

# INTRODUCTION TO TECHNAMENTAL STOCK STUDY WORKSHEET (TSSW)

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For a more in depth understanding see the book “*Take Stock*” by Ellis Traub. This introduction uses an Excel implementation of the worksheet created by Jim Thomas. A current version of Jim’s worksheet can be found at [http://groups.yahoo.com/group/TSSW\\_Excel/](http://groups.yahoo.com/group/TSSW_Excel/). An enhanced NBN version can be found at [http://nothing-but-net.org/public\\_files/tools/TSSW/](http://nothing-but-net.org/public_files/tools/TSSW/).

# GOAL

We want to build a low maintenance portfolio containing stocks that will rise in value at a faster rate than the market in general. This is accomplished by:

1. **Investing in Quality** – Look for companies that have a history of consistent sales and earnings growth, better margins than competition and opportunities for continued growth. Over the long term, earnings growth drives share price. The front page of the TSSW is used to analyze the quality of a company.
2. **Investing at a Fair Value** – The share price of a quality company is right when potential return and loss meet our objectives. If we invest at too high a price, opportunity for price appreciation is limited. The back page of the TSSW is used to determine a fair price and potential investment return.

# TERMS

1. **Share of Stock** – Your evidence of part ownership in a company.

The following four terms related to the company's Income Statement:

2. **Sales or Revenue** – What a company takes in (good).
3. **Expenses** – What a company spends (bad).
4. **Profit** – Sales or Revenue minus Expenses.
5. **Earnings per Share (EPS or Earnings)** – Profit divided by the number of shares outstanding.

The following four terms related to the company's Balance Sheet:

6. **Assets** – What a company owns (good).
7. **Liabilities** – What a company owes (bad).
8. **Equity** – Assets minus Liabilities.
9. **Book Value per Share** – Equity divided by the number of shares outstanding.

And finally:

10. **Price-Earnings Ratio (P/E, PE or Multiple)** – The relationship between the company's share price and its earnings per share.  $PE = \text{Price}/\text{EPS}$

## **Data Sheet**

This sheet provides a convenient place to input data for the supported forms. In addition to TSSW, the workbook also supports SSG and Pert-A forms.

Data can only be entered into blue fields. General data includes Company Name, Symbol, Current Price and Current Date. Annual data includes Fiscal Year End, High price, Low Price, EPS, Dividends, Book Value Per Share, Shares Outstanding, Sales, Net Profit and Tax Rate. Quarterly data includes Quarter End Date, Sales, EPS, Pre-Tax Profit, Income Tax and Current Dividend.

Data entry speed can be improved using the import and paste buttons at the top of the sheet. With the appropriate data source subscription, the “Import SSG File” and “Import from Data Service” buttons make it possible to generate a first pass TSSW in less than a minute.

## Quality Sheet (TSSW Page 1)

**Data** – All annual and quarterly data used in the graphs appears at the top of the worksheet.

**Growth** – 10 years of historic annual earnings and recent quarterly data are plotted on a semi-logarithmic graph so past EPS growth and its consistency can be examined visually.

To help determine if earnings growth is sustainable, sales, pretax profits and shares outstanding are also plotted. It's important to consider these measures because they directly affect earnings growth. If the EPS growth rate meets our goal but sales are not growing, future earnings growth problems may be close at hand. In this situation the company is likely to be improving margins or reducing the number of shares outstanding. Both allow EPS to grow but only temporarily.

Checking a box under the growth graph for a year of no interest will cause that year's data to be ignored. This can be handy if the year contains an unusual event and you don't want that year's performance to affect overall calculations.

Management's performance is measured by looking at graphs of pretax profit margin and return on equity. If these numbers are falling or not as good as competing companies, earnings problems may soon follow.

**Forecast** – Forecasting earnings and sales 5 years into the future is your toughest job. The forecast is important because it's used on the back page of the worksheet to estimate potential future stock prices and investment return.

Two models are available for forecasting earnings. The model is selected by checking or un-checking the box above the Forecast Growth Model value.

The Forecast Growth Model computes forecasted earnings using the latest annual earnings and the forecasted earnings growth rate.

The more accurate Business Model uses forecasted sales to derive forecasted earnings. Forecasted sales are calculated using the most recent annual sales figure and the forecasted sales growth rate. Using forecasted sales, average profit margin, recent tax rate and average shares outstanding, future earnings are calculated. You can override variables used in the model if your investigation indicates that historic values are not appropriate.

## Value Sheet (TSSW Page 2)

The back page of the worksheet contains references to PV, FV, N and i% in several places. These refer to keys on a financial calculator and stand for Present Value, Future Value, Number of periods and interest rate.

**P/E and Dividend Data** – High and low P/E's are computed for the last 10 years from earnings data and high and low prices. This data along with dividend data is used to determine if the current stock price is fairly valued.

**P/E Ratio Analysis** – A relative value ratio is calculated to see if the current price is below or above what investors have typically paid. A signature P/E is first determined by averaging the historical average P/E's less any outliers. To calculate the ratio, current P/E is divided by the signature P/E and expressing as a percentage. If the ratio is above 100%, the current share price is above what investors have typically paid. If below 100%, shares may be on sale.



Future high, low and average P/E's are also forecasted. The forecasted high is computed by averaging the lowest half of the historic high P/E's. The forecasted low is computed by averaging the lowest half of the historic low P/E's. Using only the lowest half forces our forecast to be conservative. The forecasted average is determined by averaging the forecasted high and low P/E's.

**Reward** – Reward is expressed as a compounded annual return rate. To compute the rate we first calculate potential 5-year high and average prices. These prices are calculated using the forecasted earnings from the front page and our forecasted high and average P/E's. Projected average and high return rates are then calculated using current price, potential 5-year prices and current dividend yield. If these returns do not meet our objective, we should avoid purchase at this time.

**Risk** – Risk is determined by assuming that earnings will not go any lower than the sum of the trailing 4 quarters. Using this earnings value and the forecasted low P/E, a potential 5-year low price is calculated.

In most cases the dividend is small on growth stocks and a share price based on dividend is of no interest. For situations where the dividend is significant, the worksheet contains a section that calculates a potential low price based on dividend yield. The actual low price used is the larger of the two low prices.

A risk index is calculated by dividing the difference between the current price and potential low price by the difference between the potential high and low prices. This ratio is then expressed as a percentage. A ratio of 25% implies that the price is 3 times as likely to go up, as it is to go down.

**Price Analysis** – This section assumes that we want to achieve a 14.9% rate of return or better on our investment and that we want the risk index to be 25% or less. Using these assumptions a buy price is calculated. If the company passes the quality tests on the front page and the current price is at or below the buy price, a good investment opportunity may exist.