

# CQG's Aggregated TradeFlow™ Charts

Moving the futures markets from pit trading to electronically-traded venues has created a level trading field for all traders due to market transparency.

All traders now have access to price ladders with depth-of-market (DOM) views of the exchange's order book. In other words, traders can now view, depending on the exchange, the current best bid and ask prices, the size of resting orders at the best bid and best ask, the amount of contracts traded at the last price, and the size of the resting orders above the best ask price and below the best bid price.

However, this data is displayed in a numerical format, which is difficult for a trader to assimilate in a fashion that traders commonly use. Moreover, most charting applications take only one piece of data from this market transparency, and that is the last price. Charts, such as open-high-low-close, candlestick, and point and figure, all use just the last price with no reference as to whether the last price was generated by a seller or a buyer.

That information is of value to a trader. There is key information to knowing whether other traders are aggressively buying or aggressively selling.

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Here, we will detail how CQG has been taking the market information available from the electronically-traded markets to create an innovative charting style and a suite of studies all built upon the market transparency. The first tool developed by CQG using the market transparency was TradeFlow charts, which have

been detailed in a series of articles posted on the CQG Web site. (Please see the footnote listing the articles.) Here, we will walk through the basic TradeFlow chart and then explain the latest enhancements, which are three forms of aggregating TradeFlow bars. The three forms of aggregation are by bars, range, and a proprietary technique that smooths the TradeFlow bars.

## The Basic TradeFlow Bar

TradeFlow charts and related studies track traders' actions at the best bid and best ask price. In other words, TradeFlow charts show you who the aggressor is, the buyer or the seller.



Figure 1: TradeFlow Chart and TradeFlow Volume Study. TradeFlow bars are color-coded to indicate the percentage of trades at the ask (buying) and at the bid (selling). The TradeFlow Volume study separates the trades at the ask price (green histogram bars) from trades at the bid price (red histogram bars).

This information is not available in other charting styles, such as open-high-low-close or point and figure charts, which only show you the last price and not whether the last price was a seller or a buyer.

Figure 1 shows the details of the basic TradeFlow chart of the E-mini S&P 500. The CQG DOMTrader shows the best ask is 1553.00 and the best bid is 1552.75. As indicated by the arrows, this is the high and low of the single TradeFlow bar.

We can also see that 461 contracts have traded at the best ask price and 62 contracts have traded at the best bid price. The bar is color-coded green to reflect the percentage of volume traded at the ask price and red for volume traded at the bid price.

The width and brightness of the TradeFlow bar is based on the relative volume of executed trades during the building of the TradeFlow bar. If the volume of executed trades is high relative to previous TradeFlow bars, then the bar is brightly colored and wide. If the level of traded volume is low relative to the previous TradeFlow bars, then the bar is narrow and dark.

At first glance, TradeFlow charts may seem to be too close a view of the action in the marketplace. However, TradeFlow charting can dovetail with other analytical approaches. Perform your favorite analysis with other higher time frames and use TradeFlow analysis as the final decision to place the trade or not based on information driven by what other traders are doing.



Figure 2: Five-Bar Aggregation TradeFlow. Up to 20 bars can be aggregated into one TradeFlow bar. This technique emphasizes support and resistance levels.

## TradeFlow Aggregation

The speed at which the information comes in is very high when tracking the best bid and best ask prices. To better manage the price/volume information, the TradeFlow bars can be aggregated. In this first example, we will look at aggregating by number of TradeFlow bars. Up to twenty individual TradeFlow bars can be combined into one single aggregated TradeFlow bar. Figure 2 shows an example of 5-bar aggregation.

One benefit to aggregating by bars is that support and resistance levels tend to be better defined on the chart. There is a stair-stepping look to the chart. The left-hand side of the chart is a series of rising support levels as the market climbs. The market then turned down and traced out a series of falling resistance levels.

Figure 3 is an example of aggregating by range. In this example, the aggregation is set to three ticks. In other words, the high and low of each TradeFlow bar is a three tick price range, e.g. 1549.00 to 1549.75 for the E-mini S&P.



Figure 3: Three-Tick Range Aggregation TradeFlow. The aggregation is set to build TradeFlow bars by price range. Each TradeFlow bar has a price range of three ticks. More price information is available on the chart.

The advantage of the aggregation by range is that when the market is trading quietly there is a tendency for the market to build a lesser number of aggregated TradeFlow bars. Therefore, there is better screen real estate management. More price information is shown on the chart using the aggregated TradeFlow charts by price range. Figure 3 now shows close to an hour's worth of trading. The trend as well as support and resistance levels are still visible.



Figure 4: Three-Bar Smoothed TradeFlow. Trends are highlighted by this smoothing technique.

The final version of aggregating TradeFlow bars is by smoothing. Here, a proprietary technique is applied to the TradeFlow bars with the goal of removing the noise about the trend and yet still having enough price information to show the trend with as little lag as possible.

Figure 4 is an example of the smoothed aggregated TradeFlow set to three-bar smoothing. One application for the smoothed aggregated TradeFlow chart is to use it as a study by monitoring the direction of the smoothed TradeFlow chart as an indication of the trend. The trend can be defined as a rising series of support levels or a falling series of resistance levels.

The smoothed TradeFlow can indicate a strong trend especially during active trading sessions when a market is reacting to significant news. Figure 4 shows a day where the smoothed TradeFlow was making sustained upward swings while the countertrend swings were shallow.

## Putting It All Together

There are many uses of the aggregated TradeFlow charts. As stated before, TradeFlow analysis can complement other types of analysis as well as be the final decision point for making a trade. Alternatively, using all three forms of aggregated TradeFlow charts in one display can detail key information of traders' actions in the market. Figure 5 is one example.

Figure 5 shows three TradeFlow charts. The left-hand chart is a three-tick range aggregated TradeFlow chart with a collection

of studies using the elements of the executed volume. The two studies are detailed in the article "CQG TradeFlow and TradeFlow Custom Studies."



Figure 5: Multiple TradeFlow Charts. The three aggregation types are applied here. In addition, the SnapTrader for entering orders and the Order Book for managing orders are displayed.

The bottom study is the DOMTracker, which is detailed in the article "CQG's Pre-Trade Analytics." The top, right-hand chart is a three-tick smoothed aggregated TradeFlow chart, and the bottom right-hand chart is a five-bar aggregated TradeFlow chart.

Looking at the charts, you can see that there was a short-term bottom in double place as indicated by all three charts. The TradeFlow Volume Cross study is tracking the contracts traded at the ask (buying) by the green line and traded at the bid price (selling) by the red line. The price action was a new low, but the red line of the TradeFlow Cross study diverged, indicating that traders were not as aggressive about hitting bids when the market made a new low. The two opposing blue lines highlight this divergence.

The next oscillator is called TFUMTFD for TradeFlow Up Volume minus TradeFlow Down Volume and is the difference between the two lines in the TradeFlow Cross. The TFUMTFD formed a second histogram in negative territory that was not as low as the first one (marked by a red trend line).

Next, the TradeFlow Volume study, which tracks separately the individual traded volume at the ask price (the green histogram bars) and the volume of trades at the bid price (the red histogram bars), also formed a higher red histogram bar marked by a red uptrend line.

## Summary

All three of these studies indicated that the sellers were less aggressive at this point than they were when the market formed the previous low. The market then advanced.

Finally, traders can trade right from the TradeFlow chart using the SnapTrader and monitor/manage the position and orders using the Order Book.

TradeFlow charting and TradeFlow studies are designed to take the key information available from today's electronically-traded markets and put that information into the hands of traders in a fashion traders have always preferred: charting styles and studies.

## Other TradeFlow articles found at the CQG Web site:

- Introduction to TradeFlow
- TradeFlow Charting
- Using TradeFlow Bars and Trading Ranges in CQG
- Using TradeFlow in an Up Trend
- TradeFlow Custom Studies

## Disclaimer

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