

Mr. PLOTKIN. In this particular hypothesized two industries here, it happens that the average rate of return in industry B, is higher than the rate of return for industry A. This is not a mathematical necessity because this curve could have been centered here, and curve A centered there. But it also turns out in this hypothesized case, not necessarily true in reality, the spread of risk of B is greater than A. Once again, this need not be true.

We can summarize—and here, sir, is where I get into a definition of that line, I think, that will be most clearly understood—the fact, that the mean, the average, return of A is below the average return of B, and also the fact that the variance of A is below the variance of B on a two-dimensional graph where we plot the industry risk or variance here— x axis—and the industry average return here— y axis.

Now, we see where the risk or variance of A and variance of B come, and we put dots at their intersection.

We have traced out a straight line connecting these points. It is the hypothesized relationship, that an industry that has a higher return will also have a higher risk and vice versa. It may not be true in fact.

Here is the way it happened in this hypothesized case. The statistical question, when we put a similar dot for each of our 59 industries, comprising 783 firms, will go through a scatter of dots, by which we put the line of best fit and, therefore, it will not hit every dot. It will show an upward sloping relationship, a downward sloping relationship or no relationship at all.

Given we have established what the slope of the relationship is, we may then ask where does any one industry fall. Does it have evidence of being above or below the normal pattern?

Now, in measuring the rate of return to protect ourselves from the sensitive of using any one year, which may be economically abnormal, we have considered the period 1950–65, a 16-year period, which certainly allows for all post-World War II adjustment and conversion.

In each year we constructed the industry average return and industry variance, so we had 16 yearly returns and 16 variances for each industry.