

GROUP PROJECTS

CASE 7: BUILDING A DECISION SUPPORT SYSTEM

Creating an Investment Portfolio

Most experts recommend that if you're devising a long-term investment strategy you should make the stock market part of your plan. You can use a DSS to help you decide what stocks to put into your portfolio. You can use a spreadsheet to do the job. The information you need on ten stocks is contained in a Word file called STOCKS.doc. This information consists of:

1. Two years of weekly price data on ten different stocks.
2. Stock market indexes from:
 - The Dow Jones Industrial Average
 - The Nasdaq Composite
3. Dividends and cash flow per share over the last ten years (*Source: Yahoo! Finance*).

Using this information, build a DSS to perform stock analysis consisting of the following tasks:

1. Examine Diversification Benefits
 - A. Calculate the average return and standard deviation(s) of each of the ten stocks.
 - B. Form six different portfolios: two with two stocks each; two with three stocks each; two with five stocks each.

Answer the following questions using your DSS:

- How does the standard deviation of each portfolio compare to the (average) standard deviation of each stock in the portfolio?
- How does the average return of the portfolio compare to the average return of each stock in the portfolio?
- Do the benefits of diversification seem to increase or diminish as the number of stocks in the portfolio gets larger?
- In the two-stock and five-stock portfolios, what happens if you group your stocks toward similar industries?

2. Value Each of the Stocks
 - A. Estimate the dividend growth rate on the basis of past dividends.
 - B. Estimate next year's dividend using this year's dividend and the estimated growth rate.

C. Generate two graphs, one for past dividends and one for estimated dividends for the next five years.

Some Particulars You Should Know

1. When performing your calculations, use the weekly returns. That is, use the change in the price each week rather than the prices themselves. This gives you a better basis for calculation because the prices themselves don't usually change very much.
2. File: STOCKS.doc (Word file).