

Feature

Determining Favorable Periods for Buying Equities Using Market Timing 1

Sections

S&P 500 Changes 4
 Using Real-Time Alerts 5
 Market Review 8
 Data Maintenance 8

The *Opening Bell Monthly* is a publication of AIQ Systems
 David Vomund, Chief Analyst
 P.O. Box 7530
 Incline Village, Nevada 89452

TESTING AIQ'S MARKET TIMING - PART II

INCORPORATING MARKET TIMING IN EQUITY BUYING YIELDS 'BETTER RESULTS'

By Paul Luebbe

This is the second of two articles by AIQ power user Paul Luebbe who used the Expert Design Studio to create backtests of the AIQ market timing model. Mr. Luebbe can be reached at luebbe@erols.com.

In last month's *Opening Bell*, we discussed how market timing can be used to outperform the market by trading securities based on the S&P 500. The other major use of market timing is to determine

favorable periods for buying equities. While we did some of this by buying index-based securities in the playing-the-market tests in last month's

article, I put the idea to a further test by incorporating market timing into some EDS routines that have been previously published in the *Opening Bell Monthly*. In April 1998, David Vomund published a stock-buying EDS routine built upon a few indicator divergences. Also, in June 1998, I contributed an EDS model and

article about buying OEX call options. Both of these files come with TradingExpert Pro and are also available on the AIQ website. The filenames are *Aprilobm* and *JuneOBM*, respectively.

Market Timing Model

For the sake of simplicity, the market timing model that I've used for these

tests looks only at ERs greater than or equal to 95 and requires no confirmation on entry or exit. The EDS code for this model is shown in

"The immediate conclusion that can be drawn from this is that, once again, market timing improves the performance of equity systems by finding favorable periods to initiate trades"

Figure 1. The EDS model referenced in last month's article, used in the no-confirmation mode, will produce exactly the same trades as this model. However, because I know that I don't need to look for confirmations, I was able to make the code more efficient. You can download this model at AIQ's web page,

www.aiq.com. Click on *Educational Products*, then *Opening Bell Monthly*.

In Figure 1, the two values *MTUpSig* and *MTDnSig* are the dates of the most recent Up and Down ERs respectively within the last 200 market days. The two values *MtUpPeriods* and *MtDnPeriods*, which are derived from the two previously determined dates, are the number of periods ago that these signals occurred. Notice that the same statements that determine these values also reset the system date back to the Report Date.

The rule *go* is true if *MtUpPeriods* < *MtDnPeriods*, meaning that the UP ER occurred more recently than the Down ER; thus defining the bullish condition in the market. Finally, the rule *BullMarket* uses the *TickerRule* function to apply the *go* rule to the DJIA market ticker. (The *TickerRule* function evaluates a specified rule for a specified ticker.) This last step is important so that in other EDS programs we can apply the market timing test against the DJIA market, while applying other EDS rules to the tickers that we would consider purchasing.

Equity Model Analysis

To run my favorable buying period tests, I copied the market timing code into the two EDS files that I wanted to test (see opening paragraph), and added the *BullMarket* rule

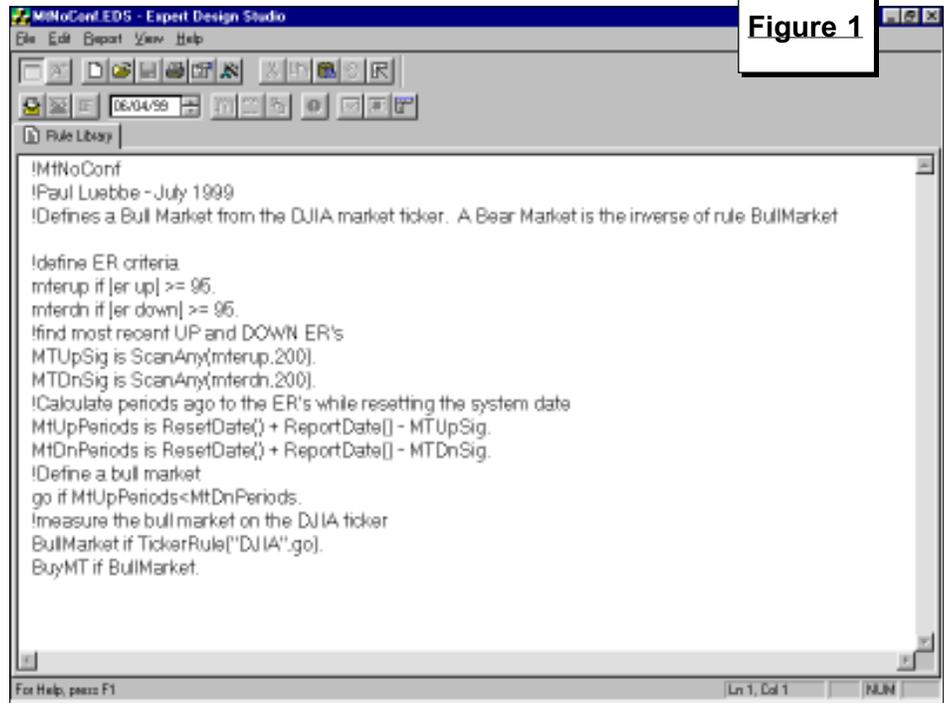


Figure 1

into the buy condition with the *and* operator.

April, 1998 EDS Model

Note: On my TradingExpert Pro distribution CD, the *Aprilobm* routine varied slightly from the actual article; the file added the *goodERmarket* rule into the buy condition. This rule doesn't do anything, and actually prohibits any of the stock tickers from passing the *allworks* rule. I don't know why it was added, so I removed the condition to make the EDS file agree with what was originally published in the newsletter. **Figure 2** contains the code for the *Aprilobm* routine.

By adding in the market timing code from Figure 1 and the *BullMarket* condition, the buy rule now reads:

allworks if volume and MA and OBVPctDIVup and FupPRICEdn and RSI and MACD and MFRSI and BullMarket.

I ran this model over an updated time range (1/2/96 - 6/30/99). It should be noted that this routine is run against a large database of stocks. David Vomund originally ran it against his database of 2200 tickers; I

ran it against my database of 3600 tickers. Depending on what you have in your database, your results will vary. Just as in the original article, I ran the test with a 90% principle protect, and 90% profit protect above 5%.

The results are shown in **Table 1**. As a reference, the *Aprilobm* test reported in the original publication produced a probability of 67.87%, with 389 positions, an average profit/loss of 2.66% per trade, and an EDS ROI of 54.52%, compared to an EDS SPX (buy-and-hold) ROI of 34.65%.

With the market timing condition added to the buy conditions, the results are noticeably better. This test produced a probability of 69.59%, with 319 positions, an average profit/loss of 3.29% per trade, and an EDS ROI of 69.64%. This is quite a significant improvement across all parameters.

Figure 3 shows the EDS results of this test. Out of curiosity, I ran the same test to see what would have happened if I made purchases only during bearish market periods. To do this, I replaced the *BullMarket* condition with *not BullMarket* in the *allworks*

PLEASE SEND CORRESPONDENCE TO:

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

AIQ Opening Bell Monthly does not intend to make trading recommendations, nor do we publish, keep or claim any track records. It is designed as a serious tool to aid investors in their trading decisions through the use of AIQ software and an increased familiarity with technical indicators and trading strategies. AIQ reserves the right to use or edit submissions.

For subscription information, phone 1-800-332-2999 or 1-775-831-2999.

© 1992-1999, AIQ Systems

TESTING AIQ'S MARKET TIMING - PART II *continued* . . .

buy condition and re-ran the test. In this scenario, the model returned a probability of 55.26% across 76 trades. However, the average profit/loss per trade was -1.07% with an EDS ROI of -18.33%. Clearly, incorporating market timing into this model kept us out of money-losing trades.

June, 1998 EDS Model

Turning to the *JuneOBM* EDS file, I ran the same series of tests. I ran the test against my OEX market ticker, and across an updated time frame (1/3/94 - 6/30/99). As a reference, the model, as published last year, produced a probability of 60.61%, with 33 positions, an average profit/loss of 1.66% per trade, and an EDS ROI of 53.38%, compared to an EDS SPX (buy-and-

hold) ROI of 35.48%.

Editor's Note: For a free copy of the June 1998 Opening Bell which features Mr. Luebbe's OEX timing model, call AIQ at 800-332-2999 or send a note to AIQonline@aol.com. For instructions on creating a market ticker, see the TradingExpert Pro User Manual, page 52.)

With the market timing condition added to the buy conditions, the

results are, again, noticeably better. This test produced a probability of 69.57%, with 23 trades, an average profit/loss of 2.31%, and an EDS ROI of 63.20%. When looking to trade OEX options, the increased probability and improved average profit/loss results that come with market timing are certainly welcomed. Again, I re-ran the test to see what positions would have been taken during bearish market periods. In this scenario, the model returned a probability of 50.00% across 14 trades, with a dismal average profit/loss of 0.38% and EDS ROI of 18.71%. These are certainly trades that I would rather avoid, and the market timing model allows me to do so.

A Trend-Following Model

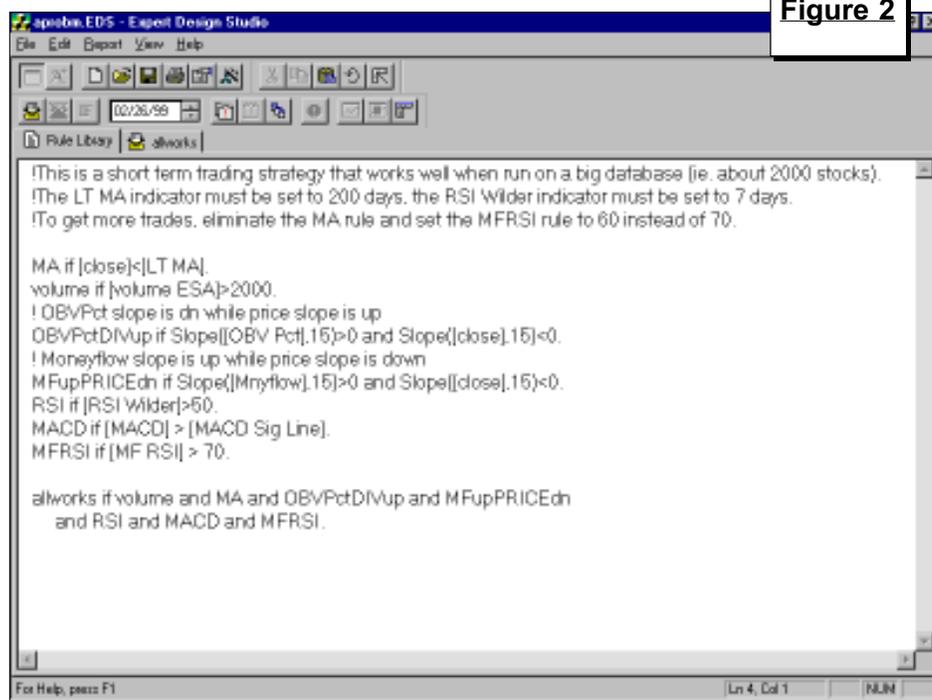
Through these two models, we have shown that market timing can definitely improve performance in equity systems. However, both of these models are bottom-fishing or reversal models. Another major category of equity models is that of trend-following. Because a trend-following model has not been published recently in the *Opening Bell Monthly*, I built a simple system to test whether market timing can improve the performance of such systems.

Table 1

Market Timing - Favorable Buying Period Analysis

Program	Entry	Prob %	Positions	Avg. P/L	EDS ROI	EDS SPX ROI
Aprilobm	as in article	67.87%	389	2.66%	54.52%	34.65%
	and BullMarket	69.59%	319	3.29%	69.64%	34.65%
	and not BullMarket	55.26%	76	-1.07%	-18.33%	34.65%
JuneOBM	as in article	60.61%	33	1.66%	53.38%	35.48%
	and BullMarket	69.57%	23	2.31%	63.20%	35.48%
	and not BullMarket	50.00%	14	0.38%	18.87%	35.48%
MAxOver	without market timing	47.86%	5529	2.47%	23.93%	27.41%
	and BullMarket	49.44%	3847	3.02%	27.51%	27.41%
	and not BullMarket	44.43%	1749	1.25%	14.24%	27.41%

Figure 2



Market Timing continued on page 4

The system is simply to buy the stock when the short term moving average crosses from below to above the intermediate term moving average, and to sell the stock when the short term moving average crosses from above to below the intermediate term moving average. The EDS code for this test is:

Xup if Val([ST MA],1) < Val([IT MA],1) and [ST MA] > [IT MA].

Xdown if Val([ST MA],1) > Val([IT MA],1) and [ST MA] < [IT MA].

BuyXover if Xup.

SellXover if Xdown.

For this test, I ran the model against my combined S&P 500/ Nasdaq 100 list over a time frame of 6/6/97 - 6/4/99. As shown in Table 1, without consideration of market timing the model had a probability of 47.86%, with over 5500 positions, an average profit/loss of 2.47% per trade, and an EDS ROI of 23.93%, compared to an EDS SPX (buy-and-hold) ROI of 27.41%. With the market timing condition added to the buy condition, the results improve, producing a probability of almost 50%, with 3847 positions, an average profit/loss of 3.02%. The EDS ROI of 27.51% is slightly above the buy-and-hold ROI of 27.41%.

I again re-ran the test to include only trades that would have been initiated during bear market conditions. As expected, the probability went down, the average profit per trade was 1.25%, and the ROI dropped significantly to 14.24%. These are trades that I would rather not take, and market timing will help to avoid them.

The immediate conclusion that can be drawn from this is that, once again, market timing improves the performance of equity systems by finding favorable periods to initiate trades - this time in a trend-following system. With over 3800 trades across two years, and an ROI that already matches the buy-and-hold ROI, we also know that we have plenty of room to add more filtering rules that will

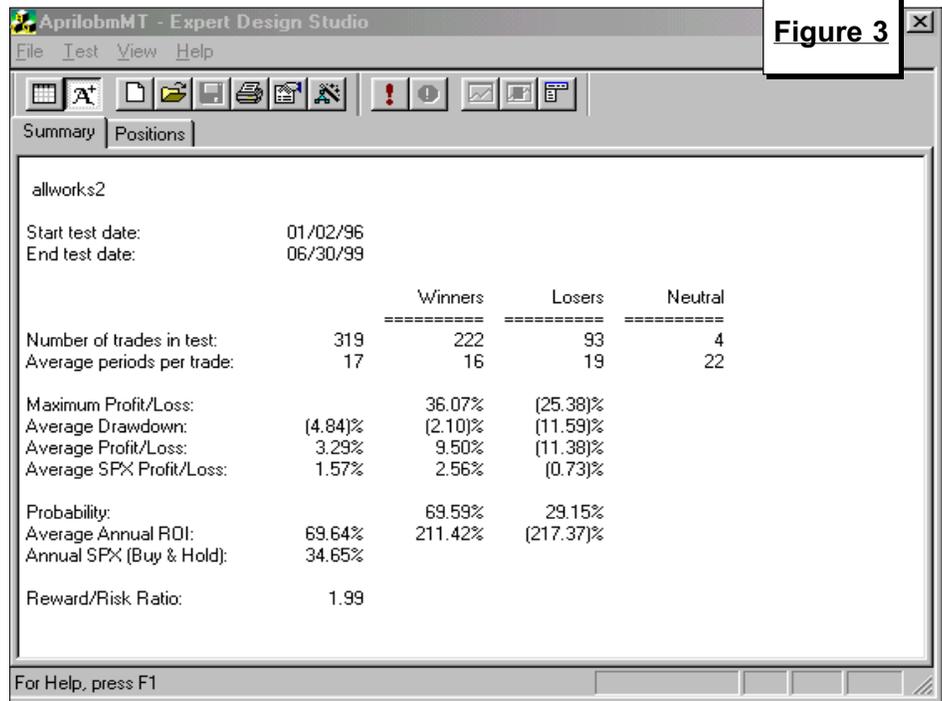


Figure 3

increase the probability, decrease the number of positions, and increase the profit/loss and ROI measurements.

Further Work

Despite the stellar returns that the no-confirmation-on-entry-or-exit model has produced (listed in last month's article), this model may not be the best market timing model for all cases. A market timing model that incorporates some confirmation on entry, exit, or both, may in some cases yield even better results than with the no-confirmation model.

As hypothetical examples, a reversal model that looks for oversold conditions on stocks may well perform better if the market timing portion waits for some sort of confirmation, such as a 1-day increase in the MACD Oscillator or a 1-day increase in the Phase on the DJIA ticker. Conversely, a model that looks for an established trend in the stock ticker might perform better without confirmation on the market timing signals.

Conclusions

Clearly, incorporating market timing into the rules of buying equity-

based securities such as stocks, mutual funds, and options can yield better results. And with EDS, this is easy to accomplish. We have shown this for reversal and trend-following systems using a simple market timing model where the bias of the market is defined by the latest market ER greater than or equal to 95 with no confirmation on entry or exit. ■

S&P 500 Changes

Tosco Corp. (TOS) replaces Mercantile Bancorp (MTL). TOS is added to the Oil & Gas-Refining & Marketing (OIL&GASR) group.

Adaptec Inc. (ADPT) replaces Fruit of the Loom (FTL). ADPT is added to the Electronics-Semiconductors (ELCTRON) group.

Pinnacle West Capital (PNW) replaces Pioneer Hi-Bred Int'l (PHB). PNW is added to the Electronic Companies (ELECTCOM) group.

REAL-TIME ALERTS

NOW YOU CAN MONITOR YOUR TICKERS USING TRADING EXPERT'S REAL-TIME ALERTS

By David Vomund

DAVID VOMUND

With the release of TradingExpert Pro, AIQ now has the ability to plot real-time charts and alert you to changing technical conditions. TradingExpert's Real-Time Alerts function, designed for short-term traders, allows users to monitor tickers with dynamically updating real-time charts.

The Alerts feature provides continuous monitoring of any number of securities. You can specify the technical conditions that you deem important, such as a price gap or heavy volume, by selecting the type of technical action that you want to look for. Then, when one of your conditions is met by any of the tickers you are monitoring, an Alert is signaled. Both visual and audible signals can be given.

For access to real-time information, connect to the internet and select the *Alerts* button from TradingExpert's Quick Launch Menu. The first time Alerts is opened, the Chart window and the Tickers panel will be empty. To add the tickers that you want to monitor, select *Tickers* from the menu bar and from the submenu choose *Add Tickers*. Multiple tickers can be entered in the dialog box by placing a semicolon in between the ticker symbols (**Figure 4**).

As an alternative, all the stocks within one of your TradingExpert lists can be added by selecting *Add tickers from List* from the *Tickers* submenu. Real-Time Charts and Alerts are run on the tickers that you have entered using these procedures.

In order for Real-Time Alerts to work properly, those with an internet connection using a standard modem should limit the ticker symbols to less

than one hundred. After entering the ticker symbols, save the file by selecting *File* from the menu bar, then *Save*.

To plot a chart, simply click on a ticker symbol in the left panel of the screen. A chart will immediately appear (**Figure 5**). All available indicators are listed in the panel to the right of the chart window. To display an indicator, check the option box next to the indicator. To remove an indicator, hold the *Control* key down and remove the check mark from the indicator box.

Nearly all attributes relating to the graph, such as changing indicator constants, changing colors, or adding grids, can be found by right-clicking on the chart.

To draw a trendline, right-click on the chart and select *Draw Attributes*. Select *Trendline*. Hold the left mouse button down to begin the trendline and release the mouse button once the trendline is complete (**Figure 6**). To erase trendlines, right-click on the chart and select *Delete Attributes*. You can have the system alert you every time a trendline is broken.

To change the charting time frame, use the bar on the left side of the Alerts window. Seven different time scales are provided, where the fastest chart is a one-minute chart.

With an understanding of the Alerts page complete, we can now set up Alerts to be run in real-time. By right-clicking the mouse on the charts section of the Alerts page, a menu will appear. Choose *Alerts*. A series of predefined Alerts can be selected to signal real-time changes in the technical behavior of the tickers you are tracking. Some of the pre-defined Alerts include price gaps, moving average crossovers, and volume spikes. Simply check those Alerts you

Real-Time Alerts continued on page 6

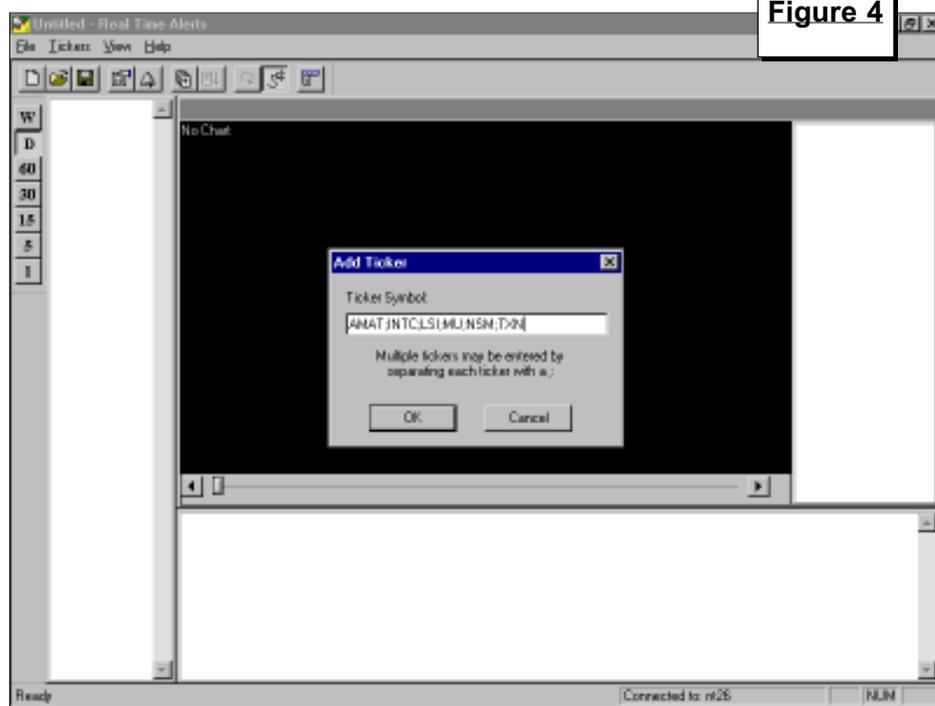


Figure 4

REAL-TIME ALERTS *continued* . . .

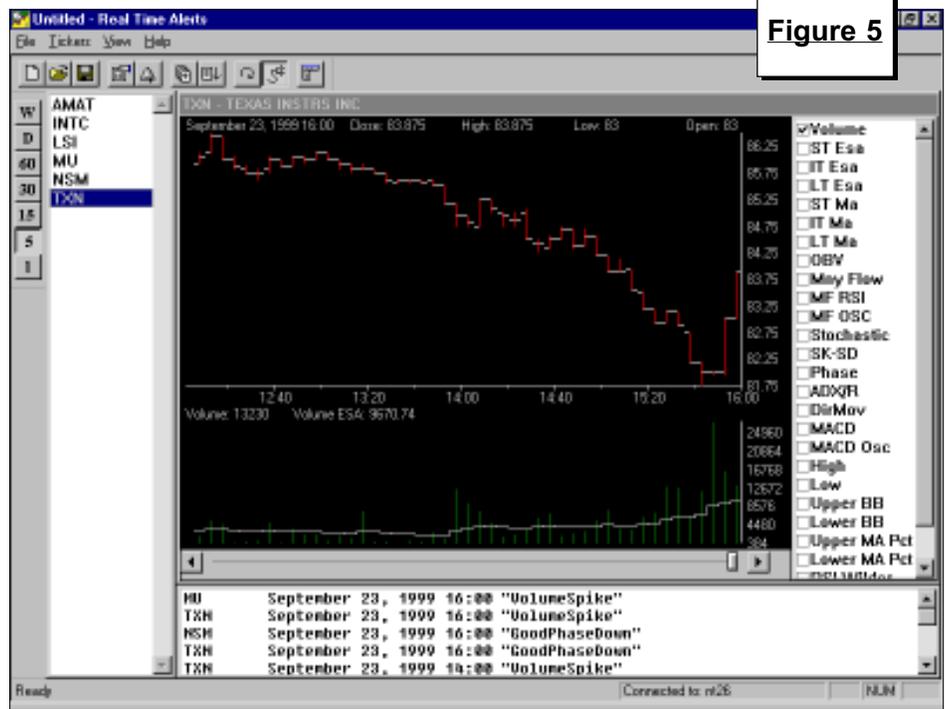
want to activate and click OK.

Every time an Alert is triggered it will appear on the lower section of the screen. You can also configure your computer to sound an Alert as well. From the *File* submenu, select *Configure Sound*. A list of possible sounds will appear. Select the sound and click OK.

In addition to using the predefined Alerts, users can build their own custom Alerts. The construction of an Alert is identical to the construction of an EDS Rule. To create a custom Alert, right-click on the chart on the Alerts page. Select *Alerts*. In the *Properties* dialog box, click *Edit Alerts*. The Alert Code window will appear.

This window displays the complete code for all of the predefined Alerts. If you want to modify the settings of one of the predefined Alerts, then locate the Alert you want to edit and make the appropriate changes.

To create a new Alert in the Alert Code window, scroll to the bottom of the page, click an insertion point, and type the code. AIQ power users can type in a rule at this point. Most users



will prefer to get help from some of the hundreds of pre-built rules that come with TradingExpert. To see the pre-built rules, click on the *Rule Wizard* command button in the Alert Code window. Click on *Prebuilt Routines* to see the rules. For each indicator there are several prebuilt rules. Highlight

the rule, click on *Paste selected item below*, and click OK.

The Rule Builder dialog box, including the Prebuilt Routines, is identical to the Rule Wizard found in the Expert Design Studio application. If you have a trading system in the Expert Design Studio and want to use it in Alerts, simply copy and paste the system to the Alert Code window. Since the Expert Design Studio screen is larger than the Alert Code screen, many users prefer to create Alerts in Expert Design Studio and then copy and paste them to the Alert Code window.

For a more thorough explanation of how to create rules, see the AIQ User Manual, page 425. For information on how to use the Prebuilt Routines, refer to page 407 in the AIQ User Manual.

Real-Time Alert Example

Let's look at an example of this process. Suppose we want to be alerted each time a stock gives a Stochastic buy signal as long as the stock is above a 28 period moving average. For this example, we'll use 5 minute charts. The first step is to open



REAL-TIME ALERTS *continued* . . .

the Alerts window and add the tickers that you want Alerts to be run on by selecting *Tickers* from the menu bar, then *Add*. Type in the tickers separated by semicolons. If these tickers have been previously saved in a file, choose *File* from the menu bar, then *Open*, and select the appropriate file.

Since we are interested in 5 minute charts, click the number 5 on the row of Time Scale Buttons at the left side of the screen. In the indicator section of the Alerts screen, check *IT MA* (which is a 28 period moving average) and click on *Stochastic*.

The final step is to create the custom Alert. Right-click the mouse on the chart and select *Alerts*. Click on *Edit Alerts*. Move the cursor to the bottom of the Alert Code window. This is where we'll place the new alert. Click on *Rule Wizard* and then *Prebuilt Routines*. Highlight the *Stochastic Up From Below 20* rule and click on *Paste Selected Item Below*. Then click *OK*.

We now have to write the rule which specifies that the price needs to be above the intermediate term moving average. Place the active cursor on the next line below. The code for the rule is *MARule if [close]>[IT MA]*. Finally,

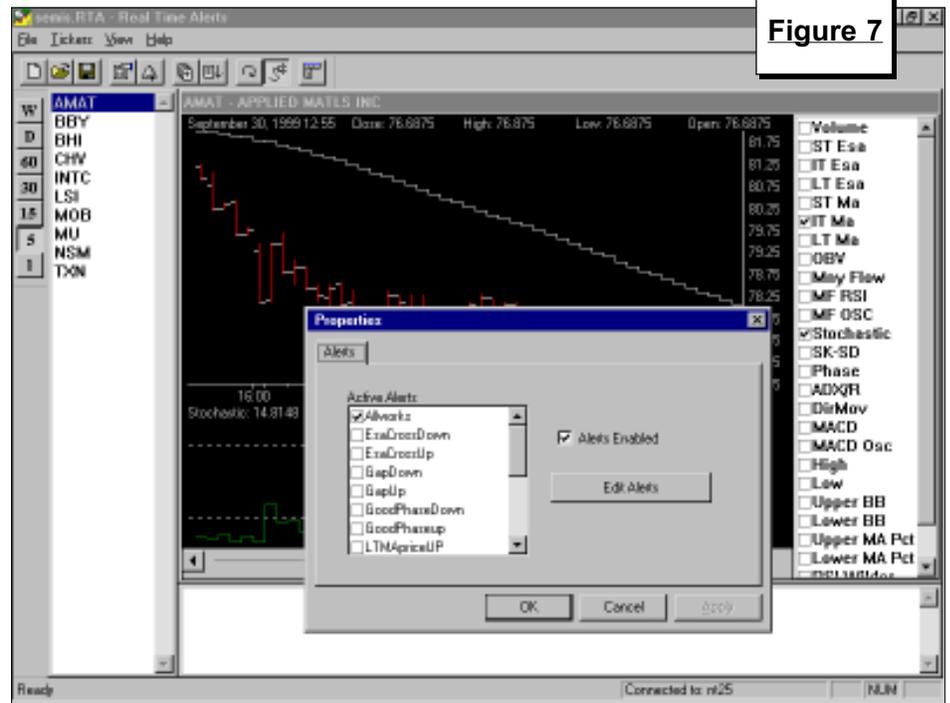


Figure 7

we need a third rule which states that both the Stochastic rule and the moving average rule are true. The final code appears as follows:

! Stochastic cuts from below 20% to above 20%
STOCHUp20 if VAL([stochastic],1)<20

and[stochastic]>20.

MARule if [close]>[IT MA].

Allworks if STOCHUp20 and MARule.

Once the rule is entered in the Alert Code window, click *OK*. The *Allworks* rule that we created now appears as one of the choices in the Alert Properties dialog box. Place a check next to the *Allworks* choice (**Figure 7**). Make sure *Alerts Enabled* is checked and click *OK*.

The system will then scan the listed ticker symbols and will alert you when the trading strategy is triggered. For our system, we were alerted to a buy signal on Best Buy (BBY) at 12:30 PM. BBY was rallying that morning and by 11:00 it was well above its moving average. A small round of selling came at 12:00, which was enough to move the Stochastic indicator below 20. When the stock began to rally, its Stochastic indicator gave a buy signal and the stock was still above its intermediate term moving average (**Figure 8**).

Our program is set up to alert you to signals when they occur, even if one



Figure 8

Real-Time Alerts continued on page 8

REAL-TIME ALERTS *continued* . . .

takes place before the end of the current period. In our example above, if the Stochastic buy signal came on the second minute of the 5 minute period, you would be alerted. Sometimes these buy signals will hold, allowing you to get in before the end of the 5 minute time period, and sometimes they don't hold. If a stock gives a Stochastic buy signal on minute 2 of the 5 minute period and then the stock falls back, you'll receive an Alert after the second minute but by the end of the 5 minute period the Stochastic may not have given a buy signal. If you want to be assured of a signal, then don't act on an Alert until the end of the time period.

The Alerts package is an upgrade to our original package and it is not documented in TradingExpert Pro's User Manual. Users can download the documentation from AIQ's web page at www.aiq.com. Select *Customer Service* and then *Real-Time Alerts*. Or, you can request a printed copy of the documentation by calling AIQ at 800-332-2999 or you can e-mail AIQ at aiqonline@aol.com. ■

MARKET REVIEW

September is historically the worst month for the market. This year was no exception.

The market correction that started earlier this summer continued in September. For the month, the S&P 500 corrected 2.86%. From its high point through the end of September, the S&P 500 has corrected 9.6%.

The broader market has been weaker than the large-cap indexes as the Advance Decline Line hit new yearly lows. Yet selling was mild among the large-cap Nasdaq stocks as the Nasdaq Composite had a small increase in September.

Heading into the month, AIQ was on a sell signal. AIQ remained on a sell throughout the decline until month-end when several AIQ buy signals were registered.

These AIQ buy signals were as follows:

97 buy on 9/27

96 buy on 9/28

97 buy on 9/30

At month's end, these signals were unconfirmed as the Phase indicator was decreasing.

The top performing group in September was Gold Mining, which increased 25%. The Cellular Communication group rose 23% and Gaming rose 14%.

The Managed Care group was the worst performer, falling 30%. The Textiles-Apparel and Personal Care groups fell by 25%. ■

David Vomund Interview

The October issue of *Technical Analysis of Stocks & Commodities* magazine features an interview with *Opening Bell* publisher David Vomund. *Technical Analysis of Stocks & Commodities* magazine is available at most large news stands.

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
AXA Financial	AXF	2:1	10/04/99	Tyco Int'l	TYC	2:1	10/22/99
Dendrite	DRTE	3:2	10/08/99	Vitesse Semiconductor	VTSS	2:1	10/22/99
Cost Plus Inc.	CPWM	3:2	10/12/99	Adobe Systems	ADBE	2:1	10/27/99
Harmonic Inc.	HLIT	2:1	10/15/99	Arrow Financial	AROW	5:4	11/01/99
Southwest Water	SWWC	3:2	10/21/99				

Name/Ticker Changes:

Equitable Cos (EQ)	to	AXA Financial Inc. (AXF)
Food Lion (FDLNA, FDLNB)	to	Delhaize America (DZA, DZB)
Enron Oil & Gas (EOG)	to	EOG Resources Inc. (EOG)
MySoftware Co. (MYSW)	to	ClickAction Inc. (CLAC)
Ocean Financial Corp (OCFC)	to	OceanFirst Financial Corp. (OCFC)
Medpartners Inc. (MDM)	to	Caremark Rx Inc. (CMX)

Trading Suspended:

EKCO Group (EKO), King World Productions (KWP), Mercantile Bancorp (MTL)