

## In This Issue

Market Forces That Influence Cyclic Behavior .....	1
Using the Corporate Veil to Smooth Speculative Profits .....	3
Ask Customer Service .....	4
History On-Demand Delivers More Data .....	5
Product Summary .....	5
100:1 Data Compression... Not Bad! .....	6
Market Statistics Update & IPOs .....	7 & 8

Editor: Sabrina Carle  
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## Market Forces That Influence Cyclic Behavior

Market cycles offer a road map to profits which many attempt to follow. Unfortunately, conflicting road signs and unexpected crossroads can lead to wrong turns along the way. A prerequisite to reliable market prediction (reading the map) is knowing the important factors that drive the market. Cyclic market behavior is driven by the elements of price, time and production. In short, it is based upon the supply and demand curve for the underlying product, with the element of time thrown in.

The aspect of time is often missing from the more elementary treatment of the relationships between supply and demand. Surprisingly, this is true even though the more dynamic aspects of supply and demand occur when time is considered. The idea of adding time to the supply and demand curve was introduced in 1938 by Mordecai Ezekiel. In his Cobweb Theorem, supply and demand were placed into a time perspective. Price in one period affected supply in the next, etc. In 1957, G. Akerman expanded on the theorem.

The Cobweb Theorem can be used as a theoretical tool to explain cyclic behavior from lags in production response. The time required for reproduction and growth results in an inevitable lag in the response of agricultural commodity price to changes in the factors that influence production.

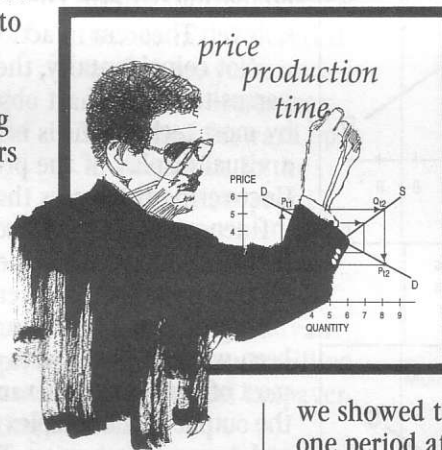
According to the theorem, the relationship between price and supply becomes visible only if the lag between a change in price and the resulting supply is sufficient to create a relatively fixed supply for a period of time. This is how the theory works and why the response lag takes place over a full cycle. The hog example below demonstrates this aptly.

In the 2/92 CSI News Journal (now the Technical Journal)

we showed that the price of hogs in one period affects the size of the pig crop in the following period. In turn, the crop size determines the number of hogs slaughtered in the next period. The number slaughtered affects the price. Price, in turn influences the size of the next pig crop and so on.

Based on this information, one can expect a high price in one period to translate into overproduction in the next period, which will be followed by a low price in the next, etc. The key element left to be determined in any exercise is the lag time one should wait for the reverse serial response. For hog traders, the lagged response time within the hog cycle must be understood.

In the four-year hog cycle, the lag times between the events of price, pig crop size, and number slaughtered are about one year each: First comes the decision to impregnate the sow. Then the gestation period of a sow, which is three months, three weeks and three



(continued on Page 2)

## Market Forces...

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In a free system of price discovery, the supply and demand curves constantly change their slopes in a perpetual search for the equilibrium point where supply and demand are in balance. Supply and demand curves in the area of economic analysis are usually displayed in a static form. Price is typically on the vertical scale and quantity on the horizontal scale.

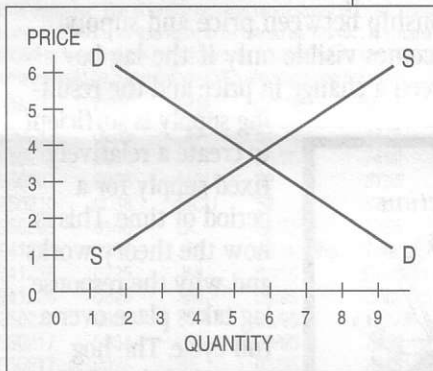


Figure 1 - Supply (S) and Demand (D) curves connecting price and quantity. One curve is simply a reverse ratio representation of the other.

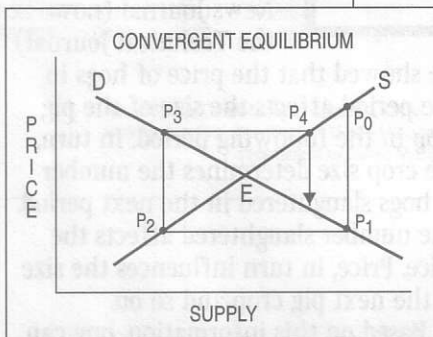


Figure 2 - In searching for equilibrium of Supply and Demand, the Cobweb theorem includes a time lag.

days. Add in the time required to fatten piglets to a marketable weight. Then add a month or so of marketing time and you have a full year between a farmer's decision and reaping his returns.

As demonstrated by this example, when time is added into the economist's equation, price in one period affects production (supply) in the next period which in turn affects price in the next period, etc. as price exhibits a cyclic or oscillating pattern. This is the Cobweb Theorem in action.

Not coincidentally, the price-versus-time bar chart observed by most technicians is basically a visual display of the process. Uncovering the forces that influence oscillating price patterns in markets is the secret all traders wish to master.

A great deal of literature has been written about cycles, but most of it attempts to examine the output of the complex supply and demand mechanism. The output (the price bar chart), is the tool upon which many technical traders base their decisions. In other words, the cyclic behavior examined by the technician is simply an analysis of symptoms to the supply demand fundamentals.

Trading signals based on symptomatic input should be avoided unless one can translate such input into realized net profits that are sufficient to cover the potential risk of loss.

The commodity and futures arena, like the stock and financial markets, deals in the fundamental raw materials necessary for daily living. Commodities are the building blocks of all societies. They respond in a predictable way to supply and demand fundamentals as they relate to price and time and supply and demand. Even so, not all markets can be explained as smoothly as the hog cycle complex.

In our increasingly specialized

modern society, financial entities also develop commodities. Computer chips, building materials, electronic devices, transportation equipment, and a multitude of man-made gadgets are all becoming commodities which affect every day life. And all of these areas are subject to the same economic forces of supply and demand.

Shorter term analysis favored by speculators involves product substitution when the short term price rises or falls. There isn't sufficient time in the speculator's view to wait for something analogous to the hog cycle to develop. The price-versus-quantity relationships are present for analytical review on a shorter term basis, but more information is needed. The intermarket relationships of past data on substitute markets must also be reviewed to uncover likely candidates that contribute to short term changes in market direction.

Turning the crank on time, as pertinent market forces are fed into an economic model, requires a skillful filtering methodology. A successful technique will sample, transform, correlate, and weight the input. The analyst addresses these areas to capture the substance of independent market movements that directly contribute to a proposed dependant response. Such a glib solution may appear simple to achieve, but there is no physical crank that makes sense of candidate inputs. The analyst must develop a more or less heuristic process. The chosen method must, through the power of computer synthesis and simulation, help to predict the dependant response.

A number of cumulative step-wise iterative procedures exist which can be used to "turn the crank." The one used must search for a way to compute a best fit non-linear procedure for forecasting future market cyclic behavior. Some of the methods are tied

(continued on Page 6)

## Using the Corporate Veil to Smooth Speculative Profits and Retain What You Earn

Few professionals, save perhaps the oil drilling wildcatter and those of a similar ilk, have a rockier road to profits than the commodity market speculator. The government, which you may have considered a neutral player in the investment game, can quickly turn predator given the right circumstances. It is important that you understand not only the markets, but also the tax laws before undertaking a serious bid at conquering the markets.

If you trade as an individual, the IRS will tax all of your profits at your highest marginal rate. If you have a very large profit in a given year, expect to pay nearly 40% in taxes. If good years follow good years, you'll still preserve sufficient after-tax dollars to make the venture worthwhile. The government will gladly act as your silent partner, quietly sharing in your success.

It is when up to three good years are followed by a bad year that the picture turns less rosy and Uncle Sam reveals his less charitable side. For example, let's say you make a handsome \$1 million profit in one year, followed by a \$1 million loss the next. The result is definitely not the breakeven level one might expect. The bottom line for these two years is a \$400,000 loss. After taxes, your \$1 million profit would amount to a net of only \$600,000 in the first year. Coupled with the \$1 million dollar loss, the end result is -\$400,000. The IRS is not about to average out your profits and give back the tax you paid the prior year.

For the individual investor, when good years are followed by a bad year, losses cannot be carried backward in time. The result is potentially devastat-

ing. Is there a solution? Perhaps. We suggest you consider incorporating your trading activities to keep a better balance and preserve more capital in times of fluctuating profits. A simple corporate veil will afford you the same tax advantages used by businesses across the country.

Once a corporation is established, if you have a profit followed by a loss, the loss may be carried back three years and any excess losses may be carried forward up to five years. In the million dollar profit scenario described above, your books could reflect the actual break-even

situation, giving you an advantage approaching \$400,000 per million in gains over the individual taxpayer accounting method.

Your exact tax savings depends on the expense of incorporating and the applicable state, local and federal taxes. If you are successful in your corporate trading account you will eventually want to pass your after-tax profits to your personal account. At that time, you will be subject to an additional second tier of tax. This is, of course, the dual taxation the government imposes on corporate owners. Look at the additional tax as the cost of earning the right to smooth out a potentially volatile business enterprise. Dual taxation aside, the net result may be well worth the additional expense. Check with a qualified tax consultant or attorney who is familiar with tax laws to learn the details as they apply to you. ♦



### ***COT Still in the Works***

***Commitment of Traders information is still planned for the data base, but is not yet available for updates. Watch upcoming journals for more information.***

## Ask Customer Service

*Each month in this column, the CSI Customer Service staff addresses a topic of interest to many of our subscribers. This month, they'll review some QuickTrieve® features that can make your life a little easier.*

**Q.** *Can QuickTrieve call CSI to retrieve daily updates when I'm not there to push the buttons?*

**A.** Yes! This capability has been part of the IBM QuickTrieve for a long time. To activate this feature, simply change the AUTOCALL prompt on page 2 of User Constants to Y. The following line shows a CALL IN TIME, which should be set for the time you wish to call. Simply leave your computer running at the QuickTrieve Main Menu and your retrieval sessions will be handled automatically.

Before using Autocall, please adjust the TIME ZONE DELAY on page 2 of User Constants and make sure your computer's DATE and TIME are correct.

**Q.** *Will QuickTrieve automatically create new QuickTrieve-format or Metastock format files after distribution without me answering these questions at every retrieval session?*

**A.** Yes! This is one of many questions for which you may supply permanent answers in User Constants. See the prompts for CREATE QT HISTORY, CREATE QT DAILY, CREATE MS HISTORY and CREATE MS DAILY on pages 4 and 5. The default for these entries is (A)sk, which is why you are asked at each retrieval session. If you substitute (Y)es or (N)o, you'll avoid these questions and QuickTrieve will proceed with your permanent response.

**Q.** *Can I pick up both my custom stock portfolio and a large commodity portfolio in the same phone call?*

**A.** Yes! Our software can accommodate multiple custom portfolios, multiple fixed portfolios, or any combination of the two. Our marketing representatives can help you determine which combination of custom and/or fixed portfolios will most closely meet your needs. Please call them if you need assistance.

**Q.** *Can I retrieve daily updates and historical data at any time of the day or night?*

**A.** Certainly. The CSI host computer is functional 24 hours a day, seven days a week, with minor interruptions for routine maintenance amounting to about 1/2 hour per week. Once we have posted today's prices, they are available on your daily update portfolio for a full nine weeks. Historical data for commodities, stocks, indexes and funds can be ordered and retrieved instantaneously as history on-demand whenever you choose to order.

History on-demand is now available for any type of data except options and Seasonal Indices.

**Q.** *I sometimes have trouble getting through to place an order. Is there a particularly good time to call or is there a better alternative?*

**A.** The peak time for calls to customer service is late afternoon, just after the markets close. Monday through Wednesday tend to be busier than Thursday and Friday. Avoiding these peak times can improve your odds of reaching a representative on your first call.

Certainly your best alternative for placing an order at any time is through QuickTrieve's Order Subsystem. This method gets your order processed immediately without the aid of our service staff and can save you up to 50% in costs. If you haven't tried it yet, we recommend you do so for your next order. ♦

### **March Billing Error:**

A glitch in our billing system resulted in charges for some history on-demand data that should have been complimentary. Your current invoice includes the reversal of any erroneous charges. ♦

## History On-Demand Delivers More Data - Perpetual Contract,<sup>®</sup> Cash and Nearest Future Data Now Available

Data processing delays are now a thing of the past for all types of stock and commodity history orders. Completing our planned History on-demand upgrade, we can now deliver cash, nearest future and Perpetual Contract data via this method.

To request these types of data, simply use QuickTrieve's Order Sub-system to place your order. Instead of a "delivery month" such as 06 for June, enter CSI's special delivery month code for the series you desire. Some examples of popular delivery month codes are:

- 54 - Current day cash
- 46 - 90-day forward Perpetual Contract data
- 55 - First nearest future rolling on 1st day of the spot month

Please see the Data Resources Appendix of your User's Manual for more information.

The only series still unavailable as History on-demand are options and Seasonal Index Data. These must be ordered as history on disk or as assisted history orders for phone retrieval. Please see our current rate schedule for applicable charges. ♦

### *Holiday* Schedule

CSI will be closed for voice communication from 11 p.m. Thursday, April 13th until 8 a.m. Monday, April 17th. The host computer will be accessible as usual throughout the Easter/Passover weekend.

## CSI Software Product Summary

Please check all that apply and complete the information box at right.

Mail or fax to CSI, 200 West Palmetto Park Road, Boca Raton, Florida 33432; Fax: (407) 392-7761

- QuickTrieve<sup>®</sup>/QuickManager<sup>®</sup>** for PC - To retrieve, manage & edit data (includes 1995 Alerts Calendar); New daily user \$59. QuickTrieve/QuickManager version 4.06 upgrade (for current QuickTrieve users only): \$39; shareware demo disk \$5
- 1995 Commodity Alerts Calendar** for use with QuickTrieve \$20; Calendar upgrade for current QT 4.06 users \$10
- QuickPlot<sup>®</sup>/QuickStudy<sup>®</sup>** for PC - Charting & analysis software (requires QT/QM) \$89
- Trade Data Manager<sup>™</sup>** - Macintosh downloader & accounting program \$59; upgrade \$49 or *FREE* with \$100 history order
- Trading System Performance Evaluator<sup>™</sup> (TSPE)** for PC - Computes your system's capital requirements \$149
- Trader's Money Manager<sup>™</sup>** for PC - \$399 (includes TSPE); Demo disk: \$15
- TraDesk<sup>™</sup>** for PC - Traders' complete accounting system - CSI daily user \$149; Unrestricted use \$299; 30-day trial version \$22
- Seasonal Index Value Pack** for PC - Ten years of history for 33 popular commodities \$315
- Daily Updates** for PC - Starting at \$10.80 per month
- CSI Technical Journal** - Aug. '90 to present \$35/Yr. - \$5/Reprint
- CSI Mailing List** - \$200/1,000 names (CSI users omitted)
- CSI Product Catalog** - *FREE*

Please add \$29 per software package for overseas shipping.

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ADDRESS \_\_\_\_\_  
\_\_\_\_\_

DAY PHONE (\_\_\_\_) \_\_\_\_\_

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DISK PREFERENCE

5.25"/360K  5.25"/1.2 MB (HIGH DENSITY)

3.5"/720K  3.5"/1.44 MB (HIGH DENSITY)

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All prices subject to change without notice.

## 100:1 Data Compression...Not Bad!

### ***Programmer's Note:***

***A new stand-alone program has been developed which adds the delivery month and year, plus put/call/strike price identity to the name field of CSI data files. The program offers the option of restoring the original name field if needed.***

***This allows Windows on Wall Street users to analyze CSI-format data for commodities and users of Omega Research's various programs to analyze option data from CSI. CSI subscribers may call customer service to request this free program, which is also included in the current QuickTrieve version 4.06.***

Our progress in the development of the data compression effort first announced in the March 1994 CSI Technical Journal has recently passed a number of critical feasibility tests. We're having great difficulty containing our excitement about these milestones, so we'd like to share them with you.

The compression algorithm, which we call CSI-PAC,<sup>TM</sup> is now being used by CSI personnel in our offices each day. Using a PC computer equipped with a preliminary release of our new interface program, we download approximately 200,000 bytes of information and append to our compressed data base in about 30 seconds!

After retrieving and appending the data, the program takes a minute or two to create all the data files needed for our various daily analysis efforts. This step builds only the .DTA or .DAT, etc. files we require. The file generation process constructs Metastock, CompuTrac, CSI, ASCII, WoW, and several other format files in their original raw or any continuous form of our choosing.

The entire effort is considered seamless because there is no need for basic data management. A complete, new file is built from the compressed data whenever it is needed and thrown away after our analysis work is complete. The real beauty of this system is its total simplicity. There is little documentation to read so we expect that even novice users can get started in minutes.

Investors and software developers will appreciate CSI-PAC because every user will have total personal control over the full inventory of stocks, options and futures in CSI's data base.

The data base in hand will stretch back to the pre-1950s and will hold nearly 400 commodities, eight or nine thousand stocks, mutual funds, and all commodity options from the first day of trading. It will reside on the user's personal computer ready for immedi-

ate use in raw or mathematically reduced form. The entire compressed commodity data base, which will be available first, occupies only 27 megabytes. The compressed file grows by about 8,000 bytes per day. The compressed space advantage gained by this software approaches or even exceeds 100:1. This program is working flawlessly thanks to an efficient and intelligent algorithm and the talents of the CSI-PAC programmer.

We developed this new approach to data management because we believe the financial software community has too long concentrated upon the analysis of only a handful of individual commodity contracts or stocks when addressing markets. Examining the big picture several markets and/or industries at a time is the focus we believe traders should take. Our compressed, streamlined data delivery system will finally make this view be possible.

Customers of record who are with us at the time of product release (possibly by early Fall) will receive preferential treatment concerning availability, content and price. ♦

### **Market Forces...**

*(continued from page 2)*

to artificial intelligence, neural network analysis, strange attractor methods, chaos theory, and other more general learning tools. We believe that using supply, demand and time studies can indeed act as a general road map in forecasting market direction. However, there are no easy, absolute answers. We'll revisit this important area of research from time to time in this journal. ♦

### **References:**

Quarterly Journal of Economics, 1938, volume 52, pages 255-280, The Cobweb Theorem by Mordecai Ezekiel. Quarterly Journal of Economics 1957, volume 71, pages 151-160, The Cobweb Theorem: A Reconsideration by G. Akerman, CSI Technical Journal, April 1993.

*Bd Pelletier*