

STOCKS, BONDS, BILLS AND INFLATION:  
THE PAST AND THE FUTURE

1982 Edition

*by*

*Roger G. Ibbotson*

*and*

*Ron A. Sinquefeld*



THE  
FINANCIAL  
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List of Subjects . . . . .

Foreword by Laurence B. Siegel . . . . .

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## **MONOGRAPH NUMBER 15**

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1977 Edition: *Stocks, Bonds, Bills, and Inflation: The Past (1926-1976) and The Future (1977-2000)*.

1979 Edition: *Stocks, Bonds, Bills, and Inflation: Historical Returns (1926-1978)*.

1982 Edition: *Stocks, Bonds, Bills, and Inflation: The Past and The Future*.

Copies of this publication may be obtained at \$8.95 per copy from:  
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## FOREWORD

The economy of man was Charles Darwin's inspiration for his theory of natural selection. Darwin wrote,

I happened to read. . . Malthus on *Population*, and being well prepared to appreciate the struggle for existence which everywhere goes on from long continued observation of. . . animals and plants, it at once struck me that under these circumstances favorable variations would tend to be preserved and unfavorable ones to be destroyed. The result of this would be the formation of new species.

Darwin went on to conclude that organisms vary randomly, with natural selection simply favoring the variations which happen to be well suited to an organism's local environment.

The most common use of the idea of evolution is to regard man as the product of evolutionary forces which impel organisms from lower to higher states of existence, with man at the top. This view is not quite right. Darwin and other evolutionists correctly perceived that evolution has no preordained direction, that, in the words of the biologist Stephen Jay Gould, "the 'degeneracy' of a parasite is as perfect as the gait of a gazelle." Man, then, is not necessarily better than other creatures. But organisms undeniably have evolved from less complex to more complex forms. Man, who is a physical, emotional, intellectual, and economic animal, is perhaps the most complex creature of all.

## SQUIRRELS, ANTS, AND ECONOMIC GROWTH

Our instincts tell us that man's development of an economy may be an evolutionary adaptation, a variation which adapts well to his environment. Let us look at this idea in the context of production, consumption, saving, and investment—the fundamental components of economy.



Squirrels hoard. Knowing that they must have food in the winter, they willingly forego present (certain) consumption in exchange for future consumption which is also more or less certain. Within an individual squirrel's lifetime, the animal makes numerous trades between the present and the future.

Yet squirrels do not build wealth over time. The offspring of particularly industrious squirrels do not find their lives made richer by their parents' past efforts; squirrels as a species are not better off than they were a hundred years ago. Clearly, hoarding or storage (the exchange of present for future consumption, both under certainty) is not a sufficient condition for building wealth. One might even speculate that such riskless saving has a zero expected rate of return. Ibbotson and Sinquefeld find precisely that: riskless investments earn a zero real rate of return on average over long time periods. They arrive at this conclusion not by studying squirrels, but by comparing U.S. Treasury bill returns with the inflation rate.

Ants (which incidentally are organically far less complex than squirrels) not only hoard but build structures (anthills) which may last longer than any individual ant. Thus, ants transfer wealth intergenerationally: young ants may find themselves born into a well-constructed anthill. Since an ant may not live to reap the fruit of his own labor, we regard ants as investors, not just hoarders. Like human investors, they trade present certain consumption for future uncertain consumption, and may defer consumption until after death. By investing, ants build wealth.

Yet, unlike that of humans, *per capita* ant wealth does not grow steadily over time, with each generation of ants better off than its predecessor. We have examined hoarding and risk-taking but we still have not uncovered a sufficient condition for secular economic growth.

The reader who is skeptical that economic growth occurs is at this point entitled to some hard evidence. This evidence is provided by the work of Sir Henry Phelps-Brown, who documents seven centuries of building wages, and Julian Simon, who records two hundred years of falling real prices for food and other resources. In medieval England, individuals sometimes



sold themselves into slavery in return for the provision of bread. This is certainly not the case today. Economic growth is a fact, and it appears to be the exclusive province of mankind.

Economic growth is made possible by the building of capital; in fact, some regard the two as synonymous. Capital takes many forms: human, physical, financial. The outstanding economic trend of recorded history is the increase in the stock of all of these kinds of capital over time, both in aggregate and *per capita*. This growth has been made possible by the taking of risk.

At this point, it is obvious that there is a missing link in the logic. Ants take risk and their economies do not grow steadily over time; humans take risk and their economies do grow.

The link has to do with man's ability to influence outcomes. This ability is the evolutionary adaptation which makes man far more of an economic animal than the squirrel or the ant. Humans can influence outcomes in three ways. First, man can identify good and bad uses for capital, and select the good ones; and secondly, man can change the environment in a way favorable to the desired outcome. Third and most importantly, man can change himself. Although man may not be strictly unique in any of these three attributes, he is unique in possessing all three in combination and to the degree in which he has them.

Why, then, do human economies have secular growth while ant economies do not? The reason is that ants most probably multiply in a Malthusian fashion, expanding their population to consume any attained economic growth, while humans sometimes react to growth by limiting their population. Thus, humans have the mechanism for pushing up the *per capita* store of wealth over time. These abilities—to influence outcomes and to change oneself—explain why the taking of risk is rewarded in human activity. What remains to be seen is whether humans can sustain their non-Malthusian behavior over the very long term, or if overpopulation or nuclear weapons will eventually limit our growth.

The question, why is risk rewarded, is not trivial. Ibbotson and Sinquefeld amply demonstrate that rewards go to risk-takers. They do not exactly say why, but suggest that people perceive risk as bad, all other things being equal, and that they demand to



be paid for taking risk. But the taking of risk—the exchange of certain for uncertain outcomes—does not in itself produce any wealth, nor is there a natural law stating that risk ought to be rewarded. People, moreover, demand many things which they do not get. (For example, most people would demand to be paid for jumping into a frozen lake. Since there are no payers, the Polar Bear Club has a small membership.) So, we must conclude that there are payers for risk, or else a market for risk would not exist. This conclusion, incidentally, points out the fact that the traditional capital asset pricing model is a demand side model and takes no account of the supply of risk.

Who are the payers? They are the people who believe that they can identify and select good uses of capital, or affect the environment or themselves in ways favorable to the growth of capital. These payers constitute the *supply* of risk, the *demand* for risk capital. The existence of people who can transform risky sacrifices into rewarding outcomes (and that includes all of us at some level) is one of man's unique evolutionary adaptations, the adaptation which explains his apparently singular ability to build wealth through investment.

## RISK AND EQUILIBRIUM

The guiding principle of the Ibbotson and Sinquefeld study is that risk is rewarded fairly. In other words, the expected return on an investment (in real terms) is commensurate with the risk taken. The risk and the expected return can be known with some accuracy in advance. This is the *ex ante* view. From the *ex post* point of view, returns vary widely in risky investments. A fairly priced risk may have very good or very poor outcomes.

These views, which form the foundation of Ibbotson and Sinquefeld's work, are part of the general construct known as economic equilibrium. In its simplest form, equilibrium is the condition in which markets clear. (For a market to "clear" means that there are willing buyers and sellers at the same price, and transaction is therefore possible.) Since the markets for most financial assets and many other types of assets are observed to



clear most of the time, economic equilibrium is a good approximation of the truth. An alternative way of describing markets is to state that at any point in time, a given market is out of equilibrium but moving towards it (and never reaching it since the equilibrium point moves); markets are in continuous readjustment in the direction of a moving equilibrium. This model is known as "dynamic equilibrium," and allows markets to be inefficient. If a market were found to be in dynamic equilibrium, Ibbotson and Sinquefeld would regard that condition as a market inefficiency.

Dynamic equilibrium in markets is analogous to the search of organisms for an ecological niche. Evolving organisms are involved in a continuous process of becoming better adapted to their niches, which themselves change quickly, the change often in turn brought about by the activity of the organisms.

#### WHO GETS THE ECONOMIC GROWTH?

Over the last century or two, *per capita* wealth has grown at a compound rate of two to three percent per year. Investment assets, such as stocks, bonds, and deeds to property, represent claims against this growing body of wealth. It makes sense that returns on the aggregate of investments should correspond roughly to the rate of growth in wealth. If, in fact, we could measure the returns on the true U.S. market wealth portfolio, including hard-to-measure items such as human capital and personal property, we would be measuring economic growth directly.

This suggests that investment is a positive sum game, with the sum over the long run equal to the rate of economic growth. By means of the various financial instruments and rules which have been devised, the two to three percent annual gain in *per capita* wealth can be distributed in any way society wants.

Capital market results represent the distribution of this growth among various asset holders. Owners of human capital have done very well in the past centuries, collecting wages which command ever greater amounts of resources. As Ibbotson and Sinquefeld show, owners of common stocks have done well too, with a compound annual total return of 9.1 percent from 1926 through



1981. Of this total return, 4.1 percent per year was the capital gain return. This rate of capital appreciation in stocks has proven relatively stable across various times and places: Securities Research Company graphs show that U.S. stocks returned 3.0 percent per year (capital appreciation) from 1789 through 1979, and British industrial shares had a capital gain return of 3.0 percent per year from 1928 through 1979. These results suggest that the portion of economic growth distributed to stockholders has been relatively constant despite any changes in the leverage of the economy, taxation, or other factors.

Over the period studied by Ibbotson and Sinquefield, bondholders received a small share of aggregate economic growth, and Treasury bill holders received none. Real estate holders (not studied by Ibbotson and Sinquefield) had generally high returns. It happened that social and governmental forces caused contracts denominated in nominal dollars to be paid off with deflated money. This worked to the benefit of leveraged real estate owners, and to the detriment of bondholders.

Forecasts of future investment returns, too, must correspond roughly with realistic expectations about economic growth. Ibbotson and Sinquefield forecast high returns for stocks, bonds, and bills over the next twenty years. But most of these high expected returns come from the impounding of anticipated high inflation rates into the asset returns. The real growth of investor wealth is expected to be something like 6 percent per year for stockholders, 1 to 2 percent per year for bondholders, and 0 percent per year for holders of riskless U.S. Treasury bills. These forecasts are quite consistent with the expectation that *per capita* wealth in the United States will grow in the future at roughly the same rate at which it grew in the past, two to three percent per year. Thus, even though Ibbotson and Sinquefield approach asset growth from a completely different direction than the macroeconomic perspective we have just discussed, their results are consistent with it. This suggests the robustness of the Ibbotson and Sinquefield forecasting model.



## SUPPLY SIDE AND DEMAND SIDE

Economics consists of supply and demand. The classical economists treated supply and demand as roughly equal determinants of prices and, by extrapolation, of economic behavior. Beginning in the 1930's demand-side economics became the vogue, and for several decades most of the attention of economists was focused on the ways in which aggregate demand could be measured, manipulated, and cultivated. Today, supply-side economics is popular. Supply-side economists concentrate on the production of goods. The present emphasis on supply, while a welcome relief from previous excesses on the demand side, may be an overcompensation. A balanced view of economic processes is one which takes into account the interactions of supply and demand.

How supply-side economists have proven particularly useful, though, is in calling attention to the harmfulness of taxation, regulation, and central planning in the effort to produce goods which people want. Supply-side economists and other thinkers sympathetic to the ideal of free markets have recently captured the attention of intellectuals, policy-makers, and the public to a degree not seen since the 1920's, or perhaps not even since the nineteenth century.

The work of Ibbotson and Sinquefield brings together the supply and demand sides of the economic equation. As we pointed out earlier, expectations represent the demand for risk, and any model based on expectations, including that of Ibbotson and Sinquefield, is at least partly a demand-side model. But the Ibbotson and Sinquefield model also looks at supply in a fundamental way. Investors' perceptions of the future determine how those investors will act and, consequently, what the shape of the future will be. Thus, unlike exogenous forecasts which reflect what a "wise man" believes about the future, the market consensus forecasts of Ibbotson and Sinquefield reflect the beliefs of investors who are actually trading present for future benefits. In other words, Ibbotson and Sinquefield uncover the beliefs about the future of those who are going to determine it by the patterns of their risk-taking. The Ibbotson and Sinquefield forecasts, then, have far more meaning for both the supply and the demand side of economics than do the exogenous forecasts one hears so often.



## THE ANT, THE GRASSHOPPER, AND THE TAX CODE

Not too long ago a man who earned a good income, lived thriftily, and invested a substantial sum each year in stocks, bonds, and property was almost universally considered wise. Today many people would call such a man foolish. "Living well," advises Louis Rukeyser of public television's *Wall Street Week*, is the best hedge against inflation. How did such a negative attitude about savings and investment come about?

A clue is found in the tax code. After paying taxes once on earned income, an investor may (if he is lucky) break even on the portion he saves. This nominal dollar gain, which represents no added wealth to him and which just keeps him even with inflation, is taxed too—possibly at a higher rate than the first time. Obviously an investor would have to do very well to be ahead after inflation and taxes combined.

On the other hand, the dollars we just talked about could be used to buy a new boat. The boat produces value (pleasure) for the buyer, but he does not have to pay tax on the pleasure; he does not have to share use of the boat with government agents; he may even deduct part of the cost from his tax bill, if he uses it for business entertaining. The free-spending man does not look so foolish after this analysis.

Cultural conservatives rant about the decline of the work ethic and its cousin, the savings ethic. Could it be that these phenomena, which are almost undeniably real, represent rational reactions of individuals to their environments?

Arthur Laffer's aphorism, "If you tax a good, you get less of it; if you subsidize a good, you get more of it," may explain the decreased importance of work and savings in the lives of many people. The work and savings of ordinary citizens are taxed at rates originally intended only for the Mellons and Carnegies. Meanwhile, government transfer payments subsidize leisure in many forms. It is little wonder that we find less zeal for work and savings than was found before the "inflation tax."

The logic of investment, however, has not gone away. Faced with marginal tax rates in excess of 100% on inflation-adjusted



income from some investments, Americans did not stop investing; they simply went in search of a better investment vehicle. In the 1970's, they found it in their own homes. Owners of mortgaged single-family houses had far better returns, after adjusting for inflation and taxes, than almost any Wall Street professional in that decade.

The jump in real estate prices in the 1970's and the simultaneous stagnation (first a sharp decline, then a compensating rise) in stock prices probably were one-time effects of the combined impact of inflation and taxes on returns. We do not expect that this extraordinary time period will repeat itself immediately. For a better look at the future, Ibbotson and Sinquefeld take a longer look at the past: 56 years. They find that investors demand, and, on average, receive six percent per year (compounded) for taking the risk of common stocks rather than riskless securities such as Treasury bills. Bonds have a smaller excess return, commensurate with their lesser risk. Ibbotson and Sinquefeld did not measure investor expectations of returns in real estate, but it is likely that these too are commensurate with the risk of the asset. The taking of risk is likely to be rewarded in the future as it has been in the past.

After inflation and taxes, we are still the same animal. We can influence our environment, and ourselves, so as to make future outcomes higher than present outcomes on average. Thus we should expect that investment will continue to build wealth in the future.

#### **A "UNIFIED FIELD THEORY" OF FINANCE**

Ibbotson and Sinquefeld have made a large contribution. Before their work, there were growth models of the economy and forecast models for investors, but no consensus model based on economic equilibrium and expectations hypothesis. Ibbotson and Sinquefeld have provided that synthesis.

The literature of finance, before the work of Ibbotson and Sinquefeld, contained a substantial body of work on the term structure of interest rates, the behavior of bonds, and the liquidity



preference function; a body of work on betas and the capital asset pricing model; and a body of work on real interest rates and inflation rates. The synthesis of these three specialties into a unified application of empirical finance has been achieved by Ibbotson and Sinquefeld in their historical and forecast models. Their frame of reference is now used by money managers, actuaries (whose whole purpose is to forecast the future), and economists. Subsequent to the work of Ibbotson and Sinquefeld, a number of other models, such as so-called intertemporal equilibrium models, have emerged; but in many ways the market consensus model of Ibbotson and Sinquefeld is the forerunner of those.

The work of Ibbotson and Sinquefeld points out the central importance of finance to the study of economic behavior. Only in financial markets do data emerge in a quantity and quality comparable to that used in the physical sciences. Ibbotson and Sinquefeld have devised a way to use these market data in a way which brings together several subspecialties of finance and which has important implications for investment, corporate finance, and economics at large.

Laurence B. Siegel



## PREFACE

This monograph is the most recent in a series of papers and books in which we have collected historical data on security market returns, and used these data to make market consensus (efficient market) forecasts of the future. In 1976, we published two papers in the *The Journal of Business*. The first treated historical data;<sup>1</sup> the second presented forecasts of the future.<sup>2</sup> In 1977, we consolidated the two into book form, updated the historical data and forecasts, and presented the methodology and results in a manner which was more accessible to the financial community at large.<sup>3</sup> We again updated the historical data in 1979, and compiled them into book form.<sup>4</sup> In that work, we discussed the ways in which historical data could be used to forecast the future, but we did not present specific forecasts.

In the present monograph, we update the historical data through 1981 and present forecasts as of December 31, 1981. We have added a new asset class, small company stocks. Our forecast methodology now consists of a lognormal asset return model rather than a simulation or random drawing method. We also answer some new questions that have been asked about our methods and results since the publication of our 1979 book.

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<sup>1</sup>Roger G. Ibbotson and Rex A. Sinquefeld, "Stocks, Bonds, Bills, and Inflation: Year-By-Year Historical Returns (1926-1974)," *The Journal of Business*, Vol. 49, No. 1, January 1976.

<sup>2</sup>Roger G. Ibbotson and Rex A. Sinquefeld, "Stocks, Bonds, Bills, and Inflation: Simulations of the Future (1976-2000)," *The Journal of Business*, Vol. 49, No. 3, July 1976.

<sup>3</sup>Roger G. Ibbotson and Rex A. Sinquefeld, *Stocks, Bonds, Bills, and Inflation: The Past (1926-1976) and The Future (1977-2000)*, The Financial Analysts Research Foundation, Charlottesville, Va., 1977.

<sup>4</sup>Roger G. Ibbotson and Rex A. Sinquefeld, *Stocks, Bonds, Bills, and Inflation: Historical Returns (1926-1978)*, The Financial Analysts Research Foundation, Charlottesville, Va., 1979.



A historical study of asset returns is feasible only where there is access to a well-organized body of accurate data. The compilation of the data was made possible by our working relationship with the Center for Research in Security Prices (sponsored by Merrill Lynch, Pierce, Fenner & Smith, Inc.) at the University of Chicago, Graduate School of Business. The Center provided access to information without which this study could not have been done.

The American National Bank and Trust Company of Chicago has provided the principal financial support for our study. We are grateful for this support and for the Bank's continuing interest and involvement in our work.

We thank the many colleagues and research assistants who helped us work on our previous journal articles and books. We are especially grateful to Peggy Anne Nelson for composing the tables, carefully checking the data, and typing the manuscript. We wish to express great appreciation to James H. Lorie, who founded the Center for Research in Security Prices and provided the foundation for the type of empirical research in finance performed here. We also wish to thank Lawrence Fisher who helped greatly in developing the historical data, and to thank Fischer Black who provided the inspiration for our forecasts of the future. We thank James R. Porter for his extensive work in programming the entire analysis, both historical and future; and Raymond K. Rikimaru, whose expertise in producing the graphic artwork was invaluable.

Roger G. Ibbotson  
Rex A. Sinquefeld

Chicago  
March 1982



## I. INTRODUCTION

In 1976, the *The Journal of Business* published our two companion papers on security returns. In the first paper, we collected historical data on the returns from stocks, government and corporate bonds, U.S. Treasury bills, and consumer goods (inflation). We presented a framework in which the return on a security is considered to be the sum of two or more component returns. In the second paper, we analyzed the time series behavior of the component returns and the information contained in the U.S. government bond yield curve to obtain inputs to a simulation model of future security price behavior. We forecast security returns through the year 2000 using the methods developed in the two papers. Our subsequent works updated and further developed the historical data and forecasts.

The response to our work showed that historical data are fascinating in their own right. We found that both security and component historical returns had a wide range of applications in academic work, investment management, corporate finance, and regulation of industry. Our forecast methodology provided the framework for various asset allocation, actuarial, and security forecasting models introduced since 1976, including our own.

In the present volume, we update the historical data and make new forecasts. Our motivations continue to be (1) to document the history of security market returns and (2) to uncover the market consensus forecasts of future returns.

Our forecasts are based on the assumption of capital market efficiency. That is, we do not attempt to outguess the market. We use the efficient market hypothesis as a tool in making the consensus forecasts; we neither test the hypothesis nor accept it as proven. If it is possible to outguess the market, then investors with that ability will, on average, have higher returns than the forecast means, and others will have lower returns. In any case, results will differ from one investor to another because of luck, skill, or other factors.



Since we have made forecasts in the past, it is worthwhile checking market results to see how accurate the forecasts were. In 1977, the means of our forecast returns for the 1977-1980 period were 11.8 percent, 6.5 percent, and 4.2 percent for common stocks, corporate bonds, and inflation, respectively. Over the same period, the stock market actually returned 11.6 percent, which was almost exactly at the 50th percentile of our forecast distribution. Inflation was 10.3 percent per year over the period, near the 95th percentile of our forecast distribution. Because of this high unanticipated inflation, long-term corporate bonds had a low return, -1.3 percent per year, over the period. This result was below the 5th percentile of our forecast distribution. These results illustrate the usefulness of wide forecasts since markets may perform very differently from consensus expectations, especially over short periods. Over longer periods, forecast annual returns are more closely met but forecast end-of-period wealth indices are even more widely dispersed.

Today's forecasts incorporate much higher inflation and interest rates than those which prevailed in 1977. Thus, we presently forecast that returns will be substantially higher on all classes of assets than they have been in the past.

The forecasts we make in this volume are as of December 31, 1981. By the time this monograph is printed, the forecasts will be technically out of date, since the yield curve and market levels change every day. The inflation-adjusted return forecasts, however, are quite stable over time, as are the forecasts of component returns other than the expected inflation rate. Forecasts may be brought up to date by incorporating the yield curve at any time into our forecast methodology. Motivated readers can produce their own updated forecasts by hand; these will be roughly equivalent to those which we would produce on the same date using the computer.



## II. HISTORICAL RETURNS

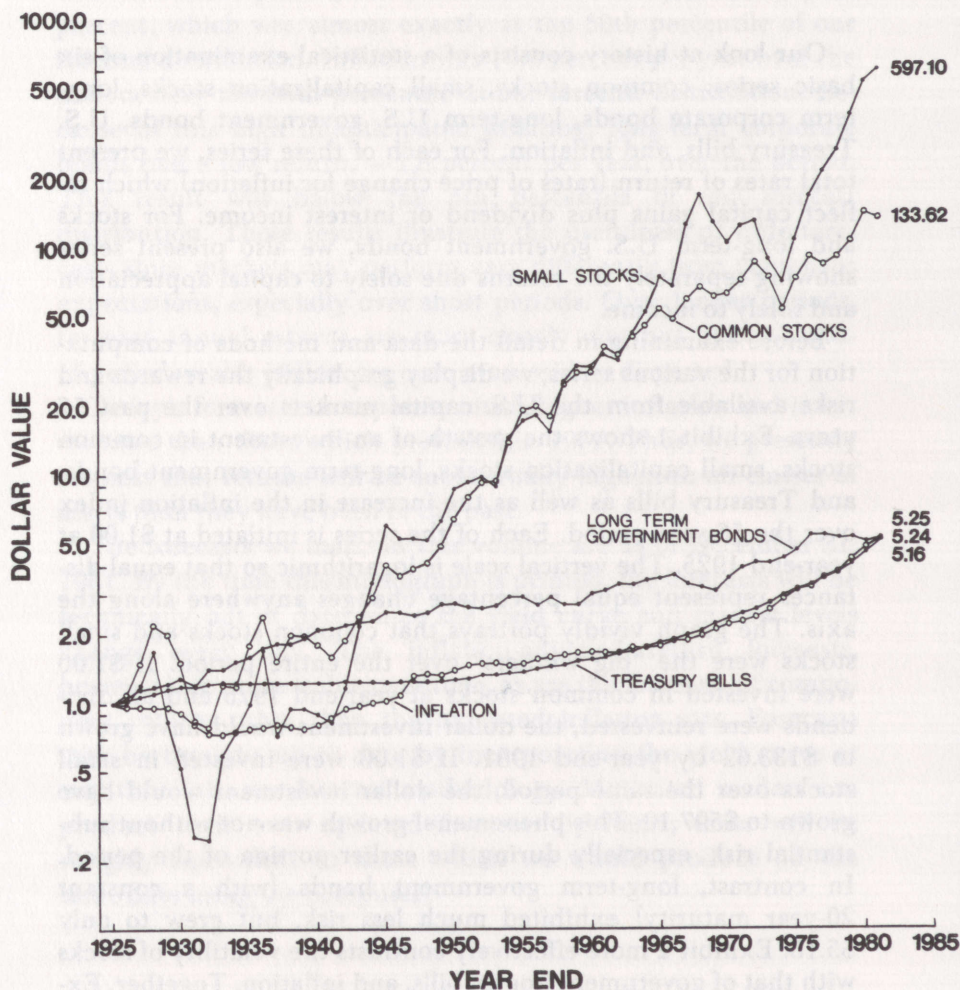
### A. Overview

Our look at history consists of a statistical examination of six basic series: common stocks, small capitalization stocks, long-term corporate bonds, long-term U.S. government bonds, U.S. Treasury bills, and inflation. For each of these series, we present total rates of return (rates of price change for inflation) which reflect capital gains plus dividend or interest income. For stocks and long-term U.S. government bonds, we also present series showing separately the returns due solely to capital appreciation and solely to income.

Before examining in detail the data and methods of computation for the various series, we display graphically the rewards and risks available from the U.S. capital markets over the past 56 years. Exhibit 1 shows the growth of an investment in common stocks, small capitalization stocks, long-term government bonds, and Treasury bills as well as the increase in the inflation index over the 56-year period. Each of the series is initiated at \$1.00 at year-end 1925. The vertical scale is logarithmic so that equal distances represent equal percentage changes anywhere along the axis. The graph vividly portrays that common stocks and small stocks were the "big winners" over the entire period. If \$1.00 were invested in common stocks at year-end 1925 and all dividends were reinvested, the dollar investment would have grown to \$133.62 by year-end 1981. If \$1.00 were invested in small stocks over the same period, the dollar investment would have grown to \$597.10. This phenomenal growth was not without substantial risk, especially during the earlier portion of the period. In contrast, long-term government bonds (with a constant 20-year maturity) exhibited much less risk, but grew to only \$5.16. Exhibit 2 more effectively contrasts the volatility of stocks with that of government bonds, bills, and inflation. Together, Exhibits 1 and 2 illustrate the fundamental tradeoff of risk versus reward that the investor faces in making an asset allocation decision.

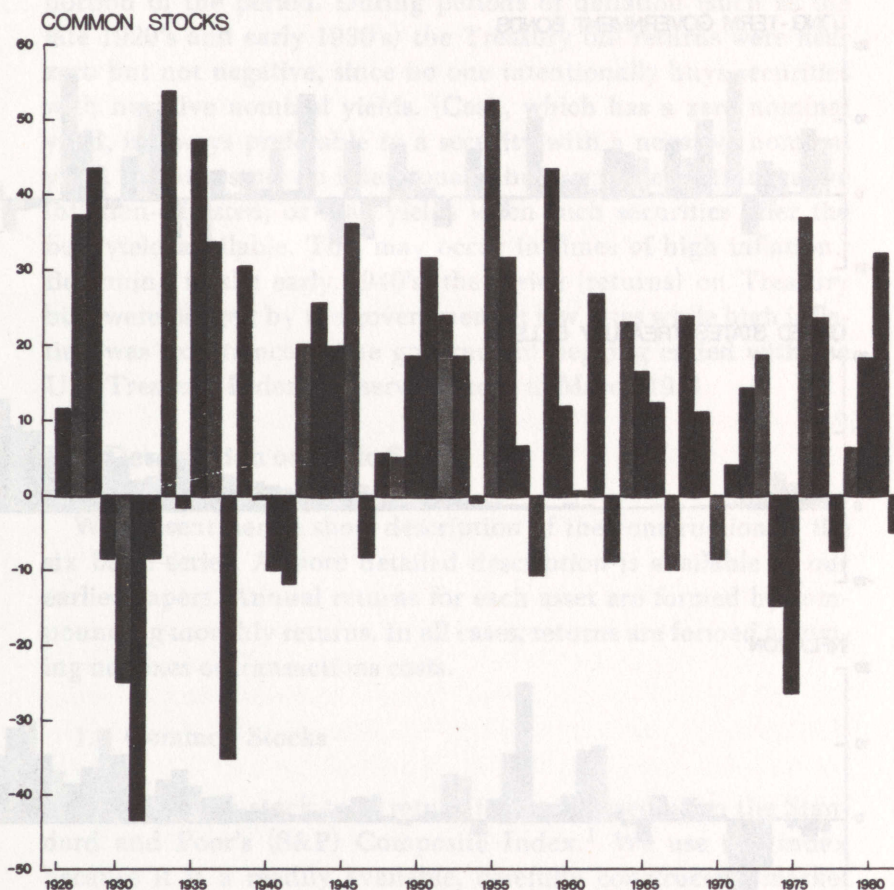


# **EXHIBIT 1** **WEALTH INDICES OF** **INVESTMENTS IN THE U.S. CAPITAL MARKETS** **1926 - 1981**



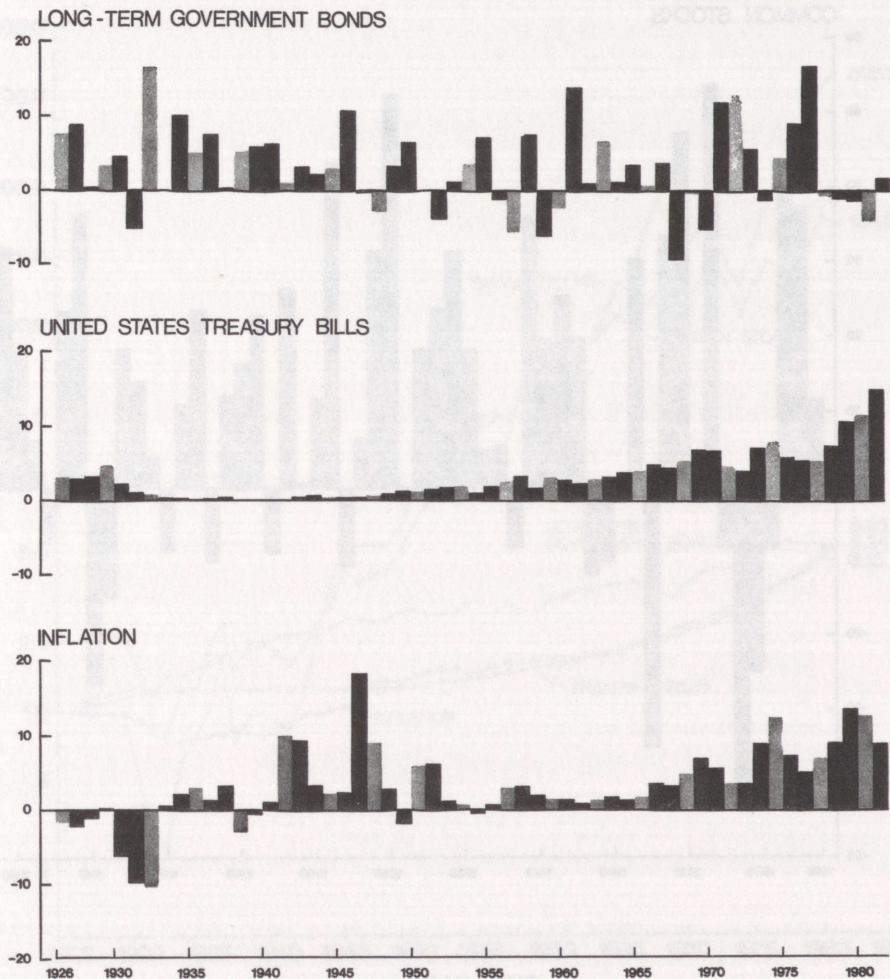


# **EXHIBIT 2-A** **YEAR-BY-YEAR TOTAL RETURNS ON COMMON STOCKS**





**EXHIBIT 2-B**  
**YEAR-BY-YEAR TOTAL RETURNS ON BONDS,**  
**BILLS, AND INFLATION**





Returning to Exhibit 1, we see that a virtually riskless strategy (for those with short-term time horizons) has been to buy U.S. Treasury bills. However, Treasury bills have had a marked tendency to track inflation, with the result that their real (inflation-adjusted) return is near zero for the entire 1926-1981 period. Note that the tracking is only prevalent over the latter portion of the period. During periods of deflation (such as the late 1920's and early 1930's) the Treasury bill returns were near zero but not negative, since no one intentionally buys securities with negative nominal yields. (Cash, which has a zero nominal yield, is always preferable to a security with a negative nominal yield. But investors do intentionally buy securities with negative inflation-adjusted, or real, yields when such securities offer the best yield available. This may occur in times of high inflation.) Beginning in the early 1940's, the yields (returns) on Treasury bills were pegged by the government at low rates while high inflation was experienced. The government pegging ended with the U.S. Treasury-Federal Reserve Accord in March 1951.

## **B. Description of Basic Series**

We present here a short description of the construction of the six basic series. A more detailed description is available in our earlier papers. Annual returns for each asset are formed by compounding monthly returns. In all cases, returns are formed assuming no taxes or transactions costs.

### **1. Common Stocks**

Our common stock total return index is based upon the Standard and Poor's (S&P) Composite Index.<sup>1</sup> We use this index because it is a readily available, carefully constructed, market

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<sup>1</sup>See Standard and Poor's *Trade and Security Statistics, Security Price Index Record*, (Orange, Conn.: Standard & Poor's Corp., 1982.)



value-weighted benchmark of common stock performance. By market value weighted, we mean that the weight of each stock in the index is proportionate to 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.

Designating common stocks as  $m$ , we form monthly returns by

$$R_{m,t} = \left[ (P_{m,t} + D_{m,t}) / P_{m,t-1} \right] - 1, \quad (1)$$

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 the month  $t$ ; and  $D_{m,t}$  is the estimated dividends received during month  $t$  and reinvested at the end of month  $t$ .

## 2. Small Capitalization Stocks

To represent the equities of smaller companies, we choose the set of stocks making up the fifth (smallest) quintile of the New York Stock Exchange (NYSE), where the stocks on the NYSE are ranked by capitalization (price times number of shares outstanding) and each quintile contains an equal number of stocks at the beginning of each formation period.<sup>2</sup> We first perform this ranking and form the fifth quintile portfolio as of December 31, 1925, and then "hold" the portfolio for five years,

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<sup>2</sup>Data were provided by Dimensional Fund Advisors Inc. (DFA), Chicago. The returns were prepared by Professor Rolf W. Banz of Northwestern University for DFA.



measuring monthly value-weighted portfolio returns. Designating the small stock portfolio as  $s$ , and the individual stocks in the portfolio as  $j$ , we form portfolio total returns according to the formula

$$R_{s,t} = \left( \sum_{j=1}^n X_{j,t-1} R_{j,t} \right) / \left( \sum_{j=1}^n X_{j,t-1} \right), \quad (2)$$

where  $R_{s,t}$  is the total return in month  $t$  for small stocks,  $n$  is the number of securities in the fifth quintile,  $R_{j,t}$  is the total return (capital gain plus dividend) in month  $t$  on security  $j$ , and  $X_{j,t-1}$  is the capitalization or dollar value of shares outstanding of security  $j$  at the end of the previous month ( $t-1$ ). We rebalance the portfolio (i.e., re-rank all of the stocks on the NYSE and form a portfolio of those falling in the fifth quintile) as of December 31, 1930 and every five years thereafter through December 31, 1980. The return after the delisting of a stock is included in the portfolio returns.

### 3. 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 constructed the High-Grade Long-Term Corporate Bond Index.<sup>3</sup> We use this monthly index from its inception in 1969 through 1981. For the period 1946-1968, we backdate the Salomon Brothers' Index using Salomon Brothers' monthly yield data and similar methodology. For the period 1925-1945, we use the Standard and Poor's monthly High-Grade Corporate Composite yield data, assuming a 4 percent coupon and a 20-year maturity.

<sup>3</sup>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 Brothers, November 1973).



Monthly returns for each yield series are calculated according to

$$R_{c,t} = \left[ (P_{c,t,19-11} + D_{c,t}) / P_{c,t-1,20} \right] - 1, \quad (3)$$

where  $R_{c,t}$  is the monthly bond return for a series during month  $t$ ;  $P_{c,t-1,20}$  is the purchase price at the end of the 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.

#### 4. 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).<sup>4</sup> 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 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.

Monthly returns on government bonds are formed according to

$$R_{g,t} = \left[ (P_{g,t} + D_{g,t}) / P_{g,t-1} \right] - 1, \quad (4)$$

<sup>4</sup>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 1926-1981.



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 reinvested at the end of month  $t$ .

## 5. 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 one month in maturity. We also want our index to reflect achievable returns. Therefore, rather than compute yields, we measure one-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.

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

$$R_{f,t} = \left[ P_{f,t} / P_{f,t-1} \right] - 1 \quad (5)$$

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

## 6. Inflation

We utilize the Consumer Price Index (CPI)<sup>5</sup> to measure inflation, which is the rate of change of consumer goods prices.

<sup>5</sup>The CPI is constructed by the U.S. Department of Labor, Bureau of Labor Statistics, Washington, D.C. We used the CPI-U (Consumer Price Index for All Urban Consumers), not seasonally adjusted, after its inception in January, 1978.



Monthly rates of change are formed by

$$R_{I,t} = \left[ V_{I,t} / V_{I,t-1} \right] - 1, \quad (6)$$

where  $V_{I,t}$  is the value of the CPI (not seasonally adjusted) measured during month  $t$ . Unfortunately, the inflation rate as measured by the CPI is not measured over the same period as the other asset returns. All of the security returns are measured from one month-end to the next month-end. CPI commodity prices are collected *during* the month. Thus, measured inflation rates lag the other series by about one-half month.

### C. Presentation of the Data

At the end of each month  $n$ , we form a cumulative wealth relative index  $V_n$  for each of the monthly return series;  $R_t$  ( $t = 1/26, 2/26, \dots, 12/81$ ). This index is initialized at  $V_{12/25} = 1.00$  and is formed for month  $n$  in the following manner:

$$V_n = V_{12/25} (1 + R_{1/26}) (1 + R_{2/26}), \dots, (1 + R_n). \quad (7)$$

Using product notation, we can abbreviate the above expression as

$$V_n = \prod_{t=1/26}^n (1 + R_t). \quad (8)$$



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

$$R_T = \left[ \frac{V_N}{V_{N-1}} \right] - 1 \quad (9)$$

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

$$R_G(T_1, T_2) = \left[ \prod_{T=T_1}^{T_2} (1 + R_T) \right]^{1/(T_2 - T_1 + 1)} - 1 \quad (10)$$

Using index values simplifies the formula to

$$R_G(T_1, T_2) = \left[ \frac{V_{T_2}}{V_{T_1}} \right]^{1/(T_2 - T_1 + 1)} - 1 \quad (11)$$

We can also compute geometric mean annual returns over all monthly periods merely by expressing  $T_1$  and  $T_2$  as fractional years. For example, the end of May 1981 is equivalent to 1981.4167, or 1981 and five-twelfths.



The geometric mean annual return formed by equations (10) and (11) should not be confused with the more familiar arithmetic mean annual return  $R_A (T_1, T_2)$  formed by

$$R_A(T_1, T_2) = \frac{\sum_{T=T_1}^{T_2} R_T}{(T_2 - T_1 + 1)} \quad (12)$$

In general,

$$R_G (T_1, T_2) \leq R_A (T_1, T_2) \quad (13)$$







The equality holds only for constant returns, and the difference between the two estimates is positively related to the variance of returns.

A simple example illustrates the difference between geometric and arithmetic means and the validity of equation (13). Suppose \$1.00 were invested in a common stock portfolio that experiences successive annual returns of +50 percent and -50 percent. At the end of the first year, the portfolio is worth \$1.50. At the end of the second year, the portfolio is worth \$.75. The annual arithmetic mean is 0 percent whereas the annual geometric mean is -13.4 percent. Naturally, it is the geometric mean that more directly measures the change in wealth over more than one period. On the other hand, the arithmetic mean serves as a better representation of typical performance over single periods.

We summarize the yearly returns for the basic series in Exhibit 3. Note that the arithmetic mean is always greater than the geometric mean, with the highly variable common stock and small stock series showing the greatest difference. The exhibit also confirms our earlier comments, that the higher risk series showed the higher returns, over the 56-year period. The risk of the six series is shown summarily by the standard deviations and more completely by the histograms. Since the histograms present single-period returns, the arithmetic mean is the mean of the distribution.



**EXHIBIT 3**  
**BASIC SERIES: TOTAL ANNUAL RETURNS**  
**(1926-1981)**

SERIES	GEOMETRIC MEAN	ARITHMETIC MEAN	STANDARD DEVIATION	DISTRIBUTION
COMMON STOCKS	9.1%	11.4%	21.9%	
SMALL STOCKS	12.1	18.1	37.3	
LONG TERM CORPORATE BONDS	3.6	3.7	5.6	
LONG TERM GOVERNMENT BONDS	3.0	3.1	5.7	
U.S. TREASURY BILLS	3.0	3.1	3.1	
INFLATION	3.0	3.1	5.1	

-90%      0%      +90%



Exhibit 4 presents year-by-year total returns for the six basic series. Exhibit 5 subdivides common stock and long-term government bond total returns into returns due solely to capital appreciation, returns due solely from the receipt of income, and returns from the reinvestment of income in the total return series. Income returns are assumed to be equal to the yield for bonds. Bond capital appreciation is then calculated each month as the total return (measured directly) minus the income return (assumed equal to the yield), i.e., capital appreciation is the return in excess of constant yield. Reinvestment returns for both stocks and bonds are zero each month but nonzero over any longer period, since they reflect monthly income reinvested in the total return index for the remainder of the year. Exhibit 6 gives cumulative wealth index values for most of the series presented in Exhibits 4 and 5.

Geometric mean annual returns for any holding period can be found by using equation (11) for any two index values ( $V_{T1}$  and  $V_{T2}$ ) for any one of the series in Exhibit 6. Geometric mean annual returns for the six basic series for all calendar yearly holding periods from 1926-1981 are presented in matrix form in Exhibits A1-A6 in Appendix A. Note that the year-by-year annual returns appearing in Exhibit 4 also appear along the diagonals of the matrices. The geometric mean annual returns are found in the matrix for any holding period by looking in the beginning year column and the ending year row. For example, in Exhibit A1, the geometric mean annual return for common stocks for the period 1926-1981 is 9.1 percent (previously shown in Exhibit 3) and is found in the matrix in column 1926 and in row 1981.

Monthly returns and index values for many of the series are also presented in Appendix B. The monthly returns corresponding to the yearly returns presented in Exhibits 4 and 5 are presented in Exhibits B1-B10. Monthly indices corresponding to the Exhibit 6 yearly indices are presented in Exhibits B20-B27.



**EXHIBIT 4**  
**BASIC SERIES: YEAR-BY-YEAR TOTAL RETURNS**  
**1926-1981**

<u>Year</u>	<u>Common Stocks</u>	<u>Small Stocks</u>	<u>Long-term Corporate Bonds</u>	<u>Long-term Government Bonds</u>	<u>U.S. Treasury Bills</u>	<u>Consumer Price Index</u>
1926	0.1162	0.0028	0.0737	0.0777	0.0327	0.0149
1927	0.3749	0.2210	0.0744	0.0893	0.0312	-0.0208
1928	0.4361	0.3969	0.0284	0.0010	0.0324	-0.0097
1929	-0.0842	-0.5136	0.0327	0.0342	0.0475	0.0019
1930	-0.2490	-0.3815	0.0798	0.0466	0.0241	-0.0603
1931	-0.4334	-0.4975	-0.0185	-0.0531	0.0107	-0.0952
1932	-0.0819	-0.0539	0.1082	0.1684	0.0096	-0.1030
1933	0.5399	1.4287	0.1038	-0.0008	0.0030	0.0051
1934	-0.0144	0.2422	0.1384	0.1002	0.0016	0.0203
1935	0.4767	0.4019	0.0961	0.0498	0.0017	0.0299
1936	0.3392	0.6480	0.0674	0.0751	0.0018	0.0121
1937	-0.3503	-0.5801	0.0275	0.0023	0.0031	0.0310
1938	0.3112	0.3280	0.0613	0.0553	-0.0002	-0.0278
1939	-0.0041	0.0035	0.0397	0.0594	0.0002	-0.0048
1940	-0.0978	-0.0516	0.0339	0.0609	0.0000	0.0096
1941	-0.1159	-0.0900	0.0273	0.0093	0.0006	0.0972
1942	0.2034	0.4451	0.0260	0.0322	0.0027	0.0929
1943	0.2590	0.8837	0.0283	0.0208	0.0035	0.0316
1944	0.1975	0.5372	0.0473	0.0281	0.0033	0.0211
1945	0.3644	0.7361	0.0408	0.1073	0.0033	0.0225
1946	-0.0807	-0.1163	0.0172	0.0010	0.0035	0.1817
1947	0.0571	0.0092	-0.0234	-0.0263	0.0050	0.0901
1948	0.0550	-0.0211	0.0414	0.0340	0.0081	0.0271
1949	0.1879	0.1975	0.0331	0.0645	0.0110	-0.0180
1950	0.3171	0.3875	0.0212	0.0006	0.0120	0.0579
1951	0.2402	0.0780	-0.0269	-0.0394	0.0149	0.0587
1952	0.1837	0.0303	0.0352	0.0116	0.0166	0.0088
1953	-0.0099	-0.0649	0.0341	0.0363	0.0182	0.0062
1954	0.5262	0.6058	0.0539	0.0719	0.0086	-0.0050
1955	0.3156	0.2044	0.0048	-0.0130	0.0157	0.0037
1956	0.0656	0.0428	-0.0681	-0.0559	0.0246	0.0286
1957	-0.1078	-0.1457	0.0871	0.0745	0.0314	0.0302
1958	0.4336	0.6489	-0.0222	-0.0610	0.0154	0.0176
1959	0.1195	0.1640	-0.0097	-0.0226	0.0295	0.0150
1960	0.0047	-0.0329	0.0907	0.1378	0.0266	0.0148
1961	0.2689	0.3209	0.0482	0.0097	0.0213	0.0067
1962	-0.0873	-0.1190	0.0795	0.0689	0.0273	0.0122
1963	0.2280	0.2357	0.0219	0.0121	0.0312	0.0165
1964	0.1648	0.2352	0.0477	0.0351	0.0354	0.0119
1965	0.1245	0.4175	-0.0046	0.0071	0.0393	0.0192
1966	-0.1006	-0.0701	0.0020	0.0365	0.0476	0.0335
1967	0.2398	0.8357	-0.0495	-0.0919	0.0421	0.0304
1968	0.1106	0.3597	0.0257	-0.0026	0.0521	0.0472
1969	-0.0850	-0.2505	-0.0809	-0.0508	0.0658	0.0611
1970	0.0401	-0.1743	0.1837	0.1210	0.0653	0.0549
1971	0.1431	0.1650	0.1101	0.1323	0.0439	0.0336
1972	0.1898	0.0443	0.0726	0.0568	0.0384	0.0341
1973	-0.1466	-0.3090	0.0114	-0.0111	0.0693	0.0880
1974	-0.2647	-0.1995	-0.0306	0.0435	0.0800	0.1220
1975	0.3720	0.5282	0.1464	0.0919	0.0580	0.0701
1976	0.2384	0.5738	0.1865	0.1675	0.0508	0.0481
1977	-0.0718	0.2538	0.0171	-0.0067	0.0512	0.0677
1978	0.0656	0.2346	-0.0007	-0.0116	0.0718	0.0903
1979	0.1844	0.4346	-0.0418	-0.0122	0.1038	0.1331
1980	0.3242	0.3988	-0.0262	-0.0395	0.1124	0.1240
1981	-0.0491	0.1395	-0.0096	0.0185	0.1471	0.0894



# **EXHIBIT 5** **YEAR-BY-YEAR INCOME AND CAPITAL APPRECIATION** **RETURNS FOR COMMON STOCKS AND LONG-TERM** **GOVERNMENT BONDS: 1926-1981**

Year	Common Stocks				Long-term U.S. Government Bonds			
	Capital Appreciation	Dividend Returns	Reinvestment Returns	Total Returns	Capital Appreciation	Yield Returns	Reinvestment Returns	Total Returns
1926	0.0572	0.0562	0.0028	0.1162	0.0391	0.0373	0.0013	0.0777
1927	0.3091	0.0520	0.0138	0.3749	0.0539	0.0337	0.0017	0.0893
1928	0.3788	0.0432	0.0141	0.4361	-0.0313	0.0332	-0.0009	0.0010
1929	-0.1191	0.0382	-0.0033	-0.0842	-0.0021	0.0363	0.0000	0.0342
1930	-0.2848	0.0488	-0.0130	-0.2490	0.0128	0.0334	0.0004	0.0466
1931	-0.4707	0.0659	-0.0286	-0.4334	-0.0847	0.0342	-0.0026	-0.0531
1932	-0.1515	0.0797	-0.0101	-0.0819	0.1292	0.0351	0.0041	0.1684
1933	0.4659	0.0525	0.0215	0.5399	-0.0314	0.0316	-0.0010	-0.0008
1934	-0.0594	0.0479	-0.0029	-0.0144	0.0676	0.0308	0.0018	0.1002
1935	0.4137	0.0458	0.0172	0.4767	0.0214	0.0279	0.0005	0.0498
1936	0.2792	0.0478	0.0122	0.3392	0.0464	0.0275	0.0012	0.0751
1937	-0.3859	0.0547	-0.0191	-0.3503	-0.0248	0.0277	-0.0006	0.0023
1938	0.2521	0.0476	0.0115	0.3112	0.0283	0.0263	0.0007	0.0553
1939	-0.0545	0.0532	-0.0028	-0.0041	0.0348	0.0238	0.0008	0.0594
1940	-0.1529	0.0618	-0.0067	-0.0978	0.0377	0.0224	0.0008	0.0609
1941	-0.1786	0.0751	-0.0124	-0.1159	-0.0102	0.0197	-0.0002	0.0093
1942	0.1243	0.0713	0.0078	0.2034	0.0073	0.0247	0.0002	0.0322
1943	0.1945	0.0545	0.0100	0.2590	-0.0038	0.0247	-0.0001	0.0208
1944	0.1380	0.0531	0.0064	0.1975	0.0032	0.0249	0.0000	0.0281
1945	0.3072	0.0450	0.0122	0.3644	0.0827	0.0229	0.0017	0.1073
1946	-0.1187	0.0422	-0.0042	-0.0807	-0.0215	0.0209	-0.0004	-0.0010
1947	-0.0000	0.0565	0.0006	0.0571	-0.0470	0.0216	-0.0009	-0.0263
1948	-0.0065	0.0611	0.0004	0.0550	0.0096	0.0242	0.0002	0.0340
1949	0.1026	0.0772	0.0081	0.1879	0.0414	0.0222	0.0009	0.0645
1950	0.2178	0.0830	0.0163	0.3171	-0.0207	0.0216	-0.0003	0.0006
1951	0.1646	0.0651	0.0105	0.2402	-0.0627	0.0248	-0.0015	-0.0394
1952	0.1178	0.0595	0.0064	0.1837	-0.0148	0.0268	-0.0004	0.0116
1953	-0.0662	0.0598	-0.0035	-0.0099	0.0067	0.0295	0.0001	0.0363
1954	0.4502	0.0539	0.0221	0.5262	0.0435	0.0273	0.0011	0.0719
1955	0.2640	0.0416	0.0100	0.3156	-0.0407	0.0288	-0.0011	-0.0130
1956	0.0262	0.0381	0.0013	0.0656	-0.0846	0.0311	-0.0024	-0.0559
1957	-0.1431	0.0408	-0.0055	-0.1078	0.0381	0.0352	0.0012	0.0745
1958	0.3806	0.0391	0.0139	0.4336	-0.0923	0.0343	-0.0030	-0.0610
1959	0.0848	0.0323	0.0024	0.1195	-0.0620	0.0418	-0.0024	-0.0226
1960	-0.0297	0.0359	-0.0015	0.0047	0.0929	0.0414	0.0035	0.1378
1961	0.2313	0.0312	0.0064	0.2689	-0.0286	0.0393	-0.0010	0.0097
1962	-0.1181	0.0351	-0.0043	-0.0873	0.0278	0.0400	0.0011	0.0689
1963	0.1889	0.0332	0.0059	0.2280	-0.0270	0.0401	-0.0010	0.0121
1964	0.1297	0.0313	0.0038	0.1648	-0.0072	0.0425	-0.0002	0.0351
1965	0.0906	0.0312	0.0027	0.1245	-0.0345	0.0430	-0.0014	0.0071
1966	-0.1309	0.0341	-0.0038	-0.1006	-0.0106	0.0476	-0.0005	0.0365
1967	0.2009	0.0324	0.0065	0.2398	-0.1355	0.0499	-0.0063	-0.0919
1968	0.0766	0.0318	0.0022	0.1106	-0.0551	0.0553	-0.0028	-0.0026
1969	-0.1142	0.0325	-0.0033	-0.0850	-0.1083	0.0639	-0.0064	-0.0508
1970	0.0016	0.0387	-0.0002	0.0401	0.0484	0.0696	0.0030	0.1210
1971	0.1079	0.0320	0.0032	0.1431	0.0660	0.0625	0.0038	0.1323
1972	0.1563	0.0295	0.0040	0.1898	-0.0035	0.0606	-0.0003	0.0568
1973	-0.1737	0.0316	-0.0045	-0.1466	-0.0773	0.0712	-0.0050	-0.0111
1974	-0.2972	0.0442	-0.0117	-0.2647	-0.0346	0.0807	-0.0026	0.0435
1975	0.3155	0.0441	0.0124	0.3720	0.0073	0.0841	0.0005	0.0919
1976	0.1915	0.0395	0.0074	0.2384	0.0807	0.0810	0.0058	0.1675
1977	-0.1150	0.0484	-0.0052	-0.0718	-0.0785	0.0795	0.0057	-0.0067
1978	0.0106	0.0545	0.0005	0.0656	-0.0908	0.0864	-0.0072	-0.0116
1979	0.1231	0.0550	0.0063	0.1844	-0.0979	0.0942	-0.0085	-0.0122
1980	0.2577	0.0542	0.0123	0.3242	-0.1377	0.1124	-0.0142	-0.0395
1981	-0.0972	0.0529	-0.0048	-0.0491	-0.1040	0.1354	-0.0129	0.0185



# **EXHIBIT 6** **BASIC SERIES** **INDICES OF YEAR-END CUMULATIVE WEALTH: 1925-1981**

Year	Common Stocks		Small Stocks	Long-term Corp. Bonds	Long-term Government Bonds		US Treasury Bills	Consumer Price Index
	Total Returns	Capital Appreciation	Total Returns	Total Returns	Total Returns	Capital Appreciation	Total Returns	Total Returns
1925	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1926	1.116	1.057	1.003	1.074	1.078	1.039	1.033	0.985
1927	1.535	1.384	1.224	1.154	1.174	1.095	1.065	0.965
1928	2.204	1.908	1.710	1.186	1.175	1.061	1.099	0.955
1929	2.018	1.681	0.832	1.225	1.215	1.059	1.152	0.957
1930	1.516	1.202	0.515	1.323	1.272	1.072	1.179	0.899
1931	0.859	0.636	0.259	1.299	1.204	0.981	1.192	0.814
1932	0.789	0.540	0.245	1.439	1.407	1.108	1.204	0.730
1933	1.214	0.792	0.594	1.588	1.406	1.073	1.207	0.734
1934	1.197	0.745	0.738	1.808	1.547	1.146	1.209	0.749
1935	1.767	1.053	1.035	1.982	1.624	1.170	1.211	0.771
1936	2.367	1.346	1.705	2.116	1.746	1.225	1.213	0.780
1937	1.538	0.827	0.716	2.174	1.750	1.194	1.217	0.804
1938	2.016	1.035	0.951	2.307	1.847	1.228	1.217	0.782
1939	2.008	0.979	0.954	2.399	1.957	1.271	1.217	0.778
1940	1.812	0.829	0.905	2.480	2.076	1.319	1.217	0.786
1941	1.602	0.681	0.823	2.548	2.095	1.305	1.218	0.862
1942	1.927	0.766	1.190	2.614	2.162	1.315	1.221	0.942
1943	2.427	0.915	2.242	2.688	2.207	1.310	1.225	0.972
1944	2.906	1.041	3.446	2.815	2.270	1.314	1.229	0.993
1945	3.965	1.361	5.983	2.930	2.513	1.423	1.233	1.015
1946	3.645	1.199	5.287	2.980	2.511	1.392	1.238	1.199
1947	3.853	1.199	5.335	2.911	2.445	1.327	1.244	1.307
1948	4.065	1.191	5.223	3.031	2.528	1.340	1.254	1.343
1949	4.829	1.313	6.254	3.132	2.691	1.395	1.268	1.318
1950	6.360	1.600	8.677	3.198	2.692	1.366	1.283	1.395
1951	7.888	1.863	9.355	3.112	2.586	1.281	1.302	1.477
1952	9.336	2.082	9.638	3.221	2.616	1.262	1.324	1.490
1953	9.244	1.944	9.013	3.331	2.711	1.270	1.348	1.499
1954	14.108	2.820	14.473	3.511	2.906	1.325	1.360	1.492
1955	18.561	3.564	17.431	3.527	2.868	1.271	1.381	1.497
1956	19.778	3.658	18.177	3.287	2.708	1.164	1.415	1.540
1957	17.646	3.134	15.529	3.573	2.910	1.208	1.459	1.587
1958	25.298	4.327	25.605	3.494	2.733	1.097	1.482	1.615
1959	28.322	4.694	29.804	3.460	2.671	1.029	1.526	1.639
1960	28.455	4.554	28.823	3.774	3.039	1.124	1.566	1.663
1961	36.106	5.607	38.072	3.956	3.068	1.092	1.600	1.674
1962	32.955	4.945	33.540	4.270	3.280	1.122	1.643	1.695
1963	40.469	5.879	41.444	4.364	3.319	1.092	1.695	1.723
1964	47.139	6.642	51.193	4.572	3.436	1.084	1.754	1.743
1965	53.008	7.244	72.567	4.552	3.460	1.047	1.823	1.777
1966	47.674	6.295	67.479	4.560	3.586	1.036	1.910	1.836
1967	59.104	7.560	123.870	4.335	3.257	0.895	1.991	1.892
1968	65.642	8.139	168.429	4.446	3.248	0.846	2.094	1.981
1969	60.059	7.210	126.233	4.086	3.083	0.754	2.232	2.102
1970	62.465	7.222	104.226	4.837	3.457	0.791	2.378	2.218
1971	71.406	8.001	121.423	5.370	3.914	0.843	2.482	2.292
1972	84.956	9.252	126.807	5.760	4.136	0.840	2.577	2.371
1973	72.500	7.645	87.618	5.825	4.090	0.775	2.756	2.579
1974	53.311	5.373	70.142	5.647	4.268	0.748	2.976	2.894
1975	73.144	7.068	107.189	6.474	4.661	0.754	3.149	3.097
1976	90.584	8.422	168.691	7.681	5.441	0.815	3.309	3.246
1977	84.076	7.453	211.500	7.813	5.405	0.750	3.479	3.466
1978	89.592	7.532	261.120	7.807	5.342	0.682	3.728	3.778
1979	106.112	8.459	374.614	7.481	5.277	0.615	4.115	4.281
1980	140.513	10.639	523.992	7.285	5.069	0.530	4.578	4.812
1981	133.615	9.605	597.097	7.215	5.162	0.475	5.251	5.242



Exhibit 7 presents the yearly cross-correlations and serial correlations for the six basic series. Note that long-term government and corporate bond returns are highly correlated with each other but negatively correlated with inflation. Since the inflation was largely unanticipated, it had a negative effect on fixed income securities. Note also that U.S. Treasury bills and inflation are reasonably highly correlated, a result of the post-1951 "tracking" described earlier. Finally, note that both the U.S. Treasury bills and inflation series have high *serial* correlation.

**EXHIBIT 7**  
**BASIC SERIES**  
**SAMPLE SERIAL AND CROSS-CORRELATIONS**  
**FOR HISTORICAL YEARLY RETURNS\***

	<u>Common Stocks</u>	<u>Small Stocks</u>	<u>Long-term Corporate Bonds</u>	<u>Long-term Government Bonds</u>	<u>US Treasury Bills</u>	<u>Inflation</u>
Common Stocks	1.00	.83	.16	.02	- .13	- .02
Small Stocks	-	1.00	.11	- .03	- .10	.06
Long-term Corp. Bonds	-	-	1.00	.84	- .21	- .28
Long-term Govt. Bonds	-	-	-	1.00	- .12	- .27
US Treasury Bills	-	-	-	-	1.00	.46
Inflation	-	-	-	-	-	1.00
Serial Correlations	.02	.11	.18	- .04	.80	.64

\*The standard error for all estimates is 0.13.



### III. COMPONENTS OF SECURITY RETURNS

Historical data suggest that investors have been rewarded for taking risks and that returns have been related to inflation rates. We now seek to uncover the risk/return and the real/nominal relationships in the historical data.

From the six basic asset classes—common stocks, small stocks, long-term government bonds, long-term corporate bonds, U.S. Treasury bills (T-bills), and consumer goods (inflation)—we derive additional series representing the component or elemental parts of the asset returns. We present nine of these derived series:

<u>Title</u>	<u>Derivation</u>
(1) Inflation-adjusted T-bill returns (Real riskless rate of return)	(T-bills) — (Inflation)
(2) Bond maturity premiums	(Long-term government bonds) — (T-bills)
(3) Bond default premiums	(Long-term corporate bonds) — (Long-term government bonds)
(4) Inflation-adjusted government bond returns (1+2)	(Long-term government bonds) — (Inflation)
(5) Inflation-adjusted corporate bond returns (1+2+3)	(Long-term corporate bonds) — (Inflation)
(6) Equity risk premiums	(Common stocks) — (T-bills)
(7) Inflation-adjusted common stock returns (1+6)	(Common stocks) — (Inflation)
(8) Small stock premiums	(Small stocks) — (Common stocks)
(9) Inflation-adjusted small stock returns (1+6+8)	(Small stocks) — (Inflation)



## A. Description of Derived Series

### 1. Inflation-adjusted U.S. Treasury Bill Returns

While the phrase "the time value of money" has a long-established currency in the financial world, estimations of that value have usually been derived from the difference between inflation and some sort of bond return. We hold that bond returns contain maturity and default premiums as well as inflation and the real riskless rate of return. Our estimation of the real riskless rate,  $R_r$ , is based on the difference in returns between consumer goods (inflation) and U.S. Treasury bills, which are a very short-term, almost literally risk-free asset. Thus, the additional return demanded by investors for buying extremely liquid, risk-free bonds instead of cash is represented by

$$R_r = R_{fr} = R_f - R_I \quad (14)$$

(The letter  $r$  in the expression  $R_{fr}$  signifies "real," that is,  $R_{fr}$  is equal to  $R_f$  adjusted for inflation.)

### 2. Bond Maturity Premiums

Long-term government bonds behave differently than short-term bills in that their prices (and hence returns) are more sensitive to interest rate fluctuations. We have reason to believe that investors demand a premium for taking the interest rate risk of long-term bonds. We call this hypothetical premium the bond maturity premium,  $R_L$ . Historically, investors have not actually received a positive maturity premium because unanticipated and rising inflation has caused long-term bonds to have low returns. We believe, however, that investors continue to demand, *ex ante*, a positive maturity premium now and in the future. The bond maturity premium is given by

$$R_L = R_g - R_f \quad (15)$$



The symbol  $R_L$  derives from the misnomer, "liquidity premium," that is sometimes applied to this number.

From the bond portfolio manager's point of view,  $R_L$  can be thought of as the gain or loss resulting from the decision to hold long-term bonds rather than short-term bonds.

### 3. Bond Default Premiums

Investors in corporate bonds face the possibility of default on the bond. Thus, in addition to inflation, the real riskless rate, and the maturity premium, holders of corporate bonds receive a premium which reflects this default possibility. The default premium, then, is measured as the difference in returns between corporate bonds and the security—government bonds of equal maturity—which contains the other three components but not the default premium. Therefore, we define the default premium as the net return from investing in long-term corporate bonds rather than long-term government bonds of equal maturity. We estimate monthly default premiums,  $R_d$ , according to

$$R_d = R_c - R_g \quad (16)$$

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,  $R_d$  is a measure of the gains or losses associated with holding high-quality corporate bonds rather than government bonds.

### 4. Inflation-adjusted Government Bond Returns

The monthly inflation-adjusted government bond returns,  $R_{gr}$ , are estimated as:

$$R_{gr} = R_g - R_I \quad (17)$$



where the additional subscript  $r$  on the returns on the left side of the equation refers to the fact that the series is real (inflation-adjusted). Since government bond returns are composed of inflation, the real riskless rate, and the maturity premium, the inflation-adjusted government bond returns may also be expressed as:

$$R_{gr} = R_r + R_L \quad (18)$$

## 5. Inflation-adjusted Corporate Bond Returns

Monthly inflation-adjusted corporate bond returns,  $R_{cr}$ , are estimated as:

$$R_{cr} = R_c - R_I \quad (19)$$

where the additional subscript  $r$  on the left side of the equation signifies "real" as before. Corporate bond returns contain all of the components of government bond returns plus the default premium, hence:

$$R_{cr} = R_{gr} + R_d \quad (20)$$

or

$$R_{cr} = R_r + R_L + R_d \quad (21)$$

## 6. Equity Risk Premiums

Because common stocks are not strictly comparable with bonds, maturity and default premiums are omitted in analysis of



the components of equity returns. (Common stocks have characteristics which are analogous to maturity and default risk, but they are not the same thing.) Hence, the difference between common stock returns and U.S. Treasury bill returns is taken as a whole and entitled the "equity risk premium." Common stock returns, then, are considered in this analysis to be composed of inflation, the real riskless rate, and the equity risk premium.

Our estimation of the monthly risk premiums,  $R_p$ , is given by the simple difference

$$R_p = R_m - R_f \quad (22)$$

## 7. Inflation-adjusted Common Stock Returns

Monthly inflation-adjusted common stock returns,  $R_{mr}$ , are estimated as:

$$R_{mr} = R_m - R_I \quad (23)$$

This may also be expressed as the sum of the real riskless rate and the equity risk premium:

$$R_{mr} = R_r + R_p \quad (24)$$

## 8. Small Stock Premiums

We define the small stock premium,  $R_q$ , as the excess of monthly small stock returns over monthly common stock (S&P) returns. (The letter  $q$  in  $R_q$  signifies the fifth "quintile.") Thus,  $R_q$  is given by the simple difference

$$R_q = R_s - R_m \quad (25)$$



## 9. Inflation-adjusted Small Stock Returns

Monthly inflation-adjusted small stock returns,  $R_{sr}$ , are estimated as:

$$R_{sr} = R_s - R_I \quad (26)$$

This may also be expressed as the sum of the components of common stocks returns plus the small stock premium, hence:

$$R_{sr} = R_{mr} + R_q \quad (27)$$

or

$$R_{sr} = R_r + R_p + R_q \quad (28)$$

### Component Returns: A Summary

As we have shown, the returns on various types of securities may be broken into their component parts. Exhibit 8 presents the symbols used in the foregoing discussion for the various

#### EXHIBIT 8 DEFINITIONS OF SYMBOLS FOR COMPONENTS OF SECURITY RETURNS

<u>Series</u>	<u>Symbol</u>
Equity Risk Premiums	$R_p$
Small Stock Premiums	$R_q$
Bond Default Premiums	$R_d$
Bond Maturity Premiums	$R_L$
Inflation Rates	$R_I$
Real Riskless Interest Rates	$R_r$



component parts of security returns, and Exhibit 9 shows, for each of the six basic return series and for the five inflation-adjusted return series, which component parts are summed to make up the whole of that series. For example,  $R_{mr}$ , the inflation-adjusted return on common stocks, is the sum of  $R_r$ , the real riskless rate, and  $R_p$ , the equity risk premium.

## B. Presentation of Data

Yearly returns for all nine of the component series ascertained in Section A are formed by compounding the monthly component returns. Therefore, the annual component returns, unlike monthly component returns, are not precisely equal to the simple difference of two basic annual returns.

### EXHIBIT 9 COMPONENT PARTS OF THE SIX BASIC RETURN SERIES AND FIVE INFLATION-ADJUSTED RETURN SERIES

<u>Series</u>	<u>Components</u>
Common Stocks, $R_m$	$R_I, R_r, R_p$
Small Stocks, $R_s$	$R_I, R_r, R_p, R_q$
Long-term Corporate Bonds, $R_C$	$R_I, R_r, R_L, R_d$
Long-term Government Bonds, $R_g$	$R_I, R_r, R_L$
U. S. Treasury Bills, $R_f$	$R_I, R_r$
Consumer Price Index (Inflation), $R_I$	$R_I$
Inflation-adjusted Common Stocks, $R_{mr}$	$R_r, R_p$
Inflation-adjusted Small Stocks, $R_{sr}$	$R_r, R_p, R_q$
Inflation-adjusted Long-term Corporate Bonds, $R_{cr}$	$R_r, R_L, R_d$
Inflation-adjusted Long-term Government Bonds, $R_{gr}$	$R_r, R_L$
Inflation-adjusted U. S. Treasury Bills, $R_{fr}$ or $R_r$	$R_r$



We summarize the yearly component returns in Exhibit 10. Note that of the component returns, the equity risk premium exhibits the highest return and greatest variability. Its arithmetic mean is 8.3 percent which is, once again, the mean of the distribution of one-year returns shown in the histogram. The 56-year geometric mean or annual compound rate of return is 5.9 percent. The arithmetic mean small stock premium was 6.0 percent over the 56-year period, and the geometric mean was 4.1 percent. The geometric mean return for taking on default risk is 0.5 percent, while the geometric mean return for taking on maturity risk is 0.0 percent over the entire period. Note that the real rate of interest is also equal to zero on average, as indicated earlier. The histogram reveals that both negative and positive real interest rates have occurred historically.

Exhibit 11 presents the year-by-year returns for the four risk premium series and the five inflation-adjusted series. Exhibit 12 presents year-end cumulative wealth index values for these same series. The returns and cumulative wealth indices of the four risk premium series are also presented monthly in Appendix B, Exhibits B11-B14 and B28-B31. The returns and cumulative wealth indices of the five inflation-adjusted return series are also presented monthly in Appendix B, Exhibits B15-B19, and B32-B36.






### C. Component Time Series Behavior

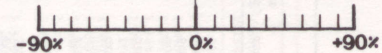
The risk/return relationships in the historical data are represented in the equity risk premiums,  $R_p$ ; the small stock premiums,  $R_g$ ; the bond maturity premiums,  $R_L$ ; and the bond default premiums,  $R_d$ . The real/nominal historical relationships are represented in the inflation rates,  $R_I$ , and the real interest rates,  $R_r$ . We wish to uncover whether each series is random or whether it is subject to any trends, cycles, or other patterns.

A direct way to test for patterns in the series is to examine the (one-year) serial correlation coefficients. The coefficients measure the degree of correlation between returns from each year and the previous year for the same series. Highly positive serial correlations indicate trends, while highly negative serial correlations indicate cycles. Serial correlations near zero suggest no patterns, i.e., random walks.



**EXHIBIT 10**  
**COMPONENT ANNUAL RETURNS 1926-1981**

SERIES	GEOMETRIC MEAN	ARITHMETIC MEAN	STANDARD DEVIATION	DISTRIBUTION
EQUITY RISK PREMIUMS stocks - bills	5.9%	8.3%	22.0%	
SMALL STOCK PREMIUMS small stocks - stocks	4.1	6.0	20.5	
DEFAULT PREMIUMS LT corps - LT govts	0.5	0.5	3.2	
MATURITY PREMIUMS LT govts - bills	0.0	0.2	6.5	
REAL INTEREST RATES bills - inflation	0.0	0.1	4.5	





# **EXHIBIT 11** **DERIVED SERIES** **YEAR-BY-YEAR RETURNS: 1926-1981**

Year	Risk Premiums on Common Stocks	Small Stock Premiums	Default Premiums on Long-term Corp. Bonds	Maturity Premiums on Long-term Govt. Bonds	Inflation Adjusted				
					Common Stocks	Small Stocks	Long-term Corporate Bonds	Long-term Government Bonds	US Treasury Bills
1926	0.0811	-0.1012	-0.0039	0.0437	0.1325	0.0181	0.0896	0.0937	0.0478
1927	0.3342	-0.1162	-0.0143	0.0564	0.4008	0.2441	0.0963	0.1112	0.0523
1928	0.3924	-0.0322	0.0267	-0.0305	0.4507	0.4129	0.0380	0.0103	0.0422
1929	-0.1264	-0.4660	-0.0054	-0.0127	-0.3852	-0.5146	0.0304	0.0318	0.0452
1930	-0.2671	-0.1547	0.0316	0.0220	-0.2009	-0.3412	0.1480	0.1127	0.0889
1931	-0.4397	-0.0542	0.0355	-0.0632	-0.3725	-0.4438	0.0837	0.0458	0.1159
1932	-0.0911	0.0861	-0.0649	0.1574	0.0260	0.0542	0.2330	0.2999	0.1239
1933	0.5360	0.6964	0.1065	-0.0037	0.5325	1.4198	0.0973	-0.0071	-0.0037
1934	-0.0160	0.3158	0.0343	0.0985	-0.0342	0.2181	0.1154	0.0777	-0.0187
1935	0.4743	-0.0464	0.0441	0.0481	0.4328	0.3614	0.0644	0.0193	-0.0278
1936	0.3369	0.2556	-0.0075	0.0733	0.3234	0.6279	0.0545	0.0621	-0.0104
1937	-0.3523	-0.3177	0.0234	-0.0008	-0.3702	-0.5933	-0.0039	-0.0285	-0.0274
1938	0.3115	0.1107	0.0056	0.0555	0.3482	0.3661	0.0912	0.0850	0.0280
1939	-0.0043	0.0984	-0.0234	0.0592	0.0035	0.0157	0.0442	0.0623	0.0045
1940	-0.0978	0.1040	-0.0271	0.0608	-0.1070	-0.0616	0.0240	0.0507	-0.0095
1941	-0.1164	0.0411	0.0168	0.0087	-0.1955	-0.1723	-0.0644	-0.0807	-0.0890
1942	0.2003	0.2021	-0.0061	0.0294	0.1014	0.3245	-0.0618	-0.0560	-0.0833
1943	0.2547	0.5446	0.0074	0.0173	0.2222	0.8355	-0.0036	-0.0109	-0.0278
1944	0.1936	0.2966	0.0187	0.0248	0.1730	0.5057	0.0257	0.0069	-0.0175
1945	0.3600	0.2882	-0.0610	0.1037	0.3343	0.6996	0.0177	0.0831	-0.0190
1946	-0.0840	-0.0237	0.0180	-0.0046	-0.2291	-0.2617	-0.1439	-0.1595	-0.1552
1947	0.0518	-0.0408	0.0023	-0.0312	-0.0316	-0.0747	-0.1056	-0.1083	-0.0793
1948	0.0466	-0.0675	0.0070	0.0257	0.0267	-0.0465	0.0129	0.0059	-0.0192
1949	0.1751	0.0126	-0.0299	0.0529	0.2091	0.2191	0.0517	0.0837	0.0293
1950	0.3019	0.0565	0.0204	-0.0113	0.2462	0.3135	-0.0351	-0.0547	-0.0439
1951	0.2222	-0.1322	0.0129	-0.0535	0.1723	0.0188	-0.0816	-0.0933	-0.0418
1952	0.1646	-0.1337	0.0226	-0.0049	0.1735	0.0213	0.0261	0.0027	0.0076
1953	-0.0277	-0.0571	-0.0025	0.0178	-0.0162	-0.0713	0.0277	0.0299	0.0118
1954	0.5136	0.0489	-0.0174	0.0627	0.5337	0.6138	0.0590	0.0771	0.0136
1955	0.2956	-0.0952	0.0173	-0.0283	0.3111	0.2000	0.0010	-0.0167	0.0119
1956	0.0400	-0.0312	-0.0137	-0.0787	0.0363	0.0138	-0.0944	-0.0824	-0.0040
1957	-0.1353	-0.0471	0.0111	0.0419	-0.1340	-0.1708	0.0550	0.0429	0.0011
1958	0.4126	0.1550	0.0394	-0.0753	0.4095	0.6219	-0.0391	-0.0772	-0.0022
1959	0.0876	0.0384	0.0129	-0.0508	0.1030	0.1468	-0.0243	-0.0371	0.0143
1960	-0.0215	-0.0395	-0.0434	0.1085	-0.0100	-0.0473	0.0747	0.1211	0.0116
1961	0.2429	0.0453	0.0374	-0.0114	0.2604	0.3118	0.0412	0.0030	0.0144
1962	-0.1118	-0.0314	0.0094	0.0405	-0.0986	-0.1300	0.0665	0.0560	0.0149
1963	0.1914	0.0049	0.0097	-0.0185	0.2081	0.2156	0.0054	-0.0043	0.0144
1964	0.1254	0.0614	0.0122	-0.0003	0.1514	0.2210	0.0354	0.0229	0.0232
1965	0.0822	0.2675	-0.0116	-0.0311	0.1031	0.3906	-0.0235	-0.0120	0.0197
1966	-0.1420	0.0366	-0.0365	-0.0106	-0.1303	-0.1009	-0.0308	0.0027	0.0136
1967	0.1904	0.4978	0.0454	-0.1289	0.2035	0.7835	-0.0779	-0.1190	0.0113
1968	0.0559	0.2303	0.0273	-0.0522	0.0607	0.2992	-0.0206	-0.0478	0.0046
1969	-0.1423	-0.1694	-0.0364	-0.1100	-0.1384	-0.2951	-0.1345	-0.1058	0.0045
1970	-0.0240	-0.1948	0.0485	0.0526	-0.0145	-0.2188	0.1225	0.0628	0.0098
1971	0.0954	0.0289	-0.0210	0.0851	0.1063	0.1272	0.0742	0.0955	0.0099
1972	0.1462	-0.1226	0.0133	0.0178	0.1509	0.0096	0.0373	0.0221	0.0041
1973	-0.2029	-0.1729	0.0217	-0.0756	-0.2177	-0.3681	-0.0706	-0.0913	-0.0175
1974	-0.3213	0.0679	-0.0702	-0.0341	-0.3478	-0.2893	-0.1373	-0.0708	-0.0378
1975	0.2983	0.1231	0.0509	0.0322	0.2833	0.4303	0.0717	0.0205	-0.0114
1976	0.1794	0.2904	0.0162	0.1116	0.1820	0.5026	0.1324	0.1143	0.0026
1977	-0.1175	0.3481	0.0234	-0.0553	-0.1313	0.1754	-0.0477	-0.0701	-0.0156
1978	-0.0059	0.1825	0.0108	-0.0783	-0.0229	0.1325	-0.0841	-0.0942	-0.0171
1979	0.0736	0.2272	-0.0303	-0.1059	0.0455	0.2686	-0.1558	-0.1295	-0.0262
1980	0.1911	0.0722	0.0122	-0.1372	0.1787	0.2440	-0.1349	-0.1470	-0.0105
1981	-0.1729	0.2004	-0.0313	-0.1134	-0.1285	0.0453	-0.0924	-0.0666	0.0533



# **EXHIBIT 12** **DERIVED SERIES** **INDICES OF YEAR-END CUMULATIVE WEALTH: 1925-1981**

Year	Risk Premiums on Common Stocks	Small Stock Premiums	Default Premiums on Long-term Corp. Bonds	Maturity Premiums on Long-term Govt. Bonds	Inflation Adjusted				
					Common Stocks	Small Stocks	Long-term Corporate Bonds	Long-term Government Bonds	US Treasury Bills
1925	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1926	1.081	0.899	0.996	1.044	1.133	1.018	1.090	1.094	1.048
1927	1.442	0.794	0.982	1.103	1.586	1.267	1.195	1.215	1.103
1928	2.008	0.769	1.008	1.069	2.301	1.790	1.240	1.228	1.149
1929	1.755	0.411	1.003	1.055	2.105	0.869	1.278	1.267	1.201
1930	1.286	0.347	1.034	1.079	1.682	0.572	1.467	1.410	1.308
1931	0.721	0.328	1.071	1.010	1.056	0.318	1.590	1.474	1.459
1932	0.655	0.357	1.001	1.169	1.083	0.336	1.960	1.916	1.640
1933	1.006	0.605	1.108	1.165	1.660	0.812	2.151	1.903	1.634
1934	0.990	0.796	1.146	1.280	1.603	0.989	2.399	2.051	1.604
1935	1.459	0.759	1.197	1.341	2.297	1.347	2.553	2.090	1.559
1936	1.951	0.953	1.188	1.440	3.040	2.192	2.693	2.220	1.543
1937	1.263	0.650	1.216	1.439	1.915	0.892	2.682	2.157	1.500
1938	1.657	0.722	1.222	1.518	2.581	1.218	2.927	2.340	1.542
1939	1.650	0.793	1.194	1.608	2.590	1.237	3.056	2.486	1.549
1940	1.489	0.876	1.161	1.706	2.313	1.161	3.130	2.612	1.535
1941	1.315	0.912	1.181	1.721	1.861	0.961	2.928	2.401	1.398
1942	1.579	1.096	1.174	1.772	2.050	1.273	2.747	2.267	1.282
1943	1.981	1.693	1.182	1.802	2.505	2.336	2.737	2.242	1.246
1944	2.364	2.195	1.204	1.847	2.939	3.517	2.808	2.257	1.224
1945	3.215	2.827	1.131	2.038	3.921	5.978	2.857	2.445	1.201
1946	2.945	2.760	1.151	2.029	3.023	4.413	2.446	2.055	1.014
1947	3.098	2.648	1.154	1.966	2.927	4.084	2.188	1.832	0.934
1948	3.242	2.469	1.162	2.016	3.005	3.894	2.216	1.843	0.916
1949	3.810	2.500	1.127	2.123	3.634	4.747	2.330	1.997	0.943
1950	4.950	2.641	1.150	2.099	4.529	6.235	2.249	1.888	0.901
1951	6.063	2.292	1.165	1.987	5.309	6.352	2.065	1.712	0.864
1952	7.061	1.986	1.192	1.977	6.230	6.487	2.119	1.717	0.870
1953	6.865	1.872	1.189	2.012	6.129	6.025	2.178	1.768	0.881
1954	10.391	1.964	1.168	2.138	9.400	9.723	2.306	1.904	0.893
1955	13.463	1.777	1.188	2.078	12.325	11.667	2.309	1.872	0.903
1956	14.001	1.722	1.172	1.914	12.772	11.828	2.091	1.718	0.900
1957	12.107	1.640	1.185	1.995	11.061	9.808	2.206	1.792	0.901
1958	17.101	1.895	1.231	1.844	15.591	15.906	2.120	1.653	0.899
1959	18.600	1.967	1.247	1.751	17.197	18.241	2.068	1.592	0.911
1960	18.200	1.890	1.193	1.941	17.025	17.379	2.223	1.785	0.922
1961	22.621	1.975	1.238	1.919	21.459	22.798	2.314	1.790	0.935
1962	20.091	1.913	1.250	1.997	19.343	19.834	2.468	1.890	0.949
1963	23.937	1.923	1.262	1.960	23.369	24.112	2.481	1.882	0.963
1964	26.940	2.041	1.277	1.959	26.906	29.440	2.569	1.925	0.985
1965	29.155	2.587	1.262	1.898	29.680	40.939	2.509	1.902	1.005
1966	25.014	2.681	1.216	1.878	25.813	36.808	2.432	1.907	1.018
1967	29.777	4.016	1.271	1.636	31.065	65.647	2.242	1.680	1.030
1968	31.440	4.941	1.306	1.550	32.949	85.289	2.196	1.600	1.035
1969	26.966	4.104	1.259	1.380	28.390	60.124	1.901	1.431	1.039
1970	26.320	3.305	1.320	1.453	27.978	46.967	2.133	1.521	1.049
1971	28.831	3.400	1.292	1.576	30.951	52.940	2.292	1.666	1.060
1972	33.048	2.984	1.309	1.604	35.621	53.447	2.377	1.703	1.064
1973	26.343	2.468	1.338	1.483	27.866	33.773	2.209	1.547	1.046
1974	17.879	2.635	1.244	1.432	18.174	24.003	1.906	1.438	1.006
1975	23.213	2.960	1.307	1.479	23.323	34.331	2.043	1.467	0.995
1976	27.376	3.819	1.328	1.644	27.569	51.586	2.313	1.635	0.997
1977	24.160	5.149	1.359	1.553	23.947	60.633	2.203	1.520	0.982
1978	24.016	6.089	1.374	1.431	23.399	68.666	2.018	1.377	0.965
1979	25.784	7.472	1.332	1.280	24.464	87.113	1.703	1.199	0.940
1980	30.713	8.011	1.349	1.104	28.835	108.371	1.473	1.023	0.930
1981	25.402	9.616	1.306	0.979	25.129	113.276	1.337	0.955	0.979



Exhibit 13 presents the yearly cross-correlations and serial correlations for the five component series and inflation. Note that small stock premiums and bond default premiums (which are both premiums for economy risk) are significantly correlated with equity risk premiums, while the other series are independent of one another, having cross-correlations which do not differ from zero at the 5 percent significance level.

**EXHIBIT 13**  
**DERIVED SERIES**  
**SAMPLE SERIAL AND CROSS-CORRELATIONS**  
**FOR HISTORICAL YEARLY COMPONENT RETURNS\***

	<u>Equity Risk Premiums</u>	<u>Small Stock Premiums</u>	<u>Default Premiums</u>	<u>Maturity Premiums</u>	<u>Real Riskless Rate of Return</u>
Equity Risk Premiums	1.00	.38	.27	.16	- .12
Small Stock Premiums	-	1.00	.16	- .01	- .15
Default Premiums	-	-	1.00	- .21	- .11
Maturity Premiums	-	-	-	1.00	.12
Real Riskless Rates	-	-	-	-	1.00
Serial Correlations	.03	.38	- .33	.23	.62

\*The standard error for all estimates is 0.13.



Exhibit 14 presents possible interpretations of the serial correlations of the five component series. We interpret equity risk premiums and bond maturity premiums as random walks in their levels. On the other hand, there is strong evidence that both inflation rates and real riskless rates follow trends. Small stock premiums and bond default premiums fall into a middle range wherein we cannot say with certainty that they follow either a trend or a random walk.

**EXHIBIT 14**  
**INTERPRETATION OF SAMPLE YEARLY**  
**FIRST ORDER SERIAL**  
**CORRELATIONS FOR COMPONENT SERIES**

<u>Series</u>	<u>Symbol</u>	<u>Serial Correlation</u>	<u>Interpretation*</u>
Equity risk premiums	$R_p$	.03	Random Walk
Small stock premiums	$R_q$	.38	Uncertain
Bond maturity premiums	$R_L$	.23	Random Walk
Bond default premiums	$R_d$	- .33	Uncertain
Inflation rates	$R_I$	.64	Trend
Real interest rates	$R_r$	.62	Trend

\*The standard error for all estimates is 0.13. To be statistically different from zero at the 5% significance level, serial correlations must have an absolute value greater than 0.26.

Exhibit 15 gives an estimate of the year-by-year riskiness of each of the basic and derived series. This year-by-year estimate is calculated by computing separately for each year the standard deviation of monthly returns (around that year's monthly arithmetic mean) and then annualizing the standard deviation estimate by multiplying it by the square root of twelve. Earlier, in Exhibits 3 and 10, we reported the 56-year annual standard deviation of returns (around the 56-year annual arithmetic mean). It is important to bear in mind that the estimates in Exhibit 15 are not strictly comparable to the annual 56-year results because the arithmetic mean drifts for a series which does not follow a random walk. A series with a drifting mean will have much higher deviations around its long-term mean than it has around the mean during a particular calendar year.

Looking at some of the specific series in Exhibit 15 is very revealing. Common stocks and equity risk premiums have virtually the same monthly standard deviations since there is very little deviation in the U.S. Treasury bill series. Note also that these two series have much higher variability in the pre-World War II period than in the post-war period. On the other hand, the various bond series (long-term government bonds, long-term corporate bonds, maturity premiums, and default premiums) were quite volatile in both the depression and in more recent times. The series with drifting means (U.S. Treasury bills, inflation rates, and inflation-adjusted U.S. Treasury bills) all tend to have very low annualized monthly standard deviations, reflecting the fact that these series are quite predictable from month to month even though there is much less long-term predictability without a good estimate of the drifting mean.



# **EXHIBIT 15** **ANNUALIZED MONTHLY STANDARD DEVIATIONS (IN PERCENT)** **BASIC AND DERIVED SERIES 1926-1981**

Year	Common Stocks	Small Stocks	Long- term Corp. Bonds	Long- term Govt. Bonds	US Treasury Bills	Consumer Price Index	Risk Premiums on Common Stocks	Premiums on Small Stocks	Default Premiums on Long-term Corp. Bonds	Maturity Premiums on Long-term Govt. Bonds	Inflation Adjusted US Treasury Bills
1926	11.74	15.84	0.90	1.76	0.31	2.05	11.78	10.14	1.65	1.62	2.06
1927	13.22	16.58	1.39	2.66	0.11	2.83	13.22	12.00	2.97	2.63	2.79
1928	17.35	19.69	1.82	3.21	0.59	1.73	17.23	14.41	2.65	3.21	1.78
1929	31.02	31.33	2.35	6.52	0.20	1.62	31.02	13.06	7.07	6.46	1.56
1930	26.26	34.65	2.21	2.25	0.29	2.15	26.23	12.99	2.39	2.08	2.27
1931	43.94	61.13	6.00	5.49	0.16	1.48	43.93	27.95	5.01	5.50	1.98
1932	68.02	90.34	7.00	10.31	0.29	1.93	68.08	42.06	15.24	10.27	1.69
1933	56.07	83.04	10.65	5.11	0.10	4.21	55.98	47.21	6.97	5.07	3.84
1934	22.22	49.39	2.75	4.12	0.04	1.99	22.21	32.04	2.44	4.09	2.38
1935	16.33	24.35	2.32	2.76	0.01	2.12	16.33	15.18	1.30	2.76	1.63
1936	14.40	36.76	1.11	2.10	0.02	1.54	14.39	29.13	1.80	2.11	1.64
1937	23.36	40.53	1.94	5.02	0.05	1.69	23.36	21.51	3.74	5.01	2.24
1938	41.19	63.65	2.26	2.23	0.07	1.83	41.17	27.67	1.88	2.20	1.36
1939	29.51	67.54	5.16	8.11	0.02	2.27	29.50	41.23	8.13	8.12	2.23
1940	26.70	40.98	1.96	4.92	0.02	1.08	26.68	19.33	3.97	4.91	1.03
1941	14.30	28.70	1.63	3.67	0.03	2.11	14.28	19.34	3.50	3.67	1.98
1942	14.71	24.65	0.71	1.38	0.03	1.28	14.69	20.88	1.17	1.38	1.33
1943	15.62	35.38	0.88	0.64	0.01	2.29	15.62	22.45	0.58	0.64	2.32
1944	7.86	18.16	1.28	0.36	0.01	0.95	7.86	11.71	1.10	0.36	0.89
1945	13.13	21.02	1.37	2.70	0.01	1.29	13.13	12.89	2.05	2.71	1.29
1946	18.70	27.66	2.12	2.74	0.00	5.70	18.70	12.07	1.71	2.74	5.69
1947	9.59	16.96	2.18	2.93	0.07	3.09	9.58	10.39	3.22	2.99	2.98
1948	19.94	22.70	2.12	1.90	0.07	2.83	19.93	6.55	1.92	1.92	2.62
1949	10.19	14.98	2.10	1.72	0.02	1.66	10.20	6.41	2.52	1.72	1.67
1950	10.79	14.39	1.05	1.45	0.03	1.72	10.79	8.18	1.32	1.45	1.73
1951	12.23	14.12	4.02	3.14	0.05	1.70	12.22	6.81	2.62	3.11	1.26
1952	11.32	8.95	2.76	3.20	0.07	1.14	11.32	4.27	3.75	3.24	1.18
1953	9.35	11.00	5.35	4.99	0.10	1.00	9.41	8.74	3.51	4.99	0.90
1954	12.95	12.30	2.24	3.25	0.06	0.74	12.93	9.62	2.38	3.24	0.71
1955	12.41	6.20	2.16	3.64	0.13	0.67	12.45	9.59	2.30	3.56	0.74
1956	14.76	7.70	3.20	4.50	0.10	1.05	14.77	7.74	2.64	4.77	0.94
1957	12.62	11.41	8.66	7.71	0.07	0.65	12.61	9.63	5.54	7.69	0.71
1958	6.27	9.29	4.65	6.64	0.26	0.88	6.17	7.00	3.56	6.61	0.83
1959	8.00	8.57	3.94	3.31	0.17	0.64	8.02	6.83	3.27	3.34	0.67
1960	13.42	13.04	3.63	5.72	0.26	0.70	13.49	6.82	4.02	5.66	0.71
1961	8.92	13.92	3.47	3.51	0.07	0.51	8.94	7.25	3.79	3.55	0.51
1962	20.09	22.39	2.12	3.48	0.08	0.66	20.08	8.11	2.16	3.50	0.68
1963	9.81	10.54	1.23	0.71	0.08	0.54	9.80	7.08	1.27	0.74	0.55
1964	4.02	5.55	1.40	0.88	0.06	0.40	4.02	3.47	1.82	0.88	0.39
1965	8.54	14.09	1.96	1.50	0.08	0.65	8.60	8.49	1.10	1.51	0.66
1966	10.89	17.80	4.79	7.78	0.11	0.69	10.88	12.60	5.65	7.74	0.75
1967	12.11	19.78	7.65	7.16	0.15	0.43	12.08	12.03	4.90	7.12	0.39
1968	13.02	19.91	7.20	7.92	0.09	0.40	13.01	12.94	3.49	7.90	0.45
1969	12.98	22.47	7.46	10.36	0.20	0.59	12.98	10.78	7.44	10.37	0.63
1970	20.29	29.61	9.61	13.42	0.21	0.42	20.34	15.09	8.89	13.38	0.49
1971	13.67	23.81	10.04	9.47	0.18	0.55	13.67	13.99	6.28	9.40	0.60
1972	6.63	15.04	3.01	5.55	0.16	0.40	6.63	12.36	3.92	5.53	0.38
1973	13.87	27.81	7.46	8.19	0.34	1.42	13.76	15.91	3.13	8.09	1.35
1974	23.93	22.80	11.68	8.28	0.34	0.82	24.13	18.85	9.73	11.60	0.94
1975	17.89	28.55	10.07	8.38	0.20	0.73	17.86	18.46	4.31	8.31	0.82
1976	13.72	30.32	4.44	4.71	0.13	0.46	13.67	21.50	1.54	4.69	0.39
1977	9.55	13.12	4.50	5.54	0.18	0.73	9.50	9.41	1.25	5.54	0.88
1978	16.64	31.24	4.45	4.46	0.33	0.61	16.64	20.31	1.62	4.56	0.80
1979	12.80	23.03	10.31	10.43	0.25	0.45	12.78	12.56	2.15	10.42	0.59
1980	17.53	26.65	19.91	20.42	0.85	1.25	17.95	12.83	4.15	20.02	1.16
1981	12.34	18.25	19.85	21.21	0.43	1.02	12.34	11.52	4.88	21.17	0.92



## **IV. HIGHLIGHTS OF THE HISTORICAL DATA**

A comparison of the performance of security returns in various periods in the past gives a perspective and an intuitive meaning to the body of data presented here. We especially focus on the effects of inflation which, at its historically high current level, is a major factor in the determination of security returns.

### **A. Common Stocks**

1. Over the period 1926-1981, stocks returned 9.1 percent per year compounded annually. One dollar invested at year-end 1925 grew to \$133.62 by the end of the 56-year period. The annual compound return from capital appreciation alone was 4.1 percent. The equity risk premium and the inflation-adjusted stock returns were both 5.9 percent per year.

2. Over the entire period, the arithmetic mean of the annual returns was 11.4 percent for stocks and 8.3 percent for both the equity risk premium and real stock returns. Although stocks outperformed bills, bonds, and inflation, their returns were far more volatile. The standard deviation of common stock annual returns was 21.7 percent, while the returns ranged from 54.0 percent in 1933 to -43.3 percent in 1931.

3. Stock returns were positive in nearly two-thirds of the years (37 out of 56 years). The longest period over which a year-end investor in our common stock total return index would have earned a negative return was the 14-year period 1929-42. A month-end investor would have earned negative returns for an additional three months, from the beginning of December 1928 through February 1943.

4. The longest period an investor would have earned a negative return in real terms was more recent. It covers 17 years and 7



months from the beginning of June 1964 through the end of December 1981. But in *nominal terms*, the investor would have more than tripled his investment over that same period of time.

5. The 1981 stock return was  $-4.9$  percent. That was well below the historical mean and there were 15 years in which total returns were lower. The inflation-adjusted stock return in 1981 was  $-12.8$  percent, a relatively poor performance in real terms as there were only 11 years in the 56-year period in which real total returns were lower.

6. The common stock total return index reached an all-time high in March 1981 and stood at an only slightly lower level at year-end. This contrasts sharply to the inflation-adjusted total return index which stood at 25.129 at year-end 1981 as compared to 25.319 as far back as May 1964.

7. Five-year annual calendar holding period returns ranged from a high of 23.9 percent during the period 1950-54 to a low of  $-12.5$  percent during the period 1928-32. The highest ten-year annual return was 20.1 percent earned from 1949 to 1958, while the lowest ten-year annual return was  $-0.9$  percent 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.

8. In inflation-adjusted terms, the highest five-year calendar holding period annual return was 23.5 percent during the period 1932-36, and the lowest was  $-8.5$  percent during the period 1970-74. Ten-year holding period annual real returns ranged from a high of 17.9 percent in the period 1949-58 to a low of  $-3.4$  percent in the period 1969-78. For 20-year holding periods, the highest annual real return was 13.0 percent earned from 1942 to 1961, and the lowest was 0.8 percent in the most recent period, 1962 to 1981.



## **B. Small Capitalization Stocks**

1. Over the period 1926-1981, stocks in the smallest capitalization quintile of the NYSE returned 12.1 percent per year compounded annually. One dollar invested at year-end 1925 grew to \$597.10 by the end of the 56-year period. The small stock premium and inflation-adjusted small stock returns were 4.1 percent per year and 8.8 percent per year, respectively.

2. Over the entire period, the arithmetic mean of the annual returns was 18.1 percent for small stocks, 6.1 percent for inflation-adjusted small stock premiums, and 14.7 percent for inflation-adjusted small stock returns. Small stock returns were more volatile than S&P stocks. The standard deviation of small stock annual returns was 37.0 percent, while the returns ranged from 142.9 percent in 1933 to -58.0 percent in 1937.

3. Small stock returns were positive in more than two-thirds of the years (38 out of 56 years). The longest period over which a year-end or month-end investor would have earned a negative return was the 15-year period 1928-42. This was also the longest period an investor would have earned a negative return in real terms. For comparison with S&P stocks, we look at the longest period for which an investor would have earned a negative real return on S&P stocks: June 1964 through December 1981 (17 years and seven months). Over that same period, our inflation-adjusted small stock index grew from \$26.84 to \$113.28, an 8.5 percent compound annual rate of return.

4. The 1981 small stock return was 14.0 percent. While this performance was not greatly above the historical mean, it was 19.0 percentage points in excess of the 1981 S&P stock return. In other words, the small stock premium was 19.0 percent for 1981. This premium return represented excellent performance by small stocks relative to S&P stocks in 1981; there were only 13 years in which the small stock premium was higher. Due to high inflation, however, the 1981 inflation-adjusted small stock return was not



was not very good by historical standards. This return was 4.5 percent in 1981; the inflation-adjusted small stock return was higher than that in 31 of the 56 years.

5. The small stock total return index reached an all-time high of \$651.92 in June 1981 and was only slightly lower at year-end. Likewise, the all-time high of the inflation-adjusted small stock total return index, \$128.58, was reached in June 1981.

6. Small stock premiums showed possible evidence of trends. From 1926 to 1931, the compound annual rate of return for this premium was -17.0 percent, and the premium was negative in every year. From 1932 to 1945, the premium had a compound annual return of 16.6 percent and was positive in twelve of the fourteen years. From 1946 to 1957, the compound annual return was -4.4 percent, and the premium was negative in nine of the twelve years. Finally, the small stock premium returned 7.6 percent per year from 1958 to 1981. Most of the 1958-1981 gain occurred in the last eight years of the period, in which the compound rate of return was 18.5 percent and the premium was positive in each year.

7. Five-year annual calendar holding period returns ranged from a high of 45.9 percent during the period 1941-45 to a low of -27.5 percent during the period 1928-32. The highest ten-year annual return was 27.5 percent earned from 1942 to 1951, while the lowest ten-year annual return was -5.7 percent from 1929 to 1938. For 20-year calendar holding periods, the highest annual return was 21.1 percent earned in the period 1942 to 1961, while the lowest annual return was 5.7 percent earned in the period 1929 to 1948.

8. In inflation-adjusted terms, the highest five-year calendar holding period annual return was 47.1 percent during the period 1932-36, and the lowest was -23.3 percent during the period 1928-32. Ten-year holding period annual real returns ranged from a high of 20.9 percent during the period 1958 to 1967 to a low of -3.8 percent during the period 1929 to 1938. For 20-year holding periods, the highest annual real return was 17.2 percent



earned from 1942 to 1961, and the lowest was 4.0 percent earned from 1929 to 1948.

### **C. Long-Term U.S. Government Bonds**

1. Long-term U.S. government bonds returned 3.0 percent per year compounded annually over the period 1926-1981. The entire period annual returns for maturity premiums and inflation-adjusted long-term government bonds were 0.0 percent and -0.1 percent, respectively.

2. The arithmetic means of the annual nominal returns, maturity premiums, and real returns from long-term government bonds are 3.1 percent, 0.2 percent, and 0.3 percent, respectively. These annual return series are far less volatile than the common stock series. However, the maturity premiums and the real return series are quite volatile relative to their own historical means.

3. Long-term government bond returns were positive in 39 out of the 56 years. Their annual returns ranged from 16.8 percent experienced in both 1932 and 1976 to -9.2 percent experienced in 1967.

4. After adjusting for inflation, long-term government bond returns were positive in 31 out of the 56 years. The highest annual return was 30.0 percent in 1932, and the lowest was -16.0 percent in 1946.

5. Five-year annual calendar holding period returns for long-term government bonds ranged from a high of 7.7 percent during the period 1932-36 to a low of -2.1 percent during the period 1965-69. The highest ten-year annual return was 5.7 percent earned during 1932-1941, while the lowest ten-year annual return was -0.1 percent earned during 1950-59. For 20-year calendar holding periods, the highest annual return was 4.7 percent earned during the period 1926-1945, while the lowest annual return was 0.7 percent earned during the period 1950-1969.



## **D. Long-Term Corporate Bonds**

1. Long-term corporate bonds returned 3.6 percent per year compounded annually over the period 1926-1981. Default premiums and inflation-adjusted corporate bond returns were both 0.5 percent.

2. The arithmetic means of the annual nominal returns, default premiums, and the real returns resulting from long-term corporate bonds are 3.7 percent, 0.5 percent, and 0.9 percent, respectively. The volatility of long-term corporate bonds is similar to that of long-term government bonds. The default premiums and the real return series are quite volatile relative to their historical means.

3. Long-term corporate bonds had positive returns in 42 out of the 56 years. Their returns ranged from 18.7 percent in 1976 to -8.1 percent in 1969.

4. Adjusted for inflation, long-term corporate bonds had positive returns in 33 out of the 56 years. Returns ranged from a high in 1932 of 23.3 percent to a low in 1979 of -15.6 percent.

5. 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 ten-year annual return was 7.1 percent earned during 1926-1935, while the lowest ten-year annual return was 1.0 percent earned during 1947-1956. For 20-year calendar holding periods, the highest annual return was 5.5 percent earned during the period 1925-1945, while the lowest annual return was 1.3 percent earned during the period 1950-59.

## **E. U.S. Treasury Bills and Inflation**

1. During the entire 1926-81 period, U.S. Treasury bills returned 3.0 percent compounded annually, a rate which was equal to the inflation rate of 3.0 percent.



2. The entire period inflation-adjusted bill return was 0.0 percent. The inflation-adjusted bill return is a measure of the "real rate of interest." Our result of 0.0 percent is substantially different from the 3 to 4 percent often suggested by the Federal Reserve Bank of St. Louis.<sup>6</sup> Note that we compute the net return difference between total returns and inflation rates. The St. Louis Federal Reserve Bank measured 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 premiums and default premiums, as well as promised future real interest rates.

3. We can break the 1926-1981 period U.S. Treasury bill returns and the inflation rates into five somewhat natural subperiods. During the deflationary period 1926-1932, the annual rate of inflation was -4.4 percent while bills returned 2.7 percent annually. During the low inflationary period 1933-1940, the annual rate of inflation was 0.9 percent while the annual bill return was a very low 0.1 percent. During the period 1941-1951, 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 1952-1965, 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

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<sup>6</sup>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.



during the last subperiod (1966-1981), with an annual inflation rate of 7.0 percent and a bill return of 6.8 percent. Thus, even though bill returns and inflation rates were often very related, the entire period real rate of interest of 0.0 percent varied substantially over the subperiods.

4. Five-year annual calendar period returns from holding one-month bills ranged from a high of 9.7 percent during the most recent period, 1977-1981, to a low of 0.1 percent during the period 1937-1941. The highest ten-year annual return was the 7.8 percent earned during the most recent period, 1972-1981, while the lowest ten-year annual return was 0.1 percent earned during 1933-1942. For 20-year calendar holding periods, the highest annual return was 6.1 percent again earned during the most recent period, 1962-1981, while the lowest annual return was 0.4 percent earned during the period 1931-1950.

5. Five-year annual calendar period inflation rates ranged from a high of 10.1 percent during the most recent period, 1977-1981, to a low of -5.4 percent during the period 1928-1932. The highest ten-year annual rate was 8.6 percent during 1972-1981, while the lowest ten-year annual rate was -2.6 percent during 1926-1935. For 20-year calendar periods, the highest annual rate was 5.9 percent during the period 1962-1981, while the lowest annual rate was 0.1 percent during the period 1926-1945.

6. While Treasury bill returns tracked inflation closely for many years after the 1951 U. S. Treasury—Federal Reserve Accord, they diverged substantially after 1972. For most of the decade of the 1970's, Treasury bills returned substantially less than the inflation rate with the real riskless rate of return averaging -1.7 percent per year over the period 1973-1980. Over the year 1981, however, Treasury bill returns substantially exceeded the inflation rate; the real riskless rate was 5.3 percent over the year, reaching a post-Accord monthly high of 12.5 percent annualized in the month of October.



2.0 are more the historical average rates. During the last century (1800-1880), with the average inflation rate of 2.0 percent and a rate of 2.5 percent, there were, though, the inflation and inflation rates were often very high. The entire period had a rate of interest of 0.5 percent, which was significantly over the average rate. However, the average rate was 2.0 percent.

3. Five-year annual average period returns from 1800 to the most recent period (1973-1981) are 2.0 percent. During the period 1800-1880, the highest five-year annual return was 2.5 percent, during the period 1880-1900, the highest five-year annual return was 2.0 percent, during the period 1900-1920, the highest five-year annual return was 2.0 percent, during the period 1920-1940, the highest five-year annual return was 2.0 percent, during the period 1940-1960, the highest five-year annual return was 2.0 percent, during the period 1960-1980, the highest five-year annual return was 2.0 percent, during the period 1980-1981, the highest five-year annual return was 2.0 percent.

4. Five-year annual average period inflation rates ranged from a high of 10.0 percent during the most recent period (1973-1981) to a low of 2.0 percent during the period 1800-1880. The highest five-year annual return was 2.5 percent, during the period 1800-1880, the highest five-year annual return was 2.0 percent, during the period 1880-1900, the highest five-year annual return was 2.0 percent, during the period 1900-1920, the highest five-year annual return was 2.0 percent, during the period 1920-1940, the highest five-year annual return was 2.0 percent, during the period 1940-1960, the highest five-year annual return was 2.0 percent, during the period 1960-1980, the highest five-year annual return was 2.0 percent, during the period 1980-1981, the highest five-year annual return was 2.0 percent.

5. While Treasury bill returns tracked inflation closely for many years after the 1950 U. S. Treasury-Federal Reserve Accord, they diverged substantially after 1973. For most of the decade of the 1980s, Treasury bill returns tracked substantially less than the inflation rate with the real return rate of return being negative. However, Treasury bill returns substantially exceeded the inflation rate after the first quarter of 1982, when the inflation rate reached a historical high of 12.0 percent in the month of October.



## V. FORECASTS OF THE FUTURE

### A. Introduction

In the previous sections, we presented historical data and analyzed the behavior of the various components of asset returns over the 1926-1981 period. We found that equity risk premiums and bond maturity premiums follow random walks in their levels, while inflation and real riskless interest rates follow distinct trends. Small stock premiums and bond default premiums fall into a middle range of serial correlation in which it is uncertain whether a random walk or a trend better describes the component's behavior.

Given this historical information and our interpretation of it, we can make forecasts of the future. We forecast the distribution of equity risk premiums, small stock premiums, and bond default and maturity premiums by use of a lognormal model which assumes that (1) these components follow random walks in their levels, distributed about their long-term means; (2) their instantaneous returns are distributed normally, which means that period returns (here, annual returns) are distributed lognormally.<sup>7</sup> The assumption of lognormality is consistent with historical fact. We forecast real riskless rates of interest by means of a process in which a given future year's rate is a linear function of the previous year's rate. The values of the function are determined by the first-order autoregression of the historical series of annual real riskless interest rates. Lastly, we forecast inflation by extracting forward interest rates from the U.S. Government bond yield curve, and determining what portion of those expected rates is attributable to expected inflation. Our discussion of interpretation of the yield curve follows this section.

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<sup>7</sup>A technical discussion of the characteristics and use of the lognormal distribution is found in Atchison, John, and Brown, J.A., *The Lognormal Distribution*, Cambridge, England: Cambridge University Press, 1957.



By adding the component returns, we arrive at forecasts for various asset categories for one, two, three, four, five, ten, and twenty years in the future. Since the components are interrelated, rates of return from various percentiles of their distributions cannot be added directly. We therefore use an asset allocation model to calculate the percentile distributions of future asset returns.<sup>8</sup>

To demonstrate the results of holding diversified portfolios rather than a single type of asset, we also present future return distributions for various portfolio mixes of stocks, bonds, and bills. We use the asset allocation model to form the portfolios and calculate distributions, in some cases, specifying a high beta for stocks or other individual portfolio characteristics.

The forecasting method used here differs from our 1977 method in two important respects: (1) we use a lognormal model instead of simulation; and (2) we assume certainty for inflation and real riskless interest rates. The simulation method gives the actual distribution of the component, and thus produces unbiased forecasts, subject only to error from small sample size. The lognormal model, which is simpler to use, produces accurate forecasts as long as the distributional assumptions inherent in the lognormal model are correct for the components being forecast.

## **B. Interpreting The Yield Curve**

### **1. Theories of the Term Structure of Interest Rates**

The government bond yield curve is simply a plot of the yields to maturity of government bonds of various maturities at a point in time. Bond prices and yields are of course, market determined. By making applications of a body of theory pertaining to the term structure of interest rates, we can extract from the yield curve the market's consensus forecast of future interest rates.

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<sup>8</sup>The model used is based on the lognormal distribution and is available commercially from R. G. Ibbotson & Company, 8 South Michigan Avenue, Suite 707, Chicago, Illinois 60603.



There are three major theories that purport to interpret the term structure of interest rates. They differ in terms of the degree in which bonds of various maturities are hypothesized to be substitutes for one another. At one end of the continuum is the "pure" *expectations* theory which asserts that on average, bonds of any maturity are perfect substitutes for one another. The *preferred habitat* theory presents the more moderate view that bonds of various maturities are only partial substitutes for one another since the market may prefer particular maturities. Finally, the *market segmentation* theory claims that bonds of various maturities are, at best, poor substitutes for one another. Strangely, the third theory seems to be the most widely accepted among the financial community. We reject it out of hand since it is a blatant violation of market efficiency.

Neither of the two remaining theories is inconsistent with market efficiency. Both of them can be termed "*expectations*" theories since each allows for long-term bond yields to encompass expected period-by-period short-term interest rates. According to the "pure" expectations theory, the holder of a long-term bond would be expected to earn an amount equal, on average, to the amount earned by the investor who rolls over short-term bonds. Thus, this theory hypothesizes that the market (investors collectively, but not necessarily individually) is completely indifferent to which maturities are held. In contrast, the preferred habitat theory states that investors and issuers each as a group may prefer different maturities. Thus, issuers induce investors to invest in less desirable maturities by offering higher expected returns.

One version of the preferred habitat expectations theory specifies that investors prefer shorter maturities to longer maturities. This version is usually referred to as the *liquidity preference* hypothesis.<sup>9</sup> It rests on the presumptions that on the one hand, investors are risk averse with short-term time horizons on

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<sup>9</sup>Chronologically, the more specific liquidity preference hypothesis was developed long before the preferred habitat generalization.



balance, so that they view long-term maturities as riskier than short-term maturities. (If an investor had a long-term time horizon in nominal terms, he would view long-term bonds as riskless because the return over the period is known in advance, and view short-term bills as risky because their yields fluctuate.) On the other hand, issuers are presumed to prefer to issue long-term securities in order to reduce the frequency of flotation costs.

We shall make use of the liquidity preference version of the theory. We allow risk to be positively related to maturity with the effect that long-term bond yields are an upward biased geometric average of expected period-by-period short-term interest rates.

The premium consisting of the difference between the expected return on a long-term bond and the expected return on a short-term bill is an interest rate risk premium. This premium compensates investors having short-term time horizons for the additional risk of price fluctuation in long-term bonds. The term, "liquidity preference hypothesis," has led some to believe instead that the premium is a compensation for illiquidity or lack of marketability, and to label the premium a "liquidity premium" (hence, the traditional symbol  $R_L$ , which we retain). In fact, there is very little difference in marketability between long- and short-term treasury issues, since all treasury issues are highly marketable.

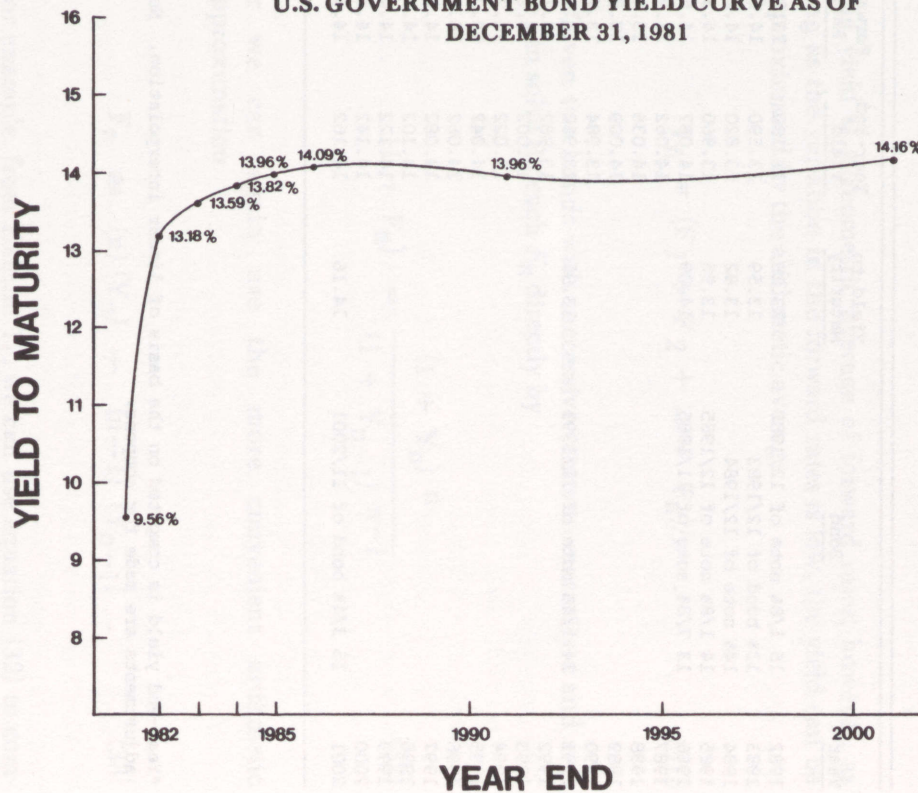
## 2. Computation of Forward Rates

Exhibit 16 presents the government bond yield curve as of December 31, 1981. Exhibit 17 presents the schedule of bonds used to compute the yield curve, giving both year-end yields and forward rates for all years 1982-2001. We use yields to maturity,  $Y_N$ , with terms to maturity  $N = 1$  to 20, corresponding to maturity dates 1982-2001. The year-end yields to maturity are computed by linear interpolation. We define forward rates  $F_n$  for each year  $n$  into the future according to

$$(1 + Y_N) = \left[ (1 + F_{1982}) (1 + F_{1983}) \dots (1 + F_N) \right]^{1/N} \quad (29)$$



**EXHIBIT 16**  
**U.S. GOVERNMENT BOND YIELD CURVE AS OF**  
**DECEMBER 31, 1981**





**EXHIBIT 17**  
**COMPUTATION OF THE U.S. GOVERNMENT**  
**BOND YIELD CURVE AND FORWARD**  
**RATES AS OF DECEMBER 31, 1981**

<u>Year</u>	<u>Bond</u>	<u>Yield to Maturity</u>	<u>Year-End Yield*</u>	<u>Forward Rate</u>
1982	15 1/8% note of 12/1982	13.18	13.180	13.180
1983	13% bond of 12/1983	13.59	13.590	14.000
1984	14% note of 12/1984	13.82	13.820	14.281
1985	14 1/8% note of 12/1985	13.96	13.960	14.381
1986	13 7/8% note of 11/1986	14.09	14.087	14.596
1987			14.062	13.937
1988			14.036	13.880
1989			14.009	13.820
1990			13.984	13.784
1991	14 1/4% note of 11/1991	13.96	13.962	13.764
1992			13.982	14.182
1993			14.002	14.222
1994			14.022	14.262
1995			14.042	14.302
1996			14.062	14.342
1997			14.082	14.382
1998			14.102	14.422
1999			14.122	14.463
2000			14.142	14.503
2001	15 3/4% bond of 11/2001	14.16	14.162	14.543

\*Year-end yield is computed on the basis of linear interpolation. No adjustments are made for coupons.

or in more compact form

$$(1 + Y) = \prod_{n=1}^N (1 + F_n)^{1/N} \quad (30)$$

The yield is a geometric average of forward rates, however, as long as the variation in the forward rates is low, the yield can be approximated by the arithmetic average

$$Y_n = (F_1 + F_2 + \dots + F_n)/n \quad (31)$$

Given two bonds with successive terms to maturity  $n$  and  $n-1$ , we can solve for each  $F_n$  directly by

$$(1 + F_n) = \frac{(1 + Y_n)^n}{(1 + Y_{n-1})^{n-1}} \quad (32)$$

or we can again use the more convenient arithmetic approximation

$$F_n \cong (n)(Y_n) - (n-1)(Y_{n-1}) \quad (33)$$

For example, from Exhibit 17, we can use equation (32) to compute the forward rate for 1984 as

$$F_3 = (1.1382^3 \div 1.1359^2) - 1 = .1428$$



Exhibit 18 shows a graph of the yield curve and the forward rates for each year from 1982 to 2001.

### 3. Forward Rates As Revealed Market Expectations

As reported earlier, we make use of the liquidity preference version of expectations theory. Thus, we assume that each forward rate,  $F$ , is comprised of an expected one-period future expected inflation rate,  $E(R_I)$ , an expected real interest rate,  $E(R_r)$ , and an expected maturity premium  $E(R_L)$ . We can express this algebraically as

$$F \cong E(R_I) + E(R_r) + E(R_L) \quad (34)$$

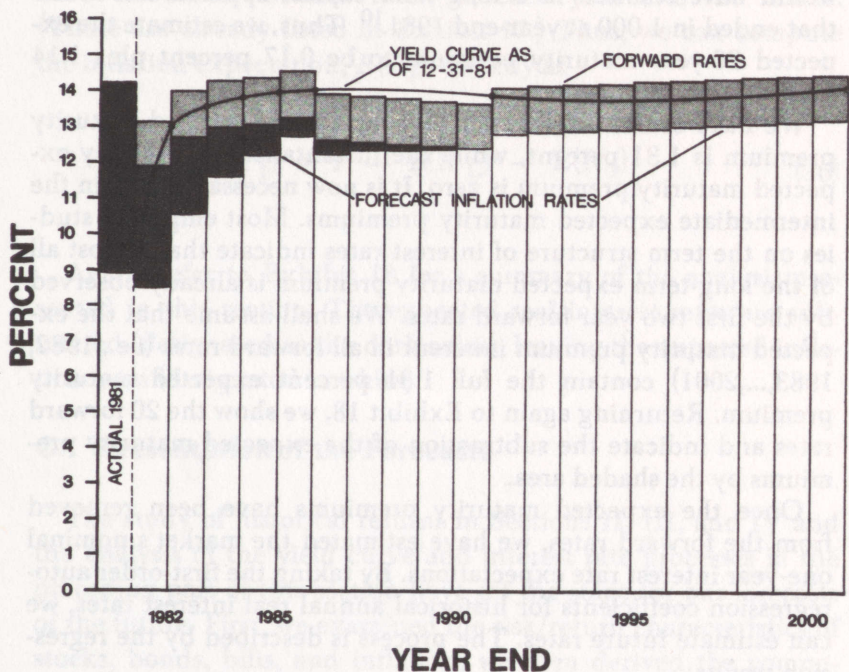
Like equation (33), equation (34) is only an approximation since the forward rate is a geometric return while its three components are arithmetic means.

In order to uncover the expected year-by-year future interest and inflation rates, it is first necessary to estimate year-by-year expected maturity premiums. The natural starting point is to examine historical maturity premiums.

One method of estimating expected maturity premiums is to observe their arithmetic mean returns historically. The arithmetic mean return from our 20-year maturity premium,  $R_L$ , was 0.17 percent. It measures the realized excess returns from investing in long-term (20-year) government bonds rather than short-term (30-day) Treasury bills. If realized returns were a good estimate of the excess returns that long-term government bondholders expected each year during the 1926-1981 period, then they might also be used as an estimate of the excess returns that 20-year bondholders expect during future years.

Unfortunately, we have rather good evidence that long-term bondholders expected to receive higher returns than they in fact realized. Referring back to Exhibit 6, we see that the long-term

# **EXHIBIT 18** **FORECASTS OF INTEREST AND INFLATION RATES**



- FORECAST INFLATION RATES
- FORECAST REAL RISKLESS RATES OF INTEREST
- ▨ FORECAST MATURITY PREMIUMS



government bond capital appreciation index, initialized at 1.000 at year-end 1925, fell to 0.475 by year-end 1981. Thus, a 52.5 percent capital loss was realized. We think it was quite unlikely that this loss was expected, so we find it necessary to add it back in estimating the 20-year expected maturity premium.

Adding 1.14 percent to the historical yearly maturity premium would have resulted in a long-term capital appreciation index that ended in 1.000 at year-end 1981.<sup>10</sup> Thus, we estimate the expected 20-year maturity premium to be 0.17 percent plus 1.14 percent or 1.31 percent.

We have estimated that the 20-year ahead expected maturity premium is 1.31 percent, while the instantaneous or 30-day expected maturity premium is zero. It is now necessary to fill in the intermediate expected maturity premiums. Most empirical studies on the term structure of interest rates indicate that almost all of the long-term expected maturity premium is already observed by the first two year forward rates. We shall assume that the expected maturity premium inherent in all forward rates (i.e., 1982, 1983,...,2001) contain the full 1.31 percent expected maturity premium. Returning again to Exhibit 18, we show the 20 forward rates and indicate the subtraction of the expected maturity premiums by the shaded area.

Once the expected maturity premiums have been removed from the forward rates, we have estimated the market's nominal one-year interest rate expectations. By taking the first-order autoregression coefficients for historical annual real interest rates, we can estimate future rates. The process is described by the regression results:

$$R_{r,t} = .632 R_{r,t-1} + \epsilon_{r,t} \quad (35)$$

(5.90)

$$R^2 = .40, \sigma(\epsilon_{r,t}) = .035, DW = 1.76$$

<sup>10</sup>The 1.14 percent adjustment was calculated as the actual annual capital loss on long-term government bonds over the period 1926 to 1981. Another way to estimate the arithmetic mean ( $R_A$ ) of a series for which one has the geometric mean ( $R_G$ ) and variance ( $\sigma^2$ ) is the natural log approximation,

$$E[\ln(1 + R_G)] \cong \ln(1 + R_A) - \frac{1}{2} [\sigma^2 / (1 + R_A)^2].$$



The value of  $R_r$  for 1981, .0533, is used as the starting point (first value of  $R_{r,t-1}$ ). Thus, the estimates of the expected real interest rate are .0336, .0212, .0134, and .0084 for 1982, 1983, 1984, and 1985, respectively. They dampen toward zero over time and are indistinguishable from zero after 1995. From equation (32), we have calculated forward rates,  $F$ , each year into the future. (These are already listed in Exhibit 17.) Thus, we can compute the inflation expectation,  $E(R_I)$ , directly as

$$E(R_I) = F - E(R_L) - E(R_r) \quad (36)$$

Again, refer to Exhibit 18 for a summary of the analysis presented in this section. The expected real interest rates are subtracted (designated as the dark color), leaving the expected inflation rates (designated in white).

### C. Presentation of the Forecasts

The study of historical returns in Sections II, III, and IV and the analysis of the yield curve and interest rate processes in the preceding part of this section have set the stage for our forecasts of the future. First, we examined the risk/return characteristics of stocks, bonds, bills, and inflation; we then derived the components of these assets' returns. We divided the components into those which follow random walks in their levels, the future distributions of which can be forecast by the lognormal model; and those which follow a process, which can be forecast by analysis of the yield curve (in the case of inflation rates) or a first-order autoregression model (in the case of real riskless rates of interest). We showed that the forward rates extracted from the yield curve revealed the market's expectations of future inflation rates. By summing the distributions of the components which make up the return on an asset, we forecast the distribution of returns for that asset. We now present the forecast distributions.



## 1. Summary of Inputs

The two sources of inputs are the historical returns from the period 1926-1981 and the December 31, 1981 yield curve.

### a. Historical Returns

(1) From the historical returns,  $R_m$ ,  $R_s$ ,  $R_g$ ,  $R_c$ ,  $R_f$ , and  $R_I$ , we compute component returns;  $R_p$ ,  $R_q$ ,  $R_d$ ,  $R_L$ ,  $R_I$ , and  $R_r$ .

(2) We assume that  $R_r$  follows a first-order autoregressive process under certainty according to:

$$R_{r,t} = .632 R_{r,t-1} + \epsilon_{r,t} \quad (37)$$

$$E(R_{r,t}) = .632 R_{r,t-1}; R_{r,1981} = .0533 \quad (38)$$

(3) We assume that  $R_p$ ,  $R_q$ ,  $R_d$ , and  $R_L$  follow random walks in their levels.

(4) We forecast probability distributions for  $R_p$ ,  $R_q$ ,  $R_d$ , and  $R_L$  by use of the lognormal distribution function of the asset allocation program described earlier. Input means are equal to historical arithmetic means for  $R_p$ ,  $R_q$ ,  $R_d$ , and equal to .0131 for  $R_L$ .

(5) Input standard deviations are equal to historical standard deviations for  $R_p$ ,  $R_q$ ,  $R_d$ , and  $R_L$ .

## b. Yield Curve

(1) We compute forward rates each year into the future.

(2) Forward rates are assumed to be comprised of expected maturity premiums, expected real interest rates, and expected inflation rates.

(3) Expected maturity premiums are assumed to be .0131 for every year from 1982 to 2001. Expected real interest rates are estimated from equation (38) above.

(4) Expected inflation rates are solved for as the forward rate minus the expected maturity premium minus the expected real interest rate as in equation (36). Thus, inflation rates are forecast under the assumption of certainty.

## 2. Forecasting 1982: The One-Year Ahead Forecast

Using the inputs described above, the actual 1982 forecast can be readily described by examination of Exhibits 18 and 19. In Exhibit 18, we graphically depicted the derivation of the 1982 nominal riskless rate, inflation rate, and real riskless rate. All of these forecasts assume certainty. The nominal riskless rate is derived by subtracting the expected maturity premium, .0131, from the 1982 forward rate, .1318. The result, .1187, is the expected return on U.S. Treasury bills in 1982. Subtracting the expected 1982 real riskless rate of .0336, we arrive at the expected 1982 inflation rate of .0851 (8.5 percent).

In Exhibit 19, we begin with either the nominal or real 1982 expected riskless rate (Treasury bill return). Adding the equity risk premium distribution gives the common stock nominal and real distributions. Adding both the equity risk premium and the small stock premium distributions gives the small stock distribution. Adding the maturity premium distribution gives the long-term government bond distribution. Adding both the maturity premium and default premium distributions gives the long-term corporate bond distributions.



**EXHIBIT 19**  
**FORECASTING CAPITAL MARKET RETURNS:**  
**SUMMING THE COMPONENTS**  
**OF RETURNS FOR THE YEAR 1982**

S E R I E S	NOMINALS		REALS		SOURCE
	SYMBOL	1982 FORECAST MEAN	SYMBOL	1982 FORECAST MEAN	
U. S. Treasury Bills	$R_f$	11.87%	$R_r$	3.36%	Yield Curve*
U. S. Treasury Bills	$R_f$	11.87	$R_r$	3.36	Yield Curve
Equity Risk Premium	$R_p$	8.30	$R_p$	8.30	Random Walk
Common Stocks	$R_m$	20.17	$R_{mr}$	11.66	
U. S. Treasury Bills	$R_f$	11.87	$R_r$	3.36	Yield Curve
Equity Risk Premium	$R_p$	8.30	$R_p$	8.30	Random Walk
Small Stock Premium	$R_q$	6.10	$R_q$	6.10	Random Walk
Small Stocks	$R_s$	26.27	$R_{sr}$	17.76	
U. S. Treasury Bills	$R_f$	11.87	$R_r$	3.36	Yield Curve
Maturity Premium	$R_L$	1.31	$R_L$	1.31	Sec. B-3 of Ch. V
Long-term Gov't Bonds	$R_g$	13.18	$R_{gr}$	4.67	
U. S. Treasury Bills	$R_f$	11.87	$R_r$	3.36	Yield Curve
Maturity Premium	$R_L$	1.31	$R_L$	1.31	Sec. B-3 of Ch. V
Default Premium	$R_d$	0.53	$R_d$	0.53	Random Walk
Long-term Corp. Bonds	$R_C$	13.71	$R_{Cr}$	5.20	

\*See Exhibit 18.



For all of the series which we forecast under uncertainty, we display selected percentiles of the probability distributions for the year 1982 in Exhibit 20. Note that the 50th percentile (median) returns correspond to the distribution means from Exhibit 19.

### 3. Forecasting the Period 1982-2001

Forecasting each additional year into the future is very similar to forecasting the year 1982. The only differences are changes in the forward rates and expected real interest rates, and the gradual decline (as one forecasts a longer period) of the forecast mean component return from the arithmetic mean historical component return to the geometric mean.

The changes in the forward and expected real interest rates are reflected in the forecast inflation rate (from Exhibit 18). Where the inflation rate or the real riskless rate is a component of a forecast asset return, the year-to-year change in the forecast component return is impounded directly into the forecast mean of the asset return.

The arithmetic mean historical return on a component is used in making one-year forecasts, since the arithmetic mean accurately represents the average performance over a one-year period. Over a long forecast period, however, the geometric mean historical return represents average performance over the whole period (stated on a compound annual basis). Therefore, we input the arithmetic mean for the one-year forecast, the geometric mean for the twenty-year forecast, and intermediate values for the two, three, four, five, and ten-year forecasts. For the equity risk premium, the historical arithmetic and geometric mean returns are 8.3 percent and 5.9 percent respectively. We use the arithmetic mean value of 8.3 percent for the one-year equity risk premium forecast; 7.2 percent for two years; 6.7 percent for three years; 6.5 percent for four years; 6.4 percent for five years; 6.0 percent for ten years, and the geometric mean value of 5.9 percent for twenty years. (The difference between the arithmetic and geometric means was not significant for any other component used in the



**EXHIBIT 20**  
**FORECAST TOTAL RETURN DISTRIBUTION FOR THE YEAR 1982 ANNUAL**  
**RATES (IN PERCENT FORM), SELECTED PERCENTILES**

Percentile*	Nominal Asset Returns				Component Returns				Inflation-Adjusted Asset Returns			
	R <sub>m</sub>	R <sub>s</sub>	R <sub>c</sub>	R <sub>g</sub>	R <sub>p</sub>	R <sub>q</sub>	R <sub>d</sub>	R <sub>L</sub>	R <sub>mr</sub>	R <sub>sr</sub>	R <sub>cr</sub>	R <sub>gr</sub>
5	-15.5	-33.9	4.2	3.9	-28.0	-27.3	- 4.6	- 9.3	-24.0	-42.4	- 4.3	- 4.6
10	- 7.6	-20.4	6.3	5.9	-19.9	-20.0	- 3.5	- 7.0	-16.1	-28.9	- 2.2	- 2.6
25	5.5	2.0	9.8	9.4	- 6.6	- 7.6	- 1.6	- 3.0	- 3.0	- 6.5	1.3	- 0.9
50 (Mean)	20.2	26.2	13.7	13.2	8.3	6.1	0.5	1.3	11.7	17.8	5.2	4.7
75	34.8	51.9	17.5	17.0	23.2	19.7	2.6	5.7	26.3	43.4	9.0	8.5
90	48.0	74.3	21.0	20.4	36.5	32.1	4.5	9.6	39.5	65.8	12.5	11.9
95	55.9	87.8	23.1	22.5	44.6	39.4	5.7	11.9	47.4	79.3	14.6	14.0

\*Although many of the forecast series are interrelated, each series is sorted independently of the others in this table.

long-term forecasts.) We derived this pattern of declining means from the simulation results in our 1977 book. The rate of decline as one forecasts farther into the future is dependent on the standard deviation of the series; that number has not changed significantly since we authored the 1977 study.

Using the lognormal model, we forecast distributions of common stock nominal and real returns, common stock risk premiums, and corporate bond nominal returns for the one, two, three, four, five, ten, and twenty-year periods beginning January 1, 1982. We present the distributions both as percentiles of compound annual rates of return and as percentiles of end-of-period wealth indices, where the wealth index is set to 1.00 on January 1, 1982. Exhibit 21 is a graph of the 5th percentile, median (50th percentile), mean, and 95th percentile wealth index values for common stocks (nominal) for 1982-2001. Exhibit 22 is a graph of the compound annual rates of return at those percentiles of market performance for the same period. Exhibits 23 and 24 are graphs of our forecasts for corporate bonds (nominal), presenting the data in the same manner as Exhibits 21 and 22, respectively. Exhibits 25 and 26 are graphs of our forecasts for inflation-adjusted common stocks, presented in the same manner as Exhibits 21 and 22.

In Exhibit 27, we present the numerical data used to construct the wealth index graphs of Exhibits 21, 23, and 25, and the compound annual rate of return graphs of Exhibits 22, 24, and 26. We display the 5th, 10th, 25th, 50th, 75th, 90th, and 95th percentile and mean returns for all of the holding periods (except four years). The assets included are common stocks (nominal), inflation-adjusted common stocks, and corporate bonds (nominal).

The forecasts contain no sampling error. Biases may have been introduced by the assumption of lognormal period returns, in cases where that distribution does not describe exactly the series being forecast.



**EXHIBIT 21**  
**COMMON STOCKS: FORECAST DISTRIBUTIONS OF**  
**WEALTH INDEX VALUES FOR THE PERIOD 1982-2001**  
**(YEAR-END 1981 = 1.00)**

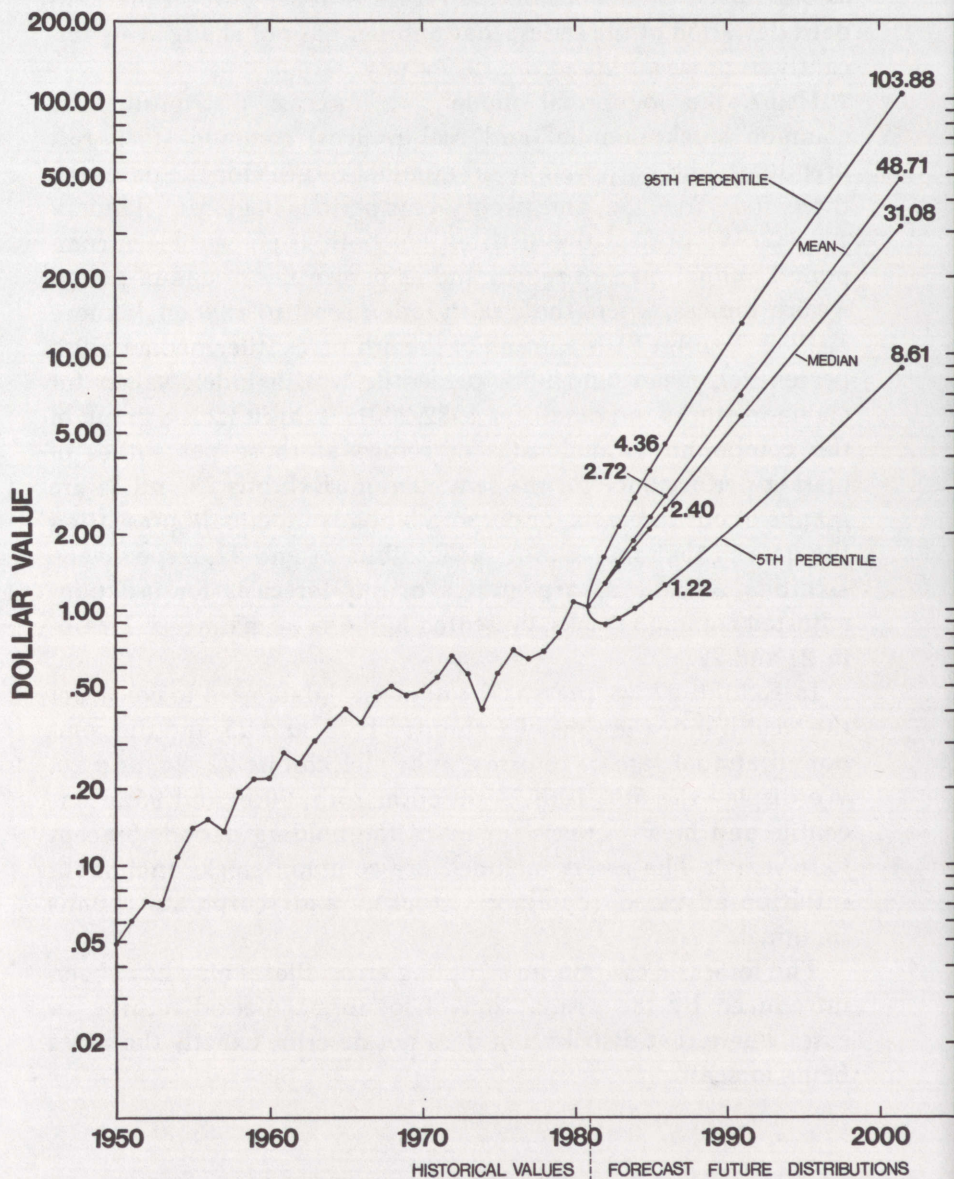
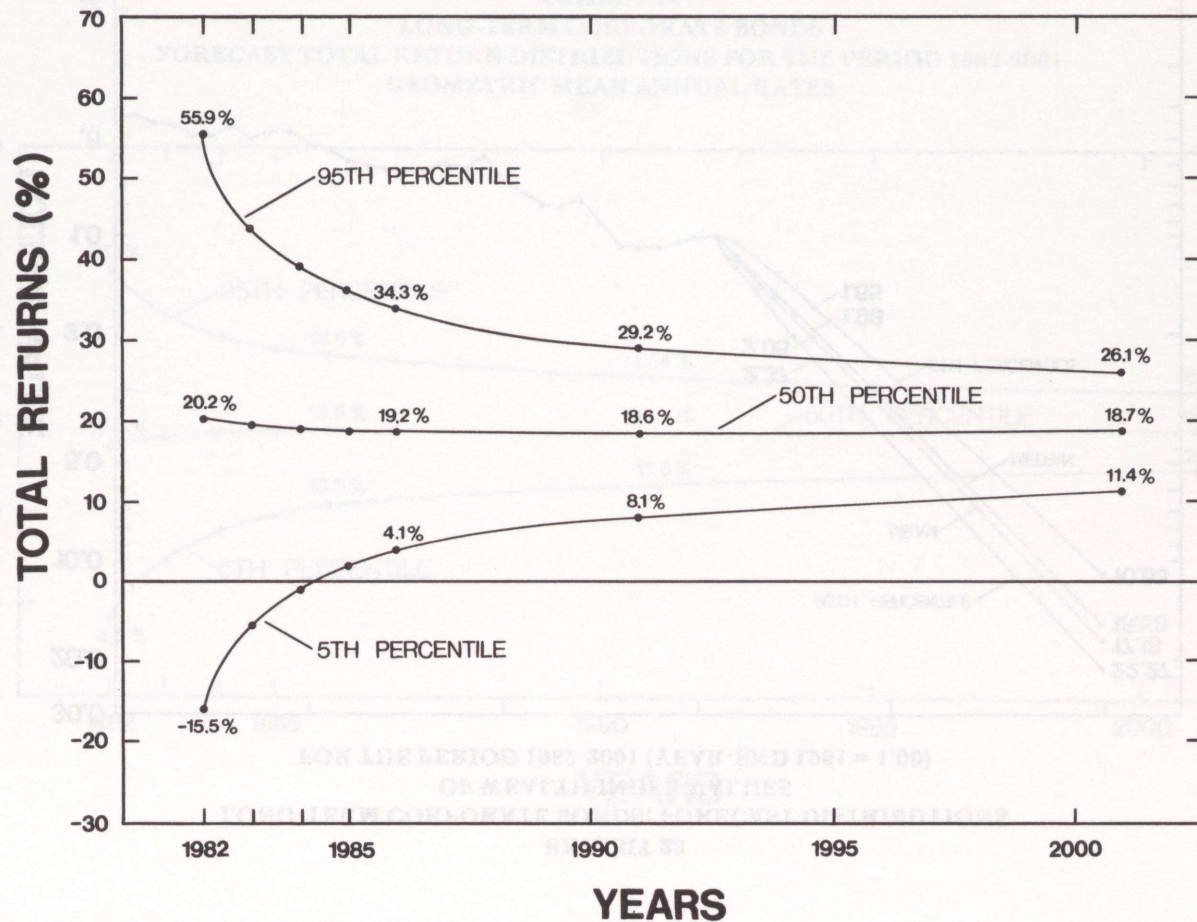


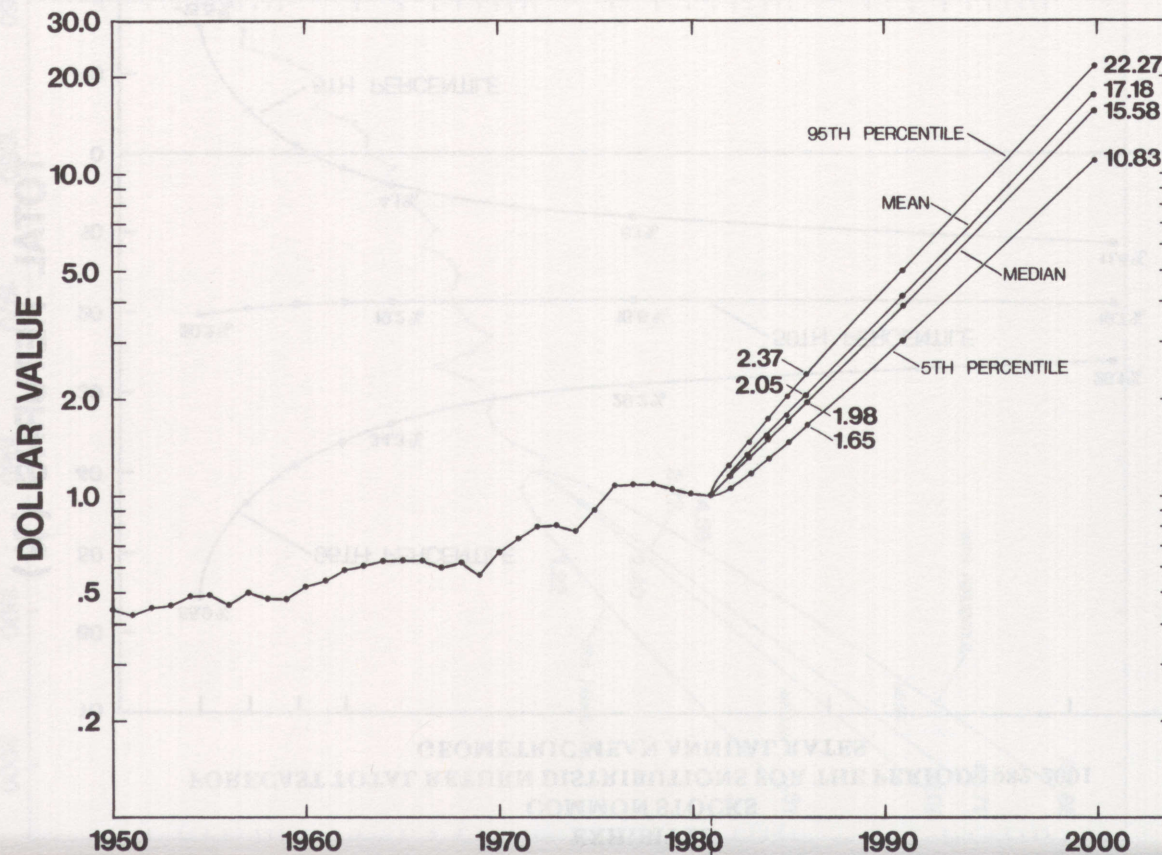
EXHIBIT 21  
COMMON STOCKS  
FORECAST TOTAL RETURN DISTRIBUTIONS FOR THE PERIOD 1982-2001

**EXHIBIT 22**  
**COMMON STOCKS**  
**FORECAST TOTAL RETURN DISTRIBUTIONS FOR THE PERIOD 1982-2001**  
**GEOMETRIC MEAN ANNUAL RATES**

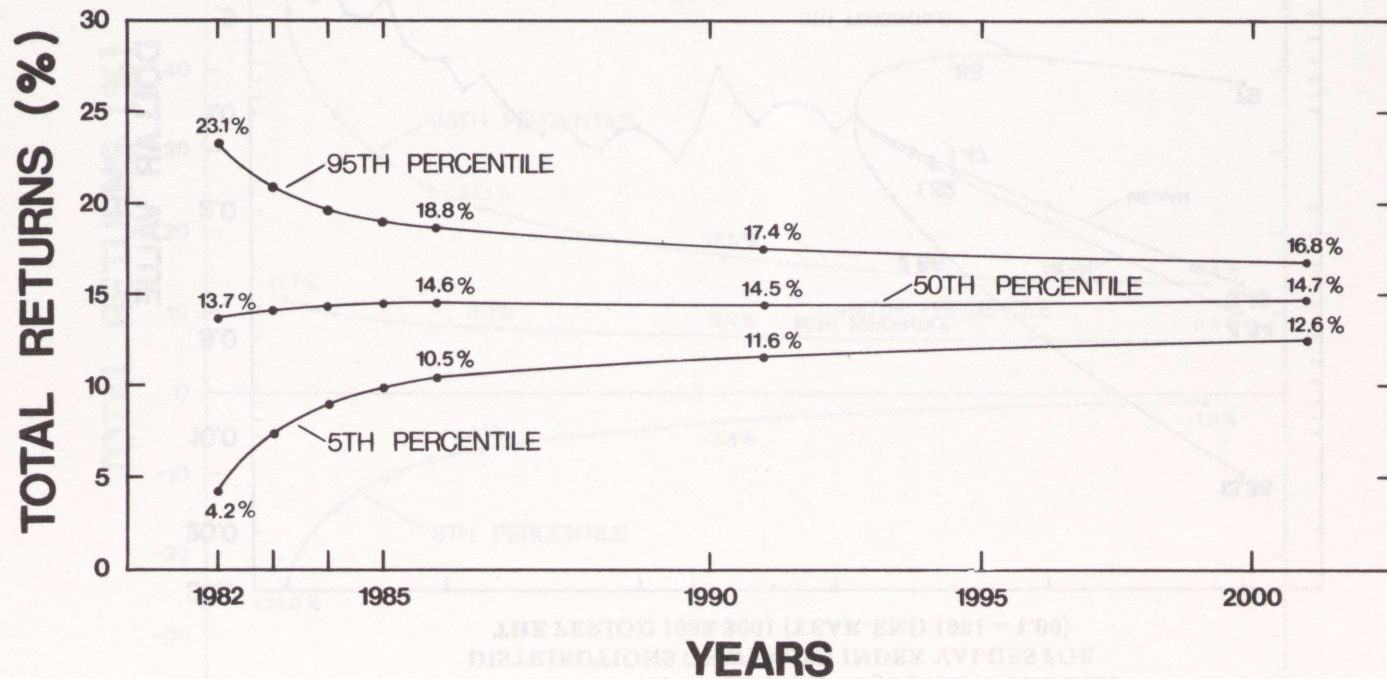




**EXHIBIT 23**  
**LONG-TERM CORPORATE BONDS: FORECAST DISTRIBUTIONS**  
**OF WEALTH INDEX VALUES**  
**FOR THE PERIOD 1982-2001 (YEAR-END 1981 = 1.00)**

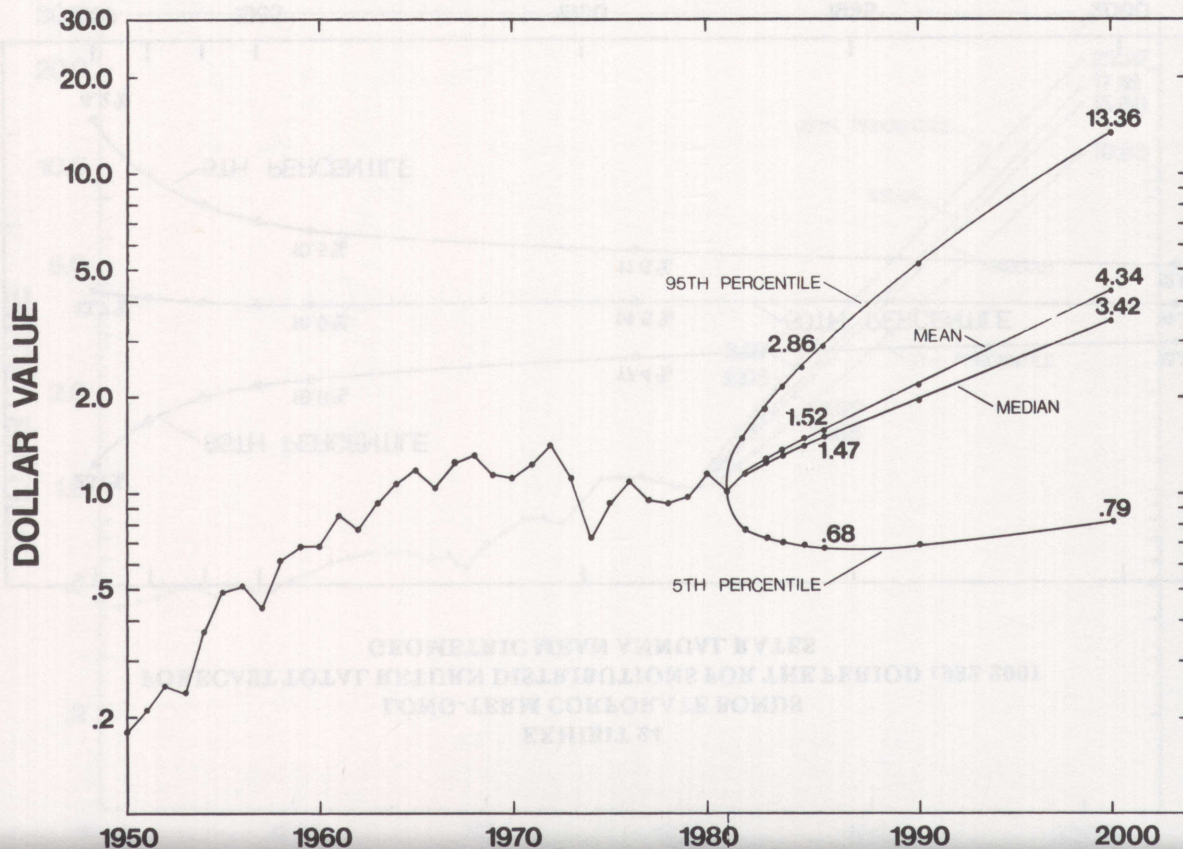


**EXHIBIT 24**  
**LONG-TERM CORPORATE BONDS**  
**FORECAST TOTAL RETURN DISTRIBUTIONS FOR THE PERIOD 1982-2001**  
**GEOMETRIC MEAN ANNUAL RATES**





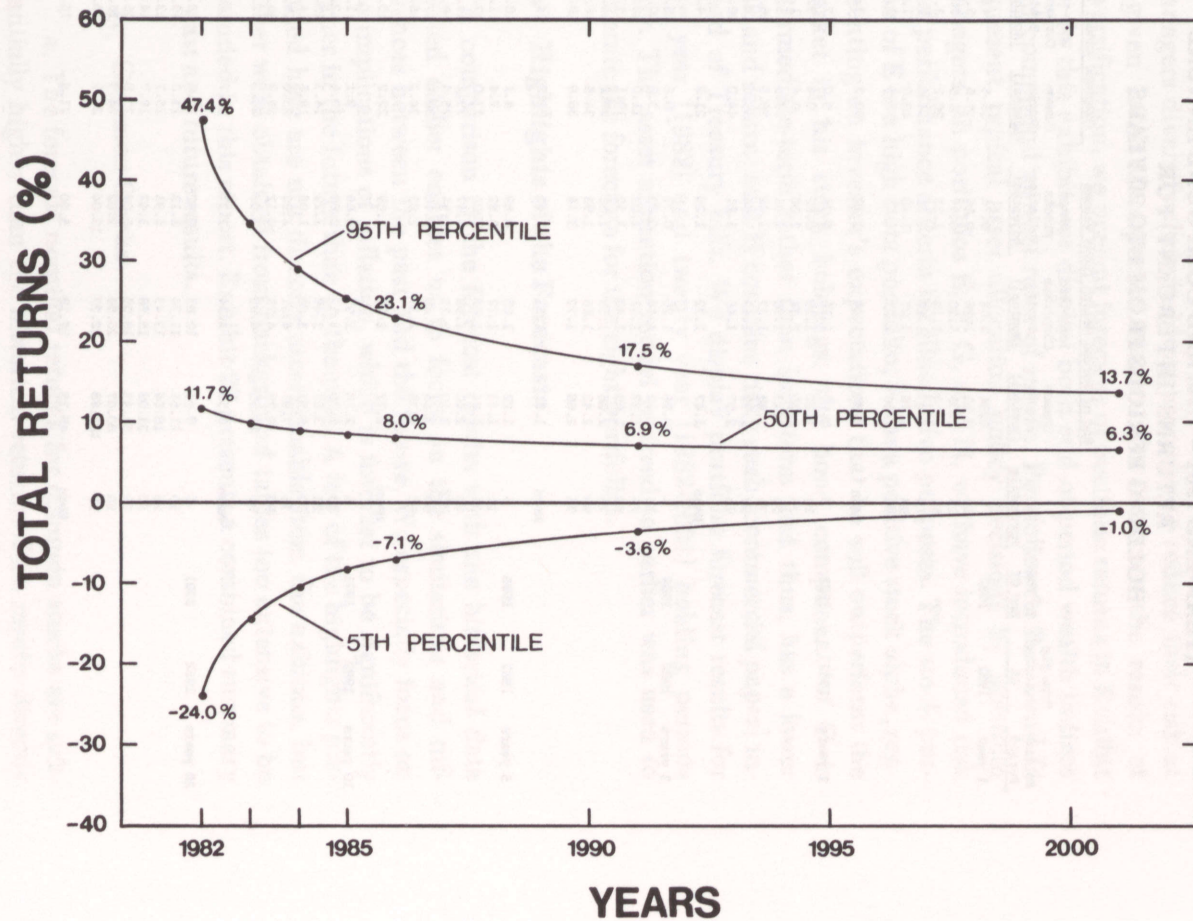
**EXHIBIT 25**  
**COMMON STOCKS INFLATION-ADJUSTED: FORECAST**  
**DISTRIBUTIONS OF WEALTH INDEX VALUES FOR**  
**THE PERIOD 1982-2001 (YEAR-END 1981 = 1.00)**



COMMON STOCKS INFLATION-ADJUSTED: FORECAST  
 DISTRIBUTIONS OF WEALTH INDEX VALUES FOR  
 THE PERIOD 1982-2001 (YEAR-END 1981 = 1.00)

EXHIBIT 26

COMMON STOCKS INFLATION-ADJUSTED  
FORECAST TOTAL RETURN DISTRIBUTIONS FOR THE PERIOD 1982-2001  
GEOMETRIC MEAN ANNUAL RATES





**EXHIBIT 27**  
**FORECAST DISTRIBUTIONS OF WEALTH INDEX VALUES**  
**(YEAR-END 1981 = 1.00) AND COMPOUND ANNUAL**  
**RETURNS (IN PERCENT) FOR**  
**HOLDING PERIODS FROM 1 TO 20 YEARS**

			End of Period Wealth Index Values			Compound Annual Rates of Return			
Holding Period	From The Beginning Of	To The End Of	Percentile	Common Stocks (Nominal)	Long-term Corporate Bonds (Nominal)	Common Stocks (Inflation-Adjusted)	Common Stocks (Nominal)	Long-term Corporate Bonds (Nominal)	Common Stocks (Inflation-Adjusted)
1 year	1982	1982	5	0.84	1.04	0.76	-15.5	4.2	-24.0
			10	0.92	1.06	0.84	- 7.6	6.3	-16.1
			25	1.06	1.10	0.97	5.5	9.8	- 3.0
			50	1.20	1.14	1.12	20.2	13.7	11.7
			75	1.35	1.18	1.26	34.8	17.5	26.3
			90	1.48	1.21	1.40	48.0	21.0	39.5
			95	1.56	1.23	1.47	55.9	23.1	47.4
			Mean	1.20	1.14	1.12	20.2	13.7	11.7
2 years	1982	1983	5	0.90	1.16	0.73	- 5.0	7.5	-14.6
			10	1.01	1.19	0.82	0.4	9.0	- 9.2
			25	1.20	1.24	1.00	9.4	11.4	- 0.2
			50	1.43	1.30	1.21	19.5	14.2	9.9
			75	1.68	1.37	1.44	29.5	16.9	19.9
			90	1.92	1.42	1.66	38.6	19.3	29.0
			95	2.07	1.46	1.81	44.0	20.8	34.4
			Mean	1.47	1.32	1.25	21.2	14.8	11.5
3 years	1982	1984	5	0.98	1.29	0.71	- 0.6	8.9	-10.6
			10	1.12	1.34	0.83	3.8	10.1	- 6.2
			25	1.37	1.41	1.03	11.0	12.1	1.0
			50	1.69	1.49	1.30	19.1	14.3	9.1
			75	2.06	1.58	1.61	27.2	16.5	17.2
			90	2.43	1.66	1.93	34.5	18.5	24.5
			95	2.68	1.72	2.14	38.9	19.7	28.9
			Mean	1.81	1.51	1.40	21.8	14.8	11.8
5 years	1982	1986	5	1.22	1.65	0.69	4.1	10.5	- 7.1
			10	1.43	1.72	0.82	7.4	11.4	- 3.8
			25	1.84	1.84	1.09	13.0	12.9	1.8
			50	2.40	1.98	1.47	19.2	14.6	8.0
			75	3.10	2.13	1.94	25.4	16.4	14.2
			90	3.85	2.28	2.46	30.9	17.9	19.7
			95	4.36	2.37	2.83	34.3	18.8	23.1
			Mean	2.72	2.05	1.69	22.2	15.5	11.0
10 years	1982	1991	5	2.18	2.99	0.69	8.1	11.6	- 3.6
			10	2.70	3.17	0.88	10.4	12.2	- 1.3
			25	3.81	3.49	1.29	14.3	13.3	2.6
			50	5.53	3.88	1.95	18.6	14.5	6.9
			75	7.91	4.31	2.92	23.0	15.7	11.3
			90	10.79	4.73	4.12	26.9	16.8	15.2
			95	12.95	4.99	5.02	29.2	17.4	17.5
			Mean	6.58	4.14	2.37	20.7	14.5	9.0
20 years	1982	2001	5	8.61	10.83	0.82	11.4	12.6	- 1.0
			10	11.51	11.74	1.13	13.0	13.1	0.6
			25	18.54	13.43	1.91	15.7	13.9	3.3
			50	31.08	15.58	3.42	18.7	14.7	6.3
			75	51.43	18.05	6.05	21.8	15.6	9.4
			90	80.07	20.59	9.82	24.5	16.3	12.1
			95	103.88	22.27	13.04	26.1	16.8	13.7
			Mean	48.75	17.18	5.60	21.4	15.3	9.0



#### 4. Portfolio Mixes

Since asset returns are not perfectly correlated, portfolio managers diversify their holdings in order to reduce their risk at a given level of expected return. To illustrate the results of diversification, we present forecasts of portfolio returns in Exhibit 28. In this exhibit, we display both end-of-period wealth indices and compound annual rates of return. Portfolios A, B, C, and D represent typical asset allocation policy decisions by portfolio managers. In portfolios E, F, G, and H, we have introduced risk and performance criteria for illustrative purposes. The stock portion of E is a high beta portfolio; F has a positive stock alpha, representing an investor's expectations that he will outperform the market in his stock holdings; the bond component of G is intermediate-term rather than long-term and thus, has a lower risk and return; and H contains risky cash (commercial paper) instead of Treasury bills. We display portfolio forecast results for one year (1982) and twenty year (1982-2001) holding periods only. The asset allocation model referred to earlier was used to generate the forecasts for the eight portfolios.

#### D. Highlights of the Forecasts

A comparison of the forecast results with the historical data treated earlier enables us to focus on the similarities and differences between the past and the future. We especially focus on the implications of inflation, which is forecast to be significantly higher in the future than in the past. A few of the highlights presented here are not directly ascertainable from the exhibits, but rather were obtained from background tables too extensive to be included in this report. Exhibit 29 presents a combined summary of past and future results.

##### 1. Common Stocks

a. The forecast nominal returns for common stocks are substantially higher than the historical returns. This results directly



# **EXHIBIT 28** **FORECAST DISTRIBUTIONS OF WEALTH INDEX VALUES** **(YEAR-END 1981 = 1.00) AND COMPOUND ANNUAL** **RETURNS (IN PERCENT) FOR SELECTED PORTFOLIO** **MIXES OVER 1 AND 20 YEAR HOLDING PERIODS**

Portfolio			A	B	C	D	E	F	G	H				
Portfolio Mix														
% Stocks			80	60	40	25	80	60	40	25				
% Corporate Bonds			10	30	50	50	10	30	50	50				
% Cash			10	10	10	25	10	10	10	25				
Portfolio Asset Characteristics														
Stock alpha (% per year)			0	0	0	0	0	2	0	0				
Stock beta			1.00	1.00	1.00	1.00	1.25	1.00	1.00	1.00				
Bond average maturity (years)			20	20	20	20	20	20	10	20				
Cash yield spread over T-bills (basis pts)			0	0	0	0	0	0	0	150				
Holding Period	From The Beginning Of	To The End Of	Percentile	End Of Period Wealth Index Values										
1 year	1982	1982	5	0.90	0.96	1.00	1.04	0.85	0.97	1.01	1.04			
			10	0.97	1.00	1.04	1.06	0.93	1.02	1.04	1.07			
			25	1.07	1.08	1.10	1.10	1.06	1.10	1.10	1.11			
			50	1.19	1.17	1.16	1.15	1.20	1.19	1.16	1.15			
			75	1.30	1.26	1.23	1.19	1.35	1.27	1.22	1.20			
			90	1.41	1.34	1.28	1.23	1.48	1.35	1.28	1.24			
			95	1.47	1.39	1.32	1.26	1.55	1.40	1.31	1.26			
			Mean	1.10	1.17	1.16	1.15	1.20	1.19	1.16	1.15			
			20 years	1982	2001	5	9.27	10.14	10.92	11.21	9.01	12.51	11.06	11.99
						10	11.72	12.15	12.46	12.28	11.99	14.96	12.58	13.13
25	17.21	16.38				15.50	14.30	14.16	20.11	15.58	15.29			
50	26.16	22.71				19.71	16.92	31.86	27.78	19.71	18.07			
75	39.41	31.31				24.99	19.98	52.32	38.19	24.86	21.33			
90	56.61	41.64				30.86	23.18	80.93	50.64	30.57	24.74			
95	70.09	49.28				34.98	25.32	104.59	59.85	34.56	27.02			
Mean	35.92	28.24				22.87	18.80	49.39	34.56	22.79	20.07			
Compound Annual Rates Of Return														
1 year	1982	1982				5	- 9.7	- 4.3	0.5	4.1	-14.9	- 3.1	0.8	4.5
			10	- 3.4	0.5	3.9	6.5	- 7.1	1.7	4.2	6.9			
			25	7.1	8.5	9.7	10.5	5.9	9.7	9.8	10.8			
			50	18.7	17.4	16.1	14.9	20.3	18.6	16.1	15.3			
			75	30.3	26.3	22.5	19.3	34.7	27.5	22.4	19.7			
			90	40.7	34.3	28.3	23.3	47.7	35.5	28.0	23.6			
			95	47.0	39.1	31.8	25.6	55.5	40.2	31.4	26.0			
			Mean	18.7	17.4	16.1	14.9	20.3	18.6	16.1	15.3			
			20 years	1982	2001	5	11.8	12.3	12.7	12.8	11.6	13.5	12.8	13.2
						10	13.1	13.3	13.4	13.4	13.2	14.5	13.5	13.7
25	15.3	15.0				14.7	14.2	15.9	16.2	14.7	14.6			
50	17.7	16.9				16.1	15.2	18.9	18.1	16.1	15.6			
75	20.2	18.8				17.5	16.2	21.9	20.0	17.4	16.5			
90	22.4	20.5				18.7	17.0	24.6	21.7	18.6	17.4			
95	23.7	21.5				19.5	17.5	26.2	22.7	19.4	17.9			
Mean	19.6	18.2				16.9	15.8	21.5	19.4	16.9	16.2			

# **EXHIBIT 29** **ALL SERIES SUMMARY OF** **PAST AND FUTURE RETURNS**

SERIES	HISTORICAL			ONE-YEAR FUTURE		
	1926 - 1981			1982		
	Arithmetic Mean	Geometric Mean	Standard Deviation	5th Percntle.	Expected Return	95th Percntle.
Common stocks, $R_m$	11.4%	9.1%	21.7%	-15.5%	20.2%	55.9%
Small stocks, $R_s$	18.1	12.1	37.0	-33.9	26.3	87.8
Long-term corporate bonds, $R_c$	3.7	3.6	5.6	4.2	13.7	23.1
Long-term government bonds, $R_g$	3.1	3.0	5.6	3.9	13.2	22.5
U. S. Treasury bills, $R_f$	3.1	3.0	3.1	N/A	11.9	N/A
Consumer price index, $R_I$	3.1	3.0	5.0	N/A	8.5	N/A
Equity risk premium, $R_p$	8.3	5.9	21.8	-28.0	8.3	44.6
Small stock premium, $R_q$	6.1	4.1	20.3	-27.3	6.1	39.4
Default premium, $R_d$	0.5	0.5	3.1	- 4.6	0.5	5.7
Maturity premium, $R_L$	0.2	0.0	6.5	- 9.3	1.3	11.9
Common stocks, inflation-adjusted, $R_{mr}$	8.3	5.9	21.9	-24.0	11.7	47.4
Small stocks, inflation-adjusted, $R_{sr}$	14.7	8.8	36.4	-42.4	17.8	79.3
Long-term corporate bonds, inflation-adjusted, $R_{cr}$	0.9	0.5	8.2	- 4.3	5.2	14.6
Long-term government bonds, inflation-adjusted, $R_{gr}$	0.3	-0.1	8.3	- 4.6	4.7	14.0
U. S. Treasury bills, inflation-adjusted, $R_r$	0.1	0.0	4.4	N/A	3.4	N/A



from the high forecast inflation rates which are impounded into all asset returns. The compounded inflation rate is expected to be 12.4 percent over the period 1982-2001 compared to the historical average annual rate of 3.0 percent over the period 1926-1981. The expected compound return on common stocks for the period 1982-2001 is 21.4 percent per year.

b. Because stocks are very risky, realized returns may differ substantially from expectations. For the entire forecast period, there is a 5 percent probability that stock returns will exceed 26.1 percent per year and likewise a 5 percent probability that they will be less than 11.4 percent per year.

c. Focusing on forecasts of average annual rates is potentially misleading as it tends to create the illusion of a reduction of uncertainty over time. The forecast of the cumulative wealth index guards against this pitfall. An investment of \$1.00 at year-end 1981 is expected to be worth \$48.75 by year-end 2001. But there is a 5 percent probability that it could be worth more than \$103.88 and a 5 percent probability that it could be worth \$8.61 or less.

d. In real terms, the simulation results are similar to historical results. Stocks are expected to have a compound return of 9.0 percent per year after adjusting for inflation. Despite high expected returns, there is approximately a 10 percent chance that nominal stock returns will not be sufficient to offset inflation over the entire forecast period. In real terms, \$1.00 invested in stocks at year-end 1981 is expected to be worth \$5.60 at year-end 2001. But there is a 5 percent chance it will be worth \$13.04 or more, and a 5 percent chance it will be worth \$.82 or less.

## 2. Long-Term Corporate Bonds

a. The forecast results for long-term corporate bonds show an expected nominal compounded return of 15.3 percent per year over the period 1982-2001.

## VL. QUESTIONS AND ANSWERS

b. Maintaining a long-term corporate bond portfolio is considerably less risky than investing in stocks. For the one-year forecast period, 1982, corporate bonds range from 23.1 percent (95th percentile) to 4.2 percent (5th percentile), while the corresponding range for stocks is 55.9 percent to -15.5 percent. Over the entire forecast period, long-term corporate bond returns have a 5 percent probability of exceeding 16.8 percent per year and a 5 percent probability of being less than 12.6 percent per year.

Q. You had a compounded annual return of 9.1 percent over the last 30 years. The yield on high quality corporate bonds is now higher than that. What incentive is there to take the additional risk in buying stocks?

A. Stocks have historically returned 5.9 percent (compounded) in excess of Treasury bills and 5.3 percent in excess of long-term corporate bonds. We anticipate that the premium for risk will continue into the future, so that we expect a compounded return of 2.4 percent for stocks over the next 30 years.

Q. The historical excess return from investing in common stocks rather than Treasury bills was 5.9 percent. Why do you think that this return is a good estimate of what will happen in the future?

A. We assume that both the supply and demand equilibrium price for risk capital and the amount of risk in common stocks will not change over time.

Q. The variability of stock market returns does not seem to be constant over the historical period. It seems to be more variable during the depression and also perhaps more variable recently. Do you take this into account in your forecast?

A. In principle it would be possible to take the changes in variability into account. However, this adds another forecasting procedure much more complicated with only modest benefits. We therefore choose to ignore the changes in variability.





## VI. QUESTIONS AND ANSWERS

Over the last several years, we have been asked numerous questions about our historical results, and especially about our future simulations. We include here some of the more frequently asked questions, along with our answers.

1. *Q.* Your historical results show that the stock market had a compounded annual return of 9.1 percent over the last 56 years. The yield on high quality corporate bonds is now higher than that. What incentive is there to take the additional risk in buying stocks?

*A.* Stocks have historically returned 5.9 percent (compounded) in excess of Treasury bills and 5.3 percent in excess of long-term corporate bonds. We anticipate that the premiums for risk will continue into the future, so that we expect a compounded return of 21.4 percent for stocks over the next 20 years.

2. *Q.* The historical excess return from investing in common stocks rather than Treasury bills was 5.9 percent. Why do you think that this return is a good estimate of what will happen in the future?

*A.* We assume that both the supply and demand equilibrium price for risk capital and the amount of risk in common stocks will not change over time.

3. *Q.* The variability of stock market returns does not seem to be constant over the historical period. It seems to be more variable during the depression and also perhaps more variable recently. Do you take this into account in your forecast?

*A.* In principle, it would be possible to take the changes in variability into account. However, this would make our forecasting procedures much more complicated with only limited benefits. We therefore choose to ignore the changes in variability.



4. *Q.* Much academic work suggests that the returns on common stocks follow a random walk, while you assume that instead, equity risk premiums follow a random walk. Can they both follow a random walk?

*A.* The returns on common stocks have been broken down into two components—the returns from holding a riskless security (Treasury bills) plus the return from the risk premium. The returns from holding Treasury bills do not follow a random walk. Thus, equity risk premiums and common stock returns cannot both follow a random walk. We assume the expected return from taking risk (the equity risk premium) is constant through time, i.e., it is the risk premium that behaves randomly. Since most of the variability from common stock returns arises from the risk premium, some researchers have mistakenly concluded that the whole of the common stock return follows a random walk. Our view is that only the risk premium component follows a random walk.

5. *Q.* You treat all years in the historical period equally. Would it not be better to emphasize recent events by weighting recent returns more heavily than distant returns?

*A.* In the absence of any particular reason to weight particular years more heavily than others, we believe it is appropriate to weight all of the historical years equally. In general, our model attempts to maintain a spirit of neutrality or objectivity in the forecast it produces. Any particular weighting scheme runs the risk of imparting subjectivity and biases into the historical data.

6. *Q.* During the last 56 years, there was a severe depression, three wars, a period of pegged interest rates, several periods of wage and price controls, periods of inflation and deflation, etc. Are you suggesting that these events will happen in the future with the same frequency as they have in the past?



A. We are not forecasting which specific events will occur in the future since we have no way of knowing what will happen. However, we do believe that historical events are not unrepresentative of the types of events that will occur in the future. Thus, we expect the rate of return effects of these event-types to be experienced again.

7. Q. You have used the yield curve to forecast expected one-year interest and inflation rates each year into the future. How well has this procedure worked in the past?

A. Yield curve forecasts have not been very accurate in the past. However, after allowing for maturity premiums, the interest rate forecasts have been unbiased. After removing real interest rates, the inflation forecasts have also been unbiased. Furthermore, we know of no way to make more accurate forecasts. We can also estimate the degree of our forecasting error.

8. Q. During the last 56 years, the rate of inflation has been only 3.0 percent, whereas, you estimate the rate of inflation to be 12.8 percent into the future. How do different levels of inflation rates affect your estimates of returns on common stocks, long-term government bonds, and long-term corporate bonds?

A. The forecast returns on stocks and bonds are in nominal terms and thus impound the different levels of expected inflation. Since we project substantially higher inflation than we have experienced in the past, the expected returns on the various assets are also higher than the historical returns.

9. Q. You say that future nominal returns on common stocks will incorporate significantly higher expected inflation rates than have been realized historically. Yet, the experience of the past decade suggests the opposite: that high inflation rates are accompanied by poor stock market returns. How do you reconcile recent events with your forecasting procedure?



A. When high inflation rates are anticipated—that is, reflected in today's yield curve—these higher rates tend to be impounded in the returns of common stocks. During some periods, such as the decade of the seventies, unanticipated increases of inflation occur. There is some evidence that unanticipated inflation tends to be detrimental to stock returns since it generally happens during periods of great uncertainty. Since our model uses the yield curve to forecast inflation rates, only anticipated inflation rates are incorporated into our projected common stock returns. We admit that there is even some evidence that stock returns are negatively related to anticipated inflation. However, 1979 and 1980 ran counter to that evidence, and we suspect that if researchers were to look again today, they would not find the relationship. In any case, we ignore this evidence since it is counter to our efficient capital market assumption.

10. Q. The yield curve changes every day. Do your forecasts also change every day, and if so, what good are they?

A. It is true that the yield curve changes every day, and it is also true that changes in the yield curve will change our forecasts every day. The yield curve reflects the changing anticipations of the market place, which continually revises its estimates. It is therefore necessary that we incorporate the latest yield curve into our forecasts. As a practical matter, the yield curve changes are relatively small during short periods of time, so that it is not necessary for us to make abrupt changes in our forecasts. Furthermore, our forecasts are very stable in real terms because it is the inflation rate component of the yield curve which is by far the most variable.

11. Q. You say that the real rate of interest has been historically 0.0 percent and you use the past series to estimate the future. How does this reconcile with the more conventional estimate that the real rate of interest is in the range of 3 to 4 percent?



A. These forecasts were obtained by comparing the yields on high-grade corporate bonds to concurrent inflation rates. We have seen by our analysis that a long-term bond yield incorporates year-by-year expectations (forward rates) over the life of the bond. The components of these interest rates are the expected inflation rate, the expected real interest rate, the expected maturity premium, and for corporate bonds—the expected default premium. Thus, subtracting expected inflation rates from a corporate bond yield still leaves the default premium and the maturity premium as well as the real interest rate. Even more important, today's corporate yield reflects future anticipations of these three components and therefore should not be matched with concurrent inflation rates.

12. Q Last year's (1981) real riskless rate of interest was 5.33 percent. How does this conform to your statement that the real riskless rate is equal to zero?

A. The real riskless rate varies from year to year and may be positive, as in 1981, or negative, as in most of the 1970's. On average, the rate has been zero. We find that the real riskless rate tends to drift toward zero, so that our long-term forecast of the rate is closer to zero than is the present rate.

13. Q Why do you choose a 56-year period over which to measure your historical results?

A. The 56-year period of time is itself arbitrary. We need a period long enough to include all types of events. We limit the period only because it is more difficult to obtain high quality data prior to 1926.

14. Q Must your forecast stop at the year 2001?

A. Once again, stopping at the year 2001 is arbitrary. In principle, we could forecast security returns as far out as there is a long-term bond available to be inserted into the yield curve.



15. *Q.* Some government bonds have much lower yields than others even though they have approximately the same maturity dates. Which bonds should we use to make up the yield curve?

*A.* Many of the government bonds trade at unusual prices because of their special tax status. For example, some bonds are called flower bonds and enable the holder to pay estate taxes by tendering the bond at par value. As these bonds are not traded primarily on a yield basis, they are not included in the yield curve.

16. *Q.* Most forecasts incorporate estimates of GNP, employment, productivity, and other such macro-economic variables. You seem to ignore them completely. Why?

*A.* The various macro- and micro-economic variables determine the prices of securities. In fact, the prices of securities are themselves forecasts of what goes on in the economy. Since we use the prices of securities as the inputs into our forecasting techniques, these economic variables are implicitly contained in our forecasts.

17. *Q.* We see many forecasts from economists, financial analysts, long-range planners, etc. Is your forecast in any way superior to theirs, and if so, how?

*A.* If our assumption of market efficiency is correct, then at the very least, our forecasts are not inferior to theirs. In fact, the forecasts of economists, financial analysts, long-range planners, etc., help to determine the prices in the market. Since we use these prices, we are, once again, implicitly incorporating their forecasts into our forecasts. Since our forecasts are based on market efficiency, our forecasts can be considered as a benchmark from which to judge other forecasts.

18. *Q.* Can we use your forecasts to make any money in the capital market?

*A.* Since our forecasts are based on the assumption of market efficiency, one cannot use our forecasts to "beat the market." Our forecasts are useful, however, in evaluating the risks involved in various investment strategies and in determining the expected rewards from taking these risks.

19. *Q.* In what ways are your forecasts consistent with efficient capital markets?

*A.* Our forecasts employ the market efficiency assumption in two principal ways. First, we use the yield curve to forecast future expected interest and inflation rates. Since the prices of the bonds that make up the yield curve are market determined, our interest and inflation rate forecasts are market determined. Secondly, our forecasts of the four risk premiums are based on the assumption of random walk behavior. Neither of the above procedures represents an attempt to outguess the market.

20. *Q.* The ranges of some of your forecasts seem to be far too wide to be of any practical value. What good are such wide forecasts?

*A.* Knowing the risk contained in the various asset categories over various periods of time in the future can be just as important and useful as knowing the expected returns for those assets. Wide forecasts simply reflect the large risks inherent in some of the assets, particularly common stocks. Forecasts that understate risks are not only useless, but can lead to harmful investment decisions.



21. *Q.* In a world of ERISA, where pension funds have to be actuarially funded, should your forecasts have any bearing on actuarial assumptions?

*A.* Any assumptions that affect the funding of pension plans should be based on realistic forecasts. In that regard, our forecasts and our forecasting procedure have an obvious bearing on the assumptions used in pension planning.

22. *Q.* Most portfolios are made up of combinations of stocks, corporate bonds, government bonds, etc. How do you use your procedures to estimate returns of the various portfolio mixes?

*A.* Just as we estimate the returns from common stocks as the combination of the risk-free component plus a risk premium for stocks, we can compute the returns for a portfolio mix by adding the forecast returns given by our model for stocks, corporate bonds, and Treasury bills, each weighted by their weights in the portfolio. Returns from selected portfolio mixes are printed in some of our tables. It is not possible to add sorted percentiles of components, since our portfolios are more diversified than individual components.

23. *Q.* Your stock market total returns are from investing in Standard & Poor's Composite Index. Suppose an investor held a high-beta or a low-beta portfolio—how would this affect his historical and future returns?

*A.* Empirical evidence suggests that high-beta portfolios outperform low-beta portfolios on average. This has happened over the last 56 years and we would also anticipate that it would happen over the next 20 years. The expected reward is not without its cost, since higher beta portfolios have higher risks or wider distributions of returns.



24. *Q* If an investor did not hold the market but rather held a highly undiversified portfolio, how would this have affected his historical and future returns?

*A* On average, undiversified portfolios have neither outperformed nor underperformed diversified portfolios historically. However, the risks of undiversified portfolios are larger than the risks of a diversified portfolio. This will also be true in the future; that is, undiversified portfolios will have on average about the same expected return, but wider distributions of return or higher risk.

25. *Q* Suppose that we have an undiversified portfolio that we strongly believe can outperform the markets indicated in your work. Are your procedures of any use in estimating the possible returns from superior money managers?

*A* If we strongly believe that a portfolio can outperform the market, then it is only necessary to insert the increased expectations into the model so that the expected return is increased by the amount that one expects the portfolio to outperform the market. The risks are also increased by the amount of the additional risk incurred as a result of holding something other than the market. We performed this procedure for Portfolio F in Exhibits 29 and 30.

26. *Q* You have shown that historically, the bond maturity premium is zero. Do you expect investors to be paid in the future for taking the additional risk of long-term bonds?

*A* Over the post-World War II period, investors underestimated inflation. The result was that long-term bondholders suffered large unanticipated capital losses. Since these losses were both unanticipated and measurable as such, we can add the annual rate of loss back in to the historical maturity premium to estimate what the expectancy was. This turns out to be a positive number, 1.3 percent. We believe this indicates a positive maturity premium is expected in the future.



27. *Q* Are long-term bonds more risky today than they were in earlier years?

*A.* In the past few years, long-term bonds have been considerably more risky than in earlier years. This does not necessarily mean that they will continue to be as risky in the future. However, as long as inflation rates are high and/or volatile, we expect long-term bonds to be riskier than they were historically.

28. *Q* Suppose an investor held neither short-term bills nor 20-year bonds, but rather a mixed portfolio of various maturity bonds—what would have been the effect on historical and future returns?

*A.* The returns from short-term bills do not reflect any maturity premium whereas the returns on a 20-year bond reflect a 20-year maturity premium. The historical returns of most intermediate-term bonds have been somewhere in between the returns of short-term bills and 20-year bonds. The expected returns of intermediate-term bonds may reflect a partial maturity premium.

29. *Q* Long-term bonds, Guaranteed Income Contracts (GIC'S), and various immunization strategies are purported to reduce risk for investors with long-term time horizons. Do they work?

*A.* If investors are interested in minimizing nominal risk over their long-term time horizon, these strategies would work if structured properly. Unfortunately, most investors are interested in reducing risk in real, not nominal, terms. Thus, even for these investors with long-term horizons, investing in short-term securities is a less risky strategy. However, if the market is dominated by investors who perceive short-term investments as less risky, then we would expect that holders of long-term bonds will be compensated for their taking on interest rate risk.

30. *Q* If we were to hold lower quality bonds than the high quality long-term corporate bonds listed in your paper, how would this affect bondholder expected returns?

*A.* Lower quality bonds have higher yields and higher default risks than high quality bonds. Since investors are paid a premium for taking default risk, holders of lower quality bonds in general have higher expected returns and higher variability than the holders of higher quality bonds.

31. *Q* In valuation models, the value of a firm is the discounted stream of earnings. Can we use your techniques to estimate riskless and risky discount rates? And to what extent should we incorporate your approaches in the estimation of earnings?

*A.* The discount rates in valuation models should reflect the level of risk involved in the asset as well as real interest rate expectations. If the discount rates were nominal, they would also include inflation rate expectations. Our models can be used to determine both the anticipated inflation and real interest rates. Although our models give a suggestion as to what risk premium should be for a typical stock, this would have to be adjusted for the risk level of the asset being valued. The numerator of a valuation model gives the estimated earnings of the company. To be consistent, the numerator and the discount rates must both be either in nominal or in real terms.



30. If we were to hold lower quality bonds than the high quality long-term corporate bonds listed in your paper, how

would this affect bondholder expectations?

As lower quality bonds have higher risks and higher default rates than high quality bonds, bondholders of lower quality bonds in general have higher expected returns and higher variability than the holders of higher quality bonds.

31. How would this affect the interest rate on a bond?

In a valuation problem, the value of a firm is the discounted stream of earnings. Can we use your technique to get

more realistic and risky discount rates? And to what extent should we incorporate your approaches in the estimation of

earnings?

As earnings are a random variable, we should use a

random variable in the discount rate. The discount rate should reflect

the level of risk involved in the cash flows. As we are interested

in the expected value of the cash flows, we should use the expected

value of the cash flows. Our model can be used to

determine both the expected inflation and real interest rates.

Although our model gives a suggestion as to what the premium

should be for a typical stock, this would have to be adjusted for

the risk level of the asset being valued. The concept of a value-

tion model gives the estimated earnings of the company. To be

consistent, the numerator and the discount rates must both be

estimated in a consistent manner.

Below are some questions that might arise from your

model. I am sure that you will find them interesting and helpful.

1. How would the model change if we had more than one

type of asset? For example, if we had a stock and a bond, we

could estimate the expected return on the stock and the expected

return on the bond. We could then compare the two and see

if they are consistent with the market interest rate.

## **APPENDIX A**

### **RATES OF RETURN FOR ALL YEARLY HOLDING PERIODS FROM 1926-1981**

Exhibit A-1	Common Stocks: Total Returns
Exhibit A-2	Small Stocks: Total Returns
Exhibit A-3	Long-Term Corporate Bonds: Total Returns
Exhibit A-4	Long-Term Government Bonds: Total Returns
Exhibit A-5	U.S. Treasury Bills: Total Returns
Exhibit A-6	Consumer Price Index: Inflation Rates



### COMMON STOCKS : TOTAL RETURNS

RATES OF RETURN FOR ALL YEARLY HOLDING PERIODS FROM 1926 TO 1981  
(PERCENT PER ANNUM COMPOUNDED ANNUALLY)

TO THE END OF	FROM THE BEGINNING OF										PERCENT PER ANNUM COMPOUNDED ANNUALLY													
	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945				
1926	11.6																							
1927	23.9	37.5																						
1928	30.1	40.5	43.6																					
1929	19.2	22.6	14.7	-8.4																				
1930	8.7	8.0	-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	-22.7	-26.9	-27.9	-8.2																	
1933	2.5	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	3.7	3.0	0.0	-3.9	-3.3	0.2	10.2	14.3	6.1	8.7	-6.7	-35.0												
1938	5.5	5.1	2.5	-0.9	-0.0	3.6	13.0	16.9	10.7	13.9	4.5	-7.7	31.1											
1939	4.0	4.4	2.3	-0.8	-0.1	-5.2	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	3.5	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	7.6	9.3	5.3	6.1	1.2	-3.4	4.6	-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	4.8	10.2	23.1	25.9						
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	22.8	19.8					
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	12.6	10.1	12.0	17.0	25.4	27.2	27.8	36.4				
1946	6.4	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	17.3	14.5	12.0				
1947	6.3	6.1	4.7	3.0	3.7	5.6	9.8	11.2	8.6	9.4	6.7	4.5	9.6	7.5	8.5	11.4	15.8	14.9	12.3	9.9				
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	13.2	10.9	8.8				
1949	6.4	6.3	5.5	3.8	4.5	6.3	10.1	11.2	9.0	9.7	7.4	5.6	10.0	8.3	9.2	11.5	14.8	14.0	12.2	10.7				
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	10.0	11.0	13.4	16.6	16.1	14.8	13.9				
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	16.9	15.9	15.3				
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	12.5	14.6	17.4	17.1	16.1	15.7				
1953	8.3	8.1	7.2	5.9	6.5	8.2	11.4	12.4	10.7	11.4	9.6	8.3	11.9	10.7	11.5	13.4	15.7	15.3	14.3	13.7				
1954	9.6	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	18.0	17.4	17.1				
1955	10.2	10.2	9.3	8.2	8.9	10.5	13.7	14.7	13.2	13.9	12.5	11.4	14.8	13.9	14.9	16.8	19.1	19.0	18.5	18.8				
1956	10.1	10.1	9.2	8.2	8.8	10.4	13.4	14.4	12.9	13.6	12.2	11.2	14.4	13.5	14.4	16.1	18.2	18.1	17.5	17.3				
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	15.9	15.2	14.9				
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	17.5	16.9	16.7				
1959	10.3	10.3	9.5	8.6	9.2	10.6	13.4	14.4	12.9	13.5	12.4	11.4	14.2	13.4	14.1	15.6	17.3	17.1	16.6	16.4				
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	16.1	15.6	15.3				
1961	10.5	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	16.7	16.2	16.0				
1962	9.9	9.9	9.2	8.3	8.8	10.1	12.5	13.2	12.1	12.6	11.4	10.7	13.0	12.3	12.9	14.1	15.5	15.3	14.7	14.4				
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	15.6	15.1	14.9				
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	15.6	15.2	14.9				
1965	10.4	10.4	9.8	9.0	9.5	10.7	12.9	13.6	12.5	13.0	12.0	11.3	13.5	12.9	13.4	14.5	15.7	15.5	15.0	14.8				
1966	9.9	9.8	9.2	8.4	8.9	10.1	12.2	13.8	11.8	12.2	11.2	10.5	12.6	12.0	12.4	13.4	14.5	14.3	13.8	13.6				
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	13.8	14.9	14.7	14.2	14.0				
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	14.5	14.1	13.9				
1969	9.8	9.7	9.1	8.4	8.9	9.9	11.8	12.4	11.4	11.8	10.9	10.3	12.1	11.6	12.0	12.8	13.8	13.6	13.1	12.9				
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	13.2	12.8	12.5				
1971	9.7	9.7	9.1	8.4	8.9	9.9	11.7	12.2	11.3	11.7	10.8	10.2	11.9	11.4	11.8	12.6	13.5	13.3	12.8	12.6				
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	13.5	13.0	12.8				
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	12.4	12.0	11.7				
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	10.9	10.5	10.2				
1975	9.0	8.9	8.4	7.7	8.1	9.0	10.6	11.1	10.2	10.6	9.8	9.2	10.7	10.2	10.5	11.1	11.9	11.6	11.2	11.0				
1976	9.2	9.2	8.6	8.0	8.4	9.3	10.9	11.4	10.5	10.9	10.1	9.5	11.0	10.5	10.8	11.5	12.2	12.0	11.6	11.3				
1977	8.9	8.8	8.3	7.7	8.1	8.9	10.5	10.9	10.1	10.4	9.6	9.1	10.5	10.0	10.3	10.9	11.6	11.4	11.0	10.7				
1978	8.9	8.8	8.3	7.7	8.0	8.9	10.4	10.8	10.0	10.3	9.6	9.0	10.4	9.9	10.2	10.8	11.5	11.3	10.9	10.6				
1979	9.0	8.9	8.0	8.5	7.9	8.2	9.1	10.6	11.0	10.2	10.5	9.8	10.2	10.6	10.4	11.0	11.7	11.4	11.1	10.8				
1980	9.4	9.4	8.9	8.3	8.7	9.5	11.0	11.4	10.6	10.9	10.2	9.7	11.1	10.6	10.9	11.5	12.2	11.9	11.6	11.4				
1981	9.1	9.1	8.6	8.1	8.4	9.2	10.6	11.0	10.3	10.6	9.9	9.4	10.7	10.2	10.5	11.1	11.7	11.5	11.1	10.8				

**EXHIBIT A-1 (cont.)**

**COMMON STOCKS & TOTAL RETURNS**



# EXHIBIT A-1 (cont.)

## COMMON STOCKS : TOTAL RETURNS

RATES OF RETURN FOR ALL YEARLY HOLDING PERIODS FROM 1926 TO 1981  
(PERCENT PER ANNUM COMPOUNDED ANNUALLY)

TO THE END OF	FROM THE BEGINNING OF																								
	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965					
1946	-8.1																								
1947	-1.4	5.7																							
1948	0.8	5.6	5.5																						
1949	5.1	9.8	11.9	18.8																					
1950	9.9	14.9	18.2	25.1	31.7																				
1951	12.1	16.7	19.6	24.7	27.8	24.0																			
1952	13.0	17.0	19.4	23.1	24.6	21.2	18.4																		
1953	11.2	14.2	15.7	17.9	17.6	13.3	8.3	-1.0																	
1954	15.1	18.4	20.4	23.0	23.9	22.0	21.4	22.9	52.6																
1955	16.7	19.8	21.7	24.2	25.2	23.9	23.9	25.7	41.7	31.6															
1956	15.7	18.4	19.9	21.9	22.3	20.8	20.2	20.6	28.9	18.4	4.6														
1957	13.2	15.4	16.4	17.7	17.6	15.7	14.4	13.6	17.5	7.7	-2.5	-10.8													
1958	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	15.1	17.1	18.1	19.3	19.4	18.1	17.3	17.2	20.5	15.0	11.1	12.7	26.7	12.0											
1960	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	6.1	0.5										
1961	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	12.6	12.9	26.9									
1962	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	6.8	5.2	7.6	-8.7								
1963	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	9.9	9.3	12.5	5.9	22.8							
1964	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	10.9	10.7	13.5	9.3	19.6	16.5						
1965	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	11.1	11.0	13.2	10.1	17.2	14.4	12.5					
1966	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	8.2	7.7	9.0	5.7	9.7	5.6	0.6					
1967	13.1	14.2	14.6	15.1	14.9	14.0	13.4	13.1	14.2	11.6	10.1	10.5	12.8	9.9	9.6	11.0	8.6	12.4	9.9	7.8					
1968	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	10.0	9.8	11.0	8.9	12.2	10.2	8.6					
1969	12.0	13.0	13.3	13.7	13.4	12.5	11.9	11.6	12.4	10.1	8.7	8.9	10.7	8.2	7.8	8.7	6.8	9.0	6.8	5.0					
1970	11.7	12.6	12.9	13.2	13.0	12.1	11.5	11.1	11.9	9.7	8.4	8.4	10.2	7.8	7.5	8.2	6.3	8.3	6.4	4.8					
1971	11.8	12.6	12.9	13.3	13.0	12.2	11.6	11.3	12.0	10.0	8.8	8.9	10.5	8.3	8.0	8.7	7.1	9.0	7.4	6.1					
1972	12.0	12.9	13.2	13.5	13.3	12.5	12.0	11.7	12.4	10.5	9.4	9.5	11.0	9.0	8.8	9.5	8.1	9.9	8.6	7.6					
1973	10.9	11.7	11.9	12.2	11.9	11.2	10.6	10.3	10.8	9.0	7.9	7.9	9.2	7.3	6.9	7.5	6.0	7.4	6.0	4.9					
1974	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	4.8	4.3	4.6	3.0	4.1	2.5	1.2					
1975	10.2	10.9	11.1	11.3	11.0	10.3	9.7	9.4	9.9	8.2	7.1	7.1	8.2	6.4	6.1	6.5	5.2	6.3	5.1	4.1					
1976	10.6	11.3	11.5	11.7	11.5	10.8	10.3	9.9	10.4	8.8	7.8	7.9	9.0	7.3	7.1	7.5	6.3	7.5	6.4	5.6					
1977	10.0	10.7	10.8	11.0	10.7	10.0	9.5	9.2	9.6	8.1	7.1	7.1	8.1	6.5	6.2	6.6	5.4	6.4	5.4	4.6					
1978	9.9	10.5	10.7	10.9	10.6	9.9	9.4	9.1	9.5	8.0	7.1	7.1	8.0	6.5	6.2	6.6	5.5	6.5	5.4	4.7					
1979	10.2	10.8	10.9	11.1	10.8	10.2	9.7	9.4	9.8	8.4	7.5	7.4	8.5	7.1	6.8	7.2	6.2	7.1	6.2	5.6					
1980	10.7	11.3	11.5	11.7	11.5	10.9	10.4	10.2	10.6	9.2	8.4	8.5	9.4	8.1	7.9	8.4	7.4	8.4	7.6	7.1					
1981	10.3	10.8	11.0	11.2	10.9	10.3	9.9	9.6	10.0	8.7	7.9	7.9	8.8	7.5	7.3	7.6	6.8	7.6	6.9	6.3					

	FROM THE BEGINNING OF																
TO THE END OF	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	
1966	-10.1																
1967	5.6	24.0															
1968	7.4	17.3	11.1														
1969	3.2	8.0	0.8	-8.5													
1970	3.3	7.0	1.9	-2.4	4.0												
1971	5.1	8.4	4.8	2.8	9.0	14.3											
1972	7.0	10.1	7.5	6.7	12.3	16.6	19.0										
1973	4.0	6.2	3.5	2.0	4.8	5.1	0.8	-14.7									
1974	0.1	1.4	-1.5	-3.4	-2.4	-3.9	-9.3	-20.8	-26.5								
1975	3.3	4.9	2.7	1.6	3.3	3.2	0.6	-4.9	0.4	37.2							
1976	5.0	6.6	4.9	4.1	6.0	6.4	4.9	1.6	7.7	30.4	23.8						
1977	3.9	5.3	3.6	2.8	4.3	4.3	2.8	-0.2	3.8	16.4	7.2	-7.2					
1978	4.1	5.4	3.9	3.2	4.5	4.6	3.3	0.9	4.3	13.9	7.0	-0.5	6.6				
1979	5.1	6.3	5.0	4.5	5.9	6.1	5.1	3.2	6.6	14.8	9.7	5.4	12.3	18.4			
1980	6.7	8.0	6.9	6.5	8.0	8.4	7.8	6.5	9.9	17.5	13.9	11.6	18.7	25.2	32.4		
1981	5.9	7.1	6.0	5.6	6.9	7.2	6.5	5.2	7.9	14.0	10.6	8.1	12.3	14.3	12.2	-4.9	



# EXHIBIT A-2

## SMALL STOCKS : TOTAL RETURNS

RATES OF RETURN FOR ALL YEARLY HOLDING PERIODS FROM 1926 TO 1981  
(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	1943	1944	1945
1926		0.3																			
1927		10.6	22.1																		
1928		19.6	30.6	39.7																	
1929		-4.5	-6.0	-17.6	-51.4																
1930		-12.4	-15.4	-25.1	-45.1	-38.1															
1931		-20.2	-23.7	-32.2	-46.7	-44.2	-49.7														
1932		-18.2	-21.0	-27.5	-38.5	-33.5	-31.1	-5.4													
1933		-6.3	-7.2	-11.4	-19.1	-8.1	4.9	51.6	142.9												
1934		-3.3	-3.8	-7.0	-13.1	-2.4	9.4	41.8	73.7	24.2											
1935		0.3	0.3	-2.1	-6.9	3.7	15.0	41.4	61.7	32.0	40.2										
1936		5.0	5.5	3.7	-0.0	10.8	22.1	45.8	62.5	42.1	52.0	64.8									
1937		-2.7	-3.0	-5.2	-9.2	-1.9	4.8	18.5	24.0	4.8	-1.0	-16.8	-58.0								
1938		-0.4	-0.4	-2.3	-5.7	1.5	8.0	20.4	25.4	9.9	6.5	-2.8	-25.3	32.8							
1939		-0.3	-0.4	-2.1	-5.2	1.4	7.1	17.7	21.5	8.2	5.3	-2.0	-17.6	15.4	0.3						
1940		-0.7	-0.7	-2.3	-5.2	0.8	5.8	14.9	17.8	6.2	3.4	-2.7	-14.7	8.1	-2.5	-5.2					
1941		-1.2	-1.3	-2.8	-5.5	-0.1	4.4	12.3	14.4	4.2	1.6	-3.7	-13.6	3.5	-4.7	-7.1	-9.0				
1942		1.0	1.1	-0.2	-2.6	2.8	7.2	14.9	17.1	8.0	6.1	2.0	-5.8	10.7	5.7	7.6	14.7	44.5			
1943		4.6	4.8	3.8	1.8	7.3	12.0	19.7	22.3	14.2	13.1	10.1	4.0	20.9	18.7	23.8	35.3	65.0	88.4		
1944		6.7	7.1	6.3	4.5	9.9	14.5	22.0	24.7	17.3	16.7	14.3	9.2	25.1	23.9	29.3	39.7	61.1	70.2	33.7	
1945		9.4	9.9	9.2	7.6	13.1	17.8	25.1	27.9	21.2	20.9	19.2	15.0	30.4	30.0	35.8	45.9	64.2	71.3	63.3	73.6
1946		8.3	8.7	8.0	6.5	11.5	15.7	22.3	24.5	18.3	17.8	16.0	12.0	24.9	23.9	27.7	34.2	45.1	45.2	33.1	23.9
1947		7.9	8.3	7.6	6.2	10.9	14.7	20.8	22.8	17.0	16.4	14.6	10.9	22.2	21.1	24.0	28.8	36.5	35.0	24.2	15.7
1948		7.4	7.8	7.1	5.7	10.1	13.7	19.3	21.1	15.6	15.0	13.3	9.8	19.8	18.6	24.0	24.5	30.2	28.0	18.4	11.0
1949		7.9	8.3	7.7	6.4	10.6	14.0	19.4	21.0	15.8	15.3	13.7	10.5	19.8	18.7	20.7	24.0	28.8	26.7	18.6	12.7
1950		9.0	9.4	8.9	7.7	11.8	15.2	20.3	21.9	17.1	16.6	15.2	12.3	21.1	20.2	22.2	25.4	29.9	28.2	21.3	16.6
1951		9.0	9.3	8.8	7.7	11.6	14.8	19.6	21.1	16.5	16.1	14.7	12.0	20.1	19.2	20.9	23.6	27.5	25.7	19.5	15.3
1952		8.7	9.1	8.6	7.5	11.2	14.2	18.8	20.2	15.8	15.3	14.0	11.4	18.9	18.0	19.5	21.8	25.1	23.3	17.6	13.7
1953		8.2	8.5	8.0	6.9	10.4	13.2	17.5	18.7	14.6	14.1	12.8	10.3	17.1	16.2	17.4	19.3	22.1	20.2	14.9	11.3
1954		9.6	10.0	9.6	8.6	12.1	14.9	19.1	20.4	16.4	16.0	14.9	12.6	19.3	18.5	19.9	21.9	24.7	23.1	18.5	15.4
1955		10.0	10.3	9.9	9.0	12.4	15.1	19.2	20.4	16.6	16.2	15.2	13.0	19.4	18.6	19.9	21.8	24.4	22.9	18.6	13.9
1956		9.8	10.1	9.7	8.8	12.1	14.7	18.5	19.7	16.0	15.7	14.6	12.6	18.5	17.8	18.9	20.6	22.9	21.5	17.5	14.9
1957		8.9	9.2	8.8	7.9	11.0	13.9	17.0	18.1	14.8	14.2	13.1	11.1	16.6	15.8	16.8	18.2	20.1	18.7	14.8	12.3
1958		10.3	10.6	10.3	9.4	12.5	15.0	18.5	19.6	16.2	15.9	15.0	13.1	18.6	17.9	18.9	20.4	22.4	21.1	17.6	15.4
1959		10.5	10.8	10.5	9.7	12.7	15.0	18.5	19.5	16.2	15.9	15.0	13.2	18.5	17.8	18.8	20.2	22.1	20.8	17.5	15.5
1960		10.1	10.4	10.0	9.2	12.1	14.4	17.6	18.6	15.3	15.1	14.2	12.5	17.4	16.8	17.6	18.9	20.6	19.4	16.2	14.2
1961		10.6	10.9	10.6	9.9	12.7	14.9	18.1	19.0	16.0	15.7	14.9	13.2	18.0	17.4	18.2	19.5	21.1	20.0	17.0	15.2
1962		10.0	10.2	9.9	9.1	11.8	13.9	17.0	17.8	14.9	14.6	13.7	12.1	16.6	16.0	16.7	17.8	19.3	18.2	15.3	13.5
1963		10.3	10.6	10.3	9.5	12.2	14.2	17.2	18.0	15.2	14.9	14.1	12.5	16.9	16.3	17.0	18.1	19.5	18.4	15.7	14.0
1964		10.6	10.9	10.6	9.9	12.5	14.5	17.4	18.2	15.3	15.2	14.4	12.9	17.1	16.6	17.3	18.3	19.7	18.6	16.1	14.4
1965		11.3	11.6	11.3	10.7	13.2	15.2	18.0	18.8	16.2	15.9	15.2	13.8	17.9	17.4	18.1	19.2	20.5	19.6	17.1	15.6
1966		10.8	11.1	10.8	10.2	12.6	14.5	17.2	18.0	15.4	15.2	14.4	13.0	17.0	16.4	17.1	18.0	19.3	18.3	15.9	14.5
1967		12.2	12.5	12.2	11.6	14.1	16.0	18.7	19.5	17.0	16.8	16.1	14.8	18.7	18.3	19.0	20.0	21.3	20.4	18.2	16.8
1968		12.7	13.0	12.8	12.2	14.6	16.5	19.1	19.9	17.5	17.3	16.7	15.4	19.3	18.8	19.5	20.5	21.8	21.0	18.9	17.6
1969		11.6	11.9	11.7	11.1	13.4	15.1	17.7	18.4	16.0	15.8	15.2	13.9	17.5	17.1	17.7	18.6	19.7	18.9	16.8	15.5
1970		10.9	11.1	10.9	10.3	12.5	14.2	16.6	17.3	15.0	14.7	14.1	12.9	16.3	15.8	16.3	17.1	18.2	17.3	15.3	14.0
1971		11.0	11.2	11.0	10.4	12.6	14.3	16.6	17.2	15.0	14.8	14.1	13.0	16.3	15.8	16.3	17.1	18.1	17.3	15.3	14.1
1972		10.8	11.1	10.9	10.3	12.4	14.0	16.3	16.9	14.7	14.5	13.9	12.7	15.9	15.5	16.0	16.7	17.6	16.8	14.9	13.7
1973		9.8	10.0	9.7	9.1	11.2	12.7	14.9	15.4	13.3	13.0	12.4	11.2	14.3	13.8	14.2	14.9	15.7	14.9	13.0	11.8
1974		9.1	9.3	9.0	8.4	10.4	11.8	13.9	14.4	12.3	12.1	11.4	10.3	13.2	12.7	13.1	13.6	14.4	13.6	11.7	10.6
1975		9.8	10.0	9.8	9.2	11.1	12.6	14.7	15.2	13.2	12.9	12.3	11.2	14.1	13.6	14.0	14.6	15.4	14.6	12.8	11.7
1976		10.6	10.8	10.6	10.0	12.0	13.4	15.5	16.0	14.0	13.8	13.2	12.2	15.0	14.6	15.0	15.6	16.4	15.7	14.0	12.9
1977		10.8	11.1	10.9	10.3	12.2	13.7	15.7	16.2	14.3	14.1	13.5	12.5	15.3	14.9	15.3	15.9	16.7	16.0	14.3	13.3
1978		11.1	11.3	11.1	10.6	12.4	13.9	15.9	16.4	14.5	14.3	13.7	12.7	15.5	15.1	15.5	16.1	16.8	16.2	14.6	13.6
1979		11.6	11.8	11.6	11.1	13.0	14.4	16.4	16.9	15.0	14.8	14.3	13.4	16.1	15.7	16.1	16.7	17.5	16.8	15.3	13.3
1980		12.1	12.3	12.1	11.6	13.5	14.9	16.8	17.3	15.5	15.3	14.8	13.9	16.6	16.2	16.6	17.2	18.0	17.4	15.9	15.0
1981		12.1	12.3	12.1	11.7	13.5	14.8	16.8	17.3	15.5	15.3	14.8	13.9	16.5	16.2	16.6	17.2	17.9	17.3	15.8	15.0



# EXHIBIT A-2 (cont.)

## SMALL STOCKS : TOTAL RETURNS

RATES OF RETURN FOR ALL YEARLY HOLDING PERIODS FROM 1926 TO 1981  
(PERCENT PER ANNUM COMPOUNDED ANNUALLY)

TO THE END OF	FROM THE BEGINNING OF																								
	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965					
1946	-11.6																								
1947	-5.6	0.9																							
1948	-4.4	-0.6	-2.1																						
1949	1.1	5.7	8.3	19.7																					
1950	7.7	13.2	17.6	28.9	38.7																				
1951	7.7	12.1	15.1	21.4	22.3	7.8																			
1952	7.0	10.5	12.5	16.5	15.5	5.4	3.0																		
1953	5.2	7.9	9.1	11.5	9.5	1.3	-1.9	-6.5																	
1954	10.3	13.4	15.3	18.5	18.3	13.6	15.6	22.5	40.6																
1955	11.3	14.2	15.9	18.8	18.6	15.0	16.8	21.8	39.1	20.4															
1956	10.6	13.1	14.6	16.9	16.5	13.1	14.2	17.2	26.3	12.1	4.3	-14.6													
1957	8.3	10.3	11.3	12.9	12.0	8.7	8.8	10.0	14.6	2.4	-5.6	-14.6	18.7	64.9											
1958	11.8	14.0	15.3	17.2	16.9	14.5	15.5	17.7	23.2	15.3	13.7	18.7	38.5	16.4											
1959	12.1	14.2	15.4	17.1	16.9	14.7	15.6	17.5	22.1	15.5	14.3	17.9	38.5	16.4											
1960	11.0	12.9	13.8	15.3	14.9	12.7	13.3	14.7	18.1	12.2	10.6	12.2	22.9	6.1	-3.3										
1961	12.3	14.1	15.1	16.5	16.2	14.4	15.1	16.5	19.7	14.8	13.9	15.9	25.1	14.1	13.0	32.1									
1962	10.7	12.2	13.0	14.2	13.8	11.9	12.3	13.3	15.7	11.1	9.8	10.7	16.7	7.0	4.0	7.9	-11.9								
1963	11.3	12.9	13.7	14.8	14.5	12.8	13.2	14.2	16.5	12.4	11.4	12.5	17.8	10.1	8.6	12.9	4.4	23.6							
1964	12.0	13.4	14.2	15.3	15.0	13.5	14.0	14.9	17.1	13.5	12.7	13.8	18.6	12.2	11.4	15.4	10.4	23.5	23.5						
1965	13.3	14.8	15.6	16.7	16.6	15.2	15.8	16.8	19.0	15.8	15.3	16.6	21.3	16.1	16.0	20.3	17.5	29.4	32.3	41.8					
1966	12.2	13.6	14.3	15.3	15.0	13.7	14.1	14.9	16.8	13.7	13.1	14.0	17.7	12.9	12.4	15.2	12.1	19.1	17.7	14.8					
1967	14.8	16.2	17.0	18.1	18.0	16.9	17.5	18.6	20.6	18.0	17.8	19.1	23.1	19.2	19.5	23.2	21.7	29.9	31.5	34.3					
1968	15.6	17.0	17.9	19.0	18.9	17.9	18.5	19.6	21.6	19.2	19.1	20.4	24.2	20.7	21.2	24.7	23.7	30.9	32.4	34.7					
1969	13.5	14.8	15.5	16.4	16.2	15.1	15.6	16.3	17.9	15.5	15.2	16.1	19.1	15.6	15.5	17.8	16.2	20.9	20.4	19.8					
1970	12.1	13.2	13.8	14.6	14.3	13.2	13.5	14.1	15.5	13.1	12.7	13.3	15.8	12.4	12.1	13.7	11.8	15.2	14.1	12.6					
1971	12.3	13.4	13.9	14.7	14.4	13.4	13.7	14.3	15.5	13.3	12.9	13.5	15.8	12.7	12.4	14.0	12.3	15.4	14.4	13.1					
1972	12.0	13.0	13.5	14.2	14.0	13.0	13.2	13.8	14.9	12.8	12.4	12.9	15.0	12.0	11.8	13.1	11.6	14.2	13.2	12.0					
1973	10.1	11.0	11.4	11.9	11.6	10.6	10.7	11.1	12.0	9.9	9.4	9.7	11.4	8.6	8.0	8.9	7.2	9.1	7.8	6.2					
1974	8.9	9.7	10.0	10.5	10.2	9.1	9.2	9.4	10.3	8.2	7.6	7.8	9.3	6.5	5.9	6.6	4.8	6.4	4.9	3.2					
1975	10.1	10.9	11.3	11.8	11.5	10.6	10.7	11.0	11.9	10.0	9.5	9.8	11.3	8.8	8.3	9.2	7.7	9.4	8.2	7.0					
1976	11.4	12.2	12.6	13.2	13.0	12.1	12.3	12.7	13.6	11.8	11.4	11.8	13.4	11.0	10.7	11.7	10.4	12.2	11.4	10.5					
1977	11.8	12.6	13.0	13.6	13.4	12.6	12.7	13.2	14.1	12.4	12.0	12.4	14.0	11.8	11.5	12.4	11.3	13.1	12.4	11.5					
1978	12.1	13.0	13.4	13.9	13.7	12.9	13.1	13.5	14.4	12.8	12.5	12.9	14.4	12.3	12.1	13.0	12.0	13.7	13.1	12.4					
1979	12.9	13.8	14.2	14.8	14.6	13.9	14.1	14.5	15.4	13.9	13.6	14.1	15.6	13.6	13.5	14.5	13.6	15.3	14.8	14.2					
1980	13.6	14.5	14.9	15.5	15.4	14.7	14.9	15.3	16.2	14.8	14.6	15.0	16.5	14.7	14.6	15.6	14.8	16.5	16.1	15.7					
1981	13.6	14.5	14.9	15.4	15.3	14.6	14.9	15.3	16.2	14.8	14.6	15.0	16.4	14.7	14.6	15.5	14.8	16.4	16.0	15.6					

TO THE END OF	FROM THE BEGINNING OF																			
	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981				
1966	-7.0																			
1967	30.7	83.6																		
1968	32.4	58.0	36.0																	
1969	14.8	23.2	0.9	-25.1																
1970	7.5	11.5	-5.6	-21.3	-17.4															
1971	9.0	12.5	-0.5	-10.3	-1.9	16.5														
1972	8.3	11.1	0.5	-6.9	0.2	10.3	4.4													
1973	2.4	3.8	-5.6	-12.3	-8.7	-5.6	-15.1	-30.9												
1974	-0.4	0.5	-7.8	-13.6	-11.1	-9.4	-16.7	-25.6	-19.9											
1975	4.0	5.3	-1.8	-6.3	-2.7	0.6	-3.1	-5.4	10.6	52.8										
1976	8.0	9.6	3.5	0.0	4.2	8.4	6.8	7.4	24.4	55.1	57.4									
1977	9.3	11.0	5.5	2.6	6.7	10.6	9.7	10.8	24.7	44.5	40.5	25.4								
1978	10.4	11.9	7.0	4.5	8.4	12.2	11.6	12.8	24.4	38.9	34.6	24.4	23.5							
1979	12.5	14.1	9.7	7.5	11.5	15.3	15.1	16.8	27.4	39.8	36.8	30.5	33.1	43.5						
1980	14.1	15.8	11.7	9.9	13.8	17.5	17.7	19.4	29.1	39.8	37.4	32.8	35.3	41.7	39.9					
1981	14.1	15.7	11.9	10.2	13.8	17.2	17.3	18.8	27.1	35.8	33.2	28.8	29.6	31.8	26.3	14.0				



# EXHIBIT A-3

## LONG-TERM CORPORATE BONDS : TOTAL RETURNS

RATES OF RETURN FOR ALL YEARLY HOLDING PERIODS FROM 1926 TO 1981  
(PERCENT PER ANNUM COMPOUNDED ANNUALLY)

	FROM THE BEGINNING OF																			
TO THE END OF	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945
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	-1.9														
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	7.1	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	7.0	4.7	2.7								
1938	6.6	6.6	6.5	6.9	7.3	7.2	8.6	8.2	7.8	6.3	5.2	4.4	6.1							
1939	6.4	6.4	6.3	6.6	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	6.6	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	6.3	5.8	5.4	4.5	3.9	3.5	3.6	3.1	2.9	2.7	2.7	2.8		
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	3.8	4.7	
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	3.9	4.4	4.1
1946	5.3	5.2	5.1	5.3	5.4	5.2	5.7	5.3	5.0	4.3	3.8	3.5	3.6	3.3	3.2	3.1	3.2	3.3	3.5	2.9
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	2.2	2.0	1.1
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	2.5	2.4	1.9
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	2.6	2.6	2.2
1950	4.8	4.7	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	2.6	2.6	2.6	2.5	2.1
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	2.0	1.8	1.4
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	2.1	2.0	1.7
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	2.2	2.2	1.9
1954	4.4	4.3	4.2	4.3	4.3	4.2	4.4	4.1	3.8	3.4	3.1	2.9	2.9	2.7	2.6	2.5	2.5	2.5	2.5	2.2
1955	4.3	4.2	4.1	4.1	4.2	4.0	4.3	4.0	3.7	3.2	2.9	2.7	2.7	2.5	2.4	2.4	2.4	2.3	2.3	2.1
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	1.6	1.6	1.3
1957	4.1	4.0	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	2.1	2.1	1.9
1958	3.9	3.8	3.6	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	1.8	1.8	1.6
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	1.7	1.6	1.4
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	2.1	2.0	1.8
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	2.2	2.2	2.0
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	2.5	2.5	2.5	2.5	2.3
1963	4.0	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	2.5	2.5	2.3
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	2.6	2.6	2.5
1965	3.9	3.8	3.7	3.7	3.7	3.6	3.8	3.6	3.3	3.0	2.8	2.7	2.7	2.5	2.5	2.5	2.4	2.4	2.4	2.3
1966	3.8	3.7	3.6	3.6	3.6	3.5	3.7	3.5	3.2	2.9	2.7	2.6	2.6	2.5	2.4	2.4	2.4	2.3	2.3	2.2
1967	3.5	3.4	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	2.0	2.0	1.9
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	2.2	2.1	2.1	2.1	2.0	1.9
1969	3.3	3.2	3.1	3.1	3.1	2.9	3.1	2.9	2.7	2.4	2.2	2.0	2.0	1.9	1.8	1.7	1.7	1.7	1.6	1.5
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	2.5	2.3	2.3	2.3	2.2	2.2	2.2	2.1
1971	3.7	3.6	3.6	3.6	3.6	3.5	3.6	3.4	3.3	3.0	2.8	2.7	2.7	2.6	2.6	2.5	2.5	2.5	2.5	2.4
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	2.7	2.7	2.6
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	2.6	2.6	2.5
1974	3.6	3.5	3.4	3.4	3.5	3.4	3.5	3.3	3.1	2.9	2.7	2.6	2.6	2.5	2.5	2.4	2.4	2.4	2.4	2.3
1975	3.8	3.7	3.7	3.7	3.7	3.6	3.7	3.6	3.4	3.2	3.0	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.7
1976	4.1	4.0	3.9	4.0	4.0	3.9	4.0	3.9	3.7	3.5	3.4	3.3	3.3	3.2	3.2	3.2	3.2	3.2	3.2	3.2
1977	4.0	4.0	3.9	3.9	3.9	3.9	4.0	3.8	3.7	3.5	3.3	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.0
1978	4.0	3.9	3.8	3.8	3.9	3.8	3.9	3.7	3.6	3.4	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.1	3.0
1979	3.8	3.7	3.7	3.7	3.7	3.6	3.7	3.6	3.4	3.2	3.1	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.9	2.8
1980	3.7	3.6	3.5	3.6	3.6	3.5	3.6	3.4	3.3	3.1	2.9	2.8	2.9	2.8	2.7	2.7	2.7	2.7	2.7	2.7
1981	3.6	3.5	3.5	3.5	3.5	3.4	3.5	3.3	3.2	3.0	2.8	2.8	2.8	2.7	2.7	2.6	2.6	2.6	2.6	2.6



## EXHIBIT A-3 (cont.)

## LONG-TERM CORPORATE BONDS : TOTAL RETURNS

RATES OF RETURN FOR ALL YEARLY HOLDING PERIODS FROM 1926 TO 1981  
(PERCENT PER ANNUM COMPOUNDED ANNUALLY)

TO THE END OF	FROM THE BEGINNING OF															1960	1961	1962	1963	1964	1965
	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960						
1946	1.7																				
1947	-0.3	-2.3																			
1948	1.1	0.8	4.1																		
1949	1.7	1.7	3.7	3.3																	
1950	1.8	1.8	3.2	2.7	2.1																
1951	1.0	0.9	1.7	0.9	-0.3	-2.7															
1952	1.4	1.3	2.0	1.5	0.9	0.4	3.5														
1953	1.6	1.6	2.3	1.9	1.6	1.4	3.5	3.4													
1954	2.0	2.1	2.7	2.5	2.3	2.4	4.1	4.4	5.4												
1955	1.9	1.9	2.4	2.2	2.0	2.0	3.2	3.1	2.9	0.5											
1956	1.1	1.0	1.4	1.0	0.7	0.5	1.1	0.5	-0.4	-3.2	-6.8										
1957	1.7	1.7	2.1	1.8	1.7	1.6	2.3	2.1	1.8	0.6	0.7	8.7									
1958	1.4	1.3	1.7	1.4	1.2	1.1	1.4	1.0	1.0	-0.1	-0.3	3.1	-2.2								
1959	1.2	1.2	1.5	1.2	1.0	0.9	1.3	1.0	0.6	-0.3	-0.5	1.7	-1.6	-1.0							
1960	1.7	1.7	2.0	1.8	1.7	1.7	2.2	2.0	1.8	1.2	1.4	3.5	1.8	3.9	9.1						
1961	1.9	1.9	2.2	2.1	2.0	2.0	2.4	2.3	2.2	1.7	1.9	3.8	2.6	4.2	6.9	4.8					
1962	2.2	2.3	2.6	2.5	2.4	2.4	2.9	2.9	2.8	2.5	2.8	4.5	3.6	5.1	7.3	6.4	7.9				
1963	2.2	2.3	2.6	2.5	2.4	2.4	2.9	2.8	2.7	2.4	2.7	4.1	3.4	4.5	6.0	5.0	5.0	2.2			
1964	2.4	2.4	2.7	2.6	2.6	2.6	3.0	3.0	2.9	2.7	2.9	4.2	3.6	4.6	5.7	4.9	4.9	3.5	4.8		
1965	2.2	2.3	2.5	2.4	2.4	2.4	2.8	2.7	2.6	2.4	2.6	3.7	3.1	3.8	4.7	3.8	3.4	2.1	2.1	-0.5	
1966	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	3.4	4.0	3.2	2.9	1.7	1.5	-0.1	
1967	1.8	1.8	2.0	1.9	1.8	1.8	2.1	2.0	1.9	1.6	1.7	2.5	1.9	2.4	2.9	2.0	1.5	0.3	-0.2	-1.8	
1968	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	2.4	2.8	2.1	1.7	0.7	0.4	-0.7	
1969	1.4	1.4	1.6	1.4	1.3	1.3	1.5	1.4	1.3	1.0	1.1	1.7	1.1	1.4	1.7	0.9	0.4	-0.6	-1.1	-2.2	
1970	2.0	2.0	2.2	2.1	2.1	2.1	2.3	2.3	2.2	2.0	2.1	2.6	2.4	2.7	3.1	2.5	2.3	1.6	1.5	0.9	
1971	2.4	2.4	2.6	2.5	2.5	2.5	2.8	2.7	2.7	2.5	2.7	3.3	3.0	3.4	3.7	3.3	3.1	2.6	2.6	2.3	
1972	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	3.6	4.0	3.6	3.5	3.0	3.1	2.9	
1973	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	3.5	3.8	3.4	3.3	2.9	2.9	2.7	
1974	2.3	2.3	2.5	2.4	2.4	2.4	2.6	2.6	2.5	2.4	2.5	3.1	2.7	3.0	3.3	2.9	2.8	2.4	2.4	2.1	
1975	2.7	2.7	2.9	2.9	2.8	2.9	3.1	3.1	3.1	3.0	3.1	3.6	3.4	3.7	4.0	3.7	3.6	3.3	3.3	3.2	
1976	3.2	3.2	3.4	3.4	3.4	3.4	3.7	3.7	3.7	3.6	3.8	4.3	4.1	4.5	4.8	4.5	4.5	4.3	4.4	4.4	
1977	3.1	3.2	3.3	3.3	3.3	3.4	3.6	3.6	3.6	3.5	3.7	4.2	4.0	4.3	4.6	4.4	4.3	4.1	4.2	4.2	
1978	3.0	3.1	3.2	3.2	3.2	3.2	3.5	3.5	3.5	3.4	3.5	4.0	3.8	4.1	4.4	4.1	4.1	3.8	4.0	3.9	
1979	2.8	2.8	3.0	3.0	2.9	3.0	3.2	3.2	3.2	3.1	3.2	3.6	3.4	3.7	3.9	3.7	3.6	3.4	3.4	3.3	
1980	2.4	2.7	2.8	2.8	2.8	2.8	3.0	3.0	2.9	2.8	2.9	3.4	3.1	3.4	3.6	3.4	3.3	3.0	3.1	3.0	
1981	2.5	2.6	2.7	2.7	2.6	2.7	2.8	2.8	2.8	2.7	2.8	3.2	3.0	3.2	3.4	3.1	3.1	2.8	2.8	2.7	

TO THE END OF	FROM THE BEGINNING OF															1980	1981
	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980		
1966	0.2																
1967	-2.4	-5.0															
1968	-0.8	-1.3	2.6														
1969	-2.7	-3.6	-2.9	-8.1													
1970	1.2	1.5	3.7	4.3	18.4												
1971	2.8	3.3	5.5	6.5	14.6	11.0											
1972	3.4	4.0	5.8	6.7	12.1	9.1	7.3										
1973	3.1	3.6	5.0	5.6	9.3	6.4	4.2	1.1									
1974	2.4	2.7	3.9	4.1	6.7	3.9	1.7	-1.0	-3.1								
1975	3.6	4.0	5.1	5.5	8.0	6.0	4.8	4.0	5.4	14.6							
1976	4.9	5.4	6.6	7.1	9.4	8.0	7.4	7.5	9.7	16.6	18.6						
1977	4.6	5.0	6.1	6.5	8.4	7.1	6.4	6.3	7.6	11.4	9.9	1.7					
1978	4.2	4.6	5.5	5.8	7.5	6.2	5.5	5.2	6.0	8.4	6.4	0.8	-0.1				
1979	3.6	3.9	4.7	4.8	6.2	5.0	4.2	3.8	4.3	5.8	3.7	-0.9	-2.1	-4.2			
1980	3.2	3.4	4.1	4.2	5.4	4.2	3.4	3.0	3.2	4.3	2.4	-1.3	-2.3	-3.4	-2.6		
1981	2.9	3.1	3.7	3.8	4.9	3.7	3.0	2.5	2.7	3.6	1.8	-1.2	-2.0	-2.6	-1.8	-1.0	



# EXHIBIT A-4

## LONG-TERM GOVERNMENT BONDS : TOTAL RETURNS

RATES OF RETURN FOR ALL YEARLY HOLDING PERIODS FROM 1926 TO 1981  
(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	1943	1944	1945
1926	7.8																			
1927	8.3	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	4.7															
1931	3.1	2.2	0.6	0.8	-0.5	-5.3														
1932	5.0	4.5	3.7	4.6	5.0	5.2	16.8													
1933	4.4	3.9	3.1	3.7	3.7	3.4	8.1	-0.1												
1934	5.0	4.6	4.0	4.7	4.9	5.0	8.7	4.9	10.0											
1935	5.0	4.7	4.1	4.7	5.0	5.0	7.8	4.9	7.5	5.0										
1936	5.2	4.9	4.5	5.1	5.3	5.4	7.7	5.5	7.5	6.2	7.5									
1937	4.8	4.5	4.1	4.5	4.7	4.7	6.4	4.5	5.6	4.2	3.8	0.2								
1938	4.8	4.6	4.2	4.6	4.8	4.8	6.3	4.6	5.6	4.5	4.4	2.8	5.5							
1939	4.9	4.7	4.3	4.7	4.9	4.9	6.3	4.8	5.7	4.8	4.8	3.9	5.7	5.9						
1940	5.0	4.8	4.5	4.9	5.0	5.0	6.2	5.0	5.7	5.0	5.0	4.4	5.9	6.0	6.1					
1941	4.7	4.5	4.2	4.5	4.6	4.6	5.7	4.5	5.1	4.4	4.3	3.7	4.6	4.3	3.5	0.9				
1942	4.6	4.4	4.2	4.5	4.5	4.5	5.5	4.4	4.9	4.3	4.2	3.6	4.3	4.0	3.4	2.1	3.2			
1943	4.5	4.3	4.0	4.3	4.4	4.3	5.2	4.2	4.6	4.0	3.9	3.4	3.9	3.6	3.1	2.1	2.6	2.1		
1944	4.4	4.2	4.0	4.2	4.3	4.2	5.0	4.1	4.4	3.9	3.8	3.3	3.8	3.5	3.0	2.3	2.7	2.4	2.8	
1945	4.7	4.6	4.3	4.6	4.6	4.6	5.4	4.6	5.0	4.5	4.5	4.1	4.6	4.5	4.3	3.9	4.7	5.1	6.7	10.7
1946	4.5	4.3	4.1	4.3	4.4	4.3	5.0	4.2	4.6	4.1	4.0	3.7	4.1	3.9	3.6	3.2	3.7	3.8	4.4	5.2
1947	4.1	4.0	3.7	3.9	4.0	3.9	4.5	3.8	4.0	3.6	3.5	3.1	3.4	3.2	2.8	2.4	2.6	2.5	2.6	2.5
1948	4.1	4.0	3.7	3.9	3.9	3.9	4.5	3.7	4.0	3.6	3.5	3.1	3.4	3.2	2.9	2.5	2.7	2.6	2.7	2.7
1949	4.2	4.1	3.8	4.0	4.1	4.0	4.6	3.9	4.1	3.8	3.7	3.4	3.6	3.5	3.2	2.9	3.2	3.2	3.4	3.5
1950	4.0	3.9	3.7	3.8	3.9	3.8	4.3	3.7	3.9	3.5	3.4	3.1	3.4	3.2	2.9	2.6	2.8	2.8	2.9	2.9
1951	3.7	3.6	3.3	3.5	3.5	3.4	3.9	3.3	3.4	3.1	3.0	2.7	2.8	2.6	2.4	2.0	2.1	2.0	2.0	1.9
1952	3.6	3.5	3.3	3.4	3.4	3.3	3.8	3.1	3.3	3.0	2.8	2.6	2.7	2.5	2.3	1.9	2.0	1.9	1.9	1.8
1953	3.6	3.5	3.3	3.4	3.4	3.3	3.8	3.2	3.3	3.0	2.9	2.6	2.8	2.6	2.4	2.1	2.2	2.1	2.1	2.0
1954	3.7	3.6	3.4	3.5	3.5	3.5	3.9	3.4	3.5	3.2	3.1	2.9	3.0	2.9	2.7	2.4	2.5	2.5	2.5	2.5
1955	3.6	3.4	3.2	3.4	3.4	3.3	3.7	3.1	3.3	3.0	2.9	2.6	2.8	2.6	2.4	2.2	2.3	2.2	2.2	2.2
1956	3.3	3.1	2.9	3.0	3.0	2.9	3.3	2.8	2.9	2.6	2.5	2.2	2.3	2.1	1.9	1.7	1.7	1.6	1.6	1.5
1957	3.4	3.3	3.1	3.2	3.2	3.1	3.5	2.9	3.1	2.8	2.7	2.5	2.6	2.4	2.2	2.0	2.1	2.0	2.0	1.9
1958	3.1	3.0	2.8	2.9	2.8	2.8	3.1	2.6	2.7	2.4	2.3	2.1	2.1	2.0	1.8	1.5	1.6	1.5	1.4	1.3
1959	2.9	2.8	2.6	2.7	2.7	2.6	2.9	2.4	2.5	2.2	2.1	1.9	1.9	1.8	1.6	1.3	1.4	1.2	1.2	1.1
1960	3.2	3.1	2.9	3.0	3.0	2.9	3.2	2.8	2.9	2.6	2.5	2.3	2.4	2.3	2.1	1.9	2.0	1.9	1.9	1.8
1961	3.2	3.0	2.9	3.0	2.9	2.9	3.2	2.7	2.8	2.6	2.5	2.3	2.4	2.2	2.1	1.9	1.9	1.9	1.8	1.8
1962	3.3	3.1	3.0	3.1	3.1	3.0	3.3	2.9	3.0	2.7	2.6	2.5	2.5	2.4	2.3	2.1	2.2	2.1	2.1	2.1
1963	3.2	3.1	2.9	3.0	3.0	2.9	3.2	2.8	2.9	2.7	2.6	2.4	2.5	2.4	2.2	2.1	2.1	2.1	2.1	2.0
1964	3.2	3.1	2.9	3.0	3.0	3.0	3.2	2.8	2.9	2.7	2.6	2.4	2.5	2.4	2.3	2.1	2.2	2.1	2.1	2.1
1965	3.2	3.0	2.9	3.0	2.9	2.9	3.2	2.8	2.9	2.6	2.6	2.4	2.5	2.4	2.2	2.1	2.1	2.1	2.1	2.0
1966	3.2	3.1	2.9	3.0	3.0	2.9	3.2	2.8	2.9	2.7	2.6	2.4	2.5	2.4	2.3	2.1	2.2	2.1	2.1	2.1
1967	2.9	2.7	2.6	2.6	2.6	2.6	2.8	2.4	2.5	2.3	2.2	2.0	2.1	2.0	1.8	1.7	1.7	1.7	1.6	1.6
1968	2.8	2.7	2.5	2.6	2.6	2.5	2.7	2.4	2.4	2.2	2.1	2.0	2.0	1.9	1.8	1.6	1.6	1.6	1.6	1.5
1969	2.6	2.5	2.3	2.4	2.4	2.3	2.5	2.1	2.2	2.0	1.9	1.7	1.8	1.7	1.5	1.4	1.4	1.3	1.3	1.2
1970	2.8	2.7	2.5	2.6	2.6	2.5	2.7	2.4	2.5	2.3	2.2	2.0	2.1	2.0	1.9	1.7	1.7	1.7	1.7	1.6
1971	3.0	2.9	2.8	2.8	2.8	2.8	3.0	2.7	2.7	2.5	2.5	2.3	2.4	2.3	2.2	2.1	2.1	2.1	2.1	2.0
1972	3.1	3.0	2.8	2.9	2.9	2.8	3.1	2.7	2.8	2.6	2.6	2.4	2.5	2.4	2.3	2.2	2.2	2.2	2.2	2.2
1973	3.0	2.9	2.8	2.8	2.8	2.8	3.0	2.6	2.7	2.5	2.5	2.3	2.4	2.3	2.2	2.1	2.1	2.1	2.1	2.1
1974	3.0	2.9	2.8	2.8	2.8	2.8	3.0	2.7	2.7	2.6	2.5	2.4	2.4	2.4	2.3	2.1	2.2	2.1	2.1	2.1
1975	3.1	3.0	2.9	3.0	3.0	2.9	3.1	2.8	2.9	2.7	2.7	2.5	2.6	2.5	2.4	2.3	2.4	2.4	2.4	2.3
1976	3.4	3.3	3.2	3.2	3.2	3.2	3.4	3.1	3.2	3.0	3.0	2.9	3.0	2.9	2.8	2.7	2.8	2.8	2.8	2.8
1977	3.3	3.2	3.1	3.2	3.2	3.1	3.3	3.0	3.1	3.0	2.9	2.8	2.9	2.8	2.7	2.6	2.7	2.7	2.7	2.7
1978	3.2	3.1	3.0	3.1	3.1	3.0	3.2	2.9	3.0	2.9	2.8	2.7	2.8	2.7	2.6	2.5	2.6	2.5	2.6	2.5
1979	3.1	3.0	2.9	3.0	3.0	2.9	3.1	2.9	2.9	2.8	2.7	2.6	2.7	2.6	2.5	2.4	2.5	2.4	2.5	2.4
1980	3.0	2.9	2.8	2.9	2.8	2.8	3.0	2.7	2.8	2.6	2.6	2.5	2.5	2.4	2.3	2.3	2.3	2.3	2.3	2.3
1981	3.0	2.9	2.8	2.8	2.8	2.8	3.0	2.7	2.7	2.6	2.5	2.4	2.5	2.4	2.3	2.2	2.3	2.3	2.3	2.2

## EXHIBIT A-4 (cont.)

## LONG-TERM GOVERNMENT BONDS : TOTAL RETURNS

RATES OF RETURN FOR ALL YEARLY HOLDING PERIODS FROM 1926 TO 1981  
(PERCENT PER ANNUM COMPOUNDED ANNUALLY)

TO THE END OF	FROM THE BEGINNING OF																				1962	1963	1964	1965
	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961								
1946	-0.1																							
1947	-1.4	-2.6																						
1948	0.2	0.3	3.4																					
1949	1.7	2.3	4.9	6.4																				
1950	1.4	1.8	3.3	3.2																				
1951	0.5	0.6	1.4	0.8	-2.0	-3.9																		
1952	0.6	0.7	1.4	0.9	-0.9	-1.4	1.2																	
1953	1.0	1.1	1.7	1.4	0.2	0.2	2.4	3.6																
1954	1.6	1.8	2.5	2.4	1.6	1.9	4.0	5.4	7.2															
1955	1.3	1.5	2.0	1.8	1.1	1.3	2.6	3.1	2.9	-1.3														
1956	0.7	0.8	1.1	0.9	0.1	0.1	0.9	0.9	-0.0	-3.5	-5.6													
1957	1.2	1.4	1.8	1.6	1.0	1.1	2.0	2.2	1.8	0.0	0.7	7.5												
1958	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	0.4	0.5	0.7	0.5	-0.1	-0.1	0.4	0.3	-0.3	-1.7	-1.8	-0.5	-4.2	-2.3										
1960	1.3	1.4	1.7	1.5	1.1	1.2	1.8	1.9	1.6	0.7	1.2	2.9	1.5	5.5	13.8									
1961	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	3.9	7.2	1.0								
1962	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	4.7	7.1	3.9	6.9							
1963	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	4.0	5.6	3.0	4.0	1.2						
1964	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	3.9	5.2	3.1	3.8	2.4	3.5					
1965	1.6	1.7	1.9	1.9	1.6	1.7	2.1	2.2	2.1	1.6	1.9	2.8	2.2	3.4	4.4	2.6	3.0	1.8	2.1	0.7				
1966	1.7	1.8	2.0	2.0	1.7	1.8	2.2	2.3	2.2	1.8	2.1	2.8	2.3	3.5	4.3	2.8	3.2	2.3	2.6	2.2				
1967	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	2.0	2.5	1.0	1.0	-0.1	-0.5	-1.8				
1968	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	1.7	2.2	0.8	0.8	-0.2	-0.4	-1.4				
1969	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	1.1	1.4	0.2	0.1	-0.9	-1.2	-2.1				
1970	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	2.0	2.4	1.3	1.3	0.7	0.6	0.1				
1971	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	2.8	3.2	2.3	2.5	2.0	2.1	1.9				
1972	1.9	1.9	2.1	2.1	1.9	2.0	2.3	2.3	2.2	2.0	2.2	2.7	2.4	3.0	3.4	2.6	2.8	2.3	2.5	2.3				
1973	1.8	1.8	2.0	1.9	1.8	1.8	2.1	2.2	2.1	1.8	2.0	2.5	2.2	2.7	3.1	2.3	2.4	2.0	2.1	2.0				
1974	1.8	1.9	2.1	2.0	1.9	1.9	2.2	2.2	2.2	1.9	2.1	2.6	2.3	2.8	3.2	2.5	2.6	2.2	2.3	2.2				
1975	2.1	2.2	2.3	2.3	2.1	2.2	2.5	2.5	2.5	2.3	2.5	2.9	2.7	3.2	3.5	2.9	3.0	2.7	2.9	2.8				
1976	2.5	2.6	2.8	2.8	2.6	2.7	3.0	3.1	3.1	2.9	3.1	3.6	3.3	3.9	4.3	3.7	3.9	3.7	3.9	3.9				
1977	2.4	2.5	2.7	2.7	2.5	2.6	2.9	2.9	2.9	2.7	2.9	3.3	3.1	3.7	4.0	3.4	3.6	3.4	3.5	3.5				
1978	2.3	2.4	2.6	2.5	2.4	2.5	2.7	2.8	2.8	2.6	2.7	3.1	2.9	3.4	3.7	3.2	3.3	3.1	3.2	3.2				
1979	2.2	2.3	2.4	2.4	2.3	2.3	2.6	2.6	2.6	2.4	2.6	2.9	2.7	3.2	3.5	2.9	3.1	2.8	2.9	2.9				
1980	2.0	2.1	2.2	2.2	2.1	2.1	2.3	2.4	2.3	2.2	2.3	2.6	2.4	2.8	3.1	2.6	2.7	2.4	2.5	2.5				
1981	2.0	2.1	2.2	2.2	2.1	2.1	2.3	2.4	2.3	2.2	2.3	2.6	2.4	2.8	3.0	2.6	2.6	2.4	2.5	2.4				

TO THE END OF	FROM THE BEGINNING OF															1981
	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	
1966	3.6															
1967	-3.0	-9.2														
1968	-2.1	-4.8	-0.3													
1969	-2.8	-4.9	-2.7	-5.1												
1970	-0.0	-0.9	2.0	3.2	12.1											
1971	2.1	1.8	4.7	6.4	12.7	13.2										
1972	2.6	2.4	4.9	6.2	10.3	9.4	5.7									
1973	2.1	1.9	3.9	4.7	7.3	5.8	2.2	-1.1								
1974	2.4	2.2	3.9	4.7	6.7	5.4	2.9	1.6	4.4							
1975	3.0	3.0	4.6	5.3	7.1	6.2	4.5	4.1	6.7	9.2						
1976	4.2	4.3	5.9	6.7	8.5	7.9	6.8	7.1	10.0	12.9	16.8					
1977	3.8	3.8	5.2	5.8	7.3	6.6	5.5	5.5	7.2	8.2	7.7	-0.7				
1978	3.4	3.4	4.6	5.1	6.3	5.6	4.5	4.4	5.5	5.8	4.7	-0.9	-1.2			
1979	3.1	3.0	4.1	4.5	5.5	4.8	3.8	3.5	4.3	4.3	3.2	-1.0	-1.2	-1.2		
1980	2.6	2.5	3.5	3.8	4.6	3.9	2.9	2.6	3.1	2.9	1.7	-1.8	-2.1	-2.6	-4.0	
1981	2.5	2.5	3.3	3.6	4.4	3.7	2.8	2.5	3.0	2.8	1.7	-1.0	-1.1	-1.1	-1.1	1.8



# EXHIBIT A-5

## U.S. TREASURY BILLS : TOTAL RETURNS

RATES OF RETURN FOR ALL YEARLY HOLDING PERIODS FROM 1926 TO 1981  
(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	1943	1944	1945
1926	3.3																				
1927	3.2	3.1																			
1928	3.2	3.2	3.2																		
1929	3.6	3.7	4.0	4.7																	
1930	3.4	3.4	3.5	3.6	2.4																
1931	3.0	2.9	2.9	2.7	1.7	1.1															
1932	2.7	2.6	2.5	2.3	1.5	1.0	1.0														
1933	2.4	2.3	2.1	1.9	1.2	0.8	0.6	0.3													
1934	2.1	2.0	1.8	1.6	1.0	0.6	0.5	0.2	0.2												
1935	1.9	1.8	1.6	1.4	0.8	0.5	0.4	0.2	0.2	0.2											
1936	1.8	1.6	1.5	1.2	0.7	0.5	0.4	0.2	0.2	0.2	0.2										
1937	1.7	1.5	1.3	1.1	0.7	0.4	0.3	0.2	0.2	0.2	0.2	0.3									
1938	1.5	1.4	1.2	1.0	0.6	0.4	0.3	0.2	0.2	0.2	0.2	0.2	0.1	-0.0							
1939	1.4	1.3	1.1	0.9	0.6	0.3	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.0						
1940	1.3	1.2	1.0	0.9	0.5	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0					
1941	1.2	1.1	1.0	0.8	0.5	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1					
1942	1.2	1.1	0.9	0.8	0.5	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2				
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	0.1	0.1	0.2	0.3			
1944	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	0.1	0.2	0.2	0.3	0.3	0.3		
1945	1.1	0.9	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	0.3	0.3	0.3	
1946	1.0	0.9	0.8	0.7	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	
1947	1.0	0.9	0.8	0.7	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.4	0.4	
1948	1.0	0.9	0.8	0.7	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.5	
1949	1.0	0.9	0.8	0.7	0.5	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.5	0.6	
1950	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	0.4	0.4	0.5	0.5	0.6	0.6	0.7	
1951	1.0	0.9	0.8	0.7	0.6	0.5	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.7	0.7	0.8	
1952	1.0	1.0	0.9	0.8	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.7	0.8	0.8	0.9	
1953	1.1	1.0	0.9	0.8	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.8	0.8	0.9	1.0	
1954	1.1	1.0	0.9	0.8	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.8	0.8	0.9	0.9	1.0	
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	0.9	1.0	1.1	
1956	1.1	1.1	1.0	0.9	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.9	0.9	1.0	1.1	1.1	
1957	1.2	1.1	1.1	1.0	0.8	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	1.2	1.3	
1958	1.2	1.1	1.1	1.0	0.9	0.8	0.8	0.8	0.8	0.9	0.9	0.9	0.9	0.9	1.0	1.0	1.1	1.2	1.2	1.3	
1959	1.3	1.2	1.1	1.1	0.9	0.9	0.9	0.9	0.9	0.9	1.0	1.0	1.0	1.0	1.1	1.1	1.2	1.3	1.3	1.4	
1960	1.3	1.2	1.2	1.1	1.0	1.0	0.9	0.9	1.0	1.0	1.0	1.1	1.1	1.1	1.2	1.2	1.3	1.3	1.4	1.5	
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	1.1	1.2	1.3	1.3	1.4	1.4	1.5	
1962	1.4	1.3	1.2	1.2	1.1	1.0	1.0	1.0	1.1	1.1	1.1	1.2	1.2	1.2	1.3	1.3	1.4	1.4	1.5	1.6	
1963	1.4	1.3	1.3	1.2	1.1	1.1	1.1	1.1	1.1	1.2	1.2	1.2	1.2	1.3	1.3	1.4	1.4	1.5	1.6	1.7	
1964	1.5	1.4	1.4	1.3	1.2	1.2	1.2	1.2	1.2	1.2	1.3	1.3	1.3	1.4	1.4	1.5	1.5	1.6	1.7	1.8	
1965	1.5	1.5	1.4	1.4	1.3	1.3	1.3	1.3	1.3	1.3	1.4	1.4	1.4	1.5	1.5	1.6	1.6	1.7	1.8	1.9	
1966	1.6	1.5	1.5	1.5	1.4	1.3	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	2.0	
1967	1.7	1.6	1.6	1.5	1.5	1.4	1.4	1.4	1.5	1.5	1.6	1.6	1.6	1.7	1.7	1.8	1.8	1.9	2.0	2.1	
1968	1.7	1.7	1.6	1.5	1.5	1.5	1.5	1.6	1.6	1.6	1.7	1.7	1.8	1.8	1.8	1.9	2.0	2.0	2.1	2.2	
1969	1.8	1.8	1.8	1.7	1.7	1.6	1.7	1.7	1.7	1.8	1.8	1.9	1.9	2.0	2.0	2.1	2.2	2.3	2.3	2.4	
1970	1.9	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.9	1.9	2.0	2.0	2.1	2.1	2.2	2.3	2.3	2.4	2.5	
1971	2.0	2.0	1.9	1.9	1.8	1.8	1.9	1.9	1.9	2.0	2.0	2.1	2.1	2.2	2.2	2.3	2.4	2.5	2.6	2.6	
1972	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.9	2.0	2.0	2.1	2.1	2.2	2.2	2.3	2.4	2.4	2.5	2.6	2.7	
1973	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.1	2.1	2.2	2.2	2.3	2.4	2.4	2.5	2.6	2.7	2.7	2.8	
1974	2.3	2.2	2.2	2.2	2.1	2.1	2.2	2.2	2.2	2.3	2.3	2.4	2.4	2.5	2.5	2.6	2.7	2.7	2.8	2.9	
1975	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.3	2.3	2.4	2.4	2.5	2.5	2.6	2.6	2.7	2.8	2.8	2.9	3.0	
1976	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.5	2.5	2.6	2.6	2.7	2.8	2.9	3.0	3.1	
1977	2.4	2.4	2.4	2.4	2.3	2.3	2.4	2.4	2.4	2.5	2.5	2.6	2.6	2.7	2.7	2.8	2.9	3.0	3.1	3.2	
1978	2.5	2.5	2.5	2.5	2.4	2.4	2.5	2.5	2.5	2.6	2.6	2.7	2.8	2.8	2.9	3.0	3.1	3.1	3.2	3.3	
1979	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.7	2.7	2.8	2.8	2.9	2.9	3.0	3.0	3.1	3.2	3.3	3.4	3.5	
1980	2.8	2.8	2.8	2.8	2.7	2.7	2.8	2.8	2.9	2.9	3.0	3.1	3.1	3.1	3.2	3.3	3.4	3.5	3.5	3.6	
1981	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.1	3.1	3.2	3.2	3.3	3.4	3.5	3.5	3.6	3.7	3.8	3.9	4.0	



## EXHIBIT A-5 (cont.)

## U.S. TREASURY BILLS : TOTAL RETURNS

RATES OF RETURN FOR ALL YEARLY HOLDING PERIODS FROM 1926 TO 1981  
(PERCENT PER ANNUM COMPOUNDED ANNUALLY)

TO THE END OF	FROM THE BEGINNING OF																								
	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965					
1946	0.4																								
1947	0.4	0.5																							
1948	0.6	0.7	0.8																						
1949	0.7	0.8	1.0	1.1																					
1950	0.8	0.9	1.0	1.1	1.2																				
1951	0.9	1.0	1.2	1.3	1.3	1.5																			
1952	1.0	1.1	1.3	1.4	1.4	1.6	1.7																		
1953	1.1	1.2	1.3	1.5	1.5	1.7	1.7	1.8																	
1954	1.1	1.2	1.3	1.4	1.4	1.5	1.4	1.3	0.9																
1955	1.1	1.2	1.3	1.4	1.4	1.5	1.5	1.4	1.2	1.6															
1956	1.3	1.3	1.4	1.5	1.6	1.6	1.7	1.7	1.6	2.0	2.5														
1957	1.4	1.5	1.6	1.7	1.8	1.9	1.9	2.0	2.0	2.4	2.8	3.1													
1958	1.4	1.5	1.6	1.7	1.7	1.8	1.9	2.0	2.1	2.3	2.5	2.5	2.2	1.5											
1959	1.5	1.6	1.7	1.8	1.9	1.9	2.0	2.0	2.1	2.2	2.4	2.5	2.6	2.4	3.0										
1960	1.6	1.7	1.8	1.9	1.9	2.0	2.1	2.1	2.2	2.4	2.5	2.6	2.4	2.8	2.7										
1961	1.6	1.7	1.8	1.9	2.0	2.0	2.1	2.1	2.2	2.3	2.5	2.5	2.3	2.6	2.4	2.1									
1962	1.7	1.8	1.9	1.9	2.0	2.1	2.1	2.2	2.2	2.4	2.5	2.5	2.4	2.6	2.5	2.4	2.7								
1963	1.8	1.9	2.0	2.0	2.1	2.2	2.2	2.3	2.3	2.5	2.6	2.6	2.5	2.7	2.7	2.7	2.9	3.1							
1964	1.9	2.0	2.0	2.1	2.2	2.3	2.3	2.4	2.4	2.6	2.7	2.7	2.7	2.9	2.8	2.9	3.1	3.3	3.5						
1965	2.0	2.1	2.1	2.2	2.3	2.4	2.4	2.5	2.5	2.7	2.8	2.9	2.8	3.0	3.0	3.1	3.3	3.5	3.7	3.9					
1966	2.1	2.2	2.3	2.4	2.4	2.5	2.6	2.7	2.8	2.8	3.0	3.1	3.2	3.2	3.3	3.4	3.6	3.8	4.1	4.3					
1967	2.2	2.3	2.4	2.5	2.5	2.6	2.7	2.8	2.8	3.0	3.1	3.2	3.3	3.3	3.5	3.6	3.7	3.9	4.1	4.3					
1968	2.3	2.4	2.5	2.6	2.7	2.8	2.8	2.9	3.0	3.1	3.2	3.4	3.5	3.6	3.8	3.9	4.0	4.3	4.5	4.7					
1969	2.5	2.6	2.7	2.8	2.9	3.0	3.0	3.1	3.2	3.3	3.4	3.6	3.7	3.8	3.9	4.0	4.1	4.3	4.5	4.7					
1970	2.7	2.8	2.9	3.0	3.0	3.1	3.2	3.3	3.4	3.4	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.4	4.6	4.8					
1971	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.4	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.4	4.6	4.8	5.0					
1972	2.8	2.9	3.0	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.4	4.6	4.8	4.9					
1973	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.6	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.6	4.8	5.0	5.1					
1974	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.8	4.0	4.1	4.2	4.3	4.5	4.6	4.7	4.9	5.1	5.3	5.4					
1975	3.2	3.3	3.4	3.5	3.6	3.7	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.6	4.8	5.0	5.1	5.3	5.5					
1976	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.6	4.7	4.8	5.0	5.1	5.3	5.4					
1977	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	5.0	5.1	5.3	5.4					
1978	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.4	4.5	4.7	4.8	4.8	5.0	5.1	5.2	5.4	5.5	5.7					
1979	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.7	4.8	4.8	5.0	5.1	5.2	5.4	5.5	5.7	5.9					
1980	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.8	4.9	5.0	5.1	5.3	5.4	5.5	5.7	5.9	6.1	6.2					
1981	4.1	4.2	4.3	4.4	4.5	4.7	4.8	4.9	5.0	5.1	5.3	5.4	5.5	5.7	5.8	5.9	6.1	6.3	6.5	6.7					

FROM THE BEGINNING OF

TO THE END OF	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
1966	4.8															
1967	4.5	4.2														
1968	4.7	4.7	5.2													
1969	5.2	5.3	5.9	6.6												
1970	5.5	5.6	6.1	6.6	6.5											
1971	5.3	5.4	5.7	5.8	5.5	4.4										
1972	5.1	5.1	5.3	5.3	4.9	4.1	3.8									
1973	5.3	5.4	5.6	5.6	5.4	5.0	5.4	6.9								
1974	5.6	5.7	5.9	6.0	5.9	5.8	6.2	7.5	8.0							
1975	5.6	5.7	5.9	6.0	5.9	5.8	6.1	6.9	6.9	5.8						
1976	5.6	5.6	5.8	5.9	5.8	5.7	5.9	6.4	6.3	5.4	5.1					
1977	5.5	5.6	5.7	5.8	5.7	5.6	5.8	6.2	6.0	5.3	5.1	5.1				
1978	5.7	5.7	5.9	5.9	5.9	5.8	6.0	6.3	6.2	5.8	5.8	6.1	7.2			
1979	6.0	6.1	6.2	6.3	6.3	6.3	6.5	6.9	6.9	6.7	6.9	7.5	8.8	10.4		
1980	6.3	6.4	6.6	6.7	6.7	6.8	7.0	7.4	7.5	7.4	7.8	8.5	9.6	10.8	11.2	
1981	6.8	7.0	7.2	7.3	7.4	7.5	7.8	8.2	8.4	8.4	8.9	9.7	10.8	12.1	13.0	14.7



# EXHIBIT A-6

## CONSUMER PRICE INDEX : INFLATION RATES

RATES OF RETURN FOR ALL YEARLY HOLDING PERIODS FROM 1926 TO 1981  
(PERCENT PER ANNUM COMPOUNDED ANNUALLY)

TO THE END OF	FROM THE BEGINNING OF															1938	1939	1940	1941	1942	1943	1944	1945
	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948
1926	-1.5																						
1927	-1.8	-2.1																					
1928	-1.5	-1.5	-1.0																				
1929	-1.1	-1.0	-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	-6.5	-8.6	-9.9	-10.3																
1933	-3.8	-4.1	-4.5	-5.1	-6.4	-6.6	-5.0	0.5															
1934	-3.2	-3.4	-3.6	-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	-0.9	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	-0.9	-0.9	-0.8	-0.8	-0.9	-0.4	0.6	1.9	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	0.0	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	3.2					
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	4.1	5.0	6.0	4.8	2.6	2.1				
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	2.5	2.2	2.3			
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	6.2	7.3	9.9			
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	6.8	7.7	9.6			
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	5.6	6.2	6.9	6.5	6.1	6.7	7.8			
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	4.9	5.2	5.8			
1950	1.3	1.5	1.6	1.7	1.8	2.2	2.9	3.7	3.9	4.0	4.0	4.2	4.3	4.9	5.4	5.9	5.5	5.0	5.3	5.8			
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	5.1	5.4	5.8			
1952	1.5	1.6	1.8	1.9	1.9	2.3	2.9	3.6	3.8	3.9	4.0	4.1	4.2	4.7	5.1	5.5	5.1	4.7	4.9	5.2			
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	4.3	4.4	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	3.9	4.0	4.2			
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	3.6	3.7	3.8			
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	3.6	3.6	3.7			
1957	1.5	1.5	1.7	1.8	1.8	2.1	2.6	3.2	3.3	3.3	3.3	3.4	3.5	3.8	4.0	4.2	3.9	3.5	3.6	3.7			
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	3.4	3.4	3.5			
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	3.3	3.3	3.4			
1960	1.5	1.6	1.7	1.7	1.8	2.1	2.5	3.0	3.1	3.1	3.1	3.2	3.2	3.5	3.7	3.8	3.5	3.2	3.2	3.3			
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	3.1	3.1	3.1			
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	3.0	3.0	3.0			
1963	1.4	1.5	1.6	1.7	1.7	2.0	2.4	2.8	2.9	2.9	3.0	3.0	3.0	3.2	3.4	3.5	3.2	2.9	2.9	2.9			
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	2.8	2.8	2.8			
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	2.8	2.8	2.9			
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	2.8	2.8	2.8			
1967	1.5	1.6	1.7	1.8	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	2.8	2.8	2.8			
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	2.9	2.9	2.9			
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	3.0	3.0	3.0			
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	3.1	3.1	3.1			
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	3.1	3.1	3.1			
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	3.1	3.1	3.2			
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	3.3	3.3	3.3			
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	3.6	3.6	3.6			
1975	2.3	2.4	2.5	2.5	2.6	2.8	3.1	3.4	3.5	3.5	3.5	3.6	3.6	3.8	3.9	4.0	3.8	3.7	3.7	3.7			
1976	2.3	2.4	2.5	2.6	2.6	2.8	3.1	3.4	3.5	3.6	3.6	3.6	3.6	3.8	3.9	4.0	3.9	3.7	3.7	3.8			
1977	2.4	2.5	2.6	2.7	2.7	2.9	3.2	3.5	3.6	3.6	3.6	3.7	3.7	3.9	4.0	4.1	3.9	3.8	3.8	3.9			
1978	2.5	2.6	2.7	2.8	2.8	3.0	3.3	3.6	3.7	3.7	3.8	3.8	3.8	4.0	4.1	4.2	4.1	3.9	4.0	4.0			
1979	2.7	2.8	2.9	3.0	3.0	3.2	3.5	3.8	3.9	4.0	4.0	4.0	4.1	4.2	4.4	4.4	4.3	4.2	4.3	4.3			
1980	2.9	3.0	3.1	3.2	3.2	3.4	3.7	4.0	4.1	4.1	4.2	4.2	4.2	4.4	4.5	4.6	4.5	4.4	4.4	4.5			
1981	3.0	3.1	3.2	3.3	3.3	3.5	3.8	4.1	4.2	4.2	4.3	4.3	4.4	4.5	4.6	4.7	4.6	4.5	4.5	4.6			



## EXHIBIT A-6 (cont.)

## CONSUMER PRICE INDEX : INFLATION RATES

RATES OF RETURN FOR ALL YEARLY HOLDING PERIODS FROM 1926 TO 1981  
(PERCENT PER ANNUM COMPOUNDED ANNUALLY)

TO THE END OF	FROM THE BEGINNING OF																			
	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965
1946	18.2																			
1947	13.5	9.0																		
1948	9.8	5.8																		
1949	6.8	3.2	0.4	-1.8																
1950	6.6	3.8	2.2	1.9	5.8															
1951	6.5	4.3	3.1	3.2	5.8	5.9														
1952	5.6	3.7	2.6	2.6	4.2	3.3	0.9													
1953	5.0	3.2	2.3	2.2	3.3	2.4	0.8	0.6												
1954	4.4	2.8	1.9	1.8	2.5	1.7	0.3	0.1	-0.5											
1955	4.0	2.5	1.7	1.6	2.1	1.4	0.3	0.2	-0.1	0.4										
1956	3.9	2.5	1.8	1.7	2.2	1.7	0.8	0.8	0.9	1.6	2.9									
1957	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	3.6	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	3.5	2.4	1.9	1.8	2.2	1.8	1.3	1.4	1.5	1.9	2.3	2.1	1.6	1.5						
1960	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	1.5	1.5					
1961	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	1.2	1.1	0.7				
1962	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	1.2	1.1	0.9	1.2			
1963	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	1.3	1.3	1.2	1.4	1.6		
1964	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	1.3	1.2	1.2	1.4	1.4	1.2	
1965	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	1.4	1.3	1.5	1.6	1.6	1.6	1.9
1966	2.9	2.2	1.8	1.8	2.0	1.7	1.5	1.5	1.6	1.7	1.9	1.8	1.6	1.6	1.6	1.7	1.9	2.0	2.2	2.6
1967	2.9	2.2	1.9	1.8	2.0	1.8	1.6	1.6	1.7	1.8	2.0	1.9	1.8	1.8	1.8	1.9	2.1	2.2	2.4	2.8
1968	3.0	2.3	2.0	2.0	2.2	2.0	1.7	1.8	1.9	2.0	2.2	2.1	2.0	2.1	2.1	2.2	2.4	2.6	2.8	3.3
1969	3.1	2.5	2.2	2.2	2.4	2.2	2.0	2.0	2.1	2.3	2.5	2.4	2.4	2.4	2.5	2.6	2.9	3.1	3.4	3.8
1970	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	2.7	2.8	2.9	3.2	3.4	3.7	4.1
1971	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	2.7	2.8	3.0	3.2	3.4	3.6	4.0
1972	3.2	2.7	2.4	2.4	2.6	2.4	2.3	2.3	2.4	2.6	2.7	2.7	2.7	2.8	2.9	3.0	3.2	3.4	3.6	3.9
1973	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	3.2	3.3	3.4	3.7	3.9	4.1	4.4
1974	3.7	3.2	3.0	3.0	3.2	3.1	3.0	3.1	3.2	3.4	3.5	3.6	3.6	3.7	3.9	4.0	4.3	4.6	4.8	5.2
1975	3.8	3.3	3.1	3.1	3.3	3.2	3.1	3.2	3.4	3.5	3.7	3.7	3.8	3.9	4.1	4.2	4.5	4.7	5.0	5.4
1976	3.8	3.4	3.2	3.2	3.4	3.3	3.2	3.3	3.4	3.6	3.8	3.8	3.8	4.0	4.1	4.3	4.5	4.8	5.0	5.3
1977	3.9	3.5	3.3	3.3	3.5	3.4	3.3	3.4	3.6	3.7	3.9	3.9	4.0	4.1	4.2	4.4	4.7	4.9	5.1	5.4
1978	4.1	3.7	3.5	3.5	3.7	3.6	3.5	3.6	3.8	3.9	4.1	4.2	4.2	4.3	4.5	4.7	4.9	5.1	5.4	5.7
1979	4.3	3.9	3.8	3.8	4.0	3.9	3.9	4.0	4.1	4.3	4.5	4.5	4.6	4.8	4.9	5.1	5.4	5.6	5.9	6.2
1980	4.5	4.2	4.0	4.1	4.3	4.2	4.2	4.3	4.4	4.6	4.8	4.9	4.9	5.1	5.3	5.5	5.7	6.0	6.2	6.6
1981	4.7	4.3	4.2	4.2	4.4	4.4	4.3	4.4	4.6	4.8	4.9	5.0	5.1	5.3	5.4	5.6	5.9	6.1	6.4	6.7

TO THE END OF	FROM THE BEGINNING OF																1981
	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980		
1966	3.4																
1967	3.2	3.0															
1968	3.7	3.9	4.7														
1969	4.3	4.6	5.4	6.1													
1970	4.5	4.8	5.4	5.8	5.5												
1971	4.3	4.5	4.9	5.0	4.4	3.4											
1972	4.2	4.3	4.6	4.6	4.1	3.4	3.4										
1973	4.8	5.0	5.3	5.4	5.2	5.2	6.1	8.8									
1974	5.6	5.9	6.3	6.5	6.6	6.9	8.1	10.5	12.2								
1975	5.7	6.0	6.4	6.6	6.7	6.9	7.8	9.3	9.6	7.0							
1976	5.6	5.9	6.2	6.4	6.4	6.6	7.2	8.2	8.0	5.9	4.8						
1977	5.7	5.9	6.2	6.4	6.4	6.6	7.1	7.9	7.7	4.2	5.8	6.8					
1978	6.0	6.2	6.5	6.7	6.7	6.9	7.4	8.1	7.9	6.9	6.9	7.9	9.0				
1979	6.5	6.7	7.0	7.3	7.4	7.6	8.1	8.8	8.8	8.1	8.4	9.7	11.1	13.3			
1980	6.9	7.1	7.4	7.7	7.8	8.1	8.6	9.3	9.3	8.8	9.2	10.3	11.6	12.9	12.4		
1981	7.0	7.2	7.6	7.8	7.9	8.1	8.6	9.2	9.3	8.9	9.2	10.1	10.9	11.5	10.7	8.9	





## APPENDIX B

### MONTHLY RETURNS AND CUMULATIVE WEALTH INDICES JANUARY, 1926 TO DECEMBER, 1981

Exhibit B- 1	Common Stocks: Total Returns
Exhibit B- 2	Common Stocks: Income
Exhibit B- 3	Common Stocks: Capital Appreciation
Exhibit B- 4	Small Stocks: Total Returns
Exhibit B- 5	Long-Term Corporate Bonds: Total Returns
Exhibit B- 6	Long-Term Government Bonds: Total Returns
Exhibit B- 7	Long-Term Government Bonds: Income
Exhibit B- 8	Long-Term Government Bonds: Capital Appreciation
Exhibit B- 9	U.S. Treasury Bills: Total Returns
Exhibit B-10	Consumer Price Index: Inflation Rates
Exhibit B-11	Equity Risk Premia
Exhibit B-12	Small Stock Premia
Exhibit B-13	Default Premia
Exhibit B-14	Maturity Premia
Exhibit B-15	Common Stocks: Inflation-Adjusted Total Returns
Exhibit B-16	Small Stocks: Inflation-Adjusted Total Returns
Exhibit B-17	Long-Term Corporate Bonds: Inflation-Adjusted Total Returns.
Exhibit B-18	Long-Term Government Bonds: Inflation-Adjusted Total Returns
Exhibit B-19	U.S. Treasury Bills: Inflation-Adjusted Total Returns
Exhibit B-20	Common Stocks: Total Return Index
Exhibit B-21	Common Stocks: Capital Appreciation Index
Exhibit B-22	Small Stocks: Total Return Index
Exhibit B-23	Long-Term Corporate Bonds: Total Return Index
Exhibit B-24	Long-Term Government Bonds: Total Return Index
Exhibit B-25	Long-Term Government Bonds: Capital Appreciation Index
Exhibit B-26	U.S. Treasury Bills: Total Return Index
Exhibit B-27	Consumer Price Index
Exhibit B-28	Equity Risk Premia: Cumulative Index
Exhibit B-29	Small Stock Premia: Cumulative Index
Exhibit B-30	Default Premia: Cumulative Index
Exhibit B-31	Maturity Premia: Cumulative Index
Exhibit B-32	Common Stocks: Inflation-Adjusted Return Index
Exhibit B-33	Small Stocks: Inflation-Adjusted Return Index
Exhibit B-34	Long-Term Corporate Bonds: Inflation-Adjusted Return Index
Exhibit B-35	Long-Term Government Bonds: Inflation-Adjusted Return Index
Exhibit B-36	U.S. Treasury Bills: Inflation-Adjusted Return Index



# EXHIBIT B-1

## COMMON STOCKS : TOTAL RETURNS

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JULY	AUG	SEP	OCT	NOV	DEC	YEAR	JAN-DEC
1926	-0.0000	-0.0385	-0.0575	0.0253	0.0179	0.0457	0.0479	0.0248	0.0252	-0.0284	0.0347	0.0196	1926	0.1162
1927	-0.0173	0.0537	0.0087	0.0201	0.0607	-0.0067	0.0670	0.0515	0.0450	-0.0502	0.0721	0.0279	1927	0.3749
1928	-0.0040	-0.0125	0.1101	0.0345	0.0197	-0.0385	0.0541	0.0803	0.0259	0.0158	0.1292	0.0049	1928	0.4361
1929	0.0583	-0.0019	-0.0012	0.0176	-0.0362	-0.1140	0.0471	0.1028	-0.0476	-0.1973	-0.1246	0.0282	1929	-0.0842
1930	0.0639	0.0259	0.0812	-0.0080	-0.0096	-0.1625	0.0386	0.0141	-0.1282	-0.0855	-0.0089	-0.0706	1930	-0.2490
1931	0.0502	0.1193	-0.0475	-0.0935	-0.1279	0.1421	-0.0722	0.0182	-0.2973	0.0896	-0.0798	-0.1400	1931	-0.4334
1932	-0.0271	0.0570	-0.1158	-0.1977	-0.2176	-0.0022	0.3815	0.3869	-0.0346	-0.1349	-0.0417	0.0565	1932	-0.0819
1933	0.0087	-0.1772	0.0353	0.4256	0.1683	0.1338	-0.0862	0.1206	-0.1118	-0.0855	0.1127	0.0253	1933	0.5399
1934	0.1069	-0.0322	0.0000	-0.0251	-0.0736	0.0229	-0.1131	0.0611	-0.0033	-0.0286	0.0942	-0.0010	1934	-0.0144
1935	-0.0411	-0.0341	-0.0286	0.0980	0.0409	0.0699	0.0850	0.0280	0.0256	0.0777	0.0474	0.0394	1935	0.4767
1936	0.0670	0.0224	0.0268	-0.0751	0.0545	0.0333	0.0701	0.0151	0.0031	0.0775	0.0134	-0.0029	1936	0.3392
1937	0.0390	0.0191	-0.0077	-0.0809	-0.0024	-0.0504	0.1045	-0.0483	-0.1403	-0.0981	-0.0866	-0.0459	1937	-0.3503
1938	0.0152	0.0674	-0.2487	0.1447	-0.0330	0.2503	0.0744	-0.0226	0.0166	0.0776	-0.0273	0.0401	1938	0.3112
1939	-0.0674	0.0390	-0.1339	-0.0027	0.0733	-0.0612	0.1105	-0.0648	0.1673	-0.0123	-0.0398	0.0270	1939	-0.0041
1940	-0.0336	0.0133	0.0124	-0.0024	-0.2289	0.0809	0.0341	0.0350	0.0123	0.0422	-0.0316	0.0009	1940	-0.0978
1941	-0.0463	-0.0060	0.0071	-0.0612	0.0183	0.0578	0.0579	0.0010	-0.0068	-0.0657	-0.0284	-0.0407	1941	-0.1159
1942	0.0163	-0.0159	-0.0652	-0.0400	0.0796	0.0221	0.0337	0.0164	0.0290	0.0678	-0.0021	0.0549	1942	0.2034
1943	0.0737	0.0583	0.0545	0.0035	0.0552	0.0223	-0.0524	0.0171	-0.0263	-0.0108	-0.0654	0.0617	1943	0.2590
1944	0.0171	0.0042	0.0195	-0.0100	0.0505	0.0543	-0.0193	0.0157	-0.0008	0.0023	0.0133	0.0374	1944	0.1975
1945	0.0158	0.0683	-0.0441	0.0902	0.0195	-0.0007	-0.0180	0.0641	0.0438	0.0322	0.0396	0.0116	1945	0.3644
1946	0.0714	-0.0641	0.0480	0.0393	0.0288	-0.0370	-0.0239	-0.0674	-0.0997	-0.0060	-0.0027	0.0457	1946	-0.0807
1947	0.0255	-0.0077	-0.0149	-0.0363	0.0014	0.0554	0.0381	-0.0203	-0.0111	-0.0238	-0.0175	0.0233	1947	0.0571
1948	-0.0329	-0.0388	-0.0793	-0.0927	0.0879	-0.0508	-0.0508	0.0158	-0.0276	0.0710	-0.0961	0.0346	1948	0.0550
1949	0.0039	-0.0296	0.0328	-0.0179	-0.0258	0.0014	0.0650	0.0219	0.0263	0.0340	0.0175	0.0486	1949	0.1879
1950	0.0197	0.0199	0.0070	0.0486	0.0509	-0.0548	0.0119	0.0443	0.0592	0.0093	0.0169	0.0513	1950	0.3171
1951	0.0637	0.0157	-0.0156	0.0509	-0.0299	-0.0228	0.0711	0.0478	0.0013	-0.0103	0.0096	0.0424	1951	0.2402
1952	-0.0181	-0.0282	-0.0072	-0.0457	0.0219	-0.0495	0.0036	-0.0716	-0.0001	-0.0001	-0.0001	0.0303	1952	0.3023
1953	-0.0049	-0.0106	-0.0212	-0.0237	0.0077	-0.0134	0.0273	-0.0501	0.0034	0.0540	0.0204	0.0053	1953	-0.0099
1954	0.0536	0.0111	0.0325	0.0516	0.0418	0.0031	0.0589	-0.0275	0.0851	-0.0167	0.0909	0.0534	1954	0.5262
1955	0.0197	0.0098	-0.0030	0.0396	0.0055	0.0841	0.0621	-0.0025	0.0130	-0.0284	0.0827	0.0015	1955	0.3156
1956	-0.0347	0.0413	0.0710	-0.0004	-0.0593	0.0409	0.0530	-0.0328	-0.0440	0.0066	-0.0050	0.0370	1956	0.0656
1957	-0.0401	-0.0264	0.0215	0.0388	0.0437	0.0004	0.0131	-0.0505	-0.0602	-0.0302	0.0231	-0.0395	1957	-0.1078
1958	0.0445	-0.0141	0.0328	0.0337	0.0212	0.0279	0.0449	0.0176	0.0501	0.0270	0.0284	0.0535	1958	0.4336
1959	0.0053	0.0049	0.0020	0.0402	0.0240	-0.0022	0.0363	-0.0102	-0.0443	0.0128	0.0186	0.0292	1959	0.1195
1960	-0.0700	0.0147	-0.0123	-0.0161	0.0326	0.0211	-0.0234	0.0317	-0.0590	-0.0007	0.0465	0.0479	1960	0.0047
1961	0.0645	0.0319	0.0270	0.0051	0.0239	-0.0275	0.0342	0.0243	-0.0184	0.0298	0.0447	0.0046	1961	0.2689
1962	-0.0366	0.0209	-0.0046	-0.0607	-0.0811	-0.0803	0.0652	0.0208	-0.0465	0.0064	0.1086	0.0153	1962	-0.0873
1963	0.0506	-0.0239	0.0370	0.0500	0.0193	-0.0188	-0.0022	0.0535	-0.0097	0.0339	-0.0046	0.0262	1963	0.2280
1964	0.0283	-0.0147	0.0165	0.0075	0.0162	0.0178	0.0195	-0.0118	0.0301	0.0096	0.0005	0.0056	1964	0.1648
1965	0.0345	0.0031	-0.0133	0.0356	-0.0030	-0.0473	0.0147	0.0272	0.0334	0.0289	-0.0031	0.0106	1965	0.1245
1966	0.0062	-0.0131	-0.0205	0.0220	-0.0492	-0.0146	-0.0120	-0.0725	-0.0053	0.0494	0.0095	0.0002	1966	-0.1006
1967	0.0798	0.0072	0.0409	0.0437	-0.0477	0.0190	0.0468	-0.0070	0.0342	-0.0276	0.0065	0.0278	1967	0.2398
1968	-0.0425	-0.0261	0.0110	0.0834	0.0161	0.0195	-0.0172	0.0164	0.0400	0.0087	0.0531	-0.0402	1968	0.1106
1969	-0.0068	-0.0426	0.0359	0.0229	0.0026	-0.0542	-0.0587	0.0454	-0.0236	0.0459	-0.0297	-0.0177	1969	-0.0850
1970	-0.0743	0.0586	0.0030	-0.0889	-0.0547	-0.0482	0.0752	0.0509	0.0347	-0.0097	0.0536	0.0584	1970	0.0401
1971	0.0419	0.0141	0.0382	0.0377	-0.0367	0.0021	-0.0399	0.0412	-0.0056	-0.0404	0.0027	0.0877	1971	0.1431
1972	0.0194	0.0299	-0.0072	-0.0072	-0.0219	-0.0205	0.0036	-0.0391	-0.0036	0.0107	0.0505	0.0131	1972	0.1897
1973	-0.0159	-0.0333	-0.0002	-0.0395	-0.0139	-0.0051	0.0394	-0.0318	0.0415	-0.0003	-0.1082	0.0183	1973	-0.1466
1974	-0.0085	0.0019	-0.0217	-0.0373	-0.0272	-0.0129	-0.0759	-0.0828	-0.1170	0.1657	-0.0448	-0.0177	1974	-0.2647
1975	0.1251	0.0674	0.0237	0.0493	0.0509	0.0462	-0.0659	-0.0144	-0.0328	0.0637	0.0313	-0.0094	1975	0.3720
1976	0.1199	-0.0058	0.0326	-0.0099	-0.0073	0.0427	-0.0068	0.0014	0.0247	-0.0206	-0.0009	0.0540	1976	0.2384
1977	-0.0489	-0.0151	-0.0119	0.0014	-0.0150	0.0475	-0.0151	-0.0133	0.0000	-0.0415	0.0370	0.0048	1977	-0.0718
1978	-0.0596	-0.0161	0.0276	0.0870	0.0136	-0.0152	0.0560	0.0340	-0.0048	-0.0891	0.0260	0.0172	1978	0.0656
1979	0.0421	-0.0284	0.0575	0.0036	-0.0168	0.0410	0.0109	0.0611	0.0025	-0.0656	0.0514	0.0192	1979	0.1844
1980	0.0610	0.0031	-0.0987	0.0429	0.0562	0.0296	0.0676	0.0131	0.0281	0.0186	0.1095	-0.0315	1980	0.3242
1981	-0.0438	0.0208	0.0380	-0.0213	0.0062	-0.0080	0.0007	-0.0554	-0.0502	0.0528	0.0441	-0.0265	1981	-0.0491



# EXHIBIT B-2

## COMMON STOCKS : INCOME

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	YEAR	JAN-DEC
1926	0.0016	0.0055	0.0016	0.0026	0.0102	0.0025	0.0024	0.0078	0.0023	0.0030	0.0123	0.0030	1926	0.0562
1927	0.0015	0.0061	0.0022	0.0029	0.0085	0.0027	0.0020	0.0070	0.0018	0.0029	0.0105	0.0029	1927	0.0520
1928	0.0011	0.0051	0.0017	0.0021	0.0071	0.0020	0.0016	0.0062	0.0019	0.0023	0.0092	0.0021	1928	0.0432
1929	0.0012	0.0039	0.0012	0.0016	0.0066	0.0016	0.0014	0.0048	0.0013	0.0020	0.0091	0.0029	1929	0.0382
1930	0.0014	0.0044	0.0013	0.0016	0.0068	0.0020	0.0020	0.0066	0.0019	0.0032	0.0130	0.0036	1930	0.0488
1931	0.0013	0.0050	0.0017	0.0024	0.0093	0.0031	0.0020	0.0087	0.0022	0.0051	0.0180	0.0053	1931	0.0659
1932	0.0011	0.0043	0.0017	0.0024	0.0077	0.0027	0.0017	0.0075	0.0024	0.0031	0.0126	0.0046	1932	0.0792
1933	0.0010	0.0072	0.0018	0.0034	0.0092	0.0021	0.0018	0.0060	0.0018	0.0031	0.0126	0.0046	1933	0.0792
1934	0.0010	0.0045	0.0009	0.0019	0.0076	0.0021	0.0020	0.0069	0.0022	0.0033	0.0114	0.0031	1934	0.0479
1935	0.0011	0.0055	0.0023	0.0024	0.0086	0.0021	0.0020	0.0063	0.0018	0.0026	0.0080	0.0023	1935	0.0458
1936	0.0015	0.0056	0.0014	0.0020	0.0087	0.0028	0.0020	0.0063	0.0019	0.0026	0.0093	0.0029	1936	0.0478
1937	0.0012	0.0045	0.0017	0.0022	0.0079	0.0025	0.0019	0.0071	0.0019	0.0036	0.0146	0.0045	1937	0.0547
1938	0.0019	0.0065	0.0018	0.0035	0.0113	0.0032	0.0017	0.0048	0.0017	0.0016	0.0061	0.0024	1938	0.0476
1939	0.0015	0.0065	0.0016	0.0027	0.0110	0.0026	0.0018	0.0066	0.0027	0.0023	0.0094	0.0033	1939	0.0532
1940	0.0016	0.0066	0.0025	0.0024	0.0107	0.0043	0.0030	0.0087	0.0028	0.0028	0.0108	0.0038	1940	0.0618
1941	0.0019	0.0089	0.0030	0.0040	0.0140	0.0043	0.0030	0.0096	0.0029	0.0029	0.0137	0.0044	1941	0.0751
1942	0.0023	0.0091	0.0023	0.0037	0.0157	0.0037	0.0024	0.0093	0.0023	0.0034	0.0117	0.0032	1942	0.0713
1943	0.0020	0.0076	0.0018	0.0026	0.0104	0.0025	0.0016	0.0068	0.0025	0.0025	0.0101	0.0027	1943	0.0545
1944	0.0017	0.0068	0.0025	0.0025	0.0101	0.0032	0.0015	0.0071	0.0023	0.0023	0.0094	0.0023	1944	0.0531
1945	0.0015	0.0067	0.0021	0.0022	0.0081	0.0027	0.0020	0.0061	0.0019	0.0019	0.0072	0.0017	1945	0.0450
1946	0.0017	0.0054	0.0017	0.0017	0.0064	0.0021	0.0016	0.0056	0.0018	0.0020	0.0088	0.0027	1946	0.0422
1947	0.0020	0.0070	0.0019	0.0026	0.0103	0.0028	0.0020	0.0076	0.0026	0.0026	0.0110	0.0027	1947	0.0565
1948	0.0020	0.0070	0.0021	0.0027	0.0099	0.0024	0.0024	0.0082	0.0025	0.0032	0.0121	0.0041	1948	0.0611
1949	0.0026	0.0099	0.0027	0.0033	0.0115	0.0035	0.0028	0.0100	0.0026	0.0045	0.0162	0.0050	1949	0.0772
1950	0.0024	0.0100	0.0029	0.0035	0.0116	0.0032	0.0034	0.0118	0.0033	0.0051	0.0179	0.0051	1950	0.0830
1951	0.0024	0.0092	0.0028	0.0028	0.0107	0.0033	0.0024	0.0085	0.0021	0.0034	0.0122	0.0035	1951	0.0651
1952	0.0025	0.0083	0.0028	0.0029	0.0111	0.0029	0.0020	0.0079	0.0020	0.0030	0.0106	0.0027	1952	0.0595
1953	0.0025	0.0072	0.0028	0.0028	0.0110	0.0029	0.0017	0.0079	0.0021	0.0030	0.0114	0.0032	1953	0.0598
1954	0.0024	0.0084	0.0023	0.0026	0.0088	0.0024	0.0017	0.0065	0.0020	0.0028	0.0101	0.0026	1954	0.0539
1955	0.0017	0.0063	0.0019	0.0019	0.0068	0.0018	0.0015	0.0053	0.0016	0.0021	0.0078	0.0022	1955	0.0416
1956	0.0018	0.0066	0.0018	0.0017	0.0064	0.0018	0.0015	0.0053	0.0016	0.0021	0.0078	0.0022	1956	0.0381
1957	0.0017	0.0063	0.0018	0.0018	0.0068	0.0017	0.0017	0.0056	0.0018	0.0019	0.0071	0.0019	1957	0.0408
1958	0.0018	0.0065	0.0020	0.0019	0.0062	0.0018	0.0018	0.0057	0.0017	0.0016	0.0060	0.0015	1958	0.0391
1959	0.0014	0.0051	0.0014	0.0014	0.0050	0.0014	0.0014	0.0048	0.0013	0.0016	0.0054	0.0015	1959	0.0323
1960	0.0015	0.0056	0.0016	0.0014	0.0057	0.0016	0.0014	0.0056	0.0014	0.0017	0.0062	0.0016	1960	0.0359
1961	0.0014	0.0050	0.0014	0.0012	0.0047	0.0016	0.0014	0.0046	0.0013	0.0015	0.0054	0.0014	1961	0.0312
1962	0.0013	0.0046	0.0013	0.0013	0.0049	0.0015	0.0016	0.0055	0.0017	0.0020	0.0071	0.0018	1962	0.0351
1963	0.0014	0.0050	0.0016	0.0015	0.0050	0.0014	0.0013	0.0048	0.0014	0.0017	0.0059	0.0018	1963	0.0332
1964	0.0013	0.0048	0.0013	0.0014	0.0048	0.0014	0.0012	0.0044	0.0013	0.0015	0.0057	0.0017	1964	0.0313
1965	0.0013	0.0046	0.0013	0.0014	0.0047	0.0014	0.0013	0.0047	0.0014	0.0016	0.0056	0.0016	1965	0.0312
1966	0.0013	0.0047	0.0013	0.0015	0.0049	0.0015	0.0014	0.0053	0.0017	0.0018	0.0064	0.0017	1966	0.0341
1967	0.0016	0.0052	0.0015	0.0014	0.0048	0.0015	0.0014	0.0047	0.0014	0.0014	0.0054	0.0015	1967	0.0324
1968	0.0016	0.0051	0.0016	0.0014	0.0049	0.0014	0.0013	0.0049	0.0014	0.0015	0.0051	0.0014	1968	0.0318
1969	0.0013	0.0048	0.0014	0.0014	0.0048	0.0014	0.0014	0.0053	0.0015	0.0016	0.0056	0.0016	1969	0.0325
1970	0.0015	0.0059	0.0016	0.0016	0.0063	0.0018	0.0019	0.0064	0.0017	0.0017	0.0061	0.0016	1970	0.0387
1971	0.0014	0.0050	0.0014	0.0014	0.0048	0.0014	0.0014	0.0051	0.0014	0.0014	0.0052	0.0015	1971	0.0320
1972	0.0013	0.0046	0.0013	0.0013	0.0046	0.0013	0.0013	0.0047	0.0013	0.0014	0.0048	0.0013	1972	0.0295
1973	0.0013	0.0045	0.0013	0.0013	0.0046	0.0014	0.0014	0.0049	0.0014	0.0014	0.0048	0.0013	1973	0.0316
1974	0.0015	0.0055	0.0016	0.0017	0.0063	0.0018	0.0019	0.0074	0.0014	0.0027	0.0084	0.0024	1974	0.0444
1975	0.0023	0.0075	0.0020	0.0020	0.0068	0.0019	0.0018	0.0066	0.0018	0.0020	0.0066	0.0019	1975	0.0441
1976	0.0016	0.0056	0.0019	0.0011	0.0071	0.0019	0.0012	0.0065	0.0020	0.0017	0.0069	0.0015	1976	0.0395
1977	0.0016	0.0056	0.0021	0.0012	0.0086	0.0021	0.0011	0.0078	0.0025	0.0019	0.0100	0.0020	1977	0.0484
1978	0.0019	0.0086	0.0027	0.0016	0.0094	0.0023	0.0020	0.0081	0.0024	0.0025	0.0094	0.0023	1978	0.0545
1979	0.0024	0.0081	0.0024	0.0019	0.0095	0.0023	0.0022	0.0080	0.0025	0.0030	0.0088	0.0024	1979	0.0550
1980	0.0034	0.0075	0.0031	0.0018	0.0096	0.0026	0.0026	0.0073	0.0029	0.0026	0.0072	0.0024	1980	0.0542
1981	0.0019	0.0075	0.0020	0.0022	0.0079	0.0021	0.0032	0.0066	0.0036	0.0036	0.0075	0.0036	1981	0.0529



**EXHIBIT B-3**

## COMMON STOCKS : CAPITAL APPRECIATION

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JULY	AUG	SEP	OCT	NOV	DEC	YEAR	JAN-DEC
1926	-0.0016	-0.0440	-0.0591	0.0227	0.0077	0.0432	0.0455	0.0171	0.0229	-0.0313	0.0223	0.0166	1926	0.0572
1927	-0.0208	0.0477	0.0045	0.0172	0.0522	-0.0094	0.0450	0.0445	0.0430	-0.0531	0.0616	0.0177	1927	0.3988
1928	-0.0051	-0.0076	0.0108	0.0433	0.0137	0.0424	0.0432	0.0435	0.0430	-0.0535	0.0629	0.0039	1928	0.3988
1929	0.0571	-0.0058	-0.0023	0.0161	-0.0428	0.1124	0.0456	0.0980	-0.0489	-0.1993	-0.1337	0.0253	1929	-0.1191
1930	0.0625	0.0215	0.0799	-0.0095	-0.0165	-0.1646	0.0367	0.0075	-0.1301	-0.0893	-0.0218	-0.0742	1930	-0.2848
1931	-0.0489	0.0144	-0.0699	-0.0255	-0.1332	-0.0725	0.0958	0.0294	0.0844	-0.0728	-0.0578	-0.4533	1931	-0.4707
1932	-0.0597	0.0547	-0.0094	-0.0203	-0.1332	-0.0089	0.0770	0.3754	-0.0369	-0.1386	-0.0589	0.0519	1932	-0.1515
1933	0.0093	-0.1844	-0.0336	0.4222	0.1587	0.1317	-0.0880	0.1146	-0.1136	-0.0885	0.1027	0.0223	1933	0.4659
1934	0.1059	-0.0367	-0.0009	-0.0270	-0.0813	0.0208	-0.1152	0.0541	-0.0055	-0.0319	0.0829	-0.0042	1934	-0.0594
1935	-0.0421	-0.0394	-0.0309	0.0956	0.0323	0.0678	0.0831	0.0217	0.0239	0.0751	0.0393	0.0371	1935	0.4137
1936	0.0655	0.0168	0.0254	-0.0771	0.0458	0.0306	0.0681	0.0288	0.0013	0.0750	0.0041	-0.0058	1936	0.2792
1937	0.0378	0.0146	-0.0094	-0.0831	-0.0103	-0.0529	0.1026	-0.0554	-0.1421	-0.1017	-0.1011	-0.0504	1937	-0.3859
1938	-0.0133	0.0608	-0.2504	-0.1412	0.0443	-0.2470	0.0722	-0.0274	0.0149	-0.0740	-0.0334	0.0377	1938	-0.0545
1939	-0.0689	0.0325	-0.1354	-0.0055	0.0623	-0.0638	0.1087	-0.0714	0.1646	-0.0146	-0.0491	0.0238	1939	-0.0545
1940	-0.0352	0.0066	0.0099	-0.0049	-0.2395	0.0766	0.0311	0.0262	0.0095	0.0394	-0.0424	-0.0028	1940	-0.1529
1941	-0.0482	-0.0149	0.0040	-0.0653	0.0043	0.0535	0.0548	-0.0087	-0.0097	-0.0686	-0.0421	-0.0451	1941	-0.1786
1942	0.0138	0.0250	-0.0675	-0.0433	0.0640	0.0185	0.0548	0.0670	0.0097	0.0332	0.0517	0.0517	1942	0.1945
1943	0.0714	0.0009	-0.0059	-0.0059	0.0059	0.0188	-0.0143	0.1103	0.0237	-0.0132	-0.0755	0.0590	1943	0.1945
1944	0.0154	-0.0025	0.0169	-0.0125	0.0404	0.0510	-0.0208	0.0087	-0.0031	0.0000	0.0039	0.0351	1944	0.1380
1945	0.0143	0.0616	-0.0462	0.0880	0.0115	-0.0033	-0.0201	0.0580	0.0419	0.0303	0.0324	0.0099	1945	0.3072
1946	0.0577	0.0063	0.0076	0.0224	-0.0391	-0.0255	-0.0255	-0.0729	-0.1015	-0.0080	-0.0115	0.0429	1946	-0.1187
1947	0.0235	-0.0147	-0.0169	-0.0389	-0.0089	0.0526	-0.0362	-0.0279	-0.1337	0.0212	-0.0285	0.0207	1947	0.0000
1948	-0.0399	-0.0470	0.0771	0.0265	0.0782	0.0030	-0.0532	0.0076	-0.0301	0.0678	-0.1082	0.0305	1948	-0.0065
1949	0.0013	-0.0394	0.0301	-0.0212	-0.0373	-0.0021	0.0621	0.1120	0.0237	0.0295	0.0012	0.0436	1949	0.1026
1950	0.0173	0.0100	0.0041	0.0451	0.0393	-0.0580	0.0085	0.0325	0.0559	0.0041	-0.0010	0.0461	1950	0.2178
1951	0.0612	0.0065	-0.0183	0.0481	-0.0406	-0.0260	0.0687	0.0393	-0.0009	-0.0138	-0.0026	0.0389	1951	0.1646
1952	0.0156	-0.0365	0.0477	-0.0431	0.0232	0.0461	0.0176	-0.0146	-0.0196	-0.0008	0.0465	0.0355	1952	-0.1178
1953	-0.0072	-0.0182	-0.0236	-0.0265	-0.0032	-0.0163	0.0253	-0.0578	0.0013	0.0510	0.0610	0.0610	1953	0.0663
1954	0.0512	0.0027	0.0302	0.0490	0.0329	-0.0007	0.0572	-0.0340	0.0831	-0.0195	0.0808	0.0508	1954	0.4502
1955	0.0181	0.0035	-0.0049	0.0377	-0.0013	0.0823	0.0607	-0.0078	0.0113	-0.0305	0.0749	-0.0007	1955	0.2640
1956	-0.0365	0.0347	0.0693	-0.0021	-0.0657	0.0392	0.0515	-0.0381	-0.0455	0.0051	-0.0110	0.0353	1956	0.0262
1957	-0.0418	-0.0326	0.0196	0.0376	0.0329	0.0150	0.0514	-0.0341	0.0318	-0.0514	0.0224	0.0318	1957	0.0262
1958	0.0308	0.0428	0.0309	0.0388	0.0189	-0.0036	0.0431	0.0119	0.0484	0.0254	0.0254	0.0520	1958	0.3806
1959	0.0038	-0.0002	0.0005	0.0388	0.0189	-0.0036	0.0349	-0.0150	-0.0456	0.0113	0.0132	0.0276	1959	0.0848
1960	-0.0715	0.0092	-0.0139	-0.0175	0.0269	0.0195	-0.0248	0.0261	-0.0604	-0.0024	0.0403	0.0463	1960	-0.0297
1961	0.0532	0.0092	-0.0255	0.0038	0.0191	-0.0288	0.0328	0.0196	-0.0197	0.0283	0.0393	0.0032	1961	0.2313
1962	-0.0709	0.0143	-0.0059	-0.0620	-0.0860	-0.0818	0.0436	0.0153	-0.0482	0.0044	0.1016	0.0135	1962	-0.1181
1963	0.0491	-0.0289	0.0355	0.0485	0.0143	-0.0202	-0.0035	0.0487	-0.0110	0.0322	-0.0105	0.0244	1963	0.1888
1964	0.0269	0.0099	0.0152	0.0061	0.0115	0.0164	0.0182	-0.0162	0.0287	0.0081	-0.0052	0.0039	1964	0.1297
1965	0.0332	-0.0015	-0.0145	0.0342	-0.0077	-0.0486	0.0134	0.0225	0.0320	0.0273	-0.0088	0.0090	1965	0.0906
1966	0.0049	-0.0179	-0.0218	0.0205	-0.0541	-0.0161	-0.0135	-0.0778	-0.0070	0.0475	0.0031	-0.0015	1966	-0.1309
1967	0.0782	0.0020	0.0394	0.0422	-0.0524	0.0175	-0.0453	-0.0117	0.0328	-0.0291	0.0011	0.0263	1967	0.2009
1968	-0.0438	-0.0312	0.0094	0.0819	0.0112	-0.0091	-0.0185	0.0115	0.0385	0.0072	0.0480	0.0193	1968	0.1668
1969	-0.0082	-0.0474	0.0344	0.0215	-0.0022	-0.0556	-0.0602	0.0401	-0.0250	0.0442	-0.0353	-0.0193	1969	-0.1142
1970	-0.0759	0.0527	0.0015	-0.0905	-0.0610	-0.0500	0.0733	0.0445	0.0330	-0.0114	0.0474	0.0568	1970	0.0016
1971	0.0405	0.0091	0.0368	0.0363	-0.0416	0.0007	0.0413	0.0361	-0.0070	-0.0418	-0.0025	0.0862	1971	0.1079
1972	-0.0181	-0.0253	0.0059	-0.0044	0.0193	-0.0218	-0.0049	0.0345	0.0149	0.0149	0.0049	0.0149	1972	0.1973
1973	0.0094	-0.0044	0.0044	0.0044	0.0044	0.0044	0.0044	0.0044	0.0044	0.0044	0.0044	0.0044	1973	0.1973
1974	-0.0100	-0.0036	-0.0233	-0.0391	-0.0336	-0.0147	-0.0778	-0.0903	-0.1193	0.1630	-0.0532	-0.0202	1974	-0.2972
1975	0.1228	0.0599	0.0217	0.0473	0.0441	0.0443	-0.0677	-0.0211	-0.0346	0.0616	0.0247	-0.0115	1975	0.3155
1976	-0.1144	-0.0307	-0.0100	-0.0144	0.0409	-0.0081	-0.0091	-0.0091	-0.0226	-0.0222	-0.0078	0.0525	1976	0.1915
1977	-0.0503	-0.0217	-0.0140	0.0002	-0.0236	0.0454	-0.0162	-0.0210	-0.0025	-0.0434	0.0270	0.0028	1977	-0.1150
1978	-0.0615	-0.0248	0.0249	0.0854	0.0042	-0.0176	0.0539	0.0259	-0.0073	-0.0916	0.0166	0.0149	1978	0.0106
1979	0.0397	-0.0365	0.0551	0.0017	-0.0263	0.0387	0.0087	0.0531	0.0000	-0.0686	0.0426	0.0168	1979	0.1231
1980	0.0576	-0.0044	-0.1018	0.0411	0.0466	0.0270	0.0650	0.0058	0.0252	0.0160	0.1023	-0.0339	1980	0.2577
1981	-0.0457	0.0133	0.0360	-0.0235	-0.0017	-0.0101	-0.0025	-0.0620	-0.0538	0.0492	0.0366	-0.0301	1981	-0.0977



## EXHIBIT B-4

## SMALL STOCKS : TOTAL RETURNS

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	YEAR	JAN-DEC
1926	0.0699	-0.0639	-0.1073	0.0179	-0.0066	0.0378	0.0112	0.0256	-0.0001	-0.0227	0.0207	0.0332	1926	0.0028
1927	0.0296	0.0547	-0.0548	0.0573	0.0734	-0.0303	0.0516	-0.0178	0.0047	-0.0659	0.0808	0.0316	1927	0.2210
1928	0.0482	-0.0236	0.0531	0.0910	-0.0439	-0.0842	0.0059	0.0442	0.0890	0.0276	0.1147	-0.0513	1928	0.3969
1929	0.0035	-0.0026	-0.0200	0.0306	-0.1336	0.0533	0.0114	-0.0164	-0.0922	-0.2768	-0.1500	-0.0501	1929	-0.5136
1930	0.1293	0.0643	0.1007	-0.0698	-0.0542	-0.2168	0.0301	-0.0166	-0.1459	-0.1097	-0.0028	-0.1166	1930	-0.3815
1931	0.2103	0.2566	-0.0708	-0.2164	-0.1379	0.1819	-0.0557	-0.0763	-0.3246	-0.0770	-0.1008	-0.2195	1931	-0.4975
1932	-0.0111	-0.0278	-0.1118	-0.0519	0.0073	0.0073	-0.0552	-0.1275	-0.1320	-0.1775	-0.0429	-0.0429	1932	-0.4303
1933	-0.0083	-0.1118	-0.0538	0.2339	-0.0073	-0.0073	-0.0550	0.0924	-0.1595	-0.1236	0.0454	0.0055	1933	-0.4287
1934	0.3891	0.0166	-0.0012	0.0240	-0.1275	-0.0024	-0.2259	0.1546	-0.0167	0.0097	0.0948	0.0172	1934	0.2422
1935	-0.0328	-0.0592	-0.1188	0.0791	-0.0024	0.0305	0.0855	0.0545	0.0357	0.0994	0.1412	0.0598	1935	0.4019
1936	0.3009	0.0602	0.0066	-0.1795	0.0272	-0.0231	0.0873	0.0210	0.0542	0.0635	0.1400	0.0160	1936	0.6480
1937	0.1266	0.0657	0.0120	-0.1679	-0.0408	-0.1183	0.1235	-0.0736	-0.2539	-0.1093	-0.1453	-0.1694	1937	-0.5801
1938	0.0534	0.0343	-0.3600	0.2776	-0.0849	0.3498	0.1499	-0.1001	-0.0157	0.2136	-0.0689	0.0487	1938	0.3280
1939	-0.0848	0.0107	-0.2466	0.0142	0.1087	-0.1042	0.2535	-0.1590	0.5145	-0.0397	-0.1053	0.0422	1939	0.0035
1940	0.0009	0.0821	0.0632	0.0654	-0.3674	0.1051	0.0231	0.0255	0.0213	0.0545	0.0245	-0.0447	1940	-0.0516
1941	0.0025	-0.0288	0.0319	-0.0669	0.0044	0.0753	0.2165	-0.0060	-0.0469	-0.0672	-0.0495	-0.1204	1941	-0.0900
1942	0.1894	-0.0073	-0.0709	-0.0353	-0.0032	0.0336	0.0737	0.0325	0.0912	0.1087	-0.0511	0.0413	1942	0.4451
1943	0.2132	0.1931	0.1445	0.0933	0.1156	-0.0083	-0.1083	-0.0002	0.0428	0.0123	-0.1113	0.1241	1943	0.8837
1944	0.0641	0.0295	0.0749	-0.0532	0.0740	0.1384	-0.0299	0.0318	-0.0020	-0.0108	0.0499	0.0869	1944	0.5372
1945	0.0482	0.1009	-0.0861	0.1157	0.0500	0.0855	-0.0556	0.0557	0.0679	0.0701	0.1172	0.0171	1945	0.7361
1946	0.1562	-0.0637	0.0273	0.0696	0.0591	-0.0462	-0.0530	-0.0849	-0.1603	-0.0118	-0.0141	0.0373	1946	-0.1163
1947	0.0421	-0.0041	-0.0336	-0.1031	-0.0534	0.0552	0.0789	-0.0037	0.1115	0.0282	-0.0303	0.0359	1947	0.0092
1948	0.0154	-0.0783	0.0629	-0.0358	-0.1085	-0.0048	-0.0278	0.0006	-0.0526	0.0647	-0.0116	0.0688	1948	-0.0211
1949	0.0182	-0.0481	0.0629	-0.0358	-0.0524	-0.0096	0.0278	0.0256	0.0489	0.0472	0.0066	0.0680	1949	0.1975
1950	0.0492	0.0221	-0.0037	0.0411	0.0255	-0.0777	0.0591	0.0530	0.0521	-0.0059	0.0322	0.0953	1950	0.3875
1951	0.0830	0.0661	-0.0477	0.0367	-0.0331	-0.0529	0.0373	0.0605	0.0215	-0.0222	-0.0083	0.0044	1951	0.0780
1952	0.0299	-0.0175	-0.0519	0.0032	0.0272	0.0111	-0.0006	-0.0066	-0.0161	-0.0103	0.0485	0.0160	1952	0.0303
1953	0.0409	0.0269	-0.0067	-0.0287	0.0141	-0.0486	0.0152	-0.0628	-0.0262	0.0292	0.0126	-0.0266	1953	-0.0649
1954	0.0756	0.0094	0.0183	0.0140	0.0451	0.0086	0.0808	0.0014	0.0410	0.0068	0.0779	0.1112	1954	0.6058
1955	0.0201	0.0479	0.0085	0.0150	0.0078	0.0293	0.0064	-0.0028	0.0109	-0.0170	0.0468	0.0163	1955	0.2044
1956	-0.0047	0.0278	0.0431	0.0047	-0.0398	0.0056	0.0283	-0.0134	-0.0260	0.0104	0.0053	0.0038	1956	0.0428
1957	0.0236	-0.0200	0.0167	0.0248	0.0075	0.0073	-0.0060	-0.0386	-0.0452	-0.0832	0.0113	-0.0481	1957	-0.1457
1958	0.1105	-0.0170	0.0471	0.0376	0.0387	0.0034	0.0492	0.0428	0.0518	0.0407	0.0496	0.0313	1958	0.6489
1959	0.0575	0.0295	0.0027	0.0117	0.0014	-0.0042	0.0327	-0.0088	-0.0431	0.0227	0.0222	0.0322	1959	0.1640
1960	-0.0306	0.0050	-0.0315	-0.0187	0.0204	0.0340	-0.0189	0.0525	-0.0738	-0.0401	0.0437	0.0332	1960	-0.0329
1961	0.0915	0.0589	0.0619	0.0127	0.0427	-0.0543	0.0031	0.0130	-0.0339	0.0262	0.0613	0.0079	1961	0.3209
1962	0.0136	0.0187	0.0057	-0.0777	-0.1009	-0.0785	0.0763	0.0289	-0.0659	-0.0373	0.1248	-0.0089	1962	-0.1190
1963	0.0906	0.0034	-0.0149	0.0312	0.0436	-0.0118	0.0033	0.0517	-0.0163	0.0236	-0.0106	-0.0048	1963	0.2357
1964	0.0274	0.0365	0.0219	0.0093	0.0157	0.0163	0.0398	-0.0029	0.0402	0.0205	0.0011	-0.0112	1964	0.2352
1965	0.0529	0.0390	0.0238	0.0509	-0.0078	-0.0901	0.0449	0.0595	0.0347	0.0572	0.0371	0.0622	1965	0.4175
1966	0.0756	0.0311	-0.0192	0.0343	-0.0961	-0.0012	-0.0012	-0.1080	-0.0164	-0.1077	0.0491	0.0665	1966	-0.0701
1967	0.1838	0.0448	0.0615	0.0271	-0.0085	0.1017	0.0951	0.0020	0.0565	-0.0311	0.0117	0.0965	1967	0.8357
1968	-0.0154	-0.0709	-0.1009	-0.1461	-0.0929	-0.0030	-0.0345	-0.0363	0.0599	0.0030	0.0640	0.0062	1968	0.3597
1969	-0.0166	-0.0990	0.0396	0.0395	0.0173	-0.1165	-0.1070	0.0732	-0.0261	0.0610	-0.0557	-0.0687	1969	-0.2505
1970	-0.0608	0.0387	-0.0285	-0.1728	-0.1031	-0.0929	0.0554	0.0949	0.1086	-0.0706	0.0137	0.0726	1970	-0.1743
1971	0.1592	0.0317	0.0247	-0.0605	-0.0319	-0.0523	0.0583	0.0583	-0.0226	-0.0551	-0.0373	0.1144	1971	0.1650
1972	0.1130	0.0296	-0.0143	0.0129	-0.0191	-0.0305	-0.0413	0.0186	-0.0349	-0.0175	0.0592	-0.0214	1972	0.0443
1973	-0.0432	-0.0799	-0.0208	-0.0621	-0.0811	-0.0290	0.1194	-0.0445	0.1064	0.0084	-0.1962	-0.0014	1973	-0.3090
1974	0.1326	-0.0085	-0.0074	-0.0464	-0.0793	0.0147	-0.0219	-0.0681	-0.0653	0.1063	-0.0438	-0.0788	1974	-0.1995
1975	0.2767	0.0285	0.0618	0.0531	0.0663	0.0750	-0.0254	-0.0574	-0.0182	-0.0050	0.0320	-0.0197	1975	0.5282
1976	0.2684	0.1390	-0.0015	-0.0359	-0.0361	0.0459	0.0045	-0.0290	0.0104	-0.0209	0.0404	0.1180	1976	0.5738
1977	0.0450	-0.0039	0.0131	0.0228	-0.0028	0.0772	0.0030	-0.0107	0.0092	-0.0330	0.1086	0.0081	1977	0.2538
1978	-0.0189	0.0347	0.1032	0.0788	0.0820	-0.0189	0.0684	0.0939	-0.0032	-0.2427	0.0732	0.0168	1978	0.2346
1979	0.1321	-0.0282	0.1120	0.0387	0.0035	0.0472	0.0171	0.0756	-0.0344	-0.1154	0.0858	0.0588	1979	0.4346
1980	0.0836	-0.0284	-0.1778	0.0694	0.0750	0.0452	-0.1323	-0.0604	0.0418	0.0333	0.0766	-0.0338	1980	0.3988
1981	0.0320	0.0220	0.0880	0.0320	0.0320	0.0180	-0.0340	-0.0790	-0.0750	0.0910	0.0420	-0.0210	1981	0.1395



# EXHIBIT B-5

## LONG-TERM CORPORATE BONDS : TOTAL RETURNS

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JULY	AUG	SEP	OCT	NOV	DEC	YEAR	JAN-DEC
1926	0.0072	0.0045	0.0084	0.0097	0.0044	0.0004	0.0057	0.0044	0.0057	0.0097	0.0057	0.0056	1926	0.0737
1927	0.0056	0.0049	0.0083	0.0055	-0.0011	0.0043	0.0003	0.0083	0.0149	0.0055	0.0068	0.0048	1927	0.0744
1928	0.0027	0.0068	0.0041	0.0014	-0.0078	-0.0024	-0.0010	0.0083	0.0030	0.0083	-0.0036	0.0084	1928	0.0284
1929	0.0043	0.0030	-0.0087	0.0019	0.0045	-0.0046	0.0020	0.0020	0.0034	0.0073	-0.0018	0.0192	1929	0.0327
1930	0.0059	0.0072	0.0138	0.0084	0.0057	0.0110	0.0056	0.0136	0.0108	-0.0012	-0.0099	-0.0099	1930	0.0798
1931	0.0203	0.0048	0.0094	0.0067	0.0134	0.0052	0.0052	0.0012	-0.0014	-0.0363	-0.0189	-0.0286	1931	-0.0185
1932	-0.0052	-0.0238	0.0356	-0.0176	0.0107	-0.0009	0.0043	0.0436	0.0301	0.0074	0.0073	0.0139	1932	0.1082
1933	0.0547	-0.0523	0.0047	-0.0095	0.0588	0.0190	0.0161	0.0093	-0.0014	0.0040	-0.0248	0.0257	1933	0.1038
1934	0.0257	0.0146	0.0187	0.0104	0.0090	0.0158	0.0047	0.0047	-0.0061	0.0102	0.0129	0.0101	1934	0.1384
1935	0.0211	0.0141	0.0043	0.0112	0.0042	0.0112	0.0111	-0.0042	0.0000	0.0042	0.0069	0.0083	1935	0.0961
1936	0.0082	0.0054	0.0082	0.0026	0.0040	0.0082	0.0011	0.0067	0.0067	0.0025	0.0109	0.0010	1936	0.0674
1937	0.0024	-0.0046	-0.0114	0.0068	0.0040	0.0053	0.0039	-0.0017	0.0025	0.0067	0.0067	0.0067	1937	0.0275
1938	0.0038	0.0010	-0.0087	0.0138	0.0010	0.0095	0.0066	-0.0019	0.0109	0.0080	0.0037	0.0122	1938	0.0613
1939	0.0022	0.0064	0.0022	0.0064	0.0049	0.0035	-0.0007	-0.0392	0.0151	0.0237	0.0079	0.0078	1939	0.0397
1940	0.0049	0.0021	0.0049	-0.0092	-0.0021	0.0121	0.0021	0.0007	0.0092	0.0049	0.0063	-0.0023	1940	0.0339
1941	0.0006	0.0006	-0.0022	0.0078	0.0049	0.0043	0.0043	0.0034	0.0048	0.0034	-0.0094	0.0006	1941	0.0273
1942	0.0006	-0.0008	0.0063	0.0006	0.0020	0.0034	0.0020	0.0035	0.0020	0.0006	0.0006	0.0049	1942	0.0260
1943	0.0049	0.0006	0.0020	0.0049	0.0048	0.0048	0.0019	0.0019	0.0005	-0.0009	-0.0023	0.0049	1943	0.0283
1944	0.0020	0.0034	0.0048	0.0034	0.0005	0.0020	0.0034	0.0034	0.0019	0.0019	0.0048	0.0149	1944	0.0473
1945	0.0076	0.0046	0.0018	0.0018	-0.0011	0.0032	-0.0011	0.0004	0.0032	0.0032	0.0032	0.0133	1945	0.0408
1946	0.0128	0.0034	0.0034	-0.0043	0.0019	0.0019	-0.0012	-0.0088	-0.0026	0.0020	-0.0025	0.0113	1946	0.0172
1947	0.0005	0.0005	0.0067	0.0020	0.0004	0.0004	0.0020	-0.0071	-0.0131	-0.0099	-0.0098	0.0024	1947	-0.0234
1948	0.0024	0.0039	0.0115	0.0038	0.0008	-0.0083	-0.0052	0.0055	0.0024	0.0024	0.0085	0.0131	1948	0.0414
1949	0.0038	0.0038	0.0007	0.0023	0.0038	0.0084	0.0099	0.0037	0.0021	0.0067	0.0021	-0.0145	1949	0.0331
1950	0.0037	0.0007	0.0022	-0.0008	-0.0008	0.0023	0.0069	0.0038	-0.0039	-0.0008	0.0054	0.0023	1950	0.0212
1951	0.0019	-0.0044	-0.0237	-0.0009	-0.0015	-0.0093	0.0205	0.0114	-0.0057	-0.0145	-0.0061	0.0058	1951	-0.0269
1952	0.0195	-0.0085	0.0076	-0.0004	0.0031	0.0016	0.0016	0.0063	-0.0018	0.0039	0.0108	-0.0091	1952	0.0352
1953	-0.0080	-0.0040	-0.0033	-0.0248	-0.0030	0.0105	0.0072	-0.0085	0.0253	0.0227	0.0073	0.0172	1953	0.0341
1954	0.0124	0.0198	0.0039	-0.0034	-0.0042	0.0063	0.0040	0.0018	0.0040	0.0040	0.0025	0.0017	1954	0.0539
1955	-0.0097	-0.0063	0.0092	-0.0001	-0.0018	0.0029	-0.0041	-0.0038	0.0076	0.0078	-0.0030	0.0063	1955	0.0048
1956	0.0104	0.0026	0.0135	0.0015	-0.0015	-0.0053	-0.0053	-0.0053	-0.0010	-0.0010	-0.0126	-0.0049	1956	-0.0681
1957	0.0197	0.0093	0.0050	-0.0066	-0.0075	-0.0322	-0.0110	-0.0009	0.0095	0.0023	0.0311	0.0685	1957	0.0871
1958	0.0099	-0.0008	-0.0046	0.0031	-0.0038	-0.0153	-0.0320	-0.0096	0.0107	0.0105	-0.0058	-0.0058	1958	-0.0222
1959	-0.0028	0.0126	-0.0083	-0.0172	-0.0114	0.0044	0.0089	-0.0068	-0.0088	0.0165	0.0135	-0.0096	1959	-0.0097
1960	0.0107	0.0128	0.0191	-0.0022	0.0021	0.0141	0.0257	0.0117	-0.0063	0.0008	-0.0070	0.0104	1960	0.0907
1961	0.0148	0.0210	-0.0029	-0.0116	0.0049	-0.0080	0.0040	-0.0018	0.0144	0.0127	0.0028	-0.0026	1961	0.0482
1962	0.0080	0.0052	0.0151	0.0142	0.0000	-0.0026	-0.0015	0.0143	0.0089	0.0068	0.0062	0.0023	1962	0.0795
1963	0.0059	0.0023	0.0026	-0.0051	0.0048	0.0043	0.0028	0.0035	-0.0023	0.0049	0.0015	-0.0034	1963	0.0219
1964	0.0087	0.0054	-0.0062	0.0040	0.0057	0.0048	0.0052	0.0037	0.0021	0.0050	-0.0004	0.0088	1964	0.0477
1965	0.0081	0.0009	0.0012	0.0021	-0.0008	0.0003	0.0019	-0.0006	-0.0015	0.0046	-0.0057	-0.0149	1965	-0.0046
1966	0.0022	-0.0113	-0.0059	0.0013	-0.0026	0.0030	-0.0098	-0.0259	0.0078	0.0261	-0.0020	0.0201	1966	0.0020
1967	0.0450	-0.0201	0.0117	-0.0071	-0.0254	-0.0223	0.0041	-0.0007	0.0094	-0.0281	-0.0272	0.0127	1967	-0.0495
1968	0.0361	0.0037	-0.0197	0.0048	0.0032	0.0122	0.0341	0.0206	-0.0053	-0.0160	-0.0226	-0.0233	1968	0.0257
1969	0.0139	-0.0160	-0.0200	0.0335	-0.0227	0.0035	0.0005	-0.0020	-0.0244	0.0127	-0.0471	-0.0134	1969	-0.0809
1970	0.0141	0.0401	-0.0045	-0.0250	-0.0163	0.0001	0.0556	0.0100	0.0139	-0.0096	0.0584	0.0372	1970	0.1837
1971	0.0532	-0.0366	0.0258	-0.0236	-0.0161	0.0107	-0.0025	0.0554	-0.0102	0.0282	0.0029	0.0223	1971	0.1101
1972	-0.0035	0.0107	0.0024	0.0008	0.0033	-0.0068	-0.0030	0.0072	0.0051	0.0101	0.0249	-0.0004	1972	0.0726
1973	-0.0054	0.0023	0.0043	0.0021	-0.0059	-0.0056	-0.0474	0.0356	-0.0024	-0.0064	0.0078	-0.0089	1973	0.0114
1974	-0.0053	0.0009	-0.0307	-0.0341	0.0105	-0.0285	-0.0211	-0.0268	0.0174	0.0885	0.0117	-0.0075	1974	-0.0306
1975	0.0596	0.0137	-0.0247	-0.0052	0.0106	0.0304	-0.0030	-0.0175	-0.0126	0.0088	-0.0088	0.0442	1975	0.1464
1976	0.0188	0.0061	0.0167	-0.0015	-0.0103	0.0150	0.0149	0.0231	0.0167	0.0070	0.0319	0.0347	1976	0.1835
1977	-0.0303	-0.0020	0.0094	0.0100	0.0106	0.0175	-0.0005	0.0136	-0.0022	-0.0038	0.0061	-0.0105	1977	0.0171
1978	-0.0089	0.0051	0.0042	-0.0023	-0.0108	0.0023	0.0101	0.0257	-0.0048	-0.0205	0.0134	-0.0133	1978	-0.0007
1979	0.0184	-0.0128	0.0107	-0.0052	0.0228	0.0269	-0.0031	0.0006	-0.0179	-0.0890	0.0222	-0.0108	1979	-0.0418
1980	-0.0675	-0.0678	-0.0051	0.1419	0.0558	0.0375	-0.0462	-0.0443	-0.0242	-0.0173	0.0008	0.0291	1980	-0.0262
1981	-0.0150	-0.0246	0.0296	-0.0799	0.0634	-0.0010	-0.0377	-0.0352	-0.0230	0.0591	0.1315	-0.0577	1981	-0.0096



## EXHIBIT B-6

## LONG-TERM GOVERNMENT BONDS : TOTAL RETURNS

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	YEAR	JAN-DEC
1926	0.0138	0.0063	0.0041	0.0076	0.0014	0.0038	0.0004	0.0000	0.0038	0.0102	0.0160	0.0078	1926	0.0777
1927	0.0075	0.0088	0.0253	-0.0005	0.0109	-0.0049	0.0050	0.0076	0.0018	0.0099	0.0097	0.0072	1927	0.0893
1928	-0.0016	0.0048	0.0045	0.0077	-0.0004	-0.0041	-0.0217	-0.0076	-0.0041	0.0158	0.0003	0.0004	1928	0.0010
1929	-0.0090	-0.0157	-0.0144	0.0275	-0.0194	0.0145	-0.0000	-0.0034	0.0028	0.0382	0.0236	-0.0089	1929	0.0342
1930	-0.0057	0.0129	0.0083	-0.0016	0.0140	0.0051	0.0034	0.0013	0.0074	0.0035	0.0042	-0.0070	1930	0.0466
1931	-0.0124	0.0085	0.0104	0.0086	0.0145	0.0004	-0.0042	0.0012	-0.0281	-0.0330	0.0027	-0.0220	1931	-0.0531
1932	0.0034	0.0413	-0.0018	0.0404	-0.0497	0.0392	0.0481	0.0003	0.0057	-0.0017	-0.0035	-0.0131	1932	-0.1684
1933	0.0148	-0.0258	0.0097	-0.0032	0.0303	0.0050	-0.0017	0.0043	0.0023	-0.0011	-0.0015	-0.0013	1933	-0.0019
1934	0.0257	0.0081	0.0197	0.0126	0.0131	0.0067	0.0040	-0.0118	-0.0146	0.0182	0.0037	0.0112	1934	0.1002
1935	0.0182	0.0092	0.0041	0.0079	-0.0057	0.0092	0.0046	-0.0133	0.0009	0.0061	0.0010	0.0070	1935	0.0498
1936	0.0055	0.0081	0.0106	0.0035	0.0040	0.0021	0.0060	0.0111	-0.0031	0.0006	0.0205	0.0038	1936	0.0751
1937	-0.0013	0.0086	-0.0412	0.0039	0.0053	-0.0018	0.0138	-0.0104	0.0045	0.0042	0.0096	0.0082	1937	0.0023
1938	0.0057	0.0052	-0.0037	0.0210	0.0044	0.0004	0.0043	0.0000	0.0022	0.0087	-0.0022	0.0080	1938	0.0553
1939	0.0059	0.0080	0.0125	0.0118	0.0171	-0.0027	0.0113	-0.0201	-0.0545	0.0410	0.0162	0.0145	1939	0.0594
1940	-0.0017	0.0027	0.0177	-0.0035	-0.0299	0.0258	0.0052	0.0028	0.0110	0.0031	0.0205	0.0067	1940	0.0609
1941	-0.0201	0.0020	0.0096	0.0129	0.0027	0.0066	0.0022	0.0018	-0.0012	0.0140	-0.0029	-0.0177	1941	0.0093
1942	0.0069	0.0011	0.0092	-0.0029	0.0075	0.0003	0.0018	0.0038	0.0003	0.0024	-0.0035	0.0049	1942	0.0322
1943	0.0033	-0.0006	0.0009	0.0048	0.0050	0.0018	-0.0001	0.0021	0.0011	0.0005	-0.0001	0.0018	1943	0.0208
1944	0.0021	0.0032	0.0021	0.0013	0.0028	0.0008	0.0036	0.0027	0.0014	0.0012	0.0024	0.0042	1944	0.0281
1945	0.0127	0.0077	0.0021	0.0160	0.0056	0.0169	-0.0086	0.0026	0.0054	0.0104	0.0125	0.0194	1945	0.1073
1946	0.0025	0.0032	0.0010	-0.0135	-0.0012	0.0070	-0.0040	-0.0112	-0.0009	0.0074	-0.0054	0.0145	1946	-0.0010
1947	0.0047	0.0006	0.0024	-0.0033	0.0033	0.0010	0.0063	0.0081	-0.0044	-0.0037	-0.0174	-0.0192	1947	-0.0263
1948	0.0020	0.0046	0.0045	0.0045	0.0141	-0.0084	-0.0021	0.0004	0.0007	0.0074	0.0074	0.0052	1948	0.0340
1949	0.0082	0.0049	0.0074	0.0011	0.0019	0.0167	0.0033	0.0111	-0.0011	0.0019	0.0021	0.0052	1949	0.0645
1950	-0.0061	0.0021	0.0008	0.0030	0.0033	-0.0025	0.0055	0.0014	-0.0072	-0.0048	0.0035	0.0016	1950	0.0004
1951	0.0058	-0.0074	-0.0157	-0.0063	-0.0069	-0.0052	0.0138	0.0099	-0.0080	0.0010	-0.0136	-0.0061	1951	-0.0394
1952	0.0028	0.0014	0.0111	0.0171	-0.0034	0.0003	-0.0020	-0.0070	-0.0130	0.0148	0.0015	-0.0086	1952	0.0116
1953	0.0012	-0.0087	-0.0088	-0.0105	-0.0148	0.0223	0.0039	-0.0008	0.0299	0.0074	-0.0049	0.0206	1953	0.0363
1954	0.0089	0.0240	0.0058	0.0104	-0.0087	0.0163	0.0134	-0.0036	-0.0010	0.0006	-0.0025	0.0064	1954	0.0719
1955	-0.0241	-0.0078	0.0087	0.0001	0.0073	-0.0076	-0.0102	0.0004	0.0073	0.0144	-0.0045	0.0037	1955	-0.0130
1956	0.0083	-0.0002	-0.0149	-0.0113	0.0225	0.0027	-0.0209	-0.0186	0.0050	-0.0034	-0.0057	-0.0179	1956	-0.0559
1957	0.0346	0.0025	-0.0024	-0.0222	-0.0023	-0.0180	-0.0041	0.0002	0.0076	-0.0050	0.0533	0.0307	1957	0.0745
1958	-0.0084	0.0100	0.0102	0.0186	0.0001	-0.0160	-0.0278	-0.0436	-0.0117	0.0139	0.0120	-0.0181	1958	-0.0610
1959	-0.0080	0.0117	0.0017	-0.0117	-0.0006	0.0010	0.0060	-0.0041	-0.0057	0.0150	-0.0119	-0.0159	1959	-0.0226
1960	0.0112	0.0204	0.0282	-0.0170	0.0152	0.0173	0.0368	-0.0067	0.0075	-0.0028	0.0066	0.0279	1960	0.1378
1961	-0.0107	0.0200	-0.0038	0.0115	-0.0046	-0.0075	0.0035	-0.0038	0.0129	0.0071	-0.0020	-0.0125	1961	0.0097
1962	-0.0044	0.0103	0.0253	0.0082	0.0046	-0.0076	-0.0109	0.0187	0.0061	0.0084	0.0021	0.0035	1962	0.0689
1963	-0.0001	0.0008	0.0009	0.0012	0.0023	0.0019	0.0031	0.0021	0.0004	-0.0026	0.0051	-0.0006	1963	0.0121
1964	-0.0014	-0.0011	0.0037	0.0047	0.0050	0.0069	0.0008	0.0020	0.0050	0.0043	0.0017	0.0030	1964	0.0351
1965	0.0040	0.0014	0.0054	0.0036	0.0018	0.0047	0.0022	-0.0013	0.0034	0.0027	-0.0062	-0.0078	1965	0.0071
1966	-0.0150	0.0140	-0.0063	-0.0063	-0.0058	-0.0016	-0.0033	-0.0204	0.0332	0.0228	-0.0148	0.0413	1966	0.0365
1967	0.0154	-0.0221	0.0198	-0.0039	-0.0039	-0.0312	0.0068	-0.0008	-0.0008	-0.0400	-0.0197	0.0919	1967	-0.0919
1968	0.0328	-0.0033	-0.0212	0.0227	0.0043	0.0230	0.0289	-0.0003	-0.0102	-0.0132	-0.0269	-0.0363	1968	-0.0024
1969	-0.0206	0.0042	0.0010	0.0427	-0.0490	0.0214	0.0079	-0.0069	-0.0531	0.0365	-0.0243	-0.0068	1969	-0.0508
1970	-0.0021	0.0587	-0.0068	-0.0413	-0.0468	0.0486	0.0319	-0.0019	0.0228	-0.0109	0.0791	-0.0084	1970	0.1210
1971	0.0506	-0.0163	0.0526	-0.0283	-0.0006	-0.0159	0.0030	0.0471	0.0204	0.0167	-0.0047	0.0044	1971	0.1323
1972	-0.0064	0.0088	-0.0082	0.0027	0.0270	-0.0065	0.0216	0.0029	-0.0083	0.0234	0.0226	-0.0229	1972	0.0568
1973	-0.0321	0.0014	0.0082	0.0046	-0.0105	-0.0021	-0.0433	0.0391	0.0318	-0.0130	0.0161	-0.0082	1973	-0.0111
1974	-0.0083	-0.0024	-0.0292	-0.0253	0.0123	0.0045	-0.0029	-0.0232	0.0247	0.0489	0.0296	0.0171	1974	0.0435
1975	0.0225	0.0131	-0.0267	-0.0182	0.0212	0.0292	-0.0087	-0.0068	-0.0098	0.0475	-0.0109	0.0390	1975	0.0919
1976	0.0090	0.0062	0.0166	0.0018	-0.0158	0.0208	0.0078	0.0211	0.0145	0.0084	0.0339	0.0327	1976	0.1675
1977	-0.0388	-0.0044	0.0089	0.0073	0.0025	0.0145	-0.0038	0.0163	-0.0027	-0.0094	0.0095	-0.0166	1977	-0.0067
1978	-0.0078	-0.0009	-0.0028	0.0000	-0.0065	-0.0062	0.0141	0.0216	-0.0102	-0.0203	0.0190	-0.0127	1978	-0.0116
1979	0.0193	-0.0129	0.0130	-0.0114	0.0259	0.0314	-0.0089	-0.0037	-0.0115	-0.0846	0.0313	0.0056	1979	-0.0122
1980	-0.0742	-0.0463	-0.0317	0.1524	0.0420	0.0357	-0.0478	-0.0428	-0.0265	-0.0264	0.0108	0.0344	1980	-0.0395
1981	-0.0113	-0.0428	0.0378	-0.0517	0.0626	-0.0185	-0.0356	-0.0388	-0.0143	0.0832	0.1409	-0.0714	1981	0.0185



# EXHIBIT B-7

LONG-TERM GOVERNMENT BONDS : INCOME													YEAR	JAN-DEC
YEAR	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	YEAR	JAN-DEC
1926	0.0031	0.0028	0.0032	0.0030	0.0028	0.0033	0.0031	0.0031	0.0030	0.0030	0.0031	0.0030	1926	0.0373
1927	0.0030	0.0027	0.0029	0.0027	0.0028	0.0027	0.0027	0.0029	0.0027	0.0028	0.0027	0.0027	1927	0.0337
1928	0.0027	0.0025	0.0027	0.0027	0.0026	0.0027	0.0027	0.0029	0.0027	0.0028	0.0027	0.0027	1928	0.0329
1929	0.0029	0.0027	0.0028	0.0034	0.0030	0.0030	0.0032	0.0030	0.0032	0.0031	0.0026	0.0031	1929	0.0363
1930	0.0029	0.0026	0.0029	0.0027	0.0027	0.0029	0.0028	0.0026	0.0029	0.0027	0.0026	0.0028	1930	0.0334
1931	0.0028	0.0026	0.0029	0.0027	0.0026	0.0028	0.0027	0.0027	0.0027	0.0029	0.0031	0.0032	1931	0.0342
1932	0.0032	0.0032	0.0031	0.0030	0.0028	0.0028	0.0028	0.0028	0.0028	0.0026	0.0026	0.0027	1932	0.0351
1933	0.0027	0.0023	0.0027	0.0025	0.0028	0.0025	0.0026	0.0026	0.0025	0.0026	0.0025	0.0028	1933	0.0316
1934	0.0029	0.0024	0.0027	0.0025	0.0025	0.0024	0.0024	0.0024	0.0023	0.0027	0.0025	0.0025	1934	0.0308
1935	0.0025	0.0021	0.0022	0.0023	0.0023	0.0022	0.0024	0.0023	0.0023	0.0023	0.0024	0.0024	1935	0.0279
1936	0.0024	0.0023	0.0024	0.0022	0.0022	0.0024	0.0023	0.0023	0.0021	0.0023	0.0022	0.0022	1936	0.0275
1937	0.0021	0.0020	0.0022	0.0023	0.0022	0.0025	0.0024	0.0023	0.0023	0.0023	0.0024	0.0023	1937	0.0277
1938	0.0023	0.0021	0.0023	0.0022	0.0022	0.0021	0.0021	0.0022	0.0021	0.0022	0.0021	0.0022	1938	0.0263
1939	0.0021	0.0019	0.0021	0.0019	0.0020	0.0018	0.0019	0.0018	0.0019	0.0023	0.0020	0.0019	1939	0.0238
1940	0.0020	0.0018	0.0019	0.0018	0.0019	0.0019	0.0020	0.0019	0.0018	0.0018	0.0018	0.0017	1940	0.0224
1941	0.0016	0.0016	0.0018	0.0017	0.0017	0.0016	0.0016	0.0016	0.0016	0.0016	0.0014	0.0016	1941	0.0197
1942	0.0021	0.0019	0.0021	0.0020	0.0019	0.0021	0.0021	0.0021	0.0020	0.0021	0.0020	0.0021	1942	0.0247
1943	0.0020	0.0019	0.0021	0.0021	0.0019	0.0021	0.0021	0.0021	0.0020	0.0021	0.0021	0.0021	1943	0.0247
1944	0.0021	0.0020	0.0021	0.0020	0.0022	0.0020	0.0021	0.0021	0.0020	0.0021	0.0020	0.0020	1944	0.0249
1945	0.0021	0.0018	0.0020	0.0019	0.0019	0.0019	0.0018	0.0019	0.0018	0.0019	0.0018	0.0018	1945	0.0229
1946	0.0017	0.0016	0.0018	0.0017	0.0017	0.0016	0.0016	0.0017	0.0018	0.0019	0.0019	0.0019	1946	0.0209
1947	0.0018	0.0016	0.0018	0.0017	0.0017	0.0016	0.0016	0.0017	0.0018	0.0018	0.0017	0.0021	1947	0.0216
1948	0.0020	0.0019	0.0022	0.0020	0.0018	0.0021	0.0019	0.0021	0.0020	0.0019	0.0021	0.0020	1948	0.0242
1949	0.0020	0.0018	0.0019	0.0018	0.0020	0.0019	0.0017	0.0019	0.0017	0.0018	0.0017	0.0017	1949	0.0222
1950	0.0018	0.0016	0.0018	0.0016	0.0019	0.0017	0.0018	0.0018	0.0017	0.0019	0.0018	0.0018	1950	0.0216
1951	0.0020	0.0017	0.0019	0.0020	0.0021	0.0020	0.0023	0.0021	0.0019	0.0023	0.0021	0.0022	1951	0.0248
1952	0.0023	0.0021	0.0023	0.0022	0.0020	0.0022	0.0022	0.0021	0.0023	0.0023	0.0021	0.0024	1952	0.0268
1953	0.0023	0.0021	0.0023	0.0024	0.0024	0.0024	0.0025	0.0025	0.0025	0.0023	0.0024	0.0024	1953	0.0295
1954	0.0023	0.0022	0.0025	0.0022	0.0020	0.0024	0.0022	0.0023	0.0021	0.0021	0.0023	0.0023	1954	0.0273
1955	0.0022	0.0022	0.0024	0.0022	0.0025	0.0023	0.0023	0.0027	0.0024	0.0025	0.0024	0.0024	1955	0.0288
1956	0.0025	0.0023	0.0023	0.0026	0.0026	0.0023	0.0026	0.0026	0.0025	0.0029	0.0027	0.0028	1956	0.0311
1957	0.0029	0.0025	0.0026	0.0029	0.0029	0.0025	0.0033	0.0030	0.0031	0.0031	0.0029	0.0029	1957	0.0352
1958	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0027	0.0027	0.0032	0.0032	0.0032	0.0032	1958	0.0328
1959	0.0031	0.0031	0.0035	0.0033	0.0033	0.0036	0.0035	0.0035	0.0034	0.0035	0.0035	0.0036	1959	0.0418
1960	0.0035	0.0037	0.0036	0.0032	0.0037	0.0034	0.0032	0.0034	0.0032	0.0033	0.0032	0.0033	1960	0.0414
1961	0.0033	0.0030	0.0031	0.0031	0.0034	0.0032	0.0033	0.0033	0.0032	0.0034	0.0032	0.0031	1961	0.0398
1962	0.0037	0.0032	0.0033	0.0033	0.0033	0.0030	0.0034	0.0034	0.0030	0.0035	0.0031	0.0032	1962	0.0400
1963	0.0032	0.0029	0.0031	0.0034	0.0033	0.0030	0.0036	0.0033	0.0034	0.0034	0.0032	0.0036	1963	0.0401
1964	0.0035	0.0032	0.0037	0.0035	0.0032	0.0038	0.0035	0.0035	0.0034	0.0034	0.0035	0.0035	1964	0.0425
1965	0.0033	0.0032	0.0038	0.0033	0.0033	0.0038	0.0034	0.0037	0.0035	0.0034	0.0037	0.0037	1965	0.0430
1966	0.0038	0.0034	0.0040	0.0036	0.0041	0.0039	0.0038	0.0043	0.0041	0.0040	0.0038	0.0039	1966	0.0476
1967	0.0040	0.0034	0.0039	0.0035	0.0043	0.0039	0.0043	0.0042	0.0040	0.0045	0.0045	0.0044	1967	0.0499
1968	0.0050	0.0042	0.0043	0.0049	0.0046	0.0042	0.0048	0.0042	0.0044	0.0045	0.0043	0.0049	1968	0.0553
1969	0.0050	0.0046	0.0047	0.0055	0.0047	0.0055	0.0052	0.0048	0.0055	0.0057	0.0049	0.0060	1969	0.0639
1970	0.0056	0.0052	0.0056	0.0054	0.0055	0.0064	0.0059	0.0057	0.0056	0.0055	0.0058	0.0053	1970	0.0696
1971	0.0051	0.0046	0.0056	0.0048	0.0047	0.0056	0.0052	0.0055	0.0049	0.0047	0.0051	0.0050	1971	0.0625
1972	0.0050	0.0047	0.0049	0.0048	0.0055	0.0049	0.0051	0.0049	0.0047	0.0052	0.0048	0.0045	1972	0.0606
1973	0.0054	0.0051	0.0056	0.0057	0.0057	0.0058	0.0061	0.0062	0.0055	0.0063	0.0058	0.0060	1973	0.0712
1974	0.0061	0.0055	0.0059	0.0068	0.0068	0.0061	0.0072	0.0065	0.0071	0.0070	0.0062	0.0067	1974	0.0807
1975	0.0068	0.0060	0.0066	0.0067	0.0067	0.0070	0.0068	0.0065	0.0073	0.0072	0.0061	0.0075	1975	0.0841
1976	0.0065	0.0061	0.0071	0.0064	0.0059	0.0073	0.0065	0.0069	0.0064	0.0061	0.0066	0.0063	1976	0.0810
1977	0.0063	0.0063	0.0063	0.0063	0.0063	0.0063	0.0063	0.0063	0.0063	0.0063	0.0063	0.0063	1977	0.0785
1978	0.0066	0.0067	0.0067	0.0068	0.0069	0.0070	0.0071	0.0070	0.0069	0.0070	0.0073	0.0072	1978	0.0864
1979	0.0074	0.0072	0.0074	0.0074	0.0075	0.0074	0.0072	0.0073	0.0074	0.0076	0.0084	0.0082	1979	0.0942
1980	0.0081	0.0088	0.0094	0.0098	0.0095	0.0082	0.0080	0.0085	0.0090	0.0093	0.0097	0.0097	1980	0.1124
1981	0.0096	0.0098	0.0104	0.0101	0.0108	0.0103	0.0106	0.0111	0.0117	0.0120	0.0113	0.0099	1981	0.1354



# EXHIBIT B-8

## LONG-TERM GOVERNMENT BONDS : CAPITAL APPRECIATION

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JULY	AUG	SEP	OCT	NOV	DEC	YEAR	JAN-DEC
1926	0.0106	0.0035	0.0009	0.0046	-0.0014	0.0005	-0.0027	-0.0031	0.0007	0.0072	0.0129	0.0048	1926	0.0391
1927	0.0045	0.0061	0.0224	-0.0032	0.0081	-0.0096	0.0022	0.0047	-0.0009	0.0071	0.0071	0.0045	1927	0.0539
1928	-0.0063	0.0036	0.0019	-0.0029	-0.0104	0.0015	-0.0245	0.0047	-0.0067	0.0128	-0.0024	-0.0024	1928	-0.0313
1929	-0.0119	-0.0184	-0.0171	-0.0242	-0.0226	0.0116	-0.0032	-0.0064	-0.0004	0.0351	0.0211	-0.0120	1929	-0.0021
1930	-0.0086	0.0102	0.0055	-0.0043	0.0113	0.0022	0.0007	-0.0013	0.0045	0.0008	0.0017	-0.0098	1930	0.0128
1931	-0.0149	0.0059	0.0076	0.0059	0.0119	-0.0024	0.0069	-0.0015	-0.0307	-0.0360	-0.0004	-0.0252	1931	-0.0847
1932	0.0002	-0.0049	0.0574	-0.0524	-0.0524	0.0362	0.0453	-0.0025	0.0031	-0.0044	0.0006	-0.0104	1932	0.1292
1933	0.0125	-0.0282	0.0070	-0.0557	-0.0557	0.0043	0.0016	-0.0025	-0.0002	-0.0177	-0.0174	-0.0140	1933	-0.0314
1934	0.0228	0.0057	0.0170	0.0101	0.0106	0.0043	0.0016	-0.0143	-0.0169	0.0155	0.0013	0.0087	1934	0.0676
1935	0.0157	0.0070	0.0019	0.0056	-0.0079	0.0070	0.0022	-0.0156	-0.0014	0.0038	-0.0014	0.0047	1935	0.0214
1936	0.0031	0.0059	0.0083	0.0013	0.0019	-0.0002	0.0037	0.0088	-0.0053	-0.0017	0.0181	0.0017	1936	0.0464
1937	-0.0034	0.0067	-0.0434	0.0016	0.0031	-0.0043	0.0114	-0.0128	0.0022	0.0012	0.0072	0.0059	1937	-0.0248
1938	0.0034	0.0031	-0.0059	0.0187	0.0022	-0.0017	0.0022	-0.0001	0.0065	-0.0043	0.0043	0.0059	1938	0.0283
1939	0.0038	0.0061	0.0105	0.0099	0.0151	-0.0045	0.0095	-0.0219	-0.0564	0.0386	0.0142	0.0125	1939	0.0348
1940	-0.0037	0.0009	0.0158	-0.0053	-0.0318	0.0239	0.0032	0.0009	0.0092	0.0013	0.0187	0.0050	1940	0.0377
1941	-0.0217	0.0004	0.0078	0.0112	0.0011	0.0050	0.0005	0.0002	-0.0028	0.0124	-0.0044	-0.0194	1941	-0.0102
1942	0.0048	-0.0007	0.0071	-0.0049	0.0056	-0.0018	-0.0003	0.0017	0.0004	0.0004	-0.0055	0.0028	1942	0.0073
1943	0.0013	-0.0024	-0.0012	0.0028	0.0031	-0.0003	-0.0021	-0.0000	-0.0009	-0.0015	-0.0021	-0.0003	1943	-0.0038
1944	0.0000	0.0012	0.0000	-0.0006	0.0006	-0.0012	0.0015	0.0006	-0.0006	-0.0009	0.0003	0.0022	1944	0.0032
1945	0.0105	0.0058	0.0001	0.0141	0.0037	0.0150	-0.0104	0.0007	0.0037	0.0085	0.0108	0.0177	1945	0.0827
1946	0.0008	0.0017	-0.0006	-0.0152	-0.0030	0.0054	-0.0058	-0.0129	-0.0028	0.0055	-0.0072	0.0126	1946	-0.0215
1947	-0.0024	0.0005	0.0002	-0.0054	0.0016	-0.0009	0.0044	0.0064	-0.0062	-0.0055	-0.0191	-0.0213	1947	-0.0470
1948	0.0000	0.0028	0.0013	0.0025	0.0123	-0.0105	-0.0041	-0.0020	-0.0006	-0.0012	0.0055	0.0036	1948	0.0096
1949	0.0062	0.0051	0.0055	-0.0006	-0.0000	0.0148	0.0016	0.0092	-0.0029	0.0001	0.0004	0.0035	1949	0.0414
1950	-0.0080	0.0005	-0.0010	0.0014	0.0014	-0.0042	0.0037	-0.0004	-0.0089	-0.0067	0.0017	-0.0001	1950	-0.0207
1951	0.0038	-0.0091	-0.0176	-0.0083	-0.0090	-0.0082	0.0116	0.0077	-0.0098	-0.0013	-0.0157	-0.0083	1951	-0.0627
1952	-0.0007	-0.0007	0.0189	-0.0054	-0.0019	-0.0042	-0.0091	-0.0153	0.0023	0.0124	-0.0036	-0.0110	1952	-0.0148
1953	-0.0011	-0.0108	0.0113	-0.0129	-0.0171	0.0125	0.0014	0.0033	0.0275	0.0051	-0.0074	0.0180	1953	0.0077
1954	0.0066	0.0218	0.0034	0.0081	-0.0107	0.0138	0.0113	-0.0059	-0.0031	-0.0015	-0.0048	0.0042	1954	0.0455
1955	-0.0264	-0.0100	0.0063	-0.0022	0.0048	-0.0099	-0.0125	-0.0023	0.0049	0.0119	-0.0069	0.0013	1955	-0.0407
1956	0.0058	-0.0025	-0.0172	-0.0139	0.0199	-0.0094	0.0234	-0.0023	-0.0044	-0.0084	-0.0207	0.0046	1956	-0.0846
1957	0.0317	0.0000	-0.0050	-0.0250	-0.0052	-0.0206	-0.0074	-0.0028	0.0045	-0.0081	-0.0045	0.0277	1957	0.0381
1958	-0.0112	0.0075	0.0075	0.0160	-0.0024	-0.0187	-0.0306	-0.0463	-0.0149	0.0106	0.0092	-0.0213	1958	-0.0923
1959	-0.0111	0.0087	-0.0018	-0.0150	-0.0038	-0.0026	0.0025	-0.0076	-0.0091	0.0115	-0.0154	-0.0195	1959	-0.0620
1960	0.0077	0.0167	0.0246	-0.0202	0.0115	0.0139	0.0335	-0.0101	0.0043	-0.0061	-0.0098	0.0247	1960	0.0929
1961	-0.0140	0.0170	-0.0069	0.0085	-0.0080	-0.0106	0.0001	-0.0071	0.0097	0.0037	-0.0052	-0.0156	1961	-0.0286
1962	-0.0051	0.0071	0.0220	0.0049	0.0014	-0.0106	-0.0143	0.0153	0.0031	0.0049	-0.0010	0.0003	1962	0.0278
1963	-0.0033	-0.0022	-0.0022	-0.0046	-0.0011	-0.0011	-0.0005	-0.0011	-0.0029	-0.0060	0.0019	-0.0042	1963	-0.0270
1964	-0.0048	-0.0043	0.0000	0.0012	0.0018	0.0031	-0.0028	-0.0015	0.0015	0.0009	-0.0018	-0.0005	1964	-0.0072
1965	0.0007	-0.0018	0.0016	0.0003	-0.0015	0.0009	-0.0012	-0.0050	-0.0069	-0.0007	-0.0100	-0.0115	1965	-0.0345
1966	-0.0142	-0.0284	0.0256	-0.0099	-0.0100	-0.0054	-0.0074	-0.0249	0.0292	0.0188	-0.0187	0.0374	1966	-0.0106
1967	0.0115	-0.0255	0.0159	-0.0326	-0.0082	-0.0351	0.0026	-0.0126	-0.0045	-0.0445	-0.0241	0.0148	1967	-0.1355
1968	-0.0278	-0.0075	-0.0254	0.0178	-0.0003	0.0188	0.0241	-0.0045	-0.0146	-0.0177	-0.0312	-0.0412	1968	-0.0551
1969	-0.0256	-0.0004	0.0036	0.0371	-0.0537	0.0159	0.0027	-0.0117	-0.0586	0.0309	-0.0293	-0.0129	1969	-0.1083
1970	0.0077	0.0535	-0.0124	-0.0467	-0.0523	0.0422	0.0260	-0.0076	0.0172	-0.0164	0.0733	-0.0137	1970	0.0484
1971	0.0455	-0.0209	0.0470	-0.0331	-0.0053	-0.0214	0.0022	0.0416	0.0154	0.0120	-0.0098	-0.0006	1971	0.0660
1972	-0.0114	0.0041	-0.0131	-0.0021	-0.0215	-0.0173	0.0165	-0.0021	-0.0129	0.0182	-0.0178	-0.0275	1972	-0.0335
1973	-0.0375	-0.0037	0.0026	-0.0012	0.0012	-0.0016	0.0449	-0.0029	0.0176	0.0419	0.0233	0.0105	1973	0.0773
1974	-0.0144	-0.0079	-0.0350	-0.0320	0.0055	-0.0016	-0.0101	-0.0298	0.0176	0.0419	0.0233	0.0105	1974	-0.0346
1975	0.0157	0.0071	-0.0333	-0.0249	0.0145	0.0222	-0.0155	-0.0133	-0.0171	0.0403	-0.0170	0.0316	1975	0.0073
1976	0.0025	0.0001	-0.0094	-0.0044	0.0135	-0.0013	0.0143	-0.0081	-0.0081	0.0283	0.0073	0.0263	1976	0.0807
1977	-0.0451	-0.0108	0.0026	0.0010	0.0058	0.0103	-0.0101	0.0101	-0.0090	-0.0158	0.0031	-0.0158	1977	-0.0795
1978	-0.0149	-0.0058	-0.0090	-0.0068	-0.0133	-0.0132	0.0070	0.0146	-0.0171	-0.0273	0.0117	-0.0198	1978	-0.0908
1979	0.0119	-0.0202	0.0056	-0.0188	0.0184	0.0240	-0.0161	-0.0110	-0.0189	-0.0922	0.0229	-0.0026	1979	-0.0979
1980	-0.0822	-0.0551	-0.0410	0.1427	0.0334	0.0274	-0.0558	-0.0513	-0.0355	-0.0357	0.0012	0.0248	1980	-0.1377
1981	-0.0210	-0.0527	0.0274	-0.0618	0.0518	-0.0288	-0.0461	-0.0499	-0.0259	-0.0711	0.1296	-0.0813	1981	-0.1040



# EXHIBIT B-9

## U.S. TREASURY BILLS : TOTAL RETURNS

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	YEAR	JAN-DEC
1926	0.0034	0.0027	0.0030	0.0034	0.0001	0.0035	0.0022	0.0025	0.0023	0.0032	0.0031	0.0028	1926	0.0327
1927	0.0025	0.0026	0.0030	0.0026	0.0030	0.0026	0.0030	0.0028	0.0021	0.0027	0.0038	0.0024	1927	0.0314
1928	0.0025	0.0033	0.0029	0.0025	0.0032	0.0021	0.0032	0.0032	0.0031	0.0021	0.0031	0.0024	1928	0.0314
1929	0.0034	0.0036	0.0034	0.0036	0.0044	0.0052	0.0033	0.0040	0.0035	0.0046	0.0037	0.0037	1929	0.0475
1930	0.0014	0.0030	0.0035	0.0021	0.0026	0.0027	0.0020	0.0009	0.0022	0.0009	0.0013	0.0014	1930	0.0241
1931	0.0015	0.0004	0.0013	0.0008	0.0009	0.0008	0.0004	0.0003	0.0003	0.0010	0.0017	0.0012	1931	0.0107
1932	0.0023	0.0023	0.0016	0.0011	0.0006	0.0002	0.0003	0.0003	0.0003	0.0002	0.0002	0.0001	1932	0.0096
1933	0.0001	-0.0003	0.0004	0.0010	0.0004	0.0002	0.0002	0.0003	0.0002	0.0001	0.0002	0.0002	1933	0.0030
1934	0.0005	0.0002	0.0002	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	1934	0.0016
1935	0.0001	0.0002	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0001	1935	0.0017
1936	0.0001	0.0001	0.0002	0.0002	0.0002	0.0003	0.0001	0.0002	0.0001	0.0002	0.0001	0.0000	1936	0.0018
1937	0.0001	0.0002	0.0001	0.0003	0.0006	0.0003	0.0003	0.0002	0.0004	0.0002	0.0002	0.0000	1937	0.0031
1938	0.0000	0.0000	-0.0001	0.0001	0.0000	0.0000	-0.0001	0.0000	0.0002	0.0001	-0.0006	0.0000	1938	-0.0002
1939	-0.0001	0.0001	-0.0001	-0.0000	0.0001	0.0001	0.0000	-0.0001	0.0001	0.0000	0.0000	0.0000	1939	0.0002
1940	0.0000	0.0000	0.0000	0.0000	-0.0002	0.0000	0.0001	-0.0001	0.0000	0.0000	0.0000	0.0000	1940	0.0000
1941	-0.0001	-0.0001	0.0001	-0.0001	0.0000	0.0000	0.0003	0.0001	0.0001	0.0000	0.0000	0.0001	1941	0.0006
1942	0.0002	0.0001	0.0001	0.0001	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	1942	0.0027
1943	0.0003	0.0003	0.0003	0.0003	0.0002	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	1943	0.0035
1944	0.0003	0.0003	0.0002	0.0003	0.0003	0.0003	0.0003	0.0003	0.0002	0.0003	0.0003	0.0002	1944	0.0033
1945	0.0003	0.0002	0.0002	0.0003	0.0003	0.0002	0.0003	0.0003	0.0003	0.0003	0.0002	0.0003	1945	0.0033
1946	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	1946	0.0035
1947	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0006	0.0006	0.0006	0.0008	1947	0.0050
1948	0.0007	0.0007	0.0009	0.0008	0.0008	0.0009	0.0008	0.0009	0.0004	0.0004	0.0004	0.0004	1948	0.0081
1949	0.0010	0.0009	0.0010	0.0009	0.0010	0.0010	0.0009	0.0009	0.0009	0.0009	0.0008	0.0009	1949	0.0110
1950	0.0009	0.0009	0.0010	0.0009	0.0010	0.0010	0.0010	0.0010	0.0010	0.0012	0.0011	0.0011	1950	0.0120
1951	0.0013	0.0010	0.0011	0.0013	0.0012	0.0012	0.0013	0.0013	0.0012	0.0016	0.0011	0.0012	1951	0.0149
1952	0.0015	0.0012	0.0011	0.0012	0.0013	0.0015	0.0015	0.0015	0.0016	0.0014	0.0010	0.0016	1952	0.0166
1953	0.0016	0.0014	0.0018	0.0016	0.0017	0.0018	0.0015	0.0017	0.0016	0.0013	0.0008	0.0013	1953	0.0182
1954	0.0011	0.0007	0.0008	0.0009	0.0005	0.0006	0.0005	0.0005	0.0009	0.0007	0.0006	0.0008	1954	0.0086
1955	0.0008	0.0009	0.0010	0.0010	0.0014	0.0010	0.0010	0.0016	0.0016	0.0018	0.0017	0.0018	1955	0.0157
1956	0.0022	0.0019	0.0015	0.0019	0.0023	0.0020	0.0022	0.0017	0.0018	0.0025	0.0020	0.0024	1956	0.0246
1957	0.0027	0.0024	0.0023	0.0023	0.0026	0.0023	0.0023	0.0023	0.0023	0.0023	0.0023	0.0024	1957	0.0317
1958	0.0028	0.0012	0.0009	0.0008	0.0011	0.0003	0.0007	0.0004	0.0019	0.0018	0.0011	0.0022	1958	0.0154
1959	0.0021	0.0019	0.0022	0.0020	0.0022	0.0024	0.0025	0.0019	0.0031	0.0030	0.0026	0.0034	1959	0.0295
1960	0.0033	0.0019	0.0035	0.0019	0.0027	0.0024	0.0013	0.0017	0.0016	0.0022	0.0013	0.0016	1960	0.0266
1961	0.0019	0.0014	0.0020	0.0017	0.0018	0.0020	0.0018	0.0014	0.0017	0.0019	0.0015	0.0019	1961	0.0213
1962	0.0024	0.0020	0.0020	0.0022	0.0024	0.0020	0.0027	0.0023	0.0021	0.0025	0.0020	0.0023	1962	0.0273
1963	0.0025	0.0023	0.0023	0.0025	0.0024	0.0023	0.0027	0.0025	0.0027	0.0029	0.0027	0.0029	1963	0.0312
1964	0.0030	0.0026	0.0031	0.0029	0.0026	0.0030	0.0030	0.0028	0.0028	0.0029	0.0029	0.0031	1964	0.0354
1965	0.0028	0.0030	0.0036	0.0031	0.0031	0.0035	0.0031	0.0033	0.0031	0.0031	0.0035	0.0033	1965	0.0393
1966	0.0038	0.0035	0.0038	0.0034	0.0041	0.0038	0.0035	0.0041	0.0040	0.0045	0.0040	0.0040	1966	0.0476
1967	0.0043	0.0036	0.0039	0.0032	0.0033	0.0027	0.0031	0.0031	0.0032	0.0039	0.0036	0.0033	1967	0.0421
1968	0.0040	0.0039	0.0038	0.0043	0.0045	0.0043	0.0048	0.0042	0.0043	0.0044	0.0042	0.0043	1968	0.0521
1969	0.0053	0.0046	0.0046	0.0053	0.0048	0.0051	0.0053	0.0050	0.0062	0.0060	0.0052	0.0064	1969	0.0658
1970	0.0060	0.0062	0.0057	0.0050	0.0053	0.0058	0.0052	0.0053	0.0054	0.0046	0.0046	0.0042	1970	0.0653
1971	0.0038	0.0033	0.0030	0.0028	0.0029	0.0037	0.0040	0.0047	0.0037	0.0037	0.0037	0.0037	1971	0.0439
1972	0.0029	0.0025	0.0027	0.0029	0.0030	0.0029	0.0031	0.0029	0.0034	0.0040	0.0037	0.0037	1972	0.0384
1973	0.0044	0.0041	0.0046	0.0052	0.0051	0.0051	0.0061	0.0070	0.0068	0.0068	0.0068	0.0064	1973	0.0593
1974	0.0063	0.0058	0.0056	0.0075	0.0075	0.0060	0.0070	0.0060	0.0081	0.0051	0.0054	0.0070	1974	0.0800
1975	0.0058	0.0043	0.0041	0.0044	0.0044	0.0041	0.0048	0.0048	0.0053	0.0056	0.0041	0.0048	1975	0.0580
1976	0.0047	0.0034	0.0040	0.0047	0.0040	0.0047	0.0042	0.0043	0.0044	0.0044	0.0040	0.0040	1976	0.0508
1977	0.0036	0.0035	0.0038	0.0038	0.0037	0.0040	0.0042	0.0044	0.0043	0.0049	0.0050	0.0049	1977	0.0512
1978	0.0049	0.0046	0.0053	0.0054	0.0051	0.0054	0.0056	0.0056	0.0062	0.0068	0.0070	0.0078	1978	0.0718
1979	0.0077	0.0073	0.0081	0.0080	0.0082	0.0081	0.0077	0.0077	0.0083	0.0087	0.0099	0.0095	1979	0.1038
1980	0.0080	0.0089	0.0121	0.0126	0.0081	0.0061	0.0053	0.0064	0.0075	0.0095	0.0096	0.0131	1980	0.1124
1981	0.0104	0.0107	0.0121	0.0108	0.0115	0.0135	0.0124	0.0128	0.0124	0.0121	0.0107	0.0087	1981	0.1471



## EXHIBIT B-10

## CONSUMER PRICE INDEX : INFLATION RATES

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JULY	AUG	SEP	OCT	NOV	DEC	YEAR	JAN-DEC
1926	-0.0000	-0.0037	-0.0056	0.0094	-0.0056	-0.0075	-0.0094	-0.0057	0.0057	0.0038	0.0038	0.0000	1926	-0.0149
1927	-0.0076	-0.0076	-0.0058	0.0000	0.0077	0.0096	-0.0190	-0.0058	0.0058	-0.0058	-0.0058	-0.0058	1927	-0.0208
1928	-0.0019	-0.0097	0.0000	0.0020	0.0058	-0.0078	0.0000	0.0020	0.0078	-0.0019	-0.0019	-0.0019	1928	-0.0097
1929	-0.0019	-0.0020	-0.0039	-0.0039	0.0059	0.0039	0.0098	0.0039	-0.0019	0.0000	-0.0019	-0.0058	1929	0.0019
1930	-0.0039	-0.0059	-0.0059	-0.0059	-0.0059	-0.0059	-0.0139	-0.0060	0.0061	-0.0060	-0.0081	-0.0143	1930	-0.0603
1931	-0.0145	-0.0147	-0.0064	-0.0064	-0.0108	-0.0109	-0.0139	-0.0060	-0.0060	-0.0051	-0.0051	-0.0051	1931	-0.0597
1932	-0.0206	-0.0140	-0.0047	-0.0071	-0.0133	-0.0073	-0.0133	-0.0050	-0.0050	-0.0050	-0.0050	-0.0050	1932	-0.1030
1933	-0.0153	-0.0155	-0.0079	-0.0027	0.0027	0.0106	0.0289	0.0102	0.0000	0.0000	0.0000	-0.0051	1933	0.0051
1934	-0.0051	0.0076	0.0000	-0.0025	0.0025	0.0025	0.0000	0.0025	0.0150	-0.0074	-0.0025	-0.0025	1934	0.0203
1935	0.0149	0.0074	-0.0024	0.0098	-0.0048	-0.0024	-0.0049	0.0000	0.0049	0.0000	0.0049	0.0024	1935	0.0299
1936	0.0000	-0.0048	-0.0049	0.0000	0.0000	0.0098	0.0048	0.0072	-0.0024	-0.0024	0.0000	0.0000	1936	0.0121
1937	0.0072	0.0024	0.0071	0.0047	0.0047	0.0023	0.0046	0.0023	0.0092	-0.0046	-0.0069	-0.0023	1937	0.0310
1938	-0.0139	-0.0094	-0.0000	-0.0047	-0.0047	0.0000	0.0024	-0.0024	0.0000	-0.0047	-0.0024	-0.0024	1938	-0.0278
1939	-0.0048	-0.0048	-0.0024	-0.0024	0.0000	0.0000	0.0000	0.0000	0.0193	-0.0047	0.0000	-0.0048	1939	-0.0048
1940	-0.0024	0.0072	-0.0024	0.0000	0.0024	0.0024	-0.0024	-0.0024	0.0000	0.0000	0.0000	0.0048	1940	0.0096
1941	0.0000	0.0000	0.0047	0.0094	0.0070	0.0186	0.0046	0.0091	0.0180	0.0110	0.0087	0.0022	1941	0.0972
1942	0.0130	0.0085	0.0127	0.0053	0.0104	-0.0021	0.0041	0.0020	0.0020	0.0101	0.0060	0.0080	1942	0.0929
1943	0.0000	0.0020	0.0158	0.0117	0.0038	-0.0019	-0.0038	-0.0038	0.0000	-0.0019	0.0019	0.0038	1943	0.0316
1944	-0.0019	-0.0019	0.0000	0.0058	0.0038	0.0019	0.0057	-0.0038	0.0000	0.0000	0.0000	0.0038	1944	0.0211
1945	0.0000	-0.0019	0.0000	0.0019	0.0075	0.0093	0.0018	0.0000	-0.0037	0.0000	0.0037	0.0037	1945	0.0225
1946	0.0000	-0.0037	0.0074	0.0055	0.0055	0.0108	0.0590	0.0220	0.0116	0.0196	0.0240	0.0078	1946	0.1817
1947	0.0000	-0.0016	0.0218	-0.0000	-0.0000	-0.0000	0.0051	0.0107	0.0058	0.0000	0.0000	0.0130	1947	0.0901
1948	0.0114	-0.0085	-0.0028	0.0142	0.0070	0.0070	0.0125	0.0041	0.0000	-0.0041	-0.0058	-0.0058	1948	0.0271
1949	-0.0014	-0.0111	0.0028	0.0014	-0.0014	0.0014	-0.0070	0.0028	0.0042	-0.0056	0.0014	-0.0056	1949	-0.0180
1950	-0.0042	-0.0028	0.0043	0.0014	0.0042	0.0056	0.0098	0.0083	0.0069	0.0055	0.0041	0.0135	1950	0.0579
1951	0.0160	0.0118	0.0039	0.0013	0.0039	-0.0013	0.0013	0.0000	0.0064	0.0054	0.0000	0.0000	1951	0.0667
1952	0.0000	-0.0063	0.0000	0.0038	0.0013	0.0025	0.0076	0.0012	-0.0012	0.0012	0.0000	-0.0012	1952	0.0088
1953	-0.0025	-0.0050	0.0025	0.0013	0.0025	0.0038	0.0025	0.0025	0.0012	0.0025	-0.0037	-0.0012	1953	0.0062
1954	0.0025	-0.0012	-0.0012	-0.0025	0.0037	0.0012	0.0000	-0.0012	-0.0025	-0.0025	0.0012	-0.0025	1954	-0.0050
1955	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0037	-0.0025	0.0037	0.0000	0.0012	-0.0025	1955	0.0037
1956	-0.0012	0.0000	0.0012	0.0012	0.0050	0.0062	0.0074	-0.0012	0.0012	0.0061	0.0000	0.0024	1956	0.0286
1957	0.0012	0.0036	0.0024	0.0036	0.0024	0.0060	0.0047	0.0012	0.0012	0.0000	0.0035	0.0000	1957	0.0302
1958	0.0059	-0.0012	0.0070	0.0023	0.0000	0.0012	0.0012	-0.0012	0.0000	0.0000	0.0012	-0.0012	1958	0.0176
1959	0.0012	-0.0012	0.0000	0.0012	0.0012	0.0046	0.0023	-0.0011	0.0034	0.0034	0.0000	0.0000	1959	0.0150
1960	-0.0011	0.0011	0.0000	0.0057	0.0000	0.0023	0.0000	0.0000	0.0011	0.0045	0.0011	0.0000	1960	0.0148
1961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0011	0.0045	-0.0011	0.0022	0.0000	0.0000	0.0000	1961	0.0067
1962	0.0000	0.0022	0.0022	0.0022	0.0000	0.0000	0.0022	0.0000	0.0055	-0.0011	0.0000	-0.0011	1962	0.0122
1963	0.0011	0.0011	0.0011	0.0000	0.0000	0.0044	0.0044	0.0000	0.0000	0.0011	0.0011	0.0022	1963	0.0165
1964	0.0011	-0.0011	0.0011	0.0011	0.0000	0.0022	0.0022	-0.0011	0.0022	0.0011	0.0021	0.0011	1964	0.0119
1965	0.0000	0.0000	0.0011	0.0032	0.0021	0.0053	0.0011	-0.0021	0.0021	0.0011	0.0021	0.0032	1965	0.0192
1966	0.0000	0.0063	0.0031	0.0042	0.0010	0.0031	0.0031	0.0051	0.0020	0.0041	0.0000	0.0010	1966	0.0335
1967	0.0000	0.0010	0.0020	0.0020	0.0030	0.0030	0.0050	0.0030	0.0030	0.0030	0.0030	0.0030	1967	0.0304
1968	0.0039	0.0029	0.0049	0.0029	0.0029	0.0058	0.0048	0.0029	0.0029	0.0047	0.0038	0.0028	1968	0.0472
1969	0.0028	0.0037	0.0084	0.0065	0.0028	0.0064	0.0046	0.0045	0.0045	0.0036	0.0054	0.0062	1969	0.0611
1970	0.0035	0.0053	0.0053	0.0061	0.0043	0.0052	0.0034	0.0017	0.0051	0.0051	0.0034	0.0051	1970	0.0549
1971	0.0008	0.0017	0.0034	0.0033	0.0050	0.0058	0.0025	0.0025	0.0008	0.0016	0.0041	0.0041	1971	0.0336
1972	0.0008	0.0049	0.0016	0.0024	0.0032	0.0032	0.0040	0.0016	0.0008	0.0032	0.0024	0.0032	1972	0.0341
1973	0.0031	0.0070	0.0093	0.0069	0.0061	0.0068	0.0023	0.0181	0.0030	0.0081	0.0073	0.0065	1973	0.0880
1974	0.0087	0.0129	0.0113	0.0056	0.0111	0.0096	0.0075	0.0128	0.0120	0.0086	0.0085	0.0071	1974	0.1220
1975	0.0045	0.0070	0.0038	0.0051	0.0044	0.0082	0.0106	0.0031	0.0049	0.0061	0.0061	0.0042	1975	0.0701
1976	0.0024	0.0024	0.0024	0.0042	0.0059	0.0053	0.0059	0.0047	0.0041	0.0041	0.0029	0.0029	1976	0.0481
1977	0.0057	0.0103	0.0062	0.0079	0.0056	0.0066	0.0044	0.0038	0.0038	0.0027	0.0049	0.0038	1977	0.0677
1978	0.0054	0.0069	0.0069	0.0090	0.0099	0.0103	0.0072	0.0051	0.0071	0.0080	0.0055	0.0055	1978	0.0903
1979	0.0089	0.0117	0.0097	0.0115	0.0123	0.0093	0.0130	0.0101	0.0104	0.0090	0.0093	0.0105	1979	0.1331
1980	0.0144	0.0137	0.0144	0.0113	0.0099	0.0110	0.0008	0.0065	0.0092	0.0087	0.0091	0.0086	1980	0.1240
1981	0.0081	0.0104	0.0072	0.0064	0.0082	0.0086	0.0114	0.0077	0.0101	0.0021	0.0029	0.0029	1981	0.0894



# EXHIBIT B-11

## EQUITY RISK PREMIUM

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	YEAR	JAN-DEC
1926	-0.0034	-0.0411	-0.0605	0.0219	0.0178	0.0423	0.0456	0.0223	0.0229	-0.0316	0.0316	0.0168	1926	0.0811
1927	-0.0217	0.0512	0.0057	0.0176	0.0577	-0.0093	0.0440	0.0487	0.0429	-0.0527	0.0200	0.0674	1927	0.3322
1928	-0.0065	-0.0158	0.1071	0.0323	0.0165	-0.0416	0.0108	0.0771	0.0232	0.0128	0.1253	0.0674	1928	0.3924
1929	0.0549	-0.0055	-0.0046	0.0141	-0.0406	0.1088	0.0437	0.0988	-0.0511	-0.2019	-0.1284	0.0245	1929	-0.1264
1930	0.0625	0.0229	0.0777	-0.0101	-0.0122	-0.1652	0.0366	0.0133	-0.1304	-0.0864	-0.0102	-0.0720	1930	-0.2671
1931	0.0487	0.1189	-0.0688	-0.0942	-0.1288	0.1413	-0.0727	0.0179	-0.2975	0.0886	-0.0814	-0.1412	1931	-0.4397
1932	-0.0294	0.0547	-0.1174	-0.2009	-0.2202	-0.0025	0.3812	0.3866	-0.0349	-0.1351	-0.0419	0.0564	1932	-0.0911
1933	0.0086	-0.1770	0.0349	0.4247	0.1678	0.1336	-0.0864	0.1203	-0.1120	-0.0855	0.1125	0.0251	1933	0.5360
1934	0.1065	-0.0325	-0.0002	-0.0252	-0.0737	0.0228	-0.1132	0.0610	-0.0033	-0.0287	0.0941	-0.0012	1934	-0.0160
1935	-0.0412	-0.0342	-0.0287	0.0979	0.0408	0.0698	0.0849	0.0278	0.0255	0.0775	0.0471	0.0393	1935	0.4743
1936	0.0669	0.0222	0.0266	-0.0752	0.0543	0.0330	0.0700	0.0150	0.0030	0.0773	0.0133	-0.0029	1936	0.3369
1937	0.0389	0.0189	-0.0079	-0.0813	-0.0031	-0.0508	0.1042	-0.0485	-0.1406	-0.0983	-0.0868	-0.0459	1937	-0.3523
1938	0.0151	0.0673	-0.2486	0.1446	-0.0330	0.2503	0.0744	-0.0226	0.0164	0.0775	0.0267	0.0400	1938	0.3115
1939	-0.0673	0.0389	-0.1338	-0.0027	0.0732	-0.0613	0.1105	-0.0647	0.1672	-0.0123	-0.0398	0.0270	1939	-0.0043
1940	-0.0336	0.0133	0.0124	-0.0025	-0.2287	0.0809	0.0340	0.0350	0.0123	0.0422	-0.0316	0.0009	1940	-0.0978
1941	-0.0462	-0.0059	0.0069	-0.0612	0.0182	0.0577	0.0576	0.0009	-0.0069	-0.0657	-0.0285	-0.0407	1941	-0.1164
1942	0.0159	-0.0160	-0.0653	-0.0402	0.0744	0.0218	0.0335	0.0161	0.0287	0.0675	0.0021	0.0546	1942	0.2003
1943	0.0734	0.0580	0.0542	0.0032	0.0550	0.0220	-0.0529	0.0168	0.0260	-0.0110	-0.0657	0.0614	1943	0.2547
1944	0.0168	0.0039	0.0192	-0.0103	0.0503	0.0540	-0.0196	0.0154	-0.0010	0.0020	0.0130	0.0372	1944	0.1936
1945	0.0156	0.0681	-0.0443	0.0899	0.0192	-0.0009	-0.0184	0.0638	0.0436	0.0319	0.0394	0.0113	1945	0.3600
1946	0.0711	-0.0644	0.0477	0.0390	0.0285	-0.0373	-0.0242	-0.0677	-0.1000	-0.0063	-0.0030	0.0454	1946	-0.0840
1947	0.0252	-0.0079	-0.0152	-0.0365	0.0011	0.0551	0.0378	-0.0206	-0.0117	0.0232	-0.0181	0.0226	1947	0.0518
1948	-0.0386	-0.0395	0.0784	0.0284	0.0871	0.0045	-0.0516	0.0149	-0.0279	0.0706	-0.0965	0.0341	1948	0.0466
1949	0.0030	-0.0304	0.0319	-0.0189	-0.0268	0.0005	0.0641	0.0210	0.0254	0.0331	0.0166	0.0477	1949	0.1751
1950	0.0188	0.0191	0.0060	0.0477	0.0499	-0.0558	0.0109	0.0433	0.0582	0.0081	0.0158	0.0502	1950	0.3019
1951	0.0624	0.0146	-0.0167	0.0496	-0.0311	-0.0239	0.0697	0.0464	0.0001	-0.0119	0.0085	0.0412	1951	0.2222
1952	-0.0165	-0.0223	0.0492	-0.0414	0.0330	-0.0475	0.0189	-0.0096	-0.0192	0.0006	0.0560	0.0365	1952	0.1646
1953	0.0668	-0.0120	-0.0251	-0.0253	0.0060	-0.1538	0.0018	0.0018	0.0018	0.0527	0.0196	0.0040	1953	-0.0277
1954	0.0525	0.0104	0.0317	0.0507	0.0412	0.0025	0.0584	-0.0280	0.0843	-0.0174	0.0903	0.0526	1954	0.5136
1955	0.0189	0.0090	-0.0040	0.0386	0.0041	0.0831	0.0611	-0.0041	0.0114	-0.0302	0.0810	-0.0003	1955	0.2956
1956	0.0367	0.0394	0.0695	-0.0023	-0.0616	0.0389	0.0509	-0.0345	-0.0458	0.0041	-0.0071	0.0347	1956	0.0400
1957	-0.0077	-0.0288	0.0192	0.0412	0.0120	-0.0200	0.0120	-0.0520	-0.0331	-0.0204	-0.0439	-0.0549	1957	0.1353
1958	0.0417	-0.0154	0.0319	0.0329	0.0201	0.0276	0.0442	0.0171	0.0481	0.0251	0.0274	0.0513	1958	0.4126
1959	0.0032	0.0030	-0.0002	0.0382	0.0218	-0.0047	0.0337	-0.0211	-0.0474	0.0098	0.0160	0.0258	1959	0.0876
1960	-0.0733	0.0119	-0.0158	-0.0180	0.0298	0.0187	-0.0247	0.0300	-0.0606	-0.0029	0.0451	0.0463	1960	-0.0215
1961	0.0627	0.0305	0.0249	0.0033	0.0221	-0.0295	0.0324	0.0229	-0.0200	0.0280	0.0432	0.0028	1961	0.2429
1962	-0.0390	0.0189	-0.0066	-0.0629	-0.0835	-0.0823	0.0625	0.0184	-0.0486	0.0038	0.1066	0.0119	1962	-0.1118
1963	0.0480	-0.0261	0.0347	0.0475	0.0169	-0.0210	-0.0048	0.0510	-0.0124	0.0310	-0.0073	0.0233	1963	0.1914
1964	0.0253	0.0120	0.0133	0.0045	0.0137	0.0147	0.0165	-0.0146	0.0273	0.0067	-0.0024	0.0025	1964	0.1254
1965	0.0316	0.0001	-0.0169	0.0326	-0.0061	-0.0508	0.0116	0.0239	0.0303	0.0258	-0.0066	0.0073	1965	0.0822
1966	0.0024	-0.0166	-0.0243	0.0185	-0.0533	-0.0184	-0.0156	-0.0766	-0.0093	0.0448	0.0055	-0.0038	1966	-0.1420
1967	0.0755	0.0036	0.0370	0.0404	-0.0510	0.0163	0.0436	-0.0101	0.0310	-0.0315	0.0029	0.0244	1967	0.1904
1968	-0.0465	-0.0300	0.0072	0.0791	0.0116	0.0063	-0.0219	0.0357	0.0121	0.0043	0.0488	-0.0445	1968	0.0559
1969	-0.0121	-0.0472	0.0312	0.0175	-0.0022	-0.0593	-0.0641	0.0404	-0.0298	0.0399	-0.0349	-0.0241	1969	-0.1423
1970	-0.0804	0.0524	-0.0027	-0.0940	-0.0600	-0.0540	0.0700	0.0455	0.0293	-0.0143	0.0490	0.0541	1970	-0.0240
1971	0.0381	0.0108	0.0353	0.0349	-0.0397	-0.0016	-0.0439	0.0365	-0.0092	-0.0440	-0.0011	0.0840	1971	0.0954
1972	-0.0165	0.0274	0.0045	0.0028	-0.0189	-0.0235	0.0005	0.0363	-0.0070	0.0067	0.0467	0.0094	1972	0.1462
1973	-0.0203	-0.0374	-0.0047	-0.0447	-0.0190	-0.0103	0.0330	-0.0388	0.0349	0.0022	-0.1138	0.0120	1973	-0.2029
1974	-0.0148	-0.0039	-0.0273	-0.0449	-0.0348	-0.0189	-0.0830	-0.0888	-0.1250	0.1607	-0.0502	-0.0247	1974	-0.3213
1975	0.1193	0.0631	0.0195	0.0449	0.0465	0.0421	-0.0707	-0.0192	-0.0381	0.0581	0.0272	-0.0145	1975	0.2983
1976	-0.1522	-0.0092	0.0286	-0.0141	-0.0111	0.0384	-0.0015	-0.0028	-0.0028	-0.0429	-0.0049	-0.0179	1976	-0.1794
1977	-0.0525	-0.0186	-0.0156	-0.0024	-0.0187	0.0435	-0.0193	-0.0177	-0.0043	-0.0465	0.0320	-0.0001	1977	-0.1794
1978	-0.0645	-0.0207	0.0223	0.0817	0.0085	-0.0206	0.0504	0.0284	-0.0110	-0.0959	0.0190	0.0094	1978	-0.0059
1979	0.0344	-0.0357	0.0494	-0.0043	-0.0250	0.0329	0.0033	0.0534	-0.0058	-0.0743	0.0415	0.0097	1979	0.0736
1980	0.0531	-0.0058	-0.1107	0.0304	0.0481	0.0235	0.0623	0.0067	0.0205	0.0091	0.1000	-0.0446	1980	0.1911
1981	-0.0542	0.0101	0.0259	-0.0321	-0.0053	-0.0215	-0.0117	-0.0682	-0.0626	0.0407	0.0334	-0.0352	1981	-0.1729



# EXHIBIT B-12 SMALL STOCK PREMIA

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	YEAR	JAN-DEC
1926	0.0699	-0.0254	-0.0498	-0.0074	-0.0245	-0.0079	-0.0367	0.0008	-0.0252	0.0057	-0.0139	0.0136	1926	-0.1012
1927	0.0488	0.0010	-0.0634	0.0372	0.0127	-0.0236	-0.0154	-0.0693	-0.0403	-0.0157	0.0087	0.0038	1927	-0.1162
1928	-0.0521	-0.0111	-0.0570	0.0565	0.0240	-0.0457	-0.0082	-0.0361	-0.0631	-0.0108	-0.0144	-0.0563	1928	-0.0322
1929	-0.0548	-0.0007	-0.0189	0.0130	-0.0974	-0.0607	-0.0357	-0.1192	-0.0446	-0.0795	-0.0254	-0.0783	1929	-0.4660
1930	0.0654	0.0384	0.0195	-0.0618	-0.0446	-0.0543	-0.0085	-0.0308	-0.0177	-0.0241	0.0061	-0.0460	1930	-0.1547
1931	0.1601	0.1373	-0.0033	-0.1252	-0.0100	0.0398	0.0164	-0.0945	-0.0274	-0.0126	-0.0211	-0.0795	1931	-0.0542
1932	0.1260	-0.0183	-0.0123	-0.0022	0.1001	0.0277	-0.0284	0.3477	-0.0976	-0.0123	-0.0810	-0.0811	1932	-0.1021
1933	-0.0170	0.0495	0.0764	0.0781	0.4657	0.1279	0.0311	-0.0282	-0.0477	-0.0381	-0.0473	-0.0198	1933	0.6964
1934	0.2822	0.0488	-0.0012	0.0491	-0.0539	-0.0253	-0.1128	0.0935	-0.0134	0.0382	0.0006	0.0183	1934	0.3158
1935	0.0083	-0.0252	-0.0189	-0.0434	-0.0395	0.0005	0.0265	0.0100	0.0217	0.0938	0.0205	0.0205	1935	-0.0464
1936	0.2339	0.0378	-0.0202	-0.1044	-0.0273	-0.0565	0.0172	0.0059	0.0510	-0.0139	0.1267	0.0189	1936	0.2556
1937	0.0877	0.0467	0.0197	-0.0870	-0.0384	-0.0679	0.0190	-0.0253	-0.1136	-0.0112	-0.0587	-0.1235	1937	-0.3177
1938	0.0383	-0.0331	-0.1113	0.1329	-0.0520	0.0995	0.0755	-0.0775	-0.0323	0.1359	-0.0415	0.0086	1938	0.1107
1939	-0.0175	-0.0284	-0.1127	0.0169	0.0355	-0.0430	0.1430	-0.0942	0.3472	-0.0274	-0.0656	0.0152	1939	0.0984
1940	0.0346	0.0688	0.0508	0.0679	-0.1385	0.0241	-0.0109	-0.0095	0.0090	0.0122	0.0561	-0.0456	1940	0.1040
1941	0.0488	-0.0229	0.0249	-0.0057	-0.0138	0.0176	0.1587	-0.0070	-0.0401	-0.0015	-0.0211	-0.0798	1941	0.0411
1942	0.1733	0.0086	-0.0057	0.0047	-0.0828	0.0115	0.0399	0.0162	0.0622	0.0409	-0.0489	-0.0136	1942	0.2021
1943	0.1395	0.1348	0.0899	0.0898	0.0604	-0.0306	-0.0557	-0.0174	0.0165	0.0231	-0.0458	0.0624	1943	0.5446
1944	0.0469	0.0253	0.0555	-0.0433	0.0234	0.0842	-0.0106	0.0161	-0.0012	-0.0131	0.0366	0.0495	1944	0.2966
1945	0.0324	0.0326	-0.0421	0.0255	0.0304	0.0862	-0.0376	-0.0085	0.0379	0.0776	0.0054	0.0054	1945	0.2882
1946	0.0847	0.0004	-0.0207	0.0303	0.0303	-0.0092	-0.0291	-0.0175	-0.0606	-0.0058	-0.0114	-0.0084	1946	-0.0237
1947	0.0166	0.0036	-0.0187	-0.0669	-0.0547	-0.0002	0.0408	0.0166	0.0226	0.0044	-0.0128	0.0126	1947	-0.0408
1948	0.0226	-0.0395	0.0193	0.0076	0.0181	-0.0006	-0.0070	-0.0152	-0.0250	-0.0063	-0.0155	-0.0258	1948	-0.0675
1949	0.0143	-0.0186	0.0300	-0.0157	-0.0306	-0.0110	0.0021	0.0037	0.0226	0.0132	-0.0159	0.0204	1949	0.0126
1950	0.0295	0.0021	-0.0107	-0.0074	-0.0254	-0.0228	0.0473	0.0087	-0.0071	-0.0151	0.0153	0.0441	1950	0.0565
1951	0.0194	-0.0096	-0.0321	-0.0143	-0.0032	-0.0301	-0.0338	0.0127	0.0202	-0.0119	-0.0179	-0.0380	1951	-0.1322
1952	0.0010	-0.0178	-0.0328	-0.0117	0.0311	-0.0219	-0.0084	0.0065	0.0015	-0.0123	-0.0086	-0.0222	1952	-0.1337
1953	0.0458	0.0375	0.0145	-0.0050	-0.0064	-0.0352	-0.0121	-0.0127	-0.0297	-0.0248	-0.0078	-0.0318	1953	-0.0571
1954	0.0220	-0.0017	-0.0142	-0.0376	0.0034	0.0055	0.0219	0.0290	-0.0442	0.0235	-0.0130	0.0578	1954	0.0489
1955	0.0004	0.0381	0.0115	-0.0246	0.0023	-0.0548	-0.0558	-0.0003	-0.0020	0.0114	-0.0358	0.0147	1955	-0.0952
1956	0.0300	-0.0135	-0.0280	0.0051	0.0195	-0.0354	-0.0247	0.0194	0.0179	0.0038	0.0214	-0.0332	1956	-0.0312
1957	0.0637	0.0044	-0.0048	-0.0135	-0.0362	0.0069	-0.0191	0.0119	0.0100	-0.0530	-0.0118	-0.0083	1957	-0.0471
1958	0.0660	-0.0029	0.0143	0.0039	0.0176	0.0045	-0.0043	0.0253	0.0017	0.0137	0.0212	-0.0223	1958	0.1550
1959	0.0522	0.0246	0.0007	-0.0286	-0.0226	-0.0020	-0.0035	0.0015	0.0012	0.0098	0.0036	0.0031	1959	0.0384
1960	0.0393	-0.0098	-0.0192	-0.0026	-0.0121	0.0129	0.0044	0.0208	-0.0148	-0.0393	-0.0027	-0.0147	1960	-0.0395
1961	0.0270	0.0270	0.0349	0.0076	0.0188	-0.0268	-0.0311	-0.0112	-0.0155	-0.0037	0.0166	0.0033	1961	0.0453
1962	0.0503	-0.0022	0.0102	-0.0171	-0.0198	0.0019	-0.0111	0.0081	-0.0194	-0.0437	0.0162	-0.0242	1962	-0.0314
1963	0.0401	0.0273	-0.0221	-0.0189	0.0243	0.0069	0.0054	-0.0018	-0.0066	-0.0103	-0.0060	-0.0310	1963	0.0049
1964	-0.0008	0.0218	0.0054	0.0019	-0.0006	-0.0015	0.0204	0.0089	0.0102	0.0109	0.0006	-0.0168	1964	0.0614
1965	0.0185	0.0359	0.0371	0.0152	-0.0048	-0.0428	0.0301	0.0323	0.0013	0.0283	0.0402	0.0516	1965	0.2675
1966	0.0694	0.0443	0.0013	0.0124	-0.0469	0.0134	0.0108	-0.0355	-0.0110	-0.0601	0.0397	0.0063	1966	0.0366
1967	0.1040	0.0378	0.0206	-0.0166	0.0392	0.0827	0.0483	0.0090	0.0223	-0.0035	0.0052	0.0688	1967	0.4978
1968	0.0579	-0.0448	-0.0219	0.0627	0.0838	-0.0075	-0.0174	0.0203	0.0200	-0.0056	0.0233	0.0465	1968	0.2303
1969	-0.0098	-0.0564	0.0037	0.0166	0.0147	-0.0622	-0.0482	0.0278	-0.0025	0.0151	-0.0260	-0.0511	1969	-0.1694
1970	0.0135	-0.0199	-0.0315	-0.0839	-0.0484	-0.0447	-0.0199	0.0440	0.0739	-0.0609	-0.0399	0.0142	1970	-0.1948
1971	0.1173	0.0176	0.0181	-0.0130	-0.0237	-0.0341	-0.0164	0.0171	-0.0171	-0.0147	-0.0400	0.0268	1971	0.0289
1972	0.0936	-0.0003	-0.0216	-0.0072	-0.0410	-0.0100	-0.0449	-0.0205	-0.0313	-0.0282	0.0088	-0.0345	1972	-0.1226
1973	-0.0273	-0.0466	-0.0206	-0.0227	-0.0672	-0.0239	0.0800	-0.0128	0.0648	0.0082	-0.0010	-0.0197	1973	-0.1729
1974	0.1411	-0.0104	0.0143	-0.0091	-0.0521	-0.0018	0.0540	0.0147	0.0517	-0.0594	0.0010	-0.0611	1974	0.0679
1975	0.1516	-0.0389	0.0382	0.0038	0.0155	0.0288	0.0405	-0.0429	0.0147	-0.0687	0.0006	-0.0100	1975	0.1231
1976	0.1485	0.1448	-0.0341	-0.0260	-0.0288	0.0032	0.0113	-0.0304	-0.0142	-0.0003	0.0413	0.0641	1976	0.2904
1977	0.0239	0.0249	0.0249	-0.0145	0.0122	0.0297	0.0181	-0.0025	0.0092	-0.0083	0.0716	0.0481	1977	0.1481
1978	0.0756	0.0509	0.0756	0.0052	0.0032	0.0037	0.0037	0.0014	0.0014	-0.0014	-0.0014	-0.0004	1978	0.1825
1979	0.0900	0.0002	0.0545	0.0351	0.0203	0.0062	0.0062	0.0146	-0.0369	-0.0499	0.0344	0.0396	1979	0.2272
1980	0.0226	-0.0314	-0.0791	0.0264	0.0188	0.0156	0.0647	0.0473	0.0138	0.0147	-0.0329	-0.0023	1980	0.0722
1981	0.0758	0.0012	0.0500	0.0533	0.0258	0.0260	-0.0347	-0.0236	-0.0248	0.0382	-0.0021	0.0055	1981	0.2004



# EXHIBIT B-13

## DEFAULT PREMIA

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	YEAR	JAN-DEC
1926	-0.0066	-0.0018	0.0043	0.0021	0.0030	-0.0034	0.0053	0.0044	0.0019	-0.0005	-0.0103	-0.0022	1926	-0.0039
1927	-0.0019	-0.0019	-0.0170	0.0060	-0.0120	0.0112	-0.0047	0.0131	-0.0044	-0.0029	-0.0004	-0.0004	1927	-0.0143
1928	0.0063	0.0007	-0.0004	0.0018	-0.0001	-0.0045	0.0207	0.0007	0.0071	-0.0075	-0.0039	0.0080	1928	0.0267
1929	0.0133	0.0187	0.0057	-0.0256	0.0241	-0.0191	0.0020	0.0054	0.0006	-0.0309	-0.0254	0.0281	1929	-0.0054
1930	0.0116	-0.0057	0.0055	0.0100	-0.0083	0.0059	0.0022	0.0123	0.0034	0.0012	-0.0054	-0.0020	1930	0.0316
1931	0.0324	-0.0017	-0.0010	-0.0019	-0.0011	0.0048	0.0094	-0.0000	0.0267	-0.0033	-0.0216	-0.0066	1931	0.0355
1932	-0.0086	-0.0051	0.0374	-0.0780	0.0604	-0.0401	-0.0438	0.0433	0.0244	0.0091	0.0041	0.0008	1932	-0.0649
1933	0.0399	-0.0265	-0.0050	-0.0063	0.0285	0.0140	0.0178	0.0049	-0.0037	0.0131	-0.0094	0.0370	1933	0.1065
1934	-0.0000	0.0065	-0.0010	-0.0022	-0.0041	0.0091	0.0007	0.0165	0.0085	-0.0080	0.0092	-0.0011	1934	0.0343
1935	0.0029	0.0049	0.0002	0.0033	0.0099	0.0020	0.0065	0.0091	-0.0009	-0.0019	0.0059	0.0013	1935	0.0441
1936	0.0027	-0.0027	-0.0024	-0.0009	-0.0000	0.0061	-0.0049	-0.0044	0.0098	0.0019	-0.0096	-0.0028	1936	-0.0075
1937	0.0037	-0.0132	-0.0298	0.0029	-0.0013	0.0071	-0.0099	0.0087	-0.0020	0.0025	-0.0029	-0.0015	1937	0.0234
1938	-0.0019	-0.0042	-0.0050	-0.0072	-0.0034	0.0091	0.0023	-0.0019	0.0087	-0.0007	0.0059	0.0042	1938	0.0056
1939	-0.0037	-0.0016	-0.0103	-0.0054	0.0122	0.0062	-0.0120	-0.0191	0.0696	-0.0173	-0.0083	-0.0067	1939	-0.0234
1940	0.0066	-0.0006	-0.0128	-0.0057	0.0278	-0.0137	-0.0031	-0.0021	-0.0018	-0.0018	-0.0142	-0.0090	1940	-0.0271
1941	0.0207	-0.0014	-0.0118	-0.0051	0.0022	-0.0003	0.0041	0.0016	0.0060	-0.0106	-0.0065	0.0183	1941	0.0168
1942	-0.0063	-0.0019	-0.0029	0.0035	-0.0055	0.0031	0.0002	-0.0003	0.0017	-0.0018	0.0041	-0.0000	1942	-0.0061
1943	0.0016	0.0012	0.0011	0.0001	-0.0002	0.0030	0.0020	-0.0002	-0.0006	-0.0014	-0.0022	0.0031	1943	0.0074
1944	-0.0001	0.0002	0.0027	0.0021	-0.0023	0.0012	-0.0002	0.0007	0.0005	0.0007	0.0024	0.0107	1944	0.0187
1945	-0.0051	-0.0031	-0.0003	-0.0142	-0.0067	-0.0137	0.0075	-0.0022	-0.0022	-0.0072	-0.0093	-0.0061	1945	-0.0610
1946	0.0103	0.0002	0.0024	0.0092	0.0031	-0.0051	0.0028	0.0024	-0.0017	-0.0054	0.0029	-0.0032	1946	0.0180
1947	0.0011	-0.0016	0.0047	0.0057	-0.0013	-0.0006	-0.0043	-0.0152	-0.0087	-0.0062	0.0076	0.0216	1947	0.0023
1948	0.0004	-0.0007	-0.0081	-0.0007	-0.0133	-0.0001	-0.0031	0.0054	0.0010	0.0017	0.0009	0.0075	1948	0.0070
1949	-0.0044	-0.0011	-0.0067	0.0012	0.0019	-0.0083	0.0066	-0.0074	0.0032	0.0048	-0.0019	-0.0197	1949	-0.0299
1950	0.0098	-0.0014	0.0014	-0.0038	-0.0041	0.0048	0.0014	0.0024	0.0033	0.0040	0.0019	0.0007	1950	0.0204
1951	-0.0039	0.0030	-0.0080	0.0054	0.0054	-0.0031	0.0067	0.0015	0.0023	-0.0155	0.0075	0.0119	1951	0.0129
1952	0.0099	-0.0035	-0.0035	-0.0175	0.0065	0.0013	0.0036	0.0112	-0.0109	0.0123	-0.0005	0.0026	1952	0.0226
1953	-0.0092	0.0047	0.0055	-0.0143	0.0118	-0.0114	0.0138	-0.0077	-0.0046	0.0153	-0.0024	-0.0034	1953	-0.0025
1954	0.0035	-0.0042	-0.0019	-0.0138	0.0045	-0.0100	-0.0094	0.0054	0.0050	0.0034	0.0050	-0.0047	1954	-0.0174
1955	0.0144	0.0015	0.0005	-0.0002	-0.0091	0.0105	0.0061	-0.0042	-0.0003	-0.0066	0.0015	0.0026	1955	0.0173
1956	0.0021	0.0028	0.0003	-0.0002	-0.0173	-0.0045	0.0116	-0.0022	-0.0038	-0.0051	-0.0049	0.0097	1956	-0.0137
1957	-0.0149	0.0068	0.0074	0.0156	-0.0052	-0.0142	-0.0069	-0.0011	0.0019	0.0073	-0.0222	0.0378	1957	0.0111
1958	0.0183	-0.0108	-0.0148	-0.0023	0.0030	0.0122	0.0125	0.0116	0.0021	-0.0032	-0.0015	0.0123	1958	0.0394
1959	0.0052	0.0009	-0.0100	-0.0055	-0.0108	0.0034	0.0029	-0.0027	-0.0031	0.0015	0.0254	0.0063	1959	0.0129
1960	-0.0005	-0.0076	-0.0091	0.0148	-0.0173	-0.0032	-0.0111	0.0184	-0.0138	0.0036	-0.0004	-0.0175	1960	-0.0434
1961	0.0255	0.0010	0.0009	-0.0231	0.0095	-0.0005	0.0005	0.0020	0.0015	0.0056	0.0048	0.0099	1961	0.0374
1962	0.0094	-0.0051	-0.0102	0.0060	-0.0046	0.0050	0.0094	-0.0044	0.0028	-0.0016	0.0041	-0.0012	1962	0.0094
1963	0.0060	0.0015	0.0017	-0.0039	0.0025	-0.0024	-0.0003	0.0014	-0.0027	0.0075	-0.0036	-0.0028	1963	0.0097
1964	0.0101	0.0065	-0.0099	-0.0007	0.0007	-0.0021	0.0044	0.0017	-0.0029	0.0007	-0.0021	0.0058	1964	0.0122
1965	0.0041	-0.0005	-0.0042	-0.0015	-0.0026	-0.0044	-0.0003	0.0007	0.0019	0.0019	0.0005	-0.0071	1965	-0.0116
1966	0.0126	0.0137	-0.0355	0.0076	0.0033	0.0046	-0.0061	-0.0053	-0.0254	0.0033	0.0128	-0.0212	1966	-0.0365
1967	0.0296	0.0020	0.0081	0.0220	-0.0215	0.0089	-0.0027	0.0077	0.0099	0.0119	-0.0075	0.0045	1967	0.0074
1968	0.0036	0.0070	0.0015	-0.0179	-0.0011	-0.0108	0.0052	0.0209	0.0049	-0.0028	0.0043	0.0130	1968	0.0273
1969	0.0345	-0.0202	-0.0210	-0.0092	0.0263	-0.0179	-0.0074	0.0049	0.0287	-0.0238	-0.0228	-0.0066	1969	-0.0364
1970	0.0162	-0.0186	0.0023	0.0163	0.0305	0.0485	0.0237	0.0119	-0.0089	0.0013	-0.0207	0.0456	1970	0.0485
1971	0.0024	-0.0205	-0.0268	0.0047	-0.0155	0.0246	-0.0055	0.0083	-0.0306	0.0115	0.0076	0.0179	1971	-0.0210
1972	0.0031	0.0019	0.0106	0.0008	-0.0107	-0.0003	-0.0186	0.0043	0.0114	-0.0133	0.0023	-0.0225	1972	0.0133
1973	0.0267	0.0009	-0.0037	0.0015	0.0066	-0.0035	-0.0043	-0.0035	0.0038	0.0064	-0.0083	-0.0007	1973	0.0217
1974	0.0030	0.0033	-0.0015	-0.0088	-0.0018	-0.0330	-0.0182	-0.0036	-0.0073	0.0396	-0.0179	-0.0246	1974	-0.0702
1975	0.0371	0.0006	0.0020	0.0130	-0.0106	0.0012	0.0057	-0.0107	-0.0028	0.0078	0.0021	0.0052	1975	0.0509
1976	0.0098	-0.0001	0.0001	-0.0033	0.0055	-0.0058	0.0071	0.0020	0.0022	-0.0014	-0.0020	0.0020	1976	0.0162
1977	0.0085	0.0024	0.0005	0.0027	-0.0015	0.0010	0.0033	-0.0027	0.0005	0.0056	-0.0034	0.0061	1977	0.0234
1978	-0.0006	0.0042	0.0065	-0.0023	-0.0043	0.0083	-0.0040	0.0041	0.0054	-0.0002	-0.0056	-0.0006	1978	0.0108
1979	-0.0009	0.0001	-0.0023	0.0063	-0.0031	-0.0045	0.0059	0.0043	-0.0063	-0.0044	-0.0091	-0.0164	1979	-0.0303
1980	0.0067	-0.0215	-0.0265	-0.0105	0.0138	0.0018	0.0016	-0.0015	0.0024	0.0091	-0.0100	-0.0053	1980	0.0122
1981	-0.0037	0.0182	-0.0082	-0.0282	0.0008	0.0175	-0.0021	0.0036	-0.0087	-0.0241	-0.0094	0.0137	1981	-0.0313



## EXHIBIT B-14

## MATURITY PREMIA

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	YEAR	JAN-DEC
1926	0.0104	0.0036	0.0011	0.0042	0.0013	0.0004	-0.0018	-0.0025	0.0015	0.0070	0.0129	0.0050	1926	0.0437
1927	0.0050	0.0062	0.0224	-0.0030	0.0079	-0.0095	0.0020	0.0048	-0.0003	0.0073	0.0076	0.0049	1927	0.0564
1928	-0.0061	0.0028	0.0016	-0.0026	-0.0110	0.0010	-0.0250	0.0044	-0.0067	0.0117	-0.0035	0.0029	1928	-0.0305
1929	-0.0124	-0.0193	-0.0178	0.0239	-0.0240	0.0093	-0.0034	-0.0074	-0.0008	0.0336	0.0199	-0.0126	1929	-0.0127
1930	-0.0071	0.0099	0.0049	-0.0037	0.0114	0.0024	0.0015	0.0004	0.0052	0.0027	0.0029	-0.0084	1930	0.0220
1931	-0.0136	0.0081	0.0091	0.0078	0.0136	-0.0004	-0.0048	0.0009	-0.0283	-0.0340	0.0011	-0.0232	1931	-0.0632
1932	0.0011	-0.0390	-0.0035	0.0592	-0.0503	0.0390	0.0479	-0.0001	0.0054	-0.0019	0.0030	0.0130	1932	0.1574
1933	0.0147	-0.0255	0.0093	-0.0044	0.0298	0.0047	-0.0019	0.0042	-0.0022	-0.0092	-0.0151	-0.0115	1933	-0.0037
1934	0.0252	0.0079	0.0195	0.0125	0.0130	0.0066	0.0039	-0.0119	-0.0146	0.0181	0.0036	0.0111	1934	0.0985
1935	0.0180	0.0090	0.0040	0.0077	-0.0058	0.0091	0.0044	-0.0135	0.0007	0.0060	0.0007	0.0069	1935	0.0481
1936	0.0054	0.0080	0.0105	0.0034	0.0039	0.0018	0.0059	0.0109	-0.0032	0.0004	0.0204	0.0038	1936	0.0733
1937	-0.0014	0.0083	-0.0413	0.0035	0.0046	-0.0135	-0.0023	0.0027	0.0041	0.0041	0.0094	0.0082	1937	-0.0008
1938	0.0057	0.0051	-0.0034	0.0209	0.0044	0.0024	0.0044	-0.0000	0.0021	0.0086	-0.0016	0.0080	1938	0.0555
1939	0.0059	0.0079	0.0126	0.0118	0.0170	-0.0028	0.0113	-0.0200	-0.0546	0.0410	0.0162	0.0144	1939	0.0592
1940	-0.0017	0.0027	0.0177	-0.0035	-0.0298	0.0258	0.0051	0.0029	0.0110	0.0031	0.0204	0.0067	1940	0.0608
1941	-0.0200	0.0021	0.0095	-0.0130	0.0027	0.0065	0.0019	0.0017	-0.0012	0.0140	-0.0030	-0.0178	1941	0.0087
1942	0.0068	0.0010	0.0091	-0.0030	0.0073	0.0008	0.0015	0.0035	0.0000	0.0021	-0.0038	0.0046	1942	0.0294
1943	0.0030	-0.0008	0.0006	0.0045	0.0048	0.0015	-0.0004	0.0018	0.0008	0.0002	-0.0004	0.0015	1943	0.0173
1944	0.0018	0.0029	0.0018	0.0011	0.0025	0.0005	0.0033	0.0024	0.0012	0.0009	0.0021	0.0040	1944	0.0248
1945	0.0124	0.0074	0.0018	0.0157	0.0053	0.0166	-0.0089	0.0023	0.0051	0.0101	0.0123	0.0191	1945	0.1037
1946	0.0022	0.0029	0.0007	-0.0138	-0.0015	0.0067	-0.0043	-0.0114	-0.0012	0.0071	-0.0057	0.0142	1946	-0.0046
1947	-0.0009	0.0018	0.0017	-0.0040	0.0031	0.0007	0.0060	0.0079	-0.0050	-0.0044	-0.0180	-0.0200	1947	-0.0312
1948	0.0013	0.0039	0.0025	0.0037	0.0134	-0.0093	0.0029	-0.0007	0.0010	0.0004	0.0072	0.0052	1948	0.0257
1949	0.0072	0.0040	0.0065	0.0002	0.0009	0.0157	0.0025	0.0102	-0.0020	0.0010	0.0013	0.0043	1949	0.0529
1950	-0.0071	0.0013	-0.0001	0.0021	0.0023	-0.0035	0.0046	0.0004	-0.0083	-0.0059	0.0024	0.0005	1950	-0.0113
1951	0.0045	-0.0084	-0.0168	-0.0075	-0.0082	-0.0073	0.0125	0.0085	-0.0092	-0.0005	-0.0147	-0.0073	1951	-0.0535
1952	0.0013	-0.0002	0.0100	0.0159	-0.0047	-0.0012	-0.0035	-0.0085	-0.0146	0.0134	-0.0026	-0.0102	1952	-0.0049
1953	-0.0004	-0.0101	-0.0107	-0.0121	-0.0165	0.0204	0.0025	-0.0024	0.0283	-0.0062	-0.0057	0.0193	1953	0.0178
1954	0.0078	0.0233	0.0051	0.0095	-0.0092	0.0157	0.0129	-0.0041	-0.0018	-0.0001	-0.0031	0.0056	1954	0.0627
1955	-0.0249	-0.0087	0.0077	-0.0010	0.0059	-0.0086	-0.0112	-0.0012	0.0057	0.0126	-0.0062	0.0019	1955	-0.0283
1956	0.0061	-0.0021	-0.0164	-0.0131	0.0202	0.0007	-0.0230	-0.0203	0.0031	-0.0079	-0.0078	-0.0202	1956	-0.0787
1957	-0.0319	0.0003	-0.0047	-0.0247	0.0048	-0.0205	0.0071	-0.0023	-0.0030	-0.0079	0.0505	0.0283	1957	-0.0417
1958	-0.0112	0.0088	0.0093	0.0178	-0.0010	-0.0143	-0.0285	-0.0440	-0.0036	0.0120	-0.0120	0.0120	1958	-0.0751
1959	-0.0101	0.0099	-0.0005	-0.0137	-0.0027	-0.0014	0.0035	-0.0060	-0.0087	0.0120	-0.0144	-0.0192	1959	-0.0508
1960	0.0079	0.0175	0.0247	-0.0189	0.0124	0.0149	0.0354	-0.0084	0.0059	-0.0030	-0.0079	0.0263	1960	0.1085
1961	-0.0126	0.0186	-0.0058	0.0098	0.0064	-0.0095	0.0016	0.0036	0.0112	0.0036	-0.0143	-0.0144	1961	-0.0114
1962	-0.0038	0.0083	0.0233	0.0040	0.0022	-0.0095	0.0134	0.0164	0.0040	0.0058	0.0001	0.0012	1962	0.0405
1963	-0.0026	-0.0015	-0.0014	-0.0037	-0.0002	-0.0003	-0.0004	-0.0003	-0.0023	-0.0055	0.0024	-0.0036	1963	-0.0185
1964	-0.0043	-0.0037	0.0006	0.0017	0.0025	0.0039	-0.0022	-0.0008	0.0022	0.0014	-0.0012	-0.0001	1964	-0.0003
1965	0.0012	-0.0016	0.0018	0.0006	-0.0013	0.0012	-0.0009	-0.0046	-0.0065	-0.0004	-0.0097	-0.0111	1965	-0.0311
1966	-0.0142	-0.0285	0.0258	-0.0097	-0.0101	-0.0053	-0.0072	-0.0247	0.0292	0.0183	-0.0188	0.0373	1966	-0.0106
1967	0.0111	-0.0257	0.0159	-0.0324	-0.0072	-0.0339	0.0037	-0.0115	-0.0037	-0.0439	-0.0232	0.0159	1967	-0.1289
1968	0.0287	-0.0072	-0.0250	0.0184	-0.0002	0.0187	0.0241	-0.0045	-0.0145	-0.0176	-0.0311	-0.0406	1968	-0.0522
1969	-0.0258	-0.0004	-0.0036	0.0373	-0.0539	0.0163	0.0026	-0.0119	-0.0593	0.0306	-0.0295	-0.0133	1969	-0.1100
1970	-0.0082	0.0525	-0.0125	-0.0464	-0.0521	0.0428	0.0267	-0.0073	0.0174	-0.0155	0.0746	-0.0126	1970	0.0526
1971	0.0467	-0.0196	0.0496	-0.0311	-0.0035	0.0196	-0.0011	0.0424	0.0167	0.0130	-0.0084	0.0007	1971	0.0851
1972	-0.0092	0.0063	-0.0109	-0.0002	0.0240	-0.0094	0.0184	-0.0000	-0.0117	0.0195	0.0189	-0.0267	1972	0.0178
1973	-0.0424	-0.0036	-0.0036	-0.0037	-0.0135	-0.0073	0.0487	0.0321	0.0250	-0.0195	0.0105	-0.0146	1973	-0.0756
1974	-0.0146	-0.0082	-0.0347	-0.0328	0.0047	-0.0016	-0.0100	-0.0292	0.0167	0.0439	0.0242	0.0102	1974	-0.0341
1975	0.0166	0.0088	-0.0308	-0.0226	0.0169	0.0251	-0.0135	-0.0116	-0.0151	0.0419	-0.0150	0.0342	1975	0.0322
1976	0.0043	0.0028	0.0125	-0.0023	-0.0196	0.0164	0.0031	0.0169	0.0101	0.0043	0.0299	0.0287	1976	0.1116
1977	-0.0424	-0.0079	0.0052	0.0036	0.0084	0.0125	-0.0090	0.0070	-0.0143	0.0045	-0.0215	0.0045	1977	-0.0033
1978	-0.0132	-0.0037	-0.0075	-0.0054	-0.0116	-0.0143	0.0085	0.0168	-0.0164	-0.0271	0.0120	-0.0205	1978	-0.0783
1979	0.0115	-0.0203	0.0048	-0.0194	0.0177	0.0233	-0.0166	-0.0113	-0.0198	-0.0933	0.0214	-0.0039	1979	-0.1059
1980	-0.0822	-0.0552	-0.0437	0.1399	0.0339	0.0296	-0.0530	-0.0492	-0.0341	-0.0359	0.0013	0.0213	1980	-0.1372
1981	-0.0217	-0.0535	0.0257	-0.0624	0.0510	-0.0320	-0.0480	-0.0516	-0.0267	0.0711	0.1302	-0.0801	1981	-0.1134



# EXHIBIT B-15

## COMMON STOCKS : INFLATION ADJUSTED TOTAL RETURNS

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	YEAR	JAN-DEC
1926	-0.0000	-0.0347	-0.0519	0.0159	0.0235	0.0532	0.0573	0.0306	0.0194	-0.0322	0.0309	0.0194	1926	0.1325
1927	-0.0117	-0.0614	0.0144	0.0201	0.0530	-0.0163	0.0860	0.0573	0.0392	-0.0560	0.0740	0.0298	1927	0.4008
1928	-0.0020	-0.0529	0.1101	0.0325	-0.0139	-0.0307	0.0141	0.0783	0.0181	-0.0188	0.1311	0.0088	1928	0.4507
1929	0.0403	0.0000	0.0027	0.0214	-0.0422	-0.1101	0.0373	0.0990	-0.0457	-0.1973	-0.1227	0.0340	1929	-0.0852
1930	0.0478	0.0298	0.0871	-0.0139	-0.0038	-0.1566	-0.0523	0.0202	-0.1343	-0.0795	-0.0008	-0.0563	1930	-0.2009
1931	-0.0647	0.1340	-0.0611	-0.0870	-0.1171	-0.1530	-0.0499	0.0204	-0.2928	-0.0963	-0.0684	-0.1309	1931	-0.3725
1932	0.0065	-0.0711	-0.1111	-0.1926	-0.1052	0.0005	0.0437	0.3991	0.0298	-0.1274	-0.0749	0.0964	1932	-0.2460
1933	0.0240	-0.1611	-0.0432	-0.1485	-0.1252	0.0202	-0.1150	0.1104	-0.1118	-0.0852	0.1127	0.0964	1933	-0.2460
1934	0.1019	0.0398	0.0000	-0.0226	-0.0741	0.0204	-0.1131	0.0586	-0.0182	-0.0212	0.0947	0.0014	1934	-0.0342
1935	-0.0560	-0.0414	-0.0242	-0.0882	0.0458	0.0724	0.0899	0.0280	0.0207	0.0777	0.0425	-0.0370	1935	0.4328
1936	0.0470	0.0272	-0.0317	-0.0782	0.0845	0.0234	0.0452	0.0679	0.0007	0.0798	0.0134	-0.0029	1936	0.3254
1937	0.0318	0.0167	-0.0148	-0.0856	-0.0071	-0.0528	0.0999	-0.0506	-0.1495	-0.0935	-0.0797	-0.0436	1937	-0.3702
1938	-0.0291	0.0767	-0.2487	-0.0233	-0.0233	-0.2503	0.0720	-0.0202	0.0166	-0.0821	-0.0250	0.0377	1938	-0.4482
1939	-0.0426	0.0438	-0.1315	-0.0003	-0.0733	-0.0412	0.1105	-0.0648	0.1479	-0.0075	-0.0398	0.0318	1939	0.0035
1940	-0.0312	0.0061	0.0147	-0.0024	-0.0231	0.0785	0.0364	0.0099	0.0099	-0.0422	-0.0316	-0.0038	1940	-0.1070
1941	-0.0463	-0.0040	-0.0023	-0.0700	0.0113	0.0392	-0.0374	-0.0081	-0.0248	-0.0767	-0.0372	-0.0438	1941	-0.1955
1942	-0.0343	-0.0244	-0.0779	-0.0444	0.0633	0.0200	-0.0533	-0.0102	-0.0270	-0.0577	-0.0372	-0.0316	1942	-0.1014
1943	0.0393	0.0563	0.0388	-0.0186	0.0475	0.0242	-0.0250	0.0210	-0.0224	-0.0146	-0.0335	0.0599	1943	-0.1738
1944	0.0191	0.0061	0.0198	-0.0100	0.0467	0.0242	-0.0250	0.0120	-0.0008	0.0023	0.0135	0.0336	1944	0.1730
1945	0.0158	0.0702	-0.0441	-0.0883	0.0120	-0.0100	-0.0199	0.0641	0.0475	0.0322	0.0359	0.0080	1945	0.3343
1946	-0.0714	-0.0604	-0.0407	-0.0353	0.0233	-0.0479	-0.0819	-0.0893	-0.1111	-0.0256	-0.0267	0.0378	1946	-0.2291
1947	-0.0277	-0.0361	-0.0361	-0.0361	0.0577	-0.0270	-0.0308	-0.0308	-0.0323	-0.0323	-0.0323	0.0104	1947	-0.0316
1948	-0.0553	-0.1885	-0.0350	-0.0193	-0.0809	-0.0270	0.0191	-0.0191	-0.0221	0.0396	0.0160	0.0542	1948	0.2091
1949	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	1949	0.2091
1950	0.0239	0.0228	0.0027	0.0472	0.0447	-0.0605	0.0021	0.0360	-0.0323	0.0038	0.0128	0.0377	1950	0.2462
1951	0.0477	0.0039	-0.0195	0.0496	0.0437	-0.0218	-0.0698	0.0478	-0.0081	-0.0154	0.0044	0.0186	1951	0.1725
1952	0.0181	-0.0219	-0.0503	0.0440	0.0330	-0.0445	0.0121	-0.0084	-0.0163	-0.0008	0.0575	0.0186	1952	0.1725
1953	-0.0024	-0.0250	-0.0238	-0.0230	0.0382	-0.0172	-0.0248	-0.0248	-0.0248	-0.0248	0.0241	0.0063	1953	-0.0162
1954	0.0511	0.0124	0.0337	0.0541	0.0380	-0.0018	0.0589	-0.0263	0.0876	-0.0142	0.0897	0.0559	1954	0.5337
1955	0.0197	0.0098	-0.0030	0.0396	0.0841	0.0584	-0.0000	-0.0092	-0.0092	-0.0284	0.0814	0.0040	1955	0.3111
1956	-0.0335	-0.0413	0.0698	-0.0017	-0.0643	0.0347	0.0456	-0.0316	-0.0452	-0.0005	-0.0050	0.0346	1956	0.0363
1957	-0.0413	-0.0300	0.0191	0.0352	-0.0443	-0.0055	0.0083	-0.0517	-0.0611	0.0302	0.0196	-0.0399	1957	-0.1340
1958	0.0386	-0.0153	0.0258	0.0314	0.0213	-0.0267	0.0437	0.0187	-0.0301	0.0270	0.0275	0.0549	1958	0.4095
1959	0.0041	0.0060	0.0020	0.0391	0.0228	-0.0068	0.0340	-0.0091	-0.0477	0.0094	0.0186	0.0292	1959	0.1030
1960	-0.0688	0.0136	-0.0123	-0.0218	0.0326	0.0189	-0.0234	0.0317	-0.0601	-0.0053	0.0453	0.0479	1960	-0.0100
1961	0.0645	0.0319	0.0051	0.0270	0.0239	-0.0297	0.0254	0.0254	-0.0206	0.0298	0.0447	0.0046	1961	-0.2604
1962	-0.0366	-0.0187	-0.0068	-0.0620	-0.0811	-0.0803	-0.0630	-0.0208	-0.0520	0.0075	-0.1086	0.0164	1962	-0.0986
1963	0.0272	-0.0157	0.0154	0.0064	0.0162	0.0156	0.0173	-0.0107	-0.0279	0.0085	-0.0017	0.0045	1963	0.2081
1964	0.0272	-0.0157	0.0154	0.0064	0.0162	0.0156	0.0173	-0.0107	-0.0279	0.0085	-0.0017	0.0045	1964	0.1514
1965	0.0345	0.0031	-0.0143	0.0324	-0.0052	-0.0526	0.0137	0.0293	0.0313	0.0278	-0.0052	0.0074	1965	0.1031
1966	0.0798	-0.0194	-0.0386	0.0178	-0.0507	-0.0177	-0.0151	-0.0776	-0.0074	0.0453	0.0099	-0.0008	1966	-0.1303
1967	-0.0798	0.0061	0.0386	0.0417	0.0072	-0.0160	-0.0418	0.0100	0.0322	0.0306	0.0033	0.0248	1967	0.2035
1968	-0.0464	-0.0291	0.0061	0.0805	0.0132	0.0047	-0.0220	0.0135	0.0371	0.0030	-0.0431	0.0607	1968	0.0607
1969	-0.0097	-0.0464	0.0275	0.0164	-0.0002	-0.0606	-0.0633	0.0409	-0.0281	0.0423	-0.0351	-0.0239	1969	-0.1384
1970	-0.0779	0.0533	-0.0023	-0.0950	-0.0591	-0.0534	0.0718	0.0492	0.0296	-0.0148	0.0502	0.0533	1970	-0.0145
1971	0.0410	0.0124	0.0349	0.0343	-0.0417	-0.0037	-0.0424	0.0388	-0.0664	-0.0420	0.0010	0.0832	1971	0.1063
1972	0.0186	0.0251	0.0056	0.0033	0.0187	-0.0229	-0.0004	0.0375	-0.0074	0.0075	0.0481	0.0100	1972	0.1509
1973	-0.0191	-0.0403	-0.0095	-0.0464	-0.0201	-0.0120	0.0372	-0.0499	0.0386	-0.0078	-0.1155	0.0118	1973	-0.2177
1974	-0.0172	-0.0110	-0.0330	-0.0429	-0.0384	-0.0225	-0.0834	-0.0957	-0.1290	-0.1572	-0.0533	-0.0249	1974	-0.3478
1975	0.1206	0.0604	0.0198	0.0442	0.0464	0.0380	-0.0765	-0.0175	-0.0377	0.0576	0.0253	-0.0139	1975	0.2833
1976	0.1175	-0.0082	0.0302	-0.0141	-0.0133	0.0374	-0.0127	-0.0033	-0.0206	-0.0246	-0.0038	0.0511	1976	0.1063
1977	-0.0547	-0.0254	-0.0181	-0.0065	-0.0205	0.0408	-0.0195	-0.0171	-0.0038	-0.0443	0.0321	0.0010	1977	-0.1313
1978	0.0450	-0.0207	-0.0789	0.0037	-0.0789	-0.0256	-0.0488	0.0289	-0.0119	-0.0971	0.0205	0.0117	1978	-0.0229
1979	0.0333	-0.0401	0.0479	-0.0291	-0.0291	0.0316	-0.0020	0.0510	-0.0079	-0.0745	0.0421	0.0087	1979	0.0455
1980	0.0467	-0.0107	-0.1130	0.0317	0.0463	-0.0185	0.0668	0.0067	0.0188	0.0099	0.1005	-0.0401	1980	0.1787
1981	-0.0519	0.0104	0.0308	-0.0277	-0.0020	-0.0166	-0.0107	-0.0631	-0.0603	0.0507	0.0412	-0.0294	1981	-0.1285



# EXHIBIT B-16

## SMALL STOCKS : INFLATION ADJUSTED TOTAL RETURNS

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JULY	AUG	SEP	OCT	NOV	DEC	YEAR	JAN-DEC
1926	0.0699	-0.0602	-0.1017	0.0085	-0.0010	0.0453	0.0206	0.0313	-0.0058	-0.0265	0.0170	0.0332	1926	0.0181
1927	0.0371	-0.0623	-0.0490	0.0573	0.0657	-0.0399	0.0706	-0.0120	-0.0011	-0.0717	0.0827	0.0336	1927	0.2441
1928	0.0501	-0.0140	-0.0531	0.0890	-0.0379	-0.0785	0.0059	0.0422	0.0812	0.0296	0.1167	-0.0474	1928	0.4129
1929	0.0054	-0.0007	-0.0161	0.0345	-0.1396	0.0494	0.0016	-0.0202	-0.0903	-0.2768	-0.1481	-0.0443	1929	-0.5146
1930	0.1332	0.0682	0.1066	-0.0757	-0.0484	-0.2109	0.0440	-0.0106	-0.1520	-0.1036	0.0053	-0.1023	1930	-0.5412
1931	0.2248	0.2713	-0.0644	-0.2099	-0.1271	0.1928	-0.0535	-0.0741	-0.3202	0.0836	-0.0896	-0.2104	1931	-0.4438
1932	0.1229	-0.0431	-0.1264	-0.2148	-0.1050	0.0106	-0.3823	0.7469	-0.1270	-0.1700	-0.1177	-0.0391	1932	0.0542
1933	0.0670	-0.1129	-0.1312	0.5064	0.6113	-0.2511	-0.0139	0.0822	-0.1895	0.1236	0.0654	0.0106	1933	0.4198
1934	0.3840	0.0090	-0.0012	0.0265	-0.1300	-0.0049	-0.2259	0.1521	-0.0316	0.0170	0.0973	0.0197	1934	0.2181
1935	-0.0477	-0.0666	-0.1164	0.0694	0.0024	0.0329	0.0904	0.0545	0.0308	0.0994	0.1363	0.0574	1935	0.3614
1936	0.3009	0.0660	0.0114	-0.1795	0.0277	-0.0329	0.0824	0.0138	0.0518	0.0659	0.1400	-0.0160	1936	0.6279
1937	0.1195	0.0649	0.0049	-0.1725	-0.0453	-0.1206	0.1189	-0.0759	-0.2631	-0.1047	-0.1384	-0.1671	1937	-0.5933
1938	-0.0673	0.0437	-0.3600	0.2729	-0.0802	0.3498	0.1475	-0.0978	-0.0157	0.2183	-0.0623	0.0463	1938	0.3661
1939	-0.0801	0.0154	-0.2442	0.0166	0.1087	-0.1042	0.2535	-0.1590	0.4951	-0.0349	-0.1053	0.0470	1939	0.0157
1940	0.0033	0.0749	0.0656	0.0654	-0.3698	0.1027	0.0255	0.0279	0.0189	0.0545	0.0245	-0.0495	1940	-0.0616
1941	0.0025	-0.0288	0.0272	-0.0764	-0.0026	0.0567	0.2120	0.0151	-0.0649	-0.0782	-0.0582	-0.1226	1941	-0.1723
1942	0.1764	-0.0138	-0.0836	-0.0415	-0.0135	0.0315	0.0696	0.0264	0.0892	0.0986	-0.0511	0.0334	1942	0.3743
1943	0.2132	0.1911	0.1287	0.0817	0.1079	-0.0064	-0.1007	0.0036	0.0389	-0.0085	-0.1094	0.1222	1943	0.8355
1944	0.0660	0.0314	0.0749	-0.0590	0.0701	0.1363	-0.0356	0.0281	-0.0020	-0.0108	0.0499	0.0832	1944	0.6097
1945	0.0482	0.1028	-0.0861	0.1138	0.0425	0.0762	-0.0575	0.0557	0.0716	-0.0701	0.1135	-0.0574	1945	0.5956
1946	0.1562	0.0600	0.0200	0.0641	-0.0537	-0.0571	-0.1120	-0.1068	-0.1718	-0.0314	-0.0381	0.0294	1946	-0.2517
1947	0.0421	-0.0023	-0.0554	-0.1031	-0.0503	0.0475	-0.0698	-0.0142	-0.0123	0.0282	-0.0361	0.0294	1947	-0.0747
1948	-0.0267	-0.0698	0.1014	-0.0225	-0.0989	-0.0022	-0.0703	-0.0035	-0.0526	0.0688	-0.1048	0.0156	1948	-0.0465
1949	0.0196	-0.0370	0.0601	-0.0350	-0.0550	-0.1110	0.0741	0.0228	0.0447	0.0528	0.0002	0.0746	1949	0.2191
1950	0.0534	0.0249	-0.0080	0.0397	0.0212	-0.0833	0.0493	0.0447	0.0452	-0.0113	0.0282	0.0818	1950	0.3135
1951	0.0570	-0.0057	-0.0516	0.0354	-0.0369	-0.0516	0.0360	0.0605	0.0151	-0.0273	-0.0134	0.0006	1951	0.0188
1952	0.0191	-0.0215	-0.0175	-0.0557	0.0019	0.0246	0.0037	-0.0018	-0.0148	-0.0116	0.0489	0.0173	1952	0.0213
1953	0.0434	0.0199	-0.0195	-0.0300	0.0116	-0.0524	0.0127	-0.0653	-0.0275	0.0267	0.0163	-0.0253	1953	-0.0713
1954	0.0732	0.0107	0.0195	0.0165	0.0414	0.0073	0.0808	0.0027	0.0434	0.0093	0.0767	0.1137	1954	0.6138
1955	0.0201	0.0479	0.0085	0.0150	0.0078	0.0293	0.0026	-0.0003	0.0072	-0.0170	0.0456	0.0187	1955	0.2000
1956	-0.0035	0.0278	0.0418	0.0034	-0.0447	-0.0006	0.0209	-0.0122	-0.0273	-0.0043	0.0053	0.0014	1956	0.0138
1957	0.0042	-0.0184	0.0133	0.0053	0.0053	0.0014	-0.0108	-0.0398	-0.0464	-0.0832	0.0078	-0.0481	1957	-0.1708
1958	0.0542	0.0307	0.0133	0.0044	0.0033	0.0488	0.0488	0.0488	0.0488	0.0193	0.0078	0.0031	1958	0.6218
1959	0.0564	0.0307	0.0027	0.0105	0.0002	-0.0088	0.0304	-0.0076	-0.0465	0.0193	0.0222	0.0322	1959	0.1468
1960	-0.0295	0.0038	-0.0315	-0.0244	0.0204	-0.0317	-0.0189	0.0525	-0.0750	-0.0446	0.0426	0.0332	1960	-0.0473
1961	0.0197	0.0589	0.0136	-0.0277	-0.0385	-0.0913	0.0143	-0.0361	-0.0714	-0.0226	0.0613	-0.0022	1961	0.3118
1962	0.0136	0.0035	-0.0800	-0.0109	-0.0109	-0.0395	0.0289	0.0714	-0.0389	0.0744	-0.0078	0.0078	1962	-0.2150
1963	0.0899	0.0023	0.0138	0.0312	0.0436	-0.0162	-0.0011	0.0517	-0.0163	0.0325	-0.0117	-0.0069	1963	0.2150
1964	0.0265	0.0376	0.0208	0.0083	0.0157	0.0141	-0.0018	-0.0018	0.0381	0.0195	-0.0011	-0.0123	1964	0.2210
1965	0.0529	0.0390	0.0227	0.0477	-0.0099	-0.0954	0.0438	0.0616	0.0326	0.0562	0.0350	0.0590	1965	0.3906
1966	0.0586	0.0248	-0.0223	0.0302	-0.0972	-0.0043	-0.0043	-0.1135	-0.0184	-0.0148	0.0491	0.0065	1966	-0.1009
1967	0.1638	0.0433	0.0594	0.0250	-0.0116	0.0997	0.0901	-0.0009	0.0545	-0.0341	0.0087	0.0936	1967	0.7835
1968	0.0115	-0.0768	-0.0158	0.1431	0.0970	-0.0028	0.0394	0.0338	0.0551	-0.0027	0.0726	0.0034	1968	0.2992
1969	-0.0194	-0.1027	0.0312	0.0330	0.0146	-0.1229	-0.1115	0.0487	-0.0306	0.0574	-0.0611	-0.0750	1969	-0.2951
1970	-0.0644	0.0334	-0.0337	-0.1789	-0.1075	-0.0981	0.0519	0.0932	0.1035	-0.0757	0.0103	0.0675	1970	-0.2188
1971	0.1584	0.0300	0.0530	0.0213	-0.0655	-0.0377	-0.0588	0.0559	-0.0235	-0.0547	-0.0390	0.1104	1971	0.1272
1972	0.1122	0.0247	-0.0160	0.0105	-0.0223	-0.0329	-0.0453	0.0170	-0.0389	-0.0207	0.0569	-0.0245	1972	0.0096
1973	-0.0466	-0.0869	-0.0501	-0.0691	-0.0872	-0.0359	0.1171	-0.0626	0.1034	0.0003	-0.2035	-0.0079	1973	-0.3681
1974	0.1240	-0.0214	-0.0187	-0.0520	-0.0904	-0.0243	-0.0294	-0.0809	-0.0773	0.0977	-0.0523	-0.0859	1974	-0.2893
1975	0.2722	0.0215	0.0580	0.0480	0.0619	0.0668	-0.0360	-0.0604	-0.0231	-0.0111	0.0259	-0.0239	1975	0.4303
1976	0.2660	-0.1366	-0.0039	-0.0400	-0.0421	0.0406	-0.0014	-0.0337	0.0064	-0.0249	0.0375	0.1152	1976	0.5026
1977	-0.0397	-0.0133	0.0958	0.0150	-0.0084	-0.0706	-0.0014	-0.0146	-0.0054	-0.0358	0.1037	0.0043	1977	0.1754
1978	0.1233	-0.0400	0.1023	0.0272	-0.0088	0.0379	0.0611	-0.0103	-0.0888	-0.2508	0.0677	0.0113	1978	0.1325
1979							0.0042	0.0656	-0.0448	-0.1244	0.0765	0.0483	1979	0.2686
1980	0.0692	-0.0421	-0.1921	0.0581	0.0651	0.0342	-0.1315	0.0326	0.0326	0.0246	0.0674	-0.0424	1980	0.2440
1981	0.0239	0.0116	0.0808	0.0256	0.0238	0.0094	-0.0454	-0.0867	-0.0851	0.0889	0.0391	-0.0239	1981	0.0453



# EXHIBIT B-17

LONG-TERM CORPORATE BONDS : INFLATION ADJUSTED TOTAL RETURNS													YEAR	JAN-DEC
YEAR	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	YEAR	JAN-DEC
1926	0.0072	0.0082	0.0140	0.0003	0.0100	0.0079	0.0151	0.0101	-0.0000	0.0059	0.0019	0.0056	1926	0.0896
1927	0.0132	0.0145	0.0141	0.0055	-0.0089	-0.0053	0.0193	0.0141	0.0091	0.0027	0.0007	0.0007	1927	0.0943
1928	0.0046	0.0165	0.0041	-0.0006	-0.0136	0.0054	-0.0010	0.0063	-0.0048	0.0102	-0.0017	0.0123	1928	0.0380
1929	0.0042	0.0050	0.0048	0.0058	-0.0014	-0.0085	-0.0078	-0.0019	0.0053	0.0073	0.0001	0.0250	1929	0.0304
1930	0.0098	0.0111	0.0197	0.0025	0.0116	0.0149	0.0195	0.0194	0.0047	0.0114	0.0049	0.0053	1930	0.1480
1931	0.0348	0.0215	0.0158	0.0131	0.0242	0.0141	0.0074	0.0034	0.0030	-0.0296	-0.0077	-0.0195	1931	0.0837
1932	0.0154	-0.0098	0.0403	-0.0105	0.0251	0.0044	0.0043	0.0559	0.0351	0.0149	0.0123	0.0240	1932	0.2330
1933	0.0700	-0.0368	0.0126	-0.0068	0.0561	0.0084	-0.0128	-0.0009	-0.0014	0.0040	-0.0248	0.0308	1933	0.0973
1934	0.0206	0.0070	0.0187	0.0129	0.0065	0.0133	0.0047	0.0022	-0.0211	0.0176	0.0154	0.0126	1934	0.1154
1935	0.0062	0.0067	0.0067	0.0014	0.0090	0.0136	0.0160	-0.0042	-0.0049	0.0042	0.0020	0.0059	1935	0.0644
1936	0.0082	0.0102	0.0131	0.0026	0.0040	-0.0016	-0.0037	-0.0005	0.0043	0.0049	0.0109	0.0010	1936	0.0545
1937	-0.0048	-0.0070	-0.0185	0.0021	-0.0007	0.0030	-0.0007	-0.0040	-0.0067	0.0113	0.0136	0.0090	1937	-0.0039
1938	0.0177	0.0104	0.0057	0.0057	0.0057	0.0059	0.0042	0.0005	0.0109	0.0127	0.0061	0.0098	1938	0.0912
1939	0.0070	0.0112	0.0046	0.0088	0.0049	0.0035	-0.0007	-0.0392	-0.0042	0.0284	0.0079	0.0126	1939	0.0442
1940	0.0073	-0.0051	0.0073	-0.0092	-0.0045	0.0097	0.0045	0.0031	0.0068	0.0049	0.0063	-0.0071	1940	0.0240
1941	0.0006	0.0006	-0.0069	-0.0016	-0.0021	-0.0123	0.0017	-0.0132	-0.0057	-0.0076	-0.0181	-0.0016	1941	-0.0644
1942	-0.0124	-0.0093	-0.0064	-0.0059	-0.0084	-0.0021	-0.0021	-0.0026	-0.0000	-0.0054	-0.0031	-0.0018	1942	-0.0618
1943	0.0049	-0.0014	-0.0138	-0.0068	-0.0029	0.0047	0.0095	0.0057	-0.0034	-0.0047	-0.0004	0.0030	1943	-0.0036
1944	0.0039	0.0053	0.0048	-0.0024	-0.0033	0.0001	-0.0023	-0.0004	0.0019	0.0019	0.0048	0.0111	1944	0.0257
1945	0.0076	0.0065	0.0018	-0.0001	-0.0084	-0.0041	-0.0029	0.0004	0.0069	0.0032	-0.0005	0.0096	1945	0.0177
1946	0.0128	0.0071	-0.0040	-0.0098	-0.0036	-0.0089	-0.0402	-0.0308	-0.0142	-0.0176	-0.0265	0.0035	1946	-0.1439
1947	0.0005	0.0021	-0.0151	0.0020	0.0050	-0.0072	-0.0071	-0.0176	-0.0369	-0.0099	-0.0156	-0.0106	1947	-0.1056
1948	-0.0090	0.0124	0.0143	-0.0104	-0.0062	-0.0153	-0.0177	0.0014	0.0024	0.0065	0.0153	0.0200	1948	0.0129
1949	0.0052	0.0149	-0.0021	0.0009	0.0052	-0.0070	0.0169	0.0009	-0.0021	0.0123	0.0007	-0.0089	1949	0.0517
1950	0.0079	0.0035	-0.0021	-0.0022	-0.0050	-0.0033	-0.0029	-0.0045	-0.0043	-0.0063	0.0013	-0.0112	1950	-0.0351
1951	-0.0141	-0.0162	-0.0276	-0.0022	-0.0054	-0.0080	0.0192	0.0114	-0.0121	-0.0196	-0.0112	0.0020	1951	-0.0816
1952	-0.0199	-0.0022	-0.0026	-0.0042	-0.0059	-0.0099	-0.0060	0.0050	-0.0066	0.0026	-0.0108	-0.0079	1952	0.0261
1953	-0.0055	-0.0010	-0.0058	-0.0018	-0.0018	-0.0017	0.0107	0.0241	0.0202	-0.0024	-0.0184	0.0073	1953	0.0373
1954	0.0099	0.0210	0.0051	-0.0009	-0.0079	0.0051	0.0040	0.0030	0.0065	0.0065	0.0013	0.0042	1954	0.0550
1955	-0.0097	-0.0063	0.0092	-0.0001	-0.0018	0.0079	-0.0078	-0.0013	0.0039	0.0078	-0.0042	0.0088	1955	-0.0010
1956	0.0116	0.0026	-0.0158	-0.0127	-0.0002	-0.0080	-0.0078	-0.0166	-0.0026	-0.0166	-0.0026	-0.0106	1956	-0.0944
1957	0.0185	0.0057	0.0026	-0.0102	-0.0099	-0.0382	-0.0157	-0.0021	0.0083	0.0024	0.0274	0.0485	1957	0.0550
1958	0.0040	-0.0020	-0.0116	0.0140	0.0031	-0.0050	-0.0165	-0.0308	-0.0096	0.0107	0.0093	-0.0046	1958	-0.0391
1959	-0.0040	0.0138	-0.0083	-0.0184	-0.0126	-0.0002	0.0066	-0.0057	-0.0122	0.0131	0.0135	-0.0096	1959	-0.0243
1960	0.0118	0.0117	0.0191	-0.0079	-0.0021	0.0118	0.0257	0.0117	-0.0074	-0.0037	-0.0081	0.0104	1960	0.0747
1961	0.0148	0.0210	-0.0029	-0.0116	0.0049	-0.0091	0.0005	-0.0007	0.0122	0.0127	0.0028	-0.0026	1961	0.0412
1962	0.0080	0.0030	0.0129	0.0120	0.0000	-0.0026	-0.0037	0.0143	-0.0034	0.0079	0.0062	0.0034	1962	0.0665
1963	0.0048	0.0012	-0.0015	-0.0051	0.0048	-0.0001	-0.0016	0.0035	0.0023	0.0038	0.0004	-0.0056	1963	0.0054
1964	0.0076	0.0065	-0.0073	0.0029	0.0057	0.0026	0.0030	0.0048	-0.0001	0.0039	-0.0025	0.0077	1964	0.0354
1965	0.0081	0.0009	0.0001	-0.0011	-0.0029	-0.0050	0.0008	0.0015	-0.0036	0.0035	-0.0078	-0.0181	1965	-0.0235
1966	0.0022	-0.0176	-0.0090	-0.0029	-0.0036	-0.0001	-0.0129	-0.0310	0.0058	0.0220	-0.0020	0.0191	1966	-0.0308
1967	0.0450	-0.0211	0.0077	-0.0091	-0.0284	-0.0253	-0.0009	-0.0037	0.0074	-0.0311	-0.0302	0.0097	1967	-0.0779
1968	0.0322	0.0008	-0.0246	0.0019	0.0044	0.0003	0.0044	0.0293	0.0177	-0.0082	-0.0217	-0.0261	1968	-0.0206
1969	0.0111	-0.0197	-0.0284	0.0270	-0.0255	-0.0029	-0.0041	-0.0065	-0.0289	0.0091	-0.0525	-0.0196	1969	-0.1345
1970	0.0106	0.0348	-0.0098	-0.0311	-0.0204	-0.0051	0.0522	0.0083	0.0088	-0.0147	0.0550	0.0321	1970	0.1225
1971	0.0524	-0.0383	0.0224	-0.0269	-0.0211	-0.0049	0.0529	0.0529	0.0110	0.0266	0.0013	0.0182	1971	0.0742
1972	-0.0041	0.0058	0.0008	0.0011	-0.0092	-0.0010	0.0010	0.0056	0.0009	0.0029	0.0228	-0.0036	1972	0.0373
1973	-0.0085	-0.0047	-0.0048	-0.0008	-0.0100	-0.0124	-0.0499	0.0175	0.0326	-0.0147	0.0005	-0.0154	1973	-0.0706
1974	-0.0140	-0.0120	-0.0420	-0.0397	-0.0006	-0.0381	-0.0286	-0.0396	0.0054	0.0799	0.0032	-0.0146	1974	-0.1373
1975	0.0551	0.0067	-0.0285	-0.0103	0.0062	0.0222	-0.0136	-0.0206	-0.0175	0.0492	-0.0149	0.0400	1975	0.0717
1976	0.0164	0.0037	0.0143	-0.0057	-0.0162	0.0097	0.0090	0.0184	0.0124	0.0029	0.0290	0.0318	1976	0.1324
1977	-0.0360	-0.0123	0.0032	0.0021	0.0050	0.0109	-0.0049	0.0098	-0.0060	-0.0065	0.0012	-0.0143	1977	-0.0477
1978	-0.0143	-0.0018	-0.0027	-0.0113	-0.0207	-0.0080	0.0029	0.0204	-0.0119	-0.0285	0.0079	-0.0188	1978	-0.0841
1979	0.0095	-0.0245	0.0010	-0.0166	0.0105	0.0175	-0.0160	-0.0094	-0.0283	-0.0979	0.0129	-0.0214	1979	-0.1558
1980	-0.0819	-0.0815	-0.0195	0.1307	0.0459	0.0264	-0.0470	-0.0508	-0.0334	-0.0260	-0.0082	-0.0205	1980	-0.1349
1981	-0.0231	-0.0350	0.0224	-0.0863	0.0552	-0.0096	-0.0491	-0.0429	-0.0331	0.0570	0.1286	-0.0606	1981	-0.0924



## EXHIBIT B-18

## LONG-TERM GOVERNMENT BONDS : INFLATION ADJUSTED TOTAL RETURNS

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JULY	AUG	SEP	OCT	NOV	DEC	YEAR	JAN-DEC
1926	0.0138	0.0100	0.0097	-0.0018	0.0070	0.0113	0.0099	0.0057	-0.0020	0.0044	0.0122	0.0078	1926	0.0937
1927	0.0150	0.0164	0.0311	-0.0005	0.0031	-0.0165	0.0239	0.0134	-0.0040	0.0041	0.0116	0.0091	1927	0.1112
1928	-0.0017	0.0158	0.0045	-0.0023	-0.0136	0.0119	-0.0217	0.0057	-0.0119	0.0177	0.0023	0.0043	1928	0.0103
1929	-0.0070	-0.0137	-0.0105	0.0314	-0.0255	0.0106	-0.0098	-0.0073	0.0047	0.0382	0.0256	-0.0031	1929	0.0318
1930	-0.0018	0.0168	0.0142	-0.0075	0.0198	0.0110	0.0173	0.0073	0.0013	0.0096	0.0123	0.0073	1930	0.1127
1931	0.0023	0.0232	0.0168	0.0150	0.0253	0.0113	-0.0020	0.0035	-0.0236	-0.0263	0.0139	-0.0129	1931	0.0458
1932	0.0240	-0.0554	0.0029	-0.0675	-0.0353	0.0465	0.0481	0.0125	0.0107	0.0058	0.0082	-0.0232	1932	0.2999
1933	0.0301	-0.0133	0.0174	-0.0006	-0.0206	-0.0056	-0.0306	0.0023	-0.0091	-0.0149	-0.0042	-0.0042	1933	-0.0071
1934	0.0206	0.0005	0.0197	0.0151	0.0106	0.0042	0.0040	-0.0143	-0.0295	0.0256	0.0062	0.0137	1934	0.0777
1935	0.0032	0.0018	0.0066	-0.0019	-0.0008	0.0116	0.0094	-0.0133	-0.0040	0.0061	-0.0039	0.0046	1935	0.0193
1936	0.0055	0.0129	0.0155	0.0035	0.0040	-0.0076	0.0012	0.0039	-0.0055	0.0030	0.0205	0.0038	1936	0.0621
1937	-0.0085	0.0063	-0.0482	-0.0008	0.0006	-0.0041	0.0092	-0.0127	0.0088	0.0164	0.0106	0.0106	1937	-0.0285
1938	0.0176	0.0146	-0.0037	0.0162	0.0091	-0.0004	0.0020	0.0024	0.0022	0.0134	0.0002	0.0056	1938	0.0850
1939	0.0107	0.0128	0.0149	0.0142	0.0171	-0.0027	0.0113	-0.0201	-0.0738	0.0457	0.0162	0.0192	1939	0.0623
1940	0.0007	-0.0045	0.0201	-0.0035	-0.0323	0.0234	0.0076	0.0052	0.0086	0.0031	0.0205	0.0019	1940	0.0507
1941	-0.0201	0.0020	0.0048	-0.0035	-0.0092	-0.0018	-0.0023	-0.0077	-0.0077	-0.0095	-0.0031	-0.0031	1941	-0.0807
1942	-0.0060	-0.0074	-0.0035	-0.0092	-0.0029	-0.0018	-0.0023	-0.0077	-0.0077	-0.0095	-0.0031	-0.0031	1942	-0.0560
1943	0.0033	-0.0025	-0.0149	-0.0068	-0.0026	0.0037	0.0076	0.0059	-0.0028	-0.0034	0.0019	-0.0001	1943	-0.0109
1944	0.0040	0.0051	0.0021	-0.0044	-0.0010	-0.0011	-0.0021	-0.0011	0.0014	0.0012	0.0024	0.0005	1944	0.0069
1945	0.0127	0.0095	0.0021	0.0141	-0.0019	0.0076	-0.0104	0.0026	0.0091	0.0104	0.0098	0.0157	1945	0.0831
1946	0.0025	0.0069	-0.0044	0.0190	-0.0067	-0.0038	-0.0630	-0.0331	-0.0125	-0.0122	-0.0295	0.0067	1946	-0.1595
1947	-0.0006	0.0037	-0.0198	-0.0037	0.0064	-0.0066	-0.0028	-0.0024	-0.0281	-0.0037	-0.0232	-0.0322	1947	-0.1083
1948	-0.0094	0.0131	0.0063	-0.0098	0.0071	-0.0154	-0.0146	-0.0040	0.0014	0.0048	0.0144	0.0125	1948	0.0059
1949	0.0096	0.0160	0.0046	-0.0003	0.0033	0.0153	0.0103	0.0083	-0.0054	0.0075	0.0007	0.0108	1949	0.0837
1950	-0.0019	0.0050	-0.0034	0.0016	-0.0009	-0.0081	-0.0043	-0.0049	-0.0141	-0.0102	-0.0006	-0.0119	1950	-0.0547
1951	-0.0102	-0.0192	-0.0196	-0.0075	-0.0108	-0.0049	0.0125	0.0099	-0.0144	-0.0041	-0.0187	-0.0099	1951	-0.0933
1952	0.0028	-0.0077	0.0111	0.0133	-0.0046	-0.0022	-0.0095	-0.0082	-0.0118	0.0135	-0.0015	-0.0073	1952	0.0027
1953	0.0037	-0.0037	0.0113	-0.0118	-0.0173	0.0185	0.0014	-0.0032	0.0287	0.0050	-0.0012	0.0218	1953	0.0299
1954	0.0064	-0.0252	0.0071	0.0129	-0.0124	0.0150	0.0134	-0.0024	0.0015	0.0031	-0.0037	0.0089	1954	0.0771
1955	-0.0241	-0.0078	0.0087	0.0001	0.0073	-0.0076	-0.0140	0.0029	0.0036	0.0144	-0.0057	0.0061	1955	-0.0167
1956	0.0096	-0.0002	-0.0161	-0.0125	0.0176	-0.0035	-0.0282	-0.0174	0.0037	-0.0115	-0.0057	-0.0203	1956	-0.0824
1957	0.0334	-0.0011	-0.0048	-0.0258	-0.0047	-0.0240	-0.0088	-0.0010	0.0064	-0.0050	0.0498	0.0307	1957	0.0429
1958	-0.0143	0.0149	0.0131	-0.0004	0.0071	-0.0071	-0.0070	0.0177	0.0139	0.0139	0.0109	-0.0169	1958	-0.0772
1959	-0.0092	0.0129	0.0017	-0.0128	-0.0017	-0.0036	0.0037	-0.0030	-0.0091	0.0116	-0.0119	-0.0159	1959	-0.0371
1960	0.0123	0.0192	0.0282	-0.0227	0.0152	0.0150	0.0368	0.0067	0.0064	-0.0073	-0.0077	0.0279	1960	0.1211
1961	-0.0107	0.0200	-0.0038	0.0115	-0.0046	-0.0086	-0.0010	-0.0027	0.0107	0.0071	-0.0020	-0.0125	1961	0.0030
1962	0.0014	0.0081	0.0231	-0.0040	0.0049	-0.0076	-0.0131	0.0187	0.0006	0.0089	0.0021	0.0046	1962	0.0560
1963	-0.0012	-0.0003	-0.0002	-0.0012	-0.0049	-0.0024	-0.0013	0.0021	0.0044	-0.0037	-0.0040	-0.0028	1963	-0.0443
1964	-0.0024	-0.0000	0.0026	0.0036	0.0050	0.0047	-0.0014	0.0031	0.0028	0.0032	-0.0005	0.0019	1964	0.0229
1965	0.0040	0.0014	0.0043	0.0004	-0.0004	-0.0006	0.0011	0.0008	-0.0055	0.0017	-0.0083	-0.0109	1965	-0.0120
1966	-0.0104	-0.0031	0.0270	-0.0104	-0.0070	-0.0047	-0.0068	0.0258	0.0312	0.0187	-0.0148	0.0403	1966	0.0027
1967	0.0154	-0.0235	0.0198	-0.0311	-0.0049	-0.0342	0.0018	-0.0114	-0.0024	-0.0430	-0.0234	0.0163	1967	-0.1190
1968	0.0288	-0.0063	-0.0261	0.0198	0.0014	0.0172	0.0241	-0.0032	-0.0131	-0.0189	-0.0302	-0.0391	1968	-0.0478
1969	0.0234	0.0004	-0.0074	0.0362	-0.0518	0.0150	0.0034	-0.0114	-0.0576	0.0329	-0.0297	-0.0131	1969	-0.1058
1970	-0.0057	0.0534	-0.0120	-0.0474	-0.0512	0.0435	0.0285	-0.0036	0.0177	-0.0160	0.0757	-0.0135	1970	0.0628
1971	0.0497	-0.0180	0.0493	-0.0317	-0.0056	-0.0217	0.0005	0.0446	0.0195	0.0150	-0.0043	0.0003	1971	0.0955
1972	-0.0072	0.0039	-0.0098	0.0003	0.0238	-0.0089	0.0176	0.0013	-0.0122	0.0203	0.0202	-0.0261	1972	0.0221
1973	-0.0352	-0.0056	-0.0011	-0.0024	-0.0166	-0.0090	0.0456	0.0211	0.0288	-0.0211	0.0087	-0.0148	1973	-0.0913
1974	-0.0170	-0.0153	-0.0405	-0.0309	0.0011	-0.0052	-0.0104	-0.0361	0.0127	0.0404	0.0211	0.0100	1974	-0.0708
1975	0.0180	0.0061	-0.0305	-0.0233	0.0168	0.0210	-0.0193	-0.0099	-0.0147	0.0414	-0.0170	0.0348	1975	0.0205
1976	0.0066	0.0038	0.0142	-0.0023	-0.0218	0.0154	0.0019	0.0165	0.0104	0.0043	0.0310	0.0298	1976	0.1143
1977	-0.0446	-0.0147	0.0027	-0.0005	0.0065	0.0098	0.0082	0.0124	-0.0065	-0.0121	0.0046	-0.0204	1977	-0.0701
1978	-0.0137	-0.0060	-0.0092	-0.0090	-0.0164	-0.0165	0.0069	0.0166	-0.0173	-0.0283	0.0135	-0.0181	1978	-0.0942
1979	0.0104	-0.0246	0.0033	-0.0229	0.0136	0.0221	-0.0219	-0.0137	-0.0219	-0.0935	0.0220	-0.0049	1979	-0.1295
1980	-0.0885	-0.0600	-0.0460	0.1412	0.0321	0.0246	-0.0486	-0.0492	-0.0358	-0.0351	0.0018	0.0258	1980	-0.1470
1981	-0.0195	-0.0532	0.0305	-0.0581	0.0543	-0.0271	-0.0470	-0.0464	-0.0244	0.0810	0.1380	-0.0742	1981	-0.0666



# EXHIBIT B-19

## U.S. TREASURY BILLS : INFLATION ADJUSTED TOTAL RETURNS

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JULY	AUG	SEP	OCT	NOV	DEC	YEAR	JAN-DEC
1926	0.0034	0.0064	0.0086	-0.0060	0.0057	0.0109	0.0117	0.0083	-0.0035	-0.0006	-0.0007	0.0028	1926	0.0478
1927	0.0100	0.0092	0.0082	0.0023	-0.0047	-0.0070	0.0220	0.0086	-0.0037	-0.0033	0.0046	0.0042	1927	0.0523
1928	0.0045	0.0130	0.0029	0.0025	-0.0026	0.0119	0.0022	0.0013	-0.0051	0.0043	0.0058	0.0042	1928	0.0429
1929	0.0054	0.0055	0.0073	0.0075	-0.0015	0.0013	-0.0064	0.0002	0.0054	0.0046	0.0057	0.0095	1929	0.0452
1930	0.0053	0.0049	0.0094	-0.0038	0.0085	0.0159	0.0086	0.0049	-0.0039	0.0049	0.0094	0.0157	1930	0.0889
1931	0.0159	0.0151	0.0077	0.0072	0.0117	0.0117	0.0028	0.0024	0.0047	0.0077	0.0129	0.0103	1931	0.1159
1932	0.0229	0.0163	0.0064	0.0083	0.0075	0.0075	0.0003	0.0126	0.0053	0.0077	0.0052	0.0102	1932	0.1239
1933	0.0154	0.0153	0.0083	0.0036	-0.0022	-0.0104	-0.0287	-0.0100	0.0002	0.0001	0.0002	0.0053	1933	-0.0037
1934	-0.0046	-0.0073	0.0002	0.0026	-0.0024	-0.0024	-0.0001	-0.0024	-0.0149	0.0075	0.0026	0.0026	1934	-0.0187
1935	-0.0148	-0.0072	0.0026	-0.0096	0.0050	0.0025	0.0050	0.0001	-0.0048	0.0001	-0.0046	-0.0023	1935	-0.0278
1936	0.0001	0.0050	0.0050	0.0002	0.0002	-0.0095	-0.0047	-0.0070	-0.0023	0.0026	0.0001	0.0000	1936	-0.0104
1937	-0.0070	-0.0022	-0.0070	-0.0044	-0.0040	-0.0020	-0.0043	-0.0021	-0.0088	0.0047	0.0071	0.0023	1937	-0.0274
1938	0.0139	0.0094	-0.0001	-0.0046	0.0047	0.0000	-0.0024	0.0024	0.0002	0.0048	0.0018	-0.0024	1938	0.0280
1939	0.0047	0.0049	0.0023	0.0024	0.0001	0.0001	0.0000	-0.0001	-0.0192	0.0048	0.0000	0.0048	1939	0.0045
1940	0.0024	-0.0072	0.0024	0.0000	-0.0025	-0.0023	0.0025	0.0023	-0.0024	0.0000	0.0000	-0.0048	1940	-0.0095
1941	-0.0001	-0.0001	-0.0046	-0.0095	-0.0070	-0.0185	-0.0043	-0.0090	-0.0179	-0.0110	-0.0087	-0.0021	1941	-0.0890
1942	-0.0126	-0.0084	-0.0126	-0.0062	-0.0101	-0.0118	-0.0039	-0.0058	-0.0017	-0.0098	-0.0057	-0.0077	1942	-0.0833
1943	-0.0093	-0.0017	-0.0148	-0.0074	-0.0074	-0.0022	-0.0039	-0.0036	-0.0036	-0.0036	-0.0022	-0.0016	1943	-0.0278
1944	0.0022	0.0022	0.0002	-0.0055	-0.0036	-0.0016	-0.0054	-0.0035	0.0002	0.0003	0.0003	-0.0035	1944	-0.0175
1945	0.0003	0.0021	0.0002	-0.0016	-0.0072	-0.0091	-0.0015	0.0003	0.0040	-0.0003	-0.0035	-0.0034	1945	-0.0190
1946	0.0003	0.0039	-0.0071	-0.0052	-0.0052	-0.0104	-0.0087	-0.0217	-0.0113	-0.0193	-0.0238	-0.0075	1946	-0.1552
1947	0.0003	0.0018	-0.0215	0.0003	0.0033	-0.0073	-0.0088	-0.0102	-0.0231	0.0006	-0.0052	-0.0122	1947	-0.0793
1948	-0.0107	0.0092	0.0037	-0.0134	-0.0063	-0.0061	-0.0116	-0.0032	0.0004	0.0045	0.0072	0.0073	1948	-0.0192
1949	0.0023	0.0120	-0.0018	-0.0005	0.0024	-0.0004	0.0079	-0.0019	-0.0033	0.0065	-0.0006	0.0065	1949	0.0293
1950	0.0052	0.0037	-0.0033	-0.0006	-0.0032	-0.0047	-0.0088	-0.0074	-0.0059	-0.0043	-0.0030	-0.0124	1950	-0.0439
1951	-0.0148	-0.0108	-0.0028	-0.0000	-0.0026	0.0024	0.0001	0.0013	-0.0052	-0.0036	-0.0040	-0.0026	1951	-0.0418
1952	0.0015	0.0075	0.0011	-0.0026	0.0000	-0.0010	-0.0060	0.0002	0.0029	0.0001	0.0010	0.0029	1952	0.0076
1953	0.0041	0.0064	-0.0007	0.0004	-0.0008	-0.0019	-0.0010	-0.0008	0.0004	-0.0012	0.0045	0.0025	1953	0.0118
1954	-0.0014	0.0019	0.0020	0.0034	-0.0032	0.0007	0.0005	0.0017	0.0034	0.0032	-0.0006	0.0033	1954	0.0136
1955	0.0008	0.0009	0.0010	0.0010	0.0014	0.0010	-0.0027	0.0041	-0.0021	-0.0021	0.0005	0.0043	1955	0.0119
1956	0.0034	0.0019	0.0003	0.0006	-0.0027	-0.0042	-0.0052	0.0029	0.0006	-0.0036	0.0020	-0.0000	1956	-0.0040
1957	-0.0012	-0.0001	-0.0001	-0.0001	0.0002	-0.0036	-0.0018	0.0013	0.0014	0.0026	-0.0008	0.0001	1957	0.0001
1958	-0.0031	0.0000	0.0060	0.0015	0.0015	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019	1958	-0.0022
1959	0.0009	0.0030	0.0022	0.0008	0.0010	-0.0022	0.0002	0.0030	-0.0003	-0.0004	0.0026	0.0034	1959	0.0143
1960	0.0045	0.0017	0.0035	-0.0037	0.0027	0.0001	0.0013	0.0017	0.0005	-0.0023	0.0002	0.0016	1960	0.0116
1961	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019	-0.0019	0.0019	0.0019	0.0019	0.0019	0.0019	1961	0.0144
1962	0.0024	-0.0002	0.0002	0.0000	0.0024	0.0020	0.0005	0.0023	0.0034	0.0034	0.0020	0.0034	1962	0.0149
1963	0.0014	0.0012	0.0012	0.0025	0.0024	-0.0021	-0.0017	0.0025	0.0027	0.0018	0.0016	0.0008	1963	0.0144
1964	0.0019	0.0037	0.0020	0.0019	0.0026	0.0009	0.0008	0.0039	0.0007	0.0019	0.0008	0.0020	1964	0.0232
1965	0.0028	0.0030	0.0025	-0.0001	0.0010	-0.0018	0.0020	0.0054	0.0010	0.0021	0.0014	0.0002	1965	0.0197
1966	0.0038	-0.0028	0.0007	-0.0007	0.0031	0.0007	0.0005	-0.0010	0.0020	0.0005	0.0040	0.0030	1966	0.0136
1967	0.0043	0.0026	0.0019	0.0012	0.0003	-0.0004	-0.0019	0.0001	0.0012	0.0010	0.0006	0.0004	1967	0.0113
1968	0.0001	0.0009	-0.0011	0.0014	0.0016	-0.0016	-0.0000	0.0014	0.0014	-0.0013	0.0005	0.0014	1968	0.0046
1969	0.0024	0.0009	-0.0038	-0.0012	0.0021	-0.0013	0.0008	0.0005	0.0017	0.0024	-0.0002	0.0002	1969	0.0045
1970	0.0025	0.0009	0.0004	-0.0011	0.0009	0.0006	0.0018	0.0036	0.0002	-0.0005	0.0012	-0.0008	1970	0.0098
1971	0.0030	0.0016	-0.0004	-0.0006	-0.0021	-0.0021	0.0016	0.0022	0.0029	0.0020	0.0021	-0.0004	1971	0.0099
1972	0.0021	-0.0024	0.0011	-0.0005	-0.0002	-0.0005	-0.0009	0.0013	-0.0006	0.0008	0.0013	0.0006	1972	0.0041
1973	0.0012	-0.0029	-0.0048	-0.0017	-0.0010	-0.0017	-0.0041	-0.0111	0.0039	-0.0016	-0.0017	-0.0002	1973	-0.0175
1974	-0.0024	-0.0071	-0.0057	0.0020	-0.0036	-0.0036	-0.0004	-0.0069	-0.0039	-0.0035	-0.0031	-0.0002	1974	-0.0378
1975	0.0013	-0.0027	0.0003	-0.0007	-0.0001	-0.0041	-0.0057	0.0017	0.0004	-0.0006	-0.0020	0.0006	1975	-0.0114
1976	-0.0023	0.0010	0.0016	0.0000	-0.0021	-0.0010	-0.0032	-0.0005	0.0003	0.0000	0.0011	0.0026	1976	0.0026
1977	-0.0021	-0.0048	-0.0024	-0.0041	-0.0024	-0.0027	-0.0002	0.0002	0.0002	0.0001	0.0001	0.0011	1977	-0.0155
1978	-0.0005	-0.0024	-0.0016	-0.0036	-0.0048	-0.0050	-0.0016	0.0005	-0.0009	-0.0012	0.0015	0.0024	1978	-0.0171
1979	-0.0012	-0.0044	-0.0015	-0.0035	-0.0041	-0.0012	-0.0053	-0.0024	-0.0021	-0.0002	0.0006	-0.0010	1979	-0.0262
1980	-0.0064	-0.0049	-0.0023	0.0013	-0.0018	-0.0049	0.0045	-0.0001	-0.0017	0.0008	0.0005	0.0045	1980	-0.0105
1981	0.0022	0.0003	0.0049	0.0043	0.0033	0.0049	0.0010	0.0052	0.0023	0.0099	0.0078	0.0059	1981	0.0533



# EXHIBIT B-20

## COMMON STOCKS : TOTAL RETURN INDEX

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	YEAR	JAN-DEC
1926	1.000	0.962	0.906	0.929	0.946	0.989	1.036	1.062	1.089	1.058	1.095	1.116	1926	1.116
1927	1.095	1.154	1.164	1.187	1.259	1.251	1.334	1.403	1.466	1.393	1.493	1.535	1927	1.535
1928	1.529	1.509	1.976	1.733	1.768	1.700	1.724	1.862	1.910	1.942	2.193	2.204	1928	2.204
1929	2.332	2.328	2.325	2.366	2.280	2.540	2.660	2.933	2.794	2.243	1.963	2.018	1929	2.018
1930	2.147	2.203	2.382	2.363	2.340	1.960	2.035	2.064	1.800	1.646	1.631	1.516	1930	1.516
1931	1.592	1.782	1.662	1.506	1.314	1.500	1.392	1.418	0.996	0.999	0.999	0.859	1931	0.859
1932	0.988	0.884	0.791	0.822	0.487	0.487	0.487	0.442	0.900	0.746	0.746	0.746	1932	0.746
1933	0.988	1.164	1.164	1.164	1.164	1.164	1.164	1.164	1.164	1.164	1.164	1.164	1933	1.164
1934	1.344	1.301	1.301	1.268	1.175	1.202	1.066	1.131	1.127	1.095	1.198	1.197	1934	1.197
1935	1.148	1.109	1.077	1.182	1.231	1.317	1.429	1.469	1.507	1.624	1.700	1.767	1935	1.767
1936	1.986	1.928	1.980	1.831	1.931	1.995	2.135	2.167	2.174	2.342	2.374	2.367	1936	2.367
1937	2.459	2.506	2.487	2.286	2.280	2.165	2.391	2.276	1.957	1.765	1.612	1.538	1937	1.538
1938	1.561	1.666	1.252	1.433	1.386	1.733	1.862	1.820	1.850	1.993	1.939	2.016	1938	2.016
1939	1.881	1.954	1.692	1.688	1.811	1.701	1.889	1.766	2.062	2.036	1.955	2.008	1939	2.008
1940	1.941	1.966	1.991	1.986	1.531	1.655	1.712	1.772	1.793	1.869	1.810	1.812	1940	1.812
1941	1.728	1.718	1.730	1.624	1.653	1.749	1.850	1.852	1.839	1.718	1.670	1.602	1941	1.602
1942	1.627	1.602	1.497	1.437	1.552	1.586	1.640	1.666	1.715	1.831	1.827	1.927	1942	1.927
1943	2.070	2.190	2.310	2.318	2.446	2.500	2.368	2.409	2.472	2.446	2.286	2.427	1943	2.427
1944	2.468	2.479	2.527	2.502	2.628	2.771	2.717	2.760	2.758	2.764	2.801	2.906	1944	2.906
1945	2.952	3.154	3.015	3.287	3.351	3.349	3.288	3.499	3.652	3.770	3.919	3.965	1945	3.965
1946	4.248	3.976	4.167	4.330	4.455	4.290	4.188	3.906	3.516	3.495	3.486	3.645	1946	3.645
1947	3.738	3.709	3.654	3.521	3.526	3.721	3.663	3.785	3.743	3.832	3.765	3.853	1947	3.853
1948	3.707	3.563	3.846	3.958	4.305	4.329	4.109	4.174	4.059	4.347	3.929	4.065	1948	4.065
1949	4.081	3.960	4.090	4.017	3.913	3.919	4.174	4.265	4.377	4.526	4.605	4.829	1949	4.829
1950	4.924	5.022	5.057	5.303	5.573	5.267	5.330	5.566	5.895	5.949	6.050	6.360	1950	6.360
1951	6.765	6.871	6.764	7.109	6.896	6.739	7.218	7.563	7.573	7.495	7.567	7.888	1951	7.888
1952	7.030	7.804	7.867	7.867	8.532	8.532	8.703	8.703	8.490	8.507	8.993	9.236	1952	9.236
1953	8.291	8.192	8.957	8.983	8.851	8.732	8.671	8.621	8.551	8.012	9.192	9.244	1953	9.244
1954	9.740	9.848	10.168	10.693	11.139	11.173	11.831	11.506	12.485	12.277	13.393	14.108	1954	14.108
1955	14.387	14.528	14.485	15.059	15.142	16.416	17.437	17.393	17.618	17.118	18.533	18.561	1955	18.561
1956	17.917	18.657	19.982	19.973	18.789	19.588	20.594	19.919	17.043	19.169	19.065	19.778	1956	19.778
1957	18.986	18.485	18.882	19.614	20.472	20.481	20.749	19.701	18.516	17.957	18.372	17.646	1957	17.646
1958	18.431	18.170	18.767	19.400	19.810	20.363	21.277	21.651	22.735	23.348	24.012	25.298	1958	25.298
1959	25.431	25.554	25.605	26.635	27.273	27.213	28.200	27.911	26.674	27.017	27.519	28.322	1959	28.322
1960	26.341	26.729	26.400	25.976	26.821	27.388	26.748	27.596	25.968	25.949	27.154	28.455	1960	28.455
1961	30.291	31.257	32.100	32.262	33.033	32.125	33.223	34.029	33.405	34.401	35.940	36.106	1961	36.106
1962	34.784	35.512	35.349	33.204	30.512	28.061	29.891	30.512	29.092	29.279	32.459	32.955	1962	32.955
1963	34.621	33.794	35.045	36.798	37.510	36.805	36.726	38.692	38.318	39.617	39.435	40.469	1963	40.469
1964	41.612	42.222	42.917	43.238	43.940	44.721	45.592	45.055	46.409	46.856	46.878	47.139	1964	47.139
1965	48.763	48.913	48.264	49.984	49.833	47.477	48.177	49.488	51.140	52.618	52.453	53.008	1965	53.008
1966	53.335	52.635	51.556	52.688	50.096	49.363	48.769	45.234	44.993	47.215	47.662	47.674	1966	47.674
1967	51.478	51.846	53.767	56.325	53.641	54.658	57.215	56.817	58.758	57.136	57.507	59.104	1967	59.104
1968	56.592	55.113	55.718	60.363	61.334	61.980	60.916	61.913	64.387	64.945	68.393	65.665	1968	65.665
1969	65.193	62.414	64.653	64.131	64.303	62.708	59.024	61.704	60.251	63.014	61.141	60.059	1969	60.059
1970	55.594	58.850	59.028	53.779	50.837	48.386	52.026	54.672	56.570	56.019	59.020	62.465	1970	62.465
1971	65.082	65.998	68.522	71.104	68.491	68.636	65.086	68.612	68.231	65.477	65.650	71.406	1971	71.406
1972	72.791	74.969	75.510	77.940	77.604	76.010	76.287	79.270	78.985	79.328	83.956	84.956	1972	84.956
1973	83.603	80.822	80.807	77.619	76.538	76.144	79.145	76.630	79.812	79.835	71.194	72.500	1973	72.500
1974	71.883	72.017	70.453	67.822	65.974	65.126	60.182	55.197	48.740	56.817	54.273	53.311	1974	53.311
1975	59.982	64.026	65.541	68.772	72.270	75.608	70.628	69.609	67.324	71.612	73.856	73.144	1975	73.144
1976	81.916	81.441	84.094	83.262	82.653	85.195	85.895	85.716	88.829	86.024	85.946	90.584	1976	90.584
1977	86.151	84.849	83.841	83.956	82.698	86.625	85.314	84.185	84.186	80.690	83.675	84.076	1977	84.076
1978	79.062	77.785	79.933	86.887	88.072	86.730	91.582	94.696	94.239	85.846	88.078	89.592	1978	89.592
1979	93.367	90.716	95.933	96.280	94.660	98.540	99.619	105.702	105.970	99.021	104.112	106.112	1979	106.112
1980	112.588	112.934	101.791	106.161	112.129	115.444	123.248	124.864	128.368	130.762	145.084	140.513	1980	140.513
1981	134.358	137.153	142.365	139.332	140.196	139.075	139.172	131.462	124.862	131.455	137.252	133.615	1981	133.615



# EXHIBIT B-21

## COMMON STOCKS : CAPITAL APPRECIATION INDEX

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	YEAR	JAN-DEC
1926	0.998	0.955	0.898	0.918	0.926	0.966	1.009	1.027	1.050	1.017	1.040	1.057	1926	1.057
1927	1.035	1.085	1.092	1.111	1.168	1.158	1.233	1.288	1.343	1.272	1.350	1.384	1927	1.384
1928	1.377	1.353	1.495	1.548	1.567	1.504	1.523	1.635	1.675	1.529	1.903	1.908	1928	1.908
1929	2.017	2.005	2.001	2.033	1.946	2.165	2.263	2.485	2.364	1.893	1.639	1.681	1929	1.681
1930	1.786	1.824	1.970	1.951	1.919	1.603	1.662	1.675	1.457	1.328	1.299	1.202	1930	1.202
1931	1.261	1.405	1.308	1.181	1.027	0.741	1.076	1.084	0.761	0.925	0.745	0.636	1931	0.636
1932	0.618	0.650	0.573	0.457	0.350	0.478	0.458	0.458	0.633	0.545	0.513	0.540	1932	0.540
1933	0.544	0.444	0.458	0.652	0.755	0.855	0.780	0.869	0.770	0.702	0.774	0.792	1933	0.792
1934	0.875	0.843	0.842	0.820	0.753	0.769	0.680	0.717	0.713	0.690	0.748	0.745	1934	0.745
1935	0.713	0.685	0.664	0.727	0.751	0.802	0.868	0.887	0.908	0.976	1.015	1.053	1935	1.053
1936	1.121	1.140	1.169	1.079	1.129	1.163	1.242	1.253	1.255	1.349	1.354	1.346	1936	1.346
1937	1.397	1.418	1.404	1.288	1.274	1.207	1.331	1.257	1.078	0.969	0.871	0.827	1937	0.827
1938	0.838	0.889	0.666	0.760	0.726	0.906	0.972	0.945	0.959	1.032	0.998	1.035	1938	1.035
1939	0.964	0.995	0.861	0.856	0.909	0.851	0.944	0.876	1.020	1.005	0.956	0.979	1939	0.979
1940	0.944	0.951	0.960	0.955	0.726	0.782	0.806	0.828	0.835	0.868	0.832	0.829	1940	0.829
1941	0.789	0.777	0.781	0.730	0.733	0.772	0.814	0.807	0.799	0.745	0.713	0.681	1941	0.681
1942	0.670	0.673	0.628	0.600	0.639	0.650	0.676	0.676	0.694	0.738	0.728	0.766	1942	0.766
1943	0.821	0.862	0.908	0.908	0.908	0.968	0.915	0.947	0.947	0.864	0.915	0.915	1943	0.915
1944	0.929	0.926	0.942	0.930	0.968	1.017	0.996	1.005	1.002	1.002	1.005	1.041	1944	1.041
1945	1.056	1.121	1.069	1.163	1.176	1.172	1.149	1.216	1.266	1.305	1.347	1.361	1945	1.361
1946	1.455	1.354	1.417	1.470	1.503	1.444	1.408	1.120	1.172	1.150	1.150	1.199	1946	1.199
1947	1.227	1.209	1.189	1.143	1.132	1.192	1.235	1.201	1.184	1.209	1.175	1.199	1947	1.199
1948	1.151	1.097	1.182	1.213	1.308	1.312	1.242	1.252	1.214	1.296	1.156	1.191	1948	1.191
1949	1.193	1.146	1.180	1.155	1.112	1.110	1.179	1.193	1.221	1.257	1.259	1.313	1949	1.313
1950	1.336	1.350	1.355	1.416	1.472	1.386	1.398	1.444	1.524	1.531	1.529	1.600	1950	1.600
1951	1.697	1.708	1.677	1.758	1.687	1.643	1.755	1.824	1.823	1.798	1.793	1.863	1951	1.863
1952	1.892	1.823	1.910	1.828	1.870	1.956	1.991	1.962	1.923	1.922	2.011	2.082	1952	2.082
1953	2.067	2.030	1.982	1.929	1.923	1.892	1.940	1.828	1.830	1.923	1.940	1.944	1953	1.944
1954	2.044	2.049	2.111	2.215	2.288	2.289	2.420	2.338	2.532	2.483	2.683	2.820	1954	2.820
1955	2.871	2.881	2.867	2.975	2.971	3.216	3.411	3.384	3.422	3.318	3.567	3.564	1955	3.564
1956	3.434	3.553	3.799	3.792	3.742	3.681	3.871	3.723	3.554	3.572	3.533	3.658	1956	3.658
1957	3.505	3.390	3.457	3.585	3.512	3.712	3.755	3.544	3.324	3.278	3.270	3.134	1957	3.134
1958	3.268	3.292	3.404	3.545	3.404	3.245	3.458	3.458	3.413	3.272	3.327	3.327	1958	3.327
1959	4.343	4.342	4.345	4.313	4.599	4.582	4.742	4.671	4.458	4.508	4.567	4.694	1959	4.694
1960	4.358	4.398	4.337	4.261	4.375	4.461	4.350	4.464	4.194	4.184	4.353	4.554	1960	4.554
1961	4.842	4.975	5.099	5.066	5.066	5.231	5.066	5.231	5.230	5.230	5.379	5.607	1961	5.607
1962	5.395	5.483	5.451	5.113	5.473	5.291	5.543	5.433	5.410	5.479	5.879	5.945	1962	5.945
1963	5.188	5.038	5.217	5.470	5.549	5.437	5.418	5.682	5.619	5.800	5.739	5.879	1963	5.879
1964	6.038	6.097	6.190	6.227	6.299	6.402	6.519	6.413	6.597	6.650	6.616	6.642	1964	6.642
1965	6.862	6.852	6.752	6.984	6.929	6.592	6.681	6.832	7.050	7.243	7.179	7.244	1965	7.244
1966	7.279	7.149	6.993	7.136	6.750	6.641	6.552	6.042	6.000	6.285	6.305	6.295	1966	6.295
1967	6.788	6.801	7.069	7.368	6.981	7.103	7.426	7.339	7.579	7.359	7.367	7.560	1967	7.560
1968	7.229	7.003	7.062	7.648	7.734	7.804	7.660	7.748	8.046	8.104	8.493	8.140	1968	8.140
1969	8.073	7.690	7.955	8.126	8.108	7.658	7.197	7.485	7.298	7.621	7.352	7.210	1969	7.210
1970	6.663	7.014	7.024	6.389	5.999	5.699	6.117	6.389	6.600	6.524	6.834	7.222	1970	7.222
1971	7.514	7.582	7.861	8.147	7.808	7.813	7.491	7.761	7.707	7.385	7.366	8.001	1971	8.001
1972	8.146	8.252	8.701	8.438	8.584	8.397	8.416	8.706	8.654	8.745	9.143	9.252	1972	9.252
1973	9.093	8.880	8.740	8.383	8.225	8.171	8.481	8.170	8.498	8.487	7.520	7.648	1973	7.648
1974	7.568	7.541	7.365	7.078	6.840	6.740	6.216	5.654	4.980	5.792	5.484	5.373	1974	5.373
1975	6.033	6.394	6.533	6.842	7.143	7.460	6.955	6.809	6.573	6.978	7.150	7.068	1975	7.068
1976	7.904	7.814	8.054	7.966	7.851	8.122	8.107	8.065	8.048	7.928	7.928	8.422	1976	8.422
1977	7.996	7.823	7.713	7.715	7.533	7.747	7.584	7.565	7.565	7.237	7.432	7.453	1977	7.453
1978	6.995	6.821	6.991	7.589	7.621	7.487	7.890	8.095	8.036	7.300	7.422	7.532	1978	7.532
1979	7.831	7.545	7.962	7.975	7.765	8.065	8.136	8.567	8.567	7.980	8.320	8.459	1979	8.459
1980	8.947	8.907	8.001	8.330	8.718	8.953	9.535	9.591	9.832	9.989	11.012	10.639	1980	10.639
1981	10.153	10.288	10.658	10.407	10.390	10.285	10.259	9.623	9.105	9.553	9.605	9.605	1981	9.605



# EXHIBIT B-22

## SMALL STOCKS : TOTAL RETURN INDEX

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JULY	AUG	SEP	OCT	NOV	DEC	YEAR	JAN-DEC
1926	1.070	1.001	0.894	0.910	0.904	0.938	0.949	0.973	0.973	0.951	0.971	1.003	1926	1.003
1927	1.032	1.089	1.029	1.088	1.168	1.133	1.121	1.176	1.176	1.098	1.187	1.224	1927	1.224
1928	1.293	1.253	1.319	1.440	1.503	1.474	1.384	1.445	1.445	1.403	1.417	1.298	1928	1.298
1929	1.716	1.712	1.677	1.729	1.498	1.578	1.596	1.569	1.425	1.030	0.876	0.832	1929	0.832
1930	0.939	1.000	1.101	1.024	0.948	0.758	0.781	0.768	0.656	0.584	0.583	0.515	1930	0.515
1931	0.623	0.783	0.727	0.570	0.491	0.587	0.548	0.507	0.742	0.392	0.251	0.259	1931	0.259
1932	0.285	0.293	0.255	0.198	0.175	0.175	0.237	0.411	0.337	0.293	0.251	0.245	1932	0.245
1933	0.243	0.212	0.235	0.354	0.578	0.729	0.689	0.753	0.633	0.555	0.591	0.594	1933	0.594
1934	0.825	0.839	0.838	0.858	0.749	0.747	0.578	0.667	0.656	0.663	0.726	0.738	1934	0.738
1935	0.714	0.672	0.592	0.639	0.637	0.656	0.713	0.751	0.778	0.855	0.976	1.035	1935	1.035
1936	1.346	1.427	1.436	1.179	1.211	1.183	1.286	1.313	1.384	1.472	1.678	1.705	1936	1.705
1937	1.921	2.047	2.072	1.724	1.654	1.458	1.638	1.517	1.132	1.008	0.862	0.716	1937	0.716
1938	0.754	0.780	0.499	0.638	0.584	0.788	0.906	0.815	0.802	0.974	0.907	0.951	1938	0.951
1939	0.870	0.879	0.663	0.672	0.745	0.667	0.837	0.704	1.066	1.023	0.915	0.954	1939	0.954
1940	0.955	1.033	1.099	1.171	0.741	0.818	0.837	0.859	0.877	0.925	0.947	0.905	1940	0.905
1941	0.907	0.881	0.909	0.848	0.852	0.916	1.115	1.108	1.056	0.985	0.936	0.823	1941	0.823
1942	0.979	0.972	0.903	0.872	0.869	0.898	0.964	0.995	1.086	1.204	1.143	1.190	1942	1.190
1943	1.444	1.723	1.971	2.155	2.404	2.384	2.126	2.126	2.217	2.244	1.994	2.242	1943	2.242
1944	2.385	2.456	2.640	2.499	2.684	3.055	2.964	3.059	3.053	3.020	3.170	3.446	1944	3.446
1945	3.612	3.977	3.634	4.055	4.257	4.621	4.364	4.607	4.920	5.265	5.882	5.983	1945	5.983
1946	6.217	6.476	6.653	7.117	7.537	7.189	6.808	6.230	5.232	5.170	5.097	5.287	1946	5.287
1947	6.609	6.487	6.508	4.756	4.502	4.750	5.174	5.106	5.165	5.311	5.150	5.335	1947	5.335
1948	6.254	4.842	5.320	5.515	4.509	4.778	5.174	5.106	5.165	5.311	5.150	5.335	1948	5.335
1949	5.318	5.062	5.380	5.199	4.906	4.859	5.185	5.318	5.578	5.841	5.851	4.254	1949	4.254
1950	6.562	6.706	6.682	6.956	7.134	6.580	6.969	7.338	7.720	7.675	7.922	8.677	1950	8.677
1951	9.398	9.455	9.004	9.334	9.026	8.548	8.867	9.403	9.606	9.314	9.314	9.255	1951	9.255
1952	9.533	9.248	9.410	9.922	8.950	9.193	9.296	9.291	9.142	9.047	9.486	9.638	1952	9.638
1953	10.032	10.302	10.233	9.939	10.079	9.589	9.735	9.123	8.884	9.143	9.258	9.013	1953	9.013
1954	9.694	9.786	9.965	10.104	10.561	10.651	11.512	11.528	12.000	12.082	13.024	14.473	1954	14.473
1955	14.764	15.471	15.602	15.837	15.960	16.428	16.533	16.487	16.667	16.384	17.152	17.431	1955	17.431
1956	17.348	17.830	18.598	18.685	17.942	18.042	18.552	18.303	17.827	18.013	18.108	18.177	1956	18.177
1957	18.607	18.234	18.540	19.000	19.143	19.283	19.167	18.427	17.595	16.131	16.314	15.529	1957	15.529
1958	17.245	16.952	17.750	18.418	19.131	19.752	20.722	21.610	22.729	23.655	24.828	25.605	1958	25.605
1959	27.076	27.875	27.951	28.277	28.315	28.196	29.118	28.863	27.619	28.245	28.873	29.804	1959	29.804
1960	28.891	29.034	28.120	27.594	28.158	29.116	28.565	30.063	27.844	26.728	27.896	28.823	1960	28.823
1961	31.460	33.314	35.376	35.825	37.355	35.326	35.436	35.898	34.682	35.590	37.772	38.072	1961	38.072
1962	38.591	39.314	39.537	36.464	32.786	30.213	32.518	33.458	31.254	30.087	33.842	33.540	1962	33.540
1963	36.580	36.705	37.251	38.412	40.088	39.613	39.744	41.799	41.118	42.090	41.642	41.444	1963	41.444
1964	42.581	44.134	45.099	45.520	46.234	46.985	48.857	48.715	50.676	51.716	51.772	51.193	1964	51.193
1965	53.902	56.003	57.335	60.252	59.782	54.397	56.837	60.220	62.310	65.876	68.319	72.567	1965	72.567
1966	78.051	80.479	78.935	81.645	73.797	73.709	73.617	65.669	64.595	63.902	67.041	67.479	1966	67.479
1967	79.884	83.475	88.606	91.003	90.232	99.411	108.862	109.085	115.244	111.662	112.964	123.870	1967	123.870
1968	125.779	116.861	115.586	132.468	145.698	146.137	141.088	146.266	155.034	155.505	167.382	168.428	1968	168.428
1969	165.634	149.238	155.142	161.265	164.063	144.954	128.449	138.925	135.301	143.552	135.552	126.233	1969	126.233
1970	118.554	123.145	119.641	98.970	88.762	80.519	84.975	91.037	103.140	95.856	97.170	104.226	1970	104.226
1971	120.820	124.647	131.675	134.923	126.670	122.710	115.802	122.555	119.780	113.180	108.854	121.423	1971	121.423
1972	135.142	139.141	137.144	138.912	136.257	132.099	126.645	125.005	124.506	125.776	129.576	126.807	1972	126.807
1973	121.329	111.635	109.318	102.526	94.211	91.476	102.397	97.837	108.242	109.155	87.737	87.618	1973	87.618
1974	99.238	98.393	97.661	93.129	85.745	84.485	82.637	77.009	71.978	79.629	76.143	70.142	1974	70.142
1975	89.551	92.105	97.799	102.990	109.821	118.053	115.056	108.456	106.488	105.954	109.341	107.189	1975	107.189
1976	135.960	154.854	154.626	149.081	143.698	150.298	150.976	146.592	148.123	145.028	150.881	168.691	1976	168.691
1977	176.275	175.587	177.880	181.941	181.434	195.445	196.028	193.924	195.715	189.249	209.804	211.500	1977	211.500
1978	207.502	214.707	236.868	255.528	276.484	271.254	289.807	317.010	316.002	239.303	256.811	261.120	1978	261.120
1979	295.623	288.279	331.805	332.955	326.484	348.676	384.642	381.457	368.351	325.827	353.796	374.614	1979	374.614
1980	405.926	394.411	324.303	346.795	372.813	389.666	441.223	467.894	487.473	503.724	542.326	523.992	1980	523.992
1981	540.760	552.656	601.290	620.531	640.388	651.916	629.750	580.000	536.500	585.322	609.905	597.097	1981	597.097



# EXHIBIT B-23

## LONG-TERM CORPORATE BONDS : TOTAL RETURN INDEX

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	YEAR	JAN-DEC
1926	1.007	1.012	1.020	1.030	1.035	1.035	1.041	1.046	1.052	1.062	1.068	1.074	1926	1.074
1927	1.080	1.087	1.096	1.102	1.101	1.106	1.116	1.126	1.132	1.138	1.146	1.154	1927	1.154
1928	1.152	1.158	1.165	1.171	1.172	1.179	1.188	1.198	1.204	1.211	1.217	1.225	1928	1.186
1929	1.192	1.195	1.185	1.187	1.192	1.187	1.189	1.192	1.196	1.204	1.202	1.225	1929	1.225
1930	1.233	1.241	1.259	1.269	1.276	1.290	1.298	1.315	1.329	1.337	1.335	1.323	1930	1.323
1931	1.350	1.359	1.372	1.381	1.400	1.407	1.414	1.416	1.414	1.362	1.337	1.299	1931	1.299
1932	1.392	1.396	1.396	1.395	1.397	1.395	1.391	1.358	1.399	1.409	1.419	1.439	1932	1.439
1933	1.518	1.438	1.445	1.431	1.516	1.544	1.569	1.584	1.582	1.588	1.549	1.588	1933	1.588
1934	1.629	1.653	1.684	1.701	1.717	1.744	1.752	1.760	1.749	1.767	1.790	1.808	1934	1.808
1935	1.846	1.872	1.880	1.901	1.909	1.931	1.952	1.944	1.944	1.952	1.966	1.982	1935	1.982
1936	1.998	2.009	2.026	2.031	2.039	2.056	2.058	2.072	2.086	2.091	2.114	2.116	1936	2.116
1937	2.121	2.111	2.087	2.101	2.110	2.121	2.129	2.125	2.131	2.145	2.159	2.174	1937	2.174
1938	2.182	2.184	2.165	2.195	2.197	2.218	2.233	2.229	2.233	2.271	2.307	2.307	1938	2.307
1939	2.312	2.327	2.332	2.347	2.359	2.367	2.365	2.272	2.307	2.361	2.380	2.399	1939	2.399
1940	2.410	2.415	2.427	2.405	2.400	2.429	2.434	2.436	2.458	2.470	2.486	2.480	1940	2.480
1941	2.482	2.483	2.478	2.497	2.509	2.525	2.541	2.550	2.562	2.570	2.546	2.548	1941	2.548
1942	2.549	2.547	2.563	2.565	2.570	2.572	2.581	2.593	2.598	2.600	2.601	2.614	1942	2.614
1943	2.627	2.628	2.647	2.647	2.659	2.672	2.677	2.682	2.684	2.681	2.675	2.688	1943	2.688
1944	2.693	2.703	2.716	2.725	2.726	2.732	2.741	2.750	2.755	2.761	2.774	2.815	1944	2.815
1945	2.837	2.850	2.855	2.860	2.857	2.866	2.863	2.864	2.873	2.882	2.892	2.930	1945	2.930
1946	2.968	2.978	2.984	2.986	2.984	2.984	2.985	2.985	2.994	2.995	2.947	2.980	1946	2.980
1947	2.982	2.983	2.983	2.983	2.983	2.983	2.983	2.983	2.983	2.983	2.983	2.983	1947	2.983
1948	2.983	2.983	2.983	2.983	2.983	2.983	2.983	2.983	2.983	2.983	2.983	2.983	1948	2.983
1949	3.043	3.054	3.056	3.063	3.075	3.101	3.132	3.143	3.150	3.171	3.178	3.132	1949	3.132
1950	3.143	3.145	3.152	3.150	3.147	3.154	3.176	3.188	3.176	3.173	3.190	3.198	1950	3.198
1951	3.204	3.190	3.114	3.111	3.107	3.078	3.141	3.177	3.159	3.113	3.094	3.112	1951	3.112
1952	3.174	3.147	3.171	3.169	3.179	3.184	3.189	3.209	3.204	3.216	3.251	3.221	1952	3.221
1953	3.194	3.183	3.172	3.094	3.084	3.118	3.173	3.146	3.226	3.299	3.275	3.331	1953	3.331
1954	3.373	3.439	3.453	3.441	3.427	3.448	3.462	3.468	3.482	3.496	3.505	3.511	1954	3.511
1955	3.477	3.455	3.486	3.486	3.480	3.490	3.476	3.462	3.489	3.516	3.505	3.527	1955	3.527
1956	3.564	3.573	3.521	3.481	3.499	3.493	3.460	3.388	3.392	3.357	3.314	3.287	1956	3.287
1957	3.552	3.383	3.400	3.377	3.352	3.244	3.209	3.206	3.236	3.244	3.244	3.273	1957	3.273
1958	3.602	3.602	3.602	3.602	3.602	3.602	3.602	3.602	3.602	3.602	3.602	3.602	1958	3.602
1959	3.484	3.528	3.499	3.439	3.400	3.415	3.445	3.422	3.392	3.447	3.494	3.460	1959	3.460
1960	3.498	3.542	3.610	3.602	3.594	3.645	3.739	3.783	3.759	3.762	3.735	3.774	1960	3.774
1961	3.830	3.911	3.899	3.854	3.873	3.845	3.857	3.850	3.865	3.865	3.865	3.865	1961	3.865
1962	3.980	4.008	4.069	4.127	4.127	4.110	4.110	4.169	4.206	4.234	4.261	4.270	1962	4.270
1963	4.296	4.305	4.317	4.295	4.315	4.334	4.346	4.361	4.351	4.372	4.379	4.364	1963	4.364
1964	4.402	4.426	4.398	4.416	4.441	4.463	4.486	4.502	4.512	4.534	4.533	4.572	1964	4.572
1965	4.609	4.614	4.619	4.629	4.625	4.627	4.635	4.633	4.626	4.647	4.620	4.552	1965	4.552
1966	4.562	4.510	4.483	4.489	4.478	4.491	4.447	4.332	4.366	4.480	4.471	4.560	1966	4.560
1967	4.766	4.670	4.724	4.691	4.572	4.470	4.488	4.485	4.527	4.400	4.280	4.335	1967	4.335
1968	4.491	4.508	4.419	4.440	4.454	4.509	4.662	4.758	4.733	4.658	4.552	4.446	1968	4.446
1969	4.508	4.436	4.347	4.493	4.391	4.406	4.408	4.400	4.292	4.347	4.142	4.086	1969	4.086
1970	4.144	4.310	4.291	4.184	4.115	4.116	4.345	4.388	4.449	4.406	4.664	4.837	1970	4.837
1971	5.095	4.908	5.035	4.916	4.837	4.889	4.876	4.876	5.094	5.238	5.253	5.370	1971	5.370
1972	5.095	4.908	5.035	4.916	4.837	4.889	4.876	4.876	5.094	5.238	5.253	5.370	1972	5.370
1973	5.095	4.908	5.035	4.916	4.837	4.889	4.876	4.876	5.094	5.238	5.253	5.370	1973	5.370
1974	5.795	5.800	5.622	5.430	5.487	5.331	5.218	5.078	5.167	5.024	5.690	5.647	1974	5.647
1975	5.984	6.066	5.916	5.885	5.947	6.128	6.110	6.003	5.927	6.255	6.200	6.474	1975	6.474
1976	6.596	6.636	6.747	6.737	6.667	6.767	6.868	6.868	6.868	7.124	7.081	7.681	1976	7.681
1977	7.448	7.434	7.508	7.508	7.508	7.508	7.508	7.508	7.508	7.895	7.895	7.813	1977	7.813
1978	7.743	7.783	7.815	7.797	7.713	7.731	7.809	8.010	7.971	7.808	7.912	7.807	1978	7.807
1979	7.951	7.849	7.932	7.892	8.072	8.289	8.263	8.269	8.121	7.398	7.563	7.481	1979	7.481
1980	6.976	6.503	6.470	7.388	7.800	8.092	7.718	7.376	7.198	7.073	7.079	7.285	1980	7.285
1981	7.176	6.999	7.206	6.631	7.051	7.044	6.778	6.540	6.389	6.767	7.657	7.215	1981	7.215



# EXHIBIT B-24

LONG TERM GOVERNMENT BONDS : TOTAL RETURN INDEX														
YEAR	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	YEAR	JAN-DEC
1926	1.014	1.020	1.024	1.032	1.034	1.038	1.038	1.038	1.042	1.053	1.069	1.078	1926	1.078
1927	1.086	1.095	1.123	1.122	1.135	1.127	1.132	1.141	1.143	1.154	1.166	1.174	1927	1.174
1928	1.170	1.177	1.182	1.182	1.173	1.177	1.152	1.161	1.156	1.174	1.175	1.175	1928	1.175
1929	1.165	1.146	1.130	1.161	1.138	1.155	1.155	1.151	1.154	1.198	1.226	1.215	1929	1.215
1930	1.208	1.224	1.234	1.232	1.249	1.256	1.260	1.262	1.271	1.275	1.281	1.272	1930	1.272
1931	1.256	1.267	1.280	1.291	1.310	1.311	1.305	1.307	1.270	1.268	1.281	1.284	1931	1.284
1932	1.208	1.258	1.256	1.332	1.266	1.315	1.379	1.379	1.387	1.384	1.389	1.407	1932	1.407
1933	1.428	1.391	1.405	1.400	1.442	1.450	1.447	1.454	1.457	1.444	1.422	1.406	1933	1.406
1934	1.442	1.454	1.483	1.501	1.521	1.531	1.537	1.519	1.497	1.524	1.530	1.547	1934	1.547
1935	1.575	1.590	1.596	1.609	1.600	1.614	1.622	1.600	1.601	1.611	1.613	1.624	1935	1.624
1936	1.633	1.646	1.664	1.670	1.676	1.680	1.690	1.709	1.704	1.704	1.739	1.746	1936	1.746
1937	1.744	1.759	1.687	1.693	1.702	1.699	1.722	1.705	1.712	1.719	1.736	1.750	1937	1.750
1938	1.760	1.769	1.763	1.800	1.808	1.809	1.816	1.816	1.820	1.836	1.832	1.847	1938	1.847
1939	1.858	1.873	1.896	1.918	1.951	1.946	1.968	1.928	1.823	1.898	1.929	1.957	1939	1.957
1940	1.953	1.959	1.993	1.986	1.927	1.976	1.987	1.992	2.014	2.021	2.062	2.076	1940	2.076
1941	2.034	2.038	2.058	2.084	2.090	2.104	2.108	2.112	2.110	2.139	2.133	2.095	1941	2.095
1942	2.110	2.112	2.131	2.125	2.141	2.142	2.145	2.154	2.154	2.159	2.132	2.162	1942	2.162
1943	2.170	2.168	2.170	2.181	2.192	2.192	2.192	2.200	2.203	2.204	2.204	2.207	1943	2.207
1944	2.212	2.219	2.224	2.227	2.233	2.235	2.243	2.249	2.252	2.255	2.260	2.270	1944	2.270
1945	2.298	2.316	2.321	2.358	2.371	2.411	2.390	2.397	2.410	2.435	2.465	2.513	1945	2.513
1946	2.520	2.528	2.530	2.476	2.493	2.510	2.500	2.472	2.470	2.488	2.475	2.511	1946	2.511
1947	2.509	2.514	2.519	2.510	2.518	2.521	2.537	2.537	2.546	2.537	2.537	2.445	1947	2.445
1948	2.450	2.461	2.469	2.480	2.515	2.489	2.489	2.489	2.493	2.495	2.514	2.528	1948	2.528
1949	2.548	2.561	2.580	2.583	2.588	2.631	2.640	2.669	2.666	2.671	2.677	2.691	1949	2.691
1950	2.674	2.680	2.682	2.690	2.699	2.692	2.707	2.711	2.691	2.679	2.688	2.692	1950	2.692
1951	2.708	2.688	2.646	2.629	2.611	2.595	2.631	2.657	2.635	2.679	2.688	2.692	1951	2.692
1952	2.594	2.597	2.626	2.671	2.662	2.663	2.657	2.639	2.604	2.643	2.636	2.616	1952	2.616
1953	2.619	2.597	2.574	2.547	2.509	2.565	2.575	2.573	2.650	2.670	2.657	2.711	1953	2.711
1954	2.736	2.801	2.817	2.847	2.822	2.868	2.906	2.896	2.893	2.895	2.888	2.906	1954	2.906
1955	2.836	2.814	2.838	2.839	2.859	2.838	2.808	2.810	2.830	2.871	2.858	2.868	1955	2.868
1956	2.892	2.892	2.849	2.816	2.880	2.888	2.827	2.775	2.789	2.773	2.757	2.708	1956	2.708
1957	2.802	2.809	2.802	2.740	2.734	2.684	2.673	2.674	2.694	2.681	2.823	2.910	1957	2.910
1958	2.885	2.914	2.943	2.949	2.951	2.951	2.869	2.744	2.712	2.750	2.783	2.733	1958	2.733
1959	2.711	2.742	2.747	2.715	2.713	2.716	2.733	2.721	2.706	2.747	2.714	2.671	1959	2.671
1960	2.701	2.756	2.833	2.785	2.828	2.876	2.982	2.962	2.984	2.976	2.956	3.039	1960	3.039
1961	3.006	3.066	3.055	3.090	3.076	3.053	3.063	3.052	3.091	3.113	3.107	3.068	1961	3.068
1962	3.044	3.095	3.174	3.200	3.215	3.190	3.156	3.215	3.234	3.261	3.268	3.280	1962	3.280
1963	3.279	3.282	3.284	3.281	3.288	3.294	3.305	3.312	3.313	3.305	3.321	3.319	1963	3.319
1964	3.315	3.311	3.323	3.339	3.356	3.379	3.381	3.388	3.405	3.420	3.425	3.436	1964	3.436
1965	3.449	3.454	3.473	3.485	3.492	3.508	3.516	3.511	3.499	3.509	3.487	3.460	1965	3.460
1966	3.424	3.338	3.437	3.416	3.396	3.490	3.378	3.308	3.418	3.496	3.444	3.586	1966	3.586
1967	3.441	3.561	3.632	3.626	3.626	3.626	3.492	3.492	3.492	3.492	3.492	3.577	1967	3.577
1968	3.364	3.352	3.281	3.356	3.370	3.448	3.547	3.546	3.510	3.464	3.370	3.248	1968	3.248
1969	3.181	3.195	3.198	3.334	3.171	3.239	3.265	3.242	3.070	3.182	3.105	3.083	1969	3.083
1970	3.077	3.257	3.235	3.102	2.956	3.100	3.199	3.193	3.266	3.230	3.486	3.457	1970	3.457
1971	3.631	3.572	3.760	3.654	3.651	3.593	3.604	3.774	3.851	3.915	3.896	3.914	1971	3.914
1972	3.889	3.923	3.891	3.902	4.007	3.981	4.067	4.079	4.045	4.140	4.233	4.136	1972	4.136
1973	4.003	4.009	4.042	4.060	4.018	4.009	3.835	3.986	4.112	4.059	4.124	4.090	1973	4.090
1974	4.056	4.047	3.928	3.829	3.876	3.893	3.882	3.792	3.886	4.076	4.196	4.268	1974	4.268
1975	4.364	4.422	4.303	4.225	4.315	4.441	4.402	4.372	4.329	4.535	4.485	4.661	1975	4.661
1976	4.703	4.732	4.810	4.819	4.743	4.841	4.879	4.982	5.054	5.096	5.269	5.441	1976	5.441
1977	5.250	5.207	5.253	5.292	5.356	5.444	5.423	5.511	5.496	5.445	5.496	5.405	1977	5.405
1978	5.360	5.365	5.353	5.382	5.318	5.285	5.360	5.476	5.420	5.310	5.411	5.342	1978	5.342
1979	5.445	5.375	5.445	5.382	5.522	5.695	5.644	5.624	5.559	5.089	5.248	5.277	1979	5.277
1980	4.886	4.660	4.512	5.200	5.418	5.611	5.343	5.115	4.979	4.847	4.900	5.069	1980	5.069
1981	5.011	4.797	4.978	4.721	5.016	4.923	4.748	4.564	4.499	4.873	5.559	5.162	1981	5.162



# EXHIBIT B-25

## LONG-TERM GOVERNMENT BONDS : CAPITAL APPRECIATION INDEX

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JULY	AUG	SEP	OCT	NOV	DEC	YEAR	JAN-DEC
1926	1.011	1.014	1.015	1.020	1.018	1.019	1.016	1.013	1.014	1.021	1.034	1.039	1926	1.039
1927	1.014	1.017	1.018	1.024	1.020	1.021	1.017	1.013	1.014	1.021	1.034	1.039	1927	1.039
1928	1.018	1.022	1.024	1.031	1.027	1.028	1.024	1.020	1.021	1.028	1.041	1.046	1928	1.046
1929	1.048	1.029	1.011	1.036	1.012	1.024	1.021	1.014	1.014	1.049	1.072	1.059	1929	1.059
1930	1.050	1.060	1.066	1.062	1.074	1.076	1.077	1.075	1.080	1.081	1.083	1.072	1930	1.072
1931	1.056	1.062	1.071	1.077	1.090	1.087	1.080	1.078	1.045	1.067	1.067	1.081	1931	1.081
1932	0.982	1.019	1.014	1.072	1.016	1.053	1.100	1.098	1.101	1.096	1.097	1.108	1932	1.108
1933	1.122	1.090	1.098	1.091	1.121	1.124	1.119	1.121	1.121	1.108	1.089	1.073	1933	1.073
1934	1.098	1.104	1.123	1.134	1.146	1.151	1.153	1.136	1.117	1.135	1.136	1.146	1934	1.146
1935	1.164	1.172	1.174	1.181	1.172	1.180	1.182	1.164	1.162	1.167	1.165	1.170	1935	1.170
1936	1.174	1.181	1.191	1.192	1.195	1.194	1.199	1.209	1.203	1.201	1.223	1.225	1936	1.225
1937	1.221	1.229	1.176	1.177	1.181	1.176	1.189	1.174	1.177	1.179	1.187	1.194	1937	1.194
1938	1.199	1.202	1.195	1.218	1.220	1.218	1.221	1.218	1.218	1.226	1.221	1.228	1938	1.228
1939	1.233	1.240	1.253	1.266	1.285	1.279	1.291	1.263	1.192	1.238	1.255	1.271	1939	1.271
1940	1.266	1.267	1.287	1.281	1.240	1.270	1.274	1.275	1.286	1.288	1.312	1.319	1940	1.319
1941	1.290	1.291	1.301	1.315	1.317	1.323	1.324	1.321	1.331	1.337	1.331	1.305	1941	1.305
1942	1.312	1.311	1.320	1.314	1.321	1.318	1.318	1.320	1.318	1.319	1.311	1.315	1942	1.315
1943	1.317	1.317	1.316	1.316	1.316	1.316	1.316	1.316	1.316	1.316	1.316	1.316	1943	1.316
1944	1.310	1.312	1.312	1.312	1.312	1.310	1.312	1.313	1.312	1.311	1.311	1.314	1944	1.314
1945	1.328	1.336	1.336	1.355	1.360	1.380	1.366	1.367	1.372	1.383	1.398	1.423	1945	1.423
1946	1.344	1.347	1.347	1.402	1.407	1.407	1.399	1.381	1.377	1.381	1.375	1.392	1946	1.392
1947	1.389	1.390	1.390	1.382	1.385	1.383	1.390	1.398	1.390	1.382	1.356	1.327	1947	1.327
1948	1.327	1.331	1.332	1.336	1.352	1.338	1.333	1.330	1.329	1.328	1.335	1.340	1948	1.340
1949	1.348	1.352	1.360	1.359	1.359	1.379	1.381	1.394	1.390	1.390	1.390	1.395	1949	1.395
1950	1.384	1.385	1.383	1.385	1.387	1.381	1.386	1.386	1.373	1.364	1.367	1.366	1950	1.366
1951	1.371	1.359	1.335	1.324	1.312	1.301	1.316	1.327	1.314	1.312	1.291	1.281	1951	1.281
1952	1.291	1.280	1.292	1.311	1.304	1.301	1.296	1.284	1.265	1.280	1.276	1.262	1952	1.262
1953	1.260	1.247	1.233	1.217	1.196	1.219	1.221	1.217	1.250	1.257	1.247	1.270	1953	1.270
1954	1.278	1.306	1.311	1.321	1.307	1.325	1.340	1.332	1.328	1.326	1.320	1.325	1954	1.325
1955	1.290	1.277	1.286	1.283	1.289	1.276	1.260	1.257	1.263	1.279	1.270	1.271	1955	1.271
1956	1.279	1.276	1.254	1.261	1.261	1.261	1.232	1.209	1.198	1.198	1.188	1.164	1956	1.164
1957	1.201	1.201	1.195	1.165	1.159	1.135	1.126	1.123	1.128	1.119	1.176	1.208	1957	1.208
1958	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1958	1.195
1959	1.084	1.094	1.092	1.075	1.071	1.069	1.071	1.063	1.053	1.066	1.049	1.029	1959	1.029
1960	1.037	1.054	1.080	1.058	1.070	1.085	1.121	1.110	1.115	1.108	1.097	1.124	1960	1.124
1961	1.108	1.127	1.119	1.129	1.120	1.108	1.108	1.100	1.111	1.115	1.109	1.092	1961	1.092
1962	1.086	1.094	1.118	1.122	1.125	1.113	1.097	1.114	1.118	1.122	1.122	1.122	1962	1.122
1963	1.119	1.116	1.114	1.109	1.107	1.106	1.106	1.104	1.101	1.095	1.097	1.092	1963	1.092
1964	1.087	1.082	1.082	1.083	1.085	1.089	1.086	1.084	1.086	1.087	1.085	1.084	1964	1.084
1965	1.085	1.083	1.083	1.085	1.083	1.084	1.083	1.078	1.070	1.070	1.059	1.047	1965	1.047
1966	1.032	1.003	1.028	1.018	1.008	1.002	0.995	0.970	0.999	1.017	0.998	1.036	1966	1.036
1967	1.048	1.021	1.037	1.003	0.995	0.960	0.963	0.950	0.946	0.904	0.882	0.895	1967	0.895
1968	0.920	0.913	0.890	0.906	0.906	0.923	0.945	0.941	0.927	0.911	0.882	0.846	1968	0.846
1969	0.824	0.824	0.821	0.851	0.806	0.819	0.821	0.811	0.764	0.787	0.764	0.754	1969	0.754
1970	0.749	0.789	0.779	0.742	0.704	0.733	0.752	0.747	0.760	0.747	0.802	0.791	1970	0.791
1971	0.827	0.810	0.848	0.819	0.815	0.798	0.796	0.829	0.842	0.852	0.844	0.843	1971	0.843
1972	0.833	0.837	0.826	0.824	0.842	0.832	0.846	0.844	0.834	0.849	0.864	0.840	1972	0.840
1973	0.809	0.806	0.808	0.807	0.794	0.788	0.749	0.778	0.794	0.778	0.786	0.775	1973	0.775
1974	0.764	0.758	0.731	0.708	0.712	0.711	0.704	0.683	0.695	0.724	0.741	0.748	1974	0.748
1975	0.760	0.766	0.740	0.722	0.732	0.748	0.737	0.727	0.715	0.743	0.731	0.754	1975	0.754
1976	0.756	0.756	0.763	0.759	0.743	0.753	0.754	0.765	0.771	0.773	0.794	0.815	1976	0.815
1977	0.778	0.778	0.772	0.772	0.772	0.785	0.772	0.785	0.785	0.785	0.768	0.790	1977	0.790
1978	0.739	0.734	0.723	0.723	0.713	0.704	0.709	0.694	0.694	0.694	0.694	0.694	1978	0.694
1979	0.690	0.676	0.680	0.667	0.679	0.696	0.684	0.677	0.664	0.663	0.617	0.615	1979	0.615
1980	0.564	0.533	0.511	0.584	0.604	0.621	0.586	0.556	0.536	0.517	0.518	0.530	1980	0.530
1981	0.519	0.492	0.505	0.474	0.499	0.484	0.462	0.439	0.428	0.458	0.517	0.475	1981	0.475



# EXHIBIT B-26

## U.S. TREASURY BILLS : TOTAL RETURN INDEX

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	YEAR	JAN-DEC
1926	1.003	1.006	1.009	1.013	1.013	1.016	1.018	1.021	1.023	1.027	1.030	1.033	1926	1.033
1927	1.035	1.038	1.041	1.044	1.047	1.049	1.053	1.055	1.058	1.060	1.063	1.065	1927	1.065
1928	1.068	1.071	1.074	1.077	1.080	1.084	1.087	1.091	1.093	1.098	1.102	1.099	1928	1.099
1929	1.103	1.107	1.111	1.115	1.120	1.126	1.129	1.134	1.138	1.143	1.147	1.152	1929	1.152
1930	1.153	1.157	1.161	1.163	1.166	1.169	1.172	1.173	1.175	1.176	1.178	1.179	1930	1.179
1931	1.181	1.185	1.188	1.184	1.185	1.186	1.187	1.187	1.187	1.189	1.191	1.192	1931	1.192
1932	1.195	1.199	1.202	1.201	1.202	1.202	1.202	1.203	1.203	1.203	1.203	1.204	1932	1.204
1933	1.204	1.203	1.204	1.205	1.206	1.206	1.206	1.206	1.207	1.207	1.207	1.207	1933	1.207
1934	1.208	1.208	1.208	1.208	1.208	1.208	1.209	1.209	1.209	1.209	1.209	1.209	1934	1.209
1935	1.209	1.209	1.210	1.210	1.210	1.210	1.210	1.210	1.211	1.211	1.211	1.211	1935	1.211
1936	1.211	1.211	1.212	1.212	1.212	1.212	1.213	1.213	1.213	1.213	1.213	1.213	1936	1.213
1937	1.213	1.214	1.214	1.214	1.215	1.215	1.216	1.216	1.217	1.217	1.217	1.217	1937	1.217
1938	1.217	1.217	1.217	1.217	1.217	1.217	1.217	1.217	1.217	1.218	1.217	1.217	1938	1.217
1939	1.217	1.217	1.217	1.217	1.217	1.217	1.217	1.217	1.217	1.217	1.217	1.217	1939	1.217
1940	1.217	1.217	1.217	1.217	1.217	1.217	1.217	1.217	1.217	1.217	1.217	1.217	1940	1.217
1941	1.217	1.217	1.217	1.217	1.217	1.217	1.217	1.218	1.218	1.218	1.218	1.218	1941	1.218
1942	1.218	1.218	1.218	1.218	1.219	1.219	1.219	1.220	1.220	1.220	1.221	1.221	1942	1.221
1943	1.221	1.222	1.222	1.223	1.223	1.223	1.224	1.224	1.224	1.225	1.225	1.225	1943	1.225
1944	1.226	1.226	1.226	1.227	1.227	1.227	1.228	1.228	1.228	1.229	1.229	1.229	1944	1.229
1945	1.230	1.230	1.230	1.231	1.231	1.231	1.232	1.232	1.232	1.233	1.233	1.233	1945	1.233
1946	1.234	1.234	1.235	1.235	1.235	1.236	1.236	1.236	1.237	1.237	1.237	1.238	1946	1.238
1947	1.238	1.238	1.239	1.239	1.240	1.240	1.240	1.241	1.241	1.242	1.243	1.244	1947	1.244
1948	1.245	1.246	1.247	1.248	1.249	1.249	1.250	1.250	1.251	1.251	1.251	1.251	1948	1.251
1949	1.255	1.256	1.258	1.259	1.260	1.261	1.262	1.264	1.264	1.265	1.265	1.268	1949	1.268
1950	1.269	1.270	1.271	1.273	1.274	1.275	1.276	1.278	1.279	1.280	1.282	1.283	1950	1.283
1951	1.285	1.286	1.287	1.289	1.291	1.291	1.294	1.296	1.297	1.299	1.301	1.302	1951	1.302
1952	1.304	1.306	1.307	1.309	1.310	1.312	1.314	1.316	1.318	1.320	1.322	1.324	1952	1.324
1953	1.326	1.328	1.330	1.332	1.335	1.335	1.339	1.341	1.344	1.345	1.346	1.348	1953	1.348
1954	1.349	1.350	1.351	1.353	1.353	1.354	1.355	1.356	1.357	1.358	1.359	1.360	1954	1.360
1955	1.361	1.362	1.363	1.365	1.367	1.368	1.369	1.371	1.374	1.376	1.379	1.381	1955	1.381
1956	1.384	1.387	1.389	1.391	1.395	1.397	1.400	1.403	1.405	1.409	1.412	1.415	1956	1.415
1957	1.419	1.422	1.425	1.429	1.433	1.436	1.440	1.444	1.448	1.452	1.456	1.459	1957	1.459
1958	1.463	1.465	1.467	1.468	1.469	1.470	1.471	1.471	1.474	1.477	1.479	1.482	1958	1.482
1959	1.485	1.488	1.491	1.494	1.497	1.501	1.505	1.507	1.512	1.517	1.521	1.526	1959	1.526
1960	1.531	1.535	1.540	1.543	1.548	1.551	1.553	1.556	1.558	1.562	1.564	1.566	1960	1.566
1961	1.569	1.571	1.575	1.577	1.580	1.583	1.586	1.589	1.591	1.594	1.597	1.600	1961	1.600
1962	1.603	1.607	1.610	1.614	1.617	1.621	1.625	1.629	1.632	1.636	1.640	1.643	1962	1.643
1963	1.647	1.651	1.655	1.659	1.663	1.667	1.671	1.676	1.680	1.685	1.690	1.695	1963	1.695
1964	1.700	1.704	1.709	1.714	1.719	1.724	1.729	1.734	1.739	1.744	1.749	1.754	1964	1.754
1965	1.759	1.765	1.771	1.776	1.782	1.788	1.794	1.800	1.805	1.811	1.817	1.823	1965	1.823
1966	1.840	1.837	1.844	1.850	1.858	1.865	1.871	1.879	1.886	1.895	1.902	1.910	1966	1.910
1967	1.918	1.925	1.933	1.939	1.945	1.951	1.957	1.963	1.969	1.977	1.984	1.991	1967	1.991
1968	1.999	2.006	2.014	2.023	2.032	2.040	2.050	2.059	2.067	2.076	2.085	2.094	1968	2.094
1969	2.105	2.115	2.125	2.136	2.146	2.157	2.169	2.180	2.193	2.206	2.218	2.232	1969	2.232
1970	2.246	2.259	2.272	2.284	2.296	2.309	2.321	2.334	2.346	2.357	2.368	2.378	1970	2.378
1971	2.387	2.395	2.402	2.408	2.414	2.425	2.434	2.444	2.455	2.464	2.473	2.482	1971	2.482
1972	2.489	2.495	2.502	2.509	2.517	2.524	2.532	2.539	2.548	2.558	2.568	2.577	1972	2.577
1973	2.589	2.599	2.611	2.625	2.638	2.652	2.669	2.687	2.706	2.723	2.738	2.756	1973	2.756
1974	2.773	2.789	2.805	2.826	2.847	2.864	2.885	2.902	2.925	2.940	2.956	2.976	1974	2.976
1975	2.994	3.007	3.019	3.032	3.046	3.058	3.073	3.088	3.104	3.121	3.134	3.149	1975	3.149
1976	3.164	3.175	3.187	3.201	3.213	3.227	3.242	3.255	3.270	3.283	3.296	3.309	1976	3.309
1977	3.321	3.333	3.345	3.358	3.370	3.384	3.398	3.413	3.428	3.445	3.462	3.479	1977	3.479
1978	3.496	3.512	3.530	3.549	3.567	3.586	3.606	3.627	3.649	3.674	3.700	3.728	1978	3.728
1979	3.757	3.785	3.816	3.846	3.877	3.909	3.939	3.969	4.002	4.037	4.077	4.115	1979	4.115
1980	4.148	4.185	4.235	4.288	4.323	4.350	4.373	4.401	4.434	4.476	4.519	4.578	1980	4.578
1981	4.625	4.675	4.731	4.782	4.837	4.902	4.963	5.027	5.089	5.151	5.206	5.251	1981	5.251



# EXHIBIT B-27

## CONSUMER PRICE INDEX

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	YEAR	JAN-DEC
1926	1.000	0.996	0.991	1.000	0.994	0.987	0.978	0.972	0.978	0.981	0.985	0.985	1926	0.985
1927	0.978	0.970	0.965	0.965	0.972	0.981	0.963	0.957	0.963	0.968	0.966	0.965	1927	0.965
1928	0.963	0.953	0.953	0.953	0.961	0.953	0.953	0.955	0.963	0.961	0.959	0.955	1928	0.955
1929	0.953	0.952	0.948	0.944	0.950	0.953	0.963	0.966	0.965	0.965	0.963	0.957	1929	0.957
1930	0.953	0.950	0.944	0.950	0.944	0.939	0.926	0.920	0.926	0.920	0.912	0.899	1930	0.899
1931	0.886	0.873	0.868	0.862	0.853	0.844	0.842	0.840	0.836	0.831	0.821	0.814	1931	0.814
1932	0.719	0.708	0.702	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	1932	0.700
1933	0.719	0.708	0.702	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	1933	0.700
1934	0.737	0.743	0.743	0.741	0.743	0.745	0.745	0.747	0.758	0.752	0.750	0.749	1934	0.749
1935	0.760	0.765	0.764	0.771	0.767	0.765	0.762	0.762	0.765	0.765	0.769	0.771	1935	0.771
1936	0.771	0.767	0.764	0.764	0.764	0.771	0.775	0.780	0.782	0.780	0.780	0.780	1936	0.780
1937	0.786	0.788	0.793	0.797	0.801	0.803	0.806	0.808	0.816	0.812	0.806	0.804	1937	0.804
1938	0.793	0.786	0.786	0.790	0.786	0.786	0.788	0.786	0.786	0.782	0.780	0.782	1938	0.782
1939	0.778	0.775	0.773	0.771	0.771	0.771	0.771	0.771	0.786	0.782	0.782	0.778	1939	0.778
1940	0.777	0.782	0.780	0.780	0.782	0.784	0.782	0.780	0.782	0.782	0.782	0.786	1940	0.786
1941	0.786	0.786	0.790	0.797	0.803	0.818	0.821	0.829	0.844	0.853	0.860	0.862	1941	0.862
1942	0.873	0.881	0.892	0.898	0.907	0.909	0.912	0.918	0.920	0.929	0.935	0.942	1942	0.942
1943	0.942	0.944	0.959	0.970	0.978	0.976	0.968	0.965	0.968	0.972	0.970	0.972	1943	0.972
1944	0.970	0.968	0.968	0.974	0.978	0.980	0.985	0.989	0.989	0.989	0.989	0.993	1944	0.993
1945	0.993	0.991	0.991	0.993	1.000	1.009	1.011	1.011	1.007	1.007	1.011	1.015	1945	1.015
1946	1.015	1.011	1.019	1.024	1.030	1.041	1.102	1.127	1.140	1.162	1.190	1.199	1946	1.199
1947	1.199	1.197	1.223	1.223	1.220	1.229	1.240	1.253	1.283	1.283	1.291	1.307	1947	1.307
1948	1.322	1.311	1.307	1.326	1.335	1.345	1.361	1.367	1.367	1.361	1.352	1.343	1948	1.343
1949	1.341	1.326	1.330	1.331	1.330	1.331	1.322	1.326	1.331	1.324	1.326	1.318	1949	1.318
1950	1.313	1.309	1.315	1.317	1.322	1.330	1.343	1.354	1.363	1.371	1.376	1.395	1950	1.395
1951	1.417	1.434	1.439	1.441	1.447	1.445	1.447	1.447	1.456	1.464	1.471	1.477	1951	1.477
1952	1.477	1.467	1.467	1.473	1.475	1.479	1.490	1.492	1.490	1.492	1.492	1.490	1952	1.490
1953	1.486	1.479	1.482	1.488	1.497	1.493	1.501	1.501	1.501	1.507	1.507	1.499	1953	1.499
1954	1.503	1.501	1.499	1.495	1.501	1.503	1.503	1.501	1.497	1.493	1.495	1.492	1954	1.492
1955	1.492	1.492	1.492	1.492	1.492	1.492	1.497	1.493	1.499	1.499	1.501	1.497	1955	1.497
1956	1.495	1.495	1.497	1.499	1.507	1.516	1.527	1.525	1.527	1.536	1.536	1.540	1956	1.540
1957	1.512	1.512	1.517	1.517	1.527	1.531	1.537	1.537	1.581	1.587	1.587	1.587	1957	1.587
1958	1.596	1.598	1.609	1.613	1.613	1.615	1.616	1.615	1.615	1.615	1.615	1.615	1958	1.615
1959	1.616	1.615	1.615	1.616	1.618	1.626	1.629	1.628	1.633	1.639	1.639	1.639	1959	1.639
1960	1.637	1.639	1.639	1.648	1.648	1.652	1.652	1.652	1.654	1.661	1.663	1.663	1960	1.663
1961	1.663	1.663	1.663	1.663	1.663	1.670	1.670	1.670	1.674	1.674	1.674	1.674	1961	1.674
1962	1.674	1.678	1.682	1.685	1.685	1.685	1.689	1.689	1.698	1.698	1.698	1.698	1962	1.698
1963	1.696	1.698	1.700	1.700	1.700	1.708	1.715	1.715	1.715	1.717	1.719	1.723	1963	1.723
1964	1.724	1.723	1.724	1.726	1.726	1.730	1.734	1.732	1.736	1.737	1.741	1.743	1964	1.743
1965	1.743	1.743	1.745	1.750	1.754	1.764	1.765	1.762	1.765	1.767	1.771	1.777	1965	1.777
1966	1.777	1.788	1.793	1.801	1.803	1.808	1.814	1.823	1.827	1.834	1.834	1.836	1966	1.836
1967	1.836	1.838	1.842	1.845	1.851	1.857	1.866	1.872	1.875	1.881	1.886	1.892	1967	1.892
1968	1.899	1.905	1.914	1.920	1.926	1.937	1.946	1.952	1.957	1.968	1.976	1.981	1968	1.981
1969	1.987	1.994	2.011	2.024	2.030	2.043	2.052	2.061	2.071	2.078	2.089	2.102	1969	2.102
1970	2.110	2.121	2.132	2.145	2.155	2.166	2.173	2.177	2.188	2.199	2.207	2.218	1970	2.218
1971	2.220	2.223	2.231	2.238	2.250	2.263	2.268	2.274	2.276	2.279	2.283	2.292	1971	2.292
1972	2.294	2.305	2.309	2.315	2.325	2.328	2.337	2.341	2.350	2.358	2.363	2.371	1972	2.371
1973	2.378	2.395	2.417	2.434	2.449	2.456	2.462	2.462	2.471	2.471	2.471	2.471	1973	2.471
1974	2.401	2.435	2.465	2.480	2.499	2.516	2.536	2.556	2.573	2.584	2.592	2.599	1974	2.599
1975	2.907	2.927	2.939	2.953	2.966	2.991	3.022	3.032	3.047	3.065	3.084	3.097	1975	3.097
1976	3.104	3.112	3.119	3.127	3.132	3.168	3.186	3.201	3.214	3.227	3.236	3.246	1976	3.246
1977	3.264	3.298	3.318	3.333	3.351	3.395	3.408	3.413	3.423	3.436	3.453	3.463	1977	3.463
1978	3.484	3.508	3.533	3.564	3.600	3.637	3.663	3.682	3.708	3.737	3.758	3.778	1978	3.778
1979	3.812	3.857	3.894	3.939	3.987	4.024	4.076	4.117	4.160	4.197	4.236	4.281	1979	4.281
1980	4.343	4.402	4.466	4.516	4.561	4.611	4.615	4.644	4.687	4.728	4.771	4.812	1980	4.812
1981	4.851	4.901	4.937	4.968	5.009	5.052	5.110	5.149	5.201	5.212	5.227	5.242	1981	5.242



# EXHIBIT B-28

## EQUITY RISK PREMIA : CUMULATIVE INDEX

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	YEAR	JAN-DEC
1926	0.997	0.956	0.898	0.917	0.934	0.973	1.018	1.040	1.064	1.031	1.063	1.081	1926	1.081
1927	1.058	1.112	1.118	1.138	1.203	1.192	1.268	1.330	1.387	1.314	1.406	1.442	1927	1.442
1928	1.433	1.410	1.561	1.612	1.638	1.570	1.587	1.710	1.772	1.772	1.994	2.008	1928	2.008
1929	2.118	2.107	2.097	2.127	2.040	2.262	2.361	2.594	2.462	1.965	1.712	1.755	1929	1.755
1930	1.864	1.907	2.055	2.034	2.010	1.678	1.739	1.762	1.532	1.400	1.386	1.286	1930	1.286
1931	1.349	1.509	1.405	1.273	1.109	1.266	1.173	1.194	0.839	0.913	0.839	0.721	1931	0.721
1932	0.699	0.738	0.651	0.520	0.406	0.405	0.559	0.775	0.748	0.647	0.620	0.655	1932	0.655
1933	0.660	0.544	0.563	0.801	0.936	1.061	0.969	1.086	0.964	0.882	0.981	1.006	1933	1.006
1934	1.113	1.077	1.077	1.049	0.972	0.994	0.882	0.936	0.932	0.906	0.991	0.990	1934	0.990
1935	0.949	0.917	0.890	0.977	1.017	1.088	1.181	1.213	1.244	1.341	1.404	1.459	1935	1.459
1936	1.557	1.591	1.634	1.511	1.593	1.646	1.761	1.787	1.792	1.931	1.957	1.951	1936	1.951
1937	2.027	2.065	2.049	1.882	1.876	1.781	1.967	1.871	1.608	1.450	1.324	1.263	1937	1.263
1938	1.283	1.369	1.429	1.477	1.138	1.353	1.529	1.495	1.519	1.637	1.593	1.657	1938	1.657
1939	1.545	1.606	1.591	1.587	1.489	1.353	1.552	1.451	1.694	1.673	1.607	1.650	1939	1.650
1940	1.594	1.616	1.636	1.632	1.258	1.360	1.406	1.456	1.473	1.536	1.487	1.489	1940	1.489
1941	1.420	1.411	1.421	1.334	1.358	1.437	1.520	1.521	1.511	1.411	1.371	1.315	1941	1.315
1942	1.336	1.315	1.229	1.180	1.273	1.301	1.345	1.366	1.406	1.497	1.579	1.579	1942	1.579
1943	1.694	1.793	1.890	1.896	2.000	2.044	1.934	1.969	2.020	1.997	1.866	1.981	1943	1.981
1944	2.014	2.022	2.061	2.040	2.142	2.258	2.214	2.248	2.246	2.250	2.279	2.364	1944	2.364
1945	2.401	2.564	2.451	2.671	2.723	2.720	2.670	2.841	2.964	3.059	3.179	3.215	1945	3.215
1946	2.444	2.222	2.376	2.601	2.708	3.473	3.389	3.160	2.944	3.059	2.917	2.945	1946	2.945
1947	3.020	2.996	2.950	2.842	2.845	3.002	3.116	3.051	3.016	3.085	3.030	3.098	1947	3.098
1948	2.978	2.861	3.085	3.172	3.449	3.464	3.285	3.334	3.241	3.470	3.135	3.242	1948	3.242
1949	3.252	3.153	3.253	3.192	3.106	3.108	3.307	3.377	3.462	3.577	3.637	3.810	1949	3.810
1950	3.881	3.956	3.979	4.169	4.377	4.133	4.178	4.359	4.612	4.650	4.723	4.960	1950	4.960
1951	5.270	5.347	5.258	5.519	5.347	5.219	5.583	5.843	5.843	5.774	5.823	6.063	1951	6.063
1952	6.163	5.982	6.277	6.017	6.215	6.511	6.629	6.572	6.446	6.450	6.812	7.061	1952	7.061
1953	7.015	6.930	6.770	6.599	6.638	6.537	6.706	6.359	6.370	6.706	6.838	6.865	1953	6.865
1954	7.225	7.301	7.532	7.914	8.241	8.261	8.743	8.498	9.215	9.054	9.871	10.391	1954	10.391
1955	10.588	10.683	10.640	11.051	11.097	12.019	12.754	12.701	12.846	12.458	13.466	13.463	1955	13.463
1956	12.965	13.476	14.413	14.380	13.494	14.019	14.732	14.225	13.573	13.629	13.532	14.001	1956	14.001
1957	13.403	13.017	13.267	13.748	14.314	14.286	14.430	13.665	12.808	12.384	12.637	12.107	1957	12.107
1958	17.156	17.181	17.204	17.862	18.251	18.166	18.779	18.551	17.672	17.846	18.132	18.600	1958	18.600
1959	17.156	17.207	17.204	17.862	18.251	18.166	18.779	18.551	17.672	17.846	18.132	18.600	1959	18.600
1960	17.237	17.442	17.167	16.858	17.360	17.686	17.249	17.767	16.691	16.643	17.394	18.200	1960	18.200
1961	19.340	19.929	20.426	20.494	20.947	20.329	20.987	21.466	21.036	21.624	22.559	22.621	1961	22.621
1962	21.739	22.149	22.000	20.618	18.897	17.342	18.426	18.766	17.923	17.923	18.834	20.091	1962	20.091
1963	21.057	20.506	21.218	22.226	22.602	22.126	22.019	23.143	22.856	23.564	23.392	23.937	1963	23.937
1964	24.543	24.838	25.169	25.284	25.629	26.007	26.436	26.050	26.760	26.939	26.874	26.940	1964	26.940
1965	27.792	27.794	27.326	28.216	28.043	26.618	26.928	27.572	28.406	29.138	28.944	29.155	1965	29.155
1966	29.224	28.739	28.039	28.559	27.036	26.539	26.126	24.125	23.900	24.972	25.109	25.014	1966	25.014
1967	26.902	26.999	27.998	29.130	27.645	28.096	29.322	29.026	29.925	28.981	29.066	29.777	1967	29.777
1968	28.391	27.539	27.736	29.930	30.278	30.468	29.799	30.161	31.238	31.373	32.905	31.440	1968	31.440
1969	31.060	29.593	30.517	31.052	30.983	29.144	27.277	28.378	27.533	28.632	27.633	26.966	1969	26.966
1970	24.798	26.098	26.027	23.582	22.167	20.970	22.438	23.459	24.148	23.801	24.968	26.320	1970	26.320
1971	27.322	27.616	28.590	29.588	28.414	28.368	27.121	28.112	27.853	26.626	26.598	28.831	1971	28.831
1972	29.308	30.112	30.247	30.332	30.906	30.180	30.196	31.290	31.071	31.279	32.741	33.048	1972	33.048
1973	32.377	31.166	31.018	29.633	29.069	28.770	29.721	28.568	29.560	29.375	26.032	26.343	1973	26.343
1974	25.954	25.852	25.146	24.017	23.182	22.744	20.858	19.006	16.629	19.301	18.332	17.879	1974	17.879
1975	20.013	21.275	21.690	22.665	23.719	24.717	22.970	22.528	21.670	22.930	23.554	23.213	1975	23.213
1976	25.888	25.650	26.383	26.011	25.724	26.711	26.404	26.330	26.864	26.202	26.075	27.376	1976	27.376
1977	25.938	25.455	25.057	24.997	24.530	25.597	25.104	24.660	24.553	23.413	24.192	24.160	1977	24.160
1978	24.211	24.624	24.624	24.473	24.682	24.174	25.289	26.113	26.113	24.610	25.537	24.476	1978	24.476
1979	24.843	23.956	25.138	25.029	24.404	25.206	25.289	26.460	26.486	24.518	25.537	25.784	1979	25.784
1980	27.153	26.995	24.007	24.736	25.926	26.534	28.188	28.377	28.960	29.225	32.146	30.713	1980	30.713
1981	29.049	29.343	30.104	29.139	28.983	28.360	28.029	26.117	24.481	25.478	26.330	25.402	1981	25.402



# EXHIBIT B-29

## SMALL STOCK PREMIA : CUMULATIVE INDEX

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	YEAR	JAN-DEC
1926	1.070	1.043	0.991	0.983	0.959	0.952	0.917	0.917	0.894	0.899	0.887	0.899	1926	0.899
1927	0.943	0.944	0.884	0.917	0.928	0.906	0.892	0.831	0.797	0.785	0.791	0.794	1927	0.794
1928	0.836	0.927	0.779	0.823	0.843	0.805	0.798	0.765	0.818	0.827	0.815	0.769	1928	0.769
1929	0.727	0.726	0.712	0.722	0.651	0.612	0.590	0.520	0.497	0.457	0.445	0.411	1929	0.411
1930	0.437	0.454	0.463	0.434	0.415	0.393	0.389	0.377	0.371	0.362	0.364	0.347	1930	0.347
1931	0.403	0.458	0.452	0.400	0.396	0.412	0.419	0.379	0.369	0.364	0.357	0.358	1931	0.358
1932	0.771	0.360	0.355	0.347	0.373	0.360	0.373	0.302	0.453	0.434	0.392	0.357	1932	0.357
1933	0.360	0.368	0.392	0.427	0.226	0.706	0.728	0.707	0.673	0.648	0.617	0.605	1933	0.605
1934	0.775	0.813	0.812	0.852	0.806	0.786	0.697	0.762	0.752	0.781	0.782	0.796	1934	0.796
1935	0.802	0.782	0.712	0.698	0.668	0.642	0.642	0.659	0.665	0.680	0.744	0.759	1935	0.759
1936	0.936	0.972	0.952	0.853	0.830	0.783	0.796	0.801	0.842	0.830	0.935	0.953	1936	0.953
1937	1.036	1.085	1.106	1.010	0.971	0.905	0.922	0.899	0.797	0.788	0.742	0.650	1937	0.650
1938	0.675	0.653	0.580	0.657	0.623	0.685	0.737	0.680	0.658	0.747	0.716	0.722	1938	0.722
1939	0.710	0.689	0.612	0.622	0.644	0.616	0.705	0.638	0.860	0.836	0.781	0.793	1939	0.793
1940	0.821	0.877	0.922	0.984	0.848	0.868	0.859	0.851	0.858	0.869	0.918	0.876	1940	0.876
1941	0.919	0.897	0.920	0.915	0.902	0.918	1.063	1.056	1.014	1.012	0.991	0.912	1941	0.912
1942	1.070	1.079	1.073	1.078	0.989	1.000	1.040	1.057	1.122	1.168	1.111	1.096	1942	1.096
1943	1.249	1.417	1.545	1.684	1.785	1.731	1.634	1.606	1.632	1.670	1.593	1.693	1943	1.693
1944	1.772	1.817	1.918	1.835	1.878	2.036	2.014	2.047	2.044	2.017	2.091	2.195	1944	2.195
1945	2.266	2.242	2.242	2.299	2.369	2.573	2.476	2.455	2.514	2.610	2.812	2.827	1945	2.827
1946	3.067	3.068	3.005	3.096	3.190	3.160	3.068	3.015	2.832	2.816	2.784	2.760	1946	2.760
1947	2.806	2.816	2.763	2.579	2.438	2.437	2.536	2.579	2.637	2.648	2.615	2.648	1947	2.648
1948	2.707	2.601	2.651	2.671	2.719	2.717	2.698	2.657	2.591	2.574	2.534	2.469	1948	2.469
1949	2.504	2.458	2.532	2.492	2.416	2.389	2.394	2.403	2.457	2.490	2.450	2.500	1949	2.500
1950	2.574	2.579	2.552	2.533	2.468	2.412	2.526	2.548	2.530	2.492	2.530	2.641	1950	2.641
1951	2.693	2.667	2.581	2.544	2.536	2.460	2.377	2.402	2.455	2.426	2.383	2.292	1951	2.292
1952	2.294	2.290	2.215	2.189	2.121	2.075	2.057	2.071	2.074	2.048	2.031	1.986	1952	1.986
1953	2.077	2.154	2.186	2.175	2.189	2.112	2.086	2.060	1.999	1.949	1.934	1.872	1953	1.872
1954	1.914	1.910	1.883	1.812	1.819	1.829	1.869	1.923	1.838	1.881	1.857	1.864	1954	1.864
1955	1.965	2.040	2.063	2.012	2.017	1.906	1.800	1.799	1.796	1.816	1.751	1.777	1955	1.777
1956	1.830	1.806	1.755	1.764	1.798	1.735	1.692	1.725	1.756	1.762	1.781	1.722	1956	1.722
1957	1.831	1.843	1.834	1.809	1.743	1.755	1.722	1.742	1.768	1.674	1.655	1.640	1957	1.640
1958	1.749	1.744	1.769	1.775	1.807	1.815	1.823	1.869	1.872	1.898	1.938	1.895	1958	1.895
1959	1.994	2.043	2.044	1.986	1.941	1.937	1.930	1.933	1.935	1.954	1.961	1.967	1959	1.967
1960	2.045	2.025	1.986	1.981	1.957	1.982	1.991	2.032	2.002	1.923	1.918	1.890	1960	1.890
1961	1.941	1.993	2.063	2.079	2.118	2.061	1.997	1.974	1.944	1.937	1.969	1.975	1961	1.975
1962	2.075	2.070	2.091	2.056	2.015	2.019	2.041	2.058	2.018	1.930	1.961	1.913	1962	1.913
1963	1.990	2.044	1.999	1.941	2.009	2.023	2.034	2.030	2.017	1.995	1.984	1.923	1963	1.923
1964	1.921	1.963	1.974	1.977	1.976	1.973	2.013	2.031	2.052	2.074	2.076	2.041	1964	2.041
1965	2.078	2.153	2.233	2.267	2.256	2.160	2.225	2.296	2.299	2.365	2.460	2.587	1965	2.587
1966	2.766	2.889	2.928	2.786	2.791	2.828	2.859	2.757	2.727	2.563	2.665	2.681	1966	2.681
1967	2.960	3.072	3.135	3.083	3.208	3.469	3.637	3.669	3.751	3.738	4.016	4.016	1967	4.016
1968	4.248	4.058	3.969	4.218	4.572	4.537	4.458	4.549	4.640	4.614	4.722	4.941	1968	4.941
1969	4.893	4.617	4.634	4.711	4.780	4.483	4.267	4.385	4.374	4.440	4.325	4.104	1969	4.104
1970	4.159	4.077	3.949	3.617	3.442	3.289	3.223	3.365	3.614	3.394	3.258	3.305	1970	3.305
1971	3.692	3.757	3.826	3.774	3.586	3.561	3.501	3.501	3.501	3.450	3.412	3.400	1971	3.400
1972	3.719	3.717	3.637	3.663	3.513	3.478	3.322	3.254	3.254	3.063	3.090	2.984	1972	2.984
1973	2.902	2.767	2.649	2.471	2.471	2.412	2.604	2.571	2.738	2.760	2.517	2.468	1973	2.468
1974	2.816	2.787	2.827	2.801	2.655	2.650	2.794	2.835	2.981	2.804	2.807	2.635	1974	2.635
1975	3.035	2.917	3.028	3.039	3.086	3.175	3.304	3.162	3.208	2.988	2.990	2.960	1975	2.960
1976	3.399	3.891	3.759	3.661	3.556	3.567	3.608	3.498	3.448	3.447	3.589	3.819	1976	3.819
1977	4.178	4.225	4.330	4.423	4.477	4.610	4.693	4.705	4.749	4.789	5.132	5.149	1977	5.149
1978	5.359	5.631	6.057	6.007	6.418	6.394	6.474	6.861	6.873	5.817	6.091	6.089	1978	6.089
1979	6.636	6.636	6.999	7.245	7.392	7.438	7.483	7.592	7.312	6.948	7.187	7.472	1979	7.472
1980	7.640	7.400	6.815	6.995	7.126	7.238	7.706	8.071	8.182	8.302	8.029	8.011	1980	8.011
1981	8.618	8.628	9.060	9.543	9.789	10.043	9.695	9.466	9.231	9.584	9.564	9.616	1981	9.616



# EXHIBIT B-30

## DEFAULT PREMIA : CUMULATIVE INDEX

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	YEAR	JAN-DEC
1926	0.993	0.992	0.996	0.998	1.001	0.998	1.003	1.007	1.009	1.009	0.998	0.996	1926	0.996
1927	0.994	0.992	0.975	0.981	0.970	0.980	0.976	0.977	0.989	0.985	0.982	0.982	1927	0.982
1928	0.988	0.989	0.988	0.990	0.990	0.983	1.004	1.004	1.012	1.004	1.000	1.008	1928	1.008
1929	1.021	1.041	1.046	1.020	1.044	1.024	1.026	1.032	1.033	1.001	0.975	1.003	1929	1.003
1930	1.014	1.008	1.014	1.024	1.016	1.022	1.024	1.036	1.040	1.042	1.036	1.034	1930	1.034
1931	1.068	1.066	1.065	1.063	1.062	1.067	1.077	1.077	1.106	1.102	1.078	1.071	1931	1.071
1932	1.062	0.993	1.036	0.949	1.007	0.966	0.924	0.964	0.988	0.997	1.001	1.001	1932	1.001
1933	1.041	1.014	1.009	1.002	1.031	1.045	1.064	1.069	1.065	1.079	1.069	1.108	1933	1.108
1934	1.108	1.115	1.114	1.112	1.107	1.117	1.118	1.137	1.146	1.137	1.147	1.146	1934	1.146
1935	1.149	1.155	1.155	1.159	1.171	1.173	1.181	1.191	1.190	1.188	1.195	1.197	1935	1.197
1936	1.200	1.197	1.194	1.193	1.193	1.200	1.194	1.189	1.200	1.203	1.191	1.188	1936	1.188
1937	1.192	1.176	1.211	1.215	1.213	1.222	1.210	1.220	1.218	1.221	1.217	1.216	1937	1.216
1938	1.213	1.208	1.202	1.193	1.189	1.200	1.203	1.201	1.211	1.210	1.217	1.222	1938	1.222
1939	1.218	1.216	1.203	1.197	1.182	1.190	1.175	1.153	1.233	1.212	1.202	1.194	1939	1.194
1940	1.202	1.201	1.186	1.179	1.212	1.195	1.191	1.189	1.187	1.189	1.172	1.161	1940	1.161
1941	1.185	1.184	1.170	1.164	1.166	1.166	1.171	1.173	1.180	1.167	1.160	1.181	1941	1.181
1942	1.173	1.171	1.168	1.172	1.169	1.169	1.169	1.169	1.174	1.174	1.174	1.174	1942	1.174
1943	1.176	1.177	1.178	1.178	1.178	1.181	1.184	1.184	1.183	1.181	1.179	1.182	1943	1.182
1944	1.182	1.182	1.186	1.188	1.185	1.187	1.186	1.187	1.188	1.189	1.192	1.204	1944	1.204
1945	1.198	1.195	1.194	1.177	1.169	1.153	1.162	1.160	1.157	1.149	1.138	1.131	1945	1.131
1946	1.142	1.143	1.145	1.156	1.160	1.154	1.157	1.160	1.158	1.152	1.145	1.151	1946	1.151
1947	1.153	1.151	1.156	1.163	1.161	1.160	1.155	1.138	1.128	1.121	1.129	1.154	1947	1.154
1948	1.154	1.153	1.163	1.162	1.147	1.147	1.143	1.149	1.150	1.152	1.153	1.162	1948	1.162
1949	1.157	1.156	1.148	1.149	1.151	1.142	1.149	1.141	1.144	1.150	1.150	1.127	1949	1.127
1950	1.138	1.137	1.138	1.134	1.129	1.135	1.136	1.139	1.143	1.147	1.150	1.150	1950	1.150
1951	1.146	1.149	1.140	1.146	1.152	1.149	1.157	1.158	1.161	1.143	1.151	1.165	1951	1.165
1952	1.185	1.173	1.169	1.149	1.156	1.158	1.162	1.177	1.191	1.178	1.192	1.192	1952	1.192
1953	1.181	1.186	1.193	1.176	1.189	1.176	1.192	1.183	1.177	1.195	1.193	1.189	1953	1.189
1954	1.193	1.188	1.185	1.169	1.174	1.163	1.152	1.158	1.164	1.168	1.173	1.168	1954	1.168
1955	1.185	1.186	1.187	1.187	1.176	1.188	1.196	1.191	1.191	1.183	1.185	1.188	1955	1.188
1956	1.191	1.194	1.194	1.194	1.173	1.168	1.181	1.179	1.175	1.169	1.161	1.172	1956	1.172
1957	1.194	1.162	1.171	1.189	1.183	1.166	1.158	1.157	1.159	1.167	1.142	1.185	1957	1.185
1958	1.207	1.207	1.173	1.173	1.173	1.211	1.214	1.214	1.214	1.218	1.217	1.231	1958	1.231
1959	1.238	1.239	1.227	1.220	1.207	1.211	1.211	1.211	1.207	1.209	1.240	1.247	1959	1.247
1960	1.247	1.237	1.226	1.244	1.223	1.219	1.205	1.228	1.211	1.215	1.215	1.193	1960	1.193
1961	1.247	1.243	1.240	1.244	1.238	1.208	1.209	1.211	1.213	1.220	1.226	1.238	1961	1.238
1962	1.250	1.250	1.240	1.240	1.238	1.232	1.230	1.240	1.240	1.246	1.251	1.250	1962	1.250
1963	1.257	1.259	1.261	1.256	1.259	1.262	1.262	1.264	1.264	1.270	1.265	1.262	1963	1.262
1964	1.274	1.283	1.270	1.269	1.270	1.267	1.273	1.275	1.271	1.272	1.270	1.277	1964	1.277
1965	1.282	1.282	1.274	1.271	1.271	1.265	1.265	1.266	1.268	1.271	1.271	1.262	1965	1.262
1966	1.278	1.294	1.250	1.259	1.263	1.269	1.261	1.255	1.263	1.267	1.243	1.216	1966	1.216
1967	1.252	1.255	1.245	1.272	1.245	1.256	1.252	1.262	1.274	1.290	1.271	1.271	1967	1.271
1968	1.276	1.285	1.287	1.264	1.262	1.249	1.255	1.281	1.288	1.284	1.289	1.304	1968	1.304
1969	1.351	1.324	1.296	1.284	1.318	1.294	1.285	1.291	1.328	1.297	1.267	1.259	1969	1.259
1970	1.279	1.255	1.258	1.279	1.318	1.254	1.284	1.299	1.287	1.289	1.262	1.320	1970	1.320
1971	1.323	1.296	1.262	1.268	1.248	1.281	1.274	1.285	1.245	1.260	1.269	1.292	1971	1.292
1972	1.296	1.298	1.312	1.313	1.299	1.299	1.275	1.280	1.295	1.277	1.280	1.309	1972	1.309
1973	1.344	1.345	1.340	1.342	1.351	1.347	1.341	1.336	1.341	1.350	1.339	1.338	1973	1.338
1974	1.342	1.346	1.344	1.332	1.330	1.286	1.263	1.258	1.249	1.298	1.275	1.244	1974	1.244
1975	1.290	1.291	1.293	1.310	1.296	1.298	1.305	1.291	1.287	1.297	1.300	1.307	1975	1.307
1976	1.320	1.320	1.320	1.315	1.323	1.315	1.324	1.327	1.330	1.328	1.325	1.328	1976	1.328
1977	1.339	1.343	1.343	1.347	1.345	1.346	1.351	1.347	1.348	1.355	1.351	1.359	1977	1.359
1978	1.378	1.364	1.370	1.370	1.364	1.375	1.370	1.375	1.383	1.382	1.375	1.374	1978	1.374
1979	1.373	1.373	1.370	1.378	1.374	1.368	1.376	1.382	1.373	1.367	1.355	1.332	1979	1.332
1980	1.341	1.312	1.347	1.333	1.351	1.354	1.356	1.354	1.357	1.369	1.356	1.349	1980	1.349
1981	1.344	1.368	1.357	1.319	1.320	1.343	1.340	1.345	1.333	1.301	1.289	1.306	1981	1.306



## EXHIBIT B-31

### MATURITY PREMIA : CUMULATIVE INDEX

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	YEAR	JAN-DEC
1926	1.010	1.014	1.015	1.019	1.021	1.021	1.019	1.017	1.018	1.025	1.039	1.044	1926	1.044
1927	1.049	1.055	1.079	1.076	1.084	1.074	1.076	1.081	1.081	1.089	1.097	1.103	1927	1.103
1928	1.056	1.062	1.071	1.078	1.086	1.087	1.092	1.094	1.097	1.104	1.112	1.118	1928	1.118
1929	1.056	1.055	1.071	1.081	1.096	1.097	1.092	1.015	1.014	1.048	1.069	1.055	1929	1.055
1930	1.048	1.058	1.063	1.060	1.072	1.074	1.076	1.074	1.082	1.085	1.088	1.079	1930	1.079
1931	1.054	1.073	1.087	1.106	1.106	1.095	1.107	1.107	1.107	1.103	1.101	1.101	1931	1.101
1932	1.051	1.071	1.081	1.095	1.109	1.107	1.107	1.107	1.107	1.103	1.101	1.101	1932	1.101
1933	1.187	1.186	1.167	1.162	1.197	1.203	1.200	1.205	1.208	1.197	1.179	1.165	1933	1.165
1934	1.195	1.204	1.227	1.243	1.259	1.267	1.272	1.257	1.239	1.261	1.266	1.280	1934	1.280
1935	1.303	1.315	1.320	1.330	1.323	1.335	1.340	1.322	1.323	1.331	1.332	1.341	1935	1.341
1936	1.349	1.359	1.374	1.378	1.384	1.386	1.394	1.410	1.405	1.406	1.434	1.440	1936	1.440
1937	1.438	1.450	1.390	1.395	1.401	1.398	1.417	1.402	1.408	1.414	1.427	1.439	1937	1.439
1938	1.447	1.454	1.449	1.479	1.486	1.486	1.493	1.493	1.496	1.509	1.506	1.518	1938	1.518
1939	1.527	1.539	1.559	1.577	1.604	1.600	1.618	1.585	1.499	1.560	1.585	1.608	1939	1.608
1940	1.605	1.610	1.638	1.632	1.584	1.625	1.633	1.656	1.656	1.661	1.695	1.706	1940	1.706
1941	1.672	1.675	1.691	1.713	1.729	1.718	1.732	1.735	1.733	1.757	1.752	1.721	1941	1.721
1942	1.733	1.734	1.750	1.751	1.757	1.758	1.760	1.766	1.766	1.770	1.762	1.773	1942	1.773
1943	1.777	1.775	1.797	1.797	1.809	1.809	1.809	1.809	1.809	1.809	1.809	1.802	1943	1.802
1944	1.805	1.811	1.814	1.816	1.821	1.821	1.828	1.832	1.834	1.836	1.840	1.847	1944	1.847
1945	1.870	1.884	1.887	1.912	1.927	1.959	1.942	1.946	1.956	1.976	2.001	2.038	1945	2.038
1946	2.043	2.049	2.050	2.062	2.032	2.032	2.024	2.001	1.998	2.012	2.000	2.025	1946	2.025
1947	2.027	2.031	2.034	2.026	2.032	2.034	2.034	2.062	2.052	2.043	2.046	1.966	1947	1.966
1948	1.968	1.976	1.981	1.988	2.032	1.996	1.990	1.989	1.991	1.992	2.006	2.016	1948	2.016
1949	2.031	2.039	2.052	2.053	2.055	2.087	2.092	2.113	2.109	2.111	2.114	2.123	1949	2.123
1950	2.108	2.111	2.110	2.115	2.120	2.112	2.122	2.123	2.105	2.093	2.098	2.099	1950	2.099
1951	2.109	2.091	2.056	2.040	2.024	2.009	2.034	2.051	2.032	2.031	2.001	1.987	1951	1.987
1952	1.989	1.990	2.010	2.042	2.032	2.030	2.023	2.005	1.976	2.003	1.997	1.977	1952	1.977
1953	1.976	1.956	1.935	1.912	1.880	1.919	1.923	1.919	1.973	1.985	1.974	2.012	1953	2.012
1954	2.028	2.075	2.086	2.105	2.086	2.119	2.146	2.137	2.133	2.133	2.126	2.138	1954	2.138
1955	2.085	2.067	2.083	2.081	2.093	2.075	2.052	2.049	2.061	2.087	2.074	2.078	1955	2.078
1956	2.091	2.086	2.062	2.025	2.066	2.070	2.020	1.979	1.985	1.969	1.954	1.914	1956	1.914
1957	1.975	1.976	1.956	1.918	1.909	1.870	1.856	1.852	1.861	1.847	1.837	1.855	1957	1.855
1958	1.972	1.990	2.000	2.042	2.040	2.044	2.042	2.044	1.864	1.840	1.840	1.848	1958	1.848
1959	1.826	1.844	1.843	1.818	1.813	1.810	1.817	1.806	1.790	1.811	1.785	1.751	1959	1.751
1960	1.765	1.796	1.840	1.805	1.828	1.855	1.920	1.904	1.916	1.906	1.891	1.941	1960	1.941
1961	1.916	1.922	1.940	1.927	1.947	1.940	1.932	1.922	1.943	1.954	1.944	1.919	1961	1.919
1962	1.916	1.925	1.972	1.984	1.988	1.989	1.983	1.974	1.982	1.994	1.997	1.962	1962	1.962
1963	1.991	1.988	1.985	1.978	1.978	1.978	1.978	1.978	1.973	1.962	1.967	1.960	1963	1.960
1964	1.951	1.944	1.945	1.948	1.953	1.961	1.976	1.955	1.959	1.962	1.959	1.959	1964	1.959
1965	1.961	1.958	1.962	1.963	1.960	1.963	1.961	1.952	1.939	1.938	1.919	1.898	1965	1.898
1966	1.871	1.818	1.865	1.818	1.828	1.818	1.805	1.761	1.812	1.845	1.810	1.878	1966	1.878
1967	1.899	1.850	1.880	1.819	1.806	1.744	1.751	1.731	1.724	1.649	1.610	1.636	1967	1.636
1968	1.693	1.671	1.629	1.659	1.659	1.690	1.731	1.723	1.698	1.668	1.616	1.550	1968	1.550
1969	1.510	1.510	1.504	1.560	1.476	1.500	1.504	1.486	1.398	1.441	1.398	1.380	1969	1.380
1970	1.369	1.440	1.423	1.357	1.286	1.341	1.377	1.367	1.391	1.369	1.410	1.453	1970	1.453
1971	1.520	1.491	1.565	1.516	1.511	1.481	1.479	1.542	1.568	1.588	1.575	1.576	1971	1.576
1972	1.562	1.552	1.575	1.575	1.521	1.511	1.505	1.585	1.585	1.608	1.608	1.608	1972	1.608
1973	1.546	1.541	1.547	1.546	1.522	1.511	1.434	1.482	1.519	1.489	1.505	1.483	1973	1.483
1974	1.461	1.449	1.399	1.353	1.360	1.357	1.344	1.305	1.326	1.385	1.418	1.432	1974	1.432
1975	1.456	1.469	1.424	1.392	1.415	1.451	1.431	1.404	1.393	1.451	1.430	1.479	1975	1.479
1976	1.485	1.489	1.508	1.504	1.475	1.499	1.504	1.529	1.545	1.551	1.598	1.644	1976	1.644
1977	1.574	1.561	1.569	1.575	1.588	1.608	1.595	1.614	1.603	1.580	1.587	1.553	1977	1.553
1978	1.532	1.527	1.515	1.507	1.489	1.472	1.485	1.509	1.484	1.444	1.461	1.431	1978	1.431
1979	1.448	1.418	1.425	1.398	1.422	1.455	1.431	1.415	1.387	1.258	1.285	1.280	1979	1.280
1980	1.174	1.110	1.061	1.210	1.251	1.288	1.219	1.159	1.120	1.080	1.081	1.104	1980	1.104
1981	1.080	1.022	1.049	0.983	1.033	1.000	0.952	0.903	0.879	0.941	1.064	0.979	1981	0.979



# EXHIBIT B-32

## COMMON STOCKS : INFLATION ADJUSTED RETURN INDEX

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	YEAR	JAN-DEC
1926	1.000	0.945	0.915	0.930	0.952	1.002	1.060	1.092	1.113	1.078	1.111	1.133	1926	1.133
1927	1.119	1.188	1.205	1.229	1.294	1.273	1.383	1.462	1.519	1.434	1.521	1.586	1927	1.586
1928	1.583	1.579	1.752	1.810	1.835	1.778	1.803	1.945	2.017	2.081	2.101	2.108	1928	2.108
1929	2.440	2.440	2.447	2.500	2.394	2.658	2.757	3.030	2.891	2.321	2.036	2.105	1929	2.105
1930	2.248	2.315	2.516	2.482	2.472	2.095	2.195	2.239	1.938	1.784	1.783	1.682	1930	1.682
1931	1.791	2.031	1.809	1.741	1.537	1.532	1.649	1.282	1.190	1.054	1.054	1.054	1931	1.054
1932	1.042	1.123	0.999	0.806	0.641	0.644	0.890	1.285	1.208	1.054	1.012	1.083	1932	1.083
1933	1.109	0.930	0.970	1.386	1.615	1.814	1.605	1.782	1.583	1.448	1.611	1.660	1933	1.660
1934	1.829	1.756	1.756	1.717	1.586	1.618	1.435	1.519	1.491	1.460	1.601	1.603	1934	1.603
1935	1.514	1.451	1.413	1.538	1.608	1.724	1.879	1.932	1.972	2.125	2.215	2.297	1935	2.297
1936	2.451	2.518	2.598	2.403	2.533	2.593	2.762	2.784	2.786	3.009	3.049	3.040	1936	3.040
1937	3.137	3.189	3.142	2.873	2.853	2.702	2.972	2.822	2.400	2.175	2.002	1.915	1937	1.915
1938	1.970	2.122	1.594	1.817	1.764	2.208	2.367	2.319	2.357	2.551	2.488	2.581	1938	2.581
1939	2.420	2.526	2.194	2.193	2.354	2.210	2.454	2.295	2.634	2.614	2.511	2.590	1939	2.590
1940	2.510	2.525	2.562	2.556	1.965	2.119	2.196	2.278	2.301	2.398	2.322	2.313	1940	2.313
1941	2.206	2.193	2.198	2.043	2.066	2.147	2.261	2.243	2.187	2.019	1.944	1.861	1941	1.861
1942	1.867	1.821	1.680	1.602	1.713	1.747	1.799	1.817	1.866	1.974	1.958	2.050	1942	2.050
1943	2.201	2.325	2.415	2.395	2.509	2.570	2.795	2.506	2.562	2.524	2.364	2.505	1943	2.505
1944	2.553	2.569	2.619	2.578	2.698	2.839	2.768	2.801	2.799	2.806	2.843	2.939	1944	2.939
1945	2.985	3.195	3.054	3.324	3.364	3.330	3.264	3.473	3.638	3.755	3.890	3.921	1945	3.921
1946	4.201	4.247	4.108	4.247	4.346	4.138	3.795	3.456	3.071	2.993	2.913	3.023	1946	3.023
1947	3.100	3.100	3.100	3.100	3.100	3.100	3.100	3.100	3.100	3.100	3.100	3.100	1947	3.100
1948	2.783	2.783	2.783	2.783	2.783	2.783	2.783	2.783	2.783	2.783	2.783	2.783	1948	2.783
1949	3.021	3.021	3.021	3.021	3.021	3.021	3.021	3.021	3.021	3.021	3.021	3.021	1949	3.021
1950	3.721	3.806	3.816	3.996	4.182	3.929	3.938	4.079	4.292	4.309	4.364	4.529	1950	4.529
1951	4.744	4.743	4.670	4.736	4.736	4.938	4.958	5.195	5.195	5.111	5.309	5.309	1951	5.309
1952	5.405	5.405	5.405	5.405	5.405	5.405	5.405	5.405	5.405	5.405	5.405	5.405	1952	5.405
1953	6.215	6.180	6.033	5.883	5.913	6.812	6.812	6.812	6.812	6.812	6.812	6.812	1953	6.812
1954	6.442	6.522	6.742	7.107	7.377	7.390	7.826	7.620	8.288	8.170	8.902	9.400	1954	9.400
1955	9.586	9.680	9.651	10.033	10.089	10.938	11.577	11.576	11.683	11.351	12.276	12.325	1955	12.325
1956	11.912	12.404	13.270	13.248	12.396	12.827	13.412	12.989	12.401	12.445	12.445	12.772	1956	12.772
1957	12.245	11.878	12.105	12.530	13.048	12.976	13.084	12.408	11.647	11.295	11.061	10.577	1957	10.577
1958	11.489	11.313	11.605	11.969	12.223	12.550	13.098	13.344	14.012	14.390	14.782	15.591	1958	15.591
1959	15.655	15.749	15.780	16.397	16.771	16.657	17.222	17.065	16.251	16.404	16.709	17.197	1959	17.197
1960	16.013	16.231	16.031	15.682	16.193	16.499	16.113	16.624	15.625	15.543	16.247	17.025	1960	17.025
1961	18.124	18.702	19.206	19.303	19.764	19.199	19.769	20.271	20.271	20.271	20.271	20.271	1961	20.271
1962	20.673	21.060	20.917	19.601	18.012	16.565	17.609	17.975	17.039	17.167	19.032	19.343	1962	19.343
1963	20.300	19.793	20.504	21.530	21.946	21.438	21.298	22.438	22.221	22.950	22.820	23.369	1963	23.369
1964	24.004	24.382	24.757	24.915	25.319	25.715	26.160	25.880	26.603	26.830	26.785	26.906	1964	26.906
1965	27.833	27.919	27.518	28.411	28.264	26.778	27.144	27.940	28.814	29.616	29.461	29.680	1965	29.680
1966	29.863	29.283	28.591	29.101	27.639	27.149	26.738	24.663	24.481	25.590	25.832	25.813	1966	25.813
1967	27.872	28.044	29.134	30.348	29.810	29.269	30.492	30.188	31.160	30.206	30.313	31.065	1967	31.065
1968	29.622	28.761	28.936	31.264	31.676	31.826	31.127	31.547	32.717	32.814	34.432	32.949	1968	32.949
1969	32.631	31.118	31.973	32.496	32.491	30.521	28.589	29.757	28.922	30.144	29.086	28.390	1969	28.390
1970	26.178	27.573	27.511	24.897	23.426	22.176	23.767	24.936	25.673	25.292	26.562	27.977	1970	27.977
1971	29.226	29.487	30.516	31.564	30.247	30.135	28.858	29.976	29.785	28.534	28.563	30.951	1971	30.951
1972	31.326	32.316	32.497	32.603	30.213	32.451	32.439	33.656	33.401	33.652	35.270	35.621	1972	35.621
1973	34.942	35.533	35.114	31.674	31.039	30.666	31.806	30.220	31.385	31.139	27.541	27.866	1973	27.866
1974	27.387	27.086	26.191	25.066	24.105	23.563	21.598	19.532	17.012	19.686	18.637	18.174	1974	18.174
1975	20.366	21.596	22.024	22.998	24.067	24.982	23.072	22.668	21.813	23.068	23.651	23.323	1975	23.323
1976	26.064	26.631	26.631	26.256	25.908	26.877	26.535	26.449	26.993	26.329	26.229	27.569	1976	27.569
1977	26.061	25.800	24.778	24.778	24.778	24.778	24.768	24.344	24.252	23.179	23.923	23.947	1977	23.947
1978	22.391	21.873	22.326	24.069	24.158	24.158	24.158	24.158	24.158	24.158	24.158	24.158	1978	24.158
1979	24.177	23.208	24.318	24.127	23.424	24.166	24.117	25.347	25.148	24.274	24.253	24.464	1979	24.464
1980	25.605	25.333	22.469	23.181	24.254	24.704	26.354	26.529	27.029	27.297	30.039	28.835	1980	28.835
1981	27.338	27.623	26.473	27.684	27.627	27.170	26.879	25.184	23.665	24.863	25.889	25.129	1981	25.129



# EXHIBIT B-33

## SMALL STOCKS : INFLATION ADJUSTED RETURN INDEX

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	YEAR	JAN-DEC
1926	1.070	1.005	0.903	0.911	0.910	0.951	0.971	1.001	0.995	0.969	0.985	1.018	1926	1.018
1927	1.056	1.122	1.067	1.128	1.202	1.154	1.236	1.221	1.219	1.132	1.226	1.267	1927	1.267
1928	1.330	1.312	1.381	1.504	1.561	1.442	1.450	1.512	1.634	1.683	1.879	1.790	1928	1.790
1929	1.799	1.798	1.769	1.830	1.575	1.653	1.655	1.622	1.475	1.067	0.909	0.869	1929	0.869
1930	0.984	1.052	1.164	1.076	1.024	0.808	0.843	0.834	0.708	0.634	0.638	0.572	1930	0.572
1931	0.701	0.891	0.834	0.659	0.575	0.686	0.649	0.601	0.409	0.443	0.403	0.318	1931	0.318
1932	0.357	0.373	0.326	0.256	0.229	0.231	0.313	0.546	0.477	0.396	0.349	0.336	1932	0.336
1933	0.338	0.300	0.336	0.506	0.825	1.033	0.946	1.024	0.861	0.754	0.804	0.812	1933	0.812
1934	1.124	1.134	1.133	1.163	1.011	1.006	0.779	0.898	0.869	0.884	0.970	0.989	1934	0.989
1935	0.942	0.879	0.777	0.831	0.833	0.860	0.938	0.989	1.019	1.121	1.273	1.347	1935	1.347
1936	1.752	1.866	1.887	1.548	1.590	1.538	1.665	1.688	1.775	1.892	2.157	2.192	1936	2.192
1937	2.454	2.610	2.622	2.170	2.071	1.821	2.038	1.883	1.388	1.242	1.070	0.892	1937	0.892
1938	0.952	0.993	0.636	0.809	0.744	1.004	1.153	1.040	1.024	1.247	1.154	1.218	1938	1.218
1939	1.120	1.138	0.860	0.874	0.969	0.868	1.088	0.915	1.368	1.321	1.182	1.237	1939	1.237
1940	1.241	1.334	1.422	1.515	0.955	1.053	1.079	1.109	1.130	1.192	1.221	1.161	1940	1.161
1941	1.164	1.130	1.161	1.072	1.069	1.130	1.370	1.349	1.261	1.163	1.095	0.961	1941	0.961
1942	1.130	1.112	1.019	0.977	0.964	0.994	1.063	1.092	1.189	1.306	1.232	1.273	1942	1.273
1943	1.544	1.839	2.076	2.245	2.487	2.472	2.223	2.231	2.318	2.337	2.082	2.336	1943	2.336
1944	2.490	2.568	2.761	2.598	2.780	3.159	3.047	3.133	3.126	3.093	3.247	3.517	1944	3.517
1945	3.687	4.066	3.716	4.139	4.314	4.643	4.376	4.620	4.951	5.297	5.899	5.978	1945	5.978
1946	6.911	6.497	6.626	7.051	7.430	7.005	6.221	5.556	4.602	4.457	4.287	4.413	1946	4.413
1947	4.599	4.587	4.333	3.886	3.691	3.866	4.136	4.077	4.027	4.141	3.992	4.084	1947	4.084
1948	3.974	3.697	4.072	4.163	4.575	4.565	4.244	4.229	4.007	4.283	3.834	3.894	1948	3.894
1949	3.970	3.823	4.053	3.911	3.696	3.655	3.926	4.015	4.195	4.417	4.417	4.747	1949	4.747
1950	5.000	5.125	5.084	5.286	5.398	4.948	5.193	5.424	5.670	5.606	5.763	6.235	1950	6.235
1951	6.653	6.614	6.273	6.495	6.255	5.932	6.146	6.518	6.616	6.435	6.349	6.352	1951	6.352
1952	6.474	6.521	6.431	6.073	6.085	6.235	6.257	6.246	6.154	6.082	6.377	6.487	1952	6.487
1953	6.769	6.985	6.920	6.713	6.791	6.435	6.517	6.691	6.724	6.082	6.181	6.025	1953	6.025
1954	6.466	6.535	6.662	6.772	7.053	7.104	7.678	7.699	8.033	8.108	8.730	9.723	1954	9.723
1955	9.918	10.394	10.482	10.639	10.722	11.037	11.066	11.142	10.953	11.452	11.667	11.667	1955	11.667
1956	11.626	11.949	12.449	11.492	11.933	11.925	11.795	12.052	11.498	11.912	11.828	11.828	1956	11.828
1957	12.093	11.807	11.976	12.231	12.294	12.310	12.178	11.693	11.151	10.223	10.303	9.808	1957	9.808
1958	10.834	10.637	11.064	11.454	11.898	12.270	12.859	13.424	14.120	14.695	15.407	15.906	1958	15.906
1959	16.802	17.317	17.364	17.547	17.550	17.396	17.925	17.788	16.960	17.287	17.671	18.241	1959	18.241
1960	17.703	17.770	17.211	16.791	17.135	17.679	17.344	18.254	16.886	16.133	16.820	17.379	1960	17.379
1961	18.969	20.086	21.330	21.601	22.523	21.274	21.246	21.546	20.768	21.312	22.619	22.798	1961	22.798
1962	23.109	23.491	23.572	21.687	19.500	17.969	19.300	19.859	18.441	17.773	19.991	19.834	1962	19.834
1963	21.610	21.660	21.959	22.643	23.631	23.248	23.223	24.424	24.026	24.568	24.280	24.112	1963	24.112
1964	24.747	25.676	26.210	26.427	26.841	27.219	28.245	28.193	29.267	29.837	29.805	29.440	1964	29.440
1965	30.997	32.206	32.938	34.508	34.165	30.907	32.260	34.248	35.365	37.351	38.658	40.939	1965	40.939
1966	44.033	45.126	44.119	45.450	41.035	40.858	40.681	36.080	35.417	34.892	36.606	36.808	1966	36.808
1967	43.575	45.489	48.194	49.400	48.832	53.652	58.484	58.428	61.611	59.512	60.030	65.647	1967	65.647
1968	66.400	51.497	60.526	69.189	75.898	75.686	72.707	75.167	79.458	79.246	85.289	85.289	1968	85.289
1969	83.633	75.041	77.379	79.932	81.098	71.131	63.198	67.538	65.471	69.228	64.998	60.124	1969	60.124
1970	56.254	58.134	56.174	46.125	41.167	37.131	39.058	42.697	47.114	43.546	43.996	46.967	1970	46.967
1971	54.406	56.038	59.010	60.268	56.411	54.195	40.011	53.840	52.996	49.612	47.678	52.940	1971	52.940
1972	58.878	60.334	59.371	59.992	56.653	54.722	54.153	55.076	52.936	51.843	54.791	55.447	1972	55.447
1973	50.971	46.539	45.139	42.021	38.356	36.980	41.311	38.724	42.728	42.742	34.042	33.773	1973	33.773
1974	37.960	37.147	36.451	34.556	31.432	30.667	29.767	32.757	25.242	27.708	26.260	24.003	1974	24.003
1975	30.537	31.193	33.002	34.586	36.728	39.181	37.772	35.489	34.670	34.285	35.172	34.331	1975	34.331
1976	43.464	49.399	49.208	47.238	45.252	47.089	47.025	45.439	45.729	44.588	46.259	51.586	1976	51.586
1977	53.609	52.850	53.212	54.008	53.557	57.337	57.256	56.422	56.727	54.699	60.374	60.633	1977	60.633
1978	59.161	60.805	66.661	71.315	74.456	74.218	78.763	85.756	84.876	63.593	67.897	68.666	1978	68.666
1979	77.130	74.049	81.625	83.846	83.106	86.254	86.612	92.290	88.159	77.193	83.100	87.113	1979	87.113
1980	93.143	89.223	72.080	76.268	81.235	84.011	95.059	100.192	103.460	106.005	113.168	108.371	1980	108.371
1981	110.958	112.249	121.316	124.420	127.376	128.580	122.739	112.103	102.560	111.673	116.044	113.276	1981	113.276



# EXHIBIT B-34

## LONG-TERM CORPORATE BONDS : INFLATION ADJUSTED RETURN INDEX

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	YEAR	JAN-DEC
1926	1.007	1.015	1.030	1.030	1.040	1.049	1.064	1.075	1.075	1.081	1.083	1.090	1926	1.090
1927	1.104	1.120	1.136	1.142	1.132	1.126	1.148	1.164	1.174	1.174	1.184	1.195	1927	1.195
1928	1.200	1.220	1.225	1.224	1.207	1.214	1.213	1.220	1.215	1.227	1.225	1.240	1928	1.240
1929	1.248	1.254	1.248	1.255	1.253	1.243	1.233	1.231	1.237	1.246	1.246	1.278	1929	1.278
1930	1.290	1.305	1.330	1.333	1.349	1.372	1.398	1.426	1.433	1.449	1.459	1.467	1930	1.467
1931	1.518	1.550	1.575	1.596	1.634	1.661	1.673	1.679	1.684	1.634	1.621	1.590	1931	1.590
1932	1.614	1.598	1.663	1.645	1.687	1.697	1.705	1.800	1.863	1.891	1.914	1.960	1932	1.960
1933	2.097	2.020	2.046	2.032	2.146	2.164	2.136	2.134	2.131	2.140	2.087	2.151	1933	2.151
1934	2.195	2.210	2.252	2.281	2.296	2.326	2.337	2.342	2.293	2.333	2.369	2.399	1934	2.399
1935	2.414	2.430	2.446	2.450	2.472	2.506	2.546	2.535	2.523	2.533	2.538	2.553	1935	2.553
1936	2.574	2.601	2.635	2.641	2.652	2.648	2.638	2.637	2.648	2.661	2.690	2.693	1936	2.693
1937	2.680	2.661	2.612	2.617	2.616	2.623	2.621	2.611	2.593	2.623	2.658	2.682	1937	2.682
1938	2.730	2.758	2.734	2.759	2.775	2.801	2.813	2.814	2.845	2.881	2.899	2.927	1938	2.927
1939	2.947	2.980	2.994	3.020	3.035	3.046	3.044	2.924	2.912	2.995	3.018	3.056	1939	3.056
1940	3.079	3.063	3.085	3.057	3.043	3.073	3.087	3.096	3.117	3.132	3.152	3.130	1940	3.130
1941	3.132	3.134	3.112	3.107	3.100	3.062	3.068	3.050	3.010	2.987	2.933	2.928	1941	2.928
1942	3.092	3.085	3.047	3.031	3.007	3.011	3.005	3.077	3.079	3.071	3.056	3.047	1942	3.047
1943	3.061	3.057	3.019	3.001	2.993	2.971	2.937	2.953	2.943	2.930	2.926	2.937	1943	2.937
1944	2.948	2.957	2.976	2.969	2.960	2.954	2.954	2.953	2.948	2.943	2.943	2.943	1944	2.943
1945	2.829	2.847	2.852	2.852	2.828	2.810	2.802	2.803	2.823	2.832	2.830	2.857	1945	2.857
1946	2.809	2.814	2.874	2.874	2.864	2.870	2.868	2.858	2.849	2.850	2.838	2.846	1946	2.846
1947	2.447	2.452	2.415	2.420	2.432	2.415	2.399	2.385	2.349	2.346	2.311	2.388	1947	2.388
1948	2.168	2.195	2.226	2.203	2.189	2.156	2.118	2.121	2.126	2.140	2.172	2.216	1948	2.216
1949	2.227	2.261	2.256	2.258	2.270	2.285	2.324	2.326	2.321	2.350	2.351	2.330	1949	2.330
1950	2.349	2.357	2.352	2.347	2.335	2.328	2.321	2.310	2.285	2.271	2.274	2.249	1950	2.249
1951	2.217	2.181	2.121	2.116	2.105	2.088	2.128	2.152	2.126	2.084	2.061	2.065	1951	2.065
1952	2.106	2.102	2.118	2.109	2.112	2.111	2.098	2.109	2.107	2.113	2.136	2.119	1952	2.119
1953	2.107	2.110	2.097	2.043	2.031	2.046	2.077	2.054	2.104	2.146	2.138	2.178	1953	2.178
1954	2.199	2.246	2.257	2.255	2.237	2.249	2.258	2.264	2.279	2.294	2.297	2.306	1954	2.306
1955	2.284	2.270	2.291	2.290	2.286	2.293	2.275	2.272	2.281	2.298	2.289	2.309	1955	2.309
1956	2.336	2.342	2.305	2.275	2.276	2.258	2.220	2.176	2.176	2.140	2.113	2.091	1956	2.091
1957	2.130	2.142	2.147	2.125	2.104	2.024	1.992	1.988	2.004	2.009	2.064	2.206	1957	2.206
1958	2.215	2.210	2.185	2.215	2.222	2.211	2.175	2.108	2.088	2.110	2.130	2.120	1958	2.120
1959	2.111	2.140	2.123	2.084	2.057	2.057	2.071	2.059	2.034	2.060	2.088	2.068	1959	2.068
1960	2.093	2.117	2.157	2.140	2.136	2.161	2.217	2.243	2.226	2.218	2.200	2.223	1960	2.223
1961	2.256	2.303	2.296	2.270	2.281	2.260	2.259	2.257	2.285	2.314	2.320	2.314	1961	2.314
1962	2.333	2.340	2.370	2.398	2.398	2.392	2.383	2.417	2.425	2.445	2.460	2.468	1962	2.468
1963	2.463	2.483	2.487	2.474	2.486	2.486	2.482	2.490	2.485	2.494	2.495	2.481	1963	2.481
1964	2.500	2.516	2.498	2.505	2.520	2.526	2.534	2.546	2.546	2.556	2.549	2.569	1964	2.569
1965	2.590	2.592	2.593	2.590	2.582	2.569	2.571	2.575	2.566	2.575	2.555	2.509	1965	2.509
1966	2.514	2.470	2.448	2.441	2.432	2.432	2.400	2.326	2.339	2.391	2.384	2.432	1966	2.432
1967	2.541	2.487	2.511	2.489	2.487	2.497	2.454	2.346	2.363	2.390	2.421	2.442	1967	2.442
1968	2.314	2.316	2.359	2.372	2.364	2.357	2.357	2.357	2.367	2.367	2.367	2.367	1968	2.367
1969	2.220	2.176	2.115	2.172	2.116	2.110	2.102	2.088	2.028	2.046	1.939	1.901	1969	1.901
1970	1.921	1.988	1.948	1.907	1.868	1.858	1.955	1.971	1.988	1.959	2.067	2.133	1970	2.133
1971	2.245	2.159	2.208	2.148	2.103	2.103	2.111	2.114	2.190	2.251	2.284	2.290	1971	2.290
1972	2.282	2.255	2.297	2.300	2.350	2.308	2.306	2.319	2.317	2.333	2.354	2.377	1972	2.377
1973	2.357	2.346	2.334	2.332	2.309	2.280	2.167	2.204	2.276	2.243	2.244	2.209	1973	2.209
1974	2.179	2.152	2.062	1.980	1.979	1.903	1.849	1.776	1.785	1.928	1.934	1.906	1974	1.906
1975	2.011	2.024	1.967	1.946	1.958	2.002	1.975	1.934	1.900	1.994	1.964	2.043	1975	2.043
1976	2.076	2.084	2.114	2.102	2.067	2.087	2.106	2.145	2.172	2.179	2.242	2.313	1976	2.313
1977	2.230	2.202	2.209	2.214	2.225	2.249	2.238	2.260	2.247	2.232	2.235	2.203	1977	2.203
1978	2.171	2.167	2.162	2.137	2.093	2.076	2.082	2.125	2.100	2.040	2.056	2.018	1978	2.018
1979	2.037	1.987	1.989	1.956	1.976	2.011	1.979	1.960	1.905	1.718	1.740	1.703	1979	1.703
1980	1.564	1.436	1.408	1.592	1.665	1.709	1.629	1.546	1.495	1.456	1.444	1.473	1980	1.473
1981	1.439	1.389	1.420	1.297	1.369	1.356	1.289	1.234	1.193	1.261	1.423	1.337	1981	1.337



# EXHIBIT B-35

## LONG-TERM GOVERNMENT BONDS : INFLATION ADJUSTED RETURN INDEX

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JULY	AUG	SEP	OCT	NOV	DEC	YEAR	JAN-DEC
1926	1.014	1.024	1.034	1.032	1.039	1.051	1.061	1.067	1.065	1.072	1.085	1.094	1926	1.094
1927	1.110	1.128	1.138	1.146	1.148	1.147	1.175	1.170	1.170	1.190	1.210	1.215	1927	1.215
1928	1.113	1.138	1.138	1.154	1.148	1.147	1.206	1.188	1.169	1.220	1.222	1.228	1928	1.228
1929	1.219	1.202	1.190	1.227	1.196	1.209	1.197	1.113	1.194	1.239	1.271	1.267	1929	1.267
1930	1.265	1.286	1.304	1.294	1.320	1.334	1.358	1.368	1.369	1.382	1.400	1.410	1930	1.410
1931	1.413	1.446	1.470	1.492	1.530	1.547	1.548	1.549	1.513	1.474	1.494	1.474	1931	1.474
1932	1.510	1.593	1.598	1.706	1.645	1.722	1.844	1.827	1.847	1.858	1.873	1.916	1932	1.916
1933	1.974	1.954	1.988	1.987	2.042	2.030	1.968	1.957	1.961	1.944	1.915	1.903	1933	1.903
1934	1.942	1.943	1.981	2.011	2.032	2.041	2.049	2.020	1.960	2.010	2.023	2.051	1934	2.051
1935	2.057	2.061	2.074	2.071	2.069	2.093	2.113	2.085	2.076	2.089	2.081	2.090	1935	2.090
1936	2.102	2.129	2.162	2.169	2.178	2.162	2.164	2.173	2.161	2.167	2.211	2.220	1936	2.220
1937	2.201	2.215	2.108	2.106	2.108	2.099	2.118	2.091	2.081	2.100	2.134	2.157	1937	2.157
1938	2.199	2.231	2.223	2.259	2.280	2.281	2.285	2.291	2.296	2.327	2.327	2.340	1938	2.340
1939	2.365	2.395	2.431	2.465	2.507	2.501	2.529	2.478	2.295	2.400	2.439	2.486	1939	2.486
1940	2.488	2.476	2.526	2.517	2.436	2.493	2.512	2.525	2.547	2.555	2.607	2.612	1940	2.612
1941	2.560	2.565	2.577	2.586	2.575	2.544	2.538	2.520	2.471	2.479	2.450	2.401	1941	2.401
1942	2.587	2.569	2.565	2.539	2.532	2.528	2.523	2.517	2.513	2.296	2.274	2.267	1942	2.267
1943	2.274	2.265	2.285	2.219	2.248	2.239	2.239	2.239	2.236	2.236	2.242	2.242	1943	2.242
1944	2.251	2.263	2.267	2.257	2.255	2.252	2.248	2.245	2.248	2.251	2.256	2.257	1944	2.257
1945	2.286	2.308	2.312	2.345	2.341	2.359	2.334	2.340	2.361	2.386	2.407	2.445	1945	2.445
1946	2.461	2.452	2.452	2.404	2.380	2.380	2.380	2.380	2.412	2.412	2.407	2.405	1946	2.405
1947	2.054	2.061	2.020	2.013	2.026	2.012	2.007	2.002	1.946	1.938	1.893	1.832	1947	1.832
1948	1.815	1.839	1.851	1.832	1.845	1.817	1.791	1.783	1.786	1.795	1.820	1.843	1948	1.843
1949	1.861	1.891	1.899	1.899	1.905	1.934	1.954	1.971	1.960	1.975	1.976	1.997	1949	1.997
1950	1.994	2.003	1.997	2.000	1.998	1.982	1.973	1.960	1.932	1.912	1.911	1.888	1950	1.888
1951	1.869	1.833	1.797	1.783	1.764	1.756	1.778	1.795	1.769	1.762	1.729	1.712	1951	1.712
1952	1.717	1.730	1.749	1.772	1.764	1.760	1.743	1.729	1.709	1.732	1.729	1.717	1952	1.717
1953	1.723	1.717	1.697	1.677	1.648	1.679	1.681	1.676	1.724	1.732	1.730	1.768	1953	1.768
1954	1.779	1.824	1.837	1.861	1.837	1.865	1.890	1.886	1.889	1.894	1.887	1.904	1954	1.904
1955	1.858	1.844	1.860	1.860	1.873	1.859	1.833	1.839	1.845	1.872	1.861	1.872	1955	1.872
1956	1.890	1.890	1.859	1.836	1.868	1.862	1.809	1.778	1.784	1.764	1.754	1.718	1956	1.718
1957	1.775	1.773	1.765	1.719	1.711	1.670	1.655	1.654	1.664	1.656	1.738	1.792	1957	1.792
1958	1.758	1.782	1.787	1.817	1.786	1.786	1.734	1.660	1.641	1.664	1.682	1.653	1958	1.653
1959	1.658	1.659	1.662	1.641	1.638	1.632	1.638	1.633	1.618	1.637	1.618	1.592	1959	1.592
1960	1.612	1.643	1.689	1.651	1.676	1.701	1.764	1.752	1.763	1.750	1.736	1.785	1960	1.785
1961	1.766	1.801	1.794	1.815	1.807	1.791	1.789	1.785	1.804	1.816	1.813	1.790	1961	1.790
1962	1.761	1.802	1.844	1.858	1.863	1.845	1.825	1.825	1.860	1.878	1.882	1.890	1962	1.890
1963	1.888	1.887	1.887	1.887	1.889	1.884	1.882	1.886	1.887	1.880	1.882	1.882	1963	1.882
1964	1.878	1.878	1.882	1.889	1.899	1.908	1.905	1.911	1.916	1.922	1.922	1.925	1964	1.925
1965	1.933	1.936	1.944	1.945	1.944	1.943	1.945	1.947	1.936	1.939	1.923	1.902	1965	1.902
1966	1.883	1.824	1.872	1.852	1.840	1.831	1.818	1.772	1.827	1.861	1.833	1.807	1966	1.807
1967	1.937	1.892	1.926	1.866	1.853	1.789	1.793	1.772	1.768	1.692	1.654	1.680	1967	1.680
1968	1.729	1.718	1.673	1.706	1.709	1.738	1.780	1.774	1.751	1.718	1.665	1.600	1968	1.600
1969	1.563	1.563	1.552	1.608	1.525	1.548	1.553	1.535	1.447	1.494	1.450	1.431	1969	1.431
1970	1.423	1.499	1.481	1.410	1.338	1.396	1.436	1.431	1.456	1.433	1.541	1.521	1970	1.521
1971	1.596	1.568	1.645	1.593	1.584	1.550	1.550	1.620	1.651	1.676	1.665	1.666	1971	1.666
1972	1.654	1.661	1.644	1.645	1.684	1.669	1.698	1.700	1.680	1.714	1.748	1.703	1972	1.703
1973	1.643	1.633	1.632	1.628	1.601	1.584	1.514	1.546	1.590	1.557	1.571	1.547	1973	1.547
1974	1.521	1.498	1.437	1.393	1.394	1.387	1.373	1.323	1.340	1.394	1.424	1.438	1974	1.438
1975	1.464	1.473	1.428	1.394	1.418	1.448	1.420	1.406	1.385	1.442	1.418	1.467	1975	1.467
1976	1.477	1.483	1.504	1.500	1.467	1.490	1.493	1.517	1.533	1.540	1.588	1.635	1976	1.635
1977	1.562	1.539	1.543	1.542	1.553	1.568	1.555	1.574	1.564	1.545	1.552	1.520	1977	1.520
1978	1.500	1.491	1.477	1.464	1.440	1.416	1.426	1.449	1.424	1.384	1.403	1.377	1978	1.377
1979	1.392	1.357	1.362	1.331	1.349	1.376	1.348	1.330	1.301	1.179	1.205	1.199	1979	1.199
1980	1.093	1.027	0.980	1.118	1.154	1.182	1.125	1.070	1.031	0.995	0.997	1.023	1980	1.023
1981	1.003	0.949	0.978	0.922	0.972	0.945	0.901	0.859	0.838	0.906	1.031	0.955	1981	0.955



# EXHIBIT B-36

## U.S. TREASURY BILLS : INFLATION ADJUSTED RETURN INDEX

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	YEAR	JAN-DEC
1926	1.003	1.010	1.018	1.012	1.018	1.029	1.041	1.050	1.046	1.046	1.045	1.048	1926	1.048
1927	1.058	1.069	1.078	1.081	1.078	1.069	1.092	1.101	1.097	1.094	1.098	1.103	1927	1.103
1928	1.108	1.122	1.125	1.123	1.123	1.123	1.138	1.140	1.140	1.141	1.147	1.149	1928	1.149
1929	1.155	1.162	1.170	1.179	1.177	1.179	1.171	1.171	1.178	1.183	1.190	1.201	1929	1.201
1930	1.207	1.216	1.227	1.222	1.233	1.243	1.263	1.272	1.267	1.276	1.288	1.308	1930	1.308
1931	1.329	1.349	1.359	1.369	1.385	1.401	1.423	1.409	1.415	1.425	1.444	1.459	1931	1.459
1932	1.493	1.517	1.527	1.539	1.563	1.574	1.575	1.595	1.603	1.615	1.624	1.640	1932	1.640
1933	1.666	1.691	1.705	1.711	1.707	1.690	1.641	1.625	1.625	1.625	1.625	1.634	1933	1.634
1934	1.627	1.615	1.615	1.619	1.615	1.611	1.611	1.607	1.583	1.595	1.599	1.604	1934	1.604
1935	1.580	1.568	1.573	1.557	1.565	1.569	1.577	1.577	1.570	1.570	1.563	1.559	1935	1.559
1936	1.559	1.567	1.575	1.575	1.575	1.560	1.553	1.542	1.539	1.543	1.543	1.543	1936	1.543
1937	1.532	1.529	1.518	1.511	1.505	1.502	1.496	1.493	1.479	1.486	1.497	1.500	1937	1.500
1938	1.521	1.536	1.536	1.528	1.536	1.536	1.532	1.536	1.536	1.543	1.546	1.542	1938	1.542
1939	1.550	1.557	1.561	1.565	1.565	1.565	1.565	1.565	1.535	1.542	1.542	1.549	1939	1.549
1940	1.553	1.542	1.546	1.546	1.542	1.538	1.542	1.546	1.542	1.542	1.542	1.535	1940	1.535
1941	1.535	1.534	1.527	1.513	1.502	1.474	1.468	1.455	1.429	1.413	1.401	1.398	1941	1.398
1942	1.380	1.369	1.351	1.343	1.329	1.327	1.322	1.314	1.312	1.299	1.292	1.282	1942	1.282
1943	1.282	1.280	1.260	1.246	1.236	1.239	1.249	1.254	1.250	1.245	1.248	1.246	1943	1.246
1944	1.249	1.251	1.252	1.245	1.240	1.238	1.232	1.227	1.228	1.228	1.228	1.224	1944	1.224
1945	1.224	1.227	1.227	1.225	1.217	1.206	1.204	1.204	1.209	1.209	1.205	1.201	1945	1.201
1946	1.201	1.206	1.197	1.191	1.185	1.173	1.104	1.080	1.068	1.047	1.022	1.014	1946	1.014
1947	0.974	0.972	0.965	0.955	0.948	0.941	0.932	0.922	0.910	0.900	0.894	0.894	1947	0.894
1948	0.924	0.932	0.936	0.923	0.918	0.912	0.901	0.898	0.899	0.903	0.909	0.916	1948	0.916
1949	0.918	0.929	0.927	0.927	0.929	0.929	0.936	0.934	0.931	0.937	0.937	0.943	1949	0.943
1950	0.948	0.951	0.948	0.948	0.945	0.940	0.932	0.925	0.920	0.916	0.913	0.901	1950	0.901
1951	0.888	0.879	0.876	0.876	0.874	0.876	0.876	0.877	0.873	0.869	0.866	0.864	1951	0.864
1952	0.865	0.872	0.872	0.870	0.870	0.869	0.864	0.864	0.867	0.867	0.868	0.870	1952	0.870
1953	0.874	0.879	0.879	0.879	0.879	0.877	0.874	0.875	0.874	0.874	0.878	0.881	1953	0.881
1954	0.879	0.881	0.883	0.886	0.883	0.882	0.883	0.884	0.887	0.890	0.890	0.893	1954	0.893
1955	0.893	0.894	0.895	0.894	0.897	0.898	0.896	0.899	0.897	0.899	0.899	0.903	1955	0.903
1956	0.904	0.908	0.908	0.909	0.906	0.903	0.898	0.900	0.901	0.898	0.900	0.900	1956	0.900
1957	0.901	0.900	0.900	0.899	0.899	0.896	0.894	0.895	0.897	0.898	0.898	0.901	1957	0.901
1958	0.898	0.898	0.892	0.891	0.892	0.891	0.891	0.892	0.894	0.894	0.894	0.899	1958	0.899
1959	0.899	0.902	0.904	0.905	0.906	0.904	0.904	0.907	0.906	0.906	0.908	0.911	1959	0.911
1960	0.915	0.917	0.920	0.921	0.919	0.919	0.921	0.922	0.923	0.920	0.921	0.922	1960	0.922
1961	0.924	0.925	0.927	0.929	0.930	0.931	0.929	0.929	0.931	0.930	0.934	0.935	1961	0.935
1962	0.938	0.937	0.937	0.937	0.939	0.941	0.942	0.944	0.941	0.944	0.946	0.949	1962	0.949
1963	0.951	0.952	0.953	0.955	0.958	0.956	0.954	0.956	0.959	0.961	0.962	0.963	1963	0.963
1964	0.965	0.968	0.970	0.972	0.975	0.975	0.976	0.980	0.981	0.983	0.983	0.985	1964	0.985
1965	0.988	0.991	0.994	0.993	0.994	0.993	0.995	1.000	1.001	1.003	1.005	1.005	1965	1.005
1966	1.008	1.006	1.006	1.006	1.009	1.009	1.010	1.009	1.011	1.011	1.015	1.018	1966	1.018
1967	1.023	1.025	1.027	1.028	1.029	1.028	1.027	1.027	1.028	1.029	1.029	1.030	1967	1.030
1968	1.030	1.031	1.030	1.031	1.033	1.031	1.031	1.033	1.034	1.033	1.033	1.035	1968	1.035
1969	1.037	1.038	1.034	1.033	1.035	1.034	1.035	1.035	1.037	1.039	1.039	1.039	1969	1.039
1970	1.042	1.043	1.043	1.042	1.043	1.044	1.046	1.049	1.050	1.049	1.050	1.049	1970	1.049
1971	1.053	1.054	1.054	1.053	1.051	1.049	1.051	1.053	1.056	1.058	1.060	1.060	1971	1.060
1972	1.062	1.060	1.061	1.061	1.061	1.062	1.061	1.062	1.061	1.061	1.064	1.064	1972	1.064
1973	1.066	1.062	1.057	1.056	1.054	1.053	1.057	1.045	1.049	1.048	1.046	1.046	1973	1.046
1974	1.043	1.036	1.030	1.032	1.028	1.024	1.024	1.017	1.013	1.009	1.006	1.006	1974	1.006
1975	1.007	1.005	1.005	1.004	1.004	1.000	0.994	0.996	0.997	0.996	0.994	0.995	1975	0.995
1976	0.997	0.998	0.999	0.999	0.997	0.996	0.995	0.995	0.995	0.995	0.996	0.997	1976	0.997
1977	0.995	0.988	0.986	0.982	0.980	0.977	0.977	0.978	0.978	0.980	0.981	0.982	1977	0.982
1978	0.981	0.979	0.979	0.979	0.979	0.979	0.979	0.979	0.979	0.979	0.979	0.979	1978	0.979
1979	0.964	0.959	0.958	0.953	0.951	0.950	0.945	0.942	0.940	0.940	0.941	0.940	1979	0.940
1980	0.934	0.929	0.927	0.928	0.926	0.922	0.926	0.926	0.924	0.925	0.926	0.930	1980	0.930
1981	0.932	0.932	0.937	0.941	0.944	0.948	0.949	0.954	0.956	0.966	0.973	0.979	1981	0.979



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