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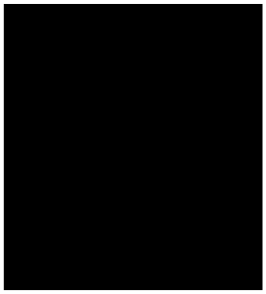
MARKET TIMING ANALYSIS

TESTING THE 'ACTUAL PERFORMANCE' OF AIQ'S MARKET TIMING MODEL



DAVID VOMUND

By David Vomund

In the September issue of the *Opening Bell,* we ran an article comparing the performance of different confirmation techniques on AIQ's market timing model. For our test we assumed that you could buy or sell the S&P 500 the day of the Expert Rating signal. The test was valid because the same assumption was made to the different confirmation techniques and the results were never compared to a buy & hold approach.

> *"The returns from trading the day after the signal are only slightly lower than the day of the signal."*

In the real world, however, you can't trade the S&P 500 on the day of the signal. In this article we'll compare the performance of trading with AIQ's market timing model the day of an Expert Rating signal to the more realistic performance of trading the day after a signal.

Many market timers use mutual funds as trading vehicles. The problem is mutual funds can only be bought and sold at the end of the trading day. That means that when an AIQ buy signal is registered, the fund is bought at the next day's closing price. The same is true on the sell side.

A more timely investment vehicle is the Standard & Poor's Depository Receipts, or SPDRs. SPDRs, pronounced "spiders," are essentially shares in a closed-end S&P 500 index fund. The SPDR trades on the American Stock Exchange and has a ticker symbol of SPY. The advantage of trading the SPDR is that it trades just like a stock and investors can trade on the open the day after the signal.

The SPDR began trading in early 1993 so that is when we began our testing. We looked at the performance of the Expert Rating buy and sell signals

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MARKET TIMING ANALYSIS *continued* . . .

Table 1

Trade by Trade Details

ER Buy Date	ER Sell Date	Trade S&P 500 the day of the signal (% change)	Trade SPDR on the open the day after the signal (% change)	Trade S&P 500 on the close the day after the signal (% change)
07/06/93	10/22/93	4.95	5.02	4.83
12/17/93	02/04/94	0.74	0.74	1.27
02/28/94	03/24/94	-0.60	-0.87	-0.83
03/28/94	06/20/94	-0.98	-1.29	-0.25
06/27/94	08/05/94	2.19	2.23	2.65
08/23/94	09/19/94	1.36	0.27	-1.21
09/26/94	09/29/94	0.31	0.20	0.41
10/10/94	10/20/94	1.70	1.08	-0.19
11/07/94	04/20/95	9.12	8.58	9.20
04/21/95	06/16/95	6.16	6.45	6.30
08/25/95	10/02/95	3.86	3.05	3.86
10/12/95	10/19/95	1.29	0.75	0.51
11/16/95	12/18/95	1.59	0.88	7.48
01/16/96	04/03/96	7.80	8.03	8.16
04/15/96	04/17/96	-0.14	0.05	-0.22
05/08/96	06/07/96	4.42	4.60	4.14
07/09/96	08/29/96	0.40	0.67	-0.62
09/09/96	01/06/97	12.64	11.73	13.47
01/07/97	03/13/97	4.82	5.12	5.98
03/21/97	08/08/97	19.60	19.43	18.47
09/02/97	11/18/97	1.15	0.44	1.80
12/29/97	01/08/98	1.79	-0.72	-4.44
01/12/98	04/17/98	19.54	18.36	18.02
06/02/98	06/10/98	1.76	1.42	1.09
06/16/98	07/21/98	7.12	5.65	5.15
07/29/98	09/03/98	-12.70	-12.49	-14.79
	Average =	**3.84**	**3.44**	**3.47**

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using no confirmation (for confirmation testing see the September *Opening Bell*). Three tests were performed and the results compared. The first test looks at the results of trading the S&P 500 index the day of the signal. The second test gives a more realistic test of the AIQ timing model in that it looks at the performance of trading the SPDR on the opening price the day after the signal. The final test trades the S&P 500 index on the closing price the day after the signal. This is similar to trading an index fund based on the Expert Ratings.

The results of the individual trades are found in **Table 1**. The average trade lasts 53 days. If you were able to trade the S&P 500 on the day of the signal, the average return per trade is 3.84%. Trading the SPDR on the opening price the day after the signal brings a 3.44% return per trade. Surprisingly, if you trade the S&P 500 on the close the day after the signal, the average trade returns 3.47%. Trading the day after the signal lowers the return some but not much.

What does this mean to overall returns and how does it compare to a buy & hold strategy? **Table 2** lists the annual returns of each trading technique with compounding. The highest return comes from trading the day of the signal. This is not possible to duplicate in real-time trading but in many cases users can get a feel for the Expert Rating signal before the market

MARKET TIMING ANALYSIS *continued* . . .

closes. Dial Data users can update the ticker DJIA before the market closes. The intraday update will typically update the open, high, low, and close as well as the breadth data. The user will then want to manually enter the total volume figure. The figures for the number of stocks hitting new highs and new lows are difficult to get during the trading day so this data is either estimated or is not updated.

After performing an intraday update and adding the total volume figure, you can plot the DJIA ticker to see if a buy or sell is likely. This signal is generally reliable unless one of the rules that fired is related to the New High/New Low indicator. Click the ER toolbar button to see if the New High/New Low indicator was fired. If the rule was fired, you'll have to guess what the figures will be, which makes for a less reliable preliminary reading.

Table 2

Average Annual Percentage Return
7/93 to 9/98

Trading the S&P 500 the day of the signal	29.80%
Trading the SPDR on the next day's opening price	25.12%
Trading the S&P 500 on the next day's closing price	25.15%
Buy & Hold	23.70%

Past Performance Does Not Guarantee Future Results

The returns from trading the day after the signal are only slightly lower than trading the day of the signal. Surprisingly, trading based on the open the day after the signal is about the same as trading on the close the day after the signal. ■

MARKET REVIEW

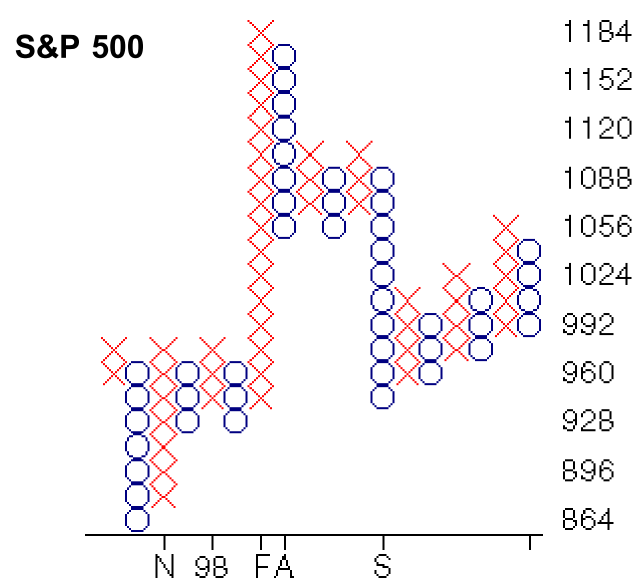
The AIQ market timing system began the month with a whipsaw. A 95 sell was registered on September 3 followed by a 100 buy signal two trading sessions later. This sell signal was unusual since the market was in a strong downtrend. Since TradingExpert is a counter-trend system, sell signals are typically registered after market strength and buy signals are registered after market weakness.

The September 8 buy signal looked promising as there was a high percentage of stocks with buy signals and the TRIN indicator had just moved below buy territory. The market, however, rarely makes a "V" shaped bottom, so most technicians expected a testing of the lows after a rally.

The market rallied to the level where the August breakdown occurred and then sellers emerged. By the end of the month, the retest of the lows had begun but AIQ remained on a buy signal. On October 1, the market was just above its late August closing low, but the TRIN indicator had risen to a bullish reading of 150. The indicator hit this level on October 27, 1997, January 9, 1998, and August 31, 1998. These time periods represent market lows.

Figure 1 shows a Point & Figure chart of the S&P 500 using the default settings. We see that the selloff in late September brought the index to the lower end of an upward sloping trading channel. Should the market continue to fall, this uptrend will be violated and the Point & Figure chart would turn bearish.

Figure 1



GROUP ANALYSIS

TAKE ADVANTAGE OF AIQ'S POWERFUL INDUSTRY GROUP ANALYSIS CAPABILITY

By David Vomund

Some TradingExpert users avoid performing industry group analysis because they don't know how to get started. This is a mistake. The industry group capability in TradingExpert is extremely powerful and can be of great benefit to traders.

Just look at the market activity this year. Internet stocks are up an amazing 200% and many of the technology and health groups are up over 25%. Meanwhile the oil drilling companies have fallen 50%. Some groups are in bull markets while others are in bear markets.

Which Group Structure Works Best for You?

One of the most often asked questions that AIQ users have is: which industry group structure works the best? TradingExpert users have the choice of using Standard & Poor's industry groups or AIQALL, a broad industry group structure that encompasses almost every stock. These two structures come free with the program. There are two other structures that are available for purchase — the AIQ Pyramid and Bollinger Group Power.

Before beginning to examine these industry group structure choices, users should know that a large stock database is needed to make the industry groups valid. That is because the group indexes are calculated based on the stocks in your database.

For example, the Standard & Poor's industry groups structure has approximately 85 industry groups. If you only have 150 stocks in your database, then many of the groups will contain only one stock, giving no useful information. The TradingExpert software comes with the 500 stocks that are classified in the S&P 500 groups, which allows new users to immediately get up and running with this structure.

The other structure delivered with the program, the AIQALL industry structure, is much larger and has about 200 groups, so a minimum database of about 1500 stocks is required for this one.

Back to the original question: which structure works best? Unfortunately, there is no one simple answer. The best structure for one person isn't the best for another. Discussed in this article are the four most popular choices available for AIQ users along with the advantages and disadvantages of each. The following information should help you decide which structure best fits your needs.

"If you are looking for an edge, industry group rotation should be incorporated into your analysis."

Standard & Poor's Industry Group Structure

The Standard & Poor's industry group structure classifies the 500 stocks in the S&P 500 index into a set of industry groups. These stocks are mostly large capitalization stocks. One advantage of the S&P 500 structure is that the TradingExpert program comes with data for all the stocks in the S&P 500 so you can rest assured that you'll have all the stock data needed to calculate the groups correctly. Also, there are no small-cap stocks in the S&P 500 so data maintenance is easier and the bid-to-ask spreads are attractive for short-term traders.

The downside of the S&P 500 group structure is that many of the groups contain too few stocks. There are eight groups that contain only one stock and about 25 groups that contain only two stocks. It is hard to identify legitimate industry group rotation when there are only one or two stocks in a group.

Since the S&P 500 industry groups change over time, you will need to keep abreast of any changes. Users can monitor these changes by going to the Standard & Poor's web page at http://www.advisorinsight.com/pub/indexes/.

Overall, Standard & Poor's industry groups will work for you if you are only interested in large company stocks and if industry group analysis is not a major part of your stock selection process. If industry group analysis is a major part of your process, you will want another structure.

AIQALL Group Structure

The second structure that is provided free of charge with TradingExpert, the AIQALL structure, is very comprehensive with about 7000 stocks classified into 200 industry groups. Many people think that they need all these stocks in their database. This is not true. We have found that about 2,500 of the larger name stocks is adequate. Once you exceed this number, you are looking at stocks with extremely low volume or large bid-to-ask spreads.

The advantage of a structure that classifies so many stocks is that when

GROUP ANALYSIS *continued* . . .

you add a stock to your database, it will automatically be added to its proper industry group, as long as it is one of the 7000 included in the structure.

There are close to 200 industry groups and the minimum database size for this structure is 1,500 stocks.

Investors who like the smaller-cap NASDAQ issues prefer the AIQALL groups since most NASDAQ stocks are classified into industry groups.

This group structure also works well for investors who use a bottom-up approach to stock selection. Bottom-up traders may have an interest in particular stocks because of AIQ's screening reports, recommendations from a newsletter, hot tips, etc. The AIQALL structure is comprehensive enough to classify most stocks into their proper groups which allows industry group analysis to be easily performed. In a sense, the industry group analysis works as a confirmation tool for stocks that you have selected by some other approach.

The disadvantage of the AIQALL group structure is that it requires a large database of stocks, which means more effort keeping your database clean. Also, with so many groups it is harder to identify the rotation of the groups as they move in and out of favor.

Overall, the AIQALL structure works best if you want every stock in your database, including the small-cap stocks, classified into industry groups.

AIQ Pyramid

The AIQ Pyramid industry group structure contains a rational set of industry groups. That is, the stocks are classified by their technicals as well as fundamentals. AIQ began with the Dow Jones set of industry groups and then used MatchMaker, a program which tests the correlations of securities, to determine which stocks within each industry group move together and which don't.

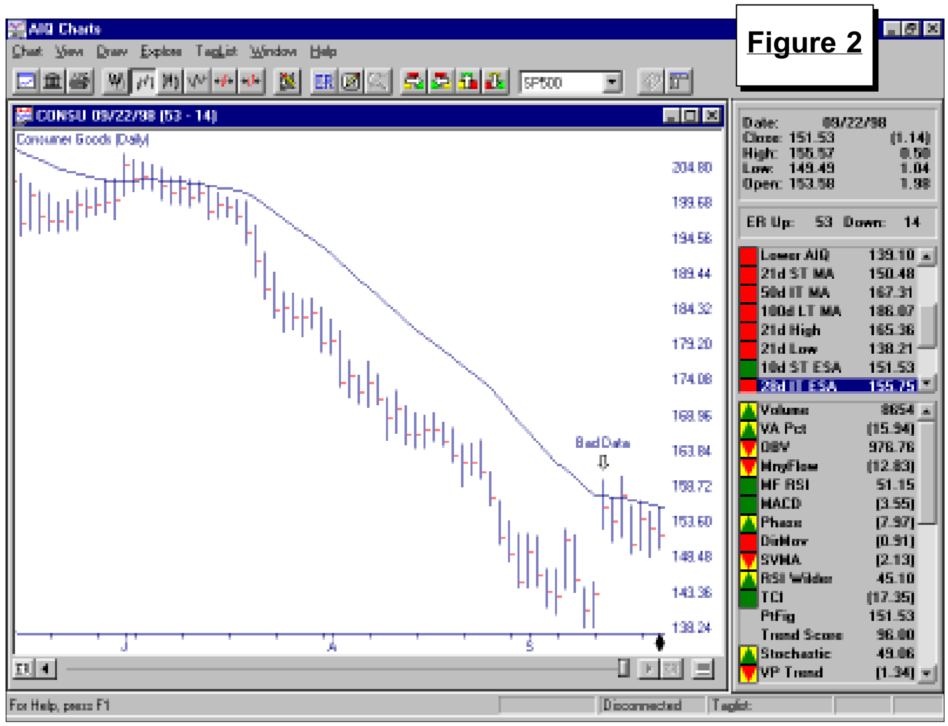


Figure 2

For example, if the Technology group contains four technology stocks that move together, and one technology stock that doesn't move with the other stocks, then that one stock is deleted from that industry group. Hence, the industry group index is a better representation of the underlying stocks.

> ***"The advantage of a rational industry group structure is. . . your chance of picking the right group but the wrong stocks is reduced."***

The advantage of a rational industry group structure is that each industry group contains stocks that move in line with one another. Your chance of picking the right group but the wrong stocks is reduced.

This is the best structure for a top-down approach to investing and for trading large-cap highly liquid stocks. With a top-down approach, you first look at the overall market, then pick some attractive sectors. You then find attractive groups within these sectors. Finally, you pick attractive stocks within the attractive groups.

The AIQ Pyramid structure does not work well if you use a bottom-up approach because the stock you are interested in may not be classified into a group.

Bollinger Group Power

The Bollinger Group Power industry structure contains a set of groups that technical analyst John Bollinger developed for his own analysis and for his *Group Power* newsletter. In a sense, Group Power is a mix of the AIQALL structure and the AIQ Pyramid structure.

Similar to the Pyramid structure, Mr. Bollinger uses MatchMaker to spot stocks that show a low correlation to their industry group index. He wanted a larger and more comprehensive structure than the Pyramid, however, so he lowered the minimum correlation level. A lower minimum correlation requirement means more stocks will pass the screening. Combine this fact with a large number of

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GROUP ANALYSIS *continued . . .*

industry groups and the result is a large structure built with groups that have passed a minimal correlation screening.

The Group Power industry group structure contains about 3,500 stocks classified into about 150 industry groups. These groups are attractive for those that want a comprehensive structure which contains large-cap, mid-cap, and small-cap stocks.

The downside is the effort it takes to maintain clean data, especially since there are a lot of low volume/ low price stocks. This structure currently contains over 1000 stocks that are priced below $10 (which may or may not be a negative depending on your investment approach). A number of stocks are classified into miscellaneous groups, which are of no help to top-down investors.

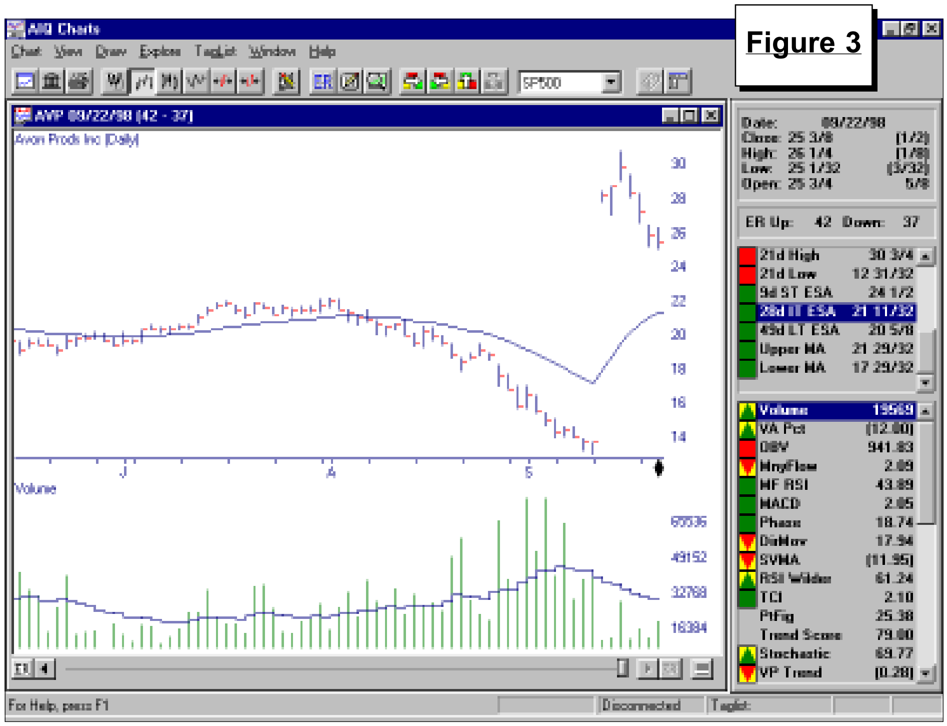


Figure 3

Summary

The preceding summary should help you understand the different industry structure choices. For information on the AIQ Pyramid or Bollinger Group Power, call AIQ sales at 800-332-2999. Now that you have an idea of which structure best fits your needs, we'll move on to data maintenance.

Data Maintenance Is Important

The effectiveness of your analysis is only as good as the quality of your data. This is especially true when it comes to industry group analysis. Bad stock data directly affects the stock's group and sector readings, resulting in a spill-over effect

It could happen that a group that should be at the top of the ranking only makes it to the midway point because one of the stocks within the group had an unadjusted stock split. If you are a top-down investor, that is an opportunity missed.

A good exercise is to browse through the sectors of an industry group structure looking for gaps in data. Since sectors rarely gap up or down, a gap often signals bad underlying data.

An example of possible bad data is seen in **Figure 2**. This chart shows the Consumer Goods sector from the Standard & Poor's structure. In mid-September, the sector gaps up in price, an indication of bad data.

After identifying a gap in data, scroll though the groups that comprise the sector. One of the groups should show a similar gap in price. Once this group is identified, browse through the stocks that comprise the industry group. This in turn will help identify which stock caused the gap in prices.

Figure 3 shows Avon Products to be the culprit. A trick that is often used to determine if the gap was the result of a news story or simply bad data is to look at volume figures. If the stock has a one-day gap and rises or falls substantially on that day, one would expect an above average volume reading. In Figure 3 we see that this was not the case. Avon doubled in price with an average volume reading. That is a signal of bad data.

To correct the problem, simply go to the *Data Retrieval Options* page and do a *Reload History* on that ticker symbol, going back to the first day of data.

After you have repaired the data, the industry groups need to be recomputed . This is performed in the Data Manager. Go to *Utilities* and then *Compute Group/Sector Indices*. You can either recompute the entire list that represents the industry group structure or you can recompute only the individual groups and sectors that were affected (except for the increased computing time, it is preferable to recompute the entire list).

In the case of Avon, a 2 for 1 stock split was either mis-adjusted or was adjusted twice. In most cases, however, the stock will gap down in price as a result of a stock split not being adjusted. If the stock gaps down and falls 50% in one day on average volume, that typically means a 2 for 1 stock split was not adjusted.

After each data update, a list of stocks that had a 25% variance in price will appear on your *Messages* list. The data for these stocks should be checked and corrected if necessary.

GROUP ANALYSIS *continued . . .*

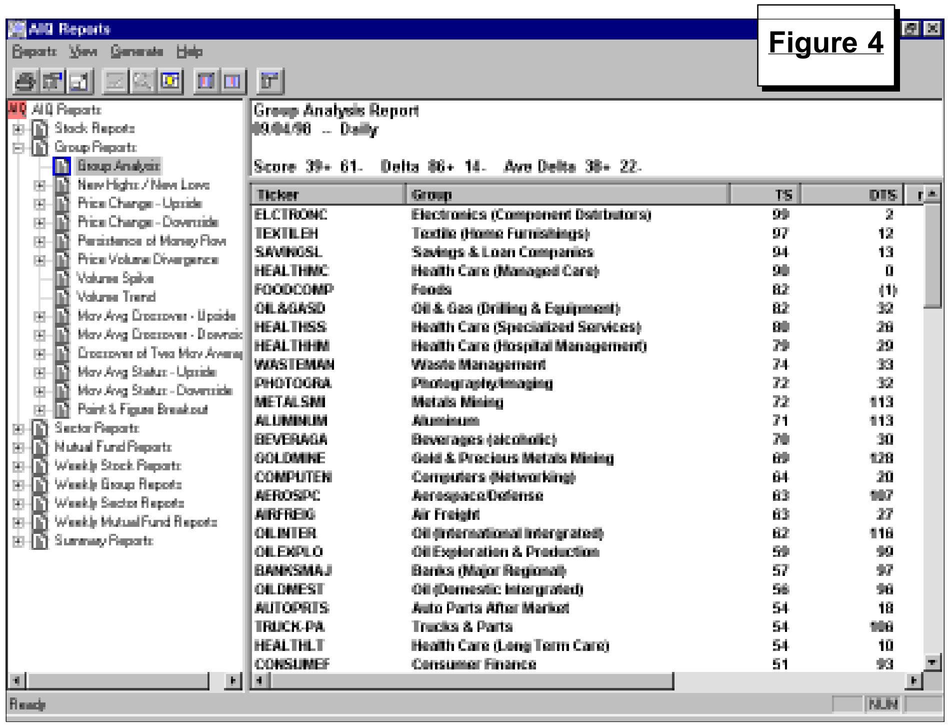
Now We Are Ready to Perform Industry Group Analysis

Now that we've decided which industry group structure to use and we have clean data, we are ready to perform the analysis.

Since the industry groups have both price and volume, the same analysis that you perform on stocks can be performed on groups as well. There is an additional benefit in that the Group Analysis report can be used to identify the group rotation.

The Group Analysis report is sorted by Trend Score (TS). TS is a composite reading of several indictors including MACD, Directional Movement, On Balance Volume, Money Flow, and Positive Volume Index. Since the groups are ranked by the strength of their indicators, and indicators precede price movement, a group that is a strong performer often falls in the ranking even as the group makes its final advance.

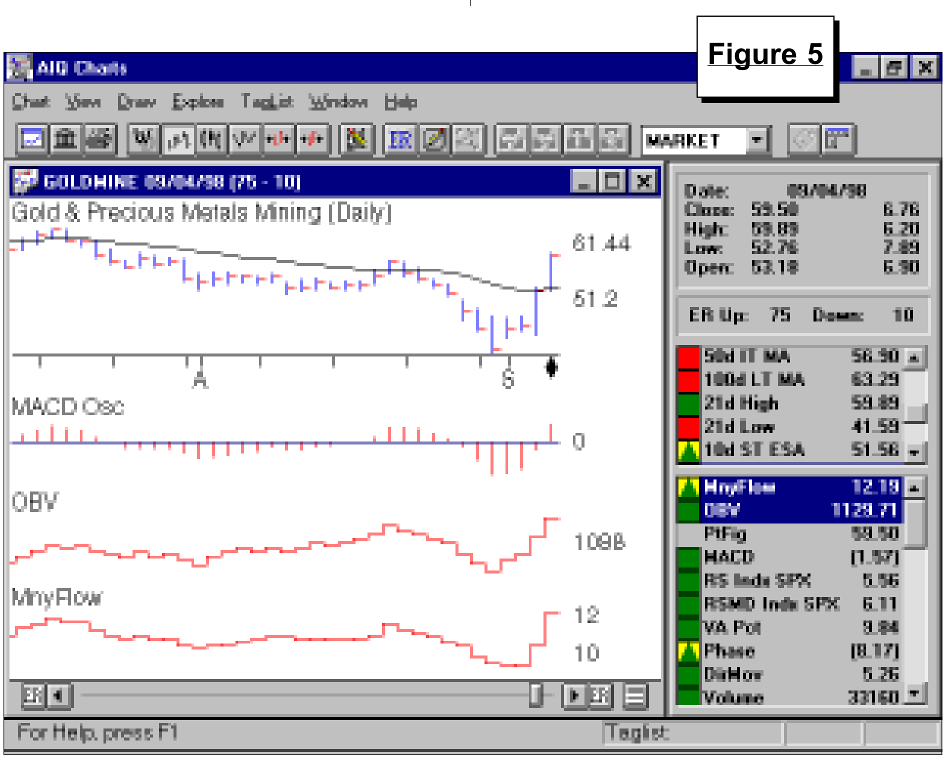
The second column on the Group Analysis report is the Delta Trend Score (DTS), which is the rate of change in the TS. Depending on whether you prefer to buy into strength or enter near the lows, you will want to focus on either the TS or the DTS readings.



Buying After Weakness

To identify a group whose indicators have been weak but are beginning to show signs of strength, look for a high DTS score relative to the other groups. DTS looks at the rate of change in the TS and is very short term in nature. Since high DTS scores are the first indication of new strength, buying high DTS groups can get you in early but you must also be aware of false signals.

What is a high score one day may not be a high score the next so it is important to scan through the DTS column to see what constitutes a high score. The groups with high DTS scores will typically appear in the lower half of the ranking. The groups near the top of the ranking already have strong indicators so the rate of change in the indicators is typically close to zero.



Buying Into Strength

What is high can go higher. Buying into strength is a strategy followed by growth investors. In this strategy, you want to focus on groups near the top of the ranking. These groups have the strongest indicators and are showing signs of accumulation so it is unlikely that they are in a

Group Analysis continued on page 8

GROUP ANALYSIS *continued . . .*

topping process.

"The trend is your friend" is a motto followed by growth investors. Therefore, with this strategy you want to plot the top ranked groups making sure that they are in an overall uptrend. Those that are near the top of the ranking and are in an overall uptrend pass the test.

Instead of charting the groups to determine their overall trend, one could also use the weekly Group Analysis report. Those that are near the top of the weekly Group Analysis report are typically in stable uptrends or are at least stronger than the other groups. Therefore, the attractive groups are those that are near the top of both the daily and weekly Group Analysis reports.

Combination Strategy

There is a very effective strategy which combines the elements of the two strategies discussed above. In this case, look for groups that are near the top of the ranking but also have a positive Delta Trend Score value. The higher the DTS relative to the other groups the better. Since the groups are near the top of the ranking, we know that their indicators are strong. Not only are they strong but the positive DTS value implies that they are still improving.

In **Figure 4** we see the Group Analysis report for September 4 (this is a preview of how reports will look in the TradingExpert Pro package). This report is showing the groups near the top of the ranking. Of those groups, a few have DTS readings above 100. Most of these groups are either gold or oil related. These are the groups that we'll want to concentrate on in our analysis.

Gold & Precious Metals Mining is the group that is near the top of the report with the highest DTS reading. In **Figure 5** we see why. This group has been weak but over the last two trading sessions it has staged a strong advance and has closed near its daily highs. Its indicators are increasing as well, which is why the DTS score is so high. Its MACD Osc has just turned positive and the Money Flow and On Balance Volume indicators are increasing fast. In addition to the high TS and DTS values which reflect recent activity, the group's indicators are moving higher over the recent time horizon.

The industry group capabilities in TradingExpert are much more powerful than any other package. If you are looking for an edge, industry group rotation should be incorporated into your analysis.

For those who want more information and more examples of how to use the industry group analysis capabilities in TradingExpert, a training video titled Advanced Group Analysis is available. Call 800-332-2999 for more information. ■

*David Vomund publishes VIS Alert, a weekly investment newsletter. For a sample copy go to **www.visalert.com** or call (702) 831-1544.*

STOCK DATA MAINTENANCE

The following table shows large dividends:

Stock	Ticker	Split/Div.	Approx. Date
Parkvale Financial	PVSA	5:4	10/15/98
Southwest Water	SWWC	5:5	10/21/98
Cardinal Health	CAH	3:2	11/02/98
S&T Bancorp	STBA	2:1	11/03/98

Trading Suspended:

Bay Networks (BAY), Broderbund Software Inc. (BROD), Camco Int'l (CAM), DSC Communications (DIGI), John Alden Financial (JA), MCI Communications (MCIC), Molecular Dynamics (MDYN), Trans Financial Inc. (TRFI), Viking Office Products Inc. (VKNG), Westbridge Capital (WBC)

Name/Ticker Changes:

Central Maine Power (CTP) to CMP Group Inc. (CTP)
Consolidated Capital Corp (BUYR) to Building One Services Corp. (BOSS)
EVI Weatherford Inc. (EVI) to Weatherford International Inc. (WFT)
Fabri-Centers of America (FCA-A) to Jo-Ann Stores Inc. (JASA)
Gartner Group Inc. (GART) to Gartner Group Inc. (IT)
Haverty Furniture (HAVT) to Haverty Furniture (HVT)
Lyondell Petrochemical (LYO) to Lyondell Chemical Co. (LYO)
Medicis Pharmaceutical (MDRX) to Medicis Pharmaceutical Corp (MEP)