



Order Blocks with Market Structure

In the realm of finance, "Smart Money" refers to institutional investors, market mavens, banks, and other financial professionals who leverage price action concepts to navigate market entry and exit points. "Order Blocks" denote zones of supply and demand that track the accumulation of orders (in bullish scenarios) and the distribution of orders (in bearish scenarios).

This indicator employs well-known price action concepts like swing structure, support/resistance levels, and others to pinpoint the location of order blocks and delineate market structure.

Market Structure

Change of Market Character (CHoCH): Market character encapsulates the overall behavior and trajectory of a financial market or asset. A "bullish" market character typically entails higher highs and higher lows, indicative of an uptrend, whereas a "bearish" market character involves lower highs and lower lows, signaling a downtrend. The indicator detects shifts in market character, thereby identifying potential changes in trend direction.

Break of Structure (BOS): A break of structure manifests when a financial market or asset undergoes a significant movement that breaches the established pattern of higher highs and higher lows in an uptrend, or lower highs and lower lows in a downtrend. Such occurrences suggest a possible shift in market direction.

Order Blocks

An order block represents a specific price level or zone where substantial buy or sell orders are presumed to have amassed. These orders can serve as support or resistance levels and are frequently associated with break of structure points. The indicator scans for order blocks following a significant break of structure, aiding in the identification of potential reversal or continuation zones within the market.

Premium Zones

These areas are identified based on historical data loaded on the chart, indicating instances when the price is deemed overpriced or underpriced.

Protected Pivots

Protected pivots denote crucial support levels safeguarded by the Break of Structure. Traders often utilize these levels as stop-loss markers or points to initiate stop-and-reverse strategies.

- Protected High: This refers to the highest point between the candle breaking the structure (the low) and the candle forming the Low level that has been breached.
- Protected Low: This signifies the lowest point between the candle breaking the structure (the high) and the candle forming the High level that has been breached.

The subsequent sections offer detailed instructions on configuring the indicator.



Version History

Version	Change Summary
Version 1.1	Add four new plots were added <ul style="list-style-type: none"> • fLastSwingHigh (indicates what is the last high, 1 = LH, and 2=HH) • fLastSwingLow (indicates what is the last low, -1=HL, and -2=LL) • sLastSwingHigh (indicates what is the last high, 1 = LH, and 2=HH) • sLastSwingLow (indicates the what is the last high, -1=HL, and -2=LL)
Version 1.1.1	<ul style="list-style-type: none"> • Support calculation on Tick Change
Version 1.2	<ul style="list-style-type: none"> • Added Order Block Filter (Cumulative Mean Range, ATR)
Version 1.2.6	<ul style="list-style-type: none"> • Ability to change the color of premium and discount zones. • Ability to adjust the transparency of zones and order blocks. • Ability to change the line width. • Ability to change label fonts and colors. • Added show/hide Volume Labels • Added new plots (Next unfulfilled OB)
Version 2.0	New Features <ul style="list-style-type: none"> • Protected Pivots • Added Extend OB feature to extend the OB drawing. • Added Send Drawn Objects to Back Changes <ul style="list-style-type: none"> • Changed the Parameter Layout (Grouped into Sections) • Updated the calculation for candle coloring to take one swing structure at the time, this includes marketDir plot calculation.
Version 2.1	New Features <ul style="list-style-type: none"> • Performance optimization to resolve freezing issues in NT 8.1.4.1 • Added "Max Bars" to the parameters to limit the number of market structure objects being rendered on the chart • New Plots were added upon users requests
Version 2.5	New Features <ul style="list-style-type: none"> • Added Volumetric Order Block calculation to Volume Analysis



Market Structure

Market structure part of the indicator is calculated from 2 swing periods, referred to in the indicator setting as **Fast Swing** (i.e. short duration), and **Slow Swing** (i.e. Long duration)

The default setting for the fast swing is 5, and slow swing is 50.

The swing period means the number of candles the indicator studies to determine the highs and lows.

There are few signals than can be inferred from Market Structure, some examples are

A - Market Direction Reversal, this mean when a CHoCH (Change of Market Character) bull or bear appear, then the market is reversing course. A good confluence for that if the CHoCH was preceded by swing reversal sign meaning (HL then followed by Bull CHoCH or LH then followed by Bear CHoCH)

B- Continuation Breakout, this means when BOS (Break of Structure), this means the instrument continues to make higher highs


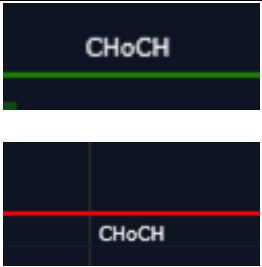

C- CHoCH fake-outs, CHoCH are basically a breakout of highs, so when the breakout fails, you can take opposite direction trades.

Configuration

<p>Market Structure configuration panel showing settings for Fast Swing and Slow Swing. Red arrows point to: 1. Fast Swing Structure (checked), 2. Fast Swing Size (5), 3. Fast Bull Color (Green) and Fast Bear Color (Red), 4. Consider Wick (unchecked), 5. Show Fast Swings Labels (unchecked), 6. Show Slow Swings Labels (unchecked), and 7. Color Candle (FastSwingStructure).</p>	<p>1- Tick Box to show or hide swings annotations described in the next section</p> <p>2 – these two fields (Fast Swing Size) and (Slow Swing Size) to define the swings duration – Make sure Slow is always higher than fast, even if you are not using it.</p> <p>3- Color changing options for bulls and bear, for both swing durations</p> <p>4- Tick Box to consider wick – if ON, it means only consider bullish breakout if upper wick is bigger than lower wick and vise-versa (this applies to both swing calculations)</p> <p>5- Tick Box to show or hide swings labels (HH, LH, HL, LL) for fast swing</p> <p>6- Tick Box to show or hide swings labels (HH, LH, HL, LL) for slow swing</p> <p>7 – Tick Box to color candles (Green-Bull candles after Change of Character to Bull, and Red-Bear candles after Change of Character to Bear)</p>
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	<p>The next field is a drop down which is also related to Coloring candles, if check box is selected, the you can select the coloring to follow the Fast Swing Structure, or the Slow Swing Structure. Also this will follow their colors too.</p> <p>8- Max Bars – is used to limit the number of Market Structure and Pivot Labels are rendered on the chart, this is to improve the performance of the indicator when being used on a huge data set.</p>
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Annotation

	<p>CHoCH (with dashed Line)</p> <p>Change of Character for the market, calculated on the fast period swing (default 5)</p> <p>Bull Change of Character – Green (Breaking Highs) Bear Change of Character – Red (Breaking Lows)</p> <p><i>Note: the candle on the left side of the line represents the top/bottom which has been broken, and the candle on the left end of the line represent the candle which broke the high/low</i></p>
	<p>CHoCH (with solid Line)</p> <p>Change of Character for the market, calculated on the slow period swing (default 50)</p> <p>Bull Change of Character – Green (Breaking Highs) Bear Change of Character – Red (Breaking Lows)</p> <p><i>Note: the candle on the left side of the line represents the top/bottom which has been broken, and the candle on the left end of the line represent the candle which broke the high/low</i></p>
	<p>BOS (with dashed Line)</p> <p>Break of Structure for the market, calculated on the fast period swing (default 5). BOS appears after CHoCH. And it's a continuation of breaking highs or lows of the swing</p> <p>Bull Break of Structure – Green (Continue to Breaking Highs)</p>



	<p>Bear Break of Structure – Red (Continue Breaking Lows)</p> <p><i>Note: the candle on the left side of the line represents the top/bottom which has been broken, and the candle on the left end of the line represent the candle which broke the high/low</i></p>
	<p>BOS (with solid Line)</p> <p>Break of Structure for the market, calculated on the slow period swing (default 50). BOS appears after CHoCH. And it's a continuation of breaking highs or lows of the swing</p> <p>Bull Break of Structure – Green (Continue to Breaking Highs) Bear Break of Structure – Red (Continue Breaking Lows)</p> <p><i>Note: the candle on the left side of the line represents the top/bottom which has been broken, and the candle on the left end of the line represent the candle which broke the high/low</i></p>
	<p>Swing Labels (without border)</p> <p>Swing labels without a border are highs and lows of the fast period swing (default 5)</p> <p>HH – Higher High LH – Lower High HL – Higher Low LL – Lower Low</p> <p>Note: Labels are printed after the swing period is passed.</p>
	<p>Swing Labels (with border)</p> <p>Swing labels with a border are highs and lows of the slow period swing (default 50)</p> <p>HH – Higher High LH – Lower High HL – Higher Low LL – Lower Low</p> <p>Note: Labels are printed after the swing period is passed.</p>



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Candle Color

If color candle tick box is selected, the indicator will color candles as green after a bull CHOCH and red after bear CHOCH

Order Blocks

Bullish and Bearish Order Blocks (OB) represent supply and demand zones identified through the break of market structure. These zones typically precede upward or downward price movements and are utilized by some traders as support and resistance levels, while others employ them to pinpoint buying and selling opportunities.

Order Block Bounce occurs when a new order block is identified, prompting traders to await the price to revisit the zone and bounce off it. The volume analysis on the order block can calculate the anchored volume profile (Bull/Bear) or the volumetric order blocks which assists in determining trade direction.

The fundamental concept of order blocks involves Smart Money fragmenting their orders into smaller block sizes to obscure their position. Identifying genuine order blocks necessitates access to Level 2 data or deeper insights into block data, which this indicator does not provide.

Technical literature on determining order blocks from price action endeavors to accurately identify supply/demand zones. The most prevalent theory among traders suggests observing the last (significant) downward candle before an upward move or the last upward (significant) candle before a downward move.

However, before endorsing this theory, it's crucial for the candle to breach a key level. This has led to alternative theories suggesting that even if a middle candle in a move was the primary candle to breach the level, it could still be considered an order block.

Our indicator integrates the aforementioned technical literature, including both theories (1) and (2), among others. Nonetheless, the first scenario is more commonly observed, as prices frequently reverse immediately following a substantial effort and breakout at a key level.

Configuration



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<p>▼ Order Blocks</p> <p>1 Show Fast Order Blocks <input checked="" type="checkbox"/></p> <p>Number of Fast OB 5</p> <p>Fast Bull OB Color <input type="text" value="Silver"/></p> <p>Fast Bear OB Color <input type="text" value="Silver"/></p> <p>2 Show Slow Order Blocks <input checked="" type="checkbox"/></p> <p>Number of Slow OB 5</p> <p>Slow Bull OB Color <input type="text" value="Snow"/></p> <p>Slow Bear OB Color <input type="text" value="Snow"/></p> <p>3 Fulfill Order Blocks <input checked="" type="checkbox"/></p> <p>4 Filter OB Using <input type="text" value="CumulativeMeanRange"/></p> <p>5 Extend OB 0</p>	<p>1 – Order Blocks generated from the fast swing structure A - Tick Box to show or hide Order Blocks from fast swing B- Number of Order Blocks to show (most recent) defaulted to 5 per swing type. C- Color specification for bull or bear order blocks</p> <p>2- Order Blocks generated from the slow swing structure A - Tick Box to show or hide Order Blocks from slow swing B- Number of Order Blocks to show (most recent) defaulted to 5 per swing type. C- Color specification for bull or bear order blocks</p> <p>3- Fulfill order blocks (removes order blocks if crossed by candles) Bull OB are removed when candles close below it, and vice versa for bear</p> <p>4- Filter OB Using, Cumulative Mean Range or ATR – OB Should be more than double the filter.</p> <p>5 – Extend OB, the default is 0, which renders the Open OBs till current closed candle. When you increase this number, this will stretch the OBs on the chart to help traders set targets or draw on the chart</p>
<p>▼ Volume Analysis</p> <p>Show Bull/Bear Vol Analysis 6 <input checked="" type="checkbox"/></p> <p>Calculation Method 7 <input type="text" value="AnchoredVolumeProfile"/></p> <p>Bull Vol Color 8 <input type="text" value="Green"/></p> <p>Bear Vol Color 9 <input type="text" value="Red"/></p> <p>Show Volume Labels 10 <input checked="" type="checkbox"/></p>	<p>Volume Analysis</p> <p>6- Show Bull/Bear Volume Analysis on order block</p> <p>7- Calculation Method – contains two option A- Anchored Volume Profile which calculates from the start of that order block. B – Volumetric Order Block – which calculates the volume profile in the Market Structure Block (See explanation in the annotation section)</p> <p>8- Bull Vol Color – is the Bull volume color 9- Bear Vol Color – is the Bear volume color</p> <p>10- Show/hide Volume Labels, shows the total bull/bear volumes labels</p>



Annotation

	<h3>Order Blocks</h3> <p>Order Blocks are identified as rectangles which represents supply or demand zones.</p> <p>Volume on the OB represents the Bull and Bear – see the next annotation</p>
	<h3>Volume Analysis</h3> <h4>Option – Anchored Volume Profile</h4> <p>Calculates the bull and bear volume from the candle that forms the Order Block – This provides information on the buy vs sell power and indicate the price trend.</p>
	<h4>Option – Volumetric Order Block</h4> <p>Calculates the bullish and bearish volume within the Market Structure Block — from the candle that creates the level to the candle that breaks the level (ChoCh or BOS). This provides insight into the volume activity behind the price manipulation leading to the structural change.</p> <p>The annotation displays the total volume, and the percentage represents the proportion of that Order Block relative to the other Order Blocks displayed on the chart.</p>



How to Interpret Volumetric Order Blocks

Each Volumetric Order Block displays the total volume and a percentage, helping assess the strength and intention behind the price move.

Volume Breakdown

- **Bullish OB and (Bull Volume > Bear Volume):**
Indicates strong buyer presence and potential accumulation. The block is more likely to act as support and cause a bullish reaction.
- **Bearish OB and (Bear Volume > Bull Volume):**
Indicates active selling and potential distribution. The block is more likely to act as resistance and trigger a bearish move.
- **Bearish OB and (Bull Volume > Bear Volume):**
Suggests buyer exhaustion — buyers were present but failed to sustain control. Price may drop, making this a valid bearish continuation zone.
- **Bullish OB and (Bear Volume > Bull Volume):**
Implies seller exhaustion — sellers were active but lost control. A bullish reversal may follow as buyers take over.
- **Volume Delta \approx 0 (Bull \approx Bear):**
Indicates indecision or lack of clear accumulation/distribution. The block is weaker and less likely to hold — may be ignored or used only with confirmation.

Percentage Metric

- Represents the relative size of the OB's volume compared to other Order Blocks on the chart.
- Higher % = stronger structural importance.
- Use it to rank and prioritize key zones.

Premium Zones

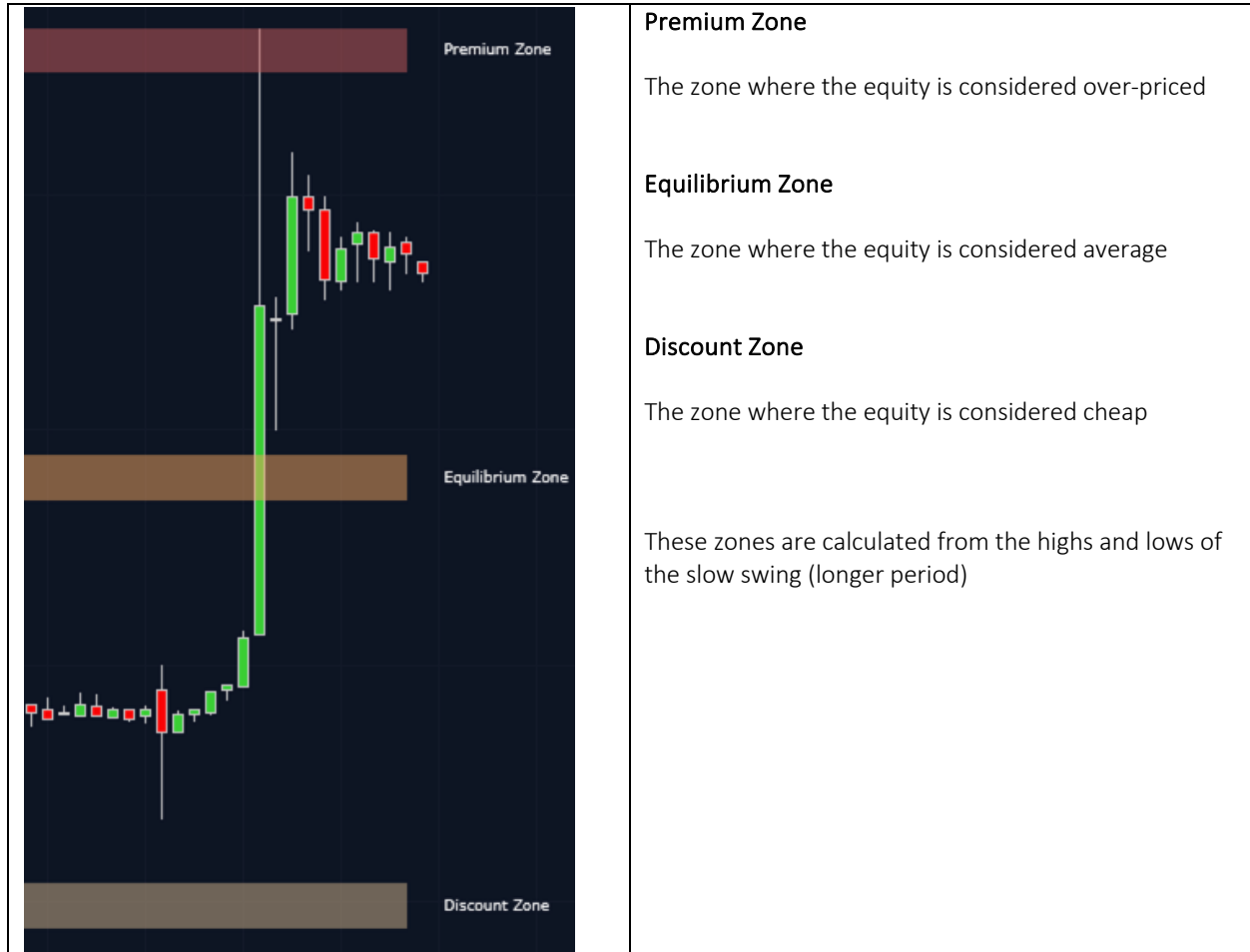
Premium Zones, Discount Zone, and equilibrium zones are areas used similar to traditional RSI trading, to identify potential reversal zones. When traders sees weakness after the price visits the premium zone (e.g. Lower High, Higher Sell Volume, bounce, etc.) then it could be opportunity for Short, when a sign of strength appear after the price visit a discount zone, it could be an opportunity to go long.

Configuration

	<p>1 - Tick Box to show or hide Premium, Discount and Equilibrium zones</p> <p>2- Options to customize the colors for each zone</p>
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Annotation



Protected Pivots

When there's a bullish shift in market sentiment indicated by a change in character (CHoCH) in market price, and it continues to break the structure (BOS), protected lows are established. These protected lows are safeguarded by the price breaking through resistance. Typically, when the price retraces before reaching the protected lows, it's a sign of continuation and the formation of more protected lows. However, if the price breaches the protected low, it signals a potential reversal. As a result, many traders use the protected low as a stop and reverse point. This principle also applies to bearish markets and protected highs.

NOTE: PROTECTED PIVOTS ARE CALCULATED FROM THE FAST SWING STRUCTURE ONLY

Configuration



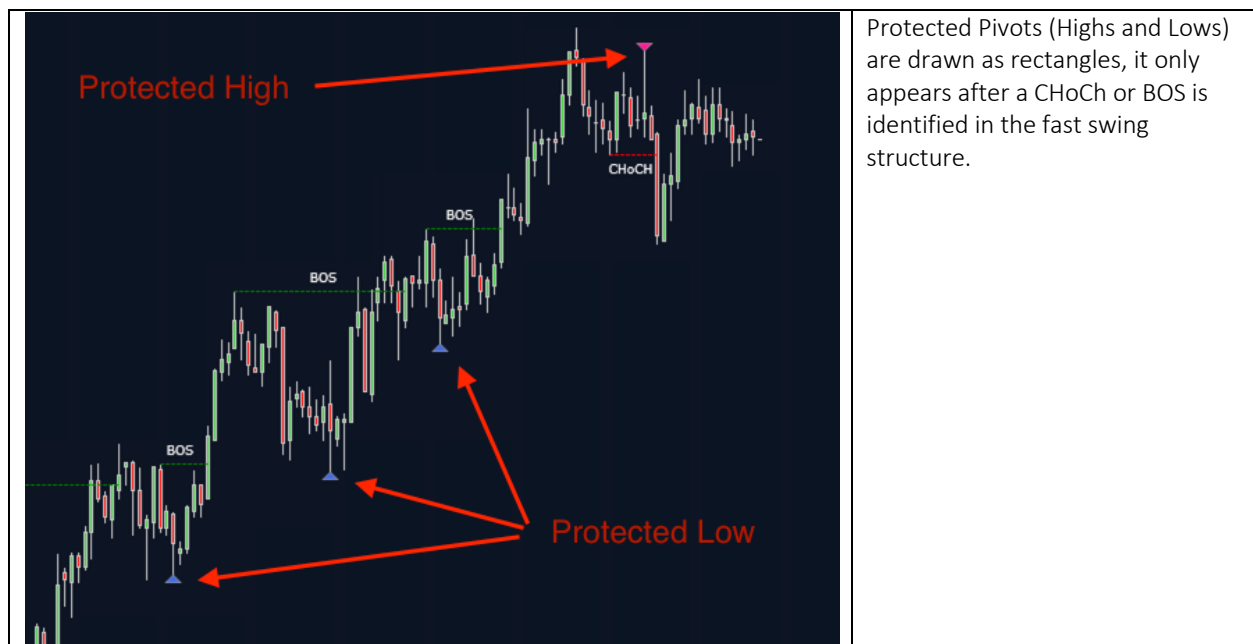
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Protected Pivots	
1 Show Protected Points	<input type="checkbox"/>
2 Show Protected Levels	None
3 Number of Levels	50
4 Show Trail Stop	<input type="checkbox"/>
5 Protected Highs Color	DeepPink
6 Protected Lows Color	RoyalBlue

1- Show Protected Pivot Points (Protected Highs and Lows)
 2- Show Protected Levels, the drop down offers three options (None, Unfulfilled, and All Levels)
 3- Number of Levels, limits the number of lines drawn for Pivot Highs and Pivot Lows
 4- Show Trail Stop lines, is a trend line which can be used as a stop/stop-and-reverse
 5- Change the color for protected highs
 6- Change the color for protected lows

Annotation



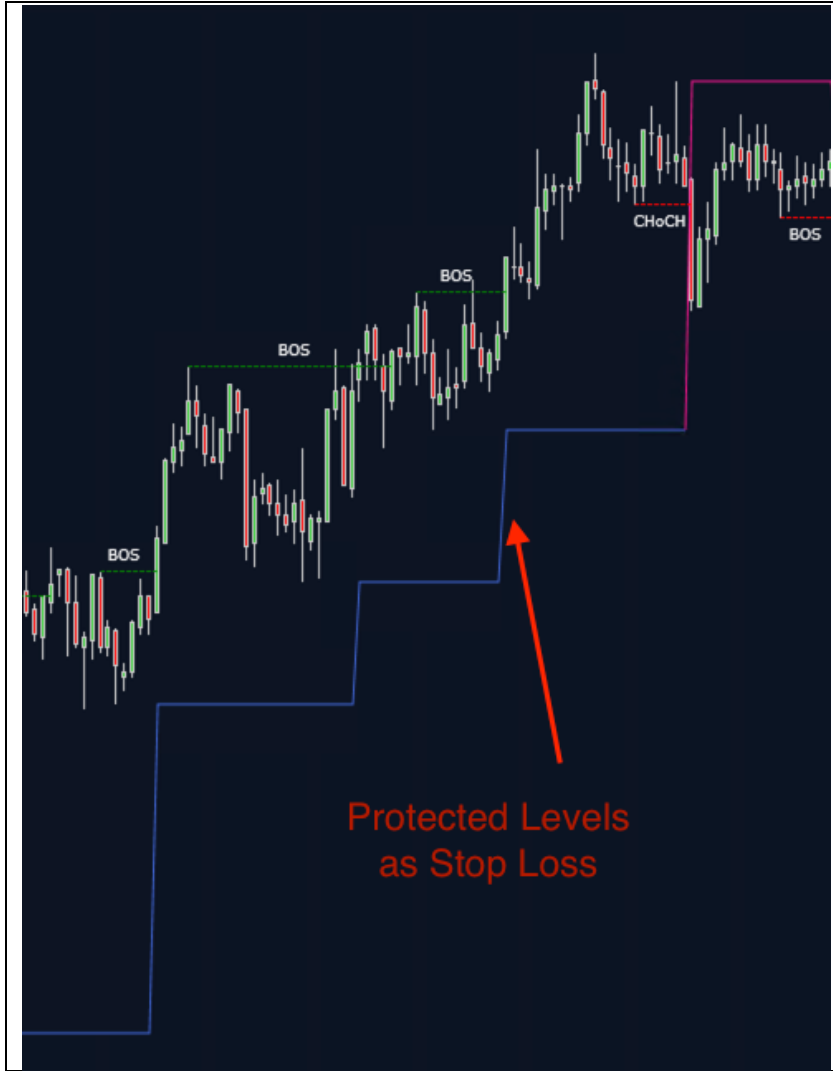


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Protected Highs and Lows can also be rendered as lines, those lines will continue if they are not yet fulfilled/breached, and will stop once fulfilled.



Stoploss line is also drawn and the color indicate if the price is bullish or bearish, following the Market Structure trend.



Visual Options

Configuration

<div style="background-color: #2e3436; color: white; padding: 10px;"> <p>▼ Visual</p> <p>1 Auto scale <input type="checkbox"/></p> <p>2 Transparency <input type="text" value="50"/></p> <p>3 Send Drawn Objects to Back <input type="checkbox"/></p> <p>4 Labels Offset <input type="text" value="10"/></p> <p style="padding-left: 20px;">Displacement <input type="text" value="0"/></p> <p>5 Line Width <input type="text" value="1"/></p> <p>6 Label Fonts <input type="text" value="Verdana, 9px"/></p> <p>7 Text Color <input type="text" value="White"/></p> </div>	<p>1- Auto Scale, scale the chart automatically to show all the components drawn on the chart. When this is turned on, it might affect the visibility on the chart</p> <p>2- Transparency, is a factor used in OB and Premium Zones box coloring</p> <p>3- Send Drawn Objects to Back, is a feature to draw the indicator graphical objects to the back of the candlesticks in order not to affect the visibility</p> <p>4- Label Offset - is just visibility field for the labels printed on the chart, current value is 10 point away from determined location.</p> <p>5- Line Width, is the line width factor used by Market Structure or Protected Pivots drawing objects</p> <p>6-Label Fonts, is a customization option for any label that is printed on the chart</p> <p>7- Text Color, is a customization option for any text rendered on the chart</p>
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Other Plots

The indicator also provides hidden series plots which can be used in your automated strategy and for back testing

Plot	Description
bullSignal	Fast Swing Signals Bull CHoCH = 1 Bull BOS = 2 Slow Swing Signals Bull CHoCH = 3 Bull BOS = 4
bearSignal	Fast Swing Signals Bear CHoCH = 1 Bear BOS = 2 Slow Swing Signals Bear CHoCH = 3 Bear BOS = 4



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fSwingSignal	Signal for the fast swing HH = 2 LH = 1 HL = -1 LL = -2
sSwingSignal	Signal for the slow swing HH = 2 LH = 1 HL = -1 LL = -2
lastOBBar	The bar number of the Start of the last Order Block. Can be used by Strategy Programmers to study the candles after that bar
lastOBTop	The price of the last Order Block top – can be used in strategy conditions
lastOBBot	The price of the last Order Block bottom – can be used in strategy conditions
LastOBVolDelta	This is an oscillator (difference) between bull and bear volumes for the volume analysis of the last order block. When above zero means bull higher than bear and vice versa
marketDir	A Continuous plot 1 = for candles after Bull CHoCH 2 = for candles after Bull BOS -1 = for candles after Bear CHoCH -2 = for candles after Bear BOS NOTE: Market Direction can either follow the fast swing or slow swing structure, this will be calculated based on the dropdown (Color Candle – Config Number 7 in Market Structure Configuration)
fLLAVWAP	Anchored VWAP plot – Anchored on last Lower Low identified in the Fast Swing / Calculated from the last LL
fHHAVWAP	Anchored VWAP plot – Anchored on last Higher High identified in the Fast Swing / Calculated from the last HH
sLLAVWAP	Anchored VWAP plot – Anchored on last Lower Low identified in the Slow Swing / Calculated from the last LL
sHHAVWAP	Anchored VWAP plot – Anchored on last Higher High identified in the Slow Swing / Calculated from the last HH
premiumBottom	The price of the bottom of the premium zone
equilibriumMiddle	The price of the middle of the equilibrium zone
discountTop	The price of the top of the discount zone
fLastSwingHigh *	Fast swing last high, 1 = LH, and 2=HH)
fLastSwingLow *	Fast swing last low, -1=HL, and -2=LL
sLastSwingHigh *	Slow swing last high, is the last high, 1 = LH, and 2=HH
sLastSwingLow *	Slow swing last low, -1=HL, and -2=LL
nextBullOBtop	The price of the Next Unfulfilled Bull Order Block top – can be used in strategy conditions
nextBullOBbot	The price of the Next Unfulfilled Bull Order Block Bottom – can be used in strategy conditions
nextBearOBtop	The price of the Next Unfulfilled Bear Order Block top – can be used in strategy conditions
nextBearOBbot	The price of the Next Unfulfilled Bear Order Block Bottom – can be used in strategy conditions
lastProtectedHigh	The price level for the last Protected High
lastProtectedLow	The price level for the last Protected Low
activeProtectedHigh	The price level for the Next Unfulfilled Protected High
activeProtectedLow	The price level for the Next Unfulfilled Protected Low



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protectedTrailStop	The price level for the Trail Stop – This is the same plot which is explained in Protected Pivots annotations
isOB	This signal appears when the OB is detected by the indicator, not on the start bar of the OB. 1 = for Bull OB -2=for Bear OB
equilibriumTop	The price of the top of the equilibrium zone
equilibriumBottom	The price of the bottom of the equilibrium zone
PremiumTop	The price of the top of the premium zone
premiumMiddle	The price of the middle of the premium zone
discountMiddle	The price of the middle of the discount zone
discountBottom	The price of the bottom of the discount zone

* Note that this plots have a late update, after the swing is detected by the algorithm. E.g. if the swing duration is 5, the plot will detect that it is a new high after 5 bars.

If you have any more questions, please feel free to contact support@scalperintel.com