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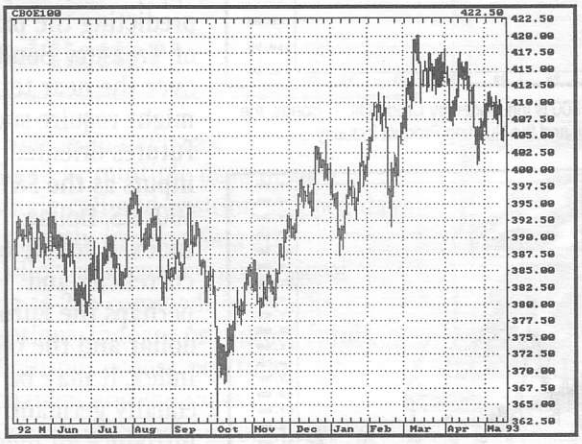
Causal Intermarket Relationships

In many aspects of our lives there is a certain order - a pattern that repeats throughout time: Spring follows winter, sunrise follows sunset, black clouds follow city buses... The list goes on. I leave it to philosophers to tell us why the planets move as they do, but even I can fathom why there is a cloud behind a bus. The diesel fuel burning in the combustion engine is clearly the cause of the smoke. Hence, with the bus and the black cloud we have a causal interrelationship.

If we look hard enough can we find a causal relationship between the prices of seemingly unrelated markets? We will discuss the relationships between the markets and explore some of the industry or intermarket groups that provide insight into future price behavior.



The CBOE 100 index (OEX, above) can be forecasted using T. Bonds, the U.S. Dollar Index, FTSE-100, Nikkei Dow, the Dow Jones Industrials and Utilities, and the Japanese Yen.

A number of basic relationships are key to every market study. For example, when employing a neural network, a given set of stimuli can be found to indirectly contribute to the behavior of certain tradeable time series. Let's consider the price of the CBOE 100 Index (the OEX). It is predictable by a known level of error by using as stimuli the independent time series: Treasury Bonds, U.S. Dollar Index, Financial Times 100, Nikkei Dow, Dow Jones Industrials, Dow Jones Utilities and the Japanese Yen.

These independent determinants may at first appear to be odd and disjointed. However, a well-designed neural network can cut through the apparent redundancy and superfluity. The neural network establishes weights and transformations to wring the maximum predictive effects from the data.

The neural network example demonstrates how the substantive causal content of certain input can produce a reliable market forecast. Other types of analysis can also benefit from understanding and exploiting causal market interrelationships.

Finding the subset of input time series and the most appropriate set of respective mathematical transformations is the most important prerequisite step needed to build a responsive model. Market study mechanics require examining a plausible subset of such stimuli to find a manageable group that will predict a given independent variable within a known level of

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Causal Intermarket Relationships

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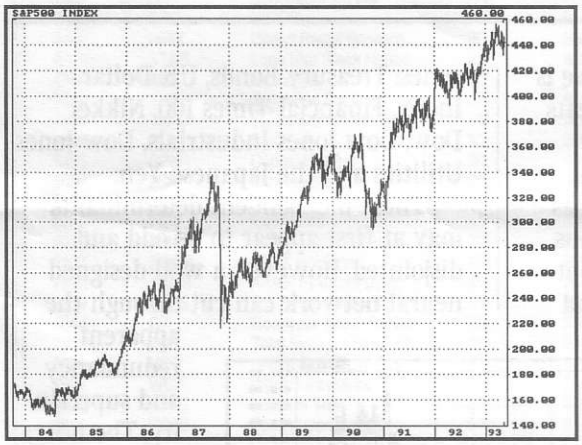
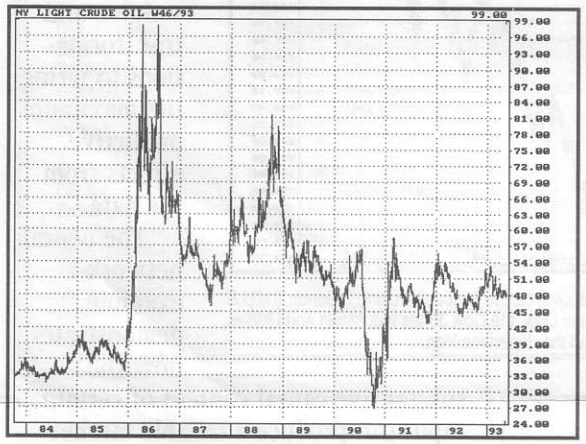
acceptable error. There are at least 500 viable time series grouped by commodity and security industry from which to choose causal stimuli. All of these input series can be captured from CSI's data base of commodities and securities.



Dependent variable S&P 500 is influenced by Crude Oil, T. Bonds, the U.S. Dollar Index and the Building Product Industry.



The Crude Oil Market moves inverse to the stock market, as demonstrated by this inverted crude oil chart.

If you want to build models that actually predict within known levels of statistical significance, you should understand the market forces that apply. For example, predicting the price of Treasury Bonds over the near term might require such futures oriented inputs as the S&P 500, U.S. Dollar Index, a couple of currencies and perhaps the Eurodollar and the CRB Index. It may be equally germane to introduce an index of securities in the industries: Money Center Bank stocks, Wholesale Building Products, Federal Funds Rate, Real Estate Development and Operations, Automobile Manufacturing, and perhaps Oil and Gas Production.

Industries classified for their financial domain of prominence are usually important in predicting a given dependant futures market. Sympathetic independent futures market time series should not be overlooked, however. They too may yield predictive results. Stimuli required to drive a given futures market may come from areas unrelated to the futures industry. As long as the input is readily available on a timely basis, the better indicators should be used.

My hope is that this article will provoke some thought on how the markets interact. To that end, I will introduce a market (dependant variable) that we wish to predict and additional independent markets that we have reason to believe could influence the future course of the dependant variable.

Dependant Variable Time Series: S&P 500

Independent Variable Time Series:

Light Crude Oil futures - The crude oil market is considered a predictor of stock market forces because of the importance of energy on our economy. When energy is relatively cheap, industry can produce products at lower costs. Conversely, when energy is relatively expensive, industry stock prices are likely to fall in anticipation of lower profits.

T - Bond futures - The movement of the bond markets has an impact on stock prices. Bond prices influence interest rates and security growth is influenced by the cost of money. Interrelationships are not always clear but there is an ever-present influence of the bond market over the stocks.

U.S. Dollar Index - The value of the dollar with respect to key international currencies will have a broad influence on the U.S. stock market depending upon the mix of domestic or foreign business and capital investment that U.S. companies as a whole might enjoy.

U.S. Building Products Industry - The relative success or failure of a segment of the housing industry can be a leading indicator for U.S. stocks as a whole. Tracking such a time series may have a fruitful influence on determining longer term stock prices.

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Coming Next Month: IPOs, Movers and Mergers

Many a fortune has been made by buying the stocks of small companies when they are first offered to the public. An early play may help you catch a rising star while the price and P/E ratio are still low. Aside from the occasional hot tip on an initial public offering (IPO), how can the average trader know which stocks to watch? One way is to subscribe to a service in New York that charges $10,000 a year for IPO information. A more economical alternative is to watch the CSI Technical Journal for listings of new issues.

Starting in the July '93 issue, the CSI Technical Journal will present an expanded format of our Changes to the Stock Data Base column. This will include a listing of all new issues added to the CSI Stock Data Base that are initial public offerings (usually about 120 per month). We'll also tell you when stocks move between exchanges, change their names or symbols and when they merge or delist.

This is just one of the many free benefits provided to CSI subscribers. Our goal is to help you trade better and smarter by offering the tools you need. ✦

Wow, That's Fast!

See Ask Customer Service for info on 14.4 modem transmission.

Mac Support Getting Better and Better

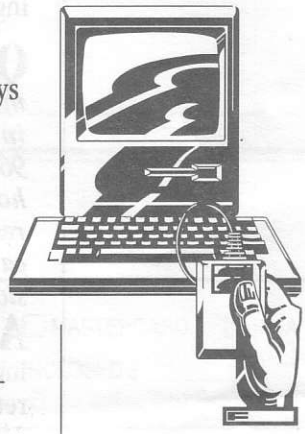
Beta Test users of Trade Data Manager™ version 1.3 are finding their Macintosh computers can access CSI data more easily than ever! We expect to complete testing of this new release within the month and are now accepting orders. New additions to the Trade Data Manager program include:

- PowerBook compatibility.
- Unattended collection directly through CompuTrac/M's service menu.
- Daily reports saved to a text file for review with any editor such as Microsoft Word, MacWrite, etc.
- Support of the Apple "Communications Toolbox" and associated Communications Tools.
- Keyboard shortcuts for all frequently accessed dialogs. Mac users can perform virtually all functions from the keyboard.
- Revised manual covering all enhancements.

In addition to these new capabilities, Trade Data Manager can:

- Download daily updates and historical data from CSI using a unique roster file for data management.
- Use network or direct-dial access - even from overseas!
- Retrieve multiple days in a single call and position skipped days correctly in your data file.
- Collect any custom portfolio of up to 256 commodities, stocks, options, indexes or mutual funds.
- Transmit orders, portfolio changes and messages.
- Deliver electronic error corrections.
- Calculate account equity and maintain personal accounting records.
- Graphically display data in bar chart form.
- Load and display multiple charts simultaneously.
- Edit data through the interactive graphic display.
- Compute stock splits and build weekly or monthly files from daily data.
- Store data in standard text files for full compatibility with CompuTrac/M.
- Store data in its own TDM format and convert between standard text and TDM format.

To order your Trade Data Manager v.1.3, call CSI Marketing or use the order form on page 5. ✦



Attention Mac Software Developers:

We invite Macintosh programmers to create TDM-compatible software. A growing number of investors are turning to Macintosh for data retrieval and analysis. Catch the wave! Contact CSI marketing for details on data format and incentives.

Ask Customer Service

Each month in this column, our customer service staff addresses a topic of interest to many subscribers. This month, they discuss some common questions and problems associated with upgrading your modem.

Q. *I got a new modem for my computer and although I didn't change my QuickTrieve at all, it just won't dial into the CSI computer any more. How can I get back to normal?*

A. If your new modem is properly installed and connected to a working phone jack, it is likely that the software is configured for a different communications port than your old modem. Check QuickTrieve's Change User Constants to see if it is set for COM1, COM2, COM3 or COM4. Experiment with different choices until you find the one that works. If you don't like the trial-and-error method, check with your hardware supplier or look at the modem to find out what COM PORT was used and change your user constants accordingly.

Q. *I just installed a new high-speed modem and changed the baud rate in QuickTrieve's User Constants to 9600. The modem dials into the CSI host computer O.K., but there is no response to the LOGON prompt. The call always ends with a "Transmission Timeout." What is the problem?*

A. It sounds like you aren't reaching a 9600 baud port at CSI. To retrieve data at speeds greater than 2400 baud, you must dial direct using the phone number (407) 368-5306. Use the dialog file LONGDIST.LOG for direct-dial access.

For 2400 baud network access, use Tymnet (TYMNET.LOG dialog file) and the appropriate local Tymnet phone number. Network access through Telenet is available at speeds up to 1200 baud.

Q. *My modem can retrieve data at incredibly high speeds, but I'm wondering if I lose data integrity in fast retrieval sessions. Is speed a factor in transmission errors?*

A. Theoretically, faster transmissions are more prone to error than slower ones; However, it is unlikely that significantly more transmission errors will occur at 9600 baud than would occur at 1200 or even 300 baud. This is particularly true since most 9600 baud modems have a built-in error correction feature which we support. QuickTrieve checks all transmissions for errors through a checksumming technique that catches most dropped or garbled characters. If you notice QuickTrieve regularly recollecting lines received in error, you might try a slower baud rate to see if it makes a difference.

Q. *I am the proud owner of a new FAXMODEM, which was supposed to make my life easier. Unfortunately, it doesn't seem to work for data transmissions from CSI. Can you help?*

A. Yes! Our programmers have developed a special dialog file for use with the Gateway Faxmodem. Just call any of the Customer Service representatives and we'll give you complete instructions. Although the new access codes were written for a Gateway Faxmodem, they may work for other models as well.

Q. *I get a very large portfolio from CSI and I want the fastest mode of retrieval possible with my P.C. What would you recommend?*

A. The fastest means right now is a 9600 baud modem operating with V.42 data compression. This will yield an effective baud rate of 19,200. A 14.4 modem operating without compression would be our second choice. For either of these methods, enter the Baud Rate in your User Constants as 1920 (19200 with the last zero dropped to fit the four-character field). Use the (407) 368-5306 phone number. If your faxmodem has problems at the 14.4 rate, degrade to a lower speed. ✦

QuickTrieve 4.05 to Handle Larger Values

The QuickTrieve data format currently supports price values up to 65,535. Since two indexes have crossed this threshold, we have been forced to quote truncated prices. QuickTrieve version 4.05, which will be available in July '93, will support values up to 99999, thus eliminating the need for truncation.

Although not all CSI-compatible software will be affected by the format change, we are attempting to notifying all compatible software vendors by mail. If you are a software developer and have not received details on the new format, please contact CSI to request an information packet. Current QuickTrieve users who do not upgrade to version 4.05 will not be affected, nor will CSI subscribers who update CompuTrac-format files. ✦

Causal Intermarket Relationships

(continued from page 2)

To illustrate some of the effects of these factors, please see figures 1 & 2 on page 2. These show the S&P 500 and Light Crude Oil futures, respectively. Please notice how the inverted crude oil time series demonstrates the stimulating importance of lower crude prices on the equity markets.

The 300+ futures markets and the 200 or so financially significant industry security groupings which can be followed through CSI's data base can help to expose future price behavior. In subsequent CSI Technical Journals we will explain the details of how you can make use of the various security industries through our extensive data base. ✦

Bob Pelletier

Holiday NEWS

CSI will be closed for voice communication on Monday, July 5 for the Independence Day holiday. The CSI host computer will be accessible as usual throughout the holiday weekend.

CSI Software Product Summary

- ❑ **QuickTrieve®/QuickManager®** - To retrieve, manage & edit data; includes Alert Calendar: Unrestricted use $99, Daily data user $39 and 4.04 Upgrade $29
- ❑ **QuickPlot®/QuickStudy®** - Charting & analysis software (requires QT/QM) $156 Currently on sale @ $99
- ❑ **Trade Data Manager™** - Macintosh downloader & accounting program; includes 1st month of updates $99
- ❑ **Trading System Performance Evaluator™ (TSPE)** - Computes your system's capital requirements $199
- ❑ **Trader's Money Manager™** - Introductory price $499 (includes TSPE)
- ❑ **TraDe$k™** - Traders' complete accounting system-(price varies with number of accounts) Starting @ $399/Unrestricted use $299/Daily data user or 12-month lease starting @ $22/Mo.
- ❑ **Seasonal Index Value Pack** - Ten years of history for 33 popular commodities $444
- ❑ **Daily Updates** - Starting at $10.80 per month
- ❑ **CSI Technical Journal** - Aug. 1990 to present $35/Yr. or $5/Reprint
- ❑ **CSI Mailing List** - $200/1,000 names (CSI users omitted)
- ❑ **CSI Product Catalog** - Free

☐ CHECK ☐ MASTERCARD ☐ VISA

AMOUNT ENCLOSED $ _____

CARD # _____

EXP. DATE _____

NAME _____

DAY PHONE (___) _____

ADDRESS _____

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SIGNATURE _____

USER ID#: _____

☐ 5¼" DISK ☐ 3½" DISK

06/93

All prices subject to change without notice.