Stock Selection Guide Tutorial

INTRODUCTION

The Stock Selection Guide is a paper form developed by the not-for-profit National Association of Investors Corporation (NAIC) in the 1950's to aid individual investors in the fundamental analysis and selection of stocks. The relatively-simple two-sided form enables an investor to identify the characteristics of a growth stock, and plot potential future growth from the historical trends. The SSG (as it is known) also helps an investor determine a reasonable value for the stock, suggesting purchase when the stock is temporarily on the cheap side of a value assessment.

The SSG is **not**, however, a "black box" analysis tool, one that uses mathematical formulas to prognosticate the future. It requires an investor to apply his or her own judgment to many factors in the analytical process. The SSG can be an important aid to the individual investor in discovering those stocks which are most likely to increase in value over the next five years.

The following tutorial attempts to de-mystify the Stock Selection Guide, to explain its components step-by-step, and to point out areas where an investor's judgment should be carefully applied. While this tutorial focuses specifically on the SSG, a special effort has been made to emphasize the tenets of long-term, growth stock selection that any investor may utilize.

For even further assistance NAIC Classic Plus, an official NAIC Software, leads beginners step-by-step through the Stock Selection Guide. NAIC Classic Plus also includes all the tools needed to analyze stocks.

The NAIC Web Site has more information about NAIC and the Stock Selection Guide.

OVERVIEW OF THE STOCK SELECTION GUIDE

Before we begin, it might be a good idea to get a general grasp of what this method of stock selection is all about.

History of the SSG Form

The Stock Selection Guide was first developed in the 1950's, during the early years of the National Association of Investors Corporation (which began with four investment clubs in Michigan in 1951). Over the past forty-five years, the SSG has proved to be a very effective tool in helping individuals to make better investing decisions when considering stocks for purchase. Amateurs and professionals alike use the SSG to assist them in investing profitably in the stock market, including over 4,000,000 past and current members of NAIC.

Goals of Stock Selection

The rationale behind this method of analyzing stocks can be summed up fairly simply in two parts.

The first: **companies that have performed exceptionally well over the past five or ten years can be expected to continue to perform well over the next**

five years. In practical terms, this means that it is possible to quantify (to some degree) the success or failure of a company's management. If a company has grown revenues and earnings consistently at an annual average rate of, say, 14% over the past ten years, and the same management team is in place at the company, then we can reasonably expect similar growth in the future.

The second goal is simply **to determine a reasonable or fair price to pay for a stock with such prospects**.

This method of stock selection is ideally suited for investors with a long-term, "buy and hold" philosophy who are seeking stocks that will return an average of 15% a year on initial investment. Price appreciation and dividend yield are taken into account in determining the stock's potential return on investment, and quantified on the form.

Role in the NAIC Methodology

The two-sided form, while daunting at first glance, is not terribly difficult to master. With the advent of pocket calculators in the 1970's and personal computers in the 1980's, entering the data on an SSG form today can take only a few minutes. However, the SSG is not designed to be a "crystal ball" to allow the user to predict the future. Proper use of the form requires that the investor apply his or her own judgment several times before reaching a personal decision regarding the suitability for purchase of the stock under consideration.

The SSG is but one tool in any investor's toolbox. Used properly, it can help an investor build a secure financial future. NAIC has produced several other paper forms that assist its members in making investment decisions. These include the **Stock Comparison Guide, Challenge Tree, Portfolio Management Guide** and **Portfolio Evaluation Review Technique**.

Adding Judgment

Two investors can complete an analysis of the same stock, using the same data, and their conclusions might be so different that an outside observer would not recognize that the same company was being analyzed. Why? Because stock selection is highly dependent on the opinions of the person completing the form. There are many opportunities for investors to *apply their own judgment*, making decisions about the company's prospects that affect the final outcome. The SSG form is not a substitute for doing research on a stock; it is merely a tool that narrows the focus on some of the most important aspects of successful companies. In addition, each investor will have different goals that the stock must reach to be a candidate for purchase, which can affect the outcome of the analysis.

Even when using software to facilitate analysis according to these principles, an investor must always use his or her experience and knowledge in determining a reasonable expectation of a stock's future performance. The keys to successful stock selection are to understand the conclusions of your analysis, and to learn to apply your own best judgment to those areas which demand input.

SOURCES OF FUNDAMENTAL DATA

The first step in any stock analysis is to acquire the necessary data. Fortunately, there are many sources of data for fundamental analysis, offline and online, as well as for stock selection software.

Annual Reports

Many companies conveniently provide a ten-year financial summary in their annual reports. These summaries will often (but unfortunately not often enough) include all the data necessary to complete an SSG.

Increasingly, companies are publishing their annual reports on the Web. A recent Alta Vista search on the string "annual report" returned over 90,000 documents!

Public Register's Annual Report Service distributes reports for over 3,200 publicly-traded companies, which can be ordered online. You can also call 1-800-426-6825.

Hoover's Company Reports

Hoover's Company Profiles on over 10,000 companies are available for $9.95/month on the World Wide Web (however, shorter company profiles are free.) Hoover's publishes a number of company directories that include historical data, so check your local library. Hoover's reports are also available on CompuServe and America OnLine.

Moody's Handbook of Common Stocks

Moody's Investors Service publishes a quarterly directory of over 1,600 common stocks, with ten years of financial data. Many public libraries carry various Moody's publications. For more information, contact Moody's Investors Service, 99 Church Street, New York, N.Y. 10007; (212) 553-0547.

NAIC Green Sheets

Corporate Members of the National Association of Investors Corporation (NAIC) provide the financial data required to complete an SSG in the form of Investor's Information Reports distributed free of charge to NAIC individual or club members. Nicknamed "green sheets" because of the color of the paper on which they are printed, these reports are available for over 115 companies, and include a corporate profile, price history and trading volume charts, balance sheet and cash flow items, a completed SSG and recent quarterly data for sales, pre-tax profit margins, earnings and dividends. A listing and order form is published each month in *Better Investing* magazine, and is available on the NAIC Web Site.

The Red Chip Review

The Red Chip Review is a research survey that covers 288 small cap stocks and other stocks in the Pacific Northwest. Full subscriptions are $249, but other options are available. Investors can download reports from their web site for $6 each.

Standard & Poor's Stock Reports

S&P Stock Reports are two-page reports published periodically on over 4,300 companies. The reports include all the data necessary for the Stock Selection Guide. Subscriptions for individuals may be prohibitively expensive (contact Standard & Poor's Equity Investor Services at 800/221-5277), but S&P Reports can be found in many local libraries or you can get individual reports from your broker or online.

S&P Stock Reports can be purchased online from Standard & Poor's Equity Investor's Service , Quote.Com, and InvesTools, and Wall St.com.

In addition, several services will now send an S&P Report to your fax machine for a charge. A single S&P Stock Report costs about $6; but discount plans are available that bring the cost per report to about $3. All offer First Call Earnings Estimates, historical price charts, S&P Industry Reports, Vickers Insider Trading Reports, Argus Company News and other reports. These services include:

❖ Wall Street by Fax (800/938-5555)
❖ CNBC (800/706-CNBC)
❖ Standard & Poor's Reports on Demand (800/292-0808).

Value Line Investment Survey

The Value Line Investment Survey follows 1,700 stocks, updating each company on a quarterly basis in a full-page format that provides complete information about a company's history and current status, and its potential growth over the next five years. Value Line is available by subscription for $525 a year (call 800/833-0046 for more information). You may also find Value Line at your local library, or your broker may provide copies of reports for companies in which you are interested. An "Expanded Edition" provides data (but no analysis) of an additional 3,500 companies. The only online source of Value Line reports is the Publications Online area of CompuServe (GO PUBONLINE), where you can purchase individual reports for $5.

THE TOP OF THE SSG FORM

General Information

At the top of the SSG form is an area to record some general information about your stock study. This information is for your own reference, and most of the fields are fairly self-explanatory.

Company
The name of the company.
Date
The date the study was completed.
Prepared by
Your name or initials.
Data taken from
The source of the data, commonly Value Line, Standard & Poor's, or a company's annual report.
Where traded
The exchange or service where the stock is traded, e.g., NYSE, AMEX (ASE), or NASDAQ (OTC).

Major product/service
The company's industry group.

Capitalization

In this area, information is recorded about a company's capital structure. Capitalization is simply the way a business is financed, including common and preferred stock, long-term debt and retained earnings. The figures in this section are not used for any calculations, but rather serve as "flags" to potential problems.

Preferred and Common Stock

Enter the number of shares outstanding and the number of shares that the company is authorized to issue. A company's articles of incorporation establish the number of shares the company is authorized to issue, which may often be much higher than the number of shares actually outstanding. The company may raise additional capital by issuing additional shares that have been authorized, but shareholders must approve any new issues. These figures can be found in the company's annual report; Value Line and Standard & Poor's report only the number of shares outstanding.

Other Debt

Record here the Total Debt of the company you are analyzing. If debt seems sizable (with reference to the company's own history or in comparison to others in the same industry), perhaps a further look at the company's financial structure is warranted. Standard & Poor's does not report Total Debt, but only Long-Term Debt.

Potential Dilution

The most common forms of dilution are unexercised options (an option to buy a number of shares at a pre-set price some point in the future, usually issued to key management) and convertible securities (usually debentures and preferred stock that can be exchanged at a later date for common stock). Enter the number of shares by which the number of outstanding shares could possibly increase if these authorized options were exercised and convertible securities redeemed. Dilution is not favorable because it "waters down" the value of the shares held by existing shareholders. Both Value Line and Standard & Poor's include potential dilution in the Capitalization section; no entry means no dilution is likely. As of 1998, changes in accounting laws require that companies report "fully-diluted EPS," taking into account the effects of dilution on the profits. Therefore, it's not usually necessary to include dilution here, since it's already been taken in account in the report of earnings.

SSG – SECTION 1 – VISUAL ANALYSIS

PLOTTING HISTORICAL DATA

Recent Results

This area is used to record information from the company's most recently completed quarter, compared to the year-ago quarter. It serves to point out recent changes in the company's position that may be indicative of longer-term problems.

```
RECENT QUARTERLY FIGURES
    Qtr End 2/28/95
                    EARNINGS
         SALES      PER SHARE

Latest Quarter    229.8       0.13

Year Ago Quarter  186.6       0.12

Percentage Change  23.2        8.3

See Chapter 14 in the NAIC Investors Manual for
Complete instructions. Use this guide as working
section of NAIC Stock Selection Guide and Report
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Conversely, lower-than-expected quarterly results may have caused the market to temporarily lose faith in the stock, creating a buying opportunity for long-term investors.

To calculate the percentage change, subtract last year's quarter from the most recent quarter, and then divide by the year ago quarter. In the example above:

Earnings Per Share:

$$\left(\frac{\text{Year Ago Quarter EPS} - \text{Latest Quarter EPS}}{\text{Year Ago Quarter EPS}} \right) \times 100 = \text{Earning Per Share \%Change}$$

0.13 - 0.12 = 0.01
0.01 ÷ 0.12 = 0.083 (or 8.3%)

$$\left(\frac{0.13 - 0.12}{0.12} = 0.083 \right) \times 100 = 8.3\%$$

Revenues:

$$\left(\frac{\text{Year Ago Quarter Sales} - \text{Latest Quarter Sales}}{\text{Year Ago Quarter Sales}} \right) \times 100 = \text{Revenue \%Change}$$

229.8 - 186.6 = 43.2
43.2 ÷ 186.6 = 0.2315 (or 23.2%)

$$\left(\frac{229.8 - 186.6}{186.6} = 0.2315 \right) \times 100 = 23.2\%$$

For future reference, it is a good idea to record the date of the most recent quarter in this box, as well.

Plotting the Data

On the graph in Section 1, you will plot Earnings, Sales (Revenues) and Prices from the company's past ten years.

The first thing you will notice when you look at the graph is that is doesn't look like the graph paper you buy at the stationery store, with neat, evenly spaced squares. This is a **semi-logarithmic chart**, sometimes known as a ratio chart. The important thing you need to know about a semi-log chart is that it shows you the **percentage changes** from year to year, rather than the absolute numerical changes.
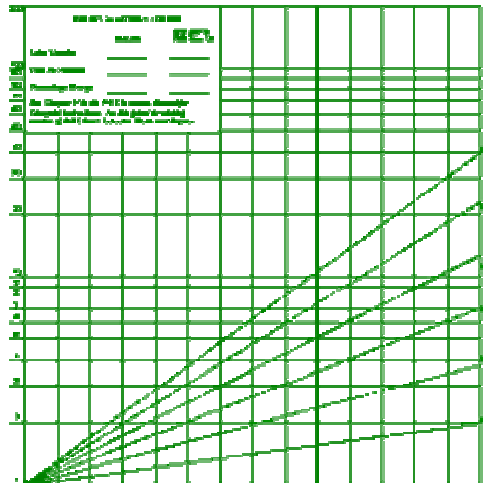
In other words, a trend line connecting 1 and 1.5, a 50% increase, will appear exactly the same as a line connecting 1,000 and 1,500, also a 50% increase. If these figures were charted on a regular chart, the increase from 1,000 to 1,500 would appear to be much larger than the increase from 1 to 1.5, even though they both represent a 50% change. A consistent percentage change will plot on the semi-log chart as a straight line.
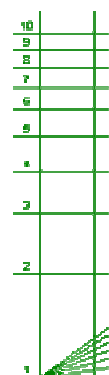
On the left side of the chart, the scale begins at 1 and goes up to 200. Since you are only interested in percentage change, these numbers can represent any number you designate: 1 can be 1, 10, 100, 1000, or 10 million. You will be plotting three items on the chart—sales, earnings per share and price—and each can be plotted on its own independent scale. Sales of $1 million and Earnings Per Share of $1 could both be plotted on the 1 at the bottom of the chart. (In practice, however, you will probably want to chart Sales and EPS on different scales for clarity).

It may be helpful to think of simply moving decimal places when you enter data points on the graph; 1800 becomes 1.800, 0.32 becomes 3.2, and so on.

The vertical lines of the chart represent years. The thick line about a third of the way from the right side of the page is for the most recent year. You will chart ten years of historical data and then project results five years into the future (1994 in this case).

The first step in plotting the data is to plot the company's revenues from the past ten years on the graph. Since a company can grow its EPS over the long term only by increasing its Revenues, you should plot Revenues first. If the picture you see of Revenue growth is not favorable, perhaps it's time to find another stock.

According to this company's Annual Report, Revenues for 1985 were $289.7 million. By adjusting the scale (i.e., moving the decimal point) we can plot this figure on our graph on either of the two scales on the SSG, as 2.897 or 28.97, as shown.

Let's use the upper scale for Revenues, plotting the next year's sales of $338.9 million as 33.89 on the vertical line for the 1986 year, about a third of the way between the horizontal lines marked 30 and 40. Continue in this manner until you reach 1994, with Revenues of $815.6 plotted as 81.56, just a bit above the vertical line marked 80.

We'll do the same for Earnings Per Share, this time using the lower scale and moving the decimal point one place to the right, so 1985 EPS of $0.33 turns into 3.3, 1986 EPS of $0.39 becomes 3.9, until we plot 1994 earnings, $0.89 as 8.9. When you're finished charting EPS, your chart should look something like this:
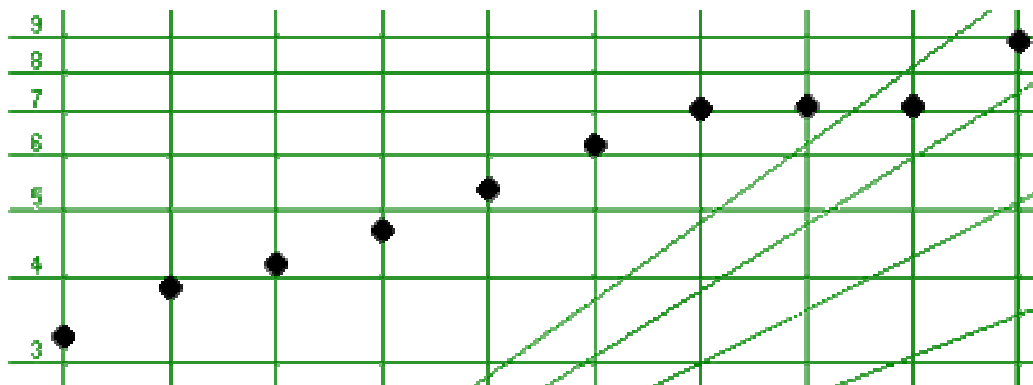
The next step is easy: just connect the dots! Draw a line between the data points for Revenues and another between the points representing Earnings Per Share. It may be helpful to use a different colored pen or pencil for both Revenues and EPS. Don't forget to mark in the margin which data are EPS and which are Revenues.
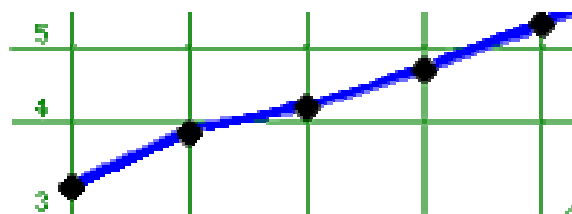
Finally, you will plot the high and low prices for each year, in much the same manner, except you won't connect the points from year to year. You will, however, draw a vertical line between the high and low price for each year. In this company's case, in 1985 the low price was $4.75 and the high price was $6.75, so you can plot these two points on the line for 1985 as in the following example.

You will continue plotting the prices in this manner for the next nine years.

# VISUAL ANALYSIS OF SALES, EARNINGS & PRICE

Estimating Historical Growth

While this is one of the most crucial areas of the Stock Selection Guide, the techniques for estimating historical growth are not that difficult. The key is to identify consistent trends in the company's growth over the past ten years.

Before putting pencil to paper, however, you should look carefully at the graphed data to see if there are any years which appear to be abnormal. Perhaps EPS dropped off significantly in one year, only to rebound the next. In that case, you might consider that year to be an "outlier", an unusual, one-time occurrence, and simply not consider it in your calculations. Circle the point in question to mark it as an outlier, and continue with your analysis. Of course, any inconsistency may be a cause for further research to determine if there is a significant change in the company's operations.

To identify the past trends, use a ruler to draw a trend line to approximate the average annual growth for both EPS and Revenues, a single straight line that best "matches" the points you have already graphed. In this company's case, you will draw your trend lines all the way from the far most left vertical line, the 1986 year, all the way to the furthest right year, 1999. There are four basic methods of drawing trend lines:

The Inspection or Best Judgment Method

By far the most common method of drawing a trend line, the "Best Judgment" method simply means that you examine the yearly results and draw a line that best represents the overall picture of those years. The following is an example of a trend line for Earnings Per Share drawn using the Best Judgment method.
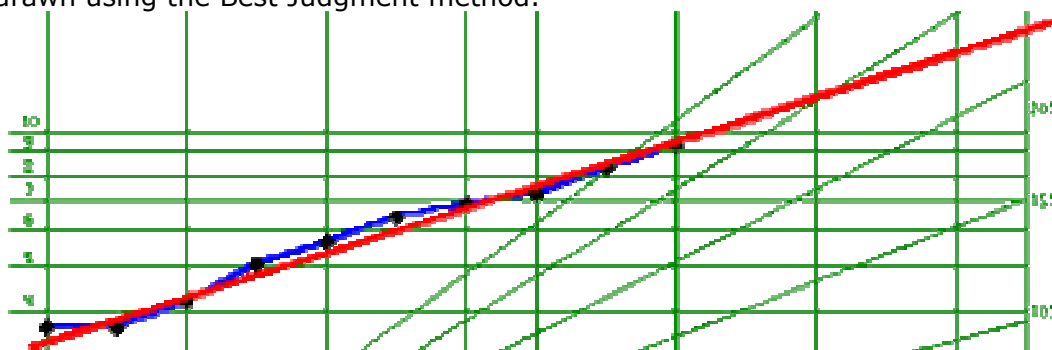
In this case, EPS have been very consistent, so it is relatively easy to determine the trend.

The Peak Period Method

This procedure is often used for more cyclical companies, whose earnings or revenues increase to a "peak" and then recede. Find the two most recent of these peaks and draw a line that connects them.

The Mid Point Method

This method produces a mathematical result that will be exactly the same for all who use it. It requires that you find the average of the first five data points, plot that point on the graph, find the average of the last five data points, then plot that point on the graph, and draw a straight line that connects those two points.

The Area Method

To use this method, place your trend line so that the area between your trend line and the drawn lines connecting the data points is equal both above and below the trend line.

Having drawn a trend line, you can now measure the growth rate by comparing this trend with the graph's pre-drawn percentage growth lines (marked 5%, 10%, 15% and so on). An easy way to do this is to measure the distance between the intersection of your trend line on the far left vertical line (the first year of data) and the horizontal base line (marked 1). Then go to the intersection of the trend line and the most recent year (the bold vertical line). Measure down the same distance as the first year and mark this point. Now, visually estimate where this point falls between the pre-drawn percentage growth lines (for instance, halfway between 15% and 20% would be 17.5%). This is the average rate of historical growth. Repeat for both EPS and Revenues, and mark the growth rates you have determined at the bottom of the Visual Analysis.

Projecting Future Results

Once you have estimated the historical growth of the stock you are studying, you need to make a decision about the company's future prospects. Is growth likely to continue at the same rate in the future? Will the company's growth slow, or even increase from its historical pattern? Common sense tells us that good growth stocks are able to continue their growth, but they may not be able to grow as quickly as they have in the past. It may be prudent to allow for a slowing of growth in the future, especially with high-flying companies that may find it hard to sustain their rapid growth.

Now, extend the historical trend lines, or draw new trend lines to reflect your expectation of the company's future growth. Draw your new line all the way from the far left to the far right margins, and, as before, measure the distance to calculate the future percentage growth. Record your projections at the bottom of the graph.

Interpreting the Results

By now, you should have filled the Page 1 graph with a multitude of lines, points and annotations, and you can see why using colored pencils may be helpful! But a picture is worth a thousand words, and you should now have a good overview of the company you are studying. Has growth been very rapid, or slow and steady? Are there periodic dips in EPS that indicate the company may be in a cyclical industry? Have EPS and Revenues grown at a consistent rate, or are Earnings growing faster than Revenues, indicating an increasing profit margin but hard to sustain over the long term? Has the stock's price kept pace with the company's growth over the years?

You can also calculate future EPS mathematically based on your revenues projection. NAIC calls this the "Preferred Procedure" because it can provide a more accurate EPS figure, since

Revenues are typically more consistent than earnings for most companies. You can see a more complete tutorial about using the Preferred Procedure.

Your decision about the company's future growth is one of the most important judgments you need to make to use the SSG properly. Having made your projections, you can now turn to Page 2 of the SSG.

SSG – SECTION 2
EVALUATING MANAGEMENT

The purpose of this section is to help the investor to determine if the company's management is doing a good job, by using two quantitative measurements: the **% Pre-Tax Profit on Sales** (also known as the "pre-tax profit margin" or PTP) and the **% Earned on Invested Capital** (also known as the "return on equity" or ROE).

Entering the Data

	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	LAST 5 YEAR AVE	TREND UP	TREND DOWN
A % Pre-tax Profit on Sales (Net Before Taxes ÷ Sales)	7.7	10.0	10.3	10.4	10.1	10.3	10.4	10.6	10.8	10.5	10.5	↔	↔
B % Earned on Invested Capital (EPS ÷ Book Value)	12.6	13.4	15.7	16.6	17.3	15.6	15.5	16.4	16.8	17.5	16.4	↑	
C Pre-Tax Profit	12.6	15.9	214.4	242	177.7	713.9	749.5	894	52.6	611.1			

A. % Pre-Tax Profit on Sales

To calculate the % Pre-Tax Profit on Sales, divide the company's Net Profit Before Taxes by that year's Sales. %PTP is expressed as a percentage, and usually one decimal point is sufficient. Calculate the %PTP for each of the last ten years.

$$\left(\frac{\text{Net Profit Before Taxes}}{\text{Sales}}\right) \times 100 = \%\text{Pre-Tax Profit on Sales}$$

Standard & Poor's reports Pre-Tax Profit in its data sheets. However, users of Value Line may often be thrown for a loop because this row uses **pre-tax profit** for the calculation instead of profit after taxes. The rationale is quite simple, though — taxes are entirely determined by outside forces and it would not be fair to blame a company's management if the powers that be in Washington, DC, had again increased taxes. Value Line reports "Net Profit" after taxes, so additional calculations are necessary.

Value Line also reports the company's Tax Rate, so you can figure the Pre-Tax Profit using the following formula:

$$\text{Pre-Tax Profit} = \frac{\text{Net Profit}}{(1 - \text{Tax Rate})}$$

(Instead of dividing the Net Profit by the Tax Rate, you're dividing by the Non-Taxed Rate, to give you the amount the company earned as profit before it paid

any taxes.) You can probably save a step on the calculator if you can do the subtraction for the denominator of the equation in your head. Think of the percentages as integers — 100% minus 30.1% (if the tax rate is 30.1%), results in 69.9%, and use 0.699 when you do the division.

It may be helpful to create a third row in this section, "Row C", to record the actual Pre-Tax Profit for each year that you calculate in this way, as in the above example.

Now you can continue to divide the Pre-Tax Profit by the Sales in the usual way.

B. % Earned on Invested Capital

Calculate the ROE by dividing the Earnings Per Share by the Book Value for each of the past ten years. Again, this figure is expressed as a percentage and it is usually adequate to record just one decimal point in the boxes.

$$\left(\frac{\text{Earnings Per Share}}{\text{Book Value}}\right) \times 100 = \%\text{Return on Equity}$$

A side note: You may find discrepancies in the book values found in Standard & Poor's and Value Line. This is usually because S&P excludes intangibles in its calculation of book value, reporting Tangible Book Value only.

Calculating 5-Year Averages

The next step is to calculate the five-year averages for each of these percentages. Add together the last five years of the %PTP and then divide by 5 to determine the average % Pre-Tax Profit on Sales of the last five years. Do the same for the % Earned on Invested Capital.

Judging the Trends

Finally, you need to determine if any trends exist for both ROE and PTP — has the percentage gone up, down or remained flat? If you have eliminated any years as outliers in Section 1, you may also wish to remove those years from consideration in Section 2 as well. You may also wish to give greater weight to the most recent years, or you can use the 5-year average as a benchmark, comparing the latest year to the average to find a trend. Most investors call the trend "even" if the percentages only vary by just a few tenths of a point from year to year. In the above example, a double-headed arrow indicates an even trend in the % Pre-Tax Profit on Sales.

Interpreting the Results

The pre-tax profit margin tells you how much profit the company makes on each dollar of sales. The return on equity determines how much profit the company makes compared to the total amount of capital that has been put into the business by its investors.

In optimal conditions, a company would be able to consistently grow its Pre-Tax Profit Margin and Return on Equity. A decreasing profit margin or percentage earned on equity may indicate that a company is having difficulties due to increased

competition, rising raw material or labor costs or other problems. If the Return on Equity is decreasing, the company may not be using its capital to best advantage in generating profits for its investors.

Both these figures vary widely by industry, so in looking at these percentages it is helpful to compare the company you're studying with others in its industry. A company with higher margins and return on equity would generally be preferred over a competitor with lower percentages. A high profit margin, on the other hand, invites competition.

SSG – SECTION 3
PRICE-EARNINGS HISTORY
AS AN INDICATOR OF THE FUTURE

Entering the Data

For this section, you need the high and low prices, earnings per share and dividends for each of the last five years. From this data you will be making several additional calculations.

You'll also need the stock's current price, and high and low prices for the current year. (You can use the high and low prices for the last 52 weeks from the newspaper, as these numbers are not used in any calculations but are included only for your reference.)

Record the current price, high price this year and low price this year above the chart.

PRESENT PRICE	15.875	HIGH THIS YEAR	17.200	LOW THIS YEAR	14.100

Year	A	B	C	D	E	F	G	H
	PRICE		Earnings Per Share	Price Earnings Ratio		Dividend Per Share	% Payout	% High Yield
	HIGH	LOW		HIGH A÷C	LOW B÷C		F÷C X100	F÷B X100
1 1990	9.7	6.6	0.55	17.6	12.0	0.320	58.0	4.8
2 1991	12.4	8.7	0.58	21.2	14.0	0.352	60.3	4.1
3 1992	14.0	10.1	0.65	22.3	15.2	0.375	56.5	3.7
4 1993	15.5	13.0	0.74	20.0	17.5	0.400	54.0	3.1
5 1994	15.7	13.0	0.85	18.3	15.2	0.440	51.4	3.4
6 TOTAL								
7 AVERAGE		10.3		20.1	14.9		56.2	
8 AVERAGE PRICE EARNINGS RATIO		17.5	9	CURRENT PRICE EARNINGS RATIO		18.2		

Then start with the oldest of the five years of data in Row 1. Enter that year's high price in Column A, the Low Price in Column B, the Earnings Per Share in Column C and the Dividends in Column F. Continue with the next four years of data, ending with the most recently completed year in Row 5.

Calculating P/E Ratios

The next step is to calculate the high and low Price/Earnings ratios for each year. Follow the instructions in the header of the chart: for the high P/E ratio (in Column D), divide the high

price (in Column A) by the EPS (in Column C). For the low P/E ratio (in Column E), divide the low price (in Column B) by the EPS (in Column C).

High P/E Ratio:

$$\frac{\text{High Price}}{\text{Earnings Per Share (EPS)}} = \text{High P/E Ratio}$$

9.7 ÷ 0.55 = 17.6

$$\frac{9.7 \text{ High Price}}{0.55 \text{ EPS}} = 17.6 \ (\text{High P/E Ratio})$$

Low P/E Ratio:

$$\frac{\text{Low Price}}{\text{Earnings Per Share (EPS)}} = \text{Low P/E Ratio}$$

6.6 ÷ 0.55 = 12.0

$$\frac{6.6 \text{ Low Price}}{0.55 \text{ EPS}} = 12.0 \ (\text{Low P/E Ratio})$$

Calculating Payout & High Yield Percentages

Again, follow the formulas in the chart header to determine the % Payout and % High Yield for each year. Divide the Dividends Per Share (Column F) by the Earnings Per Share (Column C) and multiply by 100 to calculate the & Payout in Column g. Divide the Dividends Per Share (Column F) by the Low Price (Column B) and record the results as the % High Yield (Column H).

%Payout:

$$\left(\frac{\text{Dividends Per Share}}{\text{Earnings Per Share}}\right) \times 100 = \%\text{Payout}$$

(0.320 ÷ 0.55) × 100 = 58.2%

$$\left(\frac{0.320 \text{ Dividends Per Share}}{0.55 \text{ EPS}}\right) \times 100 = 58.2\% \text{ Payout}$$

%High Yield:

$$\left(\frac{\text{Dividends Per Share}}{\text{Low Price}}\right) \times 100 = \%\text{High Yield}$$

(0.320 ÷ 6.6) × 100 = 4.85%

$$\left(\frac{0.320 \text{ Dividends Per Share}}{6.6 \text{ Low Price}}\right) \times 100 = 4.85\% \text{ High Yield}$$

Calculating Averages

Now you need to figure out some five-year averages in Row 7. (Row 6, labeled "Total," is on the chart only for your convenience, so you don't actually need to fill it in as you calculate the averages.) Start with the Low Prices in Column B: add them up and divide by 5 to reach the Average Low Price. Record this number on the chart.

Average Low Price:

$$\frac{(Y1LP+Y2LP+Y3LP+Y4LP+Y5LP)}{5 \text{ Years}} = \text{Average Low Price}$$

$$\frac{(6.6+8.7+10.1+13.0+13.0)}{5 \text{ Years}} = 10.3 \text{ Average Low Price}$$

Calculate the five-year averages in the same way for Columns D and E, the High and Low P/E Ratios, and record them in Row 7. Finally, figure out the average % Payout in Column G.

Average High P/E Ratio:

$$\frac{(Y1HP/E+Y2HP/E+Y3HP/E+Y4HP/E+Y5HP/E)}{5 \text{ Years}} = \text{Average High P/E Ratio}$$

$$\frac{(17.6+21.2+22.3+20.8+18.3+)}{5 \text{ Years}} = 20.0 \text{ Average High P/E Ratio}$$

Average Low P/E Ratio:

$$\frac{(Y1LP/E+Y2LP/E+Y3LP/E+Y4LP/E+Y5LP/E)}{5 \text{ Years}} = \text{Average Low P/E Ratio}$$

$$\frac{(12.0+14.8+15.2+17.5+15.2)}{5 \text{ Years}} = 14.9 \text{ Average Low P/E Ratio}$$

Next, calculate the Average Price/Earnings Ratio in Row 8, by adding the Average High P/E Ratio and the Average Low P/E Ratio from Row 7 and dividing by 2.

Average P/E Ratio:

$$\frac{(\text{Average High P/E Ratio} + \text{Average Low P/E Ratio})}{2} = \text{Average P/E Ratio}$$

$$\frac{(20.0 \text{ Average High P/E Ratio} + 14.9 \text{ Average Low P/E Ratio})}{2} = 17.5 \text{ Average P/E Ratio}$$

For the Current Price/Earnings Ratio, record the figure from the newspaper's stock tables, or calculate it yourself by dividing the current price by the sum of the Earnings Per Share from the four most recent quarters.

Current Price/Earnings Ratio:

$$\frac{\text{Current Price}}{\text{EPS from four most recent quarters}} = \text{Current P/E Ratio}$$

Interpreting the Results

So, what does it all mean?

Because the SSG is designed to help an investor make a reasonable projection using historical data, the figures from the past five years in this chart can be very helpful in evaluating a company's stock.

First, look at the high and low prices for the past five years (in Columns A and B). Ideally, you'd want to see both trending higher from year to year (also taking into consideration the most recent year's high and low prices on top of the chart). If the stock's price hasn't increased very much over the past five years, you may have reason to doubt that it will increase at a greater rate over the *next* five years.

The trading range within a year can also give you an idea about a company's price volatility. If the span between the high and low prices is consistent from year to year, or if the difference between the high and low price is similar every year, then this may provide a clue about the likelihood that the stock will trade in a similar range in the future.

Though these measures are not critical to the SSG analysis, it's a good idea to review the price data and be aware of how the stock has performed in the most recent five years.

You've already seen a graphic representation of the company's earnings per share on Page 1 of the SSG, but it can be handy to see the actual numbers here in Column C as well. In a company that doesn't pay dividends, you should be looking for a doubling of earnings per share over the next five years, in order to ensure a 15% return on your investment. So wouldn't it make sense for that company to have doubled earnings in the last five years too?

Of course, earnings aren't the whole story when you're considering the purchase of a stock—there may be possibilities of P/E enhancement (if the P/E at the time of purchase is lower than average, and subsequently returns to an average level, the price will reflect that change) and the impact of dividends. But a simple doubling of the EPS from five years ago compared to the most recent year is a quick and easily quantified double-check of how wide from your mark the company has been.

As with the high and low prices, the high and low P/E Ratios should be reviewed to see that no downward trends exist. It may be helpful to think of the stock's P/E Ratios as a proxy for its price, year by year. As the company's earnings grow, so too should its price, and if both did so evenly, the P/E Ratios would be exactly the same from year to year. However, other factors like investor sentiment and the laws of supply and demand will cause the price to fluctuate. The P/E Ratios of the past will tell you how stable the company's stock price has been in comparison to its earnings. If the P/E Ratios have been decreasing, that may be a danger signal. If the P/E Ratios have increased somewhat or remained the same, there's probably not much to worry about.

Columns D and E provide the raw data for one of the most important assessments of a company's value that *isn't* **on the SSG!** It is Relative Value, the comparison of a stock's *current* P/E ratio to its *average* P/E ratio. This figure is usually displayed as a percentage, and ideally is less than 100% (meaning that the stock's P/E ratio is lower than its average). To calculate Relative Value, divide Field 9, Current P/E Ratio, by Field 8, Average P/E Ratio.

$$\left(\frac{\text{Current P/E Ratio}}{\text{Average P/E Ratio}}\right) \times 100 = \%\text{Relative Value}$$

$$\left(\frac{18.2 \text{ Current P/E Ratio}}{17.5 \text{ Average P/E Ratio}}\right) \times 100 = 104.0\%\text{Relative Value}$$

You can compare the Current P/E ratio to the P/E ratios over the last five years—if the current P/E is at the low end of the range, the stock may be undervalued or fairly valued (assuming of course that its growth potential is strong). If the P/E ratio is at the high end of its five year history, that may be a signal that the company is temporarily overvalued. If the company's current P/E ratio is even lower than its average P/E ratio, it may be a good sign for a bargain shoppers that a sale is in progress!

The dividend and payout section is not usually much of a concern for investors looking for stocks with the maximum potential for capital appreciation. Still, dividends can provide the extra "kicker" to allow the stock's total return to exceed 15% over time.

You should consider if any trend in the dividend or payout ratio exists. If the company has been growing its earnings over the past five years, then the dividend should also be growing. If the payout ratio is very high, the company may not have enough capital to invest in itself.

SSG – SECTION 4
EVALUATING RISK AND REWARD
OVER THE NEXT FIVE YEARS

Choosing a Future High Price

Now, you will calculate the High Price that the stock is forecasted to reach in the next five years. The price is calculated by multiplying the Average High Price/Earnings Ratio (from Section 3, Row 7, Column D) by the Estimated High Earnings Per Share.

Average High P/E Ratio × Estimate High EPS = High Price

A HIGH PRICE - NEXT 5 YEARS
Avg High P/E __20.1__ × Estimated High Earnings/Share __1.38__ = Forecast High Price $/1 $ __27.6__
(3D7) (4A1)

A common question from beginners is, *"Where do I get the "Estimated High Earnings Per Share" for this calculation?" The answer is from the trend line you drew on Page 1 of the SSG form.* Find the point where the EPS trend line you drew intersected with the last year on the graph — that's your projection of the stock's high EPS over the next five years.

However, before you calculate the High Price, you should apply some judgment to the selection of a future Average High Price/Earnings Ratio, rather than blithely filling in the blank from the default value.

A stock's P/E Ratio reflects the market's expectations of that stock's future growth, so a company that is growing very rapidly will have a Price/Earnings Ratio that is also very high. Over time, it is very rare for a company to maintain annual earnings growth more than 30%, and as that growth inevitably slows, the P/E Ratio will decline as well. In addition, companies with high P/E Ratios are susceptible to severe "corrections" if the company's earnings miss analysts' expectations for a single quarter. If you accept a High P/E Ratio that is very high, you will set a Future High Price target that the stock will unlikely reach.

Well, how high is too high? Ralph Seger, the *Repair Shop* columnist from Better Investing magazine, often says that, as high P/E Ratios discount the future, very high P/E Ratios discount the hereafter as well! *He advises investors never to project a future High Price/Earnings Ratio that is greater than 20.*

While this may be a conservative approach, in any case, a High P/E Ratio that's higher than 25 should give a prudent investor cause to re-evaluate the choice. By cautiously selecting a High P/E Ratio that best reflects the company's future growth, you can avoid a nasty surprise later on.

Choosing a Low Price

The SSG form gives you four options for a Future Low Price. You can choose one of the four choices, or select an altogether different low price.

A. This choice is derived from the Average Low P/E Ratio (from the Section 3 chart, Row 7, Column E) and the Estimated Low Earnings Per Share.

Again, you should always apply judgment to the choice of a Low P/E Ratio, just as you did in the choice of a High P/E Ratio. If the stock's Average Low P/E Ratio is more than 15 or 20, that might signal a downward revision.

The Estimated Low Earnings Per Share also generates confusion because this figure appears nowhere on the SSG form. The "by-the-book" method of analysis suggest using the most recent year's EPS, on the assumption that a growth company's most recent year's EPS will always be the lowest of the coming five years, as the company continues to increase its earnings.

For fast-growing companies, you may wish to use the EPS from the most recent four quarters, in lieu of the most recent year's. This takes the assumption of growth one step further, and will give you a Low Price choice that is, in most cases, very reasonable.

B. The "Average Low Price of the Last Five Years" is found in Row 7, Column B, of the chart in Section 3.

C. The "Recent Severe Market Low Price" requires you to select a Low Price from the Section 3 chart, depending on what you consider "recent." Some investors consider the last five years to be recent, some only look at the last three years. You must use your own judgment in selecting a low price here.

D. The "Price Dividend Will Support" is calculated by dividing the Present Dividend (for the entire year, often referred to as the "indicated dividend") by your choice of a High Yield from Column H in Section 3. Usually, you will use the most recent year's High Yield, but you must apply your own judgment.

This choice is relevant when a stock is being purchased because of its dividend income potential, and is not very helpful in choosing a low price for a growth stock.

After making these calculations, you must select the stock's Future Low Price. Remember, to paraphrase Peter Lynch, "a stock's price can always go down until it hits zero." While you don't have to worry about this possibility with most growth stocks, you should always carefully consider your choice of a Low Price. *Some investors always choose a Low Price that is at least 10% to 25% below the current price, to give a buffer in case of a general market correction.* Other investors find that the Low Price calculated by multiplying the Average Low P/E Ratio by the Low EPS is the most realistic. Whatever your choice, your Low Price should never be higher than the stock's current price.

Zoning

The next step in the SSG is to calculate three price zones between the Forecast Low and High Prices: BUY, MAYBE and SELL. This entails subtracting the Forecast Low Price from the Forecast High Price, then dividing the result by 3.

Now, fill in your Future Low Price in the first blank in the Lower 1/3 line. Add "1/3 of Range" to the Low Price to discover the top of the BUY zone, and fill it in the appropriate blank, as well as on the next line as the bottom of the middle, MAYBE zone.

Next, add 1/3 of Range to the top of the BUY zone to reach the top of the MAYBE zone. Fill in this figure, and as the bottom of the SELL zone.

Finally, fill in your Forecast High Price as the top of the SELL zone.

Note: Some experienced investors divide the Zones into four parts, with the bottom 25% as the BUY zone, the middle 50% is the MAYBE zone and the top 25% is the SELL zone. This makes the price at top of the BUY zone equal to a 3:1 Upside/Downside Ratio. This advanced technique applies a more stringent criteria to the stock.

Upside/Downside Ratio

The Upside/Downside Ratio compares the potential gain if the stock reaches your Forecast High Price from the Current Price (the "Upside"), to the potential loss if the stock drops to your Forecast Low Price (the "Downside").

A $10 stock with a Low Price of $5 and a High Price of $15 has an equal chance of gaining $5 or losing $5 — a 1:1 Upside/Downside Ratio. A $10 stock with a high price of $20 and a low price of $5 has a 2:1 Upside/Downside Ratio, or twice the potential on the Upside as on the Downside.

$$\frac{\text{Estimated High Price} - \text{Current Price}}{\text{Current Price} - \text{Estimated Low Price}} = \text{Upside/Downside Ratio}$$

$$\frac{\$15 \text{ Estimated High Price} - \$10 \text{ Current Price}}{\$10 \text{ Current Price} - \$5 \text{ Estimated Low Price}} = 1:1 \text{ Upside/Downside Ratio}$$

$$\frac{\$20 \text{ Estimated High Price} - \$10 \text{ Current Price}}{\$10 \text{ Current Price} - \$5 \text{ Estimated Low Price}} = 2:1 \text{ Upside/Downside Ratio}$$

The NAIC recommends that you only purchase stocks with a 3:1 Upside/Downside Ratio.

Many investors will reject an Upside/Downside that is greater than 12 or 15 to 1, reconsidering their choices of High and Low Prices.

For the calculation, subtract the Present Price from the High Price, and subtract the Low Price from the Present Price. Divide these two figures, and the result is the Upside/Downside Ratio.

Interpreting the Results

Zoning often confuses beginning investors because a stock in the BUY zone may not always be a stock to BUY. Some other criteria to look for:

❖ Upside/Downside Ratio greater than 3:1.

❖ Relative Value less than 100%. *(In other words, the stock's current P/E Ratio is less than the Average P/E Ratio.)*

❖ Price in BUY zone. *(Some investors require the stock's price to be in the lower half of the BUY zone, or use the 25%-50%-25% zoning method described above.)*

❖ Price is forecast to double in the next five years. *(This roughly represents a 15% annual return on your initial investment, before dividends are calculated.)*

If the stock you are studying does not pay dividends, you can stop here! Otherwise, continue to Section 5: 5-Year Potential.

SSG – SECTION 5
FIVE YEAR POTENTIAL

The final step in completing the Stock Selection Guide is Section 5, "5-Year Potential," determining the stock's current and future dividend yield. The calculations are fairly simple; if the stock doesn't pay dividends, you can skip this section altogether.

Calculating Present Yield

To calculate the present yield, the percentage of the stock's price that is paid back in dividends each year, first figure out the total dividends that will be paid in the current year. You can multiply the most recent quarterly dividend by four to find the current dividend. Next divide the dividend by the current price of the stock, and multiply by 100 to determine the "Present Yield or % Returned on Purchase Price".

```
A  Present Full Years Dividend   $   0.480
                                            -  0.030   X 100 =   3.0       Present Yield or
   Present Price of Stock         $   15.9                                 % Returned on Purchase Price

B  AVERAGE YIELD OVER THE NEXT 5 YEARS
   Avg. Earn. Per Share Next 5 Years              1.14      X Avg. % Payout     56.2       =  4.0   %
                                                                               (G7)
                         Present Price $          15.9
```

Calculating Average Yield

Now, you need to calculate the Average Earnings Per Share over the next five years. Go back to the Section 1 graph and look at your trend line. Find where it intersects each of the next five years, and determine the actual amount of Earnings Per Share you expect the stock to earn in each year. In this stock's case, you might figure that the next five year's E/S are the following:

$0.92
$1.04
$1.12
$1.24
$1.38

Adding these together, you get $5.70. Now divide by 5 to get the Average E/S, or $1.14.

A shortcut to determine the Average Earnings Per Share over the next five years is to simply use the projected earnings per share figure from the third (middle) year of the next five year period. Assuming that future earnings have been determined by using a straight trend line, this figure will be the Average EPS. As you can see in the example above, the calculated figure is $1.14 and the middle-year figure is $1.12, just a slight variance due to the imprecision of the graph. Now, multiply $1.14 times the Average % Payout from Section 3, Column G, Row 7 (in this case, 56.2%, or .562), which gives you $0.64 (the Average Dividend). Divide by the stock's Current Price, $15 7/8, to get the Average Yield, which equals 0.040, or 4.0%. Based on your initial investment, this stock will pay an average annual dividend over the next five years that is 4.0% of the purchase price.

As with many other parts of the Stock Selection Guide, you should use your judgment in considering the stock's average yield and payout. If the company's Average Yield and/or Average % Payout have been rising in recent years, you may wish to use higher figures for these calculations than the calculated averages. Likewise, if a downward trend is indicated, you might use a lower figure.

Interpreting the Results

This section is not as critical because the SSG is best suited in analyzing growth stocks which may not pay a high dividend or any dividend at all. But often the dividend yield can provide the extra "kicker" to help boost the Total Return of a medium-growing stock above the 15.0% goal.

In cases where you are looking at income-producing investments, you can use the Present and Average Yield as benchmarks to compare the stock's return to other yielding investments such as bonds, savings accounts or money market funds, for instance.

You can also use the stock's yield when comparing stocks for potential purchase: if you expect two stocks to each return 15% annually, the stock with the higher dividend yield may often provide the "safer" investment, one that is less dependent on the uncertainties of the general market.

CONCLUSION

The Stock Selection Guide has been used by millions of investors over the past fifty years, and has proven to be a consistent and valuable tool in building successful stock portfolios. This short tutorial does not attempt to provide an in-depth review of the Stock Selection Guide, but an introduction to a method of fundamental analysis that can be used by any individual investor interested in building a long-term portfolio of growth stocks.

For more information, contact the National Association of Investors Corporation.