

EXAMPLE (c):

The *Market Sensitivity Report*, issued by Merrill Lynch, Inc., lists estimated beta coefficients of common stocks as well as their standard errors. *Beta* is the term used in the finance literature for the estimate b_1 of the regression of returns on a stock versus returns on the stock market as a whole. Returns on the stock market as a whole are taken by Merrill Lynch as returns on the Standard & Poor's 500 Index. The November 1979 issue of the report lists the following findings for common stock of Time, Inc.: beta = 1.24, standard error of beta = 0.21, $n = 60$. Is there statistical evidence to reject the claim that the Time stock moves, in general, with the market as a whole?

SOLUTION:

We want to carry out the special-purpose test: $H_0: \beta_1 = 1$ versus $H_1: \beta_1 \neq 1$. We use the general test of statistic of Equation 9-27:

$$t_{(n-2)} = \frac{b_1 - \beta_{10}}{s(b_1)} = \frac{1.24 - 1}{0.21} = 1.14$$

Since $n - 2 = 58$, we use the standard normal distribution. The test statistic value is in the acceptance region for any usual level α , and we conclude that there is no statistical evidence against the claim that Time moves with the market as a whole.