# Two Points of View About Risk and Return in the Long Run

Thus, there is an element of compound interest operating in favor of sound industrial investment. Over a period of years, the real value of the property of a sound industrial is increasing at compound interest, quite apart from the dividends paid out to the shareholders. Thus.....an index of shares yields more in the long run than its apparent rate of interest.

So far, therefore, from the higher apparent rate of interest on shares, [before 1958] as compared with that on bonds, being required to compensate the greater risk of loss, the reverse is true. Shares work out better than bonds by more than the difference between the apparent rate of interest upon each.

Will not the investment department of one of our great Insurance Companies put the work in hand? It is a task well adopted to the training and mentality of actuaries, and not less important I fancy, to the future of the insurance industry than the further improvement of Life Tables. [added]

John Maynard Keynes
An American Study of Shares versus Bonds as Permanent Investment
May, 1925

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Thus far our discussion of portfolio risk has been confined to a single-period investment horizon such as the next year. That is, the portfolio is held unchanged and evaluated at the end of the year. An obvious question relates to the effect of holding the portfolio for several periods - say for the next 20 years: Will the one year risks tend to cancel out over time? Given the random walk nature of security prices, the answer to this question is no. If the risk level (standard deviation) is maintained during each year, the portfolio risk for longer horizons will increase with the horizon length. The standard deviation of possible terminal portfolio values after $N$ years is equal to the square root of $N$ times the standard deviation after one year. Thus the investor cannot rely on the long run to reduce his risk of loss.

Franco Modigliani & Gerald A. Pogue
An Introduction to Risk and Return
Financial Analysts Journal; March, 1974