



EA Toolkit

All in One Basket Multicurrency Grid

User Manual

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Preamble:

In my journey through the world of automated trading, I've had the opportunity to test numerous Expert Advisors (EAs), each boasting unique strategies and promises of profitability. While many of these EAs introduced innovative ideas, especially in basket and grid trading, I often found myself encountering certain limitations that didn't quite align with my trading philosophy. These were not always minor nuances but sometimes significant hurdles that impacted overall trading effectiveness from my perspective.

Motivated by this experience, I set out to create an EA that embodies the best of these ideas while infusing them with my logic and strategies to overcome the limitations I encountered. This EA is the culmination of that endeavor, aiming to offer a refined approach to basket and grid trading that is both comprehensive and adaptable to various trading styles.

Important Note to Users:

Welcome and thank you for considering EA Toolkit for your trading strategy. Please be aware that this is the initial release of our Expert Advisor. While we have conducted comprehensive testing to ensure reliability and performance, as with any software, there may be unforeseen issues in real-world usage.

We are committed to continuously improving EA Toolkit and highly value user feedback. Should you encounter any problems or have suggestions for enhancements, please do not hesitate to contact us. Your input is crucial for future updates and for making EA Toolkit even better.

By choosing EA Toolkit, you're not just getting a tool for your trading arsenal but also joining a community focused on growth and excellence in automated trading. We look forward to your feedback and to providing updates that enhance your trading experience.



1 INTRODUCTION TO THE EXPERT ADVISOR: A TECHNICAL OVERVIEW

Welcome to an in-depth look at our Expert Advisor (EA), engineered for traders who demand precision, adaptability, and resilience in their automated trading tools. This EA stands out through its integration of complex trading strategies, sophisticated statistical analysis, an advanced user interface, and robust fail-safety mechanisms. Here's a breakdown of its core technical features:

1. **Parametric Richness and Trading Versatility:** The EA is designed with a wide array of adjustable parameters, supporting a multitude of trading strategies. From grid and basket trading methodologies to customized order execution tactics, it allows traders to finely tune their strategies to diverse market conditions.
2. **Advanced Statistical Processing:** Central to the EA's strategy formulation is its capability for in-depth statistical analysis. By harnessing both real-time and historical market data, the EA processes and utilizes statistical insights to inform decision-making, offering a strategic advantage by integrating market trends, volatility, and pattern recognition into trade execution.
3. **Comprehensive GUI:** The Graphical User Interface (GUI) serves as the command center, presenting a detailed overview of market activities and the EA's operational status. It facilitates seamless interaction, allowing users to monitor trades, adjust settings on the fly for individual pairs or globally, and access statistical analyses—all designed to enhance control and efficiency.
4. **Fail Tolerance and State Recovery:** Understanding the criticality of continuous operation, the EA is built with a fail tolerance system that ensures resilience against technical failures, such as computer crashes or unexpected shutdowns. It automatically saves its operational state at regular intervals, enabling quick recovery and restoration of trading activities without losing momentum or data integrity after a system restart or update.

By focusing on these four pillars, the EA not only brings advanced trading strategies and analytics within reach but also ensures a level of operational reliability and user control that is essential for serious traders. Its architecture is crafted to support rigorous trading demands, providing a stable, flexible, and intelligent tool for navigating the complexities of the forex market.



1.1 PARAMETRIC RICHNESS AND TRADING VERSATILITY : DEVELOPMENT PHILOSOPHY AND GRID TRADING MECHANICS

The foundation of our Expert Advisor is built upon the grid trading strategy, refined and enhanced to incorporate a dynamic decision-making framework that adapts to ongoing market conditions. This adaptive approach ensures that each new trade—whether initiated by the EA, another automated system, or manually by the trader—is intelligently integrated into the existing grid based on the current landscape of sell and buy orders and their respective ranges. The determination of the lot size for any new trade is meticulously calibrated according to the available equity, ensuring a balanced risk management strategy.

1.1.1 Trade Management Hierarchy

Upon the activation of a new trade, the EA employs a comprehensive three-tiered framework to govern the decision-making process for closing trades, encompassing trade level, pair level, and basket level considerations:

1. **The Trade Level:** Each individual trade is assessed based on its own merit, including its entry point, current market price, and predefined profit targets and stop loss parameters. This level ensures that each trade can independently contribute to the overall profitability, irrespective of the performance of other trades.
2. **The Pair Level:** Beyond individual trade performance, the EA evaluates the collective performance of all trades associated with a specific currency pair. This aggregation allows for nuanced decisions based on the pair's overall position, facilitating actions like closing all trades for a pair once a cumulative profit or loss threshold is reached.
3. **The Basket Level:** At the highest level of decision-making, the EA considers the cumulative performance of all open trades across all pairs, constituting the "basket." This holistic view enables strategic decisions that affect the entire trading portfolio, such as broad risk reduction maneuvers or capitalizing on widespread profitable opportunities.

1.1.2 Handling Market News Events

An integral component of our EA's strategy is the incorporation of a news-based decision modifier. Recognizing the significant impact of market news on



currency volatility, the EA includes functionality to adjust trading behavior in anticipation of or in response to major news events. This feature allows the EA to either capitalize on expected market movements triggered by news or to take protective actions to safeguard the portfolio against potential market turbulence.

To enable this, the EA is equipped with the capability to interact with market news in two sophisticated ways:

1. **IceFX NewsInfo Indicator Integration:** The EA can dynamically read chart objects from the IceFX NewsInfo indicator present on any chart within the MetaTrader terminal. This integration allows for real-time adjustment of trading strategies based on the latest economic news updates directly within the trading environment.
2. **Utilizing a Dedicated News File:** Additionally, the EA processes information from the `HDbwrronlwbQhzv1fvy` file, which contains a meticulously curated list of upcoming news events, including dates and the currencies they impact. This CSV file serves as a comprehensive guide for the EA to consider, ensuring that trading decisions are informed by a broad spectrum of economic announcements.

This nuanced approach to grid trading, combined with strategic trade management and news adaptation, underscores our commitment to providing a sophisticated, yet adaptable trading tool designed to navigate the complex forex market landscape effectively. By leveraging both live indicator data and a structured news event database, our EA offers an unmatched level of responsiveness to market conditions, ensuring that strategies are not only proactive but also protective.



1.2 ADVANCED STATISTICAL PROCESSING EXPLAINED

At the heart of our EA's decision-making process lies a deep understanding of market dynamics, a crucial element for trading success. This understanding is traditionally aided by various indicators like RSI, MACD, Stochastic, and moving averages, each providing unique insights into market trends. However, with a plethora of indicators and numerous strategies combining them across different timeframes, the challenge was to identify the most effective setup.

Pareto Principle in Statistical Analysis

Inspired by the Pareto principle and the quest for optimization, I embarked on developing a method to evaluate and utilize these indicators more effectively. This led to a two-fold statistical approach, tailored to accommodate the distinctive characteristics or values of each trading pair:

1. **Trade Statistics:** Incorporating take profit and stop loss mechanics to understand the performance implications of each trade.
2. **Time Trade Statistics:** Focusing on trade duration to gauge performance without the influence of exit strategies.

Normalization and Z-Score Calculation

The initial step involved normalizing the data from various indicators across all trading pairs using z-score analysis. This normalization allows for a consistent basis of comparison, making the indicator data universally applicable regardless of the specific pair characteristics.

Indicator Efficiency and Pareto Optimization

By sorting all trading outcomes (both real and time-simulated) according to their z-scores, I could isolate the top-performing ranges based on a predetermined percentile of the data set. This process identifies the most effective z-score values for sell or buy signals for each indicator.

Formulating Trading Strategies

Armed with the optimal z-score ranges, the next phase involves formulating strategies by combining indicators across different timeframes. Each indicator contributes to a simple voting mechanism (buy, sell, or hold), with their timeframe-specific outcomes collectively determining the trade action.



Technical Implementation

This advanced statistical processing involves several key operations:

1. **Data Compilation:** Historical data is processed to calculate indicators, their z-scores, and is stored both in memory for real-time access and saved to files for durability across trading sessions.
2. **Optimization:** On weekends, the EA calculates the most successful z-score ranges for buy and sell signals, saving these to CSV files (e.g., `HDbwrronlwbLqgKlvwVwdwv1fvy` and `HDbwrronlwbLqgWudghVwdwv1fvy`). This allows for manual tweaking via spreadsheet software by adjusting parameters like the Pareto percentage.
3. **Strategy Synthesis:** An auxiliary mode of the EA, launched in separate charts, dedicates itself to combining indicators and timeframes, assessing their collective efficacy. The top 10 strategies are saved for future application, with the process scalable across multiple charts without overloading MetaTrader's memory capacity. The EA checks the global variable "EA_Toolkit_Trading" to determine its operational mode

Through this meticulous process, our EA transcends traditional trading strategies, offering a data-driven approach to navigating the forex market. By leveraging statistical insights and the Pareto principle, we ensure that our trading decisions are both informed and optimized for success.



1.3 INTRODUCTION TO THE GUI:

The interface of our EA is designed to be intuitive yet powerful, structured around three main areas to provide you with seamless control and oversight of your trading activities:

- 1. The Control Panel:** This central hub is divided into three sections:
 - **Information Area:** Offers real-time feedback and updates on the EA's operation.
 - **Input Area:** Allows for the global setting of parameters, applicable either universally or to individual trading pairs.
 - **Action Buttons:** Two crucial buttons to initiate or halt trading, putting you in full control.
- 2. Trading Pairs Table:** With a row dedicated to each of the 28 trading pairs, this table integrates actionable elements and informative displays:
 - **Header:** Controls what information is shown in the table's columns.
 - **Rows:** Each contains interactive elements for specific actions and displays vital data for its corresponding pair.
 - **Footer:** Features controls to apply settings across all pairs, enhancing batch management efficiency.
- 3. Indicators Table:** Organized into five distinct sections for comprehensive strategy formulation:
 - **Header:** Includes an actionable button to modify third-row contents.
 - **Indicator Activation Row:** Enables or disables specific indicators for statistical processing.
 - **Trend Determination Row:** Chooses which indicators influence the pair trend analysis.
 - **Value Rows:** Show indicator values and definitions as per the header's configuration.
 - **Strategy Formulation Area:** Divided into three sections for real trading stats, time-simulated stats, and user-defined formulas, it's the heart of your strategic setup.

Each element of the GUI has been thoughtfully designed to empower you with a direct, efficient, and flexible trading experience, allowing for deep customization and strategic experimentation. Our aim is not just to provide a tool but to offer a gateway to mastering the art of trading with precision and insight.



1.3.1 The Control Panel Overview

The Control Panel serves as the central hub for monitoring and managing the EA's operations. It is designed to provide comprehensive information at a glance and facilitate easy access to key functionalities. Here's a breakdown of its main components:

Trading Info Block

- **Account Status Line:** Displays critical account metrics including the total number of market and pending trades (`OrdersTotal()`), total lot size, account profit, account balance percentage change, account balance, and the account currency.
- **Basket Line:** Provides insights into the EA-managed trades, including the number of active trades, basket profit, basket profit as a percentage of the account balance at the basket's start, basket duration (since last close or restart), maximum recorded profit percentage, and maximum recorded loss percentage.
- **Profit Performance Statistics Line:** Shows the performance percentages for the last day, week, and month, allowing for quick assessment of short-term profitability.
- **News Countdown Line:** Displays the countdown to the next significant news event, including the affected currency, date, and time remaining in days, hours, and minutes.
- **Basket Run Profit vs. Worst Loss Line:** Compares the run profit of closed basket trades against the worst loss trade within the basket, offering a snapshot of the basket's risk-reward profile.

Parameters and Conditions Setup

- **Trade Initiation Conditions:** Users can configure specific conditions under which trades will be initiated. These settings are detailed in the Input Parameters section of the manual.
- **Trade Closure Conditions:** Allows for the customization of conditions for closing individual trades or trades by pair symbol. Detailed explanations are available in the Input Parameters section.
- **Basket Closure Conditions:** Set the criteria for closing the entire basket based on take profit percentages or stop loss thresholds.



Time Conditions

- **Operational Time Settings:** Configure the daily start conditions for the EA, end-of-week actions, percentage-based conditions, and adjustments around news events. Each of these settings is elaborated upon in the Input Parameters section.

Control Actions

- **Start/Stop Buttons:** Facilitate the immediate commencement or cessation of basket trading, providing users with manual override capabilities.

Additional Controls and Notifications

- **Notification Settings:** Additional fields within the control panel support the configuration of notifications and alerts, ensuring users stay informed about the EA's activities. These settings are further described in the Input Parameters section.
- **Settings Management:** Special fields allow for the saving of current settings to a different file, enhancing customization flexibility. Additionally, an "Edit Value" field enables direct modifications to values in the trading pairs table, streamlining the adjustment process for trading strategies.

This comprehensive guide to the Control Panel highlights the depth of information and the range of functionalities available to users, designed to maximize the efficacy and usability of the EA in live trading scenarios.



1.3.2 Trading Pairs Table Overview

The Trading Pairs Table is a critical component of our EA's GUI, designed for in-depth monitoring and management of trades across various currency pairs. It consists of 30 rows, categorized as follows:

1. **Header Row:** Displays column titles and serves as an interactive area for global settings adjustments.
2. **28 Pair Rows:** Each row represents a different currency pair, allowing for individual pair monitoring and management.
3. **30th Row:** Used for wide column setting actions, providing additional control over table customization.

Column Functionalities

1.3.2.1 Column 1: Chart Opening and Interaction

- **Pair Row Click:** Opens a chart for the selected currency pair.
- **Header:** Non-interactive.
- **Settings Cell:** Not applicable.

1.3.2.2 Column 2: Pair-Specific Modifier

- **Pair Row Action:** Modifies parameters for the selected pair based on Control Panel settings.
- **Header Click:** Applies Control Panel settings to all pairs.
- **30th Row Settings Cell:** Not applicable.

1.3.2.3 Column 3: Trading Activation

- **Pair Row Toggle:** Activates or deactivates trading for the selected pair.
- **Header Toggle:** Activates or deactivates trading for all pairs.
- **30th Row Settings Cell:** Not applicable.



1.3.2.4 Columns 4 to 10: Dynamic Control Panel Settings Display & Adjustment

These columns are designed to display and facilitate the adjustment of trading parameters for each currency pair, directly mirroring settings from the Control Panel. Here's an enhanced overview of their functionalities:

Column Interaction for Setting Adjustment

- **Individual Cell Click:** Allows users to apply a predefined value (entered in the "edit value" field within the Control Panel) across all pairs for the specific parameter displayed in the column. Upon clicking, the cell's background turns red, indicating an editable state.
 - **To Confirm:** Click again while the cell's background is red to apply the new value. The cell reverts to its normal color upon successful update.
 - **To Cancel:** If no second click is made, the cell's background will return to its original color after a brief period, canceling the update.
- **Header Click:** Toggles the parameter displayed within the cells of these columns, providing a quick overview and access to different settings.
- **30th Row Click:** Offers a bulk-update feature, where clicking allows the application of the "edit value" to the respective setting across all currency pairs.

Visual Feedback Mechanism

- **Background Color Indications:**
 - **Yellow:** Signifies a discrepancy, highlighting when a cell's setting differs from the corresponding setting in the Control Panel.
 - **Red:** Indicates an editable state, signaling that the value is ready to be confirmed or canceled.

Key to Column Headings and Corresponding Control Panel Settings

- **Column 4 ("Str", "Grid", "ARP", "MxO"):**
 - Strategy (Str)
 - Grid Size (Grid)
 - Average Range Pips (ARP)
 - Maximum Orders (MxO)



- **Column 5 ("dG", "dR", "dT", "DS"):**
 - Grid Direction (dG): Defines the grid's trading direction, offering options to trade with or against the market trend.
 - Use Real Trade Stats for Direction (dR): Incorporates real trading statistics into directional decisions.
 - Use Simulated Trade Stats for Direction (dT): Leverages time-based simulated trade statistics for directional input.
 - Use Swing Points for Direction (DS): Employs swing point analysis to inform trading direction.
- **Column 6 ("LD", "L1", "L2", "L3"):**
 - Ladder Increment (LD): Specifies the lot increment frequency.
 - Level 1 Increment Factor (L1): Detailed in the Input Parameters section.
 - Level 2 Increment Factor (L2)
 - Level 3 Increment Factor (L3)
- **Column 7 ("T2C", "TP", "WCp", "PCp"):**
 - Time to Close (T2C): The timeframe for automatic trade closure.
 - Take Profit in Pips/Basis Points (TP)
 - Worst Order Close on Profit (WCp)
 - Pair Close on Profit (PCp)
- **Column 8 ("LAtf", "LAp", "LAs%", "LAI%"):**
 - Lock Profit ATR Timeframe (LAtf)
 - Lock Profit ATR Period (LAp)
 - Lock Profit Above % ATR (LAs%)
 - Lock ATR % (LAI%)
- **Column 9 ("SLtf", "SAp", "SAI%", "SL"):**
 - Stop Loss ATR Timeframe (SLtf)
 - Stop Loss ATR Period (SAp)
 - Stop Loss ATR % Close (SAI%)
 - Stop Loss in Pips/Basis Points (SL)

This detailed guide aims to provide users with a clear understanding of how to interact with and utilize the dynamic settings available in columns 4 through 10 of the trading pairs table, enhancing the adaptability and precision of their trading strategies.

1.3.2.5 Columns 10 to 17: Detailed Information Display



These columns are designed to provide a wealth of information about each currency pair without necessitating direct interaction within their cells.

Column Interactivity and Information Display:

- **Cell Interaction:** Columns 10 to 17 are set to display critical information regarding each pair. Clicking within the cells of these columns does not trigger actions.
- **Header Interaction:** Clicking on the headers of these columns allows for the toggling between different sets of information, enabling users to customize the data displayed according to their preferences.
- **Row 30 Settings Cell:** This section lacks a dedicated settings cell, focusing purely on information display.

Detailed Header Descriptions:

- **Column 10: Market Overview**
 - **DIR:** (To be implemented) Indicates the overall trend direction based on a comprehensive voting mechanism across selected indicators. This functionality aims to be enhanced by data from Columns 23 to 25.
 - **SPD:** Displays the current spread for each currency pair, crucial for assessing trading costs.
 - **P V:** Placeholder for future data implementation.
 - **T V:** Placeholder for future data implementation.
- **Column 11: Financial Metrics**
 - **R.Equity:** Shows the reference equity for each pair, serving as a baseline for calculating profit margins.
 - **R.Time:** Marks the time at which the reference equity was recorded, establishing a temporal context for performance analysis.
 - **R. Profit:** Reflects the profit accumulated since the last reference time, offering insight into short-term trading effectiveness.
 - **Tick V / Tick S:** Provides tick value information, useful for debugging and detailed trade analysis.
- **Columns 12 and 13: Price Dynamics**
 - Display real-time and reference prices alongside AVWAP (Anchored Volume Weighted Average Price) calculations for resistance/support, offering a nuanced view of market positioning.
 - **Ask/Bid Ref:** Sets the benchmark prices for comparative analysis.



- **Ask/Bid PipD:** Indicates the pip distance from the reference price, highlighting market movements.
 - **Ask/Bid Pri:** Shows the current asking and bidding prices.
 - **Ask/Bid AVWAP:** Breaks down AVWAP data into resistance (Rv/Sv) and support (Rd/Sd) values, with additional subdivisions for detailed analysis (Ra/Sa).
- **Columns 14 and 15: Order Quantities**
 - **Total:** Aggregates the total lot size across all orders for each pair, providing a snapshot of exposure.
 - **1 - 10:** Details the lot size for up to 10 individual orders per pair, allowing for granular management and oversight.
 - **Columns 16 and 17: Financial Performance**
 - Similar to Columns 14 and 15, these sections focus on the profitability aspect, displaying total and individual order profits, facilitating a comprehensive understanding of financial outcomes.

This refined explanation for columns 10 to 17 in the trading pairs table emphasizes the depth and utility of the information provided, aiding traders in making informed decisions based on real-time data and historical performance metrics.

1.3.2.6 Enhanced Indicator Data Columns (18 to 22) Guide

Columns 18 to 22 in the trading pairs table are dedicated to displaying detailed information for each currency pair based on the indicators selected by the user. These columns offer dynamic insights into the indicators' performance and characteristics. Here's how they function and can be customized:

Indicator Data Visualization

- **Columns 18 to 22:** These columns present key data points for each currency pair derived from the indicators specified. The data includes but is not limited to z-score, average, standard deviation, and raw value, providing a comprehensive view of indicator performance.

Dynamic Indicator Switching



- **Header Click Functionality:** Clicking on a column's header activates the ability to cycle through different types of information for the selected indicator. This feature allows users to quickly adjust the data being displayed based on their current analysis needs or trading strategy focus.

Custom Indicator Selection

- **Row 30 Configuration:** The 30th row of the trading pairs table introduces a mechanism for selecting which indicator's data to display in columns 18 to 22. Clicking on a cell in this row sets the system to configuration mode. The subsequent action, such as clicking in the header row of the indicators table, finalizes the choice of which indicator's data is to be displayed in these columns, enhancing the table's adaptability to the user's preferences.

Column Header Codification

To facilitate easy identification and selection of indicator data, the headers for columns 18 to 22 use a codified system:

- **Indicator Identification:** The initial letters in the header represent the indicator's name, making it straightforward to identify which indicator the data pertains to.
- **Time Frame Specification:** A number (1 or 2) follows the indicator's initials to denote the primary or secondary time frame, providing insights into the indicator's performance across different temporal analyses.
- **Data Type Indicator:** A final letter categorizes the type of data displayed:
 - **z:** z-score, offering a standardized measurement of deviation from the mean.
 - **a:** Average, showing the mean value of the indicator data points.
 - **s:** Standard deviation, reflecting the variability or dispersion of the indicator data.
 - **v:** Value, presenting the actual raw data value of the indicator.

This structured approach to displaying and customizing indicator data in the trading pairs table ensures users have precise control over the information they need to inform their trading decisions, making the EA's GUI both versatile and user-friendly.



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1.3.2.7 Columns 23 to 24: Direction and Formula Configuration

These columns are pivotal for visualizing and configuring the trade direction decision process, based on custom formulas derived from indicator data.

Display and Interaction:

- **Direction Display (D Trad or D Tim):** When the header displays either "D Trad" (Direction from Traditional Trades) or "D Tim" (Direction from Time-based Trades), each cell within these columns reveals the current trading direction for its corresponding pair - 'Buy', 'Sell', or 'N.T.' (No Trade/Hold). Clicking on a cell within these columns toggles the display to show the underlying formula, as specified in the third row of the indicators table, allowing for a deeper insight into the decision-making rationale.
- **Formula Modification Mode:** If the header is set to "Setup", clicking on a cell enables you to modify or select a different formula for determining the trading direction. This engagement initiates a two-step process for enhanced accuracy in selection and confirmation.

Header Interaction:

- **Toggling Display Modes:** Clicking on the column header alternates between displaying the calculated trading direction (Buy, Sell, or N.T.) and entering "Setup" mode. In "Setup" mode, users can adjust which formula is applied for decision-making, offering a flexible approach to strategy customization.

Applying Formulas Broadly:

- **Row 30 Global Application:** A specialized interaction in the 30th row, under "Setup" mode, allows for the application of the selected formula (visible in the third row of the indicators table) across all trading pairs. This global application ensures consistency in strategy execution and simplifies the management of multiple pairs.

This structured approach to configuring and understanding trade directions via custom formulas not only enhances the adaptability of the trading strategy but



also empowers users with precise control over their trading decisions, directly from the GUI of the Expert Advisor.

1.3.2.8 Column 25: Swing Points Info

- Displays trend information based on swing points without interactive features.

1.3.2.9 Columns 26 and 27: Manual Trading Orders

Columns 26 and 27 are specifically designed to facilitate manual order placement directly from the trading pairs table. This feature incorporates a two-step approach to ensure intentional and deliberate order execution:

1. **Order Preparation (Arming the Button):** The initial click on a cell within these columns activates (arms) the manual order button, signifying the user's intent to place an order. Upon activation, the cell's background color changes to yellow. This visual cue indicates that the order is in preparation mode, awaiting confirmation.
2. **Order Execution:** To confirm and execute the order, the user must click again on the yellow-highlighted cell. Upon this second click, the order is placed, and the cell briefly changes color to blue to signify a buy order or red to indicate a sell order. This color-coded feedback provides an immediate, visual confirmation of the order type that has been executed.
3. **Order Disarmament:** If the user decides not to proceed with the order after arming the button, or if a certain time elapses without a second click, the order button disarms automatically. This is visually indicated by the cell's background color reverting to grey. This disarmament feature adds a layer of safety, preventing unintentional orders from being placed due to inactivity or a change of decision.

This meticulously designed manual order execution process enhances the EA's user interface by offering a clear, intuitive, and secure method for placing trades. The two-step approach, coupled with distinct visual cues, ensures that manual orders are both deliberate and easily identifiable, thereby adding precision and control to the trader's strategy execution toolkit.



1.3.2.10 Last Column: Visual Aid

- Provides a visual separator for ease of row identification.

1.3.3 Overview of the Indicators Table

This table showcases 30 base indicators available in MetaTrader 4, augmented with two custom indicators (Fibonacci and AVWAP), and an additional column for CMSM data extracted from chart objects of an external indicator. It is a central element for analytical assessment, providing users with actionable insights based on statistical analysis.

Functional Breakdown

Header Interaction

- **Header Clicks:** Enable the display of specific statistical values in rows 4 and 5, related to time trade simulation statistics. A future update will introduce a switch for toggling between time trade simulation and real trade statistics.
- **Header Label Codification:**
 - Indicator Identification: 2 or 3 letters for the indicator name.
 - Timeframe Number: Specifies the timeframe for the data.
 - Data Categories: Varied metrics such as average z-score (Bas/Sas), range (Btb/Stb), and success rates (Bra/Sra) for buy and sell actions.

Rows 2 and 3: Indicator Configuration and Formula Application

- **Row 2 (Indicator Configuration):** Allows users to specify which statistics to calculate for each indicator. Clicking cycles through data sample sizes and calculation options.
- **Row 3 (Voting Mechanism Formula):** Defines the formula for the EA's directional voting mechanism. Clicking cycles through usage options, integrating these formulas into trading decisions.



Row 6: Best Formulas Display

- Displays the top 10 formulas based on real trades, time trade simulations, and manual selections, indicating their application status. This row is dynamic, reflecting the outcomes of the EA's statistical processing engine.

Formula Results and Setup

- **Columns 2 to 11 & 13 to 22:** Contain the best trading formulas derived from statistical analyses. These are subject to overwrite upon each statistical processing run by the EA.
- **Column Interaction:** Clicking reveals the associated formula in row 3, aiding in strategic decision-making.
- **Special Mechanism in Column 23:** Instead of cycling through statistical outputs, clicking here when "setup" is active allows for saving the displayed formula from row 3 into the trading strategy, marking a direct influence on future trades.

Data Presentation and Editing

- **Row 6, Columns 1 and 11 Click Cycle:** Offers a comprehensive overview of trading formula outcomes, adjusting the display across adjacent cells to reflect varied metrics such as total profit, trade count, success rates, and average profit/loss.
- **Editing Capability:** The CSV files generated by statistical analyses (for both real and simulated trades) can be manually edited for further customization, though they will be overwritten during subsequent EA analyses.

Utilizing the Indicators Table



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The indicators table is not just a display of numbers; it's a strategic tool that empowers users to refine their trading approaches based on solid statistical backing. By understanding and interacting with this table, traders can enhance their ability to make informed decisions, tailor their strategies with precision, and significantly impact their trading outcomes. This component of the EA underscores the importance of data-driven decision-making in the realm of forex trading.



1.4 FAIL TOLERANCE AND STATE RECOVERY: ENSURING UNINTERRUPTED OPERATION

One of the pillars of our EA's design philosophy is its ability to operate autonomously for extended periods, embodying the ideal of a "set it and forget it" trading tool. However, real-world scenarios of hardware failures, software glitches, or essential updates pose significant challenges to maintaining continuous operation. Traditional EAs often struggle with these disruptions, leading to a loss of operational context and necessitating manual intervention to resume trading.

Innovative Approach to Continuity

To address these challenges and minimize the need for manual restarts or interventions, our EA incorporates advanced features designed for high fail tolerance and seamless state recovery:

- 1. Comprehensive Trade and Environment Tracking:** The EA is equipped with mechanisms to monitor and manage all active trades within the account continuously. This includes understanding the status and strategy behind each trade, ensuring that the EA can maintain strategic continuity.
- 2. Regular Data Saving:** Critical operational data, including settings and trade history, is automatically saved to dedicated files at regular intervals (e.g., `HDbwrronlwbvhwvlqjv1gdw`, `HDbwrronlwbklvwGdwdWlph1gdw`, `HDbwrronlwbwudghGdwdWlph1gdw`). This periodic saving ensures that the EA can recover its full operational state after any disruptions.
- 3. Intelligent Startup Routine:** Upon restart, the EA is designed to read the previously saved data files to restore its operational state. This process allows the EA to seamlessly continue its trading activities without manual reset, ensuring that strategies and settings remain consistent through sessions. For initial startups or when changes are needed, the EA utilizes settings defined in the properties GUI.
- 4. Manual Reset Protocol:** In scenarios where manual adjustments to the EA's settings are required, users can trigger a reset by deleting the `HDbwrronlwbvhwvlqjv1gdw` file. This action prompts the EA to revert to the default settings specified in the properties GUI. Notably, this reset functionality is automatically engaged when the EA operates in strategy tester mode, ensuring a clean slate for each test.



5. **Safeguarding Against Unintended Operation Modes:** A crucial consideration is the accurate updating of `HDbwrronlwbwudghGdwdWlphlqdw` upon restarts. Additionally, the EA checks the global variable "EA_Toolkit_Trading" to determine its operational mode. If not correctly reset, the EA may inadvertently enter statistics mode, which is designed for analytical rather than trading functions. Users are advised to verify this setting after a restart to ensure the EA resumes its intended trading activities.

Ensuring Operational Integrity

These measures collectively fortify the EA against the vagaries of technical disruptions, empowering traders with a tool that not only automates their trading strategies but does so with an assurance of continuity and reliability. Our commitment to fail tolerance and state recovery reflects our understanding of the automated trader's needs, providing peace of mind that the EA will persistently pursue its trading objectives, come what may.



2 The Input Parameters - Start Trade Setup

The input parameters are organized in the same manner as they are presented in the control panel. The only distinction is that the control panel provides a summary of the trading activity at the top.

2.1 BASIC TRADING SETTINGS

(This settings apply to all pairs)

Lots per Equity: This setting allows you to control the lot size based on the maximum number of trades per active pairs for trading that you set up to have simultaneously. By specifying this value, you dynamically adjust the lot size relative to the available equity of the trading account. For instance, setting it to 0.01 lots per \$5000 (the value entered) equity assumes that the user aims to have approximately four trades per active pair out of the 28 pairs available. This dynamic adjustment helps optimize risk management by scaling position sizes relative to the account equity and the desired number of concurrent trades.

Justice Check: When enabled, this feature automatically adjusts the grid size for each pair based on the grid size defined for EURUSD and the average ATR (Average True Range) of EURUSD relative to other pairs. This adjustment helps optimize trading parameters according to market volatility.

Pips vs. BPS (Base Points): This option allows you to choose between using pips or percentage base points for defining settings. When checked or set to 1, the EA will use percentage base points instead of pips. This provides flexibility in defining parameters based on percentage changes rather than fixed pip values.



The following settings can be applied to each pair

2.2 PAIR/ORDER GRID SETTINGS

Running Strategy: Determine the operational strategy.

- 1. Classic Grid:** Initiate new trades regardless of indicators, provided the reference price is a specified distance (in pips) away from the last price in a given direction. New trades are always outside the price range of active trades.
- 2. Timed Grid (1 or 3):** Similar to Classic Grid, but any trade initiated ends after a predefined duration.
- 3. Indicator-based Grid:** Base trade direction on indicator formulas.
- 4. Retracement Strategy:** Close the last sell or buy trade within the grid to open a new trade in the opposite direction of price movement.
- 5. Trend-following Strategy:** Close the last trade to open a new one in the direction of price movement.

Grid Pips: Set the grid size in pips for entering new trades.

- **Refresh Grid:** Re-establish the reference price of the grid after a specified pip movement.
- **Max Orders:** Determine the maximum number of orders permissible in each direction.

2.3 PAIR/ORDER DIRECTION SETTINGS

Grid Direction: This setting determines the direction for grid trading:

- **0:** Trades against the direction of the price movement.
- **1:** Trades in the direction of the price change.



Trading Result Statistics: This setting determines whether to use trading history and indicators to perform statistical analysis and identify potential price directions:

- **0:** Do not use trading history and indicators for statistical analysis.
- **1:** Utilize trading history and indicators to conduct statistical analysis and identify potential price directions.

Historical Data Analysis: This setting controls the use of historic simulated trades based on time duration for statistical analysis:

- **0:** Do not use historical simulated trades for statistical analysis.
- **1:** Use historic simulated trades based on time duration for statistical analysis.

Swing Points: This setting determines whether to utilize swing points for trading decisions:

- **0:** Do not use swing points for trading decisions.
- **1:** Utilize swing points for trading decisions.

These settings provide flexibility in determining the trading strategy based on various factors such as price movement direction, historical data analysis, and swing points analysis. Adjusting these settings allows traders to customize their approach to suit their preferences and market conditions.



2.4 PAIR/ORDER LOT SETUP SETTINGS

The lot setup uses the formula of the [Millionaire EA](#) and therefore more information is available in this post

(<https://www.forexfactory.com/thread/post/13260719#post13260719>).

LD (Lots Divider): LD represents the Lots Divider, which determines the frequency of lot size adjustments based on the number of active orders in one direction. In the examples provided, LD influences how often the lot size is incremented or adjusted as new orders are opened. A lower LD value results in more frequent adjustments to the lot size, while a higher LD value leads to less frequent adjustments.

Example LD=2 L1=1 L2=1 L3=1: 1st order 0.01; 2nd order 0.01; 3rd order 0.02; 4th order 0.02; 5th order 0.03

L1 (Lot Multiplier 1): L1 serves as the initial multiplier applied to the lot size calculation. In the examples, it determines the base lot size for the first order. For instance, if FL (First Order Lot) is 0.01 lot, L1 directly influences the lot size of the first order. Subsequent orders' lot sizes are then determined based on this initial lot size and further adjustments.

L2 (Lot Multiplier 2): L2 acts as a secondary multiplier that modifies the lot size calculation in addition to L1. It influences how the lot size increments or adjusts as new orders are opened. In the provided examples, L2 affects the rate of change in lot size between consecutive orders. A higher L2 value leads to faster increases in lot size, while a lower L2 value results in slower increases.

Example LD=1 L1=1 L2=1 L3=1: 1st order 0.01; 2nd order 0.02; 3rd order 0.03; 4th order 0.04; 5th order 0.05

L3 (Lot Multiplier 3): L3 is an exponential multiplier applied to the lot size calculation, introducing a compounding effect on the lot size adjustments. In the examples where the configuration is doubled (102), L3 determines the rate at which the lot size grows exponentially with each new order. Higher values of



L3 result in more aggressive increases in lot size, while lower values lead to more gradual changes.

Example LD=2 L1=1 L2=0 L3=2: 1st order 0.01; 2nd order 0.02; 3rd order 0.04; 4th order 0.08; 5th order 0.16

2.5 THE INPUT PARAMETERS - STOP TRADE SETUP

Take Profit (TP) Settings

Time2Close: Specifies the time, in minutes, after which an open order will be closed. This is used only when running strategy 2 for opening orders.

TP pips: The fixed Take Profit value, which can be specified in pips or BPS (see basic trading settings). This sets a target price level at which the trade will be closed in profit.

WO CoP: Worst Order Close on Profit - A boolean parameter that, when true, allows the strategy to close the worst-performing loss order when a profit is realized on another trade. This can be part of a risk management strategy to minimize losses.

Pair CoP: Pair Close on Profit - When set to true, this parameter enables the closing of all trades for a specific currency pair once the combined result of these trades is in profit. It's a collective profit-taking strategy at the pair level.

Lock Profit (LP) Settings

LP atr tf: Lock Profit ATR time frame - Defines the time frame for calculating the Average True Range (ATR), used in determining when to lock in profits. The ATR is a measure of volatility, and this setting helps tailor the LP strategy to current market conditions.



atr per: ATR period - The number of periods over which the ATR is calculated, affecting how responsive the ATR-based LP strategy is to recent market volatility.

atr St%: ATR start % - Activate lock profit if profit is above a given % of ATR

atr lock%: ATR lock % - The initial % of profit that will be locked after activation.

LP end%: End % (not available in control panel) - The final lock % of profit based on a algorithm that will start increasing the % of lock profit after a given time.

LP adj Aft: The time interval to start adjusting the lock %, in minutes (not available in control panel) - after that time the percentage of maximum profit locked is adjusted gradually until reaching the end lock %.

Stop Loss (SL) Settings

SL atr tf: Determines the time frame for the ATR calculation used in SL settings, tailoring the SL strategy to fit the current market volatility.

are per: The number of periods for ATR calculation in the SL strategy, affecting the sensitivity of the SL to recent price movements and volatility.

atr %st: Sets the percentage of the ATR to establish the loss level at which a stop loss is triggered. A higher value means the stop loss is set further from the entry price, allowing more room for price fluctuations before the trade is closed in loss.

SL pips: A fixed Stop Loss value, which can be set in pips or as a BPS. This defines a predetermined price level at which the trade will be closed to prevent further losses. 0 means no stop loss

2.6 THE INPUT PARAMETERS - BASKET AND NEWS TRADING SETUP



Basket STOP Trading Setup

Take Profit %: This parameter sets the target profit percentage for the entire basket of trades. When the cumulative profit of all open trades reaches this percentage of the initial equity, the trading system will automatically take profit, closing all open trades.

Stop Loss %: Specifies the stop loss threshold as a percentage of initial equity. If the collective loss of all open trades hits this percentage, the system will close all positions to prevent further losses.

Basket TIME Trading Setup

Start EA (Hour): Defines the hour when the trading system starts operations each day. Trades will not be initiated before this hour.

Stop & Close Basket (Hour): Sets the hour at which trading stops each day. Any open trades in the basket will be evaluated for closing based on current profit or loss.

Friday Stop EA (Hour): Indicates the hour on Fridays when new trading baskets are no longer initiated, allowing the system to start closing existing trades in profit. 0 means no stop.

Friday Close Basket (Hour): Specifies the hour on Fridays when all open baskets must be closed, regardless of profit or loss, to avoid holding positions over the weekend. 0 means no close.

TP if profit Below a % of Max Reached profit after X Minutes: This parameter, X minutes, works with the next parameter to set a dynamic take profit condition. If the profit percentage falls below this value after the specified minutes, take profit actions will be executed. 0 means no use.

X% of Max Reached profit: Defines the percentage after which the system will take profit on the basket.

SL if loss Below This % of Max Reached L% After X Minutes: Similar to the TP condition, this parameter, X minutes, sets a condition for executing stop loss



based on a percentage of maximum loss reached after a specified duration. 0 means no use.

X% of Max Reached loss: Determines the time after which, if the loss percentage is less than `sc_Tper_to_SL`, the system will execute stop loss actions for the basket.

2.7 NEWS TRADING SETUP

Trading the news is facilitated through the IceFX NewsInfo indicator or a file that contains the events and their associated currencies. The system will either read the output from the indicator on any chart where it is active or parse the entries in the provided file, subsequently compiling a list of currencies along with their corresponding dates. During the EA's processing phase, it will then specifically target pairs involving those currencies for trading actions

Trade the News with Below Setup: A boolean parameter that, when true, enables the trading system to adjust its operations based on news events according to the specified news trading setup.

Minutes Before News: Specifies the duration in minutes before a scheduled news event during which the system attempts to take profit on open trades to reduce risk exposure.

Percentage of Target Profit for Pair to Close Before News: Sets the percentage of the target profit at which trades should be closed before an impending news event to secure gains.

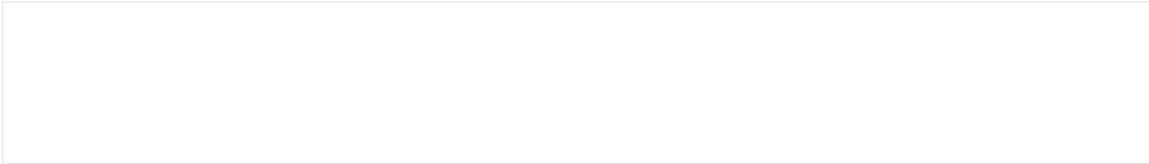
Minutes After News: Defines the pause duration in minutes after a news event, during which new orders will not be initiated to avoid market volatility.

Multiplication Factor for the Lot Size: Adjusts the standard lot size for trades initiated in response to news events, multiplying it by this factor to potentially capitalize on news-induced market movements.



Grid Size in Pips for News: Determines the grid size in pips specifically for trading on news events, setting the threshold for price movement that triggers trade entries.

Minutes to Decide if You Should Trade the Grid Change: Specifies the time frame in minutes after a news release within which the system evaluates whether to trade based on the grid change, aiming to capture profit from news-driven volatility.



2.8 STATISTICAL PROCESSING OVERVIEW

This Expert Advisor (EA) incorporates a sophisticated statistical engine designed to leverage all indicators available in MetaTrader 4, including but not limited to ATR, VOL, MA, ADX, BB, CCI, ICH, MACD, OBV, SAR, RSI, RVI, STO, WPR, STD, OMA, MFI, MOM, MKF, GAT, FRA, FOR, ENV, DEM, BUP, BEP, AWO, ALL, AD, AC, along with two custom implementations: FIB and AVW, and support for an external indicator measuring currency momentum strength.

Each indicator is set up with a common base timeframe and an additional, configurable second timeframe. The values captured by each indicator are processed to yield a singular value. This value is then normalized across pairs using two specific functions:

Function Descriptions

- `fdofxodwhGhowd`: This function calculates the moving variance for a given set of statistics. It adjusts the average and variance based on the input values and updates them using either the Exponential Moving Weighted Variance (EMWV) method or the Welford's method, depending on the `vfbydubphwkrq` setting.
- `surfhvbydoxhv`: Responsible for updating the trading symbols with new values and recalculating statistical measures, including the average, variance, and z-score, for each indicator. It maintains a historical record for comparison and statistical analysis.



Key Parameters

- `vfbDHowlphi`: Sets the base timeframe for all indicators, ensuring a consistent analytical approach across different market conditions.
- `vfbDHbshu`: Defines the duration for trade simulation, allowing for a detailed analysis of potential trading outcomes within a specified timeframe.
- `vfbvwdwbduud` & `vfbpybdyhudjhv`: These parameters manage the size of the statistical arrays and the amount of historical bar data considered for analysis, ensuring a comprehensive dataset for decision-making.
- `vfbydubphwkrq` & `vfbdoskd`: Determine the method and decay factor for calculating the moving variance, adapting the analysis to varying market volatilities.
- `vfbIpd{Ehw` & `vfbIpd{Wlph`: Limit the scope of formula combinations considered, optimizing the search for effective trading strategies within practical computational limits.
- `vfbYwuhvkrog`, `vfbIprgh`, `vfbIpd{Ohyhc`: Configure the criteria for trading decisions, selection mode for the best formula, and the depth of indicator combinations, tailoring the EA's operation to the preferred trading style.

Advanced Features

Upon initialization, the EA gathers historical data to start calculating all statistical values for indicators at each bar, identifying optimal value ranges for buy or sell orders during weekends. This process allows the EA to define the most effective indicator thresholds for trading decisions and can take a lot of time to finished depending on the number of bars to process.

When launched on additional charts, the EA can function in parallel to analyze how combinations of indicators enhance trading outcomes, significantly speeding up the data analysis process.

The EA offers extensive configurability for data processing, including array size limits, combination depth for indicators, process time limitations, and selection modes for identifying the most promising trading strategies. These settings enable a comprehensive, data-driven approach to developing and refining trading strategies.

The top 10 results from the statistical processing are documented in a CSV file and made accessible through the EA's interface, offering insights into both



time-driven simulated statistics and generated trading statistics, which can further be examined using the strategy examiner.

2.9 MAIN EA CONTROLS

Below is a structured and detailed description of the parameters for the manual, which covers both main EA controls and other/testing controls:

- `Pdjlfxpehu`: A unique identifier for the EA's orders. This allows the EA to distinguish its orders from those of other EAs and manual trades. The default value is 111.
- `vfbvwsbrughuv`: The lower margin percentage used to halt new trades. If the account equity falls below this threshold, the EA stops opening new positions to prevent further drawdown.
- `vfbraqwlfm`: Determines whether the EA pauses processing between market ticks. This can help manage the EA's computational load and responsiveness.
- `vfbraqwlfmZdlw`: Specifies the duration of the pause in seconds between processing ticks when `vfbraqwlfm` is enabled. The default is 5 seconds.
- `vfbshil` & `vfbvxiil`: These parameters allow the EA to handle symbols that have a prefix or suffix added by the broker, ensuring compatibility with a wide range of broker-specific symbol names.
- **Notification Settings** (`vfbPdlo`, `vfbSxvk`, `vfbDohuw`): These options configure how the EA notifies the user of trade openings and closings. Notifications can be sent via email (`vfbPdlo`), push notification to the MetaTrader mobile app (`vfbSxvk`), or platform alerts (`vfbDohuw`).
- `vfbfrqibiQdph`: The name of the file used to save or open specific settings configurations for the EA. This feature allows for easy switching between different strategy setups.



2.10 OTHER & TESTING CONTROLS

- `GrQrwWudgh`: A debugging tool that, when activated, prevents the EA from executing any trades. This is useful for testing the EA's behavior without risking actual trades.
- `vfbsulqwbpvj`: Enables or disables the printing of debug messages to the logs. This is helpful for troubleshooting and ensuring the EA operates as expected.
- `Volssdjhw`: The maximum slippage allowed for order execution, in pips. This setting helps to control the difference between the expected price of a trade and the price at which the trade is actually executed.
- `vfuhwu | Rug`: The number of times the EA will retry placing an order if the initial attempt is rejected by the broker. This ensures that trade orders are executed even under poor connectivity or high volatility.
- `vfbh{sFqwIdfw & vfbqlGhod | Rug & vfbpd{Ghod | Rug}`: These parameters manage the delay strategy for order retries. `vfbh{sFqwIdfw` controls the exponential factor increasing the delay between retries, starting from `vfbqlGhod | Rug` milliseconds. `vfbpd{Ghod | Rug` sets the maximum delay limit to prevent excessively long wait times.
- `vfomxvWiudph & vfomxvShulrg`: These settings are used for calculating the grid size based on the Average True Range (ATR) of EURUSD or a similar reference. `vfomxvWiudph` sets the timeframe for ATR calculation, while `vfomxvShulrg` defines the number of periods used in the ATR calculation.

Each of these parameters plays a crucial role in the customization and operational behavior of the EA, allowing users to tailor the EA's performance to their specific trading strategy and risk management preferences.

2.11 BASKET SYMBOLS CONFIGURATION

This section of the Expert Advisor (EA) settings allows for the customization of the currency pairs available for trading. By default, the EA is configured to trade the 28 major currency pairs. However, traders have the flexibility to specify their own selection of pairs, tailoring the trading strategy to suit individual preferences or market opportunities.



- `vfbghidxowbV`: When set to true, the EA uses the default set of 28 major currency pairs for trading. If set to false, the EA will consider the custom list of symbols provided by the user.
- `vfbv|perob33` to `vfbv|perob5:`: These parameters allow the user to specify up to 28 custom currency pairs for the trading basket. Each parameter corresponds to a line in the configuration, enabling the definition of a custom pair.
 - If a symbol parameter is left empty (""), the EA will revert to using the default pair for that specific line.
 - To use custom symbols, set `vfbghidxowbV` to false and specify the symbols in the respective parameters, replacing or supplementing the default pairs.

Example Use Case:

- To trade a custom basket of 10 specific pairs, set `vfbghidxowbV` to false, and fill `vfbv|perob33` through `vfbv|perob3<` with the desired symbols. Leave the remaining `vfbv|perob` parameters empty.

Guidelines for Custom Symbols:

- Ensure that the symbols are entered correctly, adhering to the broker's naming conventions but without the prefix or suffix – there is a parameter to define the suffix and prefix in the properties of the EA if the EA can't discover them by itself.
- The flexibility to define custom pairs allows traders to adapt the EA to various trading strategies, from focusing on major pairs to exploring opportunities in exotic pairs or cross rates.

By configuring the BASKET SYMBOLS settings, traders can easily customize the scope of the EA's trading strategy to align with their market analysis, risk tolerance, and trading goals. Whether utilizing the robust default set of pairs or a tailored selection of markets, these settings provide the foundation for dynamic and adaptable trading operations.



2.12 CONFIGURING INDICATOR PARAMETERS: A UNIFIED APPROACH

Our Expert Advisor (EA) harnesses the power of various technical indicators, each contributing unique insights to inform trading decisions. To maximize their effectiveness and adaptability, the EA provides comprehensive customization options, including the innovative use of dual timeframes for each indicator.

Base and Secondary Timeframe Configuration

- **Base Timeframe:** The primary timeframe for each indicator is set according to the general "Statistics" section within the EA parameters. This foundational setting determines the initial lens through which market data is analyzed.
- **Secondary Timeframe Enhancement:** For nuanced analysis, the EA offers the capability to configure a secondary timeframe for each indicator. This feature allows for the examination of market trends and patterns from an additional perspective, enriching the decision-making process.

Indicator-Specific Parameters

Beyond timeframes, the EA allows for detailed customization of each indicator's operational parameters, ensuring that traders can tailor their analysis to fit specific strategies and preferences. While the base parameters for each indicator are consistent, configuring the secondary timeframe introduces additional settings, distinguished by the inclusion of a "2" in their descriptor. This streamlined approach simplifies the customization process, making it intuitive to enhance each indicator with dual-timeframe analysis.

For example, configuring the Moving Average (MA) involves:

- **Base Timeframe Settings:** Period, shift, method, and applied price.
- **Secondary Timeframe Settings (-5):** `vfbpd5bw1phi` for the secondary timeframe selection, followed by `vfbpd5bshu`, `vfbpd5bvk`, `vfbpd5bphwkrq`, and `vfbpd5bsu1fh` to mirror the base timeframe settings with secondary timeframe specificity.



This dual-level configuration is applicable to all integrated indicators, including but not limited to ATR, ADX, Bollinger Bands®, CCI, Ichimoku Kinko Hyo, and MACD, each supporting a similar pattern of primary and secondary customization.

Custom Indicators Configuration

Our EA incorporates several custom indicators, including Swing Points for AVWAP & Fibonacci, and an external indicator integration for CMSM. These indicators are designed to enhance your trading strategies by providing additional layers of analysis. Below, you will find detailed explanations for configuring these custom indicators within the EA.

2.12.1 Swing Points for AVWAP & Fibonacci (SP)

Swing Points (SP) are crucial for identifying pivotal market turns and can be applied to both AVWAP (Anchored Volume Weighted Average Price) and Fibonacci retracement and extension levels.

- **SP Detection Window** (`vfbvzsbdp{bZ, vfbvzsbdp1qbZ`): Configures the maximum and minimum windows for detecting swing points within the primary timeframe, allowing for precise pinpointing of significant market turns.
- **SP Widening Window Period** (`vfbvzsbidfwrU`): Adjusts the frequency of widening the detection window, enhancing the flexibility in identifying swing points over different market conditions.
- **Secondary Timeframe Configuration** (`vfbvzs5b` **prefix**): Mirrors the primary settings for swing point detection but applies to a secondary timeframe, offering a multi-layered approach to swing point analysis.
- **Swing Point Bar Count** (`vfbvzsbshu`): Sets the number of bars over which swing points are detected, ensuring comprehensive coverage of market activity.



2.12.2 Fibonacci Retracement and Extension Levels (FIB)

Fibonacci levels provide insight into potential support and resistance zones based on historical price movements.

- **Retracement Levels** (`vfbi1ebuhwOhy`): Defines specific Fibonacci retracement levels to monitor, offering insights into potential reversal points.
- **Extension Levels** (`vfbi1ebh{wOhy`): Specifies Fibonacci extension levels, aiding in identifying potential continuation points beyond the initial price range.

2.12.3 Anchored Volume Weighted Average Price (AVWAP)

AVWAP combines price with volume data to provide a dynamic average price that considers trading volume.

- **Percentage Price Cross** (`vfbdyzbshuG`, `vfbdyz5bshuG`): Determines the percentage threshold for when a price crosses AVWAP levels, triggering new anchor points. This setting is vital for adapting AVWAP calculations to current market dynamics.

2.12.4 External Indicator - Currency Momentum Strength Meter (CMSM) Integration

The EA seamlessly integrates with the Currency Momentum Strength Meter (CMSM), specifically designed to utilize chart objects from the CMSM V17.05 for MT4 by grandaevus. This powerful indicator provides an in-depth analysis of currency strength, leveraging real-time data to offer a comprehensive view of market dynamics.



Configuration for Enhanced Compatibility:

- **Chart Objects Utilization:** The EA is configured to interact directly with the chart objects of the CMSM indicator present in the same chart as the EA. This ensures that currency strength metrics are accurately reflected in the EA's trading strategies.
- **Timeframe Flexibility:** The CMSM indicator's unique ability to be launched with different timeframes, each marked with a specific identifier, allows for a versatile analysis of currency momentum across multiple temporal dimensions. This adaptability is critical for tailoring strategies to various market conditions.
- **Future-Proofing Through Extensibility:** Recognizing the potential for future updates to the CMSM indicator or the emergence of similar tools, the EA's integration is designed with extensibility in mind. Should there be updates to the CMSM V17.05 or new versions released, the EA can accommodate these changes through the addition of more keywords, ensuring compatibility with chart objects of other indicators.

This level of integration underscores our commitment to leveraging advanced analytics in our EA, providing users with dynamic and strategic trading insights. By maintaining compatibility with leading indicators like CMSM, the EA empowers traders to navigate the forex market with enhanced precision and confidence.



3 EXPLORE MORE AND JOIN THE DISCUSSION:

For those interested in diving deeper into the workings of the EA discussing strategies, sharing insights, or seeking support, we've set up a dedicated thread on Forex Factory. This platform offers a vibrant community for traders and developers alike, where experiences, tips, and enhancements can be shared freely.

Visit our thread on Forex Factory: [EA Toolkit - Your All-in-One Trading Solution](#)

Whether you're looking to explore the code, understand the logic behind trade decisions, or simply connect with fellow users, the Forex Factory thread is your go-to resource. It's also a place where we'll share updates, sneak peeks at upcoming features, and occasionally seek direct feedback on new ideas.

We believe that a strong, knowledgeable community is key to the success of the EA, and we encourage you to join the conversation. Your insights and feedback are invaluable to us as we strive to make EA Toolkit the best it can be.