In this issue:

The Measured Moves Strategy

Seasonality Bands Strategy

BONUS ARTICLE
Williams E-mini Influx Strategy

NEW MAG FEATURE
Download a PDF of the Magazine
Ready to expand your TradeStation horizons with EasyLanguage®?

Creating your own indicators and strategies will give you new perspectives on markets and on your trading.

TradeStation’s Client Training and Education Department has taught thousands of traders how to use EasyLanguage and would like to count you among them. We can guide you through all the steps in creating indicators, ShowMe™ and PaintBar™ studies and trading strategies. And if you’re thinking “but I’m not a programmer,” well, most of the thousands of people we’ve taught weren’t programmers either. But, like you, they were passionate about markets and willing to spend a few hours working with us to learn.

You’ll be surprised by how quickly you can get up to speed and begin writing your own indicators and trading strategies in EasyLanguage, and how this will open up a whole new world of market analysis.

Beginners Course
For the EasyLanguage beginner, the same course work can be accessed LiveOnTheWeb and in a self-paced home study course.

EasyLanguage Boot Camp
A two-day LiveOnTheWeb class
$249  SCC Member Price: $124.50
Register with promo code ELBC4SCC

Your instructor will guide you step by step through more than 30 practical exercises covering such topics as creating indicators, ShowMes™, PaintBars™, and trading strategies, including indicators designed specifically for use with TradeStation’s RadarScreen® feature. You will learn how to:

- Use inputs for flexibility and optimization
- Design indicators specifically for RadarScreen
- Create real-time alerts based on your custom market conditions
- Write market, limit and stop orders into strategies
- Incorporate money-management exits in your strategies

Exclusive webcast bonus:
- Ask questions and interact with your instructor in real time
- Review the recordings of the course at any time
- Retake the LiveOnTheWeb class any time it is offered

EasyLanguage Home Study Course
A self-paced home-study book
$99  SCC Member Price: $49.50
Complete and return the order form

This book covers the same range of material as the EasyLanguage Boot Camp, in an easy-to-follow format that takes you through each exercise in the course, with instructions and explanations. The book is printed in vibrant color and is spiral bound, making it easy to work through each exercise right on your computer.

Advanced Users Course
For advanced users, step up to the latest in EasyLanguage by incorporating objects in your studies and strategies. Here, too, the same course work can be accessed LiveOnTheWeb and in a self-paced home study course.

Implementing Objects in EasyLanguage
A two-day LiveOnTheWeb class
$249  SCC Member Price: $124.50
Register with promo code IOEL4SCC

In this course, your instructor will guide you through exercises using the latest in EasyLanguage features, including price series providers, timers and accounts providers. These open up possibilities beyond the already formidable capabilities of conventional EasyLanguage. In this advanced course, you’ll learn how to:

- Create multi-data analysis in RadarScreen
- Access real-time account and position updates
- Place and track real-world orders
- Read and write to Excel files
- Build your own interactive windows

Exclusive webcast bonus:
- Ask questions and interact with your instructor in real time
- Review the recordings of the course at any time
- Retake the LiveOnTheWeb class any time it is offered

EasyLanguage Objects Home Study Course
A self-paced home-study book
$99  SCC Member Price: $49.50
Complete and return the order form

This book covers the same range of material as the Implementing Objects in EasyLanguage web class, in an easy-to-follow format that takes you through each exercise in the course, with instructions and explanations. The book is printed in vibrant color and is spiral bound, making it easy to work through each exercise right on your computer.
IN THIS ISSUE

The Measured Moves Strategy .................................................. 2

The idea for Measured Moves originated as an indicator first presented to our Stock and ETF Symposium in 2008. The indicator was a tool for gathering information on intraday percentage price movements. The strategy trades against these intraday swings.

Seasonality Bands Strategy ...................................................... 8

Using weekly data, the strategy constructs a seasonal price curve with bands surrounding the curve. Signals come from moves of the current seasonal pattern outside the range of the historic seasonal pattern. This strategy and the supplied indicator allow for observation and testing of seasonality on any markets you select.

EDITOR’S MESSAGE

Welcome to the November 2015 issue of TradeStation Labs’ Strategy Concepts Club.

We’re pleased to announce that the Strategy Concepts Club archives are available issue by issue. If there are any issues that pre-date the start of your subscription, they can be purchased from the Back Issues page. We’re preparing an “inventory” sheet that we’ll distribute next month.

And don’t forget that the Strategy Concepts Club is available in pdf format. The pdf can be accessed via the link on the cover and from the download button at the lower left of the flipbook viewer.

In this issue, Frederic Palmliden, CFA, CMT, and Senior Quantitative Analyst, offers a strategy based on seasonality. Using weekly data, the strategy constructs a seasonal price curve with bands surrounding the curve. Signals come from moves of the current seasonal pattern outside the range of the historic seasonal pattern. This strategy and the supplied indicator allow for observation and testing of seasonality on any markets you select.

My offering is an aggressive contrarian day-trading strategy. The idea for Measured Moves originated as an indicator first presented to our Stock and ETF Symposium in 2008. The indicator was a tool for gathering information on intraday percentage price movements. The strategy trades against these intraday swings.

On a personal note, I just returned from meetings and presentations in Las Vegas, London, Milan and New York. The interest in TradeStation and in Labs, and particularly in strategy trading, was very gratifying. And the warmth and hospitality I received in all those places are greatly appreciated.

Read on and, as always, thanks for being a subscriber!

Stanley Dash, CMT
The Measured Moves Strategy

Stanley Dash, CMT
VP, Applied Technical Analysis

BACKGROUND

IS IT POSSIBLE TO GO TOO FAR in the search for simplicity in a trading strategy? Developing and testing even the simplest ideas may yield useful insights into market action and may even lead to strategies that are viable in their own right. The Measured Moves strategy is a very simple, albeit aggressive, approach to day trading. The strategy tracks intraday price swings and takes positions contrary to the most recent swing in anticipation of a return movement.

The idea behind the Measured Moves strategy dates back to an indicator created in 2008 for TradeStation’s Stock and ETF Symposium. The purpose was to gather statistics on the number of moves each day, i.e., potential day-trading opportunities that a market provides. This was done by using intraday data and having the indicator track the number of moves of a fixed percent each day and the average number of such moves over a trailing number of days. A modified version of that indicator, rendered as a ShowMe study, is included here.

Features
- Strategy Style: Mean reversion
- Markets: Equities, futures, forex
- Trading Horizon: Day trading

Studies/Files Included
- Strategy
- ShowMe
- Workspace

DOWNLOAD FILES
The strategy begins monitoring for measured moves using the day’s opening price as the first benchmark. As ranges are made and expanded, new highs and lows are used as new benchmarks. Contrarian trades are taken following completion of a measured move from the most recent benchmark, and then the benchmarks are reset again so that consecutive swings (and consecutive entries) of the measured amount may occur in the same direction. Profit target and stop loss levels are then calculated as percent moves from the entry prices.

**STRATEGY ELEMENTS**

At the core of the strategy lies the manner in which the price swings are measured. The opening price of each day is the first benchmark price used to measure up and down moves of, for example, 1%. (Magnitude of the measured move is set using the MeasuredMovePct input, described below.)

Limit orders to take positions are placed at those levels for the second bar of each day: sell short if the market rallies 1% from the benchmark price or buy if the market sells off 1% from the benchmark price.

On the second bar of each day and all subsequent bars, the benchmark is reset when either the prior benchmark has been exceeded or a measured move has been completed. Under those conditions, the high of the bar becomes the new benchmark for a measured move down and the low of the bar becomes the new benchmark for a measured move up.

Additional similar measurements are made for the exits. The profit target and stop loss levels are calculated as percent moves from the entry prices, using the inputs PTPct for the profit target and SLPct for the stop loss. A position may be reversed when a new signal in the opposite direction is generated before either the profit target or stop loss has been reached.

Given the contrarian nature of the strategy, as well as the method for measuring moves and proactively taking profits (profit targets), it is possible to have consecutive entries in the same direction against a strong trend. Although losing streaks were limited in these test results, this is a point of risk for this strategy and those of similar style. (See the Strategy Performance Report Highlights section below.)
The **TSL:Measured Moves ShowMe** study marks the points at which a measured move has been completed. Completed moves are also identified with trendlines. The trendlines are, of course, drawn retrospectively; no line will appear until the measured move has been completed.

### Input

<table>
<thead>
<tr>
<th>Input</th>
<th>Default</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MeasuredMovePct</td>
<td>1</td>
<td>Magnitude of the measured moves, in percent of price</td>
</tr>
<tr>
<td>PTPct</td>
<td>.5</td>
<td>Profit target, in percent of entry price</td>
</tr>
<tr>
<td>SLPct</td>
<td>.5</td>
<td>Stop loss level, in percent of entry price</td>
</tr>
</tbody>
</table>

### Plot

<table>
<thead>
<tr>
<th>Plot</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MeasuredMove</td>
<td>Marks the completion of each measured move (a trend-line is also drawn to identify the measured move)</td>
</tr>
</tbody>
</table>

The **TSL:Measured Moves strategy** has three inputs, all related to the magnitude of the moves for entries and exits.

### Point 1

- This is the first bar of the day and so the open is the first benchmark for measuring up or down moves.

### Point 2

- A measured move down is completed and a long position is taken. The new benchmarks are the high and low of the bar for measured moves down and up, respectively.

### Point 3

- The low of this bar becomes the new benchmark for a move up since it is lower than the low of the bar at point 2.

### Point 4

- The profit target for the long position is satisfied and the position is closed (black hash mark). A measured move up is completed and a short position is taken. The new benchmarks are the high and low of the bar for measured moves down and up, respectively.

### Point 5

- The profit target for the short position is satisfied and the position is closed.

### Point 6

- A measured move down is completed and a long position is taken. The new benchmarks are the high and low of the bar for measured moves down and up, respectively.
STRATEGY RULES

Limit orders are used for all entries and for profit target exits; stop orders are used for stop loss exits. More detail about the benchmark prices and measured move calculations is in the Strategy Elements section above.

Long Entries

- Buy on a limit order at a fixed percent below the benchmark price for the current price swing. The fixed percent is set using the input MeasuredMovePct. No entries are taken on the first or last bar of the day.

Short Entries

- Sell short on a limit order at a fixed percent above the benchmark price for the current price swing. The fixed percent is set using the input MeasuredMovePct. No entries are taken on the first or last bar of the day.

Exits

- Profits are taken at a fixed percent price move from the entry price as set by the input PTPct.
- Losses are taken at a fixed percent price move from the entry price as set by the input SLPct.
- Close any open positions at the end of the session.

STRATEGY PERFORMANCE REPORT HIGHLIGHTS

The results below were generated from tests done after some limited optimization; that is, general ranges of acceptable inputs were discovered through optimization, but those below are not intended to be optimal in and of themselves. Readers are encouraged to do further experimentation on their own.

Testing on other bar intervals is also encouraged. However, please consider how the bar interval and the MeasuredMovePct value relate. In particular, if multiple trades per bar is a frequent occurrence, then it may be wise to reduce the bar interval. That should help with the processing and accuracy of back-tests.

Look-Inside-Bar Back-testing (LIBBT) is used to add greater precision to back-testing, especially when testing a strategy that uses so many limit and stop orders such as this one. It is also most useful in those cases when more than one trade is made on a single bar. (As mentioned above, if multiple trades per bar is a frequent occurrence, then it may be wise to reduce the bar interval.)

<table>
<thead>
<tr>
<th>Input</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>MeasuredMovePct</td>
<td>1.25</td>
</tr>
<tr>
<td>PTPct</td>
<td>.5</td>
</tr>
<tr>
<td>SLPct</td>
<td>1.5</td>
</tr>
</tbody>
</table>

Figure 3: Excerpt from Strategy Performance Report – Performance Summary tab

All performance results are hypothetical. Past performance, actual or hypothetical, is not necessarily indicative of future results.

Total Net Profit

- About three-quarters of the profits were generated on the long side. This is despite the fact that there were distinct bull and bear periods for TSLA during the test period. Of course, the strategy was run on 5-minute bars and the results may have been influenced more by the intraday characteristics of this particular issue than by the larger trends.

Total Number of Trades

- The average number of trades per day is approximately 4, a reasonable rate for day trading. In addition, they are almost evenly split between long and short positions.

Percent Profitable

- This metric is in the desired target range for a strategy of this type. Of course, traders should know to expect variance in these and other results when moving from testing to live trading.
Visit TradeStation Labs in the TradingApp® Store

Built by traders for traders, the TradingApp® Store gives TradeStation clients access to more ideas, strategies and custom trading solutions than ever before. TradeStation Labs is an active contributor to the TradingApp Store, with dozens of custom products available for download.

- **Select and download any product instantly**
  Products from TradeStation Labs in the TradingApp Store download directly to your TradeStation desktop platform in seconds – offering full compatibility and seamless integration.

- **In-house support**
  TradeStation Labs is a team of technical analysts who work side by side with the platform developers, bridging the possibilities of what can be done with TradeStation and what you need to realize those possibilities. All TradeStation Labs’ products are geared to helping you make the most of your TradeStation experience.

### TRADESTATION LABS’ FEATURED PRODUCT

**Overnight Ranges for Futures**

Futures traders, are you looking for an easy way to track the overnight high, low and close – while the overnight action unfolds and then through the following daytime? The TSL Overnight Range indicator is designed to make that easy for you.

The indicator will find and display these key levels automatically on your intraday minute-based charts, marking them with horizontal lines and putting the numerical values right on the chart where the high or low was made. In RadarScreen®, the indicator posts the numeric values in the symbol row. Alert criteria are included to let you know when prices are moving outside the overnight range during the daytime hours. The usage notes fully describe all the user options so you can customize the look, feel and function.

LEARN MORE
Max. Consecutive Winning Trades and Max.
Consecutive Losing Trades

Losing streaks were kept short, especially as compared to
the length of the winning streaks. In the Strategy Elements
section above, reference was made to the risk of consec-
uutive entries in the same direction against a strong trend.
Although there is no evidence of that here, it is a point of
concern for this strategy.

The Trade Analysis tab provides more detail on the win-
ning and losing streaks. There was one winning streak of 15
trades along with other extended winning streaks; there were
5 losing streaks of 4 trades. Stated another way, while there
were 5 losing streaks of 4 trades, there were 75 winning streaks
of four or more trades.

SUGGESTIONS FOR IMPROVEMENT

As written, the strategy uses the same input values for
long and short entries and exits. Additional testing could
be done by adding an additional set of inputs and using
separate values for MeasuredMovePct, PTPct and SLPct
for different trade directions.

The strategy might benefit from the inclusion of a
breakeven stop. The concept refers to placing an exit stop
at the entry price after some unrealized gain has been
achieved. This is done to keep unrealized gains from
turning into losses, though there is a risk that the exit
might be premature. TradeStation supplies a strategy
component called Breakeven Stop that may be added to
the chart along with TSL:Measured Moves or any other
strategy.

Traders interested in an even more aggressive ver-

version of this strategy could test it with multiple entries. As
documented here, only one position in one direction is
permitted at a time. Enabling multiple entries (Format
Strategies dialog – Strategy Properties for All button –

General tab – Position Limits section) would change this
rule. It is more aggressive, since it would be in the nature
of this strategy to add to losing positions. Pursuing this
might also require expanding the stop loss percent and
possibly rethinking the exit scheme completely.

Stanley Dash, CMT is Vice-president, Applied Technical Analysis, at
TradeStation. He and his group support active and institutional traders
with analytical tools and education designed to help them become more
effective traders.

His Wall Street career began in 1975 and includes time as an active
floor trader at one of the leading U.S. futures and options exchanges. Mr.
Dash has lectured for the New York Institute of Finance and the Institute
for Financial Markets. He is also a Chartered Market Technician and a
member of the Market Technicians Association, where he serves on the
Editorial Board of the Association’s Journal of Technical Analysis.
Seasonality Bands Strategy

Frederic Palmliden, CFA, CMT
Senior Quantitative Analyst

BACKGROUND

THE SEASONALITY BANDS STRATEGY builds upon an idea that was first examined in a TradeStation Labs Analysis Concepts paper entitled *Seasonality: Studying Annual Price Cycles*. While seasonal patterns are traditionally studied in the agricultural commodity markets by tracking crop development to harvest time, similar patterns may be found in other asset classes, including equities. In addition, while seasonality is traditionally associated with a longer-term focus (e.g., monthly data), it can also be used with a shorter time period (e.g., weekly data), as this article will demonstrate.

This strategy creates bands around weekly seasonal tendencies, thus taking an approach different from that used in the aforementioned Analysis Concepts paper. It first sets aside a specified historical period as an initial learning period, without generating trading signals, then continues to add new data as time goes by to help with the continuous learning process. Bands are added around the weekly seasonality patterns to generate signals by comparing the current year-to-date data to the historical data. Here, the strategy presented is applied to the soybean market, but other markets could also be considered. Finally, a custom indicator is included to more easily track the behavior of the strategy.

STRATEGY ELEMENTS

The TSL:Seasonality Bands strategy consists of two main elements: the year-to-date performance of the security and the seasonality bands around the cumulative performance derived from the historical learning period.

Features
- Strategy Style: Trend-following
- Markets: Equities, futures, forex
- Trading Horizon: Swing trading

Studies/Files Included
- Strategy
- Indicator
- Workspace

DOWNLOAD FILES
The cumulative performance is the compounded return of the weekly average returns for each year. For instance, the cumulative performance value for the first week of February is the compounded average weekly returns for the year to date using the average weekly returns for the first few weeks of the year prior to that point, as derived from the historical data in the learning period. In a sense, the cumulative performance represents the average performance pattern for the year to date over the historical period.

The seasonality bands are constructed using the cumulative compounded average weekly returns and two strategy inputs in order to specify how wide the bands need to be. The top band and the low band are calculated by adding two percentages (i.e., Top_Band and Low_Band strategy inputs) to the cumulative performance. Keep in mind that the Low_Band input value is negative, resulting in the low band being under the cumulative performance.

The year-to-date performance tracks the security’s performance in percentage terms on a weekly basis from the beginning of each year, which can then be compared to the seasonality bands to generate strategy signals.

A long entry is generated when the year-to-date performance crosses over the low band or the top band. In a similar fashion, a short entry is generated when the year-to-date performance crosses under the top band or the low band.

The TSL:Seasonality Bands custom indicator is provided to help visualize the trade signals. The indicator is used with inputs set as listed below.

<table>
<thead>
<tr>
<th>Input</th>
<th>Default</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Years_Set_Apart</td>
<td>1</td>
<td>Number of years set apart for the indicator before indicator signals are generated.</td>
</tr>
<tr>
<td>Years_To_Trade</td>
<td>10</td>
<td>Numbers of years from the current year when indicator signals can be generated.</td>
</tr>
<tr>
<td>Top_Band</td>
<td>0.14</td>
<td>Percentage added to the cumulative performance to display the top band (0.14 equals 14%).</td>
</tr>
<tr>
<td>Low_Band</td>
<td>-0.17</td>
<td>Percentage added to the cumulative performance to display the low band (-0.17 equals -17%).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Plot</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>YTDPerf</td>
<td>Year-to-date performance of the security.</td>
</tr>
<tr>
<td>CumPerf</td>
<td>Cumulative performance of the security using all year-to-date average weekly returns up until the point in the chart.</td>
</tr>
<tr>
<td>Top Band</td>
<td>Top seasonality band.</td>
</tr>
<tr>
<td>Low Band</td>
<td>Low seasonality band.</td>
</tr>
<tr>
<td>Top Bd HBar</td>
<td>Top seasonality band (to display the high bar shading).</td>
</tr>
<tr>
<td>Low Bd LBar</td>
<td>Low seasonality band (to display the low bar shading).</td>
</tr>
</tbody>
</table>
For long trades, positions are held until the close breaks the lowest low for a certain number of bars. Similarly, for short trades, positions are held until the close breaks the highest high for the same look-back period.

Figure 2 illustrates an example of a long entry. In this case, the year-to-date performance (dark blue line in subgraph 2) crosses over the top band on the highlighted bar and a long entry is subsequently generated at the open of the next bar.

Note that the custom indicator does not display a value for the last bar on the chart (current week), in order to avoid misalignments between the strategy behavior and that of the indicator. Keep in mind that the strategy only uses the closing price of any given week. A new indicator value is only displayed upon completion of the current week.

The TSL:Seasonality Bands strategy inputs are displayed in the table below.

<table>
<thead>
<tr>
<th>Input</th>
<th>Default</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Years_Set_Apart</td>
<td>1</td>
<td>Number of years set apart for the strategy before strategy signals are generated.</td>
</tr>
<tr>
<td>Years_To_Trade</td>
<td>10</td>
<td>Numbers of years from the current year when strategy signals can be generated.</td>
</tr>
<tr>
<td>Trail_Stop_Length</td>
<td>2</td>
<td>Look-back period for the lowest low and the highest high.</td>
</tr>
<tr>
<td>Top_Band</td>
<td>0.14</td>
<td>Percentage added to the cumulative performance to display the top band (0.14 equals 14%).</td>
</tr>
<tr>
<td>Low_Band</td>
<td>-0.17</td>
<td>Percentage added to the cumulative performance to display the low band (-0.17 equals -17%).</td>
</tr>
</tbody>
</table>

The default input values were found, in part, by strategy optimization and sensitivity analysis. (See the sensitivity analysis comments in the Strategy Performance Report Highlights section.) Applying the strategy to other securities would likely require adjustments to the input values.

**STRATEGY RULES**

The TSL:Seasonality Bands strategy was applied to soybeans futures (@S.C=11INN) using weekly bars. However, the strategy could be modified to be used on other securities (e.g., other individual commodity futures) using the same basic principles. The detailed strategy rules are listed below.

**Long Entries**
- If the year-to-date performance crosses over the top seasonality band or crosses over the low seasonality band, buy on a market order on the next bar.

**Short Entries**
- If the year-to-date performance crosses under the top seasonality band or crosses under the low seasonality band, sell short on a market order on the next bar.

**Exits**
- Exit any long on a market order on the open of the next bar when the close is below the lowest low of the last 2 bars.
- Exit any short on a market order on the open of the next bar when the close is above the highest high of the last 2 bars.
STRATEGY PERFORMANCE REPORT HIGHLIGHTS

The strategy was tested on soybeans futures using a custom continuous futures contract (@S.C=11INN). This contract utilizes no back adjustment, and the rollover trigger is one consecutive trading day of higher open interest. The problem when using the @S adjusted continuous contract is that some theoretical trades would not have occurred at the prices listed in the back-test. As a reminder, the main purpose behind any continuous contract is to create a longer history than is possible when using data from just one delivery month; however, the method of construction of the continuous contract series should be considered when back-testing.

BACK-TESTING SETTINGS

Initial Capital $20,000
Trade Size 1 Contract
Commissions $3.16 per side per contract
History 11 years ending 9/30/15
Bar Interval Weekly

Total Number of Trades = 31

The total number of trades is quite low (at just over 30), which makes it difficult to gauge the reliability of other performance metrics. Additional time and trading activity are needed to test the robustness of the strategy. On a more positive note, the number of trades is evenly split between long and short trades.

Ratio Avg. Win:Avg. Loss

The average-win-to-average-loss ratio on the long side (2.66) is much lower than that on the short side (6.84). These figures point to the strategy favoring the short side. However, the winning trades to losing trades on the long side versus the short side are basically flipped (10 and 5, respectively, on the long side versus 5 and 11, respectively, on the short side). This explains why the strategy performed better overall on the long side versus the short side.

Percent of Time in the Market = 34.37%

The time in the market is very low for a trend-following strategy. This can easily be explained by the particular nature of this trend-following strategy, which attempts to capture seasonal opportunities versus participating in each market trend. The equity curve is not especially appealing, with sporadic jumps in performance associated with detected seasonal opportunities. The strategy struggled in the initial part of testing, which could be due to the initial learning phase, but the strategy seems to have entered another period of sideways performance for the last couple of years. Also, the equity curve highlights the fact that there are only a select number of trades.
Visit TradeStation Labs in the TradingApp® Store

Built by traders for traders, the TradingApp® Store gives TradeStation clients access to more ideas, strategies and custom trading solutions than ever before. TradeStation Labs is an active contributor to the TradingApp Store, with dozens of custom products available for download.

▶ Select and download any product instantly
Products from TradeStation Labs in the TradingApp Store download directly to your TradeStation desktop platform in seconds – offering full compatibility and seamless integration.

▶ In-house support
TradeStation Labs is a team of technical analysts who work side by side with the platform developers, bridging the possibilities of what can be done with TradeStation and what you need to realize those possibilities. All TradeStation Labs’ products are geared to helping you make the most of your TradeStation experience.

TRADESTATION LABS’ FEATURED PRODUCT

Overnight Ranges for Futures

Futures traders, are you looking for an easy way to track the overnight high, low and close – while the overnight action unfolds and then through the following daytime? The TSL Overnight Range indicator is designed to make that easy for you.

The indicator will find and display these key levels automatically on your intraday minute-based charts, marking them with horizontal lines and putting the numerical values right on the chart where the high or low was made. In RadarScreen®, the indicator posts the numeric values in the symbol row. Alert criteria are included to let you know when prices are moving outside the overnight range during the daytime hours. The usage notes fully describe all the user options so you can customize the look, feel and function.
As in previous articles, instead of analyzing one strategy input in isolation, data from TradeStation's Strategy Optimization Reports can be used with Microsoft Excel to perform sensitivity analysis between two strategy inputs at the same time by creating a 3-D chart. For instance, an exhaustive Strategy Optimization Report can be run on the Top_Band and Low_Band strategy inputs, and the resulting data can be used to create a surface chart in Excel.

Figure 5 illustrates the impact on the back-tested net profit when the Top_Band and Low_Band input values change. The back-tested net profit is not especially stable when the two input values change. Notice that the surface reveals two distinct ridges along the back of the chart. The chosen default values for the two inputs are away from the peak values (see back corner of the chart where the Top_Band equals 0.07 and the Low_Band equals -0.17). Instead, the values were selected from an area where net profit stays somewhat more consistent (when the Top_Band input is 0.14 and the Low_Band is -0.17). Overall, the surface is not especially appealing, with large drop-offs in net profit with small variations in the input values.

(see the additional notes in the next section). Relatively large drawdowns were seen in the tested period. The volatility of the equity curve translated to a maximum weekly drawdown of about 40%.

All performance results are hypothetical. Past performance, actual or hypothetical, is not necessarily indicative of future results.

SUGGESTIONS FOR IMPROVEMENT

The TSL:Seasonality Bands demonstrates how seasonal opportunities can be detected by comparing the year-to-date performance to the cumulative compounded weekly average returns of a security. The strategy also reveals multiple challenges associated with this type of strategy. For one thing, additional testing would be required to see how robust the strategy is (11 years of data only produced about 30 trades). Another area of concern is the large contribution of certain trades to the overall net profit. This is fairly common for trend-following strategies to some degree, but the magnitude of the winning outlier in this case is particularly large (see figure 6). The outlier contributed roughly one-third of the gross profit and roughly half of the total net profit in the back-tested period.

The strategy also reveals the overall challenge of incorporating seasonality into strategy trading where defined rules are mandatory (versus discretionary trading). While seasonal trends can be observed over time for a particular security, the performance in any given year can be quite different from the average performance.
Ready to expand your TradeStation horizons with EasyLanguage®?

Creating your own indicators and strategies will give you new perspectives on markets and on your trading.

TradeStation’s Client Training and Education Department has taught thousands of traders how to use EasyLanguage and would like to count you among them. We can guide you through all the steps in creating indicators, ShowMe™ and PaintBar™ studies and trading strategies. And if you’re thinking “but I’m not a programmer,” well, most of the thousands of people we’ve taught weren’t programmers either. But, like you, they were passionate about markets and willing to spend a few hours working with us to learn.

You’ll be surprised by how quickly you can get up to speed and begin writing your own indicators and trading strategies in EasyLanguage, and how this will open up a whole new world of market analysis.

**Beginners Course**
For the EasyLanguage beginner, the same course work can be accessed LiveOnTheWeb and in a self-paced home study course.

**EasyLanguage Boot Camp**
A two-day LiveOnTheWeb class

$249  SCC Member Price: $124.50

Register with promo code ELBC4SCC

Your instructor will guide you step by step through more than 30 practical exercises covering such topics as creating indicators, ShowMes®, PaintBars®, and trading strategies, including indicators designed specifically for use with TradeStation’s RadarScreen® feature. You will learn how to:

- Use inputs for flexibility and optimization
- Design indicators specifically for RadarScreen
- Create real-time alerts based on your custom market conditions
- Write market, limit and stop orders into strategies
- Incorporate money-management exits in your strategies

**Exclusive webcast bonus:**
- Ask questions and interact with your instructor in real time
- Review the recordings of the course at any time
- Retake the LiveOnTheWeb class any time it is offered

**EasyLanguage Home Study Course**
A self-paced home-study book

$99  SCC Member Price: $49.50

Complete and return the order form

This book covers the same range of material as the EasyLanguage Boot Camp, in an easy-to-follow format that takes you through each exercise in the course, with instructions and explanations. The book is printed in vibrant color and is spiral bound, making it easy to work through each exercise right on your computer.

**Advanced Users Course**
For advanced users, step up to the latest in EasyLanguage by incorporating objects in your studies and strategies. Here, too, the same course work can be accessed LiveOnTheWeb and in a self-paced home study course.

**Implementing Objects in EasyLanguage**
A two-day LiveOnTheWeb class

$249  SCC Member Price: $124.50

Register with promo code IOEL4SCC

In this course, your instructor will guide you through exercises using the latest in EasyLanguage features, including price series providers, timers and accounts providers. These open up possibilities beyond the already formidable capabilities of conventional EasyLanguage. In this advanced course, you’ll learn how to:

- Create multi-data analysis in RadarScreen
- Access real-time account and position updates
- Place and track real-world orders
- Read and write to Excel files
- Build your own interactive windows

**Exclusive webcast bonus:**
- Ask questions and interact with your instructor in real time
- Review the recordings of the course at any time
- Retake the LiveOnTheWeb class any time it is offered

**EasyLanguage Objects Home Study Course**
A self-paced home-study book

$99  SCC Member Price: $49.50

Complete and return the order form

This book covers the same range of material as the Implementing Objects in EasyLanguage web class, in an easy-to-follow format that takes you through each exercise in the course, with instructions and explanations. The book is printed in vibrant color and is spiral bound, making it easy to work through each exercise right on your computer.
Williams E-mini Influx Strategy

Strategy provided by Larry Williams

Documentation by Michael Burke
VP, Client Training and Education

BACKGROUND

ACCORDING TO LARRY WILLIAMS, “This is a concept derived from market behavior, which I developed into a strategy many years ago based on the work and observations of Art Merrill, and it has stood up pretty well to the test of time with just a few minor modifications along the way.”

The Williams E-mini Influx strategy was developed by renowned trader, author, educator and money manager Larry Williams, who has taught his common-sense approach to trading to thousands of traders all over the world. He is also well known for creating many industry-standard indicators and winning the Robbins World Cup Futures Trading Championship. Larry uses TradeStation to develop, test, and automate his trading strategies. He also offers trading strategies for lease in the TradeStation TradingApp® Store.

The Williams E-mini Influx strategy is a long-only strategy based on buying the E-mini S&P 500 futures (ES) around the first of the month. That is often when mutual funds have an influx of capital to invest in stocks. With so many mutual funds concentrating their trading activity around the same time each month, there is potential opportunity to capitalize on a short-term market move as fund managers put inflows to work.

STRAIGHT ELEMENTS

At the heart of the E-mini Influx strategy is the calendar. This is crucial, since the goal is to capture a rally based on asset flows into equities at the beginning of each calendar month. Several other elements are then used to filter out signals that may not have enough time or price potential for a trade to work out favorably.

The strategy begins by evaluating its trading conditions for a signal on the first trading day of each month and continues

Features
- Strategy Style: Cycles
- Markets: Stock index futures, ETFs
- Trading Horizon: Swing trading

Studies/Files Included
- Strategies
- PaintBar
- Workspace

DOWNLOAD FILES
monitoring the conditions on each bar as long as there are at least 19 trading days remaining in the month. This means that some months will have several possible signal bars each month and others will have only one. If the conditions are met, a limit order is placed for the open of the next bar, which will then be the entry bar if the limit is filled. (Readers will recall that the term “signal bar” refers to the bar on which the entry or exit conditions are satisfied; “entry bar” refers to the bar on which the trade is made.)

These additional conditions act as filters and are also evaluated on the potential signal bar:

- The close must be greater than the close of the previous bar.
- Williams %R must not be overbought, so as to avoid a long entry into an already overbought market. A %R level below 85 is used by default.
- The signal bar must not be a Thursday; that is, no entries are taken on the Friday daily bar (which is the Thursday evening opening for ES futures).
- Finally, trades are restricted to only 1 per month.

An examination of several potential signals may be helpful. In figure 2 below, all daily bars that are at least 19 days from the end of the month (potential signal bars) are painted. The PaintBar is called TSL::Williams E-mini Influx Days and is included with this article.

- At A, the potential signal bar is a down day. No signal is generated.
- At B, the first potential signal bar is a down day. The second and third are up but %R is above 85. No signal is generated.
- At C, the first three potential signal bars are up days, but %R is above 85. On the fourth bar %R has retreated but it is a down day. No signal is generated.
- At D, the first and second potential signal bars are down days. The third is an up day and %R is below 85. A limit order is filled on the next bar.

The E-mini Influx strategy features two exit rules that bracket the market.

- The profit exit rule requires that a position be held for a minimum number of bars with 1 as the default. Following
that minimum holding period, a position is closed at the first profitable daily bar close.

The strategy also uses a dollar-based stop-loss exit that is active from the bar of entry. The stop level is calculated as a percent of the contract value. The default is 2.5%, which is approximately $2,500 at current price levels. This results in a relatively high dollar risk and is done in order to give each trade enough room to achieve a profitable result. Although this high stop-loss value results in a higher percentage of profitable trades, there is the risk that a string of losing trades could result in a significant account drawdown.

In order to exit at the close of the bar for back-testing purposes, the entry and exit rules have been separated into two strategy components that may be inserted into a chart simultaneously to create the complete strategy.

The inputs for the TSL:Williams E-mini Influx strategy:

<table>
<thead>
<tr>
<th>Input</th>
<th>Default</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PctRVal</td>
<td>85</td>
<td>Trades are not taken if %R is above this level</td>
</tr>
<tr>
<td>PctRLen</td>
<td>8</td>
<td>%R look back in bars</td>
</tr>
</tbody>
</table>

As shown in figures 1 and 2, the TSL:Williams Emini Influx Days PaintBar study may be used to visually identify potential signal bars early in each month.

The inputs for the TSL:Williams E-mini Influx Exit strategy:

<table>
<thead>
<tr>
<th>Input</th>
<th>Default</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>StopLossPct</td>
<td>2.5</td>
<td>Stop loss as a percent of the contract value</td>
</tr>
<tr>
<td>HoldDays</td>
<td>1</td>
<td>Minimum number of bars to hold the position before the profit exit becomes active</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Plot</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SignalBar?</td>
<td>Bars are painted when they are at least DaysLeftToPaint days from the end of the month.</td>
</tr>
</tbody>
</table>
STRATEGY RULES

Long Entries
► The following conditions are required to generate a signal:
  ► There are at least 19 trading days remaining in the calendar month.
  ► The bar closes higher than the previous bar.
  ► Williams %R is less than 85.
  ► It is not a Thursday.
  ► When these conditions are met, a limit order is placed to buy on the next bar at a price equal to or better than the next bar’s opening price.

Please keep in mind that the opening time of the daily session for E-mini S&P 500 futures is 6 p.m. ET.

Exits
► Sell at the first profitable close after the position has been held for at least 1 bar.
► Sell on a stop 2.5% below the entry price, as calculated from the closing price of the bar.

STRATEGY PERFORMANCE REPORT HIGHLIGHTS

BACK-TESTING SETTINGS

<table>
<thead>
<tr>
<th>Setting</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trade Size</td>
<td>1 contract</td>
</tr>
<tr>
<td>Commissions</td>
<td>$2.36 per contract, per side</td>
</tr>
<tr>
<td>Slippage</td>
<td>$2.50 per contract, per side</td>
</tr>
<tr>
<td>History</td>
<td>9/11/1997 to 9/1/2015</td>
</tr>
<tr>
<td>Bar Interval</td>
<td>Daily</td>
</tr>
</tbody>
</table>

The strategy was tested on ES using the custom continuous futures contract (@ES=107XN), which is the closest replication to the CME roll. This custom continuous contract utilizes no back adjustment and the rollover trigger is seven trading days prior to the expiration date.

Total Number of Trades
► This strategy tests well in many different types of market conditions over the past 17+ years of this back-test. There were 115 trades, or about 7 trades per year.

Percent Profitable
► A situational strategy like this should be able to identify more winning trades than losing trades and this metric, at 80%, bears this out.

Figure 3: Strategy Performance Report – Performance Summary tab

<table>
<thead>
<tr>
<th>TradeStation Performance Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Trades</td>
</tr>
<tr>
<td>Total Net Profit</td>
</tr>
<tr>
<td>Gross Profit</td>
</tr>
<tr>
<td>Gross Loss</td>
</tr>
<tr>
<td>Profit Factor</td>
</tr>
<tr>
<td>Total Number of Trades</td>
</tr>
<tr>
<td>Percent Profitable</td>
</tr>
<tr>
<td>Winning Trades</td>
</tr>
<tr>
<td>Losing Trades</td>
</tr>
<tr>
<td>Even Trades</td>
</tr>
<tr>
<td>Avg. Trade Net Profit</td>
</tr>
<tr>
<td>Avg. Winning Trade</td>
</tr>
<tr>
<td>Avg. Losing Trade</td>
</tr>
<tr>
<td>Ratio Avg. Win:Avg. Loss</td>
</tr>
<tr>
<td>Largest Winning Trade</td>
</tr>
<tr>
<td>Largest Losing Trade</td>
</tr>
<tr>
<td>Max. Consecutive Winning Trades</td>
</tr>
<tr>
<td>Max. Consecutive Losing Trades</td>
</tr>
<tr>
<td>Avg. Bars in Winning Trades</td>
</tr>
<tr>
<td>Avg. Bars in Losing Trades</td>
</tr>
<tr>
<td>Avg. Bars in Even Trades</td>
</tr>
</tbody>
</table>

All performance results are hypothetical. Past performance, actual or hypothetical, is not necessarily indicative of future results.

Ratio Avg. Win:Avg. Loss
► Although this appears weak at 0.42, the trade expectancy holds up well when this metric is combined with the win rate cited above. However, an overdependence on the win rate may be a vulnerability of the strategy.

Max. Consecutive Losing Trades
► A strategy with a high Percent Profitable will often show only short losing streaks. In this case, the strategy’s longest losing streak was only 3 trades, accounting for the largest drawdown during the back-test. (See figure 4 below for analysis of the trade series.)

Avg. Bars in Winning Trades, Avg. Bars in Losing Trades, and Percent of Time in the Market
► The average holding period for both winning and losing trades is less than 3 bars per trade and the Percent of Time in the Market (not shown) is 3.72%. This shows a modest commitment of both trading and psychological capital.
Larry Williams has been a trader and market researcher since the mid-1960s and is the author of numerous books and a speaker at major investment conferences throughout the world. Currently his time is spent in full-time trading and research. Mr. Williams has created numerous market indicators including Williams % R, the ultimate oscillator, COT indicators, POVI (a combination of price open interest volume accumulation indicator), synthetic VIX indexes that have applications for all markets, and pioneered the use of the Kelly ratio for money management. He has won the Robbins World Cup trading championship, trading $10,000 to over $1 million in real-time with this money management technique.

**SUGGESTIONS FOR IMPROVEMENT**

The HoldDays input allows the trader to control the number of days the strategy waits until the first profitable close exit becomes active. Typically, more hold days equals more risk and may result in both slightly more profitable trades and larger drawdowns. A greater number of HoldDays may also require an adjustment to the StopLossPct input so that the stop loss exit does not get hit more frequently.

There may be some value in researching additional technical filters to refine the entry condition. For example, a long-term moving average filter may have reduced the drawdowns during bear markets, though it would probably delay trading again as the market turns bullish.