

CSI NEWS JOURNAL

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Factors Affecting The Design Of A Profitable Trading System

As I cleared my desk to begin work on this month's News Journal, I stopped for a moment to ponder the many advertisements for trading systems that had accumulated there. It was this wide assortment of sure-fire winners that motivated me to write about trading system design. Although there are a few good tools available to the investor today, many trading methods are logically unfounded.

I believe software should fill a requirement, not a perceived need brought about by clever advertising and promotions. Sometimes it seems that our industry is overrun with people who will sell anything, whether or not it is helpful. The promoter of a well-known tool kit software product recently told me, "I know this stuff has little value, but if that's what they want, I'm happy to sell it to them!"

I felt it would be helpful to provide some background that might place the matter of system design in a better perspective. I doubt if many of you will be designing a trading system soon, but if you are considering a software purchase or if you want to test an idea, the following information may be invaluable. I hope this brief article will help you spot products and services that are improperly conceived or poorly designed.

Price Analysis

Least Squares and Moving Averages

In its simplest form, price analysis requires measurement of the rate and direction of price movement overtime. A mathematical approach that involves the fitting of data to a model such as a straight line, hyperbola or polynomial, etc. is known as the method of Least Squares. With the Least Squares method, the slope of price movement (rate of change over time) can be computed to establish both trend direction and the magnitude of change. In practice, many technicians adopt simpler means to a similar result with moving averages. An indication of trend direction can be established by comparing a short period moving average with a longer period average.

There are many techniques for identifying trend direction, but in my opinion, the differential filter is the best choice to produce a consistent edge in profitability. Anything else is too slow in reacting to dynamic market change. When a market suddenly accelerates its up or down movement, a moving average exit or reversal stop could leave you in the dust. It is likely that an unexpected retracement will take back profits you may have waited months to gain. It is beyond the scope of this article to explain differential filtering techniques, but I will discuss

What's News

Factors Affecting Trading System Design ...	1
Apple Pie & The Seasonal Recipe	3
How To Scale A Seasonal Index	3
Spread Corner	4
Ask Customer Service	5
Seasonal Indices.....	6
CSI Software Status & Product Summary	8

them in future articles as the Unfair Advantage® software nears completion. The Unfair Advantage will rely heavily on differential filtering.

Volatility

Another measurement of price action is volatility, which is a multiple of the statistical norm known as the standard deviation. In simpler terms, it is the tendency of prices to move in a wide or narrow range. Many technical systems depend on volatility. It comes in handy for setting stops and objectives. It is also useful in establishing confidence that prices will remain in a pre-specified range.

Data stationarity

Before rushing out to buy a trading system, it makes sense to explore the nature of the data you plan to study. I believe the question of stationarity is crucial in any market analysis. We reported on the impor-

tance of stationarity in the August, 1990 CSI News Journal, but I'll review it briefly here.

Data that is stationary possesses a constant mean and variance over time. Futures data is not stationary. It needs to be filtered and processed to get into a form that is appropriate for logical analysis. Stationarity alone does not guarantee reliable predictions, but without it, good predictions are all but impossible to develop. At the risk of sounding self-serving, we believe Perpetual Contract® data is as close to stationary as futures data can be.

Trading systems that require frequent reassessments of market volatility often need frequent re-optimization of system control parameters as well. In my opinion, this is largely because stationarity is not present in the data being analyzed. The persistent reassessment requirements are a crutch that reveals a lack of confidence in system methodology by the system's developer.

Optimization

On the other hand, many technical analysts regularly contradict themselves by making inaccurate remarks concerning "over-optimization." The suggestion is that extensive optimization is a tragic mistake that will lead to trading losses.

I've said it before and I'll say it again, "Just because they don't know how to build a viable trading system through optimization doesn't mean it can't be done." Optimization is an important mechanical means that will maximize the information value present in your model. I favor thorough optimization with reduced parameter counts (control variables) and increased sample size. Every analyst

owes it to himself and his customers to go as far as possible with optimization. It is absurd to conclude that, given a sound design, one could "over-optimize."

Volume And Open Interest

Most trading systems on futures markets ignore the impact of volume and open interest on future price. The reason for this is that the impact of volume and open interest on future price is not easily established. There is useful information there, but it takes a little thought to dig it out.

One possible problem for the analyst is that volume tends to be heavily related, if not correlated, to open interest. This relationship makes it difficult to separate the effects of each on market action. The truth is that both volume and open interest generally rise as the harvest or equivalent approaches and they both fall before and during the planting seasons.

Volume and open interest are not independent of each other, even though many analysts make the implicit assumption that they are. When analyzing market data, it is futile to treat this largely redundant input in the same manner as independent variables. This is a pitfall that is found when traders base decisions on a majority vote of several technical indicators, all of which measure the same market characteristics. Proponents of such flawed logic tend to assume large losses without a clear picture of why the odds are stacked against them.

In work done with volume and open interest, we have combined the pair into one parameter. This transformation simplifies the analysis process and delivers a possible reduction in parameter count. The result is a very

distinct advantage.

A common technical assumption is that price movements on heavy volume (or open interest) are more lasting and significant than price changes on light volume (or open interest). Whether or not this is true is a subject for study. When combining volume and open interest into a single parameter, it pays to analyze what volume measures. If open interest increases (or decreases) on a given day, volume by definition must rise a minimum of the same quantity to support the open interest growth (or drop). Any additional volume above that prompted by a change in open interest must be attributed to influences that are additional to the effects of open interest movement.

It may be a misnomer, but we like to call this the day-trader influence. It represents all of the net forces (except for seasonal open interest growth or decline) that bear upon the market. Our QuickStudy software offers a simple menu item which plots this non-seasonal day-trader volume. The method of computation is shown in the QP/QS manual.

Once the suggested volume/open interest transformation is introduced, the result should be combined with current pricing statistics. This will reinforce a market entry or exit timing signal or assist in a money management decision. The mechanics of this analysis will depend on the exact objectives you seek to accomplish.

Other Market Forces

Failure to consider other market factors is where most trading systems break down. The technical analyst spends long hours finding ways to smooth, filter and combine price and

Perhaps volume and open interest for a single market. The result is a system that effectively says, "Price determines price." In other words, tomorrow's price is expected to be a function of today's and many prior day's prices.

No commodity or stock price exists in a vacuum. Corn price is influenced not by past corn price alone, but by the current situation for oats, wheat, crude oil, interest rates, weather and many other factors. Your job, if you really want to make some money, is to integrate these other factors in some level of detail. Include them in your model and you will have a chance.

Today's corn price and prices for the last year or so are not enough to tell you how to trade corn. You need as much as 20 to 50 years of corn to understand its typical market behavior. We recommend introducing seasonal information such as our #62 Seasonal Index for any commodity. CSI Seasonal Indices are scientifically compiled to give our customers an important advantage.

Process the other items of influence in your model that affect the price of corn. You should have a facility to measure whether corn is priced in correct alignment with other related markets. This helps you determine the level of assumed risk.

In my opinion, if you do not have a fundamental reason for taking a given position, then you are relying on a hunch. It follows that you may have less than an even chance of success. I recommend looking at spread relationships and seasonals before making a trading decision. It may appear to the technician that price determines price, but looks can be deceiving.

The curvy highway marker tells

you what lies ahead, but if you are a realist, you will admit that tool kit software tells you what is in your rear view mirror. Don't be fooled by any software developer who states or even suggests that a brief history of past data can tell you what lies ahead. □

On A Seasonal Basis My Mother Bakes A Great Apple Pie

My mother would give just about any appreciative visitor a piece of one of her delicious apple pies. Those fortunate enough to enjoy a serving will be told wonderful stories about her grandchildren. If you listen carefully, you will get a second serving. Those tempted to ask for the recipe shouldn't, because she won't part with it.

I can't tell you how many users have requested the recipe for our #62 Seasonal Index data. We are grateful for your requests (and we happen to know that some have originated from those who pretend to compete with us) because our readers are telling us we have something of spectacular value. Even though we would like to reveal the seasonal formulas to our loyal customers, we feel we must keep it under wraps. We cannot risk helping those who pattern everything they do (down to the commodity number, delivery month code, conversion factor, and nearly every characteristic of service), after CSI. The shameless *?!*>!*'s have even stolen our data format.

We have been gradually extending our wheat data base back to 1895. A few weeks after it is finally released we expect some dirty data vendor from the West to be selling our infor-

mation as his own. We can't disclose our recipe, but we will reward any CSI user who introduces a new daily user to CSI, or who is successful in converting to CSI any user of a competitive service. We'll give the nominee and the nominator \$50.00 each in free historical data. This offer can be used for any type information including Seasonal Index and Perpetual Contract data. □

Best Wishes for Prosperous Trading,

Bob Pelletier

How to Scale A Seasonal Index

Since we introduced our new Seasonal Indices in the March, 1991 CSI News Journal, we have had many good reports from satisfied customers. Some users found that their index charts looked like our examples, but the numerical values were different. Others found that both their charts were different from our examples and that the scale was also different. In the latter case the conversion factor required was of an opposite sign than the conversion factor of the parent commodity. In the former case the indices are plotted with a different positioning of the decimal point.

Seasonal Indices are intended to be presented as three-digit numbers oscillating above and below the zero point on your chart. To achieve this presentation, you should adjust the CONVERSION FACTOR for each index to 3. To change the conversion factor, simple enter QuickManager's Editor Subsystem and select Edit Data Disk Master File. Find one of your Seasonal Index files (identified

Spread Corner

by the delivery month code 62) by pressing <Pg Dn> until the desired file is listed or by entering the record number. You can look up the record numbers on QuickManager's expanded data disk catalog feature.

Once a Seasonal Index record has been found, press <Enter> several times until you reach the Conversion Factor entry. Change the value to 3 and press <Esc>. This is a one-time process, which should be performed on each file of Seasonal Index data whenever the conversion factor for the commodity is different from 3.

We apologize for neglecting to mention this in the past. Please feel free to contact our Customer Service Department if you need additional assistance. □

FMD is pleased to announce that it has merged with the Computer Center of Davie. This combination of resources will provide the same high quality hardware with improved services, more choices and very competitive pricing. They offer one year warranty on all hardware, five year warranty on labor and free installation of software purchased with a computer system. They also have a 24-hour software support service. You can reach the Center of Davie/Financial Micro Data, Inc. at (800) 683-7672. See the insert for some of their popular pricing.

The study of relationships between pairs of commodities can add a great deal to your market analysis. Quick-Plot/QuickStudy lets you view relationships directly by charting two or more commodities together on the screen. It also allows you to invert one or more time series to examine the important inverse relationships between markets.

An example of two markets with inverse relationships is Crude Oil and S&P 500 Index futures. You know that higher oil prices have a negative impact on our economy, so it follows that oil has an inverse relationship to the S&P Index.

The chart shows a normal S&P 500 contract with an inverted Crude Oil contract. Notice the prevailing tendency for the inverse of light crude to lead the stock market by days or weeks!

Experimentation with many N.Y. security markets and heavily related commodity markets reveals many similar opportunities. We hope to bring you news of other relationships in future News Journals.

To make this chart, we loaded the S&P 500 contract normally, then activated the empty window below it with the <Tab> key. We pressed <L> to Load another contract to the screen. A list of paths was displayed for contract selection, but since we wanted to change the charting constants, we pressed <Esc> before selecting the path. This brought up the same questions we answered initially about the number of days to load, total or individual volume, and

whether or not to invert the data.

When asked, "Do you wish to invert the data?" we answered <Y>es. We were then asked, "Enter power of



ten multiplier after inversion?" Zero was used here. (The multiplier can be increased as needed for better visibility when multiple files are displayed in the same window.)

Our lists of paths and data files were then redisplayed and we selected the NY Crude Oil chart you see. This chart confirms the inverse relationship we suspected between the S&P 500 Index and Crude Oil.

If additional charts are to be added to the screen, be sure to change the charting constants so they won't be inverted. Just press <Esc> before selecting the data file. This lets you respecify your inversion requirements. □

Ask Customer Service:

Each month in this column, our service staff addresses a topic of interest to many CSI customers. This month Karen, Kathy, Rudi, Susan and Tami have presented some common questions about QuickTrieve version 4's MASTER PATH FILE and DISTRIBUTION PATH FILE.

Q. *I noticed that I can edit a MASTER PATH FILE and a DISTRIBUTION PATH FILE through the EditorSubsystem. Will you please explain the difference between the two?*

A. The MASTER PATH FILE (called QPATH) is simply a list of subdirectories holding CSI data. It tells QuickTrieve where to look for CSI-format data files. QuickTrieve uses this file for historical data distribution and for all the features listed on the QuickManager menu.

The DISTRIBUTION PATH FILE (called QPATHD) is a list of subdirectories that tells QuickTrieve where to look to distribute daily updates. It limits the paths that are scanned during data distribution. If no QPATHD exists, QuickTrieve tries to distribute daily updates to all paths listed in QPATH. The subdirectories listed in QPATHD must be a subset of the directories listed in QPATH.

Q. *Why would I want to limit paths for data distribution with QPATHD?*

A. Because limiting the number of directories that QuickTrieve scans can save time. Users of just a few data directories probably won't benefit much, but users with many subdirectories will see a big difference. This is particularly true if many of your directories don't get any daily updates.

For example, assume you have eight data directories. Four contain active contracts and stocks which are sorted into groups. One holds only continuous weekly files. One holds continuous monthly files. The remaining two act as archives for expired contracts.

If you use only QPATH (with no QPATHD), QuickTrieve will scan each of your directories in search of matching files, but will only distribute data to the four directories with current daily files. If you have a distribution path file that lists only the four directories that get updates each day, you may save a significant amount of time.

Q. *Must I have a Master Path File? What about a Distribution Path File?*

A. If you are using QuickTrieve, then you have a Master Path file! QuickTrieve created it automatically the first time you started the program. It contains initially the one path you listed when you were asked

to "Enter Path for QuickTrieve data files." New paths can be added as desired.

A distribution path file is completely optional. If you want one, you must create it using the EditorSubsystem's EDIT Distribution Path feature. Simply list the subdirectories holding files to be updated daily and save the file. Remember, everything listed here must also be listed in the Master Path File.

Q. *Will a Distribution Path File affect distribution of historical data?*

A. No. It only affects the distribution of daily updates. All other QuickTrieve and QuickManager features use the full Master Path File list.

Q. *May I include diskette drives such as A: or B: in my Master Path file and Distribution Path File?*

A. It isn't recommended. Doing so slows the time required to start QuickTrieve. If you must distribute your daily updates directly to diskettes, by all means add A: or B:. It'll speed the process if you put the diskette in the drive before starting QuickTrieve. □

Seasonal Indices

(Neural Network Training Material)

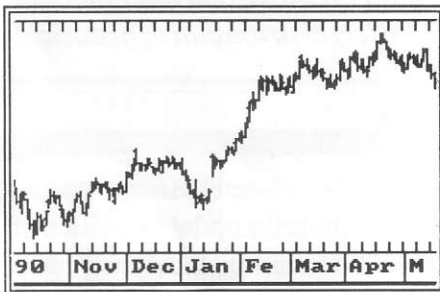
Seasonal tendencies in commodity pricing are all too often overlooked in the "technical" approach to market analysis. We are pleased to announce that we have developed a way to combine seasonal information with daily chart analysis to promote a better understanding of commodity price movement.

CSI's new Seasonal Indices are a compilation of daily seasonal values for most popular commodities. We have calculated a seasonal index rating for each of the average 251 trading days per year using our vast data resources. Some of these indices are virtually a mirror image of the recent past, while others reflect only subtle seasonal effects. The general wave form tends to prevail all of the time. The seasonal index repeats year after year with the same wave form, permitting a glimpse of what might be expected beyond the current date.

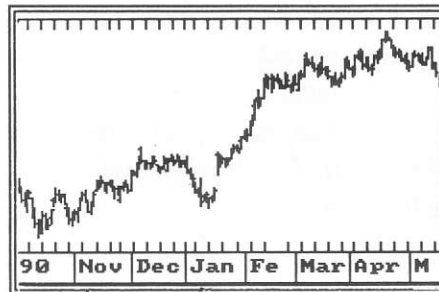
Neural networks, not unlike old fashioned brain power, require substantive information to generate workable results. Seasonal market characteristics and data on markets correlated with those you hope to forecast are among the most important market analysis inputs. It is well known that neural networks do not replace sound mathematics. By supplying such vital processed information, we have done your homework.

Examine the predictive market power of CSI seasonals and related markets in the following examples drawn from our neural network training material:

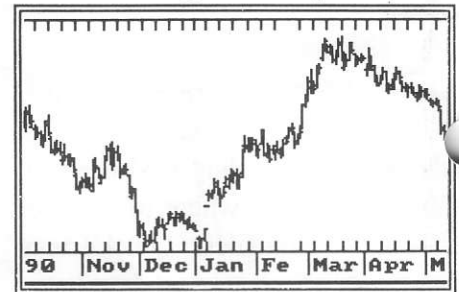
S&P 500 forward prices



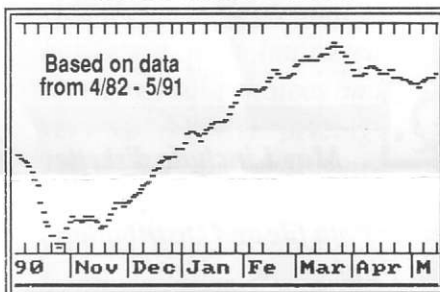
S&P 500 forward prices



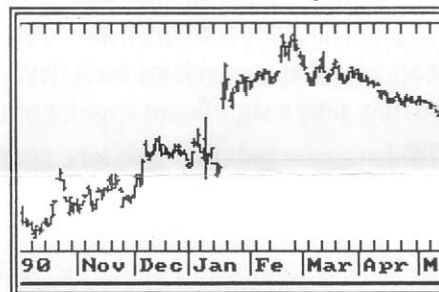
Live Hog forward prices



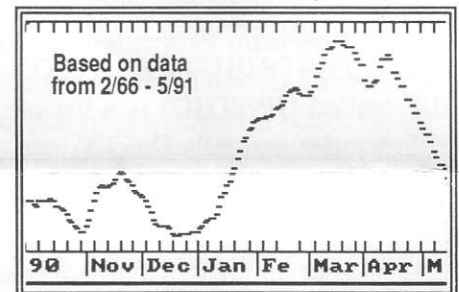
Seasonal S&P Index



Inverted Crude Oil prices



Seasonal Live Hog index



These examples show how easily seasonal indices and related markets (shown in the lower charts) contribute to the trade timing of the top charts.

Suggested Usage: The suggested usage of this index data is to look for coincident peaks and troughs between the market and the index. When peaks coincide or when troughs coincide, the risk of loss on a trading position should be at its minimum. For some traders this may translate into an opportunity to take a heavier position. These indices are best studied along with a minimum of two years of Perpetual Contract data and with actual contract delivery months. Sufficient time should be remaining on the near months to implement your trading strategy. It is not recommended that seasonal indices be used as the sole basis for trading. They should be used in conjunction with other confirming market factors.

HISTORICAL DATA

36 MONTH MINIMUM PER COMMODITY
MAXIMUM CHARGE = 36 MONTHS PER COMMODITY
 additional years of any commodity are priced at \$1/yr per commodity

Cost per month of data is shown below:

DISKETTES

First 500 months 56¢

Next 1000 months 52¢

(Disks subject to \$50 minimum order)

BY PHONE

Long distance 60¢

Network access (night) 65¢

Network access (day) .. 70¢

Overseas toll-free 90¢

Seasonal

VALUE PACK

The entire seasonal index history for three years of all commodities we have listed for the discounted rate of

\$444

Purchasers of this special offer who regularly collect at least five #62 contracts in their daily portfolio will also receive a two-year history of all index revisions as they are offered for a price of \$40. We expect to make periodic revisions which will be of marginal significance in months to come.

CSI's SEASONAL INDICES

COMMODITY	SYMB.
002	Live Cattle LC
003	Cocoa CO
004	Live Hogs LH
005	Pork Bellies PB
007	Cotton NY
009	Corn C
010	Coffee CC
011	Oats O
012	Orange Juice OJ
013	Platinum PL
016	Silver SV
017	Soybeans S
018	Soybean Meal SM
019	Soybean Oil BO
020	Sugar #11 SU
021	Wheat (CBT) W
022	Wheat (KCBT) KW
024	Deutschemark DM
025	Swiss Franc SF
026	British Pound BP
027	Lumber LB
030	Gold GC
033	Feeder Cattle FC
044	T-Bonds TR
065	Japanese Yen JY
069	Palladium PA
089	Heating Oil HO
143	Value Line Index KV
149	S&P 500 Index SP
150	T-Notes TS
151	NYSE Comp. Indx YX
188	Light Crude Oil CL
224	Unleaded Gasoline HU

Order CSI Delivery Month Code 62 for each of the above commodities on which Seasonal Indices are desired.

PRICING: Seasonal Indices are priced the same as our Perpetual Contract Data, with one major exception. Since the index form repeats itself year after year, we require the purchase of the first 36 months at the above rates and offer all preceding years at 8.33¢ per month (\$1.00 per year). For example, you can get the Seasonal Index on diskette for Feeder Cattle going back to November 30, 1966 and pay \$20.16 for the final 3 years and \$1.00 more for each additional duplicate year.

PERIODIC REVISIONS: We expect to recalculate these Seasonal Indices from time to time so that the most recent pricing information can be included in the index data. The subtle changes brought about through these revisions will not invalidate previous index data, but they may enhance market insight. Once you have purchased the history of

any of these indices, you may buy the last two years of revised data for \$5.00 per commodity as the revisions become available.

DAILY UPDATES: Daily updates on Seasonal Index data are priced the same as updates on any other commodity contract in your daily-update portfolio. See our Daily Update Price Schedule for details. Even though daily seasonal indexing updates can be derived from your #62 historical files, we recommend you also add to your daily file the #62 contract for the commodities you follow. Granted, it is a matter of convenience, but you will never get out of sync with the market when an opportunity develops.