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Feature

Sections

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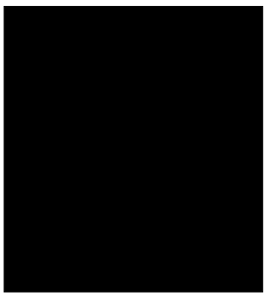
AIQ Incorporated
David Vomund, Chief Analyst
P.O. Box 7530
Incline Village, Nevada 89452

STOCK ANALYSIS

TESTING THE AIQ SYSTEM – RESULTS BUILD CONFIDENCE

By David Vomund



DAVID VOMUND

There are several characteristics of successful investors: they have a system, they have a trading process which utilizes the system, and they have an emotional makeup that allows them to follow their process. The trading process is unique to every individual but the system is the same for all *Opening Bell* readers—the system is the AIQ software. At the heart of the AIQ software are the Expert Ratings.

A system is only effective if it works well and the investor has confidence that it works well. We've just completed a study that tests the effectiveness of the AIQ system. The results should build your confidence.

> ***"Combining the market timing and stock timing Expert Ratings proved to be very effective, especially in 1994 which was a very tough year for investing."***

The test we ran is very similar to one that was published in our May 1992 issue of the *Opening Bell*. The test is simple. Using a database of the stocks that currently make up the S&P 500 Index, we ran a Weighted Action List every time there was a market buy signal (an Expert Rating of 95 or greater). Only the first signal in a string of buy signals was used. The top five stocks in the Weighted Action List with buy signals were purchased and held until a market sell signal was registered, at which time all positions were moved to cash. Only stocks over $10 were purchased.

To obtain percentage return figures, we made the following assumptions:

- The portfolio started with $25,000 in January, 1992.
- All profits/losses were reinvested in the next block of trading with each of the five stocks receiving an equal amount of capital.

Stock Analysis continued on page 2

STOCK ANALYSIS *continued . . .*

Table 1

AIQ Performance Study
1992 through 1994

Entry Date	Exit Date	S&P500 % Change	Stocks % Change	Portfolio Holdings (Stock Symbols)
12/31/91	02/24/92	-1.16	6.13	SHN, PRD, NT, SVU, VO
04/10/92	05/15/92	1.44	-1.70	NEC, BKB, KBH, OCF, ONE
05/29/92	06/05/92	-0.45	0.35	PBY, GD, VAT, DNF, CEN
06/22/92	07/20/92	2.57	4.74	MER, WHR, DJ, CMCSK, MD
07/27/92	08/06/92	2.20	5.09	BDK, KBH, VAT, DD, ROAD
08/14/92	09/08/92	-1.30	-1.36	MEL, IAD, PH, USBC, ROAD
09/10/92	09/22/92	-0.67	1.02	NSM, MEL, FLT, OM I
09/28/92	12/14/92	3.89	8.86	ENE, STI, IAD, TA, ONE
12/18/92	01/07/93	-2.39	0.96	SFA, TA, U, MDR, JCP
01/12/93	02/16/93	31.08	3.86	CEN, I, MER, CL, PNC
07/06/93	10/22/93	4.95	12.38	PET, CMCSK, CHA, NSI, GAS
12/17/93	02/04/94	0.74	8.09	AMD, UIS, FG, NSM, TWX
02/28/94	03/24/94	-0.61	5.80	SFA, TEK, CMZ, AHM, MII
03/28/94	06/20/94	-0.99	2.45	ML, ASN, KRB, NSC, PEL
06/27/94	08/05/94	2.17	9.06	MU, TCOMA, TWX, CBS, PH
08/23/94	09/19/94	1.36	14.78	HM, PDG, FRM, MIL, CNF
09/26/94	09/29/94	0.31	0.59	TDM, KR, MD, BDK, MAR
10/10/94	10/20/94	1.67	4.03	MYG, SFA, AL, MD, CSC
11/07/94	12/30/94	-0.82	-2.63	CCB, BYM, DGN, GWF, KBH

Table 1 gives a more detailed listing of the results. The entry and exit dates correspond to AIQ's market timing signals. The third column lists what the S&P 500 Index did during each bullish time period, while the fourth column shows the improvement seen by purchasing the top five stocks on the Weighted Action List. The final column lists the portfolio holdings. Again, the entry and exit prices for both the S&P 500 Index and the stock holdings are the opening price on the day following the market signal. On average, the stocks selected by AIQ outperformed the S&P 500 by 2% during each of the bullish time periods.

This study is meant to test the effectiveness of the Expert Ratings rather than to develop a trading strategy. The benefits of industry group analysis have been ignored. Also protective stops were not used. Any trading strategy should utilize some form of stop-loss protection.

From this study, however, we are able to see that the AIQ system is working well and our confidence in its ability to call market and stock movements is reinforced. We will continue some mechanical tests on the system and report the findings in future *Opening Bell* newsletters.

If you would like a more detailed trade-by-trade listing of this test, please give us a call at (800) 332-2999. ■

- The buy and sell points on the stocks were the opening price the day after the market Expert Rating.

The results do not take into account commissions (which vary depending on the amount invested and the commission schedule) or slippage. Also not factored in is the interest received on funds held in a money market account and the dividends received from the stock holdings.

Figure 1 (next page) shows the impressive results. Combining the market timing and stock timing Expert Ratings proved to be very effective, especially in 1994 which was a very tough year for investing. Just as impressive is the fact that this test began in 1992, right after the release of TradingExpert. There was no back fitting or optimizing involved.

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Opening Bell Monthly
G.R. Barbor, Editor
P.O. Box 7530
Incline Village, NV 89452

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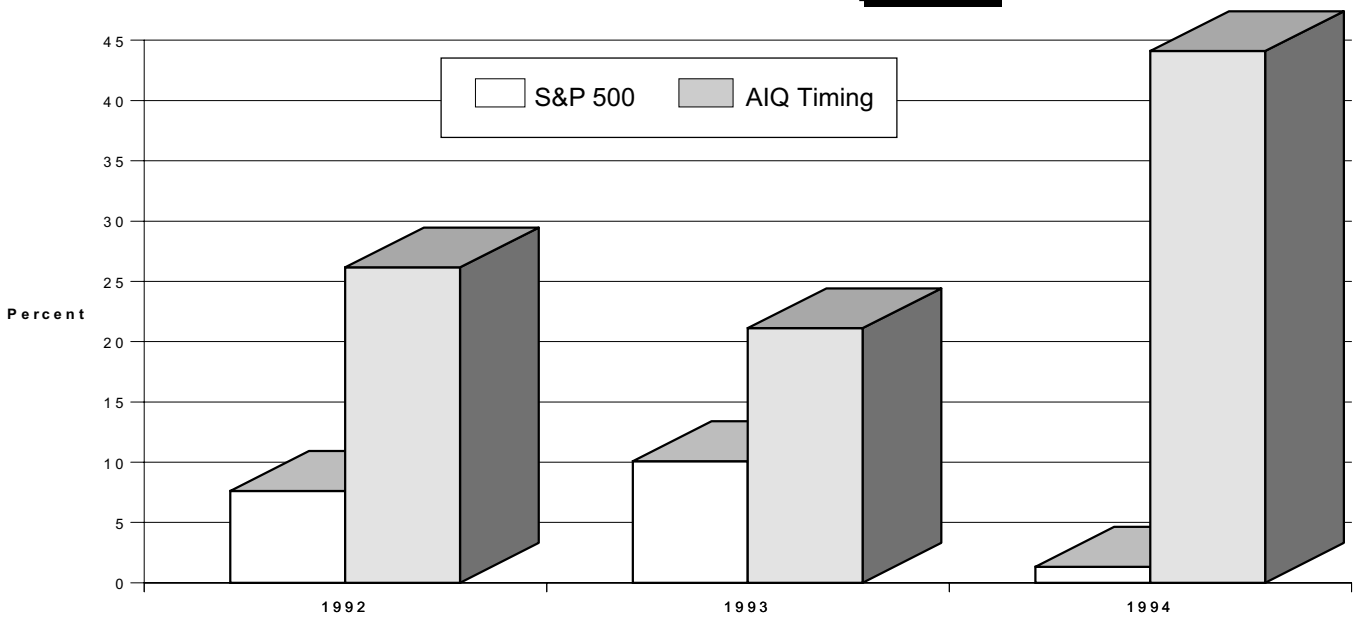
STOCK ANALYSIS *continued . . .*

Figure 1



STOCK DATA MAINTENANCE

The following table shows past and future stock splits and large dividends:

Stock	Ticker	Split/Div.	Approx. Date	Stock	Ticker	Split/Div.	Approx. Date
Sanderson Farms	SAFM	3:2	02/23/95	Andrew Corp	ANDW	3:2	03/09/95
Harleysville Svgs.	HARL	3:2	02/23/95	Daig Corp	DAIG	2:1	03/09/95
Oracle Systems	ORCL	3:2	02/23/95	Callaway Golf	ELY	2:1	03/13/95
Varsity Spirit	VARS	3:2	02/27/95	Scientific Games	SGIH	2:1	03/14/95
Mid Iowa Financial	MIFC	2:1	02/27/95	Titan Wheel Int'l	TWII	3:2	03/16/95
ADC Telecom.	ADCT	2:1	03/01/95	Dynatech Corp	DYTC	2:1	03/16/95
Kent Electronics	KNT	3:2	03/02/95	Meredith Corp	MDP	2:1	03/17/95
AMP Inc.	AMP	2:1	03/02/95	Respironics Inc.	RESP	2:1	03/20/95
Schwab (Charles)	SCH	3:2	03/02/95	National Data Corp.	NDC	3:2	03/21/95
Frozen Food Exp.	FFEX	5:4	03/06/95	Hudson Foods	HFI	3:2	03/28/95
Sierra On Line	SIER	2:1	03/06/95	Fastenal Corp	FAST	2:1	03/30/95

Ticker Changes:

American Barrick Res. (ABX)	to	Barrick Gold Corp (ABX)
Ashland Oil (ASH)	to	Ashland Inc. (ASH)
Isomedix (ISMX)	to	Isomedix (ISO)
NWNL Cos (NWN)	to	Reliastar Financial (RLR)
State Street Boston (STBK)	to	State Street Boston (STT)

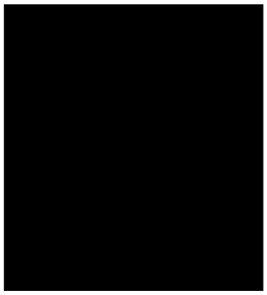
Trading Suspended:

Chemical Waste Mgmt. (CHW)	Metropolitan Financial (MFC)	NBB Bancorp (NBB)
Offshore Pipelines (OFP)	Reliance Electric (REE)	USLICO Corp (USC)

OPTION ANALYSIS

CREATING AN OEX SURROGATE GROUP GIVES YOU AN ADVANTAGE

By Dean Kasparian



DEAN KASPARIAN

TradingExpert's group/sector feature offers us a powerful and flexible trading tool. Most people use this feature to keep apprised of industry group rotation— to see which groups are rotating into favor and which ones are rotating out of favor. The group/sector feature can also be used to help improve sector fund trading as discussed in the June 1994 *Opening Bell*. In this article, we will discuss how the industry group capability can be used to help in index option analysis.

Group Basics

Before we discuss the OEX surrogate group, let's first take a closer look at the mechanics of AIQ's group/sector feature. AIQ's definition of a sector is a collection of groups, calculated as an index, and a group is defined as an index of particular stocks. In calculating a group index, the group's first day of price data is assigned a value of $100. After that, the group increases or decreases in value depending on the performance of the stocks that make up the group. Each day, the average percentage price change for all stocks in the group is computed. This average is then applied to yesterday's group index value. An example will make this easier to understand.

Let's look at the Domestic Auto Group which is comprised of Ford (F) , General Motors (GM) and Chrysler (C). To continue the example, today was a strong day in the Domestic Auto Group as F was up 2.5%, GM up 5% and C up 7.5%. This gives us an average closing percentage gain of 5%.

Yesterday's group price is then increased by this percentage to get today's group value. If the Domestic Auto Group was $100 yesterday, today it would increase to $105 (1.05 x 100=105). Since everything is calculated in percentage terms, the movement in a $10 stock is just as important as the movement in an $80 stock.

"By creating a surrogate group for the OEX, we have a distinct advantage in that both price and volume statistics can be used."

This same procedure is followed for the daily high, low, and opening prices as well. The group's volume is simply the sum of all the volumes of the individual stocks.

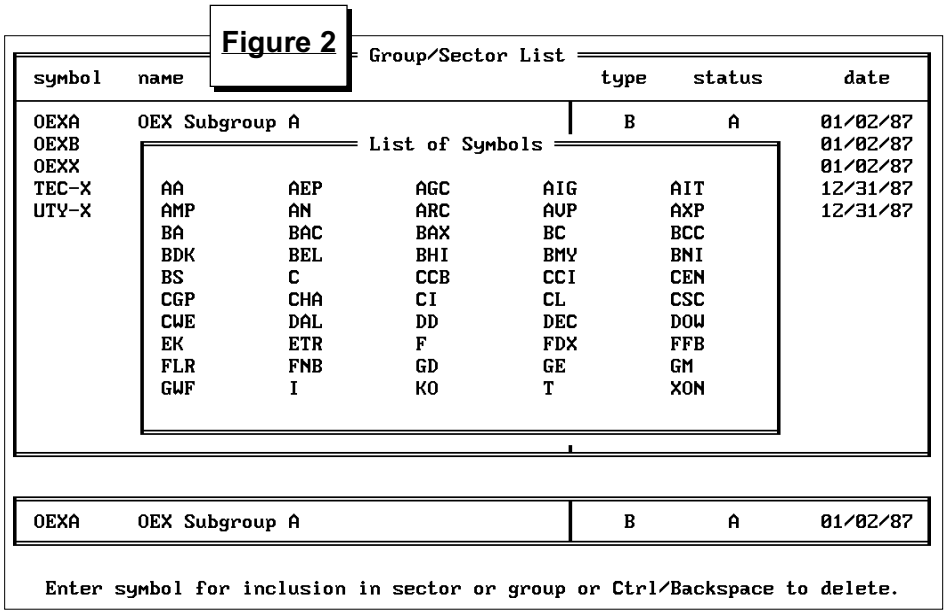
With this type of calculation, all the stocks in the group are equally weighted. Groups are calculated first and then sectors are calculated based on the performance of the individual groups.

OEX Surrogate Group

All of us are looking for an advantage over the next guy, especially when trading options. Most index option traders trade the S&P 500 or the S&P 100 (the OEX). While there is an overall volume figure for all the stocks on the New York Stock Exchange, there are no volume statistics reported for these individual indexes. When you plot the OEX on the Ticker Plot screen, only price-based indicators appear. By creating a surrogate group for the OEX, we have a distinct advantage in that both price and volume statistics can be used.

To create an OEX Surrogate Group, we could build a group based on all 100 stocks that make up the index or we could simply take the top 20 stocks based on capitalization. (For my work, I use all 100 stocks in my OEX group calculation.) We need to first overcome one obstacle: AIQ has a limit of 50

Figure 2



OPTION ANALYSIS *continued . . .*

stocks per group. Luckily, version 3.0 of TradingExpert added the capability of creating subgroups. That is, I create two groups of 50 stocks and then place the two groups into a parent group. That way all 100 stocks are used in the calculation.

Figures 2 and 3 show the input for the two subgroups (labeled OEXA and OEXB). Notice the "type" field is set to "B" for the subgroups. The 100 ticker symbols are then input into OEXA and OEXB. The parent group (**Figure 4)** is named OEXX. Its "type" field is set to "A" which identifies it as a parent group. OEX is calculated based on the price activity of OEXA and OEXB. (For more detailed information on industry group creation, see the TradingExpert manual page V-22).

To calculate the groups, go to "File Maintenance" then "Compute Group/ Sector Indices." Type OEXX for the symbol and answer yes to "update from end of file."

The resulting OEX Surrogate Group is seen in **Figure 5**. Its price activity is very similar to the actual OEX index and MatchMaker shows a high correlation between the OEX and its surrogate group (correlation of 870 where 1000 is perfect correlation).

Below the chart of the OEX Surrogate Group shown in Figure 5 are several indicators that require volume

Figure 3

Group/Sector List

symbol	name	type	status	date
OEXA	OEX Subgroup A	B	A	01/02/87
OEXB				01/02/87
OEXX				01/02/87
TEC-X				12/31/87
UTY-X				12/31/87

List of Symbols

DIS	HAL	HM	HNZ	HON
HRS	HWP	IBM	IFF	INTC
IP	ITT	JNJ	KM	LTD
MA	MCD	MCIC	MER	MKG
MMM	MOB	MRK	MTC	NSC
NSM	NT	OXY	PEP	PRD
PRI	RAL	ROK	RTN	S
SKY	SLB	SO	TAN	TDY
TEK	TOY	TXN	UIS	UPJ
UTX	WMB	WMT	WY	XRX

OEXB	OEX Subgroup B	B	A	01/02/87

Enter symbol for inclusion in sector or group or Ctrl/Backspace to delete.

in their calculation. The date is highlighted to December 16, which is the date when we became convinced that the rally would be stronger than the rallies earlier in the year. AIQ gave a market buy signal on November 28 and the OEX had rallied since that time. Several price-based indicators had turned positive but there wasn't overwhelming evidence that the rally would continue. Examination of the volume indicators for the OEX surrogate group, however, pointed towards higher prices.

Examining the indicators in detail, we see that Money Flow rose sharply on December 16 and had broken its three month downtrend. There was also a positive divergence in this indicator as the OEX surrogate group fell to a new low in early December but Money Flow rallied over that time period. The same pattern also took place in On Balance Volume. These two indicators attempt to measure what "smart money" is doing and they were clearly saying smart money was buying.

Volume Accumulation Percentage and On Balance Volume Percentage had both just turned positive after remaining in negative territory for several months, and the Positive Volume Index moved above its signal line.

Probably the most bullish indicator was Split Volume Moving Average (SVMA) which is equivalent to a moving average of On Balance Volume. This indicator also shows the positive divergence in the November to December time period. Even more impressive, the SVMA was at a three month high indicating that volume was heavy on days when the OEX increased.

In my personal option analysis, I keep a close eye on the price and volume indicators from my surrogate group. As for Expert Ratings, I place more emphasis on AIQ's market timing Expert Rating than I do the Expert Rating from the surrogate group. The

Option Analysis continued on page 6

Figure 4

Group/Sector List

symbol	name	type	status	date
OEXX	OEX Sector	A	A	01/02/87
TEC-X				12/31/87
UTY-X				12/31/87

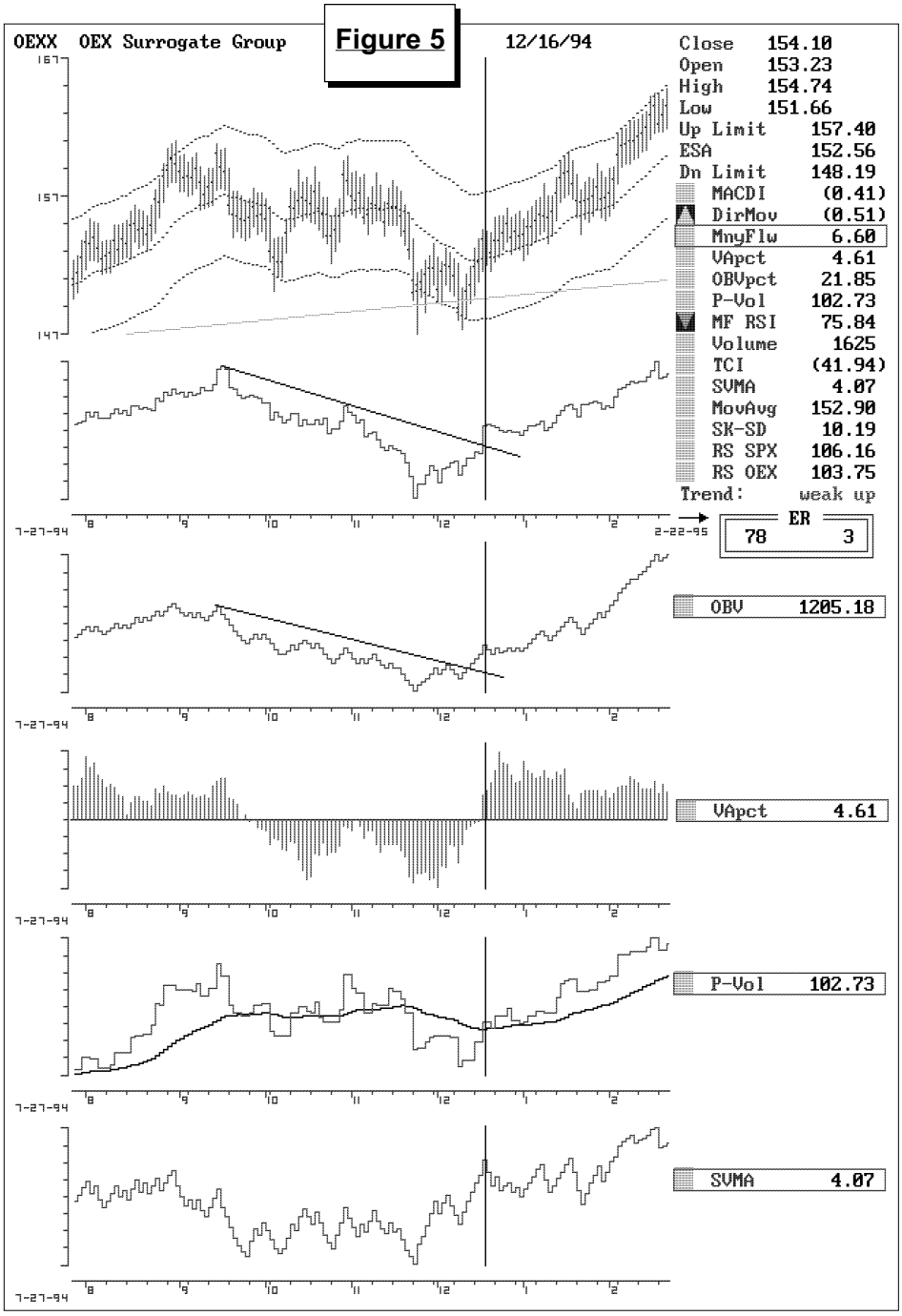
List of Symbols

OEXA OEXB

OEXX	OEX Surrogate Group	A	A	01/02/87

Enter symbol for inclusion in sector or group or Ctrl/Backspace to delete.

OPTION ANALYSIS *continued . . .*



Expert Rating from the Market Plot screen has more information to work from (i.e., market breadth, up and down volume, and new highs/new lows) which gives the market Expert Ratings improved accuracy.

From our analysis, we can see how the ability to examine volume statistics for individual market indexes helps to paint a clearer picture as to the bullishness/bearishness of the underlying index. Index option traders are usually restricted to price-based indicators but our surrogate group analysis allows us to see volume indicators based only on the stocks that make up the OEX index.

This analysis was based on the OEX but the same process can be performed on other indexes as well. In upcoming issues,we will examine other elements of option trading such as the importance of volatility and how to best apply AIQ's option module. ■

MARKET REVIEW

AIQ's market timing model is on a roll. It gave frequent but accurate signals in last year's choppy market. Now that the market is in a rallying phase, the model has kept us in the market and has not registered a sell signal since November 1. The last buy signal came on November 28.

In early February, the Fed raised short term rates for the seventh time in twelve months. This is normally thought of as bearish but Wall Street is betting that this was the last increase and staged a strong rally (do people really try to time the market based on fundamentals?). At that time, the market had already rallied 5% from its lows but there were no signs of a top. On February 3, 82% of the stocks giving confirmed signals were on the buy side.

Near the end of February, the Dow and the S&P 500 had moved to new all-time highs and the 4000 level was broken. Similar to last year's action, large company stocks are leading the broader markets. While the S&P 500 has rallied 6% this year, the Russell 2000 is up only 2%.

Another factor demonstrating the narrow performance of the current rally is seen in the number of stocks hitting news highs relative to those hitting new lows. Consider this, there were 217 new highs and only 2 new lows when the Dow first rose above the 3000 level back in 1991. On February 24, with the Dow above 4000, there were 56 stocks reaching news highs and 49 hitting new lows. In this environment, proper stock and group selection is critical. ■ D.V

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TOOLS OF THE TRADE

THE RSI INDICATOR – TWO APPROACHES

By David Vomund

A change was made to the RSI indicator in TradingExpert's 3.0 version that very few people know about. AIQ now charts two versions of the RSI: the RSI that has been a part of AIQ's software since 1987 and the RSI as calculated by its developer, Welles Wilder. Before we discuss the differences, we'll first give you a background on the indicator.

RSI stands for Relative Strength Index, but this is a bit of a misnomer in that the indicator has nothing to do with Relative Strength, which measures the performance of a security relative to other securities. Instead, the RSI indicator is a momentum indicator and the only data needed for its calculation is the closing price of the security under study.

At the time of the development of the RSI, most people looked at today's price of a security divided by the price x days ago to measure momentum. Mr. Wilder saw two problems with this calculation. First, this type of indicator can become erratic simply because of the numbers that are being dropped off. Second, this type of indicator can go up for quite some time without giving a clue as to what is really a high value. A constant range of values was needed for comparison purposes. RSI solves these problems by smoothing its values and normalizing all values to a range of between 0 and 100.

The actual formula is calculated as follows:

RSI= 100-{100/(1+RS)}

where RS = Average of x day's closing prices on up days/average of x day's closing prices during down days.

With this formula in mind, the only difference between Wilder's RSI and AIQ's RSI is how the averages for the up and down days are calculated. In AIQ's calculation, exponential moving averages are used whereas Wilder uses simple moving averages. It sounds like a small difference, but an examination of the resulting indicators can yield significant variations.

"In AIQ's calculation, exponential moving averages are used whereas Wilder uses simple moving averages . . . the resulting indicators can yield significant variations."

Wilder's RSI is much more volatile than AIQ's RSI. To partially offset this, the default value for the time period represented by the average was lowered from 14 (which was the number of days Wilder originally used) to 7 for the AIQ version of RSI.

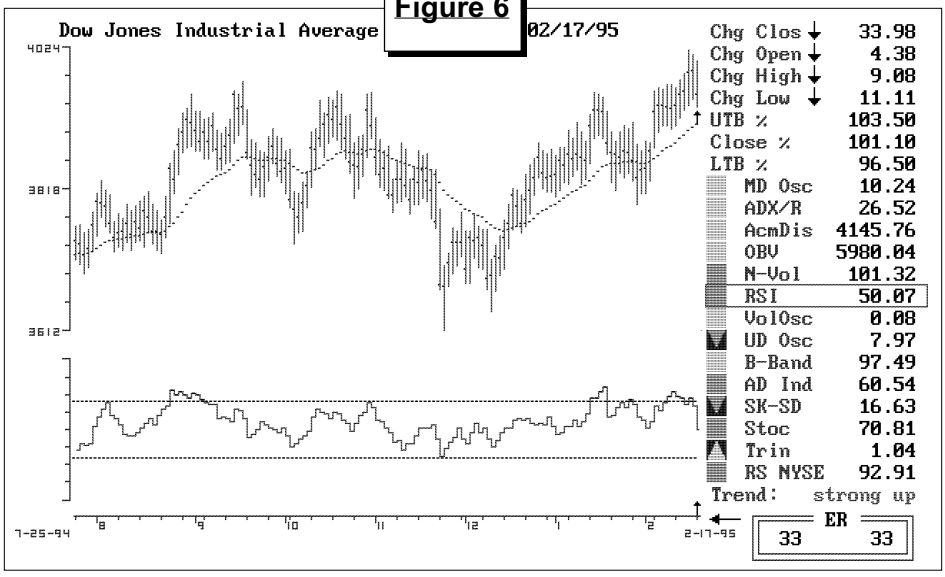
To see the two RSI graphs on your AIQ software, highlight the RSI indicator. By default, the plot will show AIQ's calculation of the RSI. To see Wilder's RSI, press the **Ctrl** and **Enter** keys at the same time. When asked if you want to use AIQ's RSI, type '**N**.' Press the **Enter** key to accept Wilder's 14 average number of days, and Wilder's RSI graph will be displayed.

Figure 6 shows a Market Plot of the Dow Industrials along with AIQ's version of the RSI. The most simple interpretation of the RSI is: when its value moves above the 70 level the market (or security) is considered overbought and due for a correction. When the RSI value falls below 30, the market (or security) is oversold and will likely stage a rally. The two horizontal lines on AIQ's RSI chart represent the 30 (lower line) and 70 (upper line) levels.

Notice in Figure 6 how well AIQ's RSI called recent market moves. In late August, the indicator rose above the

Tools of the Trade continued on page 8

Figure 6



TOOLS OF THE TRADE *continued . . .*

top band showing an overbought market. The actual sell signal occurs when the indicator falls below the 70 level. The indicator fell to the 30 line in November, then gave another sell signal in mid-January and another in early February.

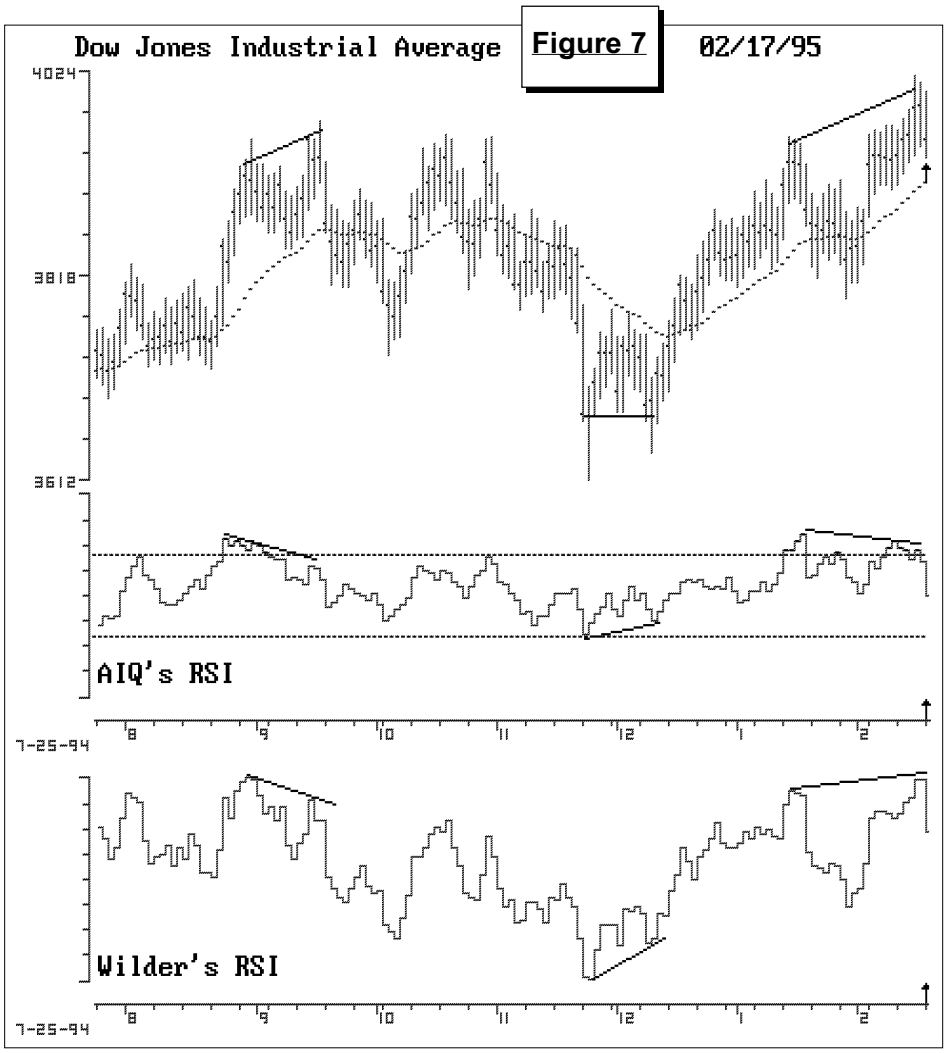
This simple interpretation of the indicator works well for non-trending securities but performs poorly for trending securities. A stock in a strong uptrend will give sell signals all the way up.

With this simple analysis (using only the 70 and 30 levels), I prefer Wilder's RSI. As an example, in 1994 the Dow rose 80 points. AIQ's RSI gave two buy signals for the year (4/5 and 6/2). Remember, a buy signal given when the value rises above the 30 level. By investing in the Dow during these times and selling when the indicator gave a sell, you would have seen a 132 point gain in the Dow. The same analysis using Wilder's formula also saw two buy signals (4/5 and 11/25), but the resulting gain in Dow points was increased to an impressive 352 points.

This is the simplest interpretation of the RSI. Most technicians prefer to see divergences form on this indicator before a signal is acted upon. In this case, it is useful to look at both RSI formulas. If both calculations are showing divergences, then the signal carries more significance.

Let's look at the Market Plot in **Figure 7.** This Market Plot displays both RSI formulas. Note that in this current version of TradingExpert, the horizontal lines representing the 70 and 30 values are not shown on the Wilder's RSI plot.

A negative divergence occurs when the RSI value rises above the 70 level but then falls as the market moves higher. A clear divergence is seen in the August to September time period. The Dow rose during this time period but the RSI values were falling and making a pattern of lower highs (see trendlines in Figure 7). Both the AIQ and Wilder versions of the indicator showed negative divergences at the same time, thus making the signal more significant.



A positive divergence can be seen in the November to December time period. The Dow was essentially unchanged but the RSI values were increasing. Once again, both RSI versions showed the positive divergence, making the signal more powerful. (The Wilder RSI gave a stronger signal since the indicator fell well below the 30 level).

The AIQ and Wilder versions of the RSI indicator are not always in agreement, however. Both versions have recently given sell signals but their interpretations are not the same. AIQ's RSI is showing a negative divergence — the indicator fell from mid-January to mid-February even as the Dow rallied. Wilder's RSI, while giving a sell signal, is above its mid-January level. This, therefore, is a weaker sell signal since only one of the two versions is showing a negative divergence.

The analysis discussed in this article was performed on the overall market, but the same type of analysis can be performed on individual stocks or other indices. We used the default settings for the indicator but these can be reduced if you would like the indicator to give a shorter term picture. Most people use the default settings, but short term traders often change Wilder's setting from 14 to 9 and then use 80 and 20 as overbought and oversold levels. ■

David Vomund is publisher of two advisories for stock and sector fund investing available by mail or fax. For a free sample of the advisories, phone 702-831-1544.