RSMD Tkr indicator
Relative Strength of
Bank America Corp. (BAC) compared
against its group,
Banking Group (RS Tkr 6029)

The chart above is identical to the previous chart except the RSMD Indx is plotted instead of the RS Indx. Note the bullish signal in late January when the difference line crossed from below to above the signal line.

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Value shown in Control Panel
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The value shown is the value for RS Ticker for the date specified.

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Changeable  constants
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The smoothing constant used to compute the exponential average is a function of the number of periods that the average represents. This constant, expressed in terms of the number of periods represented by the average, may be changed. The default value and the permissible range are as follows:

|	Default	Range
Average periods	3	1-100

SK-SD Stochastics (SK-SD)

This indicator is the more classic version of George Lane's formulation of stochastics, and involves two components. The SK component is typically a 3-day moving average of the stochastic ratio as defined by Lane's basic Stochastic formula (see Stochastic indicator in this section). SK is again averaged over the same number of days to obtain a double smoothed average ratio called SD.

AIQ has modified the indicator, which Lane originally developed for futures trading, by lengthening the default value for the moving average to a 10-day average to better reflect stock trading.
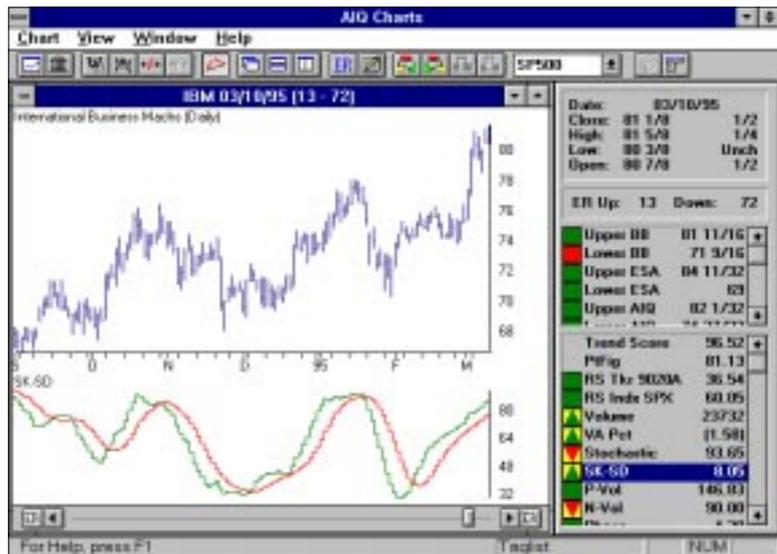
SK-SD Stochastics, IBM

The SK component is always the upper line on up movements and the lower line on down movements (see SK-SD chart). The SD component is the lower line on up movements and the upper line on down movements. With TradingExpert Pro's default colors displayed, the SK line is green and the SD line is purple.

The simplest interpretation of this version of the Stochastic is that price trends will reverse when the value of SK diverges from price.

For timing following a nonconfirmation, buy signals are generated when the SK line moves above the SD, and sell signals occur when the SK moves below the SD. These signals are enhanced if the second average, the SD, has already made the turn in the direction of

the signal. When these situations occur at extreme ranges, below 10 and above 90, the SK-SD becomes less reliable as an indicator and should be used only with confirmation of several other indicators in the system.

Value shown in Control Panel

The value shown is the difference between the SK and SD lines for the date specified.

Changeable constants

The time period used to compute the averages may be changed. The default value is 10 days and the permissible range is 1 to 21 days.

Split Volume (SplitVol)

As the name of this indicator implies, Split Volume separates volume into two components — up volume and down volume. On days when price advances, volume is charted above the line. On days when price declines, volume is charted below the line.

The pattern to watch for is the cluster, a series of days above or below the center line. A cluster of up days following a price decline is usually bullish, and a cluster of days below the center line after an uptrend is often bearish. Declining volume during a strong up movement is clearly seen, as is decreasing down volume when prices approach a bottom.

Split Volume,
Micron Technology Inc.

The chart for Micron Technology (MU) shows clusters of up volume that coincide with strong price advances. In January of 1995, the MU stock was under consolidation. The Split Volume indicator showed a few positive days before the breakout of the stock, then a cluster of positive days as the breakout occurred. This kind of cluster marks increasing strength in price and volume action.

Value shown in Control Panel

The value shown is the Volume for the date specified.

Changeable constants

The Split Volume indicator has no constants.

Split Volume Moving Average (SVMA)

SVMA is an exponentially smoothed moving average of Split Volume. It is equivalent to a moving average of On-Balance Volume. The pattern to watch for is a nonconformation between price movements and movements of this indicator. Also, when there is a divergence (trends do not agree), the direction of this indicator will often signal the next direction in price action.

When the SVMA moves from positive to negative, it is considered a sell signal. When the SVMA moves from negative to positive, it is a buy signal.

Split Volume Moving Average, Lotus Development Corp.

More important is the use of the Split Volume Moving Average as a confirmation of Expert Rating signals. An example of a confirmation of a signal is shown in the chart for Lotus Development Corp. (LOTS). On February 17, 1995, a downside Expert Rating of 96 was issued by AIQ for LOTS. The stock continued to move higher, but at the same time the Split Volume Moving Average topped out and was decreasing. This nonconformation of upward price movement confirms the bearish Expert Rating signal.

Value shown in Control Panel

The value shown is the value of the Split Volume Moving Average for the date specified.

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Changeable constants for SVMA
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The time period used to compute the exponentially smoothed average is a changeable constant. The default value is 19 days and the permissible range is 1 to 100 days.

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Stochastic
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The Stochastic indicator relates the closing price to the range in prices for a prior period of time. George Lane, who developed this indicator, determined that 21 days is the optimum period of time for the price range. Hence, the indicator is usually referred to as the 21-day Stochastic. The following discussion pertains only to a stochastic based on a 21-day period of time (or 21-week period of time).

Note

The term stochastic as defined by Lane has little or no relation to the real definition of the word, which is "a naturally occurring random process." By industry accepted usage, the meaning in technical analysis terms is defined by the stochastic equation.

The 21-Day Stochastic relates the closing price to the price range from the prior 21-day period. The 21-day price range is the difference between the highest value in the last 21 days and the lowest value. The indicator, expressed as a percentage, is charted on a scale of 0 to 100.

Above 80% indicates an overbought condition, and below 20% indicates an oversold condition. A sell signal is generated when this indicator drops below 80%, and a buy signal is evident when its value moves above 20%. The upper horizontal line on the 21-Day Stochastic chart represents 80%. The lower horizontal line represents 20%.

In a non-trending market, the buy and sell signals produced by this indicator are fairly reliable. But signals in a strong trending market are premature and not as reliable. The chart for Intel Corp. (INTC) shows that in the second half of 1994 Intel was in a period of consolidation, a period when the Stochastic worked well. However, as the stock moved into a strong uptrend the Stochastic gave several sell signals, even as the stock moved higher.

This is a good example of how the AIQ expert system works. The AIQ expert system combines the 21-Day Stochastic indicator with the Price Phase Indicator into an Expert Rule. This rule says that a buy signal is generated when the 21-Day Stochastic crosses the 20% line, and the Price Phase Indicator is increasing. A sell signal is generated when the 21-Day Stochastic drops below the 80% line, and the Price Phase Indicator is decreasing.

This example shows how the AIQ expert system combines indicator signals with expert knowledge and comes up with an Expert Rule that, together with other Expert Rules, is part of a knowledge base that produces an Expert Rating.

21-Day Stochastic, Intel Corp.

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Value shown in Control Panel
```

The value shown is the value of the Stochastic indicator for the date specified.

```
Changeable constants
```

The only constant required for the calculation of the Stochastic is the period of time over which the price range is determined. Lane determined that 21 days is the optimum period and for this reason the default value is set at 21 days. Should you want to change this value, the permissible range is 1 to 65 days.

Note
Testing of the Stochastic constants by AIQ has shown that 14 days is too short (stocks are "whipsawed") and 30 days is too long (valid opportunities are missed). The longer stochastic periods were found to miss the tops which are much shorter-lived and more difficult to locate than the bottoms.

Summation Index (SumInd)

The Summation Index is another indicator developed by the McClellans *(Reference No. 32)* and is the summation of the Advance/ Decline Oscillator.

The Summation Index is not one of the indicators used in the computation of the Expert Rating. This is because it is derived from the Advance/Decline Oscillator, which is used in the Expert Rating computation.

The Summation Index values appearing in the Control Panel are computed as the sum of all dates beginning at least 200 periods (days or weeks) prior to the current market date. Some charting services publish values for this indicator which do not agree with the Market Chart values. The reason for the difference is that the published values are taken from summations that begin on different dates — these services commonly begin summations tens of years ago. Although the values may differ, the Summation Index available on the AIQ charts is the same indicator and it is used in exactly the same manner.
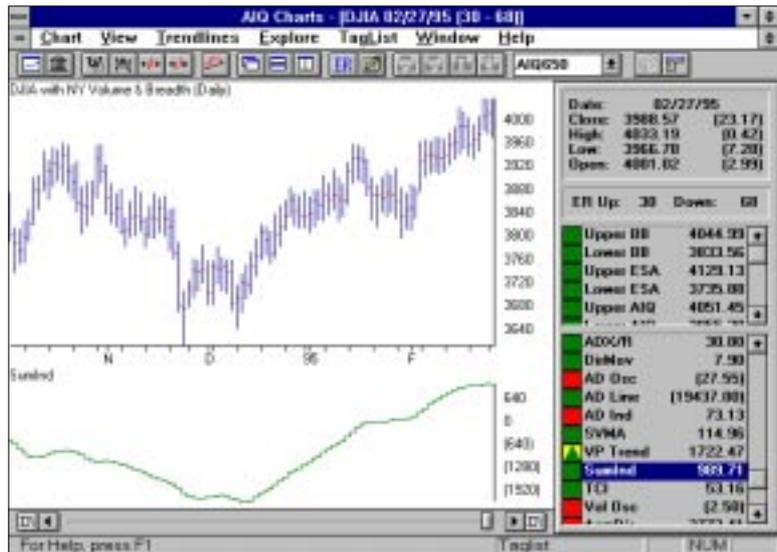
Summation Index, AIQ Market Timing Chart

The Summation Index presents a picture of the strength of the market. Strong market advances are characterized by increasing market averages and an increasing Summation Index. It is a difficult stock picking environment when market averages are increasing at the same time that the Summation Index is flat or falling. Falling market averages and a decreasing Summation Index are strong bearish indications.

`Value shown in Control Panel`

The value shown is the value of the Summation Index for the date specified.

`Changeable  constants`

The Summation Index has no changeable constants.

Note
In this documentation, the chart of the DJIA with NYSE Volume and Breadth is referred to as the AIQ Market Timing Chart. The Price Plot is of the Dow Jones Industrial Average. The Expert Rating and technical indicator values are derived from both DJIA and NYSE breadth and volume figures.

Traders Index (TRIN)

An indicator developed by Richard Arms, the Traders Index (TRIN) is the ratio of advancing issues versus declining issues divided by the ratio of advancing volume versus declining volume. It is a measure of the breadth of the participation in the market.

A value of 100 for this indicator means that the market trend is moving in a balanced way. That is, the up volume for the day is about equally distributed over advancing issues; and the down volume for the day is equally distributed over declining issues. This balance can occur in an uptrending market, downtrending market, or lateral market. It simply means that the entire market is participating in whatever direction the market is moving.

When the Traders Index moves away from 100, it indicates that the market is moving into an unbalanced condition, signaling a possible change in direction. As the value of the Traders Index decreases below 100, it is an indication that volume is distributed over fewer and fewer issues and it is a signal of a market top. It means that fewer issues have sufficient perceived value to attract buyers — more and more issues are fairly valued or overvalued, and fewer issues are undervalued sufficiently to attract buyers. The market is unbalanced on the high side, and a market top is signaled.

When the value of the Traders Index is greater than 100, it again signals that volume is moving in fewer securities, but this time on the down side. Fewer issues are perceived to be overvalued, and thus fewer are available for sale. As fewer issues are being offered for sale at current prices, prices tend to stabilize and a market bottom is signaled.

The Traders Index is computed as an exponentially smoothed average with a smoothing factor of 18%. Empirically, it has been determined that 75 or lower indicates a market top, and 120 or higher indicates a market bottom. Compared to other indicators of this type, the Traders Index (see chart displayed) is upside-down. From an engineer's point of view, it probably should be flipped over. Historically, however, this is the way the Traders Index has been displayed and AIQ will continue with the convention.

On the Traders Index plot, the upper horizontal line is 120 and the lower horizontal line is 75. These numbers are, historically, good dividing points for signals. The 120 line indicates an oversold condition and the 75 line indicates an overbought condition. When the Traders Index is at either line, a trading opportunity is signaled.

On the AIQ Market Timing Chart displayed, TRIN gives a buy signal in October of 1992. The Dow subsequently moved significantly higher.
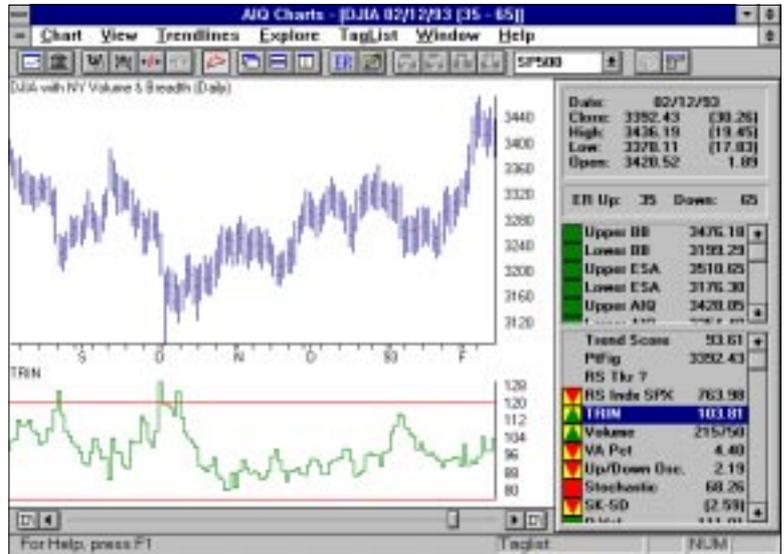
Traders Index (TRIN), AIQ Market Timing Chart

Look for the number of days that the Traders Index remains at one or the other of the extreme values. The Traders Index tends to be a leading indicator, sometimes giving a signal two or three weeks prior to the actual market turnaround. Also, there are times in extremely trending markets when the indicator will give false signals.

This is another good reason for using the expert system approach — by itself this indicator is not always reliable, but when used in combination with other indicators within the system, valuable signals can be generated.

Reminder...
You can expand an indicator plot to fill the entire chart window. Position your mouse cursor on the indicator plot, and press the **Z** key. Pressing the **Z** key again restores the plot to its previous size.

`Value shown in Control Panel`

The value shown is the value of the Traders Index for the date specified.

`Changeable constants`

The time period used to compute the average may be changed. The default value is 10 days and permissible range is 1 to 60 days. The default value of 10 days is standard among technical analysts, and is the number of days strongly recommended by Richard Arms.

Trading Channel Index (TCI)

The Trading Channel Index (TCI) identifies changes in price direction. The TCI can be used for short-term confirmation of an Expert Rating signal, and is especially useful in option trading.

A simple rule is to never take a position against the direction of the TCI. The TCI is a very short-term and responsive indicator and is likely to change in a short period of time. When you have determined a position that you wish to take, using the direction of TCI to dictate your entry point can be an effective short-term timing method.

The Trading Channel Index is an adaptation for equities of Donald R. Lambert's Commodity Channel Index. The TCI has been slowed down and is not quite as volatile as the Commodity Channel Index, whose fast response is needed for the commodity markets. A slower response is more practical for equity markets.

Trading Channel Index, General Dynamics
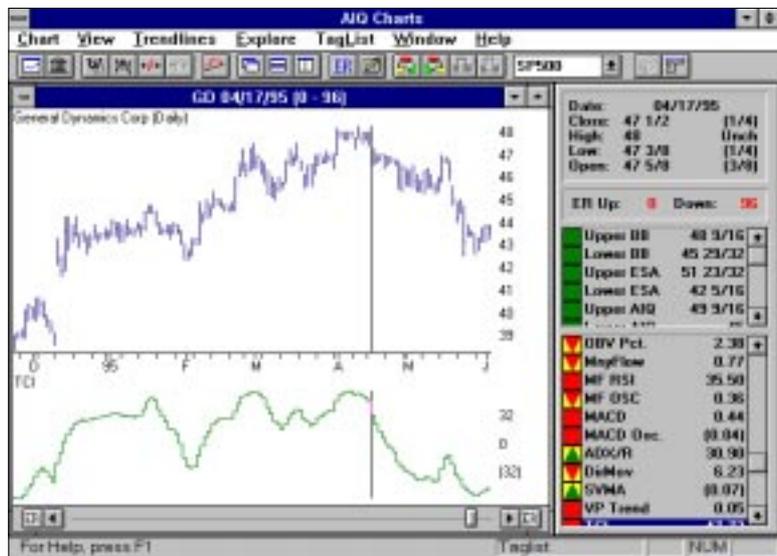
The TCI is computed using two exponentially smoothed averages. The first average is simply an average of daily price, and the second is an average of the variability of price around the average. The difference between the daily price and average price is broken up into units of variability, not unlike the standard deviations in Bollinger Bands. The TCI is now computed as a third average of the number of units of variability around the moving average of price.

Thus, it is the direction of this indicator that is of importance. The TCI is a very responsive indicator and, if an Expert Rating is to be confirmed by the index, it is not unusual for it to be confirmed almost immediately — that is, the same day or the next day.

An example of the use of TCI is shown on the chart for General Dynamics Corp. (GD). A down signal (ER Down: 96) was generated by TradingExpert Pro on 04/17/95, at the end of a period in which prices were stable and consolidating. Prior to April 17 when the downside Expert Rating was generated, TCI had already turned down. This downward direction of TCI constitutes an immediate confirmation of the down signal.

Value shown in Control Panel

The value shown is the value of the Trading Channel Index for the date specified.

Changeable constants

There are two constants involved in the computation of TCI. The number of time periods used to compute the channel periods and the average periods may be changed. Default values and permissible ranges for these constants are as follows:

	Default	Range
Channel Periods	10	1-21
Average Periods	21	1-50

Trend Score

Trend Score is a very useful indication of the overall technical strength or weakness of the ticker being examined. It is derived from six technical indicators and is designed to give a quantitative measure of the current trend of these indicators.

Trend Score is computed by combining the values of the following six indicators:

- MACD
- Directional Movement
- Positive Volume
- Volume Accumulation
- ADX/ADXR
- On-Balance Volume

A special expert system computes Trend Score from the values of these six indicators. The indicators are all trend-following and the expert system consists entirely of trend-following rules. Trend Score values are similar to Expert Ratings in that they range between plus and minus 100, with large positive values indicating an uptrend and large negative values a downtrend.

Value shown in Control Panel

The value shown is the value of the Trend Score for the date specified.

Changeable constants

There are no constants that can be changed for Trend Score.

Note
Trend Score is not available for real-time charts.