

MarketDelta Strategy Guide

MarketDelta Strategy Guide

Enabling you to "See INSIDE the CHART"

by MarketDelta LLC

MarketDelta® offers unique tools and analytics to empower the trader to see more, do more, and make more.

Use this guide to learn more about the various ways to use the Footprint® chart, Market Profile® and other tools included in MarketDelta®.

MarketDelta Strategy Guide

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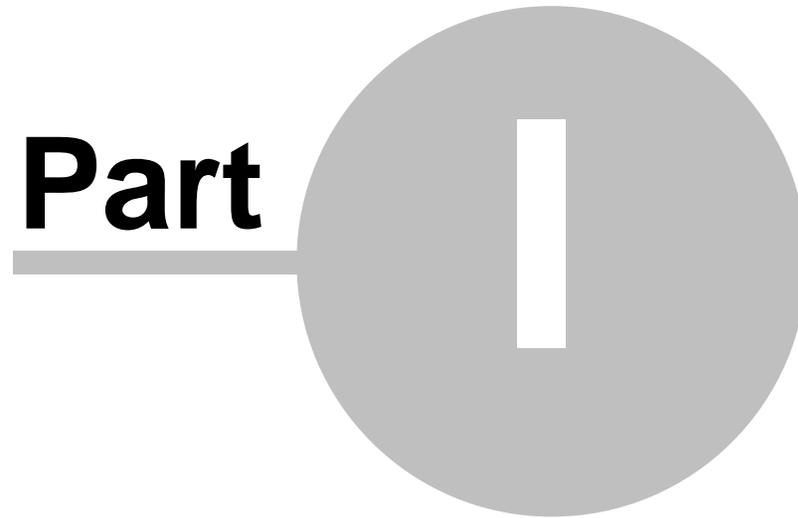
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Part



1 Testimonials

"I had wanted to let you know since I first discovered Market Delta, and I apologize for not doing so, but as a former open outcry trader I can honestly say that your system is about the closest I have come to true market transparency since being in a pit. I do believe it can be a very useful addition to any traders arsenal."

- Damian H. — United Kingdom

" I traded at the CBOT for 20 years scalping in the 30 year Bond pit. I have since been trading off the floor, on a screen, for the last five years. I related very much to one of your clients testimonials. Since being off the floor, I have lost that edge of sight, sound and intensity. If there is a way to regain some of that by using your product, then there may still be hope in saving a 25 year trading career. I have always felt that volume and price action along with who and how it is being traded, is the key to trading off the floor. Unfortunately, I have tried several products and wasted much too much money on indicators and software that were not even close. I have gone over your website and can honestly say, I have not seen anything even close to this."

- Larry G. -- Chicago

"I got it all up and running today and watched many of your online video's. This seems to be what I have been looking for as a final confirmation tool. I have been keenly interested in volume and bid/ask pressure. This lets you see right through volume structure. It helped me avoid two trades and see when to take two other trades."

- Blair C. -- British Columbia

"Just wanted to express my appreciation for bringing MarketDelta to market. I've been looking for its functionality literally for years. It truly is an important innovation especially for day traders. Its ease of use, flexibility in tailoring the settings as well as the clarity of its displays are excellent. That said, what is most significant by far is the positive effect MD is having on my trading. You talk about MD enabling a better "feel" for the market's action. For me, (and I'm still in the early stages of tapping MD's potential) this "feel" has already translated into more confidence and better

timing on my entries, less anxiety in staying in my trades, and better results on exits whether it's in cutting my losses or increasing my profits."

- Bob A. -- Toronto

"MarketDelta is just about the most amazing tool I have ever used. As a former floor trader, I was used to gauging the speed and direction of a price move by observing volume. Large and knowledgeable institutional traders are often the first to act in anticipation of big move and on the floor I could see it all...both the intensity and extensity of these traders buying and selling. Since the electronic medium is anonymous and "spoofing" is so common these days, a tool like MarketDelta™ has proved to be of invaluable help. I am able to gauge the same patterns and feel that I had from the floor using this most amazing program. If you are a tick trader or scalper, you gotta have to have this incredible piece of software."

- Gerard C. -- Singapore

"Thought I would drop you a line to let you know how thankful I am for your product. I have been position trading the Australian and European markets for some years now and MarketDelta has opened a new dimension for me in terms of execution. Basically, MD has allowed me to zone in on those sweet entry and exit points, which the traditional order book and course of sales helped with but never got me as tight as MD has managed."

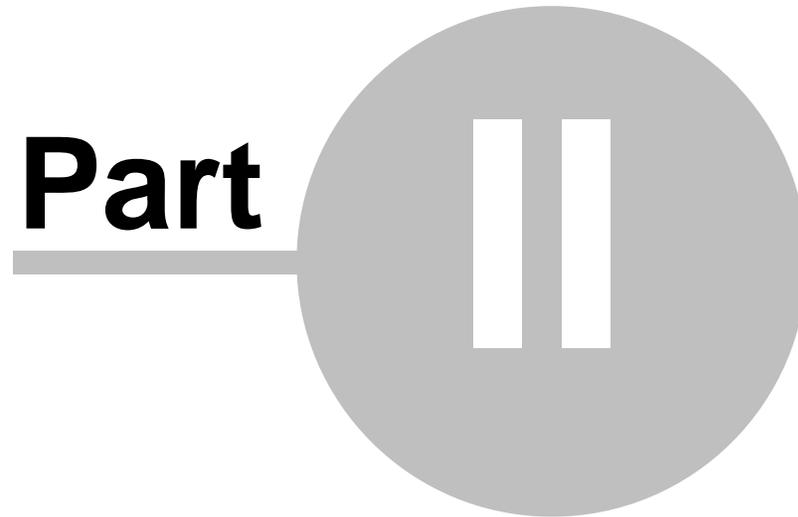
- Ray K. -- Australia

"Your software enables me to "look under the hood" of market action in a way I hadn't imagined possible before I stumbled onto your website. Imagine -- a few weeks ago, I'd never heard of Market Delta. Now, I won't place a trade without it."

- Peter O. -- Massachusetts

[click here for more.](#)

Part



2 Strategy Guide Overview

This strategy guide will provide ideas on how MarketDelta® and the Footprint® chart can be utilized. This guide does not even come close to all the possible uses and strategies that are possible, but does provide a good foundation from which to begin putting your ideas to work with some practical examples. Some of these examples are taken directly from customer feedback, while a majority of examples are patterns and strategies we have identified after years of working with the Footprint® chart.

Keep in mind the basic premise of the Footprint® is to help you understand more fully what is taking place in the market and provide some context to all the activity taking place. The Footprint® is NOT a system, but rather a superior way of viewing price and volume interact. It will provide a means of confirming much of what you already know to be true but offer a better way of filter out the good trades from the bad.

The format of this guide is to provide the [Anatomy of a Footprint®](#) so that you fully understand what the Footprint® is and begin to see the usefulness of it. The Footprint® Strategies chapter will cover what this guide is all about: [Real life trading examples](#) of patterns, setups, and strategies for many of the most popular markets that the Footprint® is used for. Each market category will have a couple examples that you will experience while trading. All of these examples can be applied to other markets and are not exclusive to each individual market shown.

If you are new to MarketDelta®, the Footprint® chart it may look abstract at first. We ask that you please give it a chance and look at it as just another chart, similar to a bar or candlestick chart. Viewed in that manner, you will quickly realize the Footprint® is simply not just another chart, but a tool you won't be able to do without. Allow the natural way Footprints® breakdown each bar, price by price, to communicate to you through color, shape, and numbers. You will see the additional information is indispensable and something that can really compliment your current strategies and skills sets.

A very important distinction of MarketDelta® is that it's NOT a buy-sell system. MarketDelta® is instead a cutting edge decision support tool that combines technology and instant availability of trade data with each trade. By taking advantage of technology and using price AND volume, the Footprint® provides a very intuitive and unprecedented view of the market. **This provides traders with higher quality information in a more precise format and allows them to act with more confidence and decisiveness.**

Interpreting MarketDelta's display and data will require grasping principles and not just memorizing a few rules or setups. Even though the display looks very quantitative with all the numbers and calculations being performed, it is more of an art than science when it comes to applying it. It will be your task to interpret the patterns and data within the innovative display called the Footprint®. Throughout this guide there will be many examples and descriptions of what to look for, but this guide is by no means comprehensive. **You are encouraged to apply your knowledge of the markets using the unique visual perspective the Footprint® provides and see what other profitable opportunities you can discover.** We believe in empowering the trader and providing them with charts and analytics they can learn to read into and adapt to their methodology of trading.

Those who make the effort to learn this valuable new way of interpreting data will gain a priceless skill that hopefully will allow for further development of your trading skills and provide context for evaluating the market. Because the Footprint® is not some indicator or buy/sell system, you don't have to worry about it not working some day. **The Footprint® is providing a display and context of the market in a dynamic manner to help you identify and then confirm trading opportunities.** The Footprint® will capture the changes in the market so you can adjust accordingly, no matter what the market conditions do over time.

Why Consider the Footprint®

A good analogy of why the Footprint® is needed and why it makes perfect sense to adopt it would be the following: We have all done a job in a particular manner and thought we knew best on how that job could be accomplished. Then one day we

come in contact with someone who is doing that SAME JOB differently and much more productively by using a different technique or tool. You are amazed that you did not think of doing it that way and immediately realize the benefits the new technique provides. However, you also realize that to master the new technique and become as skilled as the other person will take time and effort. Regardless of the effort needed, you fully realize that to be competitive and productive you must adopt the new technique. You also realize that if you are not to adopt the new technique, others that do adopt will have an edge (advantage) over you. **This little story sums up how the other charting types compare to the Footprint® and why it will be important for the success of traders to adopt and integrate the Footprint®.** The reason for this is the Footprint® chart is the only chart type to show a price bar broken up by price and show the volume at each price. You now have more information presented in a logical, visual manner....you now have the Footprint®!

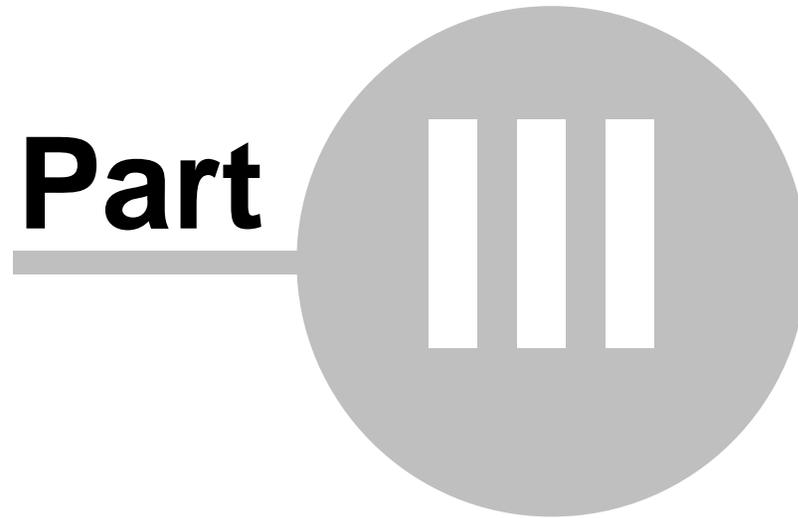
Trading requires making a decision based on all available information. Current charting methods are not giving all this information in an intuitive way for you to make quick, informed decisions. Chart types such as line, bar, candlestick, etc. are limited in the information they can provide. Granted, they do a good job of showing a picture of price but that is what they were created long ago to do.....just show price. With advancements in technology, electronic markets have come into being and with electronic markets comes the ability to send out all the trade information at once. Traditionally with non-electronic markets volume would not be known until possibly the next day. By that time it is not of much use for short term traders. Exchanges now send all this information with each trade as it occurs and give us the ability to present this "newly available" data in much more efficient, visual, and useful ways. Ask any database expert and they will tell you it's not what data you have but how you are able to put that data to use. **The Footprint® does just this: makes sense of the data and provides real time context for traders in a very readable and intuitive display.**

The Footprint® can't predict the future, but then nothing can. What it can do is help you to understand the present market conditions from multiple perspectives -- price, volume, buy and sell pressure. **And if you understand what's happening now, in the present, you can make better decisions about what might happen in the**

near future.

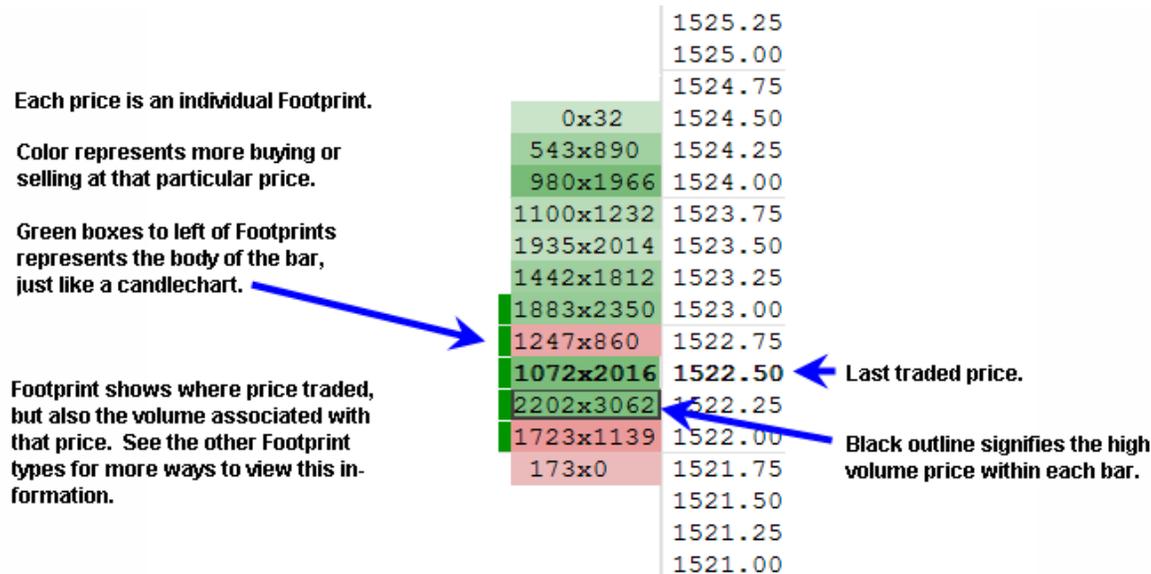
Traditional charts are one dimensional where the Footprint® is multi-dimensional. **This is because each data point (price) in the Footprint® contains not just price alone, but also volume and a dynamic color which signifies more aggressive buying or selling.** The color is the result of whether more trading occurred on the bid or ask. With all this additional trade data at each point, new intra-bar patterns emerge that you previously haven't noticed because it simply wasn't presented to you. Technology is what makes this all possible. So jump on board and begin using what the professionals are adopting each and every day as the default chart for the next generation of traders.

Part



3 Anatomy of a Footprint

The Footprint® breaks a bar up by each PRICE and includes some metric depending on which Footprint® you are viewing. The "metric" is volume or a derivative of volume, usually [delta](#). Each Footprint® is also shaded a particular color based upon either volume or aggressive buying or aggressive selling (delta). The Footprints® are [Bid / Ask](#), [Footprint® Profile](#), [Delta %](#), [Delta](#), [Volume](#) and a few more Footprint® types not covered in this guide. Each is unique in the information it provides and explained in detail individually throughout this chapter. The purpose of the Footprint® is to provide a way to analyze price, volume, and order flow all together and also to show what is happening intra-bar. Essentially, the Footprint® provides a way to track the market, as well as how volume impacted price.



Footprint Type - This is the information within the actual Footprint®. The primary types are [Bid / Ask](#) (seen above), [Footprint® Profile](#), [Delta %](#), [Delta](#), [Volume](#). There are a few other Footprint® types which can be read more about in the [Help Manual](#).

Read each description throughout this chapter to fully understand and see graphically the difference between these five Footprint® types.

Periodicity - Periodicity is the measure by which a new bar will be created. Each bar consists of multiple prices (Footprints®). MarketDelta® provides various periodicities that can be used to create new bars. One periodicity named *delta* is exclusive to MarketDelta® and provides a very powerful way to follow and confirm prices rotations and reversals. All traders are familiar with time based bars (1 minute, 5 minute, etc.). MarketDelta excels at providing all sorts of various ways to create new bars, most of them being non-time based. This is very important because the information the Footprint® shows may be more relevant when viewing non-time based bars like tick bars, volume bars, range bars, reversal bars, and our latest, delta bars. These prove to be very useful when looking at a Footprint® chart because the Footprint® captures volume and the way that volume was transacted (aggressive buyer or aggressive seller). As a market trades and has momentum in the price swings, capturing how volume, tick activity, and price movement all interacted is extremely important and useful. That said, you will notice many of the examples throughout this guide will be with non-time based charts. It is not that time based charts are useless with the Footprint® chart, but we encourage you to consider other periodicities to confirm the time based charts. More information on periodicities can be found in this [special chapter](#).

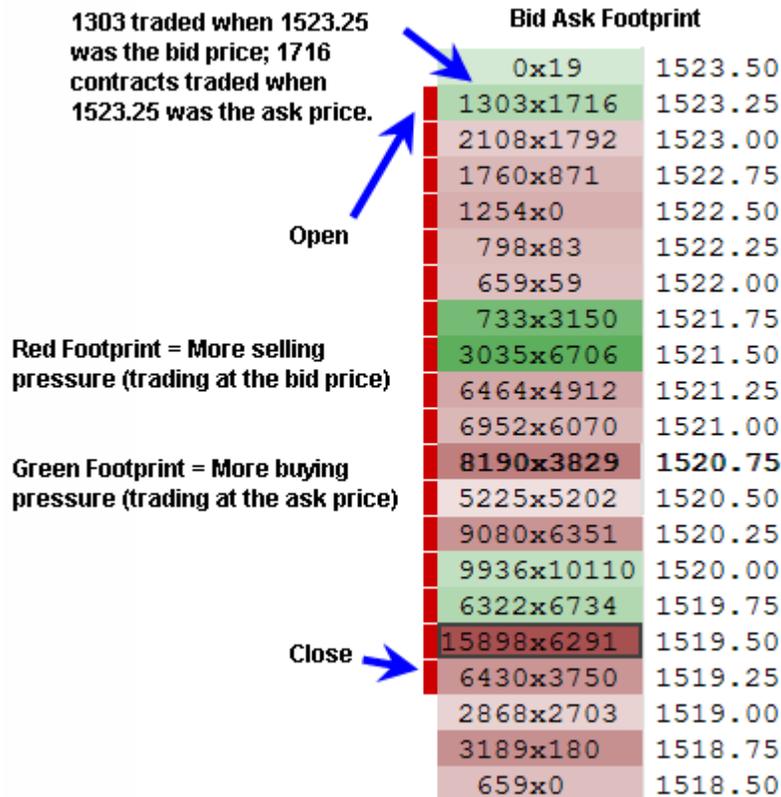
Color Shading - Each Footprint® is colored one of two colors that you specify. By default the Footprints® are red or green. Red signifies more aggressive selling at that price (more trading occurred while that price was the bid versus when it was the ask). Green signifies more aggressive buying at that price (more trading occurred while that price was the ask versus when it was the bid). Each Footprint® is shaded according to how strong the aggressive buying or selling actually was. This strength is simply based on volume; how much volume traded on the bid versus ask. Traders will gain experience in the use of the Footprint® chart and be more in tune to the underlying market dynamics and changes in market activity.

3.1 Bid / Ask Footprint

Bid / Ask Footprint® – Displays the number of shares or contracts that traded on the bid price and the number of shares or contracts that traded at the ask price in real time and in the periodicity you want. As the bid and ask change with price, the Bid / Ask Footprint® adjusts accordingly. They display as (cumulative BID traded volume x cumulative ASK traded volume). (Example: 1000 x 400). 'x' is a spacer and not a mathematical operator in this notation.

- Click the 'BxA' button at the top of the Footprint® window to view.
- This Footprint® will help you keep track of the market action as it happens.
- Better follow how the volume is coming into the market and driving price change.
- Follow volume and momentum as it happens and let the color tell you who is being more aggressive, buyer or seller.
- Footprint® shows whether the volume was on the bid side or the ask (offer) side.
- Confirm who is in control at key price levels.
- See how many shares (contracts) traded.
- See how many orders were involved.

The Footprint® provides context to all the price, volume and order flow in any time frame you want and presents it in a simple, easy to read display. This allows the trader to be nimble and focus only on what is important but still have the capability to reference past data at any level.

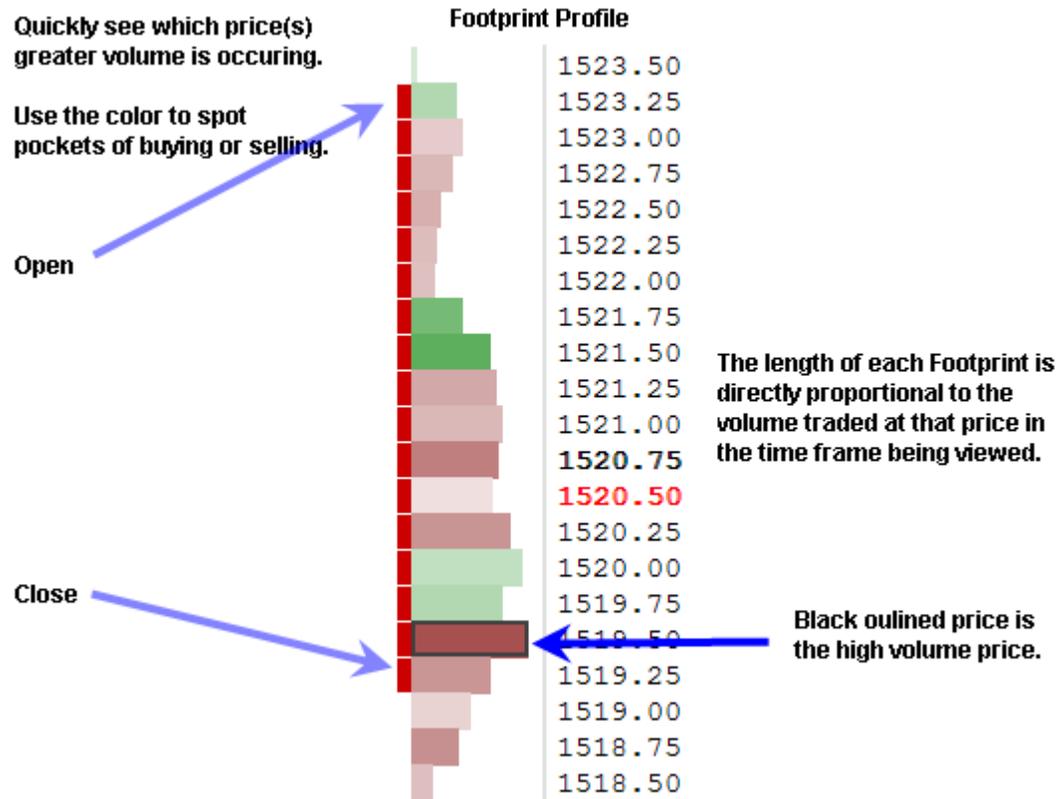


STRATEGY - The Bid/Ask Footprint® was our original Footprint® type. Because there are a lot of numbers shown on this type, it may be best utilized focusing in more on the color of the Footprint® than the numbers. Once comfortable with this display type it is a great view because the volume can be seen, as well as, which side of the market experienced greater volume. These numbers combined with the color of the Footprint® and the open/close bar can keep you much more informed while the bar is building instead of having to wait for it to close to evaluate what took place. **This is what we mean when we say "See Inside the Chart". You are literally seeing inside each bar as it is being built, providing for more timely decisions at key levels.**

3.2 Footprint Profile

Footprint® Profile - This displays a profile or vertical histogram of volume at price in whatever time frame chosen. The color of each Footprint® within each profile is based on the delta. Delta is the net buying or selling that occurred at each price. Green represents a positive delta (buying pressure) and red represents a negative delta (selling pressure).

- Click the 'FP' button at the top of the Footprint® panel to view.
- Popular view for those who are familiar with Market Profile® and allows a trader to drill down and see inside the chart.
- This Footprint® Profile will help you track areas of high interest among many participants in a nice graphical manner.
- Quickly track the high volume prices bar by bar to see if the market is attracting more participants at higher/lower levels.
- See the shape of each bar in any time frame to reveal clues to the underlying market structure.
- Use the color of each Footprint® to confirm the pressure being exerted at each price. Combine this with the volume (shape of bar) and you will have a very good understanding and representation of the market generated data.



STRATEGY - This has quickly become one of our most popular Footprint® types. Use it to visually see how much volume is occurring at any one price or series of prices. Let the color, especially consecutive color, provide indication of the dominant side of the market. When you see red Footprints® stacking up it is evidence the sellers are in control. Using other factors like where the market is in relation to value (and/or other factors), the Footprint® Profile can provide valuable insight to the likelihood of the move continuing or reversing. Use the high volume nodes a potential support/resistance on pullbacks.

3.3 Delta Footprint

Delta Footprint® – Displays a positive or negative number. A **negative delta** value represents aggressive selling. Specifically, it represents how many more shares/contracts were sold on the bid versus when that price was the ask. A **positive delta** value represents aggressive buying. Specifically it represents how many more shares/contracts were bought at the ask (offer) versus when the price was the bid. **Delta** is the term we use to describe the net difference between the quantity traded on the ask versus the quantity traded on the bid. Delta Footprint® is used to give a measurement of buying and selling pressure at each traded price in real time. It also helps to quantify who, buyer or seller, is more aggressive (in turn producing pressure) as price fluctuates.

- Click the 'Delta' button on top of the Footprint® panel to view.
- Gives a true sense of buy and sell activity at each price.
- Very advantageous to see price runs sequentially. Begin to realize when a current run is running out of fuel.
- See a price run strengthen as volume is captured by the Footprint to quantify momentum.
- Know when and where the buyers are accumulating and the sellers are distributing.
- See the prices where aggressive selling or aggressive buying kicked in and moved price (provides potential areas of support/resistance if a pullback occurs).
- Takes up less screen space (width) than the bid/ask Footprint® and can be used to see more bars.

The values within each Footprint represent the NET buy or sell volume.

Clearly can see that there was more selling pressure within this bar because there are more red Footprints.

Cluster of buying occurred at these couple of prices.

Huge selling at 1519.50.

Delta Footprint	
19	1523.50
413	1523.25
-316	1523.00
-889	1522.75
-1254	1522.50
-715	1522.25
-600	1522.00
2417	1521.75
3671	1521.50
-1552	1521.25
-882	1521.00
-4361	1520.75
-23	1520.50
-2729	1520.25
174	1520.00
412	1519.75
-9607	1519.50
-2680	1519.25
-165	1519.00
-3009	1518.75
-659	1518.50

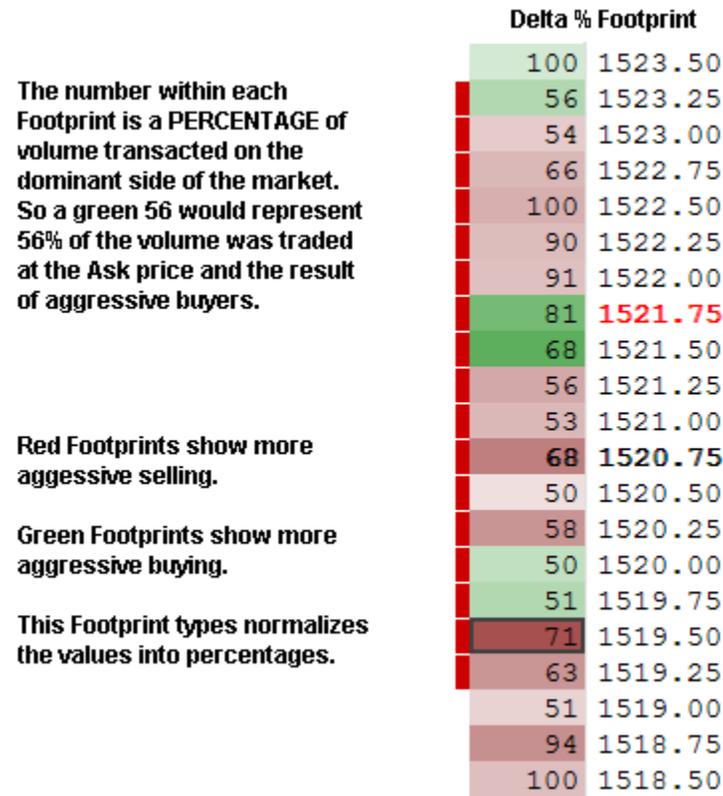
STRATEGY - Using this Footprint® a trader might look to identify potential areas of intra bar support and resistance. Of course this would only be applicable if viewing bars that tend to be longer term in nature (15 min to daily). In the graphic above, the 1521.50 and 1521.75 area could prove to be a good area of resistance if price were to bounce back up to it. Those were the only prices we saw any considerable buying enter during this time period. Over the course of the day each price ends up having a delta (net buy and sell volume) associated with it and it can be very interesting to see how this all adds up over time. To see this data, open the Footprint® preferences window, select the 'Columns' tab, and check 'Delta'.

STRATEGY - Use the bar delta values to monitor the strength according to volume as each bar develops. For many instruments (especially ones that have some volatility and momentum) the bar delta provides key insight into the strength of a move. For instance, as price trades lower the expectation is to see a negative delta. This would signify sellers are being more aggressive and hitting more bids. The bar delta provides a way to monitor the selling coming into the market price by price and bar by bar. Eventually the market has to stop. The Delta may reach an extreme level or you may see buyers finally enter the market aggressively near the lows. If the buyers finally step in aggressively, green Footprints® would immediately appear alerting you to this fact.

3.4 Delta Percent

The Delta Percent Footprint® - Shows the percentage of volume that occurred on the dominant side of trading. It is essentially showing a ratio of bid traded volume and ask traded volume but only showing the % of volume that occurred on the most dominant side of the market. For instance, if the Footprint® is green (in the graphic below) then it had a positive delta and the number shown represents the % of volume that occurred at the ask price for that particular Footprint®. If the Footprint® is red then it had a negative delta and the number shown represents the % of volume that occurred at the bid price for that particular Footprint®.

Using the Footprint® preferences menu (click 'More' button to open the preferences window) choose the General tab | Footprint Type | Delta Percent.



STRATEGY - A general method for utilizing this Footprint® would be to look for bars where the values are increasing in the direction of the trend. For instance, when price is trading at higher and higher prices, are the Delta Percentages are increasing as well? This would serve to confirm that more and more volume is occurring at the ask price, signifying the aggressiveness of the buyers to get into the market. This provides key insight to when a market is beginning to come into equilibrium.

STRATEGY - Another strategy would be if the Delta Percentages are very neutral (between 50 and 60) at a breakout level, then the chances increase that the breakout will not hold and revert back within the range. The logic behind this is at

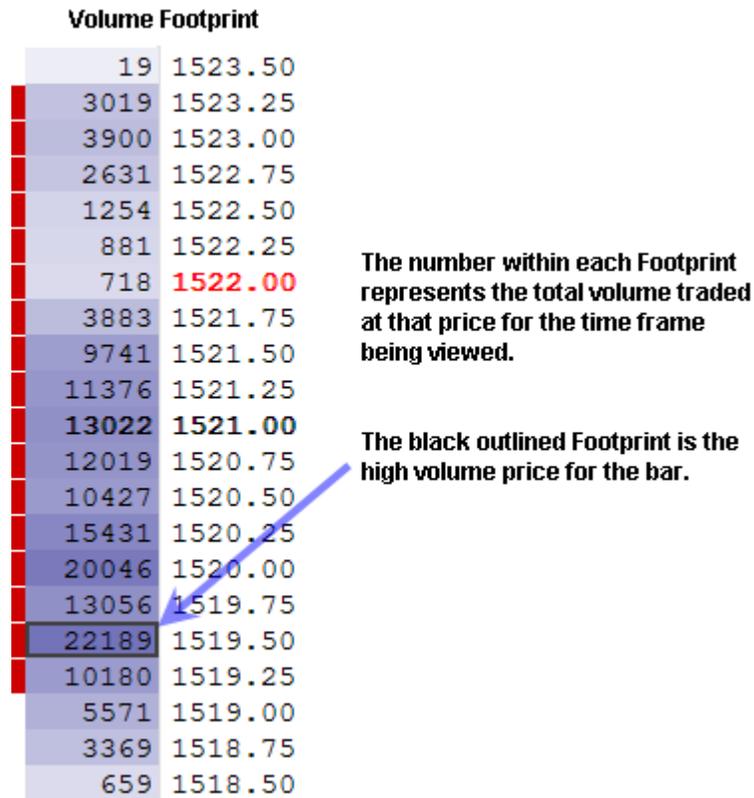
breakout levels we expect to see expanding volume and a significant portion of the volume to be occurring in the direction of the breakout. This would be a green shade for up-side breakouts and red for down-side breakouts. Failure to see large Delta Percentage readings at these key levels and prices should give reason to question the breakout.

STRATEGY - Look at the delta percent at the bottom of each bar. Sideways markets will have a very neutral bar delta percent of somewhere between 50% - 59% from our observations. When these readings start printing beyond 60% a directional move could begin. This is a simple strategy but great way to monitor the underlying directional order flow in real time.

3.5 Volume Footprint

Volume Footprint® - Displays the total volume traded at each price, regardless of whether it was bid or ask. This is helpful in showing where large volume occurs. The calculation would be the bid traded volume + the ask traded volume = Volume Footprint®. Using the Bid / Ask Footprint® example (1000 x 400), the Volume Footprint® would be 1400. This will never be a negative number because it is the sum of traded volume. Each Footprint® is shaded according to the level of volume. The heavier the volume, the darker the Footprint®.

- Click the 'Vol' button at the top of the Footprint® panel to view. The left "Vol" button is shaded for just volume as described above. The right "Vol" button is colored according to the Delta of the Footprint®. The shading is still based upon the volume.
- Know when and where active trading is occurring.
- Have the added context of volume price by price within the bar in any time frame you want.
- Know at which prices the largest traders area comfortable trading at.
- You won't be fooled by orders that look like they traded but really didn't trade.
- Similar to noise on the trading floor, when applied to electronic markets, this tool will let you know how and where the volume trades.
- Know how much traded at extreme prices. This is very helpful when prices are capitulating.
- See pockets of liquidity. These provide potential support and resistance points.



STRATEGY - We have found many of the traders who like this Footprint® type trade instruments that are less volatile and less driven by momentum. One example of these markets would be fixed income markets. Traders we have spoken with say the volume Footprint® is extremely useful because they can see inside the bar to evaluate how much volume is trading at each price over whatever time frame they want to see. This provides valuable information with respect to where the markets are most providing the most liquidity and can assist traders and managers at finding the best places to enter and exit positions.

3.6 Understanding Periodicities

Periodicity Summary

We are dedicating a portion of this guide to understanding the various bar periodicities MarketDelta offers. This is important because of the Footprint® chart and the way we can now view and calculate trade data. This will particularly discuss WHY you may consider some of these alternate periodicities and classify them into three categories: Time, Volume, and Volatility based periodicities.

Periodicity is another word for "time frame". We use the word periodicity because many of the periodicity options in MarketDelta® do NOT use time as a component. This simply means the charts do not draw new bars based upon a clock, but rather some other parameter. Generically this other parameter may be volume or a derivative of volatility.

Time Based Periodicities

Seconds
Minutes
Days

Volume Based Periodicities

Volume
Delta

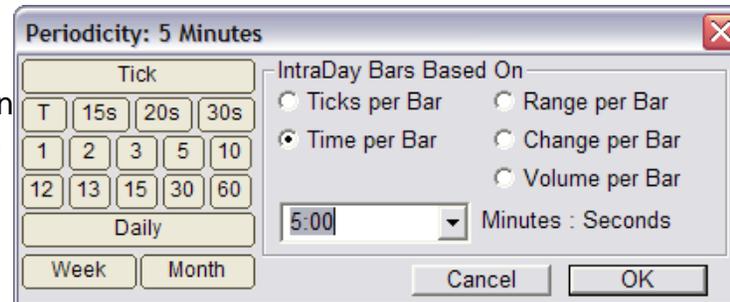
Volatility Based Periodicities

Price
Range
Change
Reversal
Tick

The primary difference between the three categories is what needs to occur for a new bar to be created. This will result in how long it took for it to be created.

Time based periodicities will create bars based upon the tick of the clock. This is certainly the most traditional way of plotting price and it gives a natural order to what you are looking at. Each bar represents the same amount of time. For many traders this is a very comfortable way to view price activity.

To change the periodicity on traditional charts just type a number and this screen will appear.



To change the periodicity on the Footprint® Chart simply type in the value for the periodicity and then select what type from the drop down list. Another way is to open the Footprint® Preferences window and make the change.

Minutes
Range
Change
Volume
Ticks
Seconds
Reversal
Prices
Days
Delta

Example: 10 minutes, 10 volume, 10 ticks, 10 prices, etc.

- **Seconds** - Time-based bars composed of any number of seconds.
- **Minutes** - Time-based bars composed of any number of minutes.
- **Days** - Time based bars. Day bars are relevant only for multi-day viewing periods, and allow multiple day bars to be seen on a single profile.

Volume based periodicity consists of two different choices. Volume builds each bar based on a set level of volume you specify. For instance, specifying 10,000 will create each bars that consist of 10,000 traded contracts or shares. This periodicity normalizes the bars with respect to volume. There will be times when it might take a long time to trade 10,000 contracts and there will be other times that 10,000 will trade in a relatively short period of time. Of course you can set this value to whatever volume level you want.

- **Volume** - Activity based bars composed of any amount of volume. Each bar has

equal amount of volume. Trades can be split into multiple bars. Volume Bars are volume-driven bars, with each bar having a required minimum volume. Once the volume requirement is reached, the next tick/trade will initiate a new bar (and become the opening price of that new bar).

A 3000 Volume Bar chart of ES with volume can be seen here. Notice that the volume of every bars is essentially the same. All bars have the required volume of 3000, with some having slightly more depending on the volume of the last tick/trade that occurred in that bar. The current bar will obviously have less than the required amount of volume while it is forming.

For Volume Bars, the volume or each bar is essentially held constant, while price and time are variables.



- **Delta** - A new periodicity which MarketDelta introduced to the trading world is the Delta periodicity. Delta periodicity uses a user specified delta to create new bars. Delta is the term we use to describe net buying or selling with respect to how volume was created. For instance, if 50 contracts trade at the Ask price then it would be +50 delta. IF 50 contracts traded at the bid price then the delta for that trade would be -50. The delta periodicity is keeping a running total of how volume is being transacted in the market and will closely follow and confirm the order flow

coming into the market. For instruments that have volatility and momentum to their intra-day price swings the delta periodicity will open a whole new world to how you look at the market. The delta is monitoring how the volume is being transacted and will smooth out the rotations, provide more acute awareness to market reversals, and most of all, show the underlying strength in the market which will help capture more of the move. Below is a 5000 delta ES chart using the Delta Footprint®. More information and settings can be [found here](#).



Volatility based periodicity creates bars based up the actual movement of price. This "movement" can be tallied in the five methods listed above. The basic idea of volatility based periodicities is that time is not considered in the construction of a new bar. If the market does not move around enough to meet the criteria for the periodicity chosen then a new bar is NOT created.

- **Prices** - Volatility based bars composed of any number of prices. Similar to range bars, except the magnitude is expressed in number of prices, instead of actual price range.
- **Range** - Volatility based bars composed of any range of price. Each bar has the same high/low range.

Here is an example of a 2.0 range bar for the ES. This would be equivalent to 2 point or 8 ticks in the ES. Also notice that each bar opens at a price outside of the high/low range of the previous bar. And last, notice that each bar closes at either it's high or it's low. The way this would be entered for the Footprint chart would be "1.75 Range". These are the three rules of range bars.

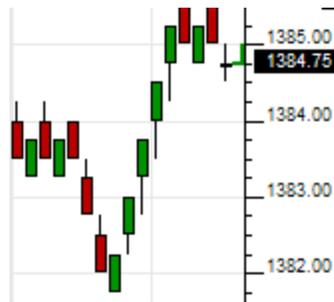
- Each bar must have a high/low range equal to the range specified. The high/low range of a bar can exceed the range specified in certain situations (gaps) but can never be less than the range specified.
- Each bar must open outside the high/low range of the previous bar.
- Each bar must close at either it's high or it's low.



With Range Bars (and Change Bars), new bars will only be formed when price is moving. When prices gets stuck in a tight range for an extended period of time, horizontal screen real estate will not be wasted with multiple bars that would have formed had the periodicity been volume or time driven.

For Range Bars, the high/low range of each bar is essentially held constant, while time and volume are variables.

- **Change** - Volatility based bars composed of any change of price. Change bars are price-driven bars, with each bar having a required minimum open-close change (in either direction). Once the change requirement is reached, the first tick to break outside that change will begin a new bar (and become the opening price of that new bar).
- A 0.50 change Bar chart of the ES is seen below. Notice that the magnitude of the open/close change of each bar is 0.50. Also notice that each bar opens at a price outside of the open/close range of the previous bar. And last, notice that each bar closes at either it's high or it's low. These are the three rules of range bars.



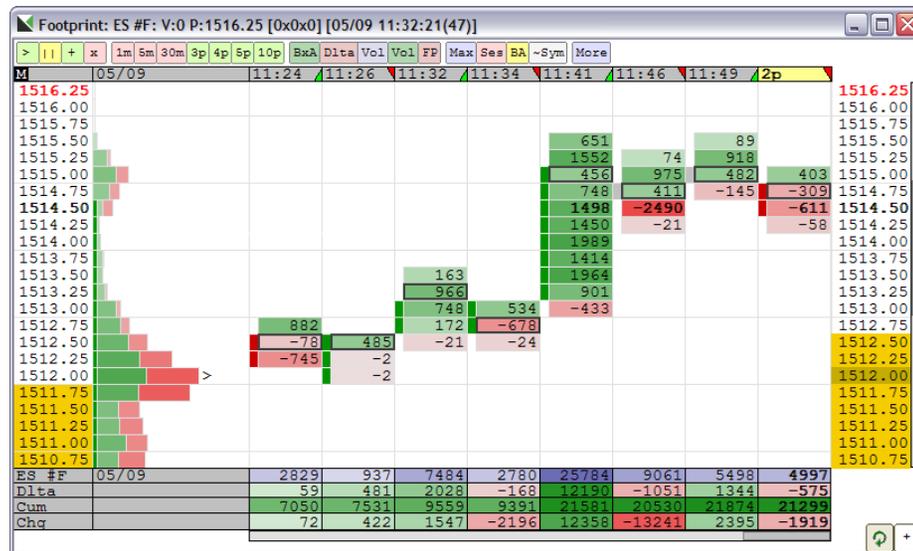
- Each bar must have a open/close change equal to the change specified. The open/close change of a bar can exceed the change specified in certain situations (gaps) but can never be less than the change specified.
- Each bar must open outside the open/close range of the previous bar.
- Each bar must close at either it's high or it's low.

For Change Bars, the magnitude of the open/close change of each bar is essentially held constant, while time and volume are variables.

- **Ticks** - Activity based bars. Similar to volume bars, each bar is composed of a user specified number of ticks. Tick charts start a new bar or column when a specified number of ticks occur. A tick is defined as a single trade. Popular settings would be 89, 144, 233, 377, or 610 tick charts, with many other popular favorites. This type of chart provides more granularity than time based charts.
- **Reversals** - Volatility based bars, building upon the concept of Point and Figure. This type of chart monitors price action and doesn't have a time component. Each column is designated either up or down and alternates between up and down accordingly. A new column is started only if price travels in the opposite direction

that a column is designated. There are never to up columns or two down columns back to back as defined by the charting method. The green (up) or red (down) arrow at the top of the bar or column is called the column designator which is simple stating the designation of the bar. This is important because once each column is designated up or down, then the only other rule is to monitor the number of price ticks from the high or low that occur. Each column will represent a price run in a direction until a pre-defined number of price ticks is traded off the low of a down move or off the high of an up move. When this preset number of ticks happens, a new column is added, defining a new price run.

An example would be if the column were designated up and it was set to a 3 tick reversal, then as soon as price trades 3 tick from the high tick of the current column, a new column will start. The best way to learn would be to open a Footprint® chart, set it to a 3 tick reversal and watch what it takes to produce a new column. The reversal chart is one of the best ways to follow price action with the Footprint® chart because it is more sensitive to order flow, momentum, and price action.



Part

IV

4 Footprint Strategies

While reviewing the following strategy examples and pattern definitions, keep these few rules in the forefront of your mind. Doing so will help to see the usefulness of the information more clearly. Also, examples and strategies will work across many markets and time frames, so do not be discouraged if the market you trade was not covered in the examples. Simply take the ideas and adapt them to your market. If you need any helps with suggestions for the market you trade just contact us and we will be happy to provide some guidelines.

KEY OBSERVATION - DIRECTIONAL (TRENDING)

When the market is trending down you should expect to see dark red Footprints®. When trending up there should be dark green Footprints®. These dark Footprints® should comprise most of the bar if it is a strong trend. A sign of a strong trend is when the upper (lower) prices of each bar are the darkest color (green for up trend, red for down trend). This is best to witness early in the trend. If you see it late in the move it could be interpreted as a last effort to get into the market by those not already on board, and they will only it reverse in the near term ([Figure 4-15](#)). Capitulation is a word often used to describe this "ending of the trend". Understanding this will provide key insight when price is beginning to lose momentum because inevitably you will see lighter shades or the other color appear which is evidence of the price move being contested ([Figure 4-2](#) shows an example).

KEY OBSERVATION - NON-DIRECTIONAL (SIDEWAYS or RANGE BOUND)

When the market is range bound (lacking the ability to trend) you should expect to see variations of color comprising each bar. This means many of the bars will have roughly 50% red and 50% green Footprints® combination, but certainly not all one color. We call this pattern [candy striping](#). This pattern will occur when the market reaches an equilibrium and is content trading within boundaries, such as, mid-session support and resistance, value area, etc. Often times in markets like this you may see a cluster of dark green Footprints® come in near the high of the range or a cluster of dark red Footprints® come in at the bottom of the range. Probability suggests these are traders playing for the breakout and will be wrong. **They are**

being met with adequate supply to overcome their demand. Eventually a breakout will ensue, but in the interim it is much wiser (and certainly more profitable) to trade the probability of price mean reverting from the range extremes. Another way to verify this more precisely is to use the [Delta % Footprint®](#) and note the delta percent at the bottom of each bar.

Other times volume may simply dry up as it approaches support or resistance. This is good information as well, because typically breakout's do not occur on light volume ([Figure 4-9](#) shows an example of rejection and a breakout). This can be signaling a reversal or pause in the market. The Footprint® Profile is an excellent tool for spotting these opportunities because you can visually see the volume price by price and the delta as well.

BAR DELTA

This is the sum of all the Footprint® [deltas](#) for a particular bar. There are many ways this can be used. One strategy is to confirm price direction. If price is trending up delta should be positive for the bar to confirm aggressive buying is driving and supporting price, thus sustaining the trend. The reverse is true for a down trending market. There should be a negative bar delta to confirm more aggressive selling. In a consolidating market the bar delta will typically flip flop back and forth from positive to negative and back, or not show strong conviction either way. This helps to confirm the type of market you are witnessing. If you are witnessing a consolidating market but the bar delta's are all pointing one direction, then there is a greater probability that price will exit the range in the direction of the bar delta (up if positive, down if negative).

DARK COLORED FOOTPRINTS®

You will tend to see more [clusters](#) of dark Footprints® in trending markets than you will in sideways markets. Trending markets exemplify direction and strength while rotational markets exemplify lack of conviction and are directionless and exemplify random behavior. For those who are familiar with Market Profile®, using the value area and/or initial balance area can provide good trade location when combined with the Footprint®. You will become much more confident in the trades you place once this concept is understood and practiced.

Sometimes you will see dark Footprints® (dark green if aggressive buying) and the market will stop and reverse. A question we often get is why did this occur? A pattern like this would signify aggressive buyers were present but there was adequate sellers with working sell orders in the market who absorbed all the buyers demand. Again, using key reference points will help to uncover the moves that have potential to follow through versus the moves that will likely stop and reverse.

MARKET PROFILE®

MarketDelta® can be very effectively used to help read the conviction and underlying market dynamics at key reference areas that you may have identified, as well as, the value area extremes, point of control, and initial balance area. Combining the information that can be obtained from the Footprint® chart with a thorough understanding of Market Profile® can provide a powerful edge. Market Profile® provides context and consistently identifies key reference areas. The Footprint® chart provides real time context to what is going on when the market reaches those areas, providing you with a perfect tool to compliment Market Profile® at the execution level.

BASIC RULES FOR INTERPRETING PRICE & VOLUME & DELTA

Volume should increase (grow) in the direction of a health trend. In an uptrend volume should increase as price moves higher and decrease (shrink) as price retraces. In a downtrend volume should increase as price moves lower and decrease as price retraces. An additional metric the Footprint® offers is Delta, which is the net buying or selling at each price. The delta is made visible through the color of the Footprint® and the delta for each bar located at the bottom of each bar. Pay special attention to how the Footprint® uses color to compliment volume. It is often very telling of the type of market you are witnessing.

Price	Volume	Delta	Market
Rising	Increasing	Increasingly Positive	Strong (Up)
Rising	Decreasing	Decreasingly Positive or becoming Negative	Weak

Declining	Increasing	Increasingly Negative	Weak (Down)
Declining	Decreasing	Decreasing Negative or becoming Positive	Strong

KEY PRINCIPLES

- All these examples can be applied in any time frame. Scalpers can take each of the examples and just apply it on the micro level. The reverse is true for longer term traders.
- Learn the trading principles that are exploited in the following examples. Don't just memorize the example. LEARN them. Trading is not a one time test. There are no shortcuts. You will have to continually re-apply your knowledge, ideas, and abilities each and every day.
- Try to understand why the market developed the way it did. What is transforming to eventually bring about the pattern? The benefit is recognizing the forming of the pattern taking place before your eyes. The Footprint® will help you build the skills necessary to recognize moves earlier in development because you are seeing more of the trade information.
- Focus on how each Footprint® is related to the Footprints® around it and how the current bar relates to the previous few bars. Also, pay special attention to the column delta is developing. i.e. Is it increasing or decreasing on an absolute basis? What has the most recent trend in deltas been? Positive and growing (up) or negative and becoming more negative.
- This will build your skills and help to recognize moves earlier in development.

4.1 S&P 500 e-mini

S&P 500 E-mini Summary

The ES is certainly one of the most popular instruments traded using MarketDelta® and the Footprint® chart. Some of the primary reasons for this is liquidity and volatility - two very important components. Volatility serves a vital role in the development and construction of Footprints®. The Footprint® is monitoring not only volume, but also which side of the market that volume occurred. It is the recording of this information that gives Footprints® their color - green for more aggressive buying (trading at the ask price) and red for more aggressive selling (trading at the bid price). Volatility is important because it makes the color presented by the Footprints® more valuable. Why? Because with volatility comes follow through to price movement and because the Footprint® is showing how much volume takes place and who is being more aggressive (buyer or seller) it provides a very good picture of potential future market direction in the near term. Understanding this adds clarity to why so many e-mini traders employ the Footprint® chart. In fact, really any market that has significant price swings and some volatility are excellent candidates for the Footprint® chart.

For markets that lack price volatility and are more of a volume trade (trade lots of volume but don't have large price ranges typically) different Footprint® types and/or strategies will be better employed. See the [10 Yr Note](#) for an example of a lower volatility market.

Core Principles

TRENDING - The definition of a trend is higher highs and higher lows for an up trend and lower highs and lower lows for a down trend. A combination of the two would represent a sideways market. In the definitions just given there is no mention of volume. However, volume is a key piece of information when determining **STRENGTH** of the trend. Current charting methods only allow for measuring of volume with respect to time. None take it a step further.

When the market is trending down you should expect to see dark red Footprints® and dark green Footprints® when the market is trending up. These dark Footprints®

should comprise most of the bar. A sign of a strong trend is when the high (low) prices of each bar are the darkest color (green for up trend, red for down trend). Watching these extreme prices in each bar gives a clue when price is beginning to lose momentum because inevitably lighter shades appear. When approaching an area of support/resistance volume AND delta will signal a reversal or pause in the market.

A market can not keep going forever, but it may rest (retrace and consolidate) before continuing the original move. In Figure 4-2 you can see all the dark green Footprints® as price rallied. Notice as price pulled back during the retracement how it lacked the momentum and strength it had during the initial rally. Consequently, the rally resumed and carried price beyond the original high price and broke out with strong volume in the direction of the trend.

The Footprint® assists in trend following in a breakthrough way. Each Footprint® measures the buy and sell pressure through a thermometer of color. The color is automatically determined by whether more buying or selling occurred at each price and then automatically shaded dark or light. Notice in the Footprint® charts below how the color of each Footprint® accurately reflects the general price direction of the trend. Many times the price direction will be confirmed by the color of the Footprints®. For example, in an uptrend typically you will see many more green Footprints®. The darker the green the more conviction on the buyers part to drive price higher. In a down trend typically you will see many more red Footprints®. **Look for blocks of dark reds or dark greens to confirm the direction of the trend.** These represent areas where aggressive buying or selling entered the market and could be an area of support/resistance on a pull back, especially if viewing longer term intraday Footprint® charts. But more importantly they are showing conviction at consecutive prices. This is often a sign of dominant supply or demand and can provide a great way to monitor the trend or lack of trend.

CONFIDENCE and CONFIRMATION - Many traders have found the Footprint® useful in following the trend and has given them something to "lean" on and not get shaken out at the slightest sign of price contention. Seeing the flow of volume and painting it to the screen in the manner the Footprint® does has been a breakthrough

for traders. Volume is a very important component of trade and in a trend it is very crucial to know when volume begins to weaken and order flow reverse (supply overcomes demand). **The Footprint® constantly monitors the flow of volume as price trends and will alert traders to the condition of the trend by a change in color.** Traders will be better equipped to make more timely and informed decisions because they will know more about the price trend. Nothing is more visual and reflects true market sentiment better than the Footprint®.

As price trends into an area of support or resistance, the Footprint® showcases how volume is behaving. For example, if price has been trending up and pulls back to an area of support, use the Footprint® to monitor the supply/demand at that point. This helps to determine the overall strength of the trend by gauging the volume of the retracements to known areas of support/resistance.

Unique to These Examples

Below are a few examples of the ES breaking out of balance (sideways trading) and starting a late day trend. Figure 4-1 shows one of the most unique things about the Footprint® chart - the [delta periodicity](#). A new bar is only created when a user specified level of delta is achieved. This periodicity is essentially based solely upon order flow and volume entering the market. In Figure 4-1 the level was specified as 5000. So when delta for the bar reaches either +5000 or -5000 a new bar will begin. This periodicity is not time based, but volume and order flow based. **The logic behind this type of chart periodicity is new bars are only created when supply and demand levels become imbalanced.** For this periodicity, notice how the volume was low for each bar as the market began to rally. This confirms a high level of buying because the +5000 delta was being achieved with little volume. Figure 4-2 is the same day and instrument but is a 5 minute chart. This is certainly a more traditional way of looking at market data and it clearly shows the breakout and how volume was expanding and aggressive buyers were present as demand overcame supply at a key resistance level. Figure 4-3 shows each bar based on 10,000 volume. It removes time from the building of new bars and only builds them based on volume. This gets back to our original discussion on volatility and activity. Price volatility usually brings new participants into the market, thus increasing volume.

Complimentary Strategies & Uses

The market can not go in one direction forever. Looking for reversals of the trend can be dangerous if you are wrong and do not manage losses accordingly.

However, catching a reversal correctly can be very rewarding. Using the bar delta at extremes (HOD or LOD) can provide great opportunities to spot where supply over came demand. We call this unique pattern delta divergence. This occurs when a new high of day (HOD) or low of day (LOD) occurs and a delta occurs in the opposite direction. For instance, a HOD with a negative bar delta would be a potential sell signal.

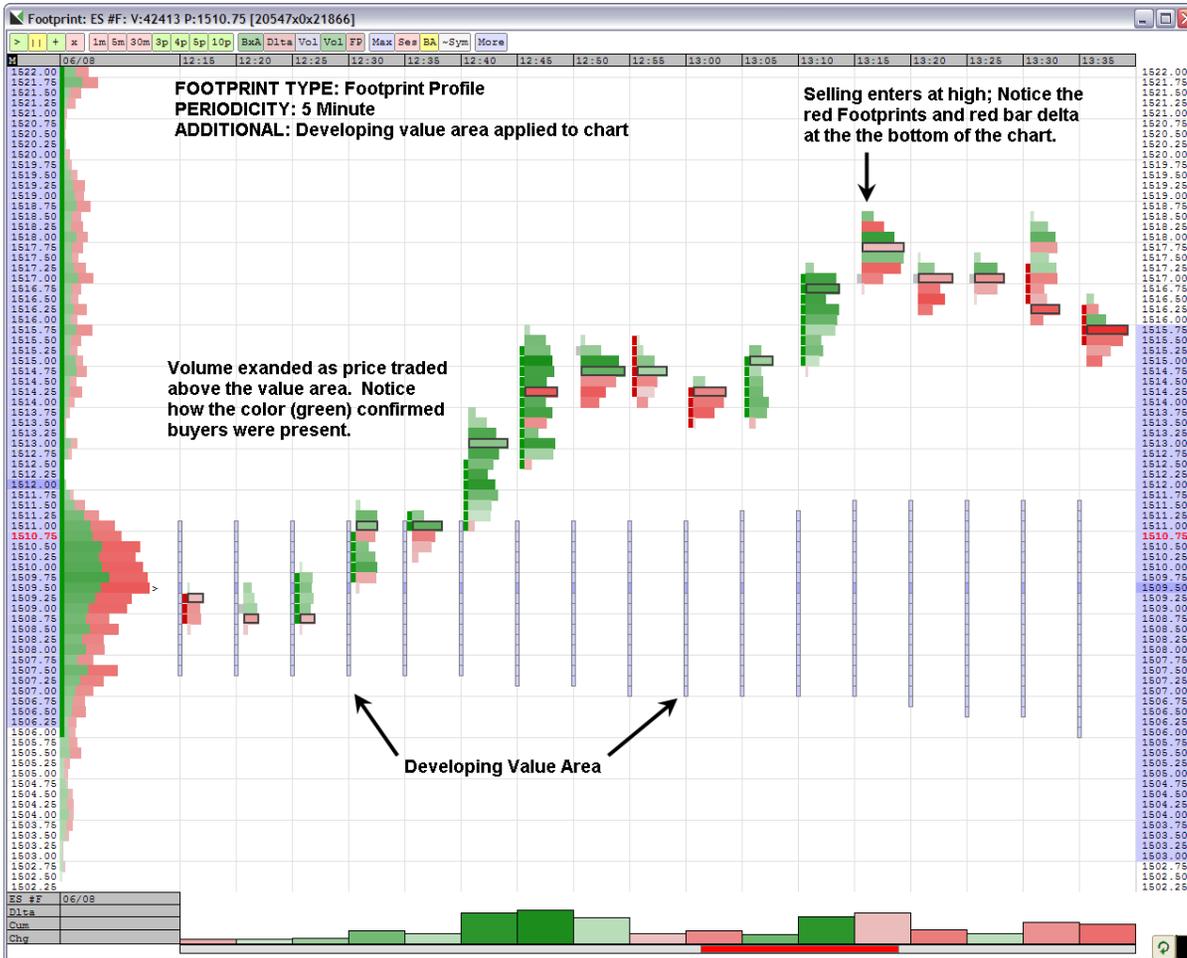


Figure 4-2

4.2 Russell 2000 e-mini

Russell 2000 E-mini Summary

This is another popular market for many of our subscribers. The primary reason is there is lots of price action, good rotations, and lots of prices and opportunities to trade in an out of. If you are a longer time frame trader, then this market offers some very nice trends that you will be able to participate. Some nice periodicities to try with this market besides time based are 10 Price (Figure 4-4), .5 Range, 233 Tick, 377 Tick (Figure 4-4), 1000 Volume, and 250 Delta.

Core Principles

Reversals are probably one of the most commonly recognized chart patterns. They come in many forms, all of which can be read in any good book on technical analysis. A few would be double or triple tops/bottoms, outside bar, and price spikes. While this guide is not intended to cover all the different reversal chart patterns, it is intended to show how the Footprint® displays some of these formations and why it adds value to identifying these patterns. Volume helps to confirm whether the trend is truly reversing or whether continuation is likely.

One of the key components of a reversal is volume. General trading rules to confirm this are:

- Significant highs & lows are very often made on higher than average volume.
- A re-test of a top/bottom on light volume is often a sign that it is just a retest and will not have the strength to push through the original high/low.
- A re-test of a support/resistance on increased volume provides traders with the information that price may be violated during this probe.
- Volume helps to determine whether the price pattern can be trusted.
- Volume gives confirmation to trend direction. Use the Footprint® to gain the inside view of when and how the market is reversing.
- Volume should increase in the direction of the trend and decrease when going against the trend.
- Monitor where a bar is closing in relation to its range. If a bar breaks out but

closes at its opposite extreme there is a good chance the breakout will not hold.

A quick history lesson: One of the primary reasons many floor traders were able to be successful was due to the fact they could see and hear the volume coming into and around the pit. **This was a great advantage to them because they could accurately gauge supply and demand at important levels throughout the trading day.** Many of these same traders have more difficulty trading from behind the electronic screen. Why could this be? It is most likely because traditional charting methods do not provide them with the flow and feel of volume that they once had at their fingertips. The Footprint® chart was developed with both perspectives in mind and fulfills this need in the best way possible.

Unique to These Examples

Figure 4-4 is an example of attempted continuation but lacked any follow through. You can see the same example in Figure 4-5 but using a different Footprint® type and periodicity. Figure 4-4 is the Delta Percent Footprint®. The important thing to notice is the delta % for the continuation bar was only 56%. That is pretty neutral for a bar that is putting in new highs and continuing the trend. We like to see it be above 59% or 60%. In 4-4 it also closed on its lows and had selling enter in the very next bar.

Complimentary Strategies & Uses

See some of the outside bar bar reversals examples and delta divergence reversals through this guide.

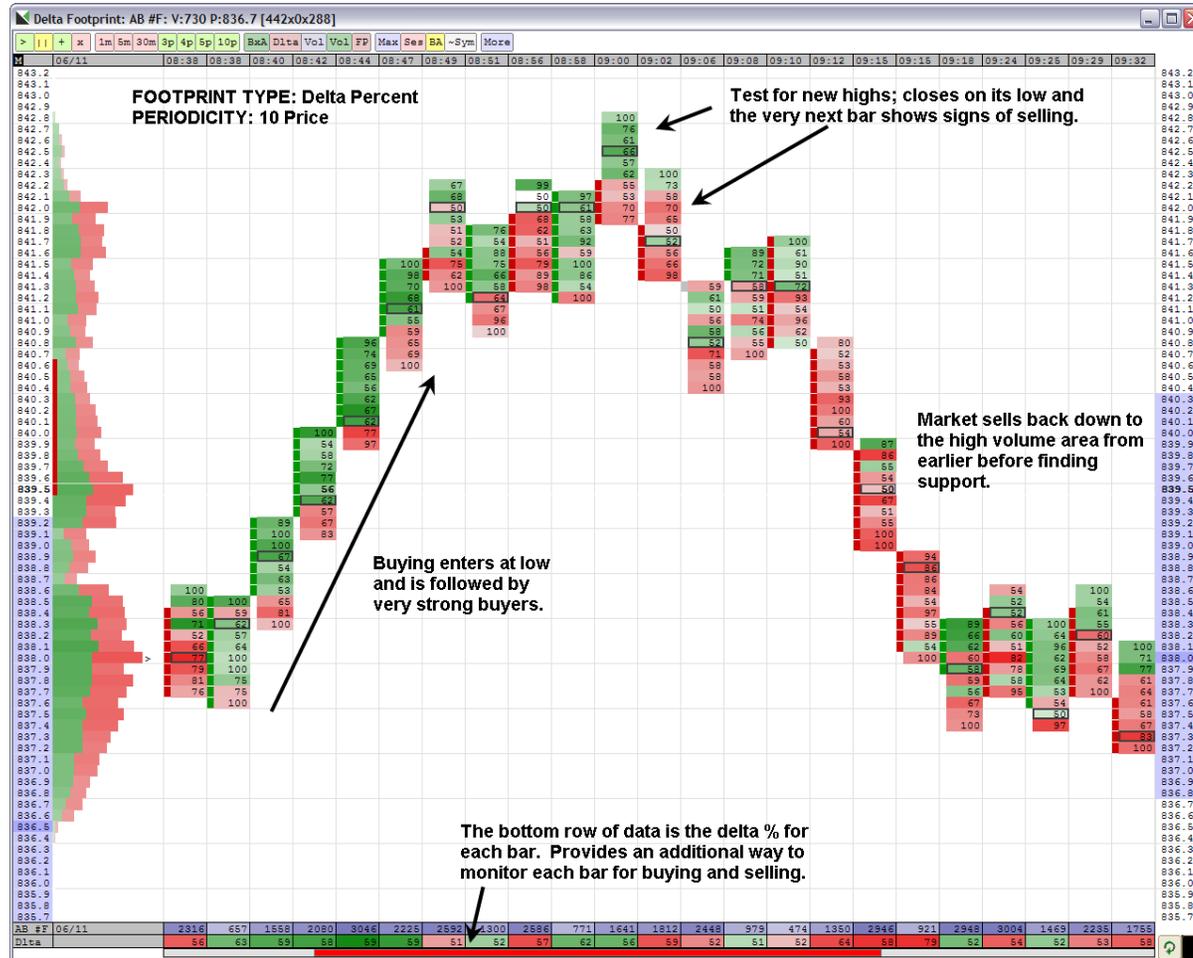


Figure 4-4

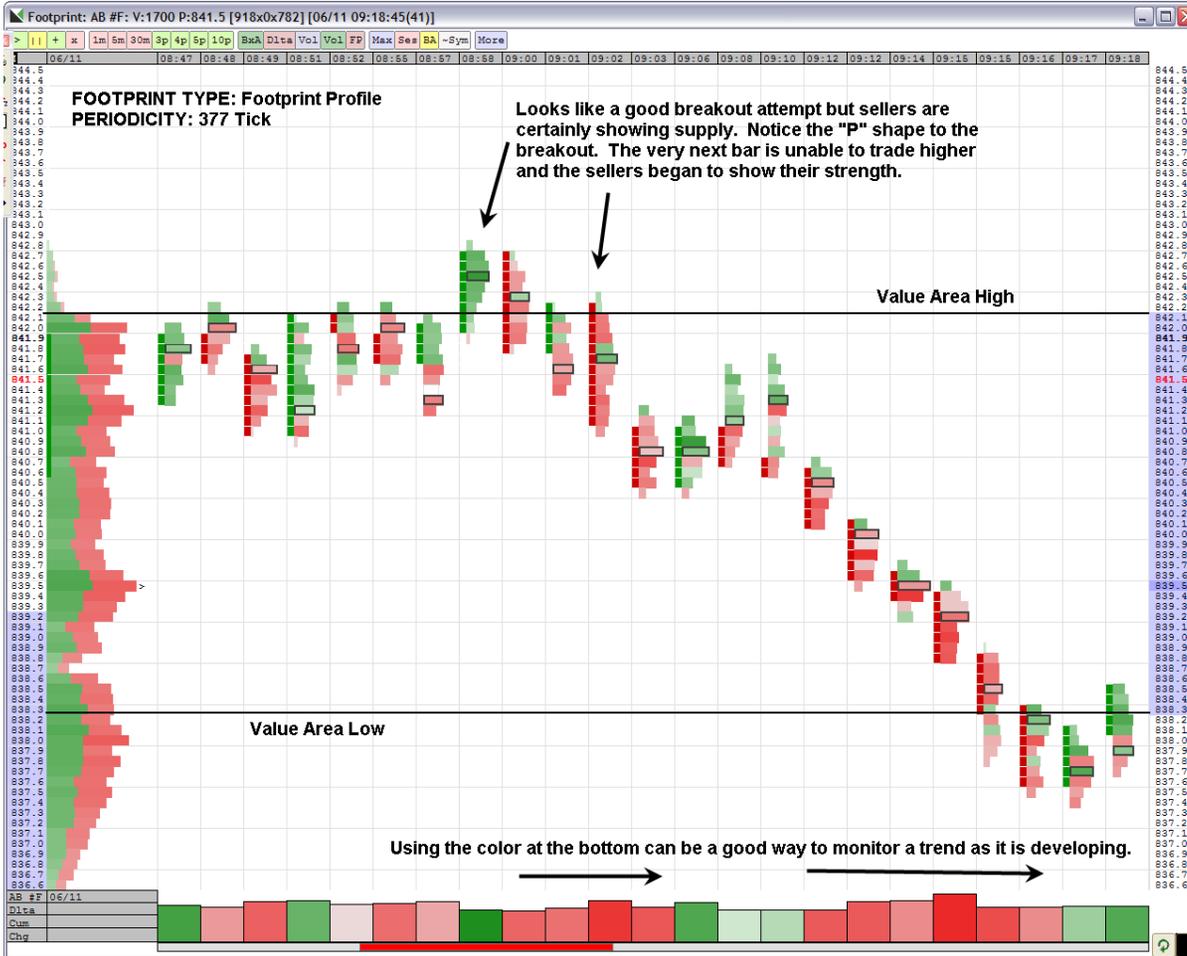


Figure 4-5

For more examples, visit our [Strategies](http://blog.marketdelta.com) page. Timely market examples are at <http://blog.marketdelta.com>.

4.3 Dow mini

Dow (YM) Summary

The YM is a great instrument to use all the Footprint® strategies throughout this guide. It offers good liquidity, volatility, and momentum -- all key components to making the most of the Footprint®.

Core Principles

Reversals can offer high return, low risk entry points. Identifying them can be difficult but using the delta can help spot good opportunities and provide a way of following volume and the direction of order flow as the market reverses and begins moving the opposite direction. Delta is the net buying or selling that took place for a given price or bar. It is calculated by monitoring all the tick data and determining who initiated the trade, buyer or seller. If more buyers initiated trades then there is a positive delta. If more sellers initiated trades then the delta is negative.

Bar delta is the sum of all the Footprint® delta's for a particular bar. There are many ways this can be used. One strategy is to confirm price direction. As price is trending up you would like to see a positive delta for each bar to confirm that aggressive buying is driving price, thus sustaining the trend. The reverse is true for a down trending market. There should be a negative delta to confirm more aggressive selling. In a consolidating market the column delta will typically flip flop back and forth from positive to negative and back, or not show strong conviction either way. This helps to confirm the type of market you are witnessing. If you are witnessing a consolidating market but the bar deltas are all pointing one direction, then there is a greater probability price will exit the range in the direction of the bar delta (up if positive and green or down if negative and red).

Unique to These Examples

A reversal pattern that is unique to MarketDelta®, and one that you will see a lot of examples on the website and blog, is the bar delta divergence pattern. This happens when price trades at or near a new high/low or re-tests it and has a delta opposite what is expected. At highs, if a negative bar delta appears when the bar closes this shows supply entered the market and aggressively began to sell into the market. Vice versa at lows. In Figure 4-6 there are actually 4 examples of this

divergence. Figure 4-7 is a candlestick chart with a custom study applied called Delta Divergence. This indicator is [for sale](#) separately from MarketDelta. However, you can apply the delta histogram to the bottom of the candle chart by applying the Volume Breakdown Indicator and just look for the pattern to occur. This pattern has the highest probability of working at the highs or lows for the day. You will see them occur mid-range and it may be a good signal, however, they will provide the most opportunity at highs and lows of the day. Because this pattern is a reversal pattern, if the market trades through the bar that had the divergence the trade should be exited because it is not reversing. This pattern is looking for the market to reverse and move away, not sit around that price level.

Figure 4-8 shows another excellent example of how sensitive the Footprint® is to volume and order flow. This example had a chart periodicity of 300 Delta. One way to apply this type of chart is to follow the delta color at the bottom of the chart. **It will offer a good way to monitor who is being more forceful in the market, buyers or sellers. It also provides a valid way to gauge exit and entry opportunities. Notice how it will turn color as the market reverse during each rotation. Also, because it often confirms price direction, it can be used as a great tool to help provide confidence to stay in winning trades longer and cut the losing ones if the delta is opposite your position.**

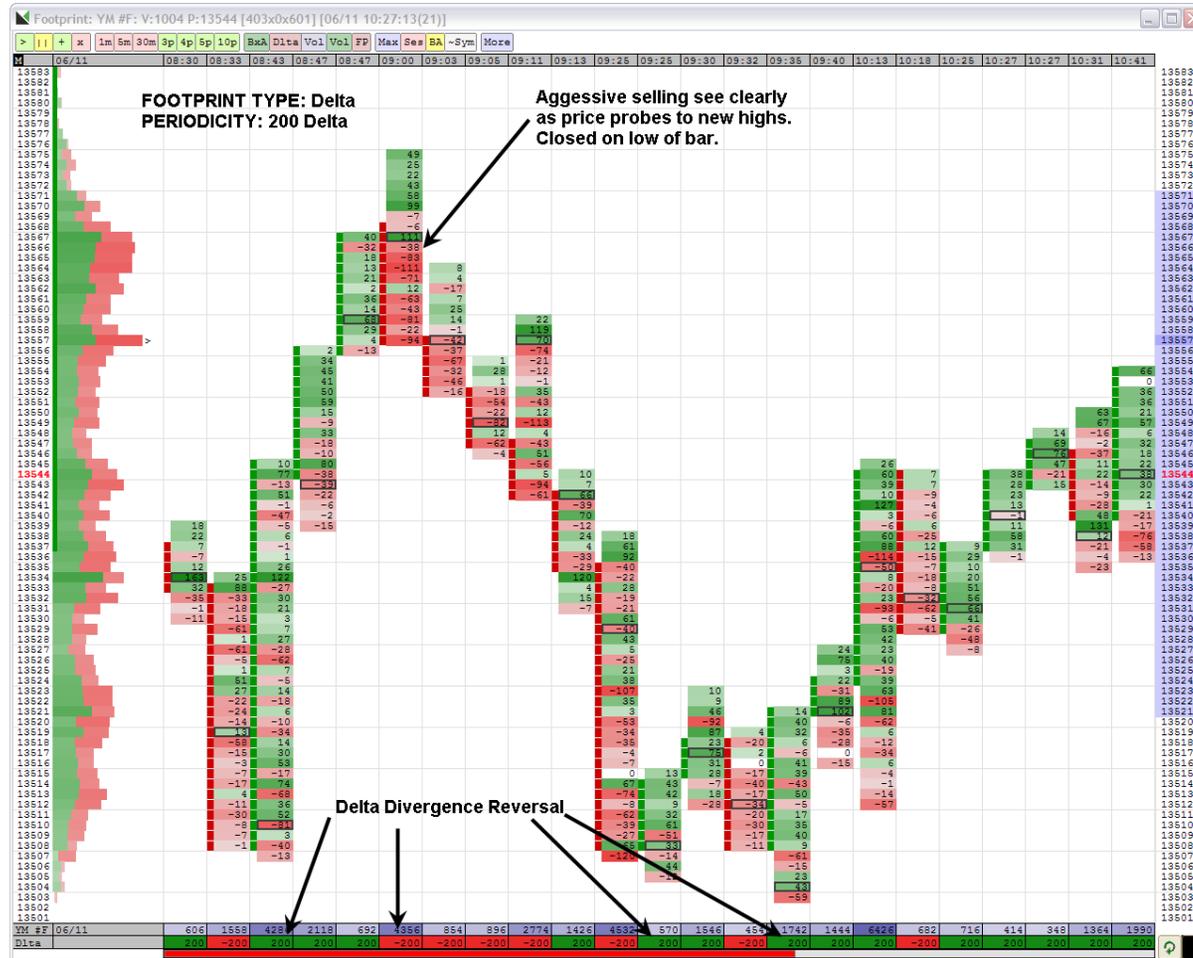


Figure 4-6

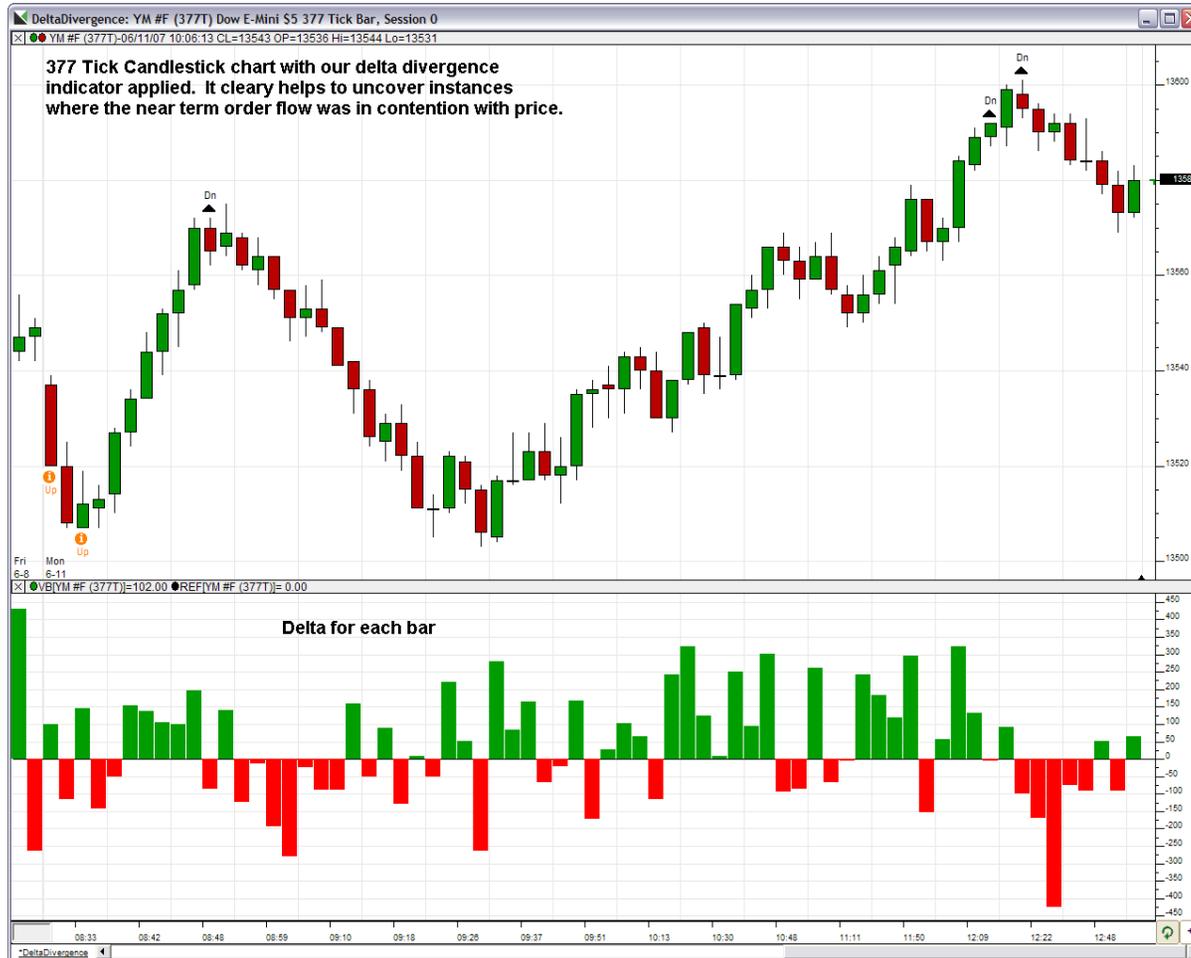


Figure 4-7

To add the indicator shown on the candle chart choose the Volume Breakdown Indicator from the technical indicator list.

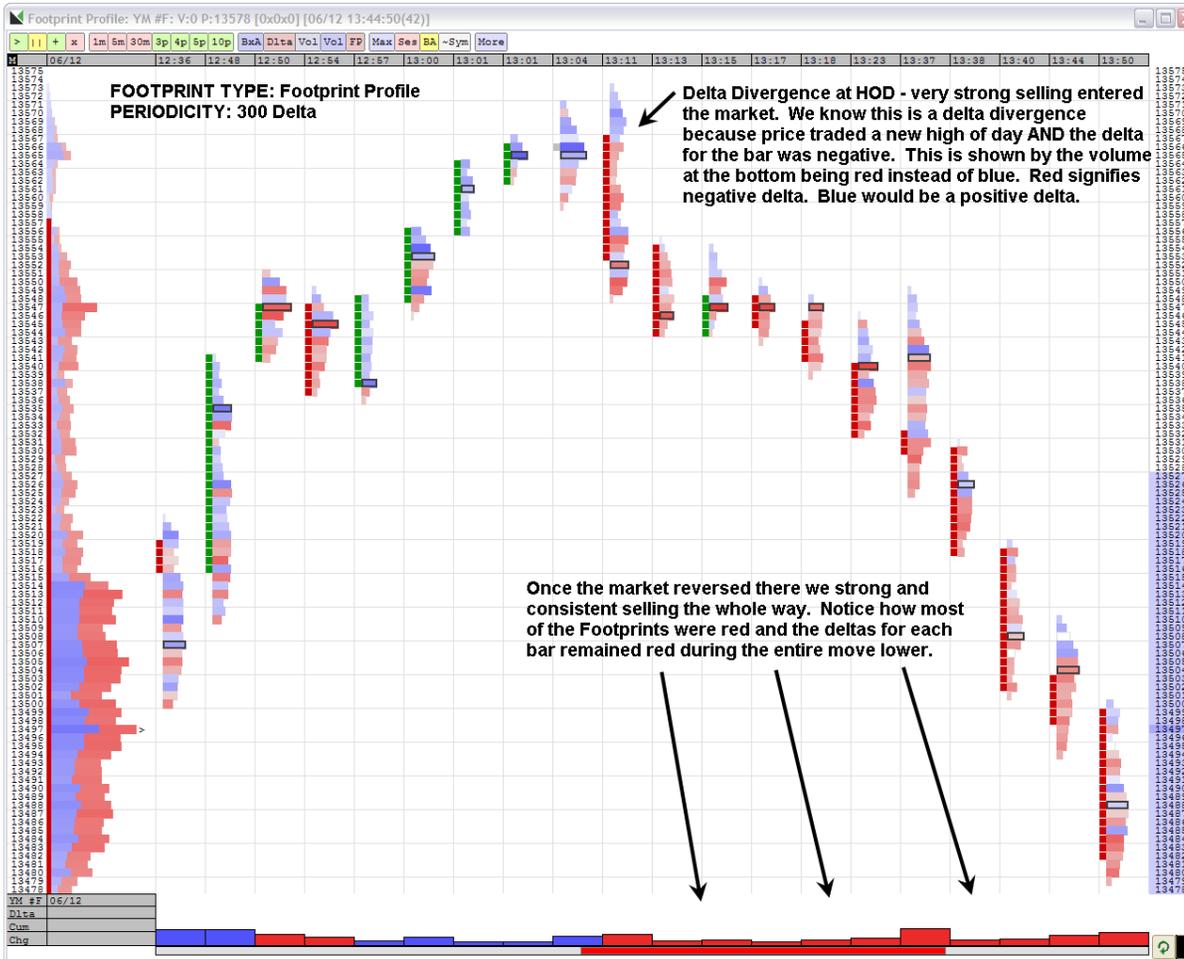


Figure 4-8

For more examples, visit our [Strategies](http://blog.marketdelta.com) page. Timely market examples are at <http://blog.marketdelta.com>.

4.4 Dax

Dax Summary

The Dax is a German Stock Index composed of 30 stocks. It offers abundant volatility and trading opportunities and is a very popular instrument to trade using any of the strategies discussed in this guide. In order to avoid confusion, the Dax trades in halves but some of the examples below show only whole prices. It has good liquidity but due to its volatility large traders may have to trade at multiple prices in order to execute size in this market. This helps to fuel the volatility and you will often see the market move quickly and farther than what you expect. Because this is a European instrument, it tends to have 2 surges of liquidity during the day. The first during the open in Europe and the second during the US open. For traders in the US, this can offer the opportunity to trade this instrument during normal hours and not have to trade it from bell to bell. It is an excellent day trading contract.

Core Principles

In the examples below for the Dax we will focus on trading breakouts. Breakouts occur when price is exiting an area of consolidation. This means many breakouts occur when price is leaving a continuation pattern. A continuation is nothing more than a pause in the current trend. Some of the most common continuation patterns are triangles (ascending, descending, symmetrical), flags, pennants, wedges, and rectangles. It is crucial that a trader understand what these patterns look like and how each should be treated. The reason it is important is because the Footprint® does a superior job at showing how volume is developing within each of these chart formations.

Two other types of breakouts would be support and resistance areas and trend line breakouts. Breakouts should occur on higher than average volume. Anything less is very susceptible to being a false breakout. Using the Footprint® and its intuitive color display, its very clear when breakouts are occurring on low or high volume and at which individual prices. The Footprint® also helps to show how much volume and which side of the market volume is occurring prior to the breakout. This helps to better determine the probability of the eventual breakout. Another very important thing to following leading up to the breakout is the bar delta. Notice how in Figure

4-10 there was a slight positive bias in the market prior to the big breakout.

The Footprint® Profile offers traders a very good way to evaluate breakouts because you can see the shape of each bar and see where more volume is occurring AND the color each price (Footprint®) to determine more selling or buying is occurring. All this information will update in realtime, so it offers a solid way to participate in breakouts and not be left behind. Sometimes the sideways trading before a breakout will begin to show a delta in the direction of the breakout. This offers a way to be possibly enter the trade early in hopes of a breakout, but the trade must be monitored closely in case the breakout fails.

The Footprint® also helps a trader understand whether or not aggressive selling or buying is entering at a key breakout area. To better understand price potential, it is critical for a trader to anticipate what to expect given the most likely probable outcome. To do this we feel it is best to understand the underlying market dynamics and structure for at least the current day. Simply having an idea of whether the market has been trending or been range bound can help to anticipate the likelihood of a breakout and provide a better perspective as to what the Footprints® are telling you.

Unique to These Examples

Figure 4-9 offers a great example of a market that moved lower, consolidated, then resumed the selling. The key points to notice is the breakout point. The volume increased AND the selling increased immensely (denoted by dark red color). Also, as a way to immediately confirm the breakout there should be follow through selling. The very next bar at 4:31 continued to trade lower and have good volume with continued aggressive selling. All the characteristics of a good breakout.

Figure 4-11 shows a 150 delta periodicity for the Dax. It is a fairly short term periodicity by provides a good way to catch and monitor the rotations in the Dax. After seeing the market like this nothing else will do. It is empowering when the ability exists to track order flow and volume in this manner. It reflects price behavior extremely well. Another observation we have witnessed is bar delta % readings above 58 or so reflect the ability to maintain a directional bias. Keep this in mind when monitoring each bar for strength. Extreme readings of 90 or greater could also

reflect panic buying or selling and be the end of a move.



Figure 4-9

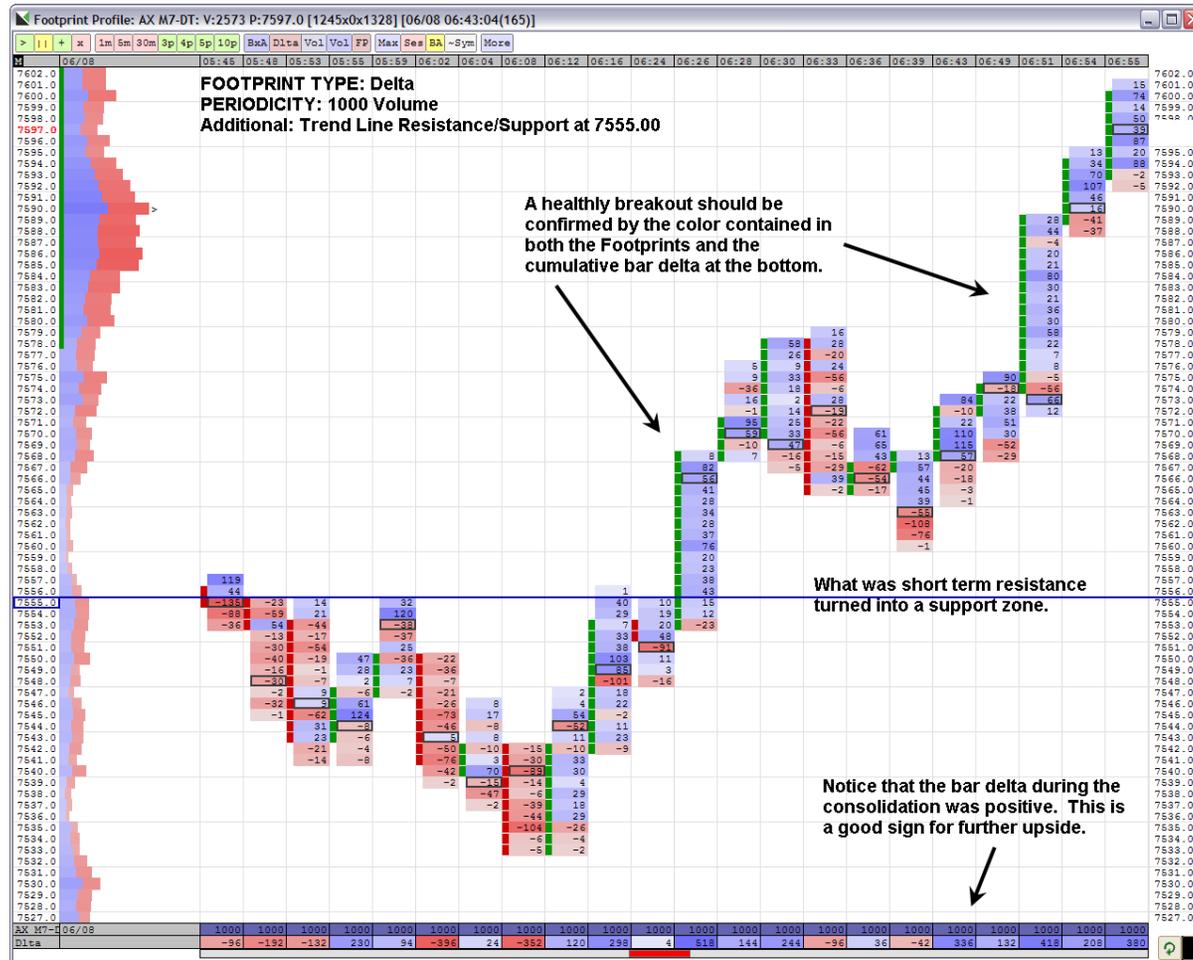


Figure 4-10

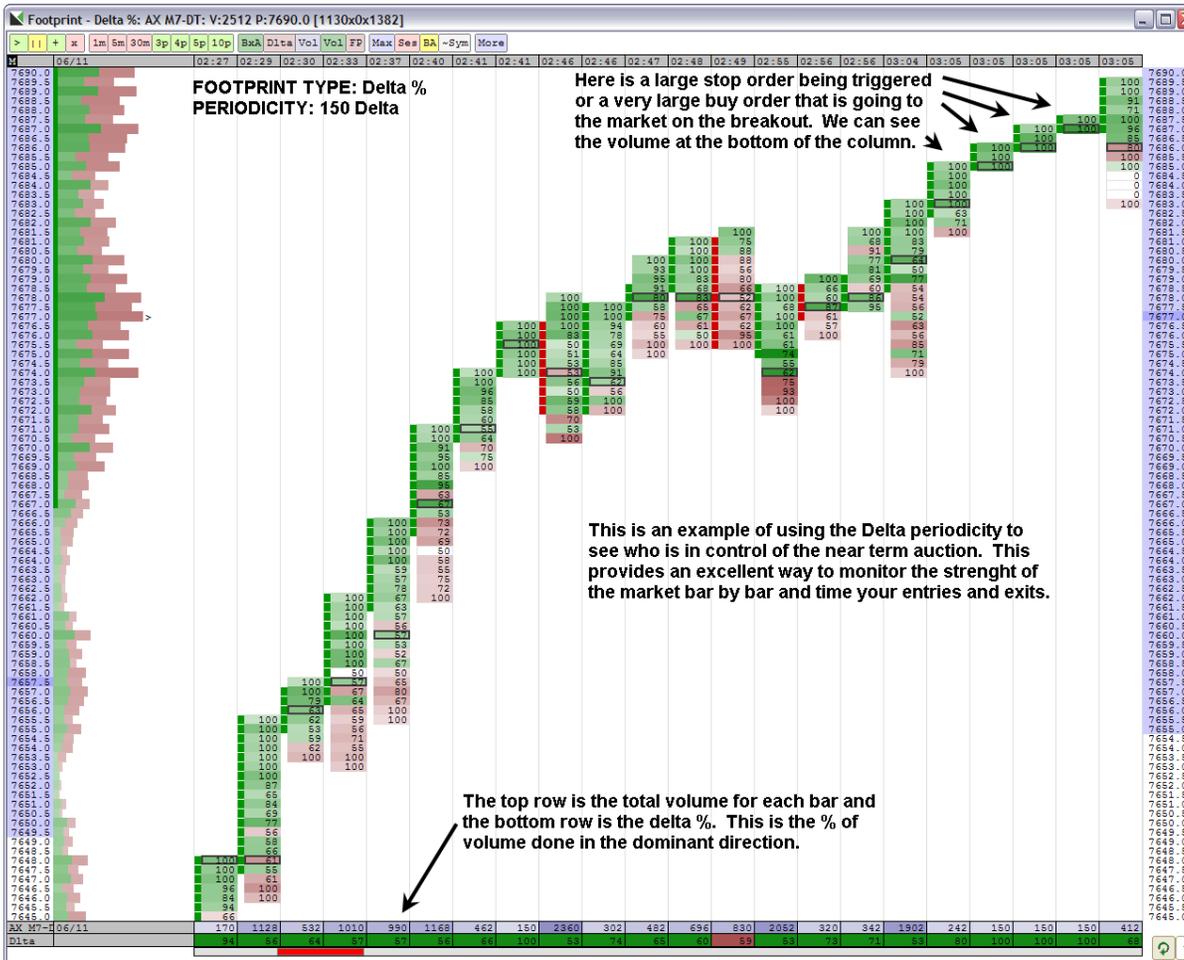


Figure 4-11

For more examples, visit our [Strategies](http://blog.marketdelta.com) page. Timely market examples are at <http://blog.marketdelta.com>.

4.5 EuroStoxx 50

EuroStoxx 50 Summary

The EuroStoxx 50 is a futures contract based upon 50 of the largest companies in the Euro zone. In the opinion of many it is similar to the S&P 500 in the US except it is comprised of 50 European companies. It offers a great deal of liquidity and many trading opportunities. It is not as volatile as the Dax but can experience some quick, sharp moves. It trades in full prices, so that has some effect on the short term volatility. This market is traded by institutions, speculators, and proprietary traders alike. The EuroStoxx 50 tends to have less volatility due to the liquidity provided. Because this is a European instrument, it tends to have 2 surges of liquidity during the day. The first during the open in Europe and the second during the US open. For traders in the US, this can offer the opportunity to trade this instrument during normal hours and not have to trade it from bell to bell.

Core Principles

Liquidity, liquidity, liquidity. "The trend is your friend" - have you ever heard that? What is the secret to identifying and sticking with this fleeting friend? We would propose "delta". Use the Footprints® to track the trend and uncover where it is going and the underlying strength contained within it. Delta will prove to be a very good measure in markets that have decent levels of volume and offer some volatility. You may find that charts based on time will not make as good of use of the delta reading as non-time based charts. This is part of the reason you will see so many non-time based examples throughout this guide. The reason for this is delta is a function of order flow and volume. The volume that is transacted in markets is not linear. **Viewing charts that are based upon a function of volatility or activity may produce Footprints® the more accurately reflect the underlying dynamics in the market and allow for more precise ways of monitoring price.**

Unique to These Examples

Figure 4-12 shows a market that was quiet and in balance (in this case it was trading within the developing value area). As the market began to test the high of the developing value area we see a sudden spike in volume at prices 4410 and 4411. At 4411 we see is it dark green representing aggressive buying. This alone does not

infer it will breakout. **In fact, many times there will be expanding volume near the highs or lows of the value area. It could represent adequate supply matching up against the demand.** In this case these were among the widest bars for the day (4410 and 11). The buying continued and the market managed to breakout and continue higher. There are two immediate rules to apply here: **1) If you had been selling up against the value area high all day up until this point it was a rewarding experience. In this example as soon as you see the aggressive buying it may be time to exit and cut the losses. So it provided a quick evaluation of unfavorable conditions to be short. 2) If you had been waiting to get long on a breakout above value, this is your chance. The breakout is occurring on expanding volume with good, aggressive buying in the direction of the breakout.**

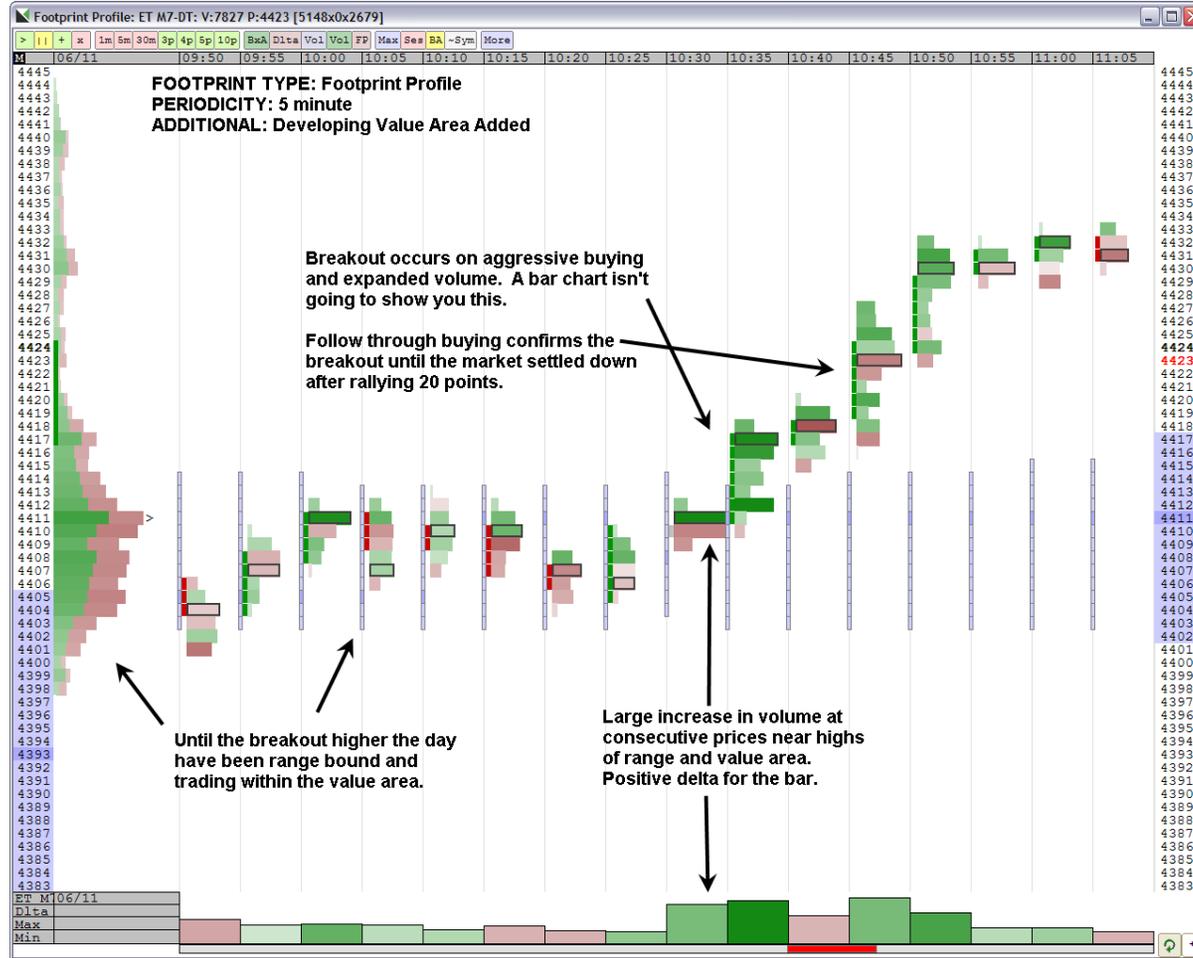


Figure 4-12

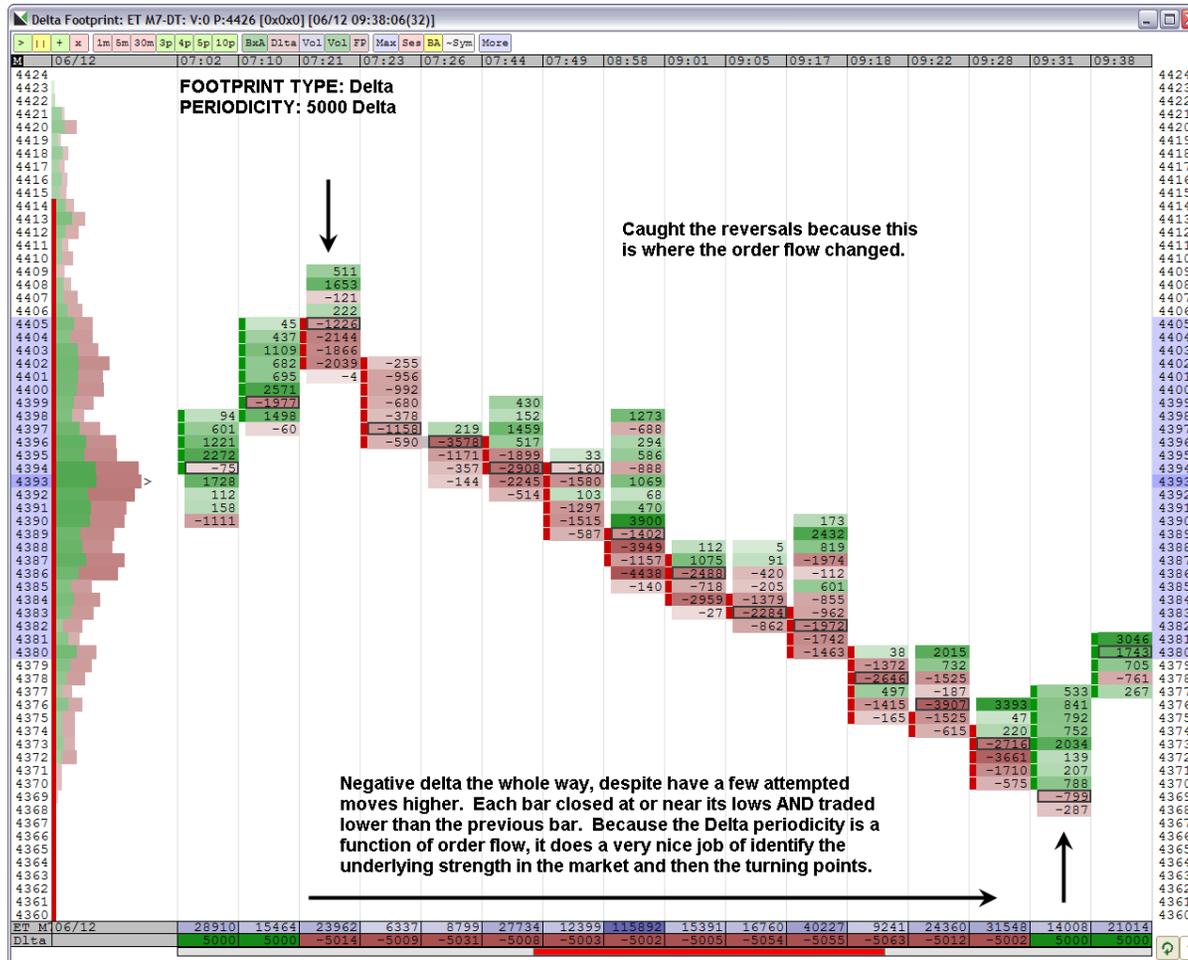


Figure 4-13

The ES is certainly one of the most popular instruments traded using the MarketDelta® and the Footprint® chart. For more examples, visit our [Strategies](#) page. Timely market examples are at <http://blog.marketdelta.com>.

4.6 Crude Oil

Crude Oil Summary

Electronically traded crude oil (and the energy markets in general) have become popular contracts since going electronic. With energy prices firm and looking to stay that way many users of MarketDelta® and the Footprint® chart have discovered key insights to trading these markets. Sometimes there is confusion as to which crude oil contract we are actually talking about, so the examples below will be the Nymex WTI contract. It trades in \$0.01. There is also a mini-crude contract that is popular but it trades every \$0.025.

The energy markets are such a great candidate for the Footprint® chart because of the volatility and the prices swings they experience. The Footprint® provides key insight into the underlying market dynamics and communicates this through color and shape. It puts a face on supply and demand and allows you to trade with more precise information.

Core Principles

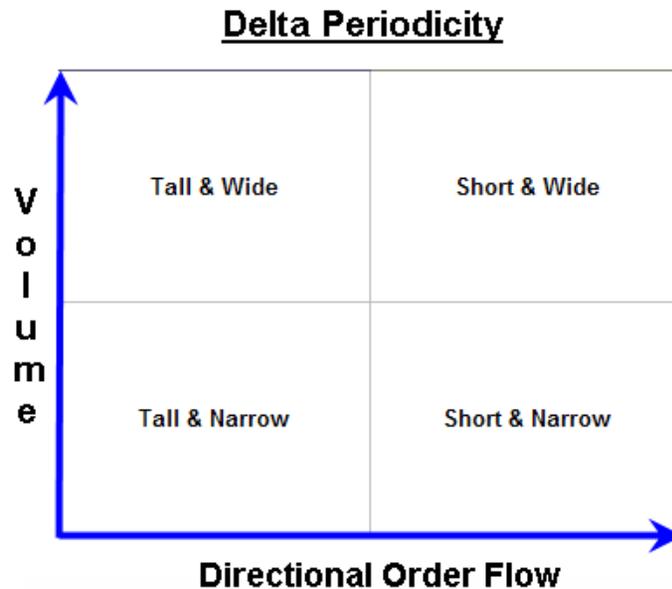
Monitoring the trend for signs of weakness or strength has traditionally been accomplished using a volume histogram applied to the bottom of a chart with a series of over bought/sold indicators. The Footprint® chart offers traders a more finite and accurate manner to accomplish the same thing. With the Footprint® chart you are tracking volume and how it entered the market, price by price, each step of the way. We are not proposing you follow every trade that enters the market. Let the Footprint® do the work of classifying and keeping you more in tune to the underlying fundamentals and supply and demand dynamics unfolding before your eyes. **This heightened sensitivity and way in which to view a bar will provide more understanding to what is unfolding before you and in turn produce more confidence.**

Unique to These Examples

Figure 4-14 show a very nice example of a 70 cent break in crude oil and a subsequent bounce from the lows. The teaching point in this graphic is what happened at the lows. Price was contested 3 independent times before the sellers

realized price was being challenged very well by the buyers who were presenting adequate demand at these levels. The clue was how at 64.60 there was large sell volume occurring but price could not move lower. As a trader, it is important to keep in mind the market had just sold off 70 cents. This latest attempt to push price lower was a little late and trades at that level were likely to get caught short in the near term...at least until price consolidated for another potential move lower.

Figure 4-15 offers a great example of supply and demand at work. Because new bars are only created when a delta of 250 has been reached, the only thing that will advance a bar is more volume trading in one direction. This just means a delta of + or - 250 must be reached. So as supply or demand enter the market this Footprint® will capture it and provide an idea of whether it was aggressive supply (selling) or aggressive demand (buying). In Figure 4-15 we see the first rally was swift and without a whole lot of supply. However, we can see near the end of the move how the 9:06 bar was much wider because supply was soaking up demand AND it turns out this bar closed with a negative delta. This is keen insight for the astute trader. In the second attempt to trade higher at 9:32 and 9:33 we see blocks of aggressive buying (dark green) which covered just a few prices. **While this is perceived initially as aggressive buying because of the color, the underlying fact is there must be large supply present to soak up all that demand within just a few prices.** This is where it gets interesting. Price could continue to rally and it will be very important to see some follow through in the very near term with a positive delta. However, if the breakout begins to fail we now have the knowledge of some large buyers long at the highs. This can provide added fuel to the downside as the market trades lower.

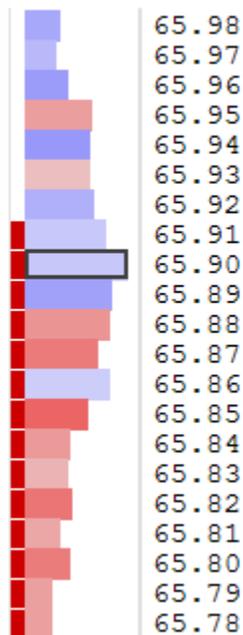


Another more advanced concept you can benefit from when using the delta periodicity is the range and width of each bar. Short and narrow bars represent a very high degree of directional order flow. Short and wide bars represent still a high degree of directional order flow but not as high as when the bar is short and narrow. The width represents more volume traded within the makeup of this bar indicating supply and demand are more equally matched and more traders are attracted to trading at these price levels. Tall and narrow and tall and wide bars represent less overall directional order flow. These bars are long because price is trading around but not with much conviction on the part of buyer or seller. That is why the delta is not reaching the + or - extreme it needs to create a new bar. In other words, buyers and sellers are near equally matched and not able to push the delta of each bar to the threshold specified to advance to the next new bar. Tall and wide bars would usually occur at inflection points or areas of value where there would be lots of supply and demand present but buyers and sellers nearly equally matched in their conviction. When these bars close it is important to see whether it was a positive or negative delta. Tall and narrow bars usually represent illiquidity and show how price

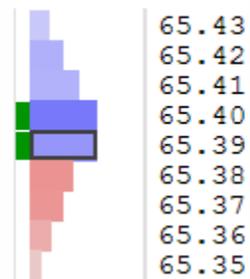
had to move more than normal to achieve the delta threshold specified. You will see these in pre and post market hours and during times of illiquidity like on economic releases or at price extremes. Do be deceived by these bars because price CAN move a long way while creating the bar.

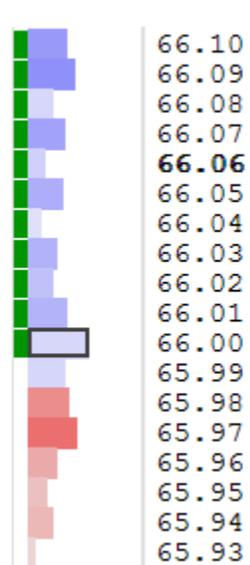
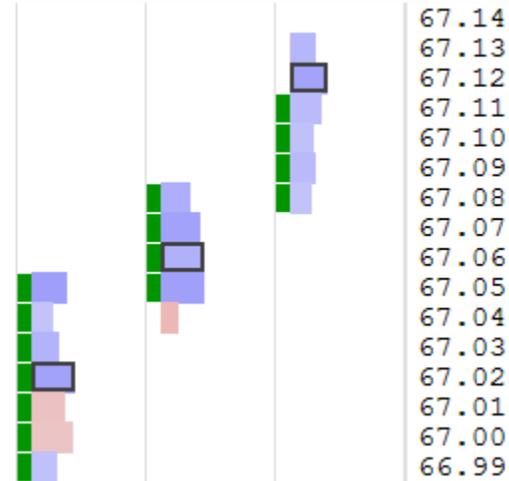
These rules are not set in stone. They are just observations we have noticed since the release of this new periodicity. We welcome your feedback if you have other ideas on how this could be interpreted and implemented.

Tall & Wide



Short & Wide



Tall & Narrow**Short & Narrow****Complimentary Strategies & Uses**

Many who trade crude are used to volatility and the unexpected. With the energy markets there seems to be a greater possibility that price will go farther than you would have expected. Because this is often true, using the Footprint® to identify the underlying strength in terms of volume and order flow can be very beneficial. There are a large number of people who use Mark Fisher's ACD strategy to trade the energy markets. The Footprint® can provide an excellent confirmation tool to that strategy. Let the ACD define price levels to consider and make the decision to execute the trade with a clear signal from the Footprint® and then monitor the trade accordingly.

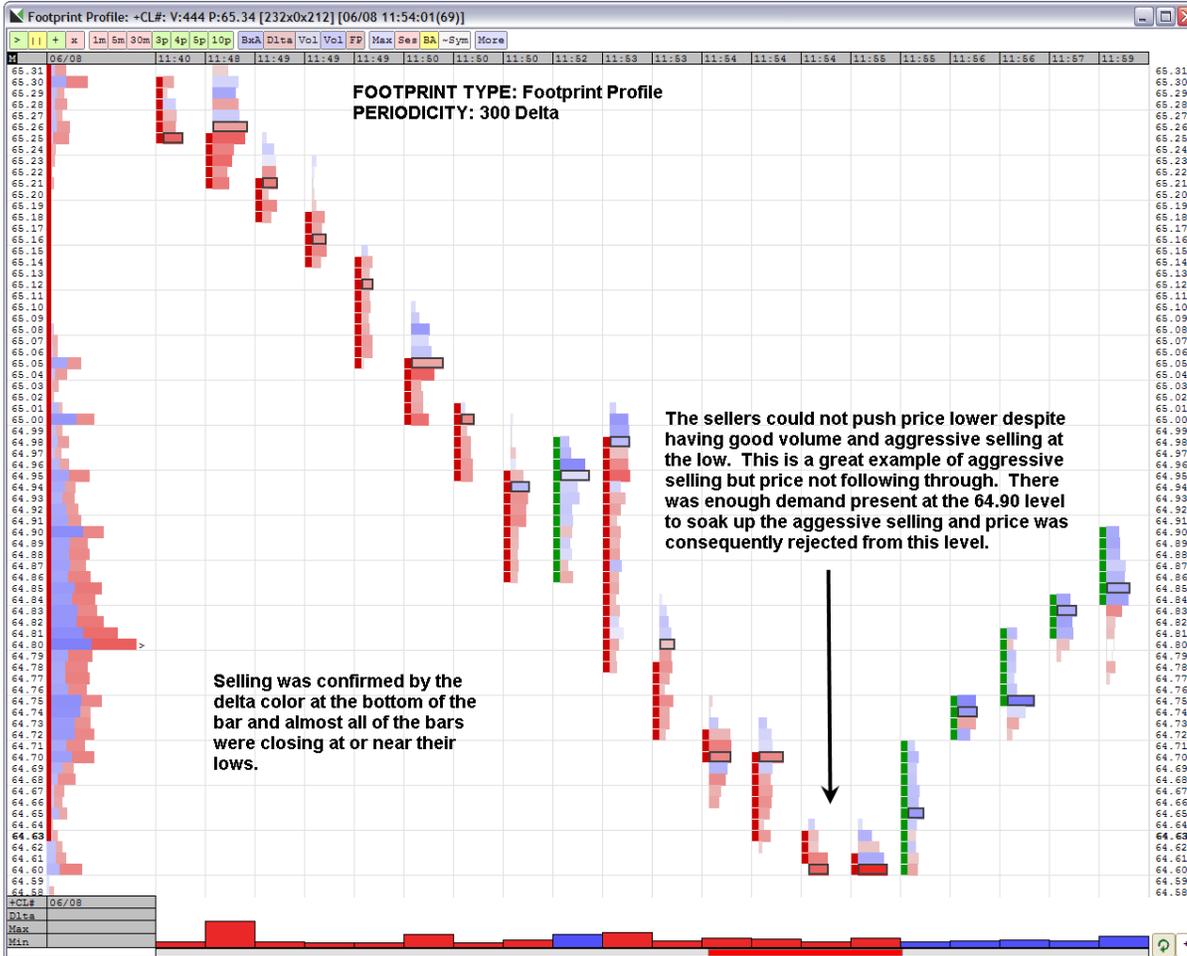


Figure 4-14

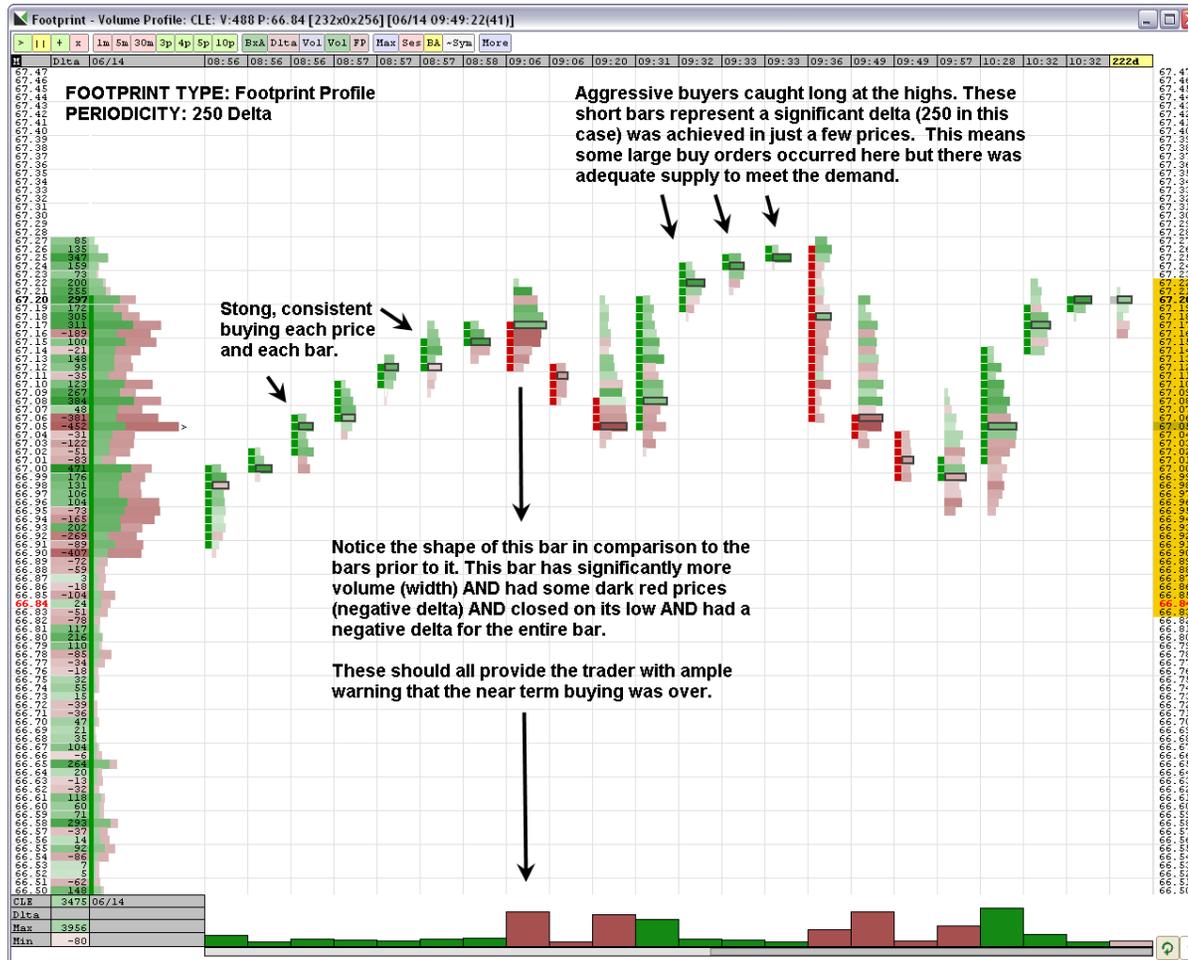


Figure 4-15

For more examples, visit our [Strategies](http://blog.marketdelta.com) page. Timely market examples are at <http://blog.marketdelta.com>.

4.7 Gold

Gold Summary

Like some of the other futures contracts, gold is a cross listed contract on more than one exchange. A most liquid gold contract (as of this writing) is traded on COMEX. The examples below are using the 100oz. electronic gold contract on COMEX. Another important thing to keep in mind is gold does a decent amount of overnight volume (US time), primarily when London opens.

Core Principles

Sometimes a consolidating market provides some clues as to which way it may exit the consolidation. The only way to really get an understanding of this is to view the composition of the Footprints® and the delta for the bars in consolidation. If viewing the Delta % Footprint® then look for red deltas if looking price to exit the consolidation to the downside. They don't need to be significant values (like 60 or greater). Just the fact they are red indicates net selling within consolidation and provides key insight to how the smart money was positioning within congestion. A key thing to remember is the largest and smartest traders are usually not trying to get into the market during the breakout. They are already in...they got in when the market was in congestion and randomly trading within an area. This allows them to enter with the size they need and not push the market all over the place AND then exit the trade when everyone else is scrambling to enter on the breakout.

Unique to These Examples

Figure 4-17 utilizes the value area (often employed by those who use Market Profile ®) and shows the value area high and value area low. After the first hour or two the current (developing) days value area can provide some solid reference points to trade from if the market is exhibiting signs of being range bound. If the market is showing a tendency to trend, the value area can provide solid support levels if the market is in a more vertical state (trending).

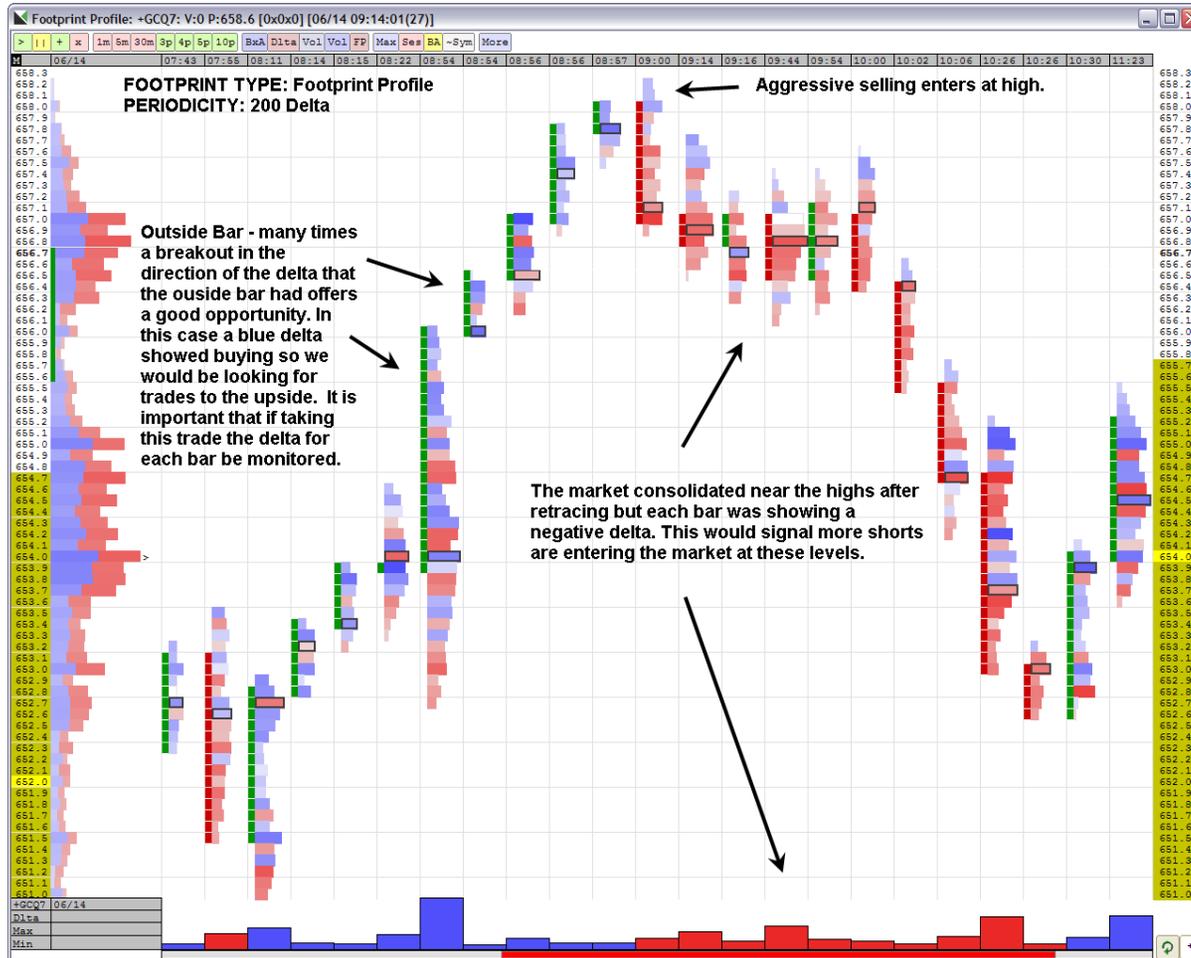


Figure 4-16

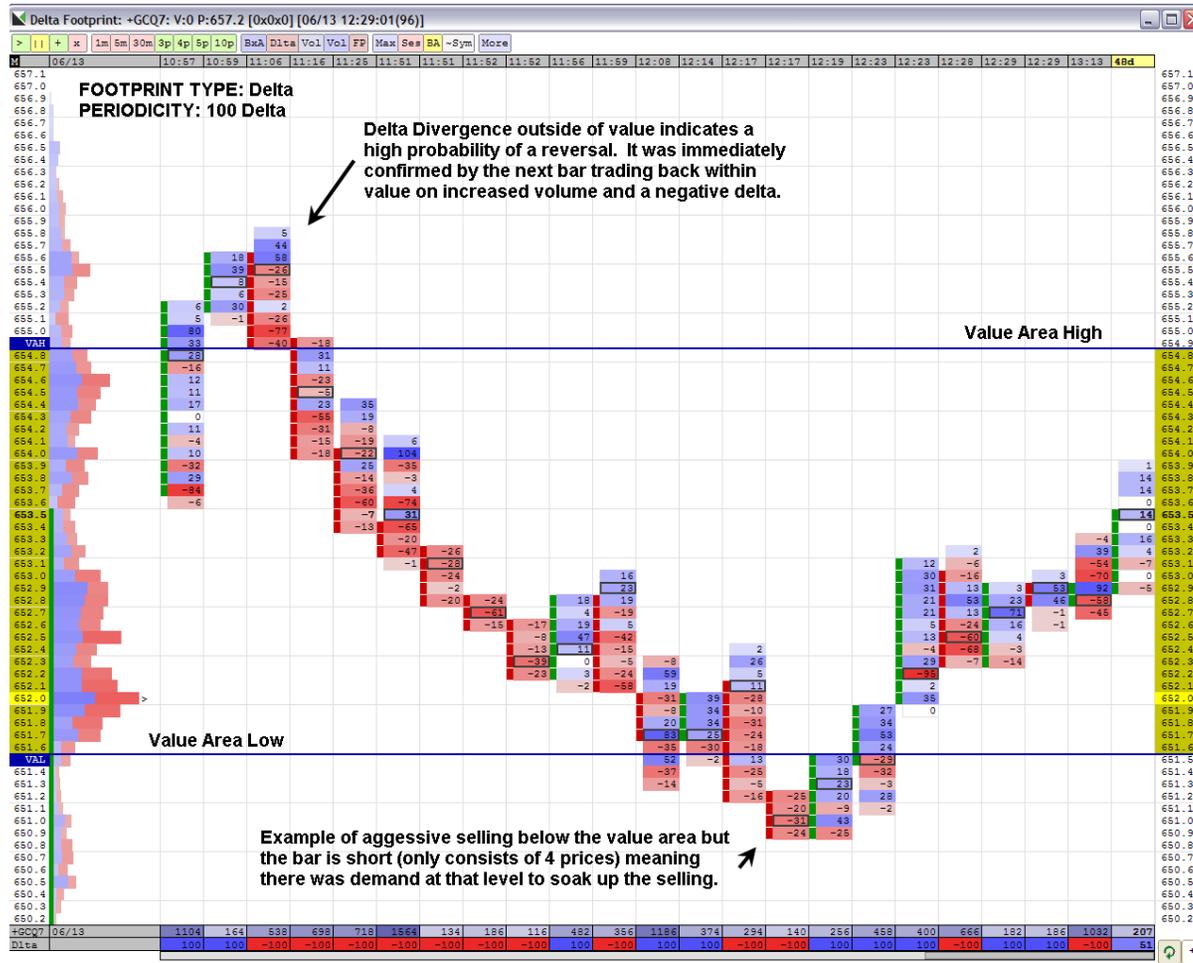


Figure 4-17

For more examples, visit our [Strategies](http://blog.marketdelta.com) page. Timely market examples are at <http://blog.marketdelta.com>.

4.8 Grains

Grains Summary

Grains have just started trading electronic during the day session in the last few years and have already attracted many market participants. They provide great opportunities for traders and investors looking for alternative investments. With respect to MarketDelta® and the Footprint® chart we will only consider the electronic contracts since those are the only ones we have tick by tick volume for in real time. The grains have more of a seasonal volatility component compared to other markets, so keep that in mind when considering the overall probability of large moves. The summer months offer ample volatility to find some great opportunities.

Unique to These Examples

The agricultural markets are prone to "locking" limit sometimes after reports show imbalances in supply or demand. While there is nothing that can be done leading into reports like this except to be flat, the Footprint® can show how a market is trading at those levels and provide you with an idea of how much traded, at which prices, and if it was the result of the buyer or seller being more aggressive. In Figures 4-17-1 and 4-17-2 we see a soybean market that was locked limit up. Trading began to occur and then came off limit and quickly traded lower. Only the Footprint® will allow you to see this information and make you one of the most

informed traders in your marketplace.

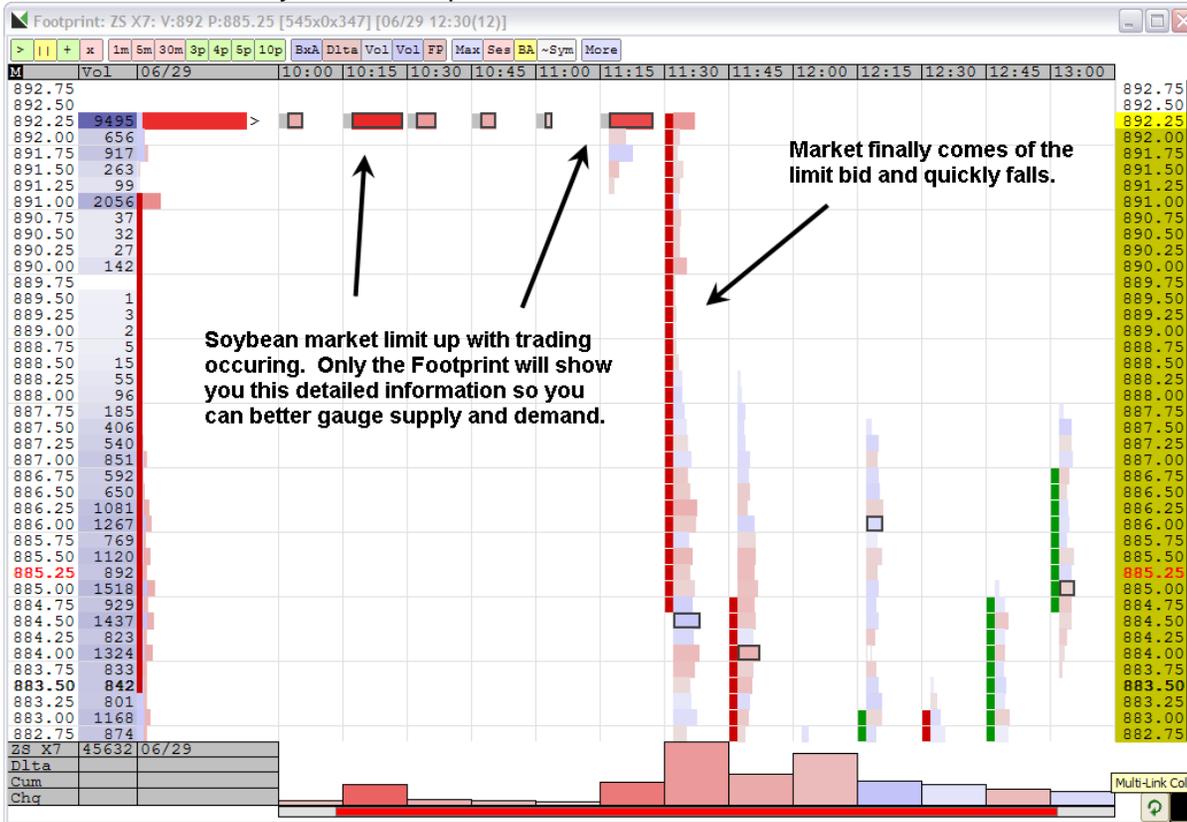


Figure 4-17-1

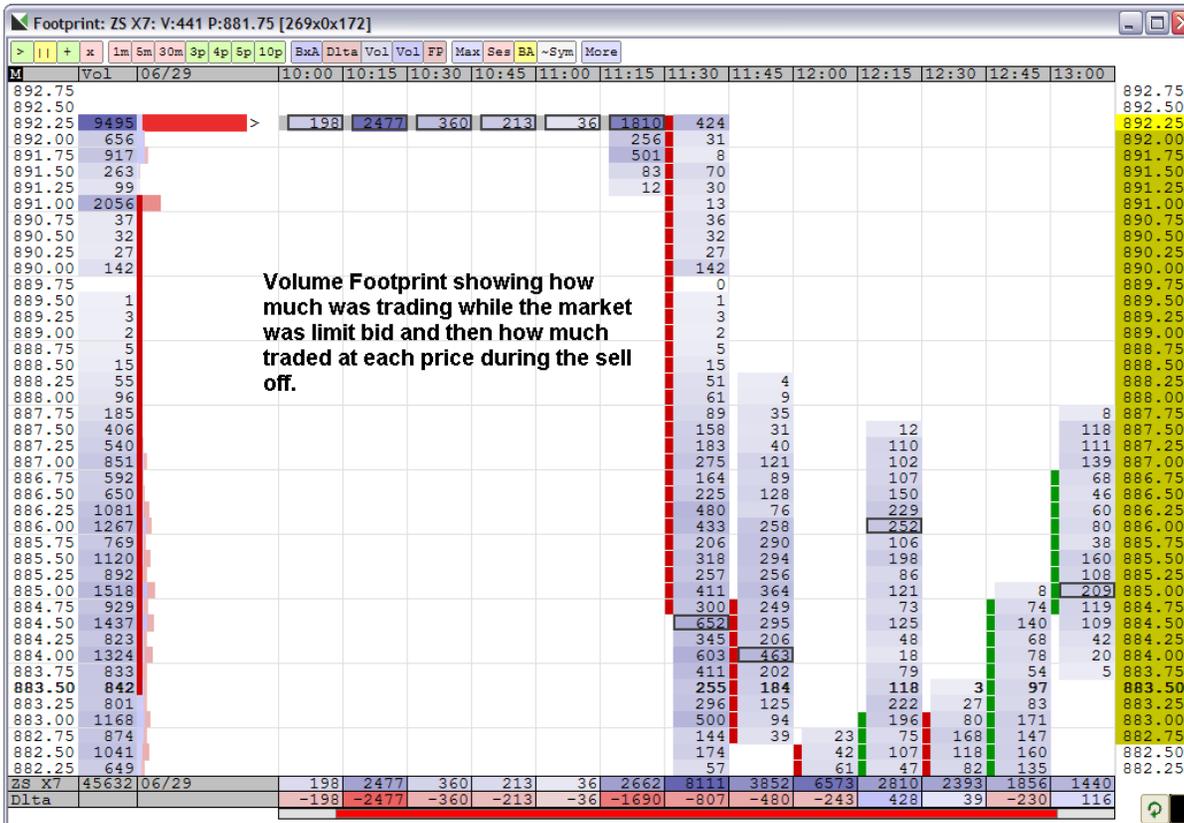


Figure 4-17-2

Complimentary Strategies & Uses

A popular way to trade the grains is using Market Profile®. It would be worthwhile to open a Footprint® chart apply the value area and/or developing value area to the chart. Figure 4-18 shows the previous days value area in gold on the left price scale and the current days value area on the right price scale. The gold bars on the actual chart are plotting the developing value area and help to keep this important reference point visible AND show whether or not value is trending higher or lower. This can prove to be a very useful way to find support and resistance points when

the market is trending. When it is not trending the value area will be stable and not continually put in higher highs or lower lows. In this case it would be more reasonable to fade the market at the value area extremes and look for price to pull back into the value area, as seen in Figure 4-18.

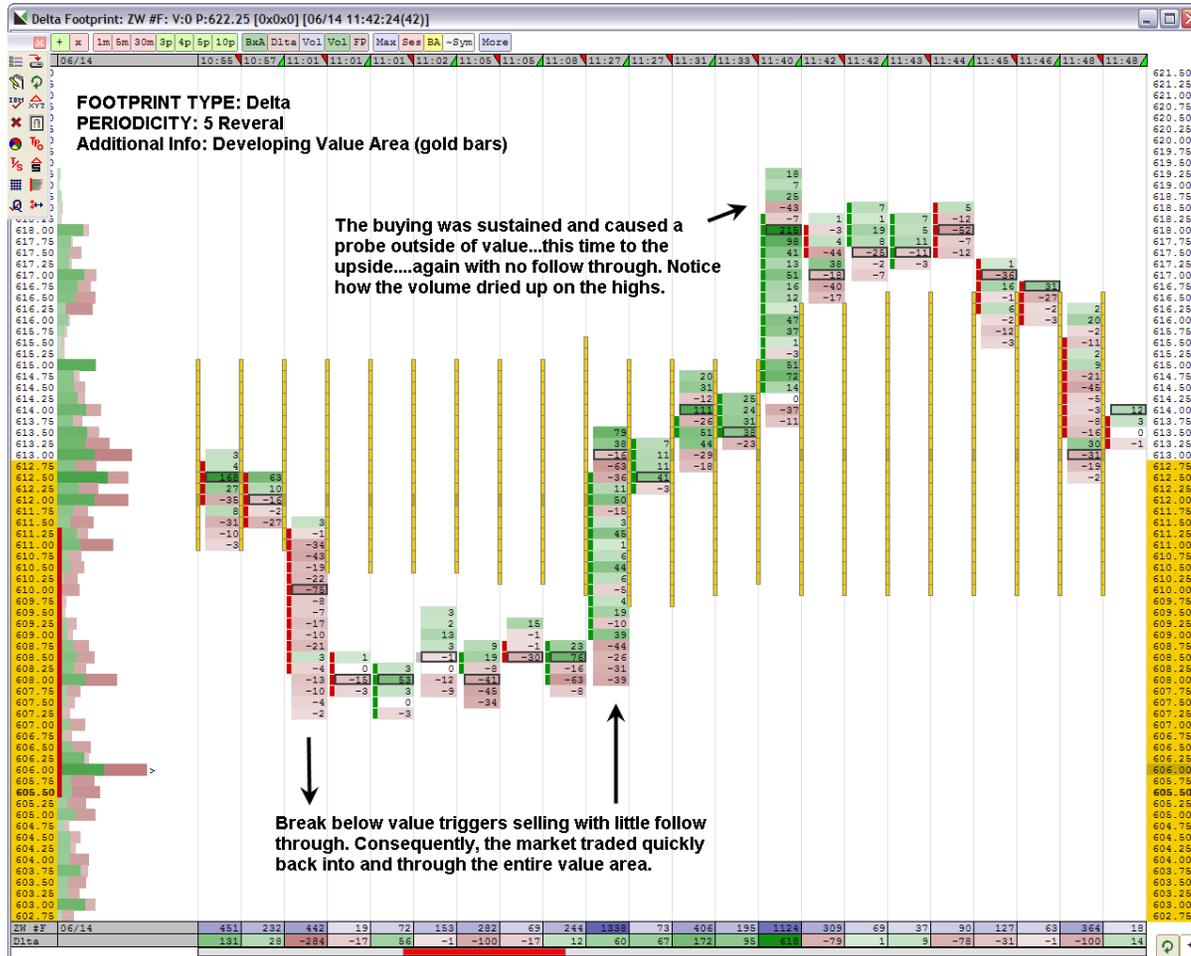


Figure 4-18

4.9 Bund

Bund Summary

The Bund is the European equivalent to the US 10yr Treasury. It is one of the most liquid futures contracts in the world and offers good volatility and follow through. One of the nice things for this fixed income contract is the way it "ticks". The tick increment is 0.01, not fractions like the US treasuries. One of the benefits this offers MarketDelta® and Footprint® chart users is more ticks from which to trade from when compared to the US treasuries. More ticks means slightly more price volatility which means more potential for the Footprint® chart to capture important information. Remembering back to some of the previous concepts already mentioned, price volatility lends itself well to the Footprint® interpreting the underlying order flow. This essentially enables you see inside the chart and have a better understanding of the markets.

Core Principles

We want to put forth a short discussion covering an advanced method for interpreting price, volume, and order flow using the Footprint® chart. The Footprint® Profile chart shows 3 unique things not apparent on traditional charts. The first is each bar is divided by each price traded within that bar. The second is the shape of the bar - wide at high volume prices and narrow at low volume prices. The third is the color applied to each price - blue or green signifies more aggressive buying and red signifies more aggressive selling. These 3 unique properties are discussed throughout this strategy guide so what we will focus on here is the range and periodicity type. This might not sound important at first but as you will see in the following examples it provides insight into how the auction is occurring.

If the range is elongated it tells us a couple of facts. First it shows price is being rejected or there is initiative activity under way. Second it tells us price is somewhat unstable and searching for a level that will bring interest from other market participants, either buyer or seller. This usually results at range extremes, high or low of day, or on news releases. This is one of the benefits of non-time based bars because the bars have been normalized to a specific criteria other than time, such as volume per bar, ticks (trades) per bar, or delta per bar (new for version 8.7).

There are other non-time based bars like range bars and change bars, but those will essentially produce the same range for each bar and for the sake of this example would not be applicable.

If the range is compressed it is inferring that there is lots of interest to trade at the current price level on the part of BOTH buyers and sellers. They are trading heavily within this area and transacting a lot of volume without pushing price all over the place. This is more likely to occur at intraday support and resistance and general price pivots that do not have a lot of interest from many sorts of traders, including long term traders. There are instances like in Figure 4-21 where compressed bars will occur at range extremes. This shows buyers and sellers are very active and supply and demand are matching up within just a few prices. This is very insightful information because typically at range extremes (HOD or LOD, etc) we see instances of brief illiquidity with stop orders being triggered and producing price volatility. In Figure 4-21 resting limit sell orders (supply) is absorbing demand. This is powerful information because those buyers are most likely looking for near term follow through to the upside and if price does not begin ticking higher they will be caught long at the highs.

By also applying the color of the Footprints® within the range, the bar delta, the high volume price within the bar and whether it is higher or lower than the previous bar, a trader is armed with added information to judge the auction being facilitated within the market.

As the market trades it is searching for a place that it can facilitate trading. All this means is buyers and sellers are searching for an area where they can agree and trade the most volume. As the market searches for this level, price is pushed around by all types of traders, big and small, longer term and short term, buyer versus seller. Highs and lows could be viewed as unfair prices or prices that were quickly rejected and thus could not facilitate sustained trading. With all this in mind, using the Footprint® Profile provides valuable insight and clues to where the market is more likely to trade and establish value (volume).

Complimentary Strategies & Uses

Using the delta periodicity can provide a powerful way to track the rotations in the market. Because the delta is based on volume and which direction it is flowing into the market, you will often find it is a very good way to confirm price direction and reversal points.

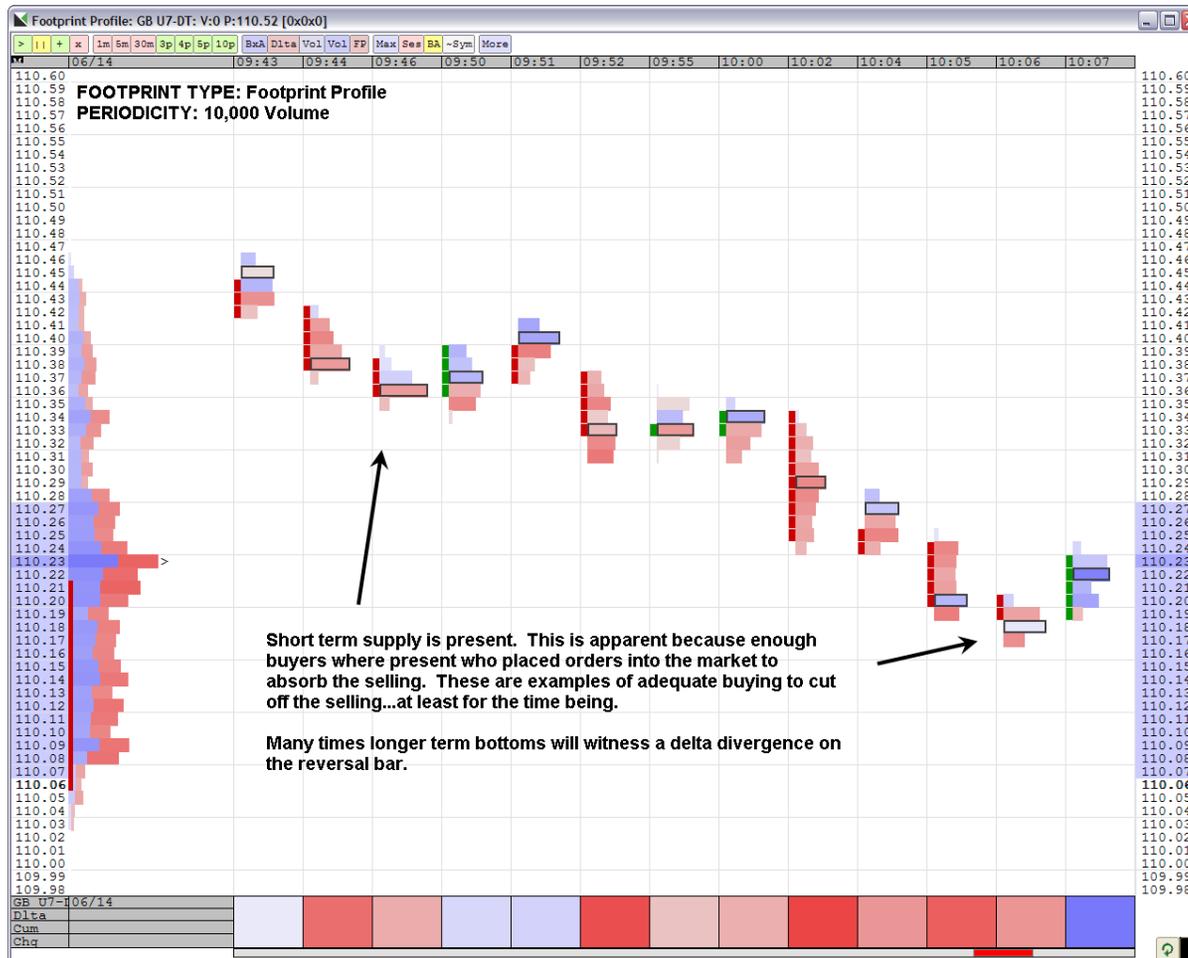


Figure 4-19

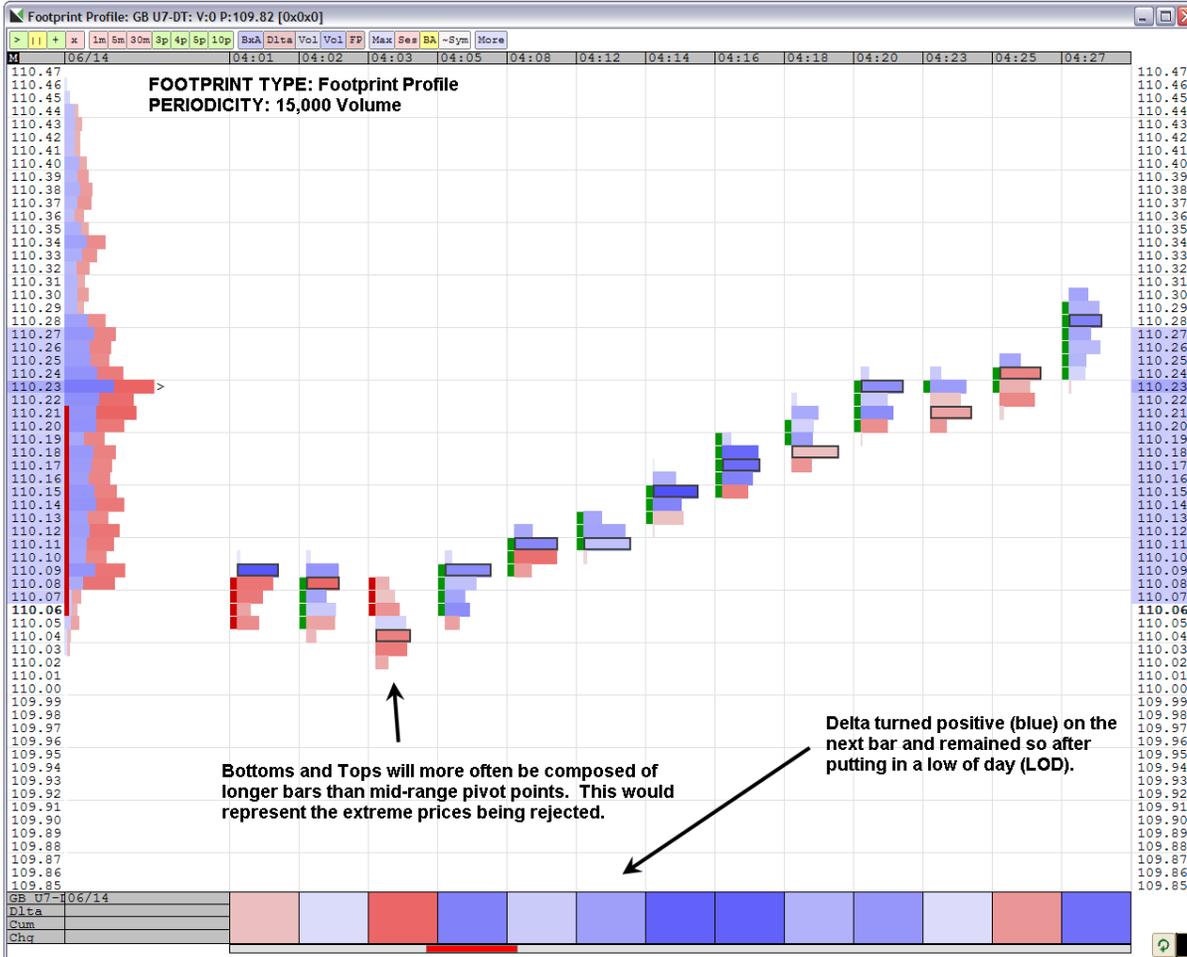


Figure 4-20

4.10 10 Yr Note

US 10yr Treasury Note Summary

Users of MarketDelta® who trade any fixed income market besides the Bund should probably consider using the Footprint® chart in a slightly different manner than is primarily talked about throughout this guide. The reason for this these markets usually do not contain as much price volatility as other markets. This is a generalization of course, but an accepted fact among traders. Because of the lack of price volatility the trading occurs a little different. Because the fixed income markets do not rotate aggressively and quickly (besides during economic releases) heavy volume is transacted at each and every price. The directional order flow does not offer as much insight in these markets because they are less likely to have a lot of near term follow through. This tends to neutralize somewhat, the information extracted from observing order flow. These are all generalizations but worthy of mentioning so you have a better perspective while trading and how to possibly make use of the delta information within the Footprint® chart.

Core Principles

Many of the traders we talk with that have found the Footprint® chart indispensable in the fixed income arena use either the Footprint® Profile chart or volume Footprint® chart. Many of those traders utilize our Market Profile® chart as well. The Footprint® Profile offers traders a way to see mini-Market Profiles® in any time frame they want. This helps to gauge the supply and demand at a closer level and better evaluate areas to trade against, such as significant Market Profile® levels or other pre-defined support and resistance. Another nice feature of the Footprint® Profile is the shape it produces. This can be very helpful in seeing where pockets of liquidity exist and see where all the volume is occurring.

Unique to These Examples

Figure 4-22 and 4-23 are from the same date. One chart is a 15 minute and the other a 30 minute. Figure 4-22 shows the delta color shading. In Figure 4-23 we just colored the bid and ask volume all the same color. This shows the volume distribution without the delta color shading. It works well for those who just want to see volume distributions in whatever time frame desired. Figure 4-24 shows a

non-time based periodicity of 1/8 of a point. Each bar represents 8 ticks, so once a bar trades outside the 8 ticks a new bar is created. This offers a useful way of seeing how much volume occurs within price ranges as long as price does not trade outside that range. Bars will be skinny and contain less volume if they traded the 8 ticks quickly and did not spend much time there. Bars that are wide represent more volume traded and probably spent more time within that range. This may offer a unique way to confirm a Market Profile®.

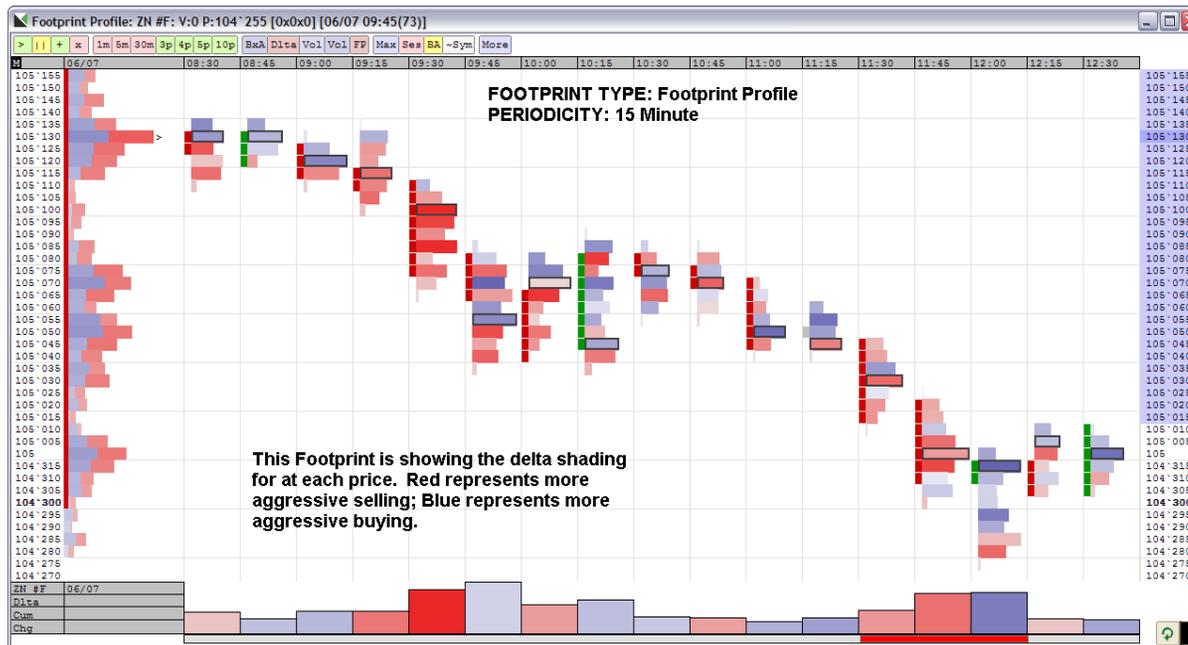


Figure 4-22

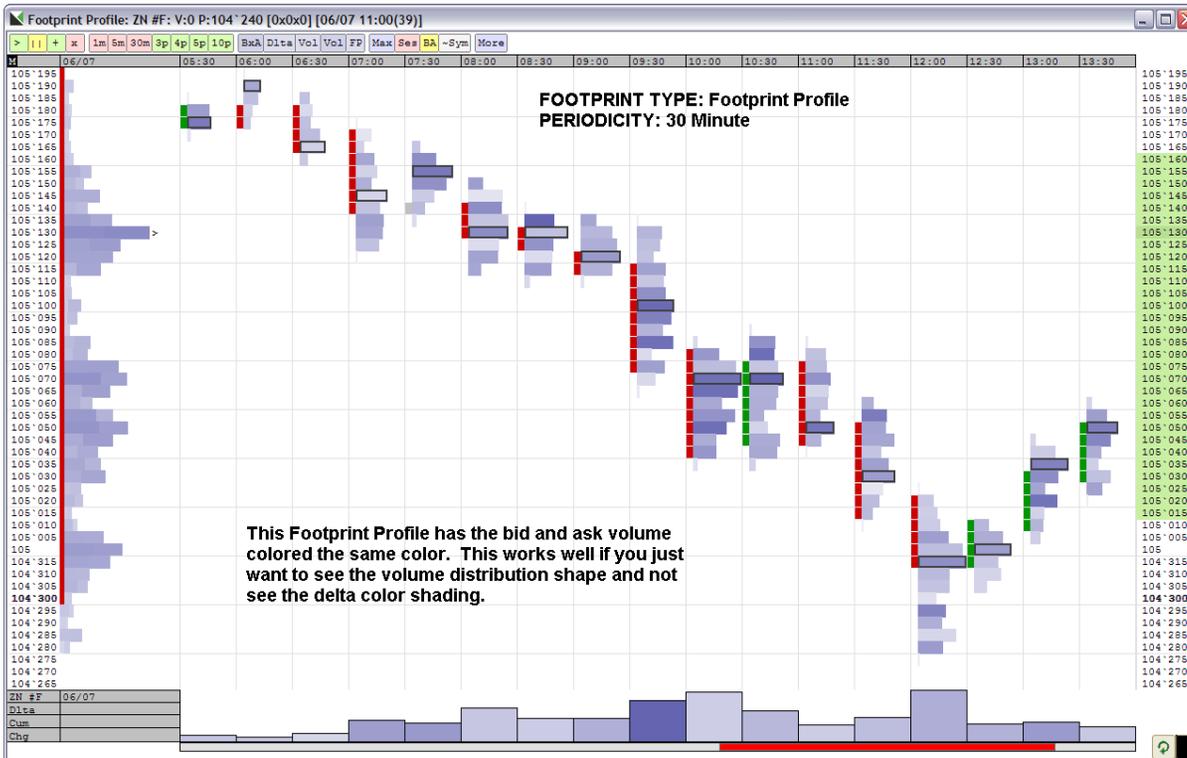


Figure 4-23

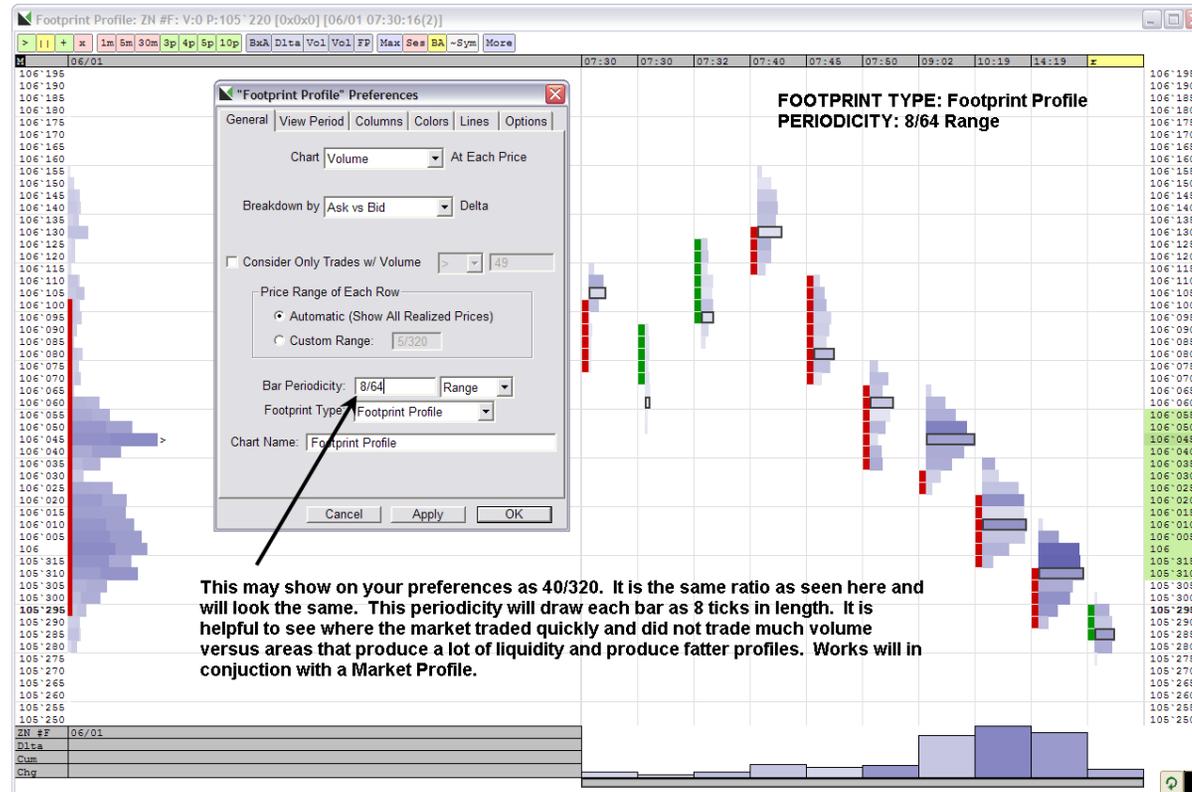


Figure 4-24

For more examples, visit our [Strategies](http://blog.marketdelta.com) page. Timely market examples are at <http://blog.marketdelta.com>.

4.11 Currency Futures

Currency Futures Summary

All examples of currencies use the currency futures contracts. Spot forex (cash market) does not disseminate volume with each trade while currency futures do. This allows the Footprint® to work correctly since it requires volume with each trade. Other features within MarketDelta® do work with spot forex because volume with each trade is not required. Currencies are probably the most 24-hour market in the world. This is important to understand when trading so you realize that there will be times during the day when more liquidity is available.

Core Principles

Heavy volume is witnessed on the Footprint® very clearly through shape, color, and numbers. Depending on which Footprint® you view, the numbers represent volume in one form or another. In the case of the Footprint® Profile volume is represented by the width of the bars. The important principle to grasp is how each Footprint® relates to others around it. Some questions you might ask yourself are the following: As price trades lower/higher is volume picking up? Is the POC (point of control or high volume price) of the current bar higher or lower than the previous bar? What is the color of the POC? How does one bar's volume or delta relate to another? Are certain prices exhibiting more volume than others? As price trades sideways what is volume doing at the high and low of the trading range? What is the shape of the bar if viewing the Footprint® Profile? These questions should all be able to be answered with material presented throughout this guide.

Unique to These Examples

The Footprint® will help you answer these questions by providing the necessary data for you to make the decision. Without the Footprint® the ability does not exist to reference this very crucial trade data. In Figure 4-25 and 4-26 the Footprint® Profile clearly shows where high levels of volume were transacted AND who had more conviction to trade, buyer or seller. This conviction is depicted by color and in two different ways: the first is Footprint® by Footprint®. The second is the color of the bar delta located at the bottom of the window beneath each bar. This keeps track of the net buying and selling that took place for the entire bar and should be used to

confirm the price move you are witnessing.

A move higher should be confirmed with a blue or green delta color for the bar. A move lower should be confirmed by a red delta color for the bar. Any difference should cause a trader to question the price move in the near term. One of the reasons for this is aggressive buyers and sellers tend to be short sighted and want to see payoff quickly. If the market is unable to move in their favor in the near term they may exit the trade. Utilizing the Footprint® and the delta color can provide a way to see through all the noise and gauge the underlying strength in a market in whichever time frame you prefer.

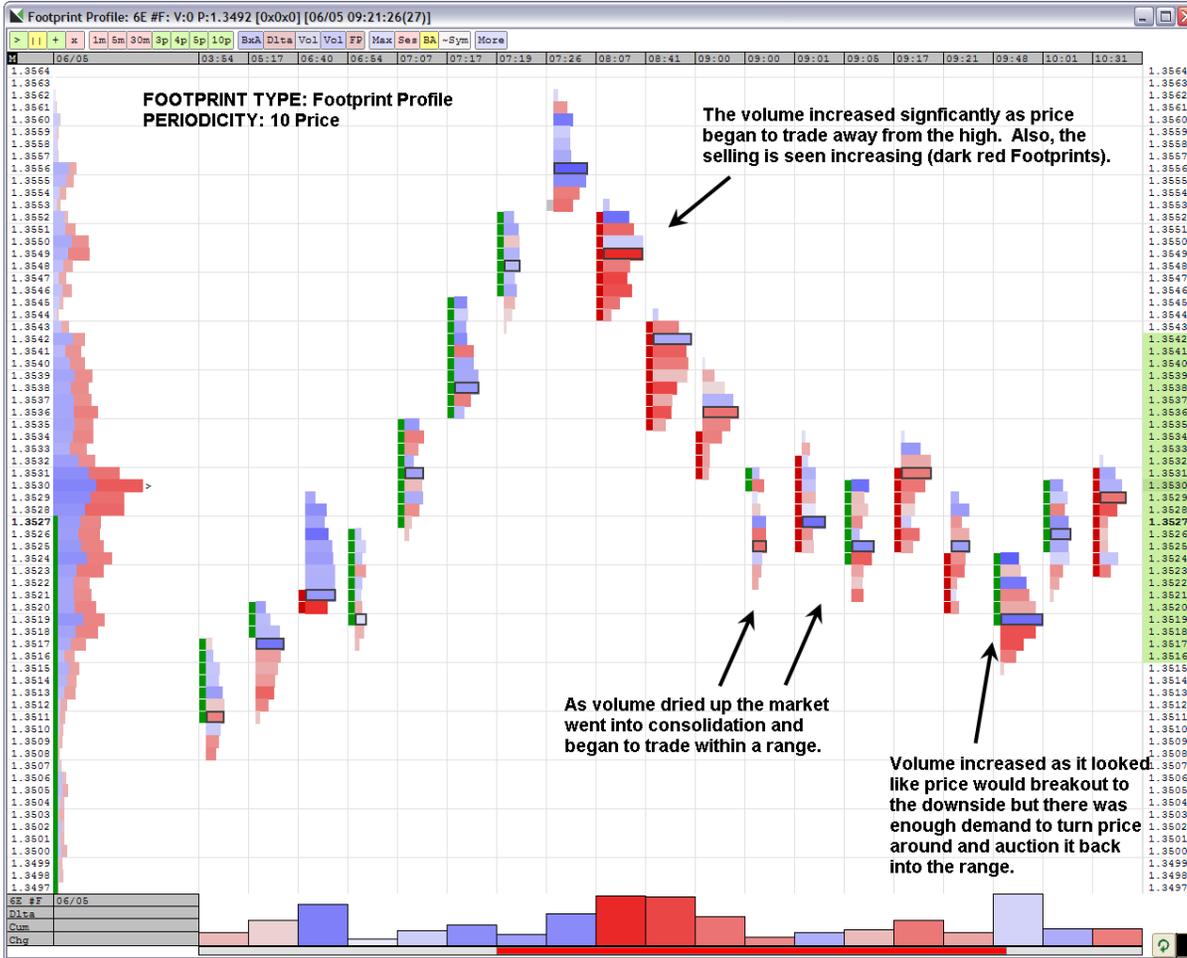


Figure 4-25

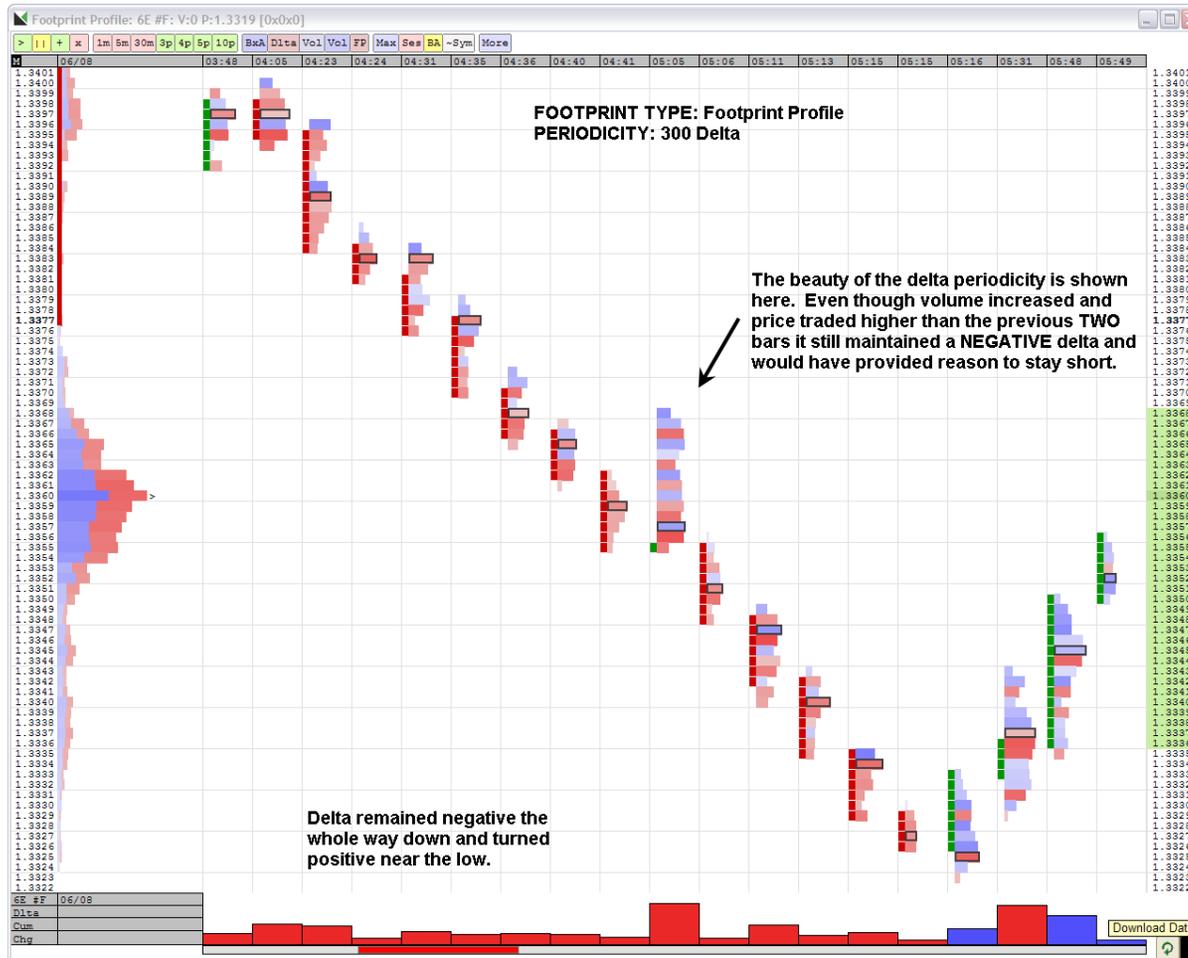


Figure 4-26

The ES is certainly one of the most popular instruments traded using the MarketDelta® and the Footprint® chart. For more examples, visit our [Strategies](#) page. Timely market examples are at <http://blog.marketdelta.com>.

4.12 Stocks & ETF's

Stock & ETF Summary

A majority of the traders using MarketDelta® and the Footprint® chart up to now primarily trade futures. Until July 6, 2007 stocks could not be shorted on the down tick. An uptick is required in order to short stocks. This rule has been repealed and should be good news for those interested in trading stocks using MarketDelta®. More information on this topic can be found [here](#). If you trade stocks in countries outside the U.S. you should understand whether an uptick rule exists. The uptick rule does not effect the total volume at each price, so viewing the Footprint® Profile or volume Footprint® can be a very good choice for markets that contain an uptick rule. ETF's do not have an uptick rule.

Core Principles

MarketDelta® can be used by traders who like to time entries, exits, follow reversals, and take advantage of breakouts. The Footprint® provides an innovative view for market timers using color shading to express buying and selling. Shades of blue represent more buying and shades of red represent more selling at each respective price. Market timers are looking for clues as to what the market will do next in order to take advantage of their knowledge. The goal is to get in on the move early. The Footprint® gives a unique perspective because it allows market timers to see HOW the price is trading, not just where price is trading. This allows market timers to have the "inside view" of turning points in the market because they are viewing volume with price. The color shading jumps out at you when price begins to move or when they coil up waiting to breakout.

Another way the Footprint® may be used by market timers is when price moves up to new highs and advertises for selling. The Footprint® will show whether aggressive sellers are entering the market at the new highs. By displaying red Footprints® at new high prices, the Footprint® is advertising selling activity. Think of the Footprint® as a big billboard flashing "aggressive selling" or "aggressive buying" when the colors change. Simply put, this would indicate the sellers are becoming aggressive at the highs. Footprints® light up dark red because the aggressive sellers are willing to throw more volume at the bids rather than posting their offer. In this simple micro

pattern the sellers do not want to miss the opportunity to sell new high prices. More times than not, if aggressive selling does not enter the market, price will move higher until it brings in a response by the sellers.

Complimentary Strategies & Uses

Use the Footprint® to Confirm other Indicators - The Footprint® is also used to confirm a signal given from other indicators. An example would be a moving average or moving average crossover. As the signal is being produced from the moving average, look to the Footprint® to confirm the signal and better time the entry or exit. Stochastic's are another example. These can read overbought or oversold for a very long time, causing big problems when trying to gauge buy and sell opportunities. Using the Footprint® you can monitor how the market is trading at the overbought/oversold points and confirm whether the market is turning or whether continuation is likely. The idea is to increase the probability that your indicator is giving a correct reading and not a false signal.

One of the most frequent compliments about MarketDelta® is not how many trades it has put traders into, but rather, how many bad trades it has helped keep them from taking. **The reason for this is while your conventional indicators or tools give signals, the Footprint® gives you the evolving real time view of the market and how it is behaving at those points.** Although viewed as just another chart, it is far from being just another chart. It provides the most comprehensive trade information available of any chart form available, thus providing more information for you to make your trades. The Footprint® is not a leading or lagging indicator. Its job is to present all the data in the most readable manner for you to make trading decisions.

When viewing stocks or ETF it may be useful to use the "scale" feature located in Footprint® Preferences | Options Tab. A popular setting may be dividing value by 100 or 1K.

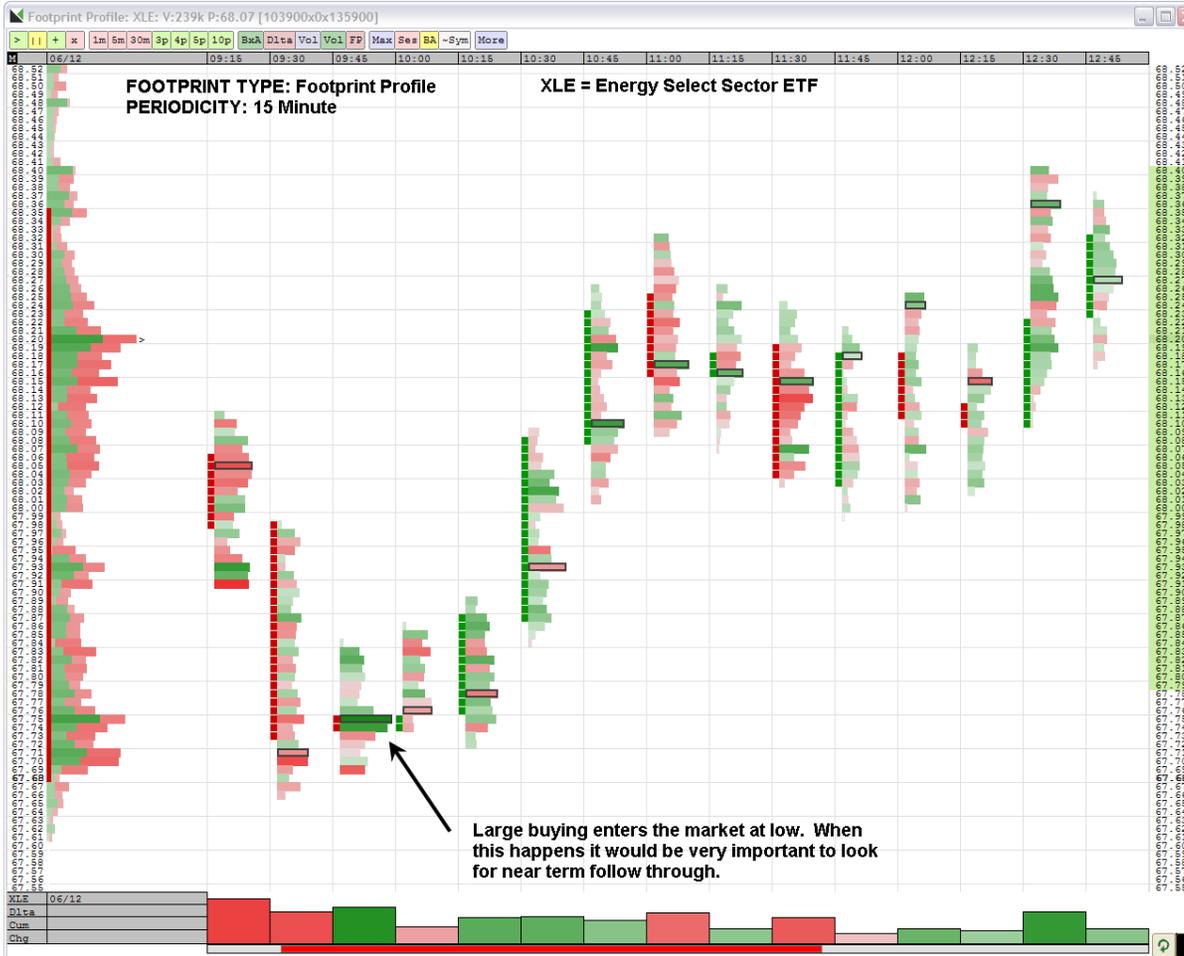


Figure 4-27

For more examples, visit our [Strategies](http://blog.marketdelta.com) page. Timely market examples are at <http://blog.marketdelta.com>.

4.13 Market Profile Strategies

Market Profile® Summary

Using MarketDelta® to confirm Market Profile® is one of the most popular ways to apply the Footprint® chart. Market Profile® was created by Peter Steidlmayer in the early 1980's. It categorizes market generated data in a unique manner and has provided professional traders a methodology to base their trades upon for the past 25 years. Market Profile® provides a graphic that is statistically based and provides a very good way of organizing market data into distributions. As a session progresses, learn to determine who is attempting to influence the market – the "other time frame" participant or the "day time frame" participants. **As traders become more aware of specific Market Profile® patterns and setups, it becomes obvious how complimentary the Footprint® is at providing traders with a way to qualify trading opportunities see on the Market Profile®.**

Market Profile® + MarketDelta® = Greater Awareness & Increased Transparency – Our Market Profile® offers many features you won't find with other vendors. One of the most important is the Footprint® chart is built into the charting software, allowing traders to confirm entries and exits by "zooming" in on how the market is trading at key levels and helping make more informed decisions.

Market Profile® will help determine **where** to trade and the Footprint® will help determine **when** to trade. Many traders use Market Profile® to display the overall structure of the market and gauge value. MarketDelta® compliments this by gauging volume and order flow to help determine whether or not what you are witnessing on the profile can be trusted. You can then use MarketDelta® to assist in more timely entries and exits and monitor volume at critical levels. With a basic understanding of Market Profile® you will be able to easily understand the examples below. For a more in depth review of Market Profile® please see the MarketDelta® Help Manual section entitled Market Profile®.

Core Principles

Like any methodology in trading there are numerous ways to interpret and define trade signals. In the examples below we will look at some of the most conventional

ways to apply Market Profile®, along with a few specialized applications.

Probably the most popular way of applying Market Profile® is by using the Value Area. The value area represents the area where 70% of the trading has occurred (approximately 1 standard deviation). The value area is based upon a normal distribution curve. The benefit of identifying the value area is to see where price is trading in relation to value and then apply logic, reason, and market structure to it. It is typical to relate the previous days value area to where the current price and value area are. Watching how this develops over time can clue the trader to "fair" and "unfair" prices. Coupling this information with the Footprint® chart can provide the trader with an acute view of underlying price and volume behavior and provide a way to confirm the "fair" and "unfair" prices.

A second way to use Market Profile® would be for the various other statistics and measures, such as the initial balance area, opening range, single prints, point of control, etc. Identifying these levels and understanding how price may respond to them can provide crucial knowledge to trade by. Using the Footprint® chart to confirm these levels of support/resistance will provide added context to the Market Profile® chart and assist in better trade placement and execution. You will find that often the Footprint® will provide information that will suggest NOT entering the trade at the level identified on the profile. This is where the benefits of the Footprint® are apparent, as well as once you are in a trade for monitoring the position and underlying strength or weakness.

A third way Market Profile® is often used and referred to is by the shape of the profile. Some of the more popular terms to describe the profile are: Normal, Neutral, Normal Variation, Double Distribution, and Trend Day. A very good book that details each of these is *Mind Over Markets* by Dalton. Again, once a thorough understanding of the profile shapes is achieved and a trader understands which way a market is more likely to trade, the Footprint® chart becomes an invaluable tool for confirming this further and providing optimal trade entry/exit location, as well as a tool for gauging the position as the market trades.

Lastly, one of the core benefits the Market Profile® provides is context. Traditional

charts focus on price and volume and draw a chart over some time period. Market Profile® takes all that information and provides the added context of "shape" and creates a distribution and useful statistics from which a trader will gain added perspective and context. The Footprint® chart draws upon the both the strengths of traditional and Market Profile® charts and creates what many feel is a killer application and view of the market.

Unique Examples

In Figures 4-28, 4-29, and 4-30 we see an interesting progression and method of confirmation. Figure 4-28 shows 3 days of data for Crude Oil during the period of June 28th, 2007 through July 2nd. It shows a basic Market Profile® with the initial balance (black vertical bar to left of each profile) and the value area (blue vertical bar to right of each profile). Figure 4-29 shows the same 3 days but "split". This separates each letter (bracket) and shows the ranges and prices traded during each particular bracket. This could be viewed similar to a bar or candle chart but lacking the ability to see where each bracket closed. The letter "O" in each bracket signifies the open for that bracket. The split profile view can be utilized to spot potential areas of support/resistance and areas where a market was stable and unstable, i.e. volatile. Figure 4-30 shows a 30 minute Footprint® Profile for July 2nd. It zooms in on how volume is flowing into the market and affecting price. This can prove to be a very good way to accurately confirm breakouts, range extensions, trends, and rotations.

Figures 4-31 to 33 show the same progression except using the 30 year bond contract which tends to have less volatility and rotate in tighter ranges more often. Most of what is shown is self explanatory for those familiar with Market Profile®. However, Figure 4-33 shows a Footprint® Profile with the developing value area bars applied to the chart. Having these present on the chart can help keep this important reference area in the forefront of your mind. It is also useful to see if the developing value area begins to rise or fall, showing that value throughout the day is shifting.

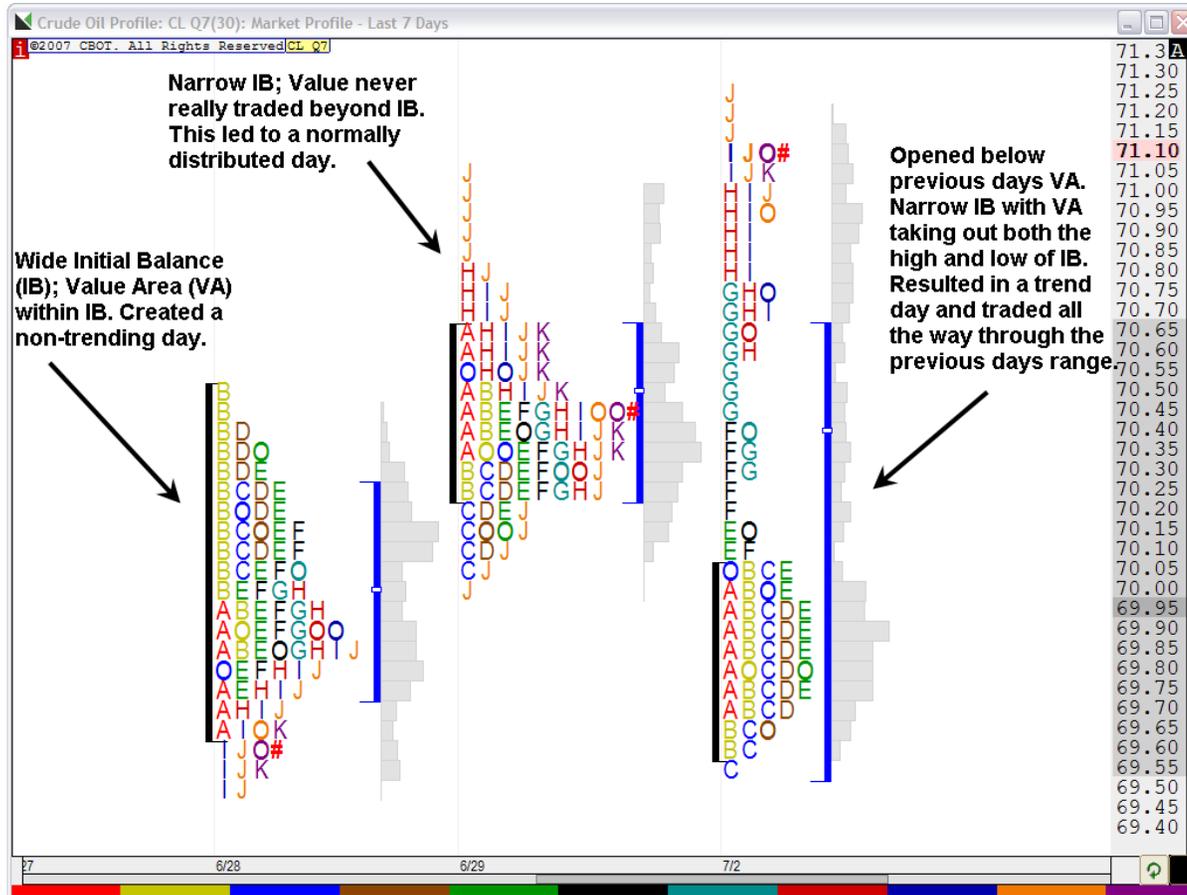


Figure 4-28

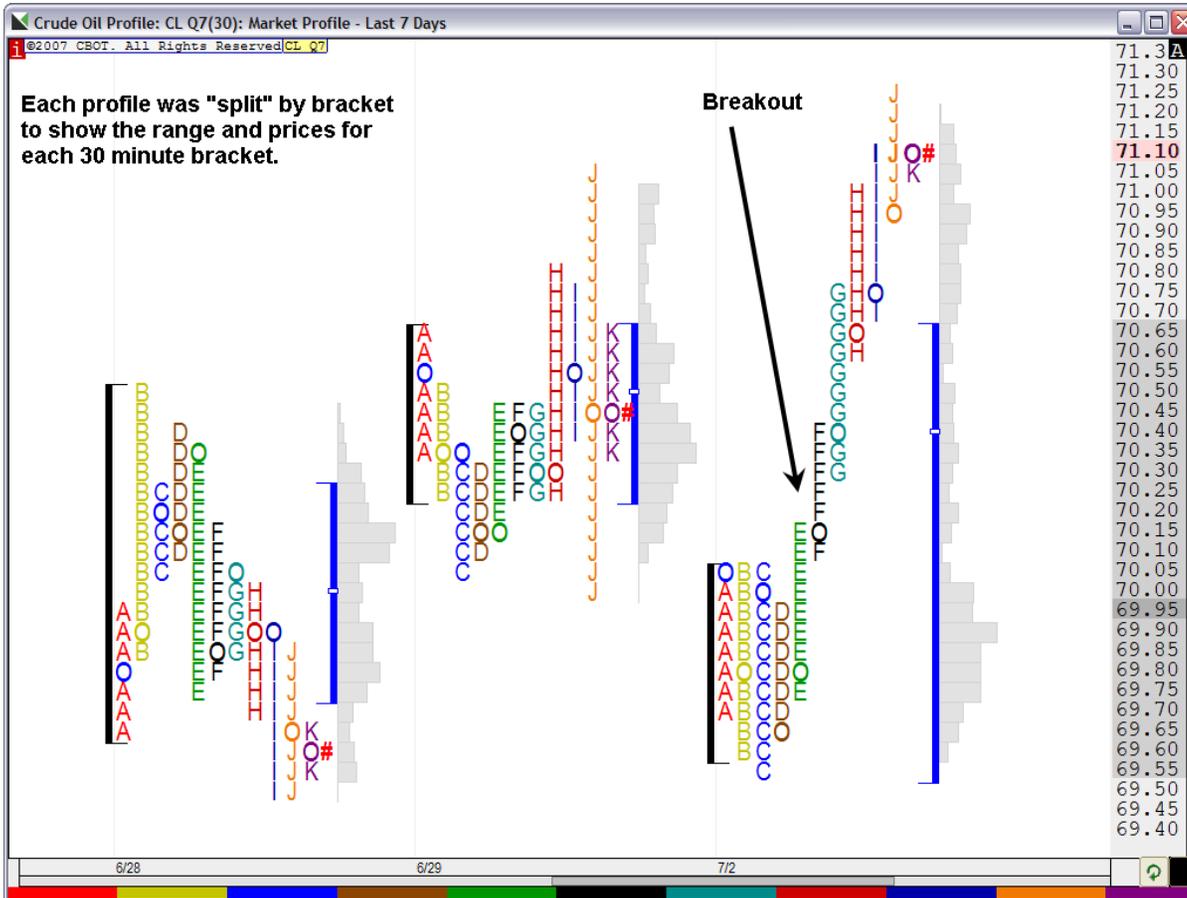


Figure 4-29

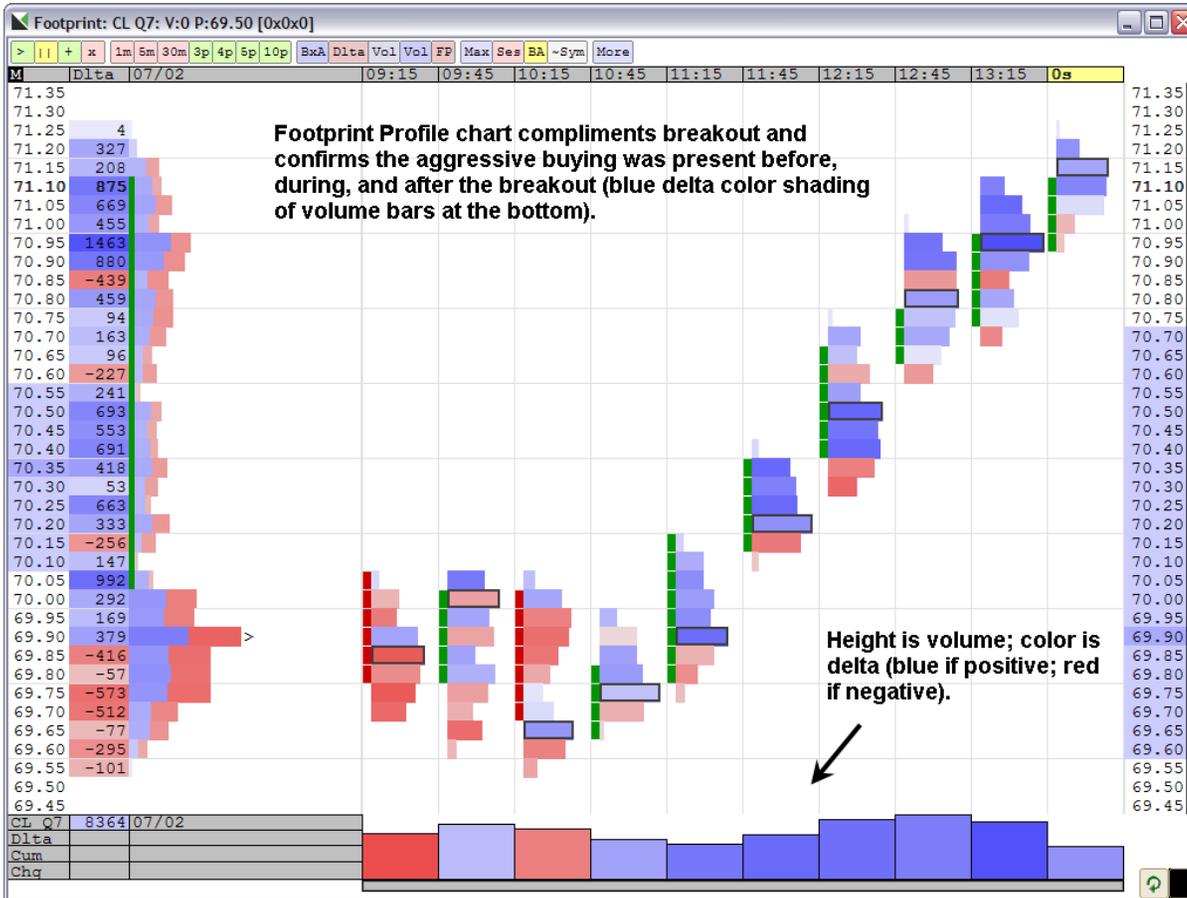


Figure 4-30

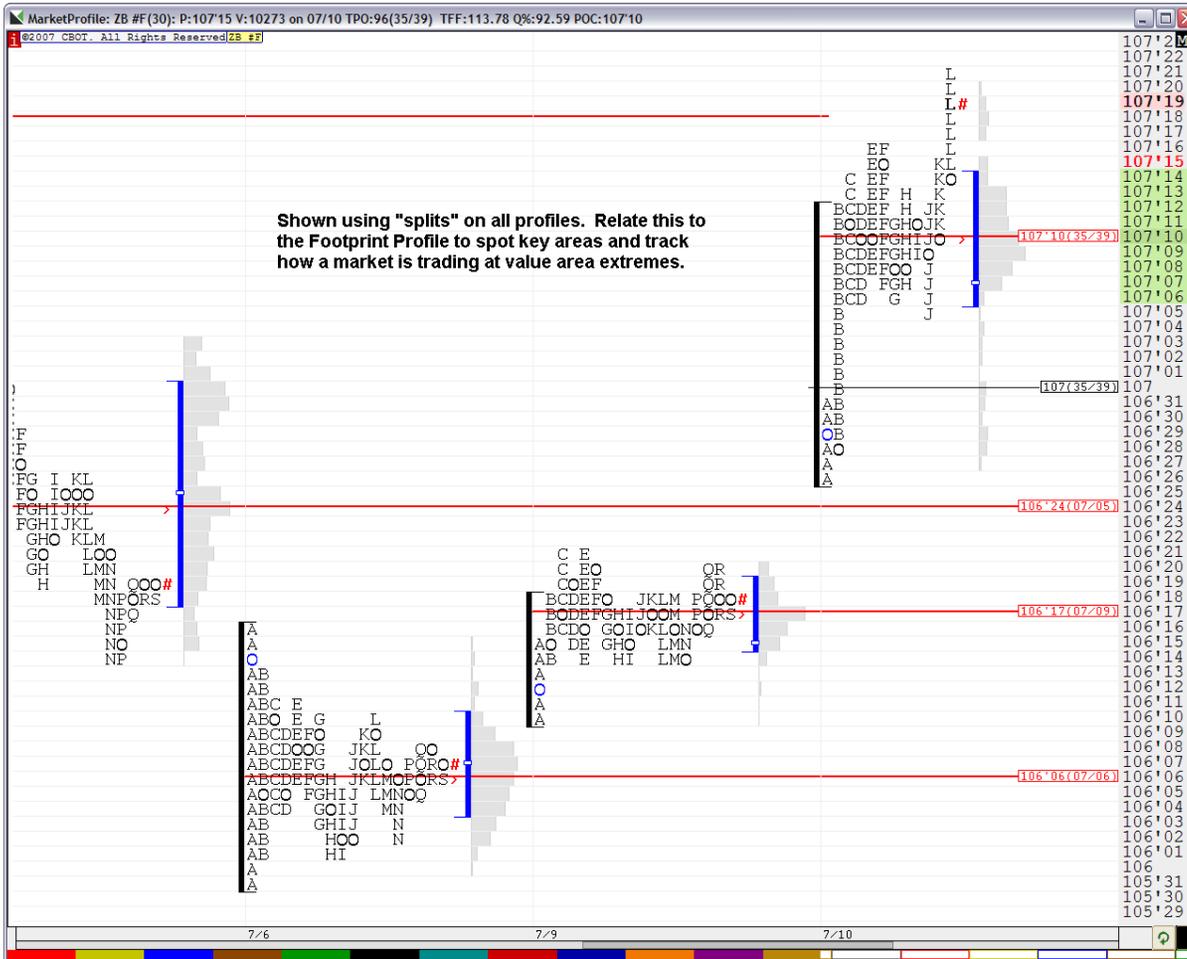


Figure 4-32

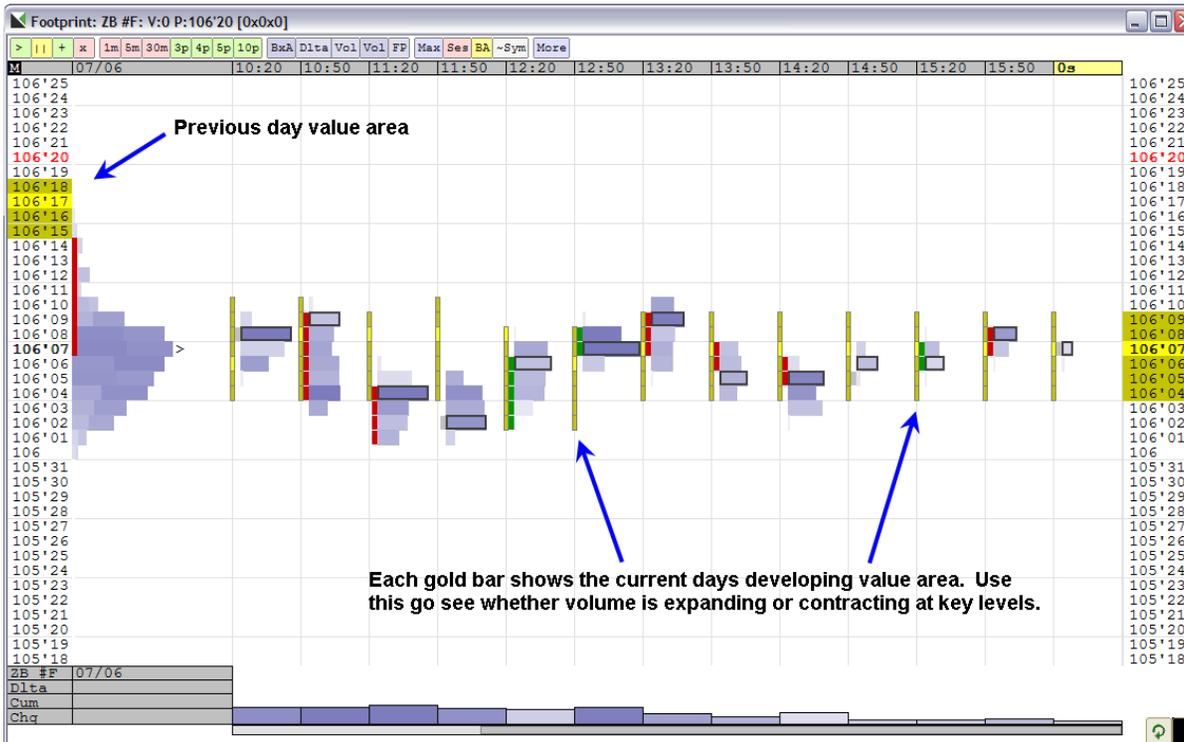


Figure 4-33

Here is a 1 hour video presentation that was done for the Chicago Mercantile Exchange on [Using Volume to Confirm Market Profile®](#) (65MB Windows media file).

4.13.1 Advanced Market Profile Strategies

Variable Profile Splitter used in conjunction with the Footprint®.

(Note, This strategy originally was posted to our [blog](#).)

This strategy uses the Variable Profile Splitter within the Footprint® chart and shows step by step how to set it up and then how to read the results.

1. You will need to define two conditions in the Preferences tab:
2. A time period that the market must travel before it can “split” to a new profile.
3. A condition for a range of time periods that the market must “breakout” from in order to “split.”

For traditional Market Profile® users, this new functionality will require you to take a fresh look at markets. With the increased volume in “overnight” trading and the vertical nature of today’s markets, the use of the standard daily Market Profile® may have less functionality.

For ease of understanding, I have included a few definitions:

Split: when one profile changes to another. The old/traditional method “split” profiles every day (via exchange defined open and close time). The new method splits profiles based on time and price conditions (via market structure and user defined time).

Traditional Market Profile® View: displays profiles in “bell-curved” shape profiles based on the standard deviation measurements

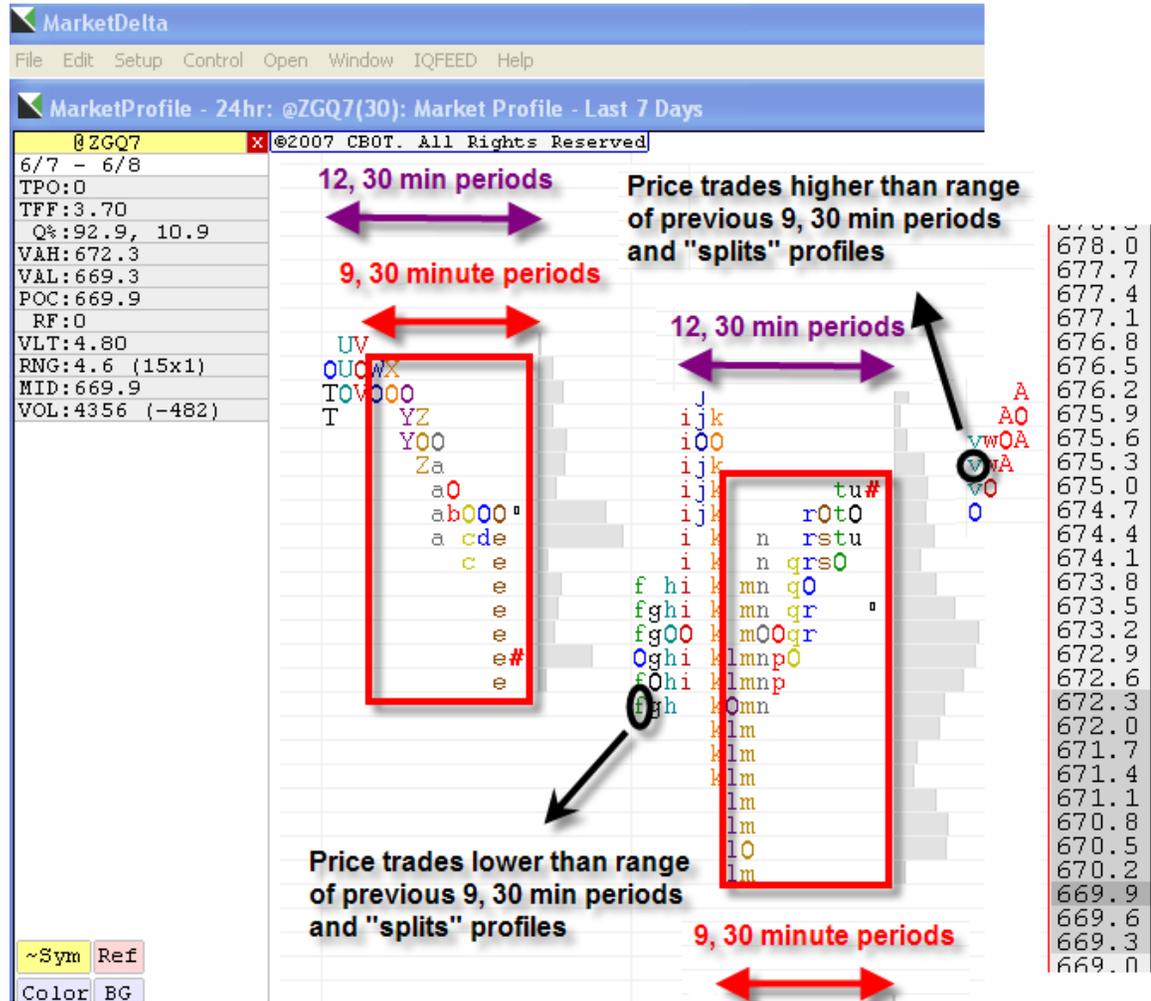
Segmented Period Market Profile® View: displays each 30 minute period as it

occurred sequentially

Here are the settings we prefer for day trading:

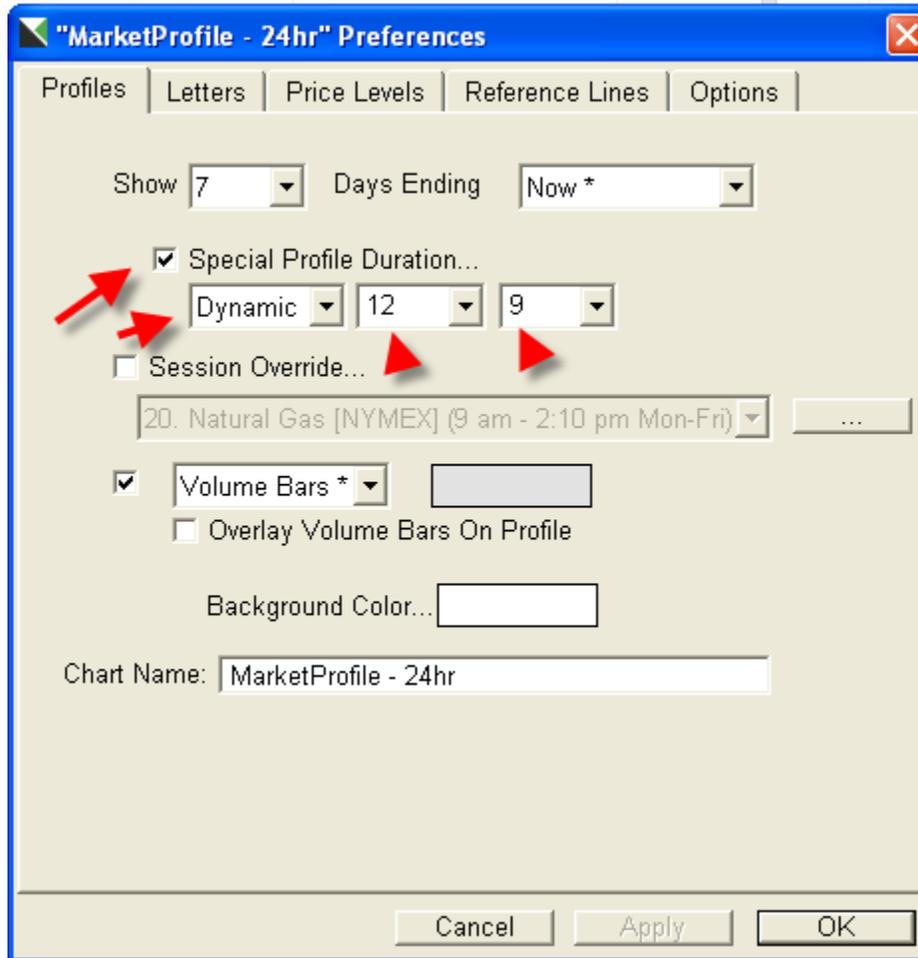
1. 12, 30 minute time periods that the market must travel before it can “split” to a new profile.
2. A range of 9, 30 minute time periods that the market must “breakout” from in order to “split.”

This is an example of the 12/9 splitter in the Segmented Period Market Profile® View:

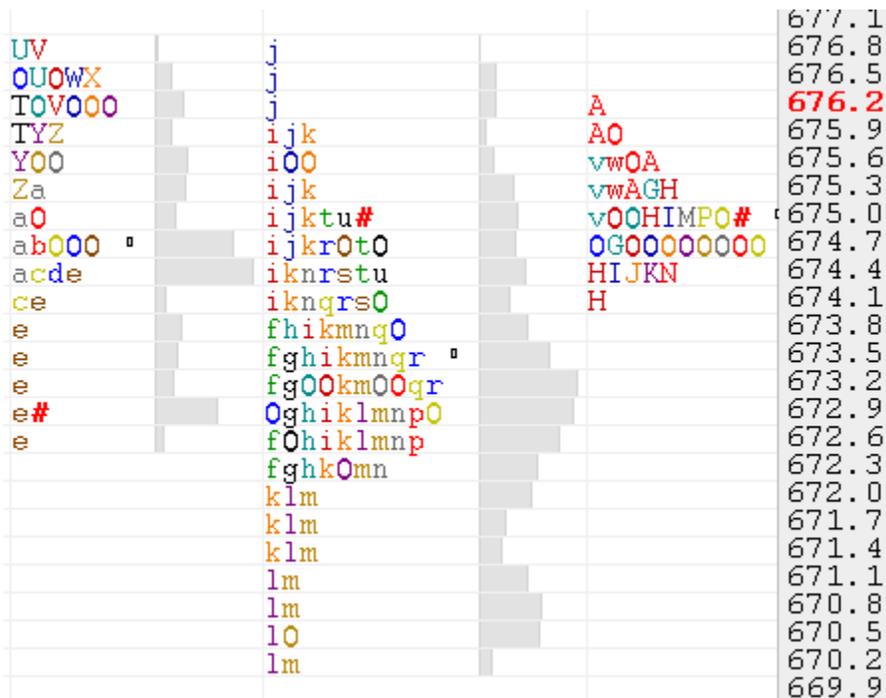


The profile split when "f" bracket (0630-0700 with my settings) broke the range of the previous 9, 30 minute periods.

Here are the Market Profile® preferences used here:



Here are the same Variable Profile Splitter in the Traditional Market Profile View:



Strategy and Application:

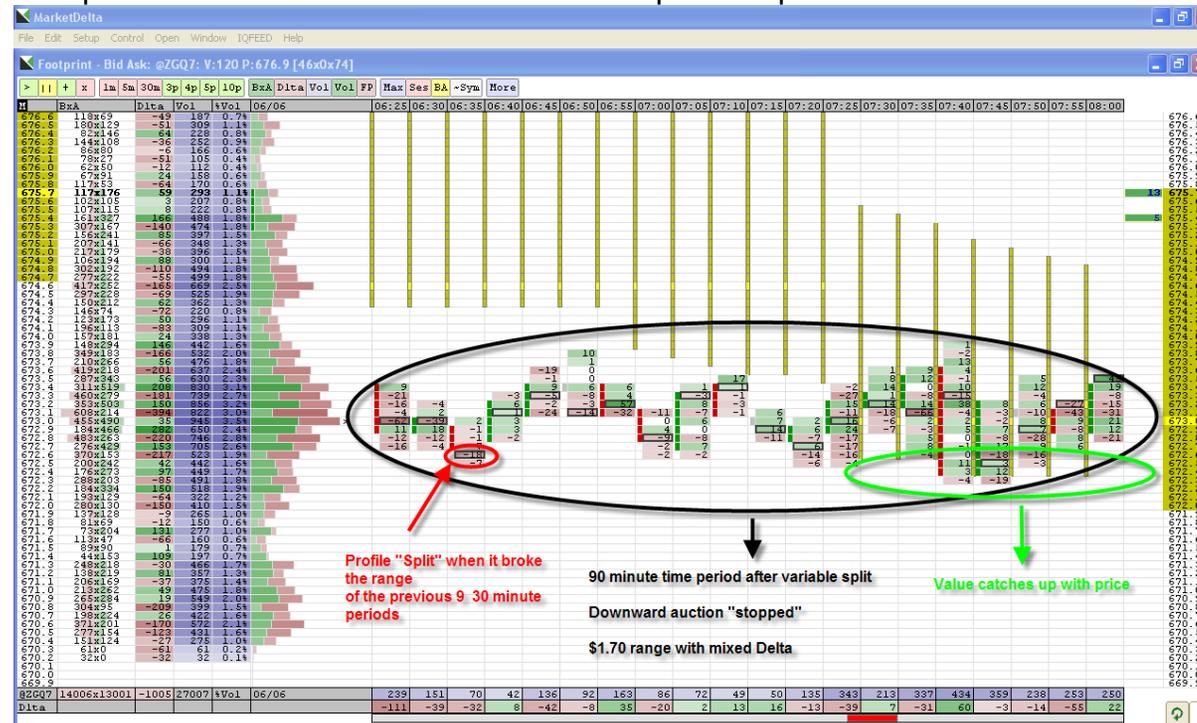
When the profile “splits” several possibilities could occur: the market trades sideways, the market pauses and reverses, the market immediately stops and reverses, or the market will drive in the direction of the split.

We recommend using the Footprint® Chart to help gauge the success/failure of the “split” breakout.

In this case study we use the CBOT August 07 Gold contract on 6-6-07 and 6-7-07. The first example on 6-6-07 shows a pause and reversal from the “split” breakout as not enough aggressive sellers stepped in to drive the market lower.

On the Footprint® Chart, we highlighted the breakout price that corresponds with the “split” example from above.

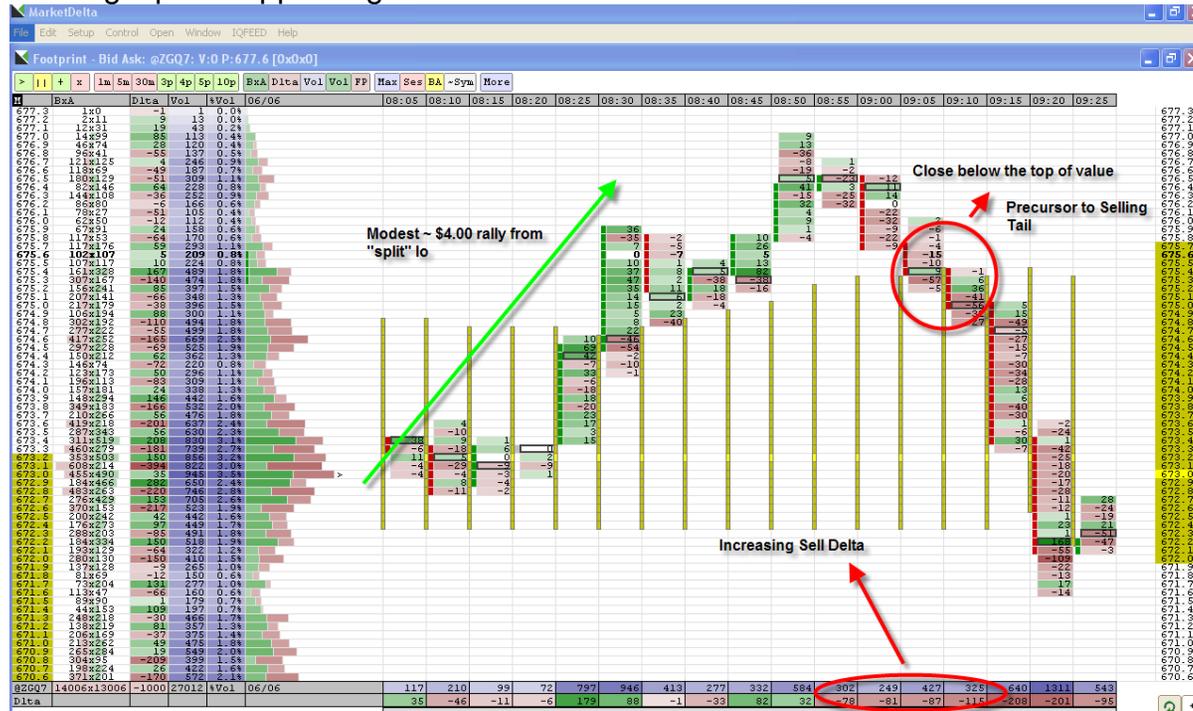
This picture shows the Delta action when the profile “split”:



Things to observe: Where is the value area? What is the Delta? How much volume is present? How successful are the sellers? The buyers?

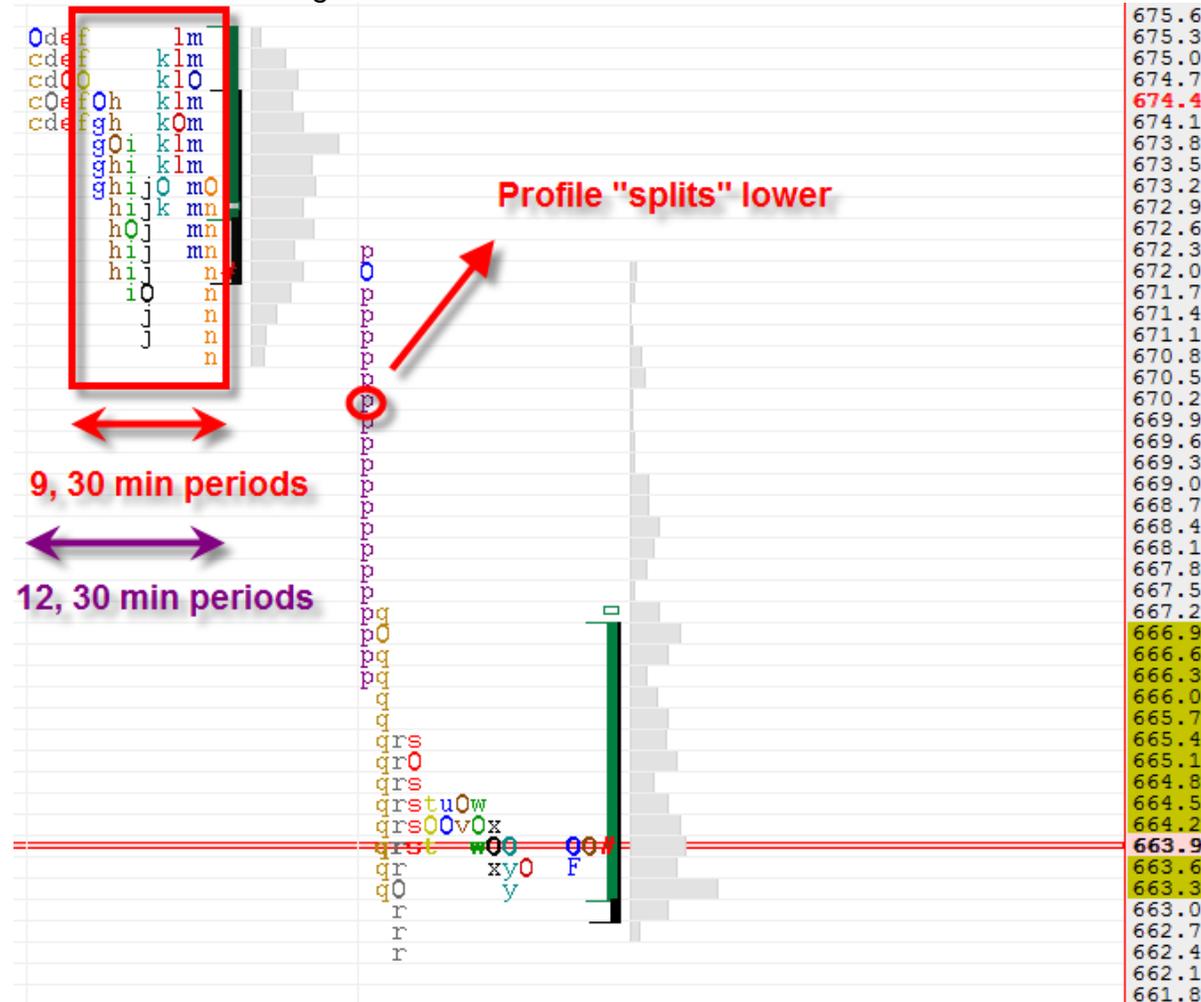
After the “split” lower and 1.5 hr pause, the Gold Market rallied ~ \$4.00 before putting in a single print selling top (as a bonus we included how the Footprint® Chart captured the entry sell signal before the single print was “seen” in the Traditional Market Profile® view).

Below we see the sell signal generated by the Volume Value Area and Delta prior to the single prints appearing:



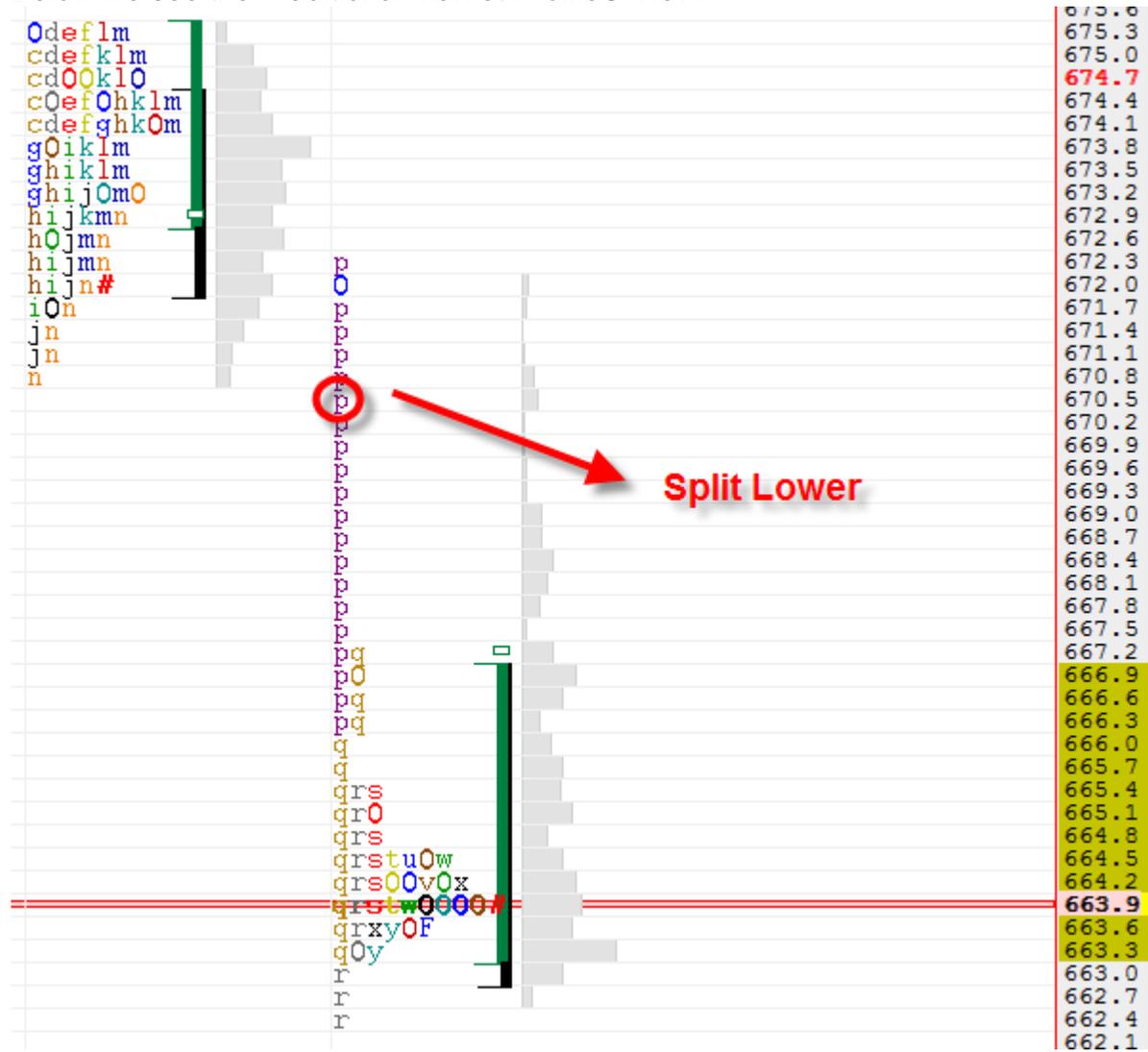
The next example of Gold on 6-7-07 shows how the market "split" lower and multiple aggressive sellers entered the market and drove it lower.

Below we see the Segmented Market Profile® View:

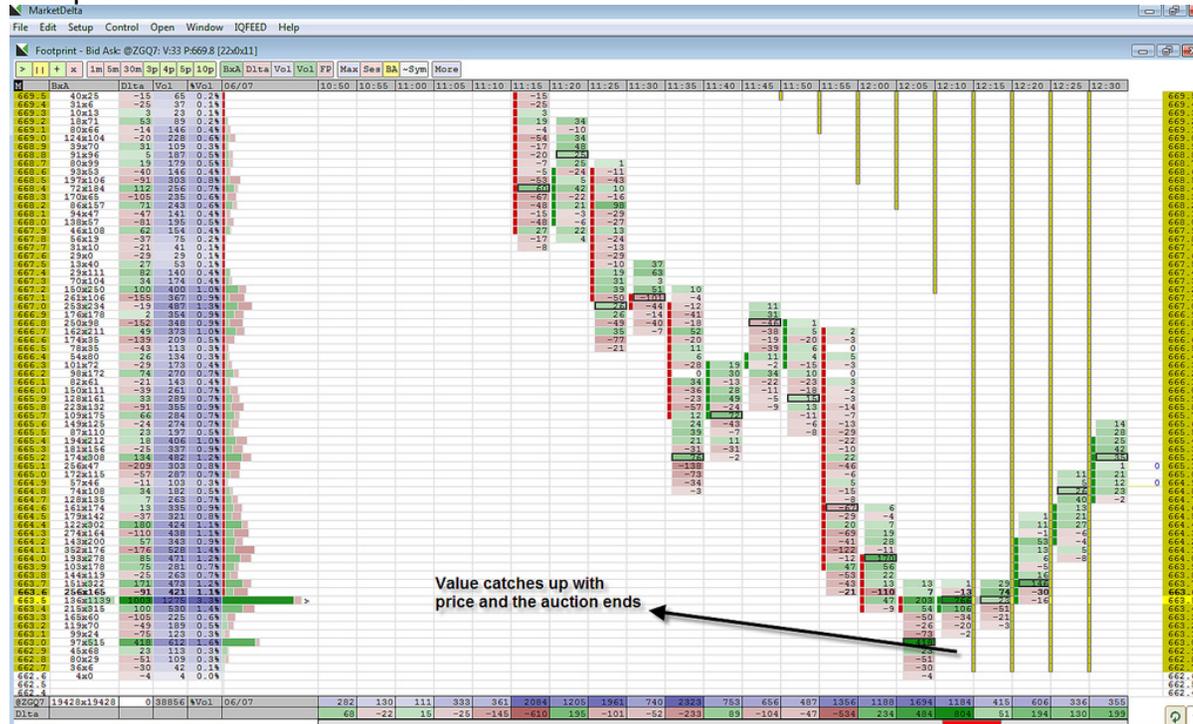


The profile split when "p" bracket (1100-1130 with my settings) broke the range of the previous 9, 30 minute periods.

Below we see the Traditional Market Profile® View:



The picture below is the final result:



Please contact MarketDelta® and ask for Brian if you are interested in learning more about the Variable Profile Splitter and its applications.

4.14 Miscellaneous Strategies

4.14.1 Volume Cluster

Volume Clusters – These are areas on a chart where price rotates back and forth and distributes volume. These are best seen on the Footprint® Profile. They often become support or resistance during pull backs in trending markets. Using the cumulative profile on the Footprint® (located on the far left of the window) allows a trader to spot longer term trading opportunities. Selling clusters can confirm reversals and provide confidence that the market is truly reversing. See Figure 4-34 below for an example.

Buying clusters - These are areas within a bar or series of bars where it is apparent accumulation is taking place. Buying clusters will be sequential blue (usually the darkest blue) Footprints® back to back. Other times it can be assumed to be a general area of the chart.

Selling clusters - These are areas within a bar or series of bars where there is apparent distribution taking place. Selling clusters will be sequential red (usually the darkest red) Footprints® back to back. Sometimes it can be assumed to be a

general area of the chart where the Footprints® are not back to back.

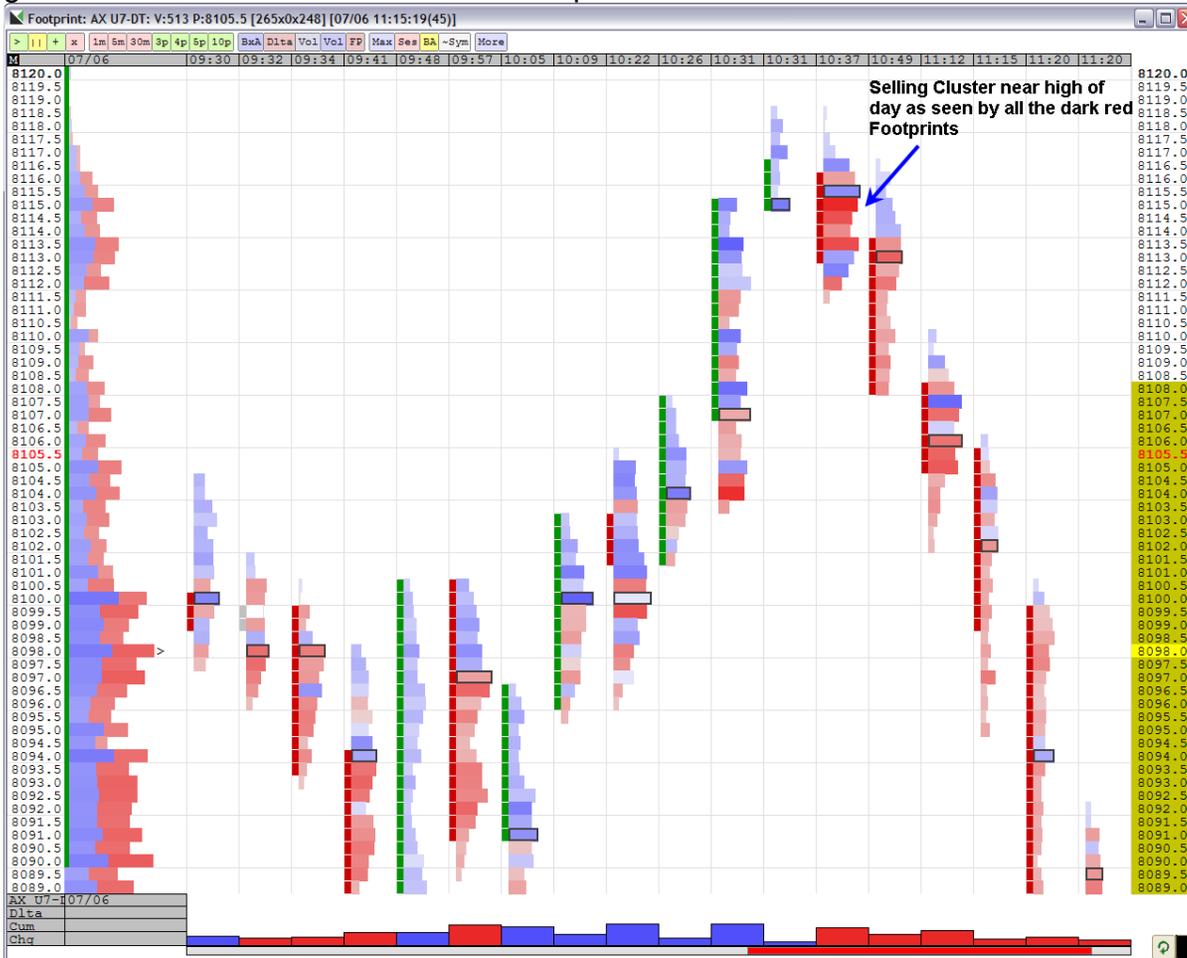


Figure 4-34

Cluster Strategies

A popular "cluster" strategy is to first recognize what stage of development the market is in - rotational (consolidation) or trend. Ask what has the market been doing up until now. Trending or rotating back and forth? Look to see if clusters are developing within the bars. Often times the clusters develop at important areas of a

distribution, helping to confirm acceptance or rejection of that particular area.

IMPORTANT - You will tend to see more clusters of dark Footprints® in trending markets than you will in rotational markets. Trending markets exemplify direction and strength while rotational markets exemplify lack of conviction and are often directionless, random behavior. Non-trending markets will lead to a pattern we call [candy striping](#).

Another is a support/resistance strategy. Use the cluster areas as support and resistance on pullbacks. Use the areas you identify as clusters as potential support resistance. This will work best in trending markets when a market is consolidating. The aggressive buyers/sellers will defend area the original cluster appeared.

4.14.2 Consolidating

A consolidating market is one which finds price rotating within a range or channel. The rotating concept can be seen in any time frame, but these examples will consist of intraday time frame examples using one days worth of data. Often a market will rotate between support and resistance areas in what seems to be a very random pattern, but having the perspective of the Footprint® can sure help. Due to the unique manner in which the Footprint® displays information, unique Footprint® chart patterns and traditional chart patterns will become more apparent and help you spot trending and rotational markets more clearly.

It is crucial that traders understand what are reasonable expectations for the trades they make. **Understanding if the market has the potential to trend versus rotate is very important if you want to become a successful trader.** The Footprint® does an exceptional job taking the task of identifying what type of day is developing and visually makes more clear how expectations unfold while the market makes its rotations.

Key observation - RANGE BOUND - When the market is range bound (lacking the ability to trend) you should expect to see variations of color comprising each bar. This means many of the bars will have roughly 50% red and 50% green Footprints®, but certainly not all one color. This will happen when the market reaches an

equilibrium and is content trading within boundaries, such as the value area or a trading range. Often times in markets like this you may see a cluster of dark green Footprints® come in near the high of the range or a cluster of dark red Footprints® come in at the bottom of the range. Probability suggests these are traders playing for the breakout and will be wrong as they experience the market trade right back up to the high of the range. Eventually a breakout will ensue, but in the interim it is much wiser (and certainly more profitable) to trade the probability of price mean reverting from the range extremes. Other times volume may simply dry up as it approaches support or resistance. This is good information as well, because typically breakout's do not occur on light volume. This can be signaling a reversal or pause in the market. Look at Figure 4-35 for a good example.



Figure 4-35

It cannot be stressed enough how important it is for a trader to build expectation around the potential for a given market. Expectations will guide actions. Actions will lead to profits or losses. Proper actions will lead to profits. Observing a market develop using the Footprint® will give one confidence that the chance for a breakout in either direction is reduced because of what the Footprint® is showing. **Let the market communicate its intentions to you through the Footprint®.** On the contrary, if trade begins to accumulate near one of the extremes and volume is evident through dark Footprints®, then the underlying conditions may be changing and with it your expectation of market potential will be rising. Your attention will now be focused on a breakout which may ensue. No other type of chart will provide this type information in such a clear manner.

Remember, when you witness volume increasing into support or resistance it is likely due to supply matching up with demand. Reading the delta and monitoring how trading occurs if the breakout point is taken out will provide further evidence of failure or success. Price has mind of its own and the Footprint® chart helps keep all perspectives in view.

4.14.3 Candy Striping

Candy striping is a term to describe **a unique Footprint® pattern** that represents a mixed market. This type of pattern happens when buyers and sellers lack conviction and are battling for control but equally matched. It appears within each bar where some Footprints® are blue and some red. Ideally it would be a 50/50 mix. It creates a striped pattern in the bar. Candy striping is often present in non-trending and rotational type markets and very often when they are trading WITHIN the value area. This pattern should be viewed as confirmation of a market that currently lacks the ability to move directionally.

To go a step further, it's critical you have an idea of what to expect from the trades you place. When present, this pattern will give clues to what type of market is developing and makes you more aware of what to possibly expect -- more of the

same rotations, breakout or trend. If candy striping appears within a market that is trending, it could be showing signs of a change in momentum or a pause in the trend. It does not signal a reversal, but rather a pause in momentum. Price could consolidate and continue in its original direction after digesting volume and bringing in other participants.

Candy striping is a pattern that often results in price returning to the point from which it started the previous candy striped bar. i.e. Price run lacks conviction. This can happen within the actual candy striped column or in a following column. We have noticed that sometimes price might not return to the starting point of the candy striped column but rather return to a volume cluster within that column itself. Figure 4-36 is a good example of typical price action that results in this pattern.

Candy striping is one of the easiest patterns to recognize from the Footprint® and will give traders a new pattern from which to trade. This pattern will not show up in any other kind of chart. Only the Footprint® provides this insightful view of market dynamics.

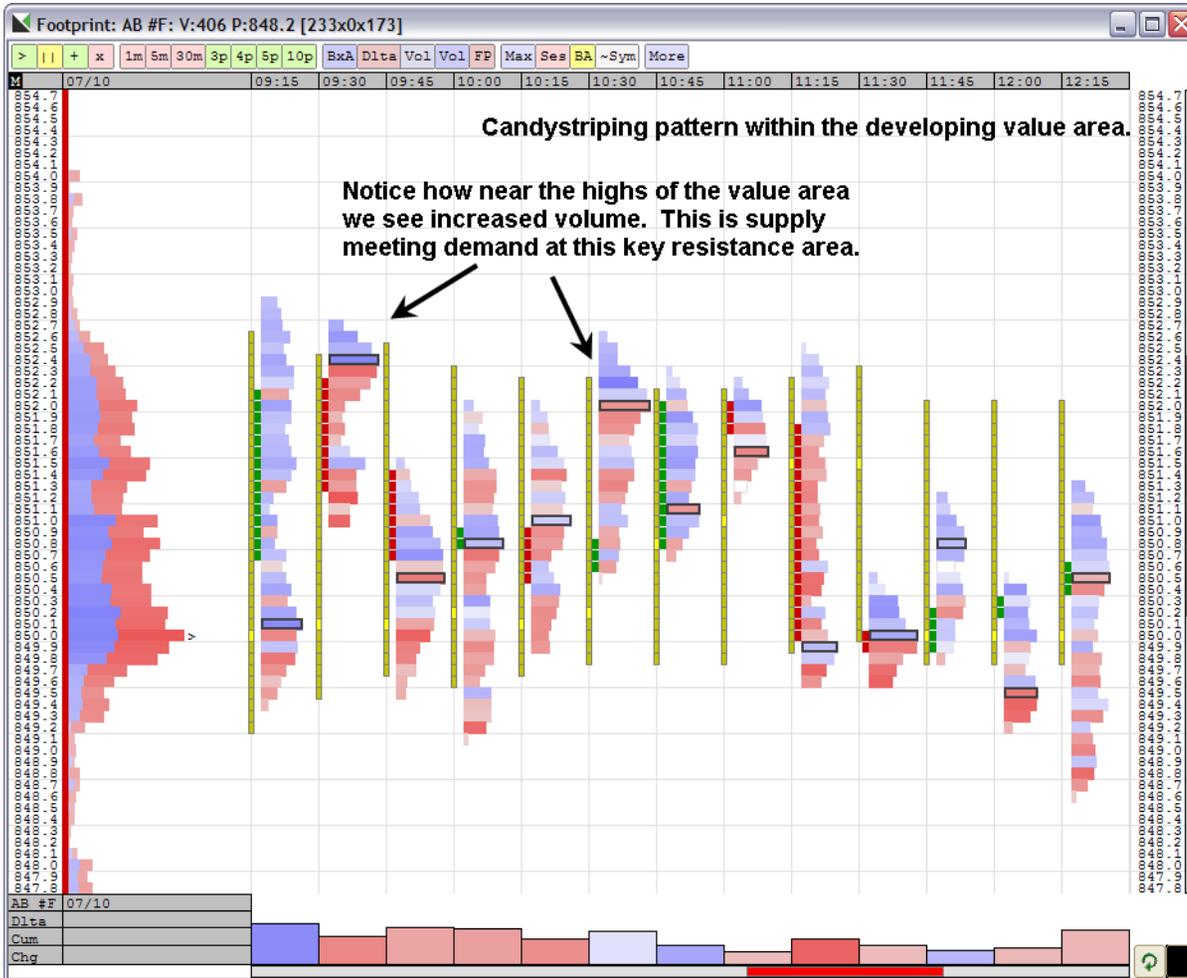


Figure 4-36

Part

V

5 Conclusion

If you have not figured it out by now, the Footprint® chart is very unique and superior to all other charts available. The unique characteristics of the Footprint® require study and diligent use, but the time and effort will truly be worth it. We recommend making full use of this guide and all the education material available at www.marketdelta.com.

The Footprint® is being adopted internationally and has been used by traders in over 45 countries. There is no doubt traders are finding it indispensable. One of the ways organizations are using it is to train traders on price dynamics and patterns. By showing them the Footprint® it speeds up the time traders need to begin understanding price/volume relationships and supply/demand relationships. They are doing this because of the superior way in which the Footprint® relates price dynamics to the traders eye.

Keep up to date by visiting <http://blog.marketdelta.com> for timely market examples and strategies..

For individual or group training, please contact us at sales@marketdelta.com.

Educational Materials at marketdelta.com

- MarketDelta® Help manual, FAQ's, Blog, and built-in help files
- Videos covering the general functionality of all the components within the software
- Videos highlighting some of the strategies in this guide

MarketDelta® community support is available at the following Yahoo® message board. <http://groups.yahoo.com/group/MarketDelta/>

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