Fundamental and Technical Analysis in Future Trading

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Abstract

Future contracts are legal agreements that are standardized to buy or sell a commodity or stock at a future date at a predetermined specified price in the present. It is basically a mechanism to protect the investors from future price risk or price fluctuation. It uses the techniques of hedging and speculation to do the same. For determining the right set of prices the analysts use different techniques to study the trend and seasonal variations based on certain characteristics that will help the investors in long run. The analysis thus done is of two types, viz, Fundamental Analysis and Technical Analysis. This article reviews the two types of analysis and the techniques used under them thereof.

Introduction

Future trading is an agreement to buy or sell a specified quantity of underlying equity share for a future date at a price agreed upon between the buyer and seller. The contracts have standardized specifications like market lot, date of expiry, price quotation unit, tick size and settlement method. Futures traders are basically divided into two groups: hedgers, who have an interest in the underlying asset and are seeking to hedge out the risk of price changes; and speculators, who view to make a profit by predicting market moves. The success of future trading depends on two important factors:

1. Accurately predicting the future prices.
2. Effectively managing the risks.

Basically 2 techniques are commonly used for price forecasting:

1. Fundamental Analysis.
2. Technical Analysis.

Both the above methods are used for researching and forecasting future trends in stock prices, and, like any investment strategy or philosophy, and both are quite opposite to each other.

Fundamental Analysis v/s Technical Analysis

Fundamental analysis is a method of evaluation of securities by measuring the intrinsic value of a stock. Fundamental analysts study everything from the overall economy and industry conditions to the financial condition and management of companies. The important characteristics include earnings, expenses, assets, and liabilities.

Technical analysis differs from fundamental analysis in that the only inputs here are the stock’s price and volume. The
main assumption is that all known fundamentals are factored into price. Technical analysts however use stock charts to identify patterns and trends that suggest what a stock will do in the future.

**Fundamental Analysis**

Fundamental analysis uses the knowledge of supply and demand factors to create the opinion of whether the futures contract is fairly valued, and if price will increase or decrease. Some of the key factors in this are the interactions within interconnected markets and broad economy, spot and future prices, etc.

However, this approach requires:
1. Gathering substantial amount of data and information,
2. Assessment of the expectations of participants of marketing,
3. Analyzing the information to predict the future price movement.

Fundamental Analysis focuses on the cause and effect, i.e., the externalities of trading markets that are likely to affect the prices of the market. These factors may include weather, inventory levels of the present, policies of the government, economic indicators, trade balances and the reaction of the traders to certain events.

**Various Techniques Used in Fundamental Analysis**

1. The Demand-Supply Framework.
   i. Price Elasticity.
2. The Balance Table.
   i. Stocks-to-Dispersion Ratio
3. The Tabular and Graphic Approach
4. The Regression Analysis
   i. Econometric Models
5. Seasonal Price Analysis

Few most commonly used techniques are described below:

### The Demand and Supply Framework

Market Demand is how much people are willing to purchase at various levels of prices. The demand for a commodity is inversely proportional to the price of the commodity. When demand change due to changes in price it is called “movement along the demand curve” and when demand changes due to other factors, it is called “shift in demand”. Market supply is how much producers are willing to sell at various prices. The relationship between supply and price of the commodity is a direct one (Figure 1).

![Figure 1: Relationship of demand-supply with price](image)

### Price Elasticity of Demand and Supply

The price elasticity of demand or supply is a measure of the responsiveness of quantity demanded or supplied to change in the price of the commodity.

$$E_D = \frac{\Delta Q_D}{Q_D} \times \frac{\Delta P}{P} = \frac{\Delta Q_D}{Q_D} \times P$$

$$E_S = \frac{\Delta Q_S}{Q_S} \times \frac{\Delta P}{P} = \frac{\Delta Q_S}{Q_S} \times P$$

### The Balance Table

It summarizes the key components of current-season supply and disappearance, along with previous-season comparisons (Table 1).

<table>
<thead>
<tr>
<th>Year</th>
<th>Supply</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beg. stocks</td>
<td>Production</td>
<td>Imports</td>
<td>Total</td>
</tr>
<tr>
<td>2001</td>
<td>1,899</td>
<td>9,503</td>
<td>10</td>
<td>11,412</td>
</tr>
<tr>
<td>2002</td>
<td>1,596</td>
<td>8,967</td>
<td>14</td>
<td>10,578</td>
</tr>
<tr>
<td>2003</td>
<td>1,087</td>
<td>10,089</td>
<td>14</td>
<td>11,190</td>
</tr>
<tr>
<td>2004</td>
<td>958</td>
<td>11,807</td>
<td>11</td>
<td>12,776</td>
</tr>
<tr>
<td>2005</td>
<td>2,114</td>
<td>11,114</td>
<td>9</td>
<td>13,237</td>
</tr>
<tr>
<td>2006</td>
<td>1,967</td>
<td>10,535</td>
<td>12</td>
<td>12,514</td>
</tr>
<tr>
<td>2007</td>
<td>1,304</td>
<td>13,168</td>
<td>15</td>
<td>14,487</td>
</tr>
<tr>
<td>Disappearance</td>
<td>Dom. Use</td>
<td>Exports</td>
<td>Total</td>
<td>Ending stocks total</td>
</tr>
<tr>
<td>2001</td>
<td>7,911</td>
<td>1,905</td>
<td>9,815</td>
<td>1,596</td>
</tr>
<tr>
<td>2002</td>
<td>7,903</td>
<td>1,588</td>
<td>9,491</td>
<td>1,087</td>
</tr>
<tr>
<td>2003</td>
<td>8,332</td>
<td>1,900</td>
<td>10,232</td>
<td>958</td>
</tr>
<tr>
<td>2004</td>
<td>8,844</td>
<td>1,818</td>
<td>10,662</td>
<td>2,114</td>
</tr>
<tr>
<td>2005</td>
<td>9,136</td>
<td>2,134</td>
<td>11,270</td>
<td>1,967</td>
</tr>
<tr>
<td>2006</td>
<td>9,086</td>
<td>2,125</td>
<td>11,210</td>
<td>1,304</td>
</tr>
<tr>
<td>2007</td>
<td>10,240</td>
<td>2,350</td>
<td>12,590</td>
<td>1,897</td>
</tr>
</tbody>
</table>
The balance between supply and disappearance shows a season ending stocks – it is the relative magnitude of the stocks-to-disappearance ratio and this ratio is considered as the primary price determining statistic.

Total Supply = Beginning Stocks + Production + Imports
Total Disappearance = Domestic Use + Exports
Year Ending Stocks = Total Supply – Total Disappearance
Stocks-to-Disappearance Ratio = (Stocks/Disappearance) ×100

Example:
The critical stocks-to-disappearance ratio for corn is 12%.
The critical stocks-to-disappearance ratio for soybeans is 10%.

The Tabular and Graphic (TAG) Approach

The drawback with the balance table is that it doesn’t take into account the direct consideration of price. The tabular and graphic (TAG) approach checks the relationship between the balance table statistics and the prices. It also considers other factors like supply of substitute goods and income. Using the TAG approach, analysts collect and plot historical disappearance data against corresponding prices, and analyze the correlation. Inconsistencies are further explained by using disappearance data for substitute goods. This approach is well-suited to situations in which the fluctuations in price can be largely explained by one or two variables.

Regression Analysis

This technique provides a statistical procedure that can be used to formalize the TAG approach. It is the single most useful analytical tool in fundamental analysis. The coefficients with the equation of the regression can forecast price accurately.

Example
Hog slaughter and the pig crop
Y = a + bX; (Assumption: estimates of a = 0.232, and b = 0.9256.)
Y = June-November Hog slaughter
X = December-May Pig crop
If X = 46 million, then Y = 0.232 +0.9256×46 = 42.8 million.

Seasonal Price Index

Seasonals are regular movements of prices or other variables in one year. Many agricultural commodities show quite definable and consistent seasonal patterns. This is mainly due to the seasonal nature of agricultural production. As seasonals are so important to agricultural commodities, the focus is laid on seasonal price patterns. The method uses average monthly prices and could be modified for weekly, quarterly or other time frames within a year of particular interest.

Technical Analysis

Technicians (also called chartists) do not draw heavily from economic theory unlike the fundamental analysts. Technical analysts base their price predictions on historical patterns and depend on human psychology and some vaguely defined theories on how prices are established when buyers and sellers interact in the market. This method is basically used for
1. Price discovery and trend analysis.
2. Market Efficiency and entry-exit decisions.

Some of the techniques used in technical analysis are
1. Vertical Bar Charts
2. Candlestick Charts
3. Trend Lines
4. Reversals
5. Support and Resistance
6. Moving Averages and Stochastics
7. Volume, Open Interest and Price
8. Relative Strength Index
9. Point and Figure Charting
10. Cycles

Some unique techniques are described below:

Reversals

It is the quickest technical tool to identify a change of direction in the market. Reversals name the “day” that the market has turned. There are four types of reversals:
1. Bullish Hook Reversal- Identified in a down trending market if on the given day, the low is below the previous day’s low and high is below the previous day’s high and the close is above the previous day’s close.
2. Bullish Key Reversal- It is same as the above except that the given day’s high is above the previous day’s high.
3. Bearish Hook Reversal- It is on the opposite side. It occurs in a rising market when the high of a given day is above the previous day’s high, the low is above the previous day’s low and the close is below the previous day’s close.
4. Bearish Key Reversal- It is like the bearish hook reversal except that the low on the given day is below the previous day’s low.

Support and Resistance

To identify the key support and resistance levels is an important ingredient to successful technical analysis. Though it is sometimes difficult to establish exact support and resistance levels, being aware of their existence and location can enhance analysis and forecasting abilities in a great way. If a futures contract is approaching an important support level, it can act as an indicator to be careful in looking
for signs of increased pressure of buying and a potential reversal. If a futures contract is approaching a resistance level, it can act as an indicator to look for signs of increased pressure of selling and potential reversal. If a support or resistance level is broken, it indicates that the relationship between supply and demand has changed. A resistance breakout shows that demand (bulls) has gained the upper hand and a support break signals that supply (bears) has won the battle.

**Moving Averages and Stochastics**

One of the more popular tools is called “moving averages”. Such a procedure may be as simple as calculating only 2 series, one being an avg. of market closes over the most recent few days, and the other over the avg. over the recent few days plus some number of preceding days. The short term moving avg. might be over the past 3 days and the long term moving average, over the past 10 days. The trader might device the rule that he or she would go long if the short term moving average went above the long term moving average and go short if the short term moving average dropped below the long term moving avg. Use of moving averages screens out the “noise” of the somewhat erratic day-to-day price movement and provides very clear, unambiguous signals on whether to buy or sell. “Stochastics” as applied in technical analysis refers to the relationship between recent prices and a range in prices over some past period.

**Volume, Open Interest and Price**

At an early stage, in a bull market as prices begin to rise, longs are drawn to the market and both open interest and volume increase. As price begins to fall in the third stage of the cycle, bears are attracted to the market, both open interest and volume increase, signaling growing momentum to the down side- a definite bearish tone.

**Relative Strength Index**

The logical basis for this tool is the aberrant behavior of the commodity prices to rise or fall consistently. In the event of such an occurrence, the appropriate interpretation is that the market has over reacted and a reversal is eminent. The RSI is an exponential moving average and the earlier data carries less weight than the most recent period. The basic formula is a ratio of the average increase over the past X days dived by the average increase, plus the average decrease in absolute terms.

**Point and Figure Charting**

One common technical tool is called “point and figure charting”. The time dimension is not included on the horizontal axis, only cases of reversals. Once a price interval is selected, the chartist begins filling in the chart paper in the form of boxes. Price is on the vertical scale. The decision rule relates to the correct box-size and what constitutes a reversal. The point and figure charting method could be computerized with somewhat more difficulty than moving averages, but with questionable advantages. A disadvantage is that specific date of reversals is not indicated in a point and figure charting.

**Cycles**

Many technical analysts are ardent cyclists, believing that the ups and downs in futures can be traced to period of, say, 21-35 days. However, departures from such patterns are such that their validity is questioned. Even more, there is difficulty in accepting that long term cycles planning several years can be useful forecasting tools other than the cyclical tendencies explained by the fundamental analysis.

**Conclusion**

- Technical analysis emerged because fundamental analysis failed to explain adequately short term fluctuations in commodity prices.
- While devoid of economic theory, technical analysis does draw from psychology and ideas about the typical behavior of the buyers and sellers.
- A testimony to its value is its popularity even with many who are mostly fundamentalists.
- To the extent that technical analysis can add discipline to speculating, devoted technicians may be able to out-perform who allow emotion to dictate their trading schemes.

**Reference**
