One-Sample Hypothesis Testing Procedure

Conducting a one-sample hypothesis test consists of five steps.

1. **Stating the Hypothesis**

   State two hypotheses, or assumptions, to be tested against the sample data. These hypotheses, known as a null hypothesis and alternative hypothesis, cannot be both true. A researcher's goal is to fail to reject the null hypothesis when it is true or reject the null hypothesis when it is false.

   An example of a null hypothesis is that over the past year, a stock's average daily return is greater than or equal to 0.05 percent.

   An example of an alternative hypothesis is that over the past year a stock's average daily return is less than 0.05 percent.

2. **Creating the Decision Rule**

   Create the decision rule, or the level of inconsistency, which will cause the null hypothesis to be rejected.

   An example of a decision rule is that the null hypothesis will be rejected if the test statistic is found to occur in the critical region determined by the researcher's choice for alpha, the significance level.

3. **Collecting Data and Testing the Hypothesis**

   Collect data and calculate necessary statistics to compare the data against the decision rule.

   The researcher can collect stock price data from the Internet and convert this data into return data. The test statistic is calculated as the sample average daily return that is calculated minus 0.05 percent from the null hypothesis divided by the standard error. This is a one-tailed test.

4. **Making a Decision**

   Based on the test results, decide to reject or not reject the null hypothesis.

   If the test statistic is greater than the table value for the researcher's chosen significance level, then the null hypothesis can be rejected; if not, the null hypothesis cannot be rejected.

5. Taking Action

Based on the decision made, take appropriate action.

Let us assume that the researcher finds that the stock's average daily return is significantly greater than or equal to 0.05 percent. The researcher can then inform the mutual fund portfolio manager of this information. If the mutual fund portfolio manager is looking at adding a stock that has performed fairly well in the past, he or she may decide to add this stock to the portfolio as a momentum play.