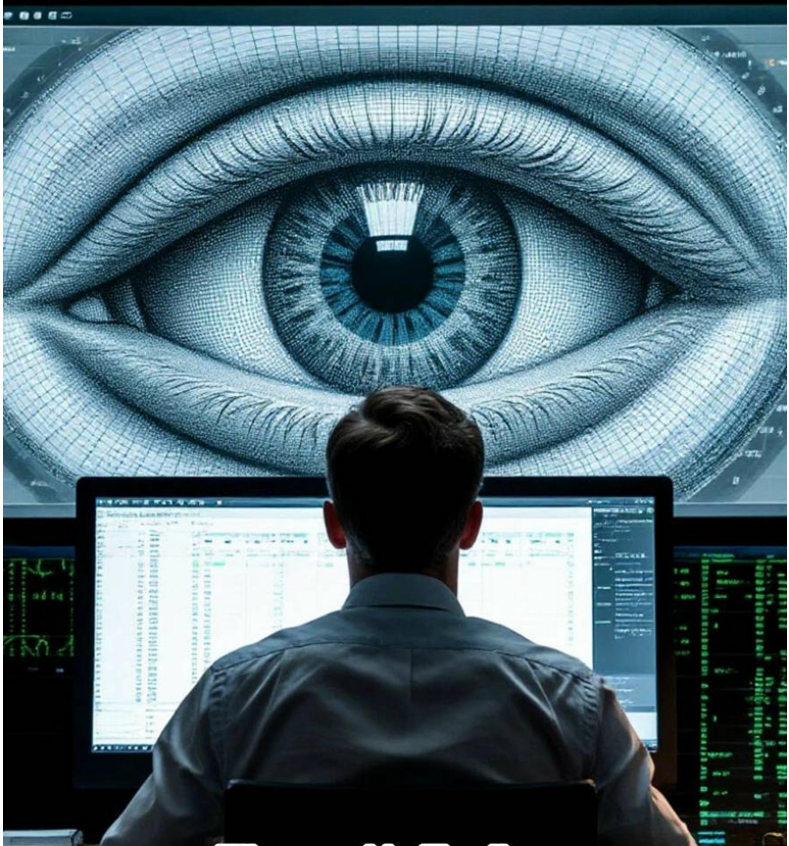
A. Borovkov



Fibonacci in Trading: The Mathematics of Market Movement. A Practical Guide to Using Correction, Expansion, and Fan Lines in the Forex Market

Алексей Боровков

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Аннотация

Markets do not move chaotically. Behind the apparent chaos of quotes, there are rhythms, proportions, and patterns that have been observed by humanity for centuries. One of the keys to understanding these rhythms is the Fibonacci numbers and their derivatives, the "golden" proportions. This book is not about finding the "holy grail." Instead, it is about adding a powerful and objective tool to your trading arsenal for identifying potential reversal zones, trend continuation, and risk management.

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Part 1: Fundamentals. Numbers that Rule the World

Chapter 1: The History and Mathematics of Fibonacci Numbers

- A Brief History of Leonardo of Pisa

The name of Leonardo of Pisa (c. 1170 – c. 1250), better known by his nickname Fibonacci (son of Bonacci), is inextricably linked to the revolution that took place in European mathematics and commerce at the end of the Middle Ages.

1. The Son of a Merchant and a Traveler

Leonardo was born in the Italian trading republic of Pisa, the son of a wealthy merchant and government official, Guglielmo Bonacci. His father was appointed a customs official in the largest port of North Africa, Bejaia (modern-day Algeria). It was there that he took his young son to learn the intricacies of commerce.

In Bejaia, young Leonardo was immersed in a world that was vastly different from Europe. Here, Arab, Indian, Byzantine, and African trade routes converged. He quickly realized the tremendous advantage of the Arabic and Indian methods of calculation over the cumbersome Roman numeral system used by European merchants. Try quickly multiplying CXVII by XXIV in your head, and you will understand his frustration.

2. The Student of the East

Fibonacci did not limit himself to commercial arithmetic. He spent years traveling along the Mediterranean coast (Egypt, Syria, Sicily, Greece), studying the works of the great mathematicians of the Islamic world – Al-Khwarizmi, Abu

Kamil, and others – from Arab and Byzantine teachers.

His genius was not just in studying, but in synthesizing. He was able to combine the knowledge of Greek geometry (Euclid), Indian arithmetic, and Arabic algebra into a unified, logical system.

3. "The Book of Abacus" (Liber Abaci) – a commercial code of the new era

Returning to Pisa around 1200, Fibonacci summarized his knowledge in the fundamental work "Liber Abaci" (The Book of Calculations), published in 1202. This was not a dry mathematical theory, but a practical guide for merchants, bankers, and scholars.

In the book, he:

· Introduced the Indo-Arabic numerals (0-9) and the decimal system to Europe. He clearly demonstrated how much more effective they are than Roman numerals for any calculations, from currency conversions to profit calculations.

· He analyzed in detail the tasks that are vital for trading: calculating interest rates, exchanging currencies, distributing profits in partnerships, and resolving commercial disputes.

· He presented the famous rabbit problem, which described the numerical sequence (1, 1, 2, 3, 5, 8, 13…) later named after him. For Fibonacci himself, it was just a curious example, not a central discovery.

The book caused a sensation. Leading Italian merchants and bankers quickly recognized the power of the new tool. "Liber Abaci" became a textbook for generations of European merchants, laying the mathematical foundation for the future flourishing of banking and stock trading during the Renaissance.

4. Legacy: From Trading Calculations to the Laws of Nature

Fibonacci was respected at the court of Emperor Frederick II, participated in mathematical tournaments, and wrote several other significant works on geometry and number theory.

Why is this story important for a trader?

Because it reminds us of the most important thing: Fibonacci's mathematics were born out of the practical needs of trading. His sequence and proportions were not just abstract theories; they became a tool for analyzing, predicting, and managing risks in a world where everything was subject to movement and exchange.

Ironically, eight centuries later, his name is associated not with the debit and credit of medieval merchants, but with the search for harmony and order in the seemingly chaotic movement of prices in financial markets. As before, Fibonacci numbers provide us with a coordinate system, a language for understanding the hidden logic of a market where the interests of millions of modern "traders" collide.

Moving on to mathematics:

This historical foundation brings us to the most important part—the numbers themselves. How did a simple recursive sequence born from the hypothetical reproduction of rabbits become the key to the "golden ratio" that defines the proportions of the Parthenon, the spiral of a seashell, and, as we will see, the behavior of the crowd in the Forex market? This will be discussed in the next section of the chapter.

• The Fibonacci sequence: 0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89…

This seemingly simple chain of numbers is the mathematical heart of the method we are studying. Understanding its nature is the key to using all the following tools.

1. How it is constructed: A simple rule that generates complexity.

The sequence starts with 0 and 1. Each subsequent number is the sum of the two previous numbers.

· 0 + 1 = 1
· 1 + 1 = 2
· 1 + 2 = 3
· 2 + 3 = 5
· 3 + 5 = 8

· 5 + 8 = 13
· … and so on indefinitely.

Formally, this is written as: $F(n) = F(n-1) + F(n-2)$, where $F(0) = 0$, $F(1) = 1$.

This is a recurrent sequence – its future is completely determined by its past. It is this idea of "dependence on the previous state" that resonates with the behavior of the market, where the current price is always a derivative of past price movements and the psychology of participants.

2. The main property: The desire for the "Golden ratio" (Phi, $\varphi \approx 1.618$).

This is where the magic begins. If we start dividing each number in the sequence by the previous one, we will see an amazing pattern:

· 3/2 = 1.5
· 5/3 ≈ 1.666…
· 8/5 = 1.6
· 13/8 = 1.625
· 21/13 ≈ 1.615…
· 34/21 ≈ 1.619…
· 55/34 ≈ 1.6176…
· 89/55 ≈ 1.61818…

The further we move along the sequence, the closer the ratio of adjacent numbers approaches the irrational number ≈ 1.6180339887…, known as the Golden Ratio (Phi, φ).

The same is true for the inverse operation (dividing the previous by the subsequent), which approaches the number 0.618 (1 / 1.618).

3. Why is it important for us? The mathematics of mass psychology.

The golden ratio and its derivatives (0.236, 0.382, 0.5, 0.786, 1.618, etc.) are not just beautiful numbers. They are universal proportions of harmony, balance, and natural development, observed in the spiral structure of galaxies, the nautilus shell, the branching of trees, and the proportions of the human body.

The key takeaway for the trader: The market is a product of the collective psychology of thousands and millions of people. This psychology, as part of human nature, perceives Fibonacci-based proportions as levels of natural tension, saturation, and reversal on an unconscious level.

When the price makes a strong movement (impulse), market participants intuitively expect a correction. But how deep is it? Experience shows that the most likely points of correction completion often lie at levels derived from the golden ratio:

23.6%, 38.2%, 50.0%, 61.8%, and 78.6%.

· 38.2%: A shallow, "healthy" correction.
· 61.8% (1/φ): Deep, but still within the trend. The most important level.
· 50.0%: Although it is not a Fibonacci number, it is a key psychological balance level that the market often respects.

4. Derived key levels used in trading:
How do we get the other percentages that are important to us?
· 23.6%: This is the result of dividing a number in the sequence by a number two positions ahead (for example, 8/34 ≈ 0.235).
· 38.2%: Dividing a number by a number one position ahead (13/34 ≈ 0.382).
· 61.8%: Reverse The value of K is φ (1 / 1.618 ≈ 0.618).
· 78.6%: The square root of 0.618 (√0.618 ≈ 0.786).
· 161.8%: The Golden Ratio itself (1.618).

Conclusion of the section:
Thus, the Fibonacci sequence is not just a numerical puzzle. It is a mathematical bridge that connects the laws of natural growth with the collective psychology of the market. The price, like a living organism, tends to follow these natural proportions in its movement. The trader's task is not to guess, but to use objective Fibonacci levels to identify areas where the market's response

is most likely. In the following chapters, we will learn how to apply these levels to a chart and create comprehensive trading strategies.

• "The Golden Ratio" (Phi, $\varphi \approx 1.618$) and its reciprocal (0.618)

If the Fibonacci sequence is a musical scale, then the number Phi (φ) is its main, fundamental note that creates harmony. It is the key that transforms a series of numbers into a system for analyzing proportions.

1. What is the Golden Ratio?

It is an irrational number ($\approx 1.6180339887\ldots$), which arises as a solution to a simple but elegant problem: to divide a segment into two parts in such a way that the ratio of the whole segment (C) to the larger part (A) is equal to the ratio of the larger part (A) to the smaller part (B).

$C / A = A / B \approx 1.618$

This ratio is φ (Phi). In other words, if you take a line segment, the golden ratio point will divide it approximately in a 62% / 38% ratio.

2. Connection to the Fibonacci sequence

As we have already seen, the ratio of adjacent Fibonacci numbers converges to φ. But the connection goes deeper:

· φ can be derived from the properties of the sequence: $\varphi = (1 + \sqrt{5}) / 2$.

· φ has unique mathematical properties.

For example:

· $\varphi + 1 = \varphi^2$ ($2.618\ldots = 1.618\ldots^2$)

· $1 / \varphi = \varphi - 1 \approx 0.618$ – this is its reciprocal, a number that is no less important in trading.

· φ can be obtained by continuing the Fibonacci sequence in the opposite direction (…-8, 5, -3, 2, -1, 1, 0, 1, 1, 2, 3…) – the ratio remains the same.

3. The inverse value: 0.618 – the main correction level

The number 0.618 (61.8%) is 1 / φ. In trading, this is not just a mathematical transformation. It is the most significant and powerful Fibonacci correction level.

· Psychological meaning: If the price movement retraces 61.8% of the previous impulse, it is perceived by the market as a deep but natural correction that does not disrupt the trend structure. This is the point of maximum balance, after which it is highly likely that the initial movement will continue. Many traders are waiting for a reaction at this level.

4. Why do these proportions "work" in the market?

· Harmony and expectation: φ and 0.618 are universal proportions of aesthetic harmony and growth that are inherent in nature. Human perception (including the perception of charts and proportions) subconsciously seeks these harmonious relationships. When the price approaches these proportions, there is a collective expectation of a reversal or reaction.

· Self-fulfilling prophecy: Since millions of traders around the world are watching the same levels, they are concentrating their orders (stop-losses, take-profits, pending orders) around them. This concentration of liquidity causes the market to react to these zones.

· Decision-making level: For large players (institutional investors, banks), the 61.8% and 38.2% levels are often logical decision-making zones for entering a trend at a "good price" after a pullback.

5. Derived levels: the whole Fibonacci family

From φ and 0.618, other key levels occur that we use:

· 0.382 (38.2%): This is 1 – 0.618. The level of a shallow, "first" correction.

· 0.236 (23.6%): This is 0.618 * 0.382 or 0.618^2. A weak level, often used to confirm the strength of a trend.

· 0.786 (78.6%): This is the square root of 0.618 ($\sqrt{0.618}$). A

deep and important level, an alternative to 61.8%.

· 1.272 and 1.618: These are extensions (√φ and φ), targets for continuing the movement.

A practical conclusion for a trader:

Remember this pair as the foundation of the foundations:

· 1.618 (φ) is the target (extension, expansion of momentum).

· 0.618 is the key reversal point (correction, depth of retracement).

They do not guarantee that the price will reverse exactly at these points, but they indicate areas where the probability of a strong market reaction is much higher than in any random location on the chart. Your task is to learn how to find these zones and confirm signals in them with other tools.

Next, we will look at how these abstract numbers turn into specific tools on the chart – correction and expansion levels.

• Derived key ratios: 0.236, 0.382, 0.5, 0.618, 0.786, 1.0, 1.272, 1.618

Now that we know the ancestors – φ (1.618) and 0.618 – it's time to get acquainted with the whole "family". These derived ratios are the very lines that we will put on the chart. Each of them has its own mathematical genesis and unique trading

interpretation.

They can be divided into three groups: correction levels, base level, and expansion levels.

I. Correction Levels (Depth of Rejection)

These levels answer the question: "How deep can the retracement be against the main trend?". They are measured as a percentage of the previous movement.

· 0.236 (23.6%) – Weak level.

· Origin: 0.618^3 or the ratio of a Fibonacci number to a number three positions ahead (for example, $8/34 \approx 0.235$).

· Trading meaning: A very shallow correction. It often serves as a temporary pause in a powerful trend. A rebound from this level indicates the exceptional strength of the current movement. Its breakout is the first signal that the correction may deepen.

· 0.382 (38.2%) – Moderate correction.

· Origin: $1 – 0.618$ or 0.618^2.

· Trading meaning: The most common and “healthy” depth of a pullback. It is believed that the trend retains a good chance of continuation after a rebound from this level. This is the first serious zone for finding a trend entry point.

· 0.500 (50.0%) – Balance level (NOT a Fibonacci number, but a key one!).

· Origin: Simply half (1/2). Although it is not formally a Fibonacci level, the market respects it as the deepest psychological level of symmetry and balance between bulls and bears.

· Trading meaning: It often acts as strong support/resistance. Many professional traders (such as followers of Elliott Wave Theory) consider it mandatory to use alongside the "classic" Fibonacci levels.

· 0.618 (61.8%) – Golden correction (Main level).

· Origin: 1 / φ (the inverse of the golden ratio).

· Trading meaning: The most important and significant level. A deep but still "legitimate" correction within the trend. It is considered the last boundary, and if the price holds it, the trend is alive. This is where the maximum number of orders and traders' attention is concentrated. There is a high probability of a strong price reaction.

· 0.786 (78.6%) – Deep correction.

· Origin: √0.618.

· Trading meaning: Alternative deep level. Often is the border between deep correction and the beginning of a trend reversal. Especially important in some modern trading techniques. If the price breaks through this level, the probability of a trend change increases dramatically.

II. Basic Level

· 1.000 (100.0%) – Level of complete correction.

· Origin: Complete return of the price to the beginning of the impulse.

· Trading meaning: In fact, it says that there is no trend. The movement has been completely "compensated." However, in the context of extensions (as we will see later), this level becomes a key target for the next impulse (extension).

III. Expansion Levels (Movement Targets)

These levels answer the question: "Where can the trend extend after the correction is complete?" They are measured in percentages of the original impulse's length.

· 1.272 (127.2%) – The first expansion target.

· Origin: $\sqrt{\varphi}$ (square root of 1.618).

· Trading meaning: A frequent and conservative target for taking part of the profit. A move towards this level indicates a resumption of trend strength.

· 1.618 (161.8%) – The Golden Expansion (Classical Target).

· Origin: The Golden Ratio itself, φ.

· Trading meaning: ** The main and strongest target. ** If the trend is really strong, the price often reaches this level. Many traders set take-profit levels around 1.618.

· 2.618 (261.8%) – Strong expansion.

· Origin: φ^2 or 1.618 + 1.

· Trading meaning: Target for very strong, impulsive, and

often "panic" market movements.

Practical summary and the most important concept "Cluster"

How to use it?

1. Correction (0.236 – 0.786): You are waiting for an upward roll in a downward trend or a roll down in an upward trend. Apply the Fibonacci grid from the maximum to the minimum (in a downward trend) or from the minimum to the maximum (in an upward trend). Your potential entry points into the trend are reboots from these levels, especially from 0.382, 0.5, and 0.618.

2. Extension (1.272 – 2.618): After you enter a trade on a pullback, you apply a grid of extensions (from the beginning of the impulse through its end to the end point of the correction). Your take-profit targets are the levels of 1.272 and 1.618.

The key secret is CLUSTERS.

The most powerful levels are not single levels, but zones where several Fibonacci tools converge (for example, the 61.8% correction level of one movement coincides with the 127.2% extension level of another). These zones (clusters) become magnetic fields for the price, and the probability of a reversal or strong reaction is highest in these zones.

Conclusion:

These numbers are your toolkit. They do not provide 100% guarantees, but they do provide a map of probabilities. By placing this map on your chart, you can stop guessing and start trading in areas where major players are making decisions and market psychology is focused. In the following chapters, we will explore in detail how to technically apply these levels and create trading strategies based on them.

• The main conclusion: The universal language of proportions

Throughout this chapter, we have traced the path of numbers – from the problems of medieval merchants to the charts of modern Forex. Now it is time to put all the elements together and formulate the fundamental principle on which the whole method is based.

Fibonacci numbers and the Golden ratio derived from them ($\varphi \approx 1.618$) are not an invention of man, but a fundamental discovery that describes the principle of harmonious growth, development and balance in the universe around us.

1. Universality in nature and culture:

· Botany: The arrangement of seeds in a sunflower inflorescence, scales in a pine cone, or petals in many flowers follows the Fibonacci sequence, providing optimal packing and access to light.

· Biology: The spirals of mollusk shells (such as the nautilus)

unwind in a logarithmic spiral based on φ. The proportions in the skeleton of many animals and even humans (the ratio of the length of the phalanges of the fingers, the arrangement of leaves on the stem) are close to the golden ratio.

· Art and architecture: From the proportions of the Parthenon in Athens and the pyramids in Giza to the compositional solutions in Leonardo da Vinci's paintings ("The Mona Lisa," "The Vitruvian Man") and modern masterpieces, the golden ratio has been used for centuries as a standard for aesthetic harmony.

· Cosmology: The shape of galaxies, the trajectories of planets, and even the relationships in quantum physics demonstrate the manifestation of these mathematical constants.

2. Connection to financial markets: a psychological archetype

And here is the key transition: Financial markets are not a chaotic system. They are a product of the collective behavior of thousands and millions of people. And human psychology, with all its fears, greed, herd instinct, and intuitive perception of harmony, is an integral part of nature.

Therefore, the laws that govern natural systems and aesthetic perception are also reflected in the mass psychology of the crowd in the market.

· The price moves in waves: Any trend consists of impulses (movement towards a goal) and corrections (rebound, break).

These waves naturally tend to proportional relations.

· Levels as zones of collective attention: When traders see a strong movement, their mind on an unconscious level looks for points to take profit or enter the market. Derived from φ levels (23.6%, 38.2%, 61.8%) become such universal, intuitive decision-making points.

· Self-fulfilling prophecy: Since these levels are known and used by a huge number of institutional and retail traders, banks, and algorithms, limit orders, stop-losses, and take-profits are concentrated around them. This concentration of liquidity causes the price to react to these zones, increasing their significance.

3. Practical interpretation for traders:

Thus, the Fibonacci levels on a chart are a map of areas where the price is more likely to change. They do not say, "Here is where the price is guaranteed to reverse." They say, "This is where the market's attention is focused, where a strong battle between bulls and bears is most likely to occur, and where you should look for confirming signals to enter a trade."

The outcome of Chapter 1:

We have found out that the Fibonacci method in trading is not a technical indicator in the usual sense. It is an applied application of the universal law of proportions to the analysis of mass psychology behind the price movement. Having mastered

this language, the trader ceases to be a passive observer of chaos and gets the opportunity to “speak” with the market in the language of its internal, natural logic.

This is the foundation on which we will build all further building of practical tools: correction levels, extensions and the Fibonacci fan. Let's get to practice!

Chapter 2: Basic Fibonacci Trading Tools

• Fibonacci Retracement Levels

The main tool for searching for pullback (correction) zones within the existing trend.

Fibonacci retracement levels are the first and main tool that every trader who studies this method learns. If we think of the trend as a step forward, then a correction is an inevitable small step back before the next breakthrough. The fibo grid helps you determine where this step back is likely to end.

Tool Philosophy: The Logic of a Pullback

Any sustainable price movement is not straight-line. After an impulse (a strong movement in one direction), there is a period of consolidation or a pullback, caused by profit-taking by part of the participants. Fibonacci levels (23.6%, 38.2%, 50%, 61.8%, 78.6%) are potential support levels (in an upward trend) or resistance levels (in a downward trend) where this fixation process can end and new forces can join the trend.

How to correctly build a correction grid?

This is a critical skill that determines the success of your

future work. There are only two steps, but they must be performed flawlessly.

1. Identify a significant trend impulse.

· The chart should clearly show a strong unidirectional movement (large candles with few retraces).

· Work on the timeframe of the trend you want to trade (for example, for intraday trading, we look for momentum on H1 and an entry point on M15).

2. Apply the grid FROM the initial point of the impulse TO its final point.

· For an UPWARD trend: Hang the grid FROM the MINIMUM (point 0%) TO the MAXIMUM (point 100%) of the impulse.

· For a DOWNWARD trend: Hang the grid FROM the MAXIMUM (point 0%) TO the MINIMUM (point 100%) of the impulse.

Correct: The grid is stretched in the direction of the trend.

Error: The grid is stretched against the trend or between random points. This will give false levels.

Interpretation of levels and trading scenarios

After applying the grid, horizontal lines appear on the chart.

Their role changes depending on the context of the trend.

In an UPWARD trend (grid from bottom to top):

· The levels of 38.2%, 50.0%, and 61.8% become a potential support zone for the price during a pullback.

· The trader's task is to look for buying signals in this zone.

IN A DOWNSIDE TREND (grid from the top to the bottom):

· The same levels of 38.2%, 50.0%, 61.8% become a zone of potential resistance on the price rebound upwards (downward correction).

· The trader's task is to look for signals to sell in this zone.

Scenario 1: Rebound from the level (Ideal situation)

The price, during the correction, carefully reaches one of the Fibo levels (most often 38.2%, 50% or 61.8%), demonstrates signs of reversal (candle patterns, slowing down the pace) and resumes movement towards the main trend.

· Action: Consider entering a trade on the trend. Stop-loss is placed behind the next Fibo level or behind the nearest local extremum.

Scenario 2: A shallow pullback to 23.6%

This indicates an exceptional trend strength. The correction is minimal, and the market offers few "cheap" entries.

· Action: You can consider entering with a small stop loss, but be cautious as the price may move further without you.

Scenario 3: Breakthrough of the key level 61.8% and movement to 78.6%

Signals the weakness of the current trend movement. The probability of its continuation decreases. A breakthrough of 78.6% often indicates a possible trend change.

· Action: Cancel plans to enter the old trend. Consider entering a trade on a breakthrough or waiting for the formation of a new structure.

Key principles of working with recovery:

1. The trend is your friend. Always correct against the trend. If there is no trend, there is no point in using a Fibonacci correction.

2. Zone, not line. The price rarely reverses exactly at a level. More often, it is a zone (±5-10 points) around the level where reversal patterns are formed.

3. Confirmation is mandatory! The Fibonacci level is a target. However, you need a trigger to fire. They are:

· Candlestick patterns (Pin Bar, Engulfing, Inside Bar).

· Divergence on the oscillator (RSI, MACD, Stochastic).

· Coincidence with a horizontal support/resistance level.

4. The 50% level is your ally. Do not ignore this psychological

level. It often works better than the "classic" Fibo levels.

5. The older the timeframe, the stronger the level. Levels built on a daily (D1) or weekly (W1) chart are much more significant than those on a five-minute (M5) chart.

A typical mistake of beginners:

Applying a grid to the entire chart or to an unimpressive, sideways movement (flat). Fibonacci only works on clearly defined trend impulses. If there is no impulse, the tool loses its meaning.

Practical exercise:

Open a historical chart of any currency pair (for example, EUR/USD) on the H4 timeframe. Find an obvious upward or downward impulse. Apply the correction grid correctly. Track how the price subsequently behaved at these levels. Note at which level the reversal most often occurred.

Summary: Fibonacci retracement levels are your map for navigating the phases of a trend pullback. They do not predict the future, but they point to areas where the laws of probability and mass psychology converge. By learning how to apply them correctly and patiently wait for confirmation in these zones, you will take the first and main step from chaotic trading to meaningful trading. In the next section, we will learn how to set profit targets using Fibonacci Extension levels.

• Fibonacci Extension Levels (Fibonacci Extension)

A tool for determining the targets of the movement after the correction is completed.

If the correction levels answer the question "Where will the retracement end?", then the Fibonacci extensions answer the next, no less important question: "And where can the price go further after the retracement is completed?".

This tool is a logical continuation of the correction grid and is used to determine potential targets (take-profits) when entering a trend trade.

Tool philosophy: Defining targets based on momentum

The idea is that a new momentum movement (after a correction) is often related to the previous momentum through the same "golden" proportions. Knowing the length of the market's first "step" (momentum A→B) and the depth of the "rest" (correction B→C), we can project the possible length of the next "step" (momentum C→D).

How to properly construct an expansion grid?

Three key points are used here. Defining them correctly is the foundation of success.

Three points for construction:

1. Point A (0%): The beginning of the initial trend impulse.
2. Point B (100%): The end of the initial trend impulse (its extremum).
3. Point C (correction): The end of the correction (rebound) against this impulse. It is from this point that we will look forward to the goals.

The sequence of construction:

In any trading terminal, the Fibonacci Extension tool requires the sequential indication of these three points.:

1. Click on A (the bottom of the momentum in an uptrend).
2. Drag to B (the top of the pulse). The correction grid will appear.
3. Click and stretch to C (correction depth). There will be levels above point B (in an uptrend) – these are the expansion goals.

Key expansion levels and their interpretation

After the construction, you will see levels that exceed 100% (point B). The most significant levels are:

· 61.8% (0.618): Conservative target. If the new impulse is weak, it may end here.

· 100.0% (1.000): Classic, minimum target. The new impulse

reaches a length equal to the first impulse (A→B). This is a very frequent and important level.

· 127.2% (1.272): Strong target, square root of 1.618.

· 161.8% (1.618): "Golden" target. The main and most powerful target for a strong trend movement. This is often where the entire wave structure ends.

· 261.8% (2.618): Target for exceptionally powerful, extreme movements.

Practical application: Take Profit Strategy

1. You enter a trade on a rebound from the correction level (for example, from 61.8%) in the direction of the main trend.

2. Immediately after entering, you build a grid of extensions at points A, B, and C.

3. Your targets (take profits) are set at key expansion levels:

· First target (TP1): 100% expansion. At this level, you can fix a part of the profit (for example, 50-70% of the position).

· The second target (TP2): 161.8% of the expansion. You can hold the remaining part of the position until this level.

Example for an upward trend:

· A: Minimum at 1.0000.

· B: Maximum at 1.0200 (impulse = 200 points).

· C: Correction ended at 1.0140 (61.8% correction level).

· Calculation: The 161.8% expansion level will be equal to: B + (B − A) * 1.618 = 1.0200 + 0.0200 * 1.618 = 1.0200 +

0.03236 = 1.05236.

Synthesis with correction levels: Warning about a reversal

Expansion levels can serve not only as targets, but also as warning signals. If the price, having reached, for example, the level of 161.8%, demonstrates signs of exhaustion (a strong reversal candlestick formation, divergence), this level may become the beginning of a new, deep correction or even a reversal. Thus, for a trader sitting in a trade, this is a signal to fix the remaining profit, and for a counter-trend trader – a potential entry point.

Important principles of working with extensions:

1. Priority 161.8%: For strong, pronounced trends, the main focus should be on the 1.618 level.
2. Don't look ahead: Don't build extensions until the correction (point C) has been formed and confirmed. Building on the fly is like guessing.
3. Target cluster: The strongest areas are where the Fibonacci extension level coincides with a key horizontal resistance/support level. For example, the 161.8% target is at an important round number or historical high.
4. Use extensions to find exit points, not entry points. Entering a trade at the 161.8% extension level in the hope of a continuation is an extremely risky strategy.

Resume:

Fibonacci extension levels translate the analysis from the "where to enter" plane to the "where to exit with a profit" plane. It is a transaction management and goal setting tool based on the same mathematical harmony. Together, correction and expansion form a complete cycle of analysis: we find an entry point on a pullback and determine reasonable goals for the movement that should follow it. In the next section, we will look at the Fibonacci Fan, a tool that adds dynamic trend lines to our analysis.

• Fibonacci Fan (Fibonacci Fan): Dynamic support/resistance lines that define a trend corridor

The Fibonacci Fan is a unique tool that transforms static horizontal retracement levels into dynamic slanted trend lines. Unlike the retracement grid, which shows "where the price can roll back," the fan helps you understand how the price will move over time within a trend channel.

The essence of the tool: Dynamic support and resistance

If horizontal Fibonacci levels are "floors" in a building, then the fan is inclined support beams that show the speed and angle of trend development. These lines can serve as:

· Dynamic support in an upward trend

· Dynamic resistance in a downward trend

How to correctly build a Fibonacci fan?

The construction is similar to the correction levels, but with important nuances:

Three steps of construction:

1. Determine a strong trend impulse (point A → point B)
2. Select the "Fibonacci Fan" tool in the trading platform
3. Apply the fan according to the trend direction:

· For an upward trend: from the minimum (A) to the maximum (B)

· For a downward trend: from the maximum (A) to the minimum (B)

Result: Three diverging lines will appear, starting from point A and passing through the levels corresponding to 38.2%, 50.0%, and 61.8% of the vertical distance between A and B.

Interpretation and practical application

Upward trend:

· Line 38.2%: The first and strongest dynamic support. A rebound from this line indicates a strong trend

· Line 50.0%: Moderate support. A breakout may signal a slowdown in the trend

· Line 61.8%: The last support level. A breakout often predicts a reversal or a deep correction

Downward trend (reverse logic):

· Fan lines become dynamic resistance on price rebounds upward

Three key scenarios of use

Scenario 1: Correction to the fan line with subsequent continuation of the trend

· The price rolls back to one of the fan lines (more often to 38.2% or 50.0%)

· A reversal candlestick pattern (pin bar, absorption) is formed

· The price resumes movement towards the main trend

· Action: Entering a trend trade with a stop loss behind the fan line

Scenario 2: Breakthrough of the 61.8% line as a signal of trend weakening

· The price breaks through and settles below (for an upward trend) the 61.8% line

· This often coincides with the breakdown of the corresponding horizontal level

· Action: Taking profit on trend positions, preparing for a possible reversal

Scenario 3: Fan lines as trend channel guides

· The price moves along the fan line, using it as a guide

· This indicates a stable, controlled trend

· Action: Adding to the position when the price rebounds from the fan line

Cluster zones: Synthesis of the fan and horizontal levels

The maximum efficiency of the fan is achieved when it is combined with horizontal Fibonacci levels:

Example of a powerful cluster:

1. Horizontal correction level of 61.8%
2. Fan line of 61.8%
3. Important round number level or previous extremum

The intersection of these elements creates a super-powerful zone where the probability of a strong price reaction is maximized.

Advantages and limitations of the Fibonacci fan:

Advantages:

· Provides dynamic levels that adapt to the speed of the trend

· Visualizes the acceleration/deceleration of the trend

· Works effectively in strong trend movements

· Perfectly complements horizontal Fibonacci levels

Limitations:
· Less accurate in sideways movements (flat)
· Requires a strong initial impulse for construction
· May give false signals in case of sharp changes in volatility
· Like all Fibo instruments, requires confirmation of signals

Practical recommendations:
1. Combine with other tools: The fan is most effective in combination with horizontal Fibonacci levels and classic support/resistance levels
2. Use on higher timeframes: On D1 and H4, the fan provides more reliable signals than on lower timeframes
3. Monitor the angle of inclination: A steep angle of the fan lines indicates a strong trend, while a flat angle indicates a weak trend
4. Do not overload the chart: Use 1-2 fans simultaneously on the most significant impulses
5. Confirm signals: Always wait for confirmation from Price Action (candle patterns) before entering a trade

Typical mistakes when working with a fan:
1. Incorrect construction: Applying a fan against the direction of the trend or between random points
2. Ignoring the context: Using a fan in a flat or overbought/

oversold market

3. Too many fans: Applying multiple fans creates visual chaos and hinders analysis

4. Lack of confirmation: Entering a trade only based on the fan line touching without additional signals

Practical exercise:

1. Open the daily chart of EUR/USD
2. Find a clear upward or downward impulse
3. Properly construct a Fibonacci fan
4. Analyze how the price interacted with the fan lines in subsequent periods
5. Note which cases the fan lines worked as support/resistance and which were broken through

Conclusion:

The Fibonacci Fan is a powerful tool that adds a dynamic component of analysis to your arsenal. It helps you not only identify where the price may roll back, but also understand how it will move over time while maintaining its trend structure.

Remember: the fan is not a magical line that guarantees a reversal. It is a coordinate system that helps you navigate the trend. When combined with horizontal Fibonacci levels, candlestick analysis, and proper risk management, the fan becomes a valuable tool for identifying high-probability trading

opportunities.

In the next section, we will briefly explore the Fibonacci Time Zones to complete our review of the essential tools and move on to their practical application in trading strategies.

• Fibonacci Time Zones (Fibonacci Time Zones)

Analysis of potential reversal points in time.

Fibonacci Time Zones are perhaps the most mysterious and least used tool in the Fibonacci arsenal. Unlike other tools that work with price levels, time zones work with the time axis. They do not indicate where the price will go, but rather when a significant price event may occur.

The philosophy of the instrument: Market Cyclicity

The idea is based on the assumption that markets move not only in space (in price), but also in time, following certain cycles. Fibonacci numbers, being a universal language of proportions, can also describe these time cycles. The key hypothesis is that significant reversals, accelerations, or decelerations of a trend often occur at moments corresponding to Fibonacci numbers from some initial event.

How are time zones constructed?

The construction is simple, but interpretation requires skill:

1. Select a significant extreme (reference point): This should be an important high or low, from which a strong movement began. The more significant the point, the more significant the signals will be.

2. Apply the Fibonacci Time Zones tool: In the trading platform, you select this option and set the first vertical line at the selected extreme.

3. The system will automatically draw subsequent vertical lines that are spaced at intervals proportional to the Fibonacci numbers (1, 1, 2, 3, 5, 8, 13, 21… units of time).

Result: A series of vertical lines appears on the chart, marking potential moments for changes in market dynamics.

Interpretation and practical application

· Not a prediction, but a guideline: It is important to understand that time zone lines do not predict a reversal with a 100% probability. They indicate moments when the probability of an important price event (reversal, level break, acceleration) is increased.

· What to look for on these lines: Look not at the fact of the line being crossed, but at how the price behaves near it:

· Formation of extremes (highs or lows).

· Breakthrough of important support/resistance levels.

· A sharp increase in volume and volatility.

· The appearance of strong reversal candlestick patterns.

Three practical scenarios for use

Scenario 1: Confirmation of a Fibonacci price level

The strongest signal occurs when the vertical line of the time zone coincides with the horizontal level of a Fibonacci retracement or extension. This creates a powerful space-time cluster.

Example: The price approaches the 61.8% retracement level just as the vertical line of the time zone passes. The likelihood of a reaction at this point increases significantly.

Scenario 2: Determining the duration of the correction

It is possible to estimate how long the correction may take relative to the previous impulse. If, for example, 8 or 13 candles (Fibonacci numbers) pass from the beginning of the correction to the next vertical line, this may indicate the possible completion of the consolidation phase.

Scenario 3: Predicting the release of important news

Sometimes, time zones surprisingly coincide with the release of key economic data or central bank decisions, which can serve as an additional filter for trading planning.

Limitations and Cautions

1. Subjectivity of the choice of the starting point: The entire

picture depends entirely on the choice of the extremum-count. Different traders can choose different points and get different results.

2. Uncertainty of the event: The line indicates the moment of increased probability of the event, but does not say what kind of event will happen (reversal, break, acceleration).

3. Works as an additional filter: This tool is almost never used on its own. Its value lies in its combination with other technical analysis methods (primarily the same Fibonacci levels).

4. It works better on higher timeframes: Cycles are more stable on daily and weekly charts than on minute charts.

Practical recommendation: Minimalism

Within the framework of a trading system based on Fibonacci, we recommend using time zones in a limited and conservative manner:

· Use them only on higher timeframes (H4 and higher).

· Use only obvious, key historical extremes as a reference point.

· Consider the coincidence of a time zone with a price level as an amplifying factor rather than a standalone signal.

Summary of the instrument

Fibonacci time zones are an attempt to bring a time dimension to trading by supplementing the analysis of price levels. In the

right hands, they can be a useful filter, but their subjectivity and ambiguity of interpretation require caution.

For a trader who is just starting to learn Fibonacci, the priority should be on the levels of correction and expansion. Time zones are a tool for a more advanced stage, when the basic skills have already been honed.

Conclusion:

Now you are familiar with all the main tools:

1. Correction levels – where the retracement may end.
2. Expansion levels – where the trend may continue.
3. Fibonacci fan – how the price may move within the trend (dynamic lines).
4. Time zones – when an important event may occur (additional filter).

The next chapter will be entirely practical. We will move on to correctly overlaying the Fibonacci grid on real charts, analyze common mistakes, and start synthesizing these tools into trading setups.

Part 2: Practical Application in the Forex Market

Chapter 3: Fibonacci Retracement Levels – Catching a Pullback

• How to Properly Apply a Grid: The Golden Rule

This is a fundamental skill. A mistake in construction will make all subsequent analysis useless. Remember once and for all:

The correction grid is applied in the direction of the MAIN TREND to measure the POSSIBLE REVERSE REBOUND.

Step-by-step algorithm for correct construction:

STEP 1: Identify a significant trend impulse.

Find a pronounced movement on the chart:

· Upward impulse: A series of upward candles with minor corrections.

· Downward impulse: A series of downward candles with small rebounds.

Important: Work on the time frame of the trend you are

trading (H4 trend → H1/M15 correction).

STEP 2: Determine the END POINTS of this impulse.
· Maximum (High): The highest point of the impulse.
· Minimum (Low): The lowest point of the impulse.

STEP 3: Apply the grid CORRECTLY:
FOR AN UPWARD TREND:
From MINIMUM (0%) to MAXIMUM (100%)
1. Activate the "Fibonacci Retracement Levels" tool.
2. Click on the MINIMUM point (the beginning of the impulse, the base).
3. Drag the cursor UP to the MAXIMUM point (the end of the impulse, the top).
4. Result: The levels of 38.2%, 50%, and 61.8% will appear BELOW the maximum, which are your future support zones for a pullback.

Visualization: [Low (0%)] ===== UP IMPULSE =====> [High (100%)]
Support levels:23.6% – 38.2% – 50% – 61.8% – 78.6% (between High and Low)

FOR A DOWN TREND:
From MAXIMUM (0%) to MINIMUM (100%)
1. Activate the "Fibonacci Retracement Levels" tool.

2. Click on the MAXIMUM point (the beginning of the impulse, the top).

3. Drag the cursor DOWN to the MINIMUM point (the end of the impulse, the base).

4. Result: The levels of 38.2%, 50%, and 61.8% will appear above the low, which are your future resistance zones for a pullback (upward rebound).

Visualization: [High (0%)] ===== IMPULSE DOWN =====> [Low (100%)]

Resistance levels:23.6% – 38.2% – 50% – 61.8% – 78.6% (between Low and High)

TYPICAL MISTAKES OF NEWCOMERS AND WHY THEY ARE WRONG

MISTAKE 1: In reverse (against the trend).

· What they do: In an upward trend, they pull the grid from the high to the low.

· Result: The 38.2% and 61.8% levels are higher than the current price in a growing market, which is pointless for finding a pullback. This measures the distance already traveled, not the future pullback.

ERROR 2: On the entire chart.

· What they do: They stretch the grid from the historical low to the historical high over several years.

· Why it's an error: These global levels are too broad and static. They do not reflect the structure of the current, local trend that you intend to trade.

ERROR 3: On the side (flat).

· What they do: They try to stretch the grid on a horizontal, non-trending movement.

· Why it's an error: Fibonacci is a trend tool. Without a clear impulse (strong movement), there is no concept of "correction." The levels will be random and ineffective.

ERROR 4: By candle bodies instead of shadows (wick).

· What they do: They build from the minimum/maximum of candle bodies (open/close), ignoring the true extremes (high/low).

· Why it's an error: The market reacts to the absolute extremes where stop orders are placed. Candle shadows are crucial for accurate construction.

RULE FOR MEMORIZATION (MNEMONIC)

"Pull the grid along the trend to catch a REBOUND against it."

I WANT TO BUY ON A REBOUND → I'm looking for an upward trend → I'm pulling the grid from below → I'm waiting for a drop to support levels (38.2-61.8%).

I WANT TO SELL ON A REBOUND → I'm looking for a downward trend → I'm pulling the grid DOWN → I'm waiting for the price to rise to the resistance levels (38.2-61.8%).

The key principle of market psychology

The correct setup works because it reflects the pattern of crowd behavior:

1. There is a strong movement (emotions: greed, FOMO).
2. Some traders take profit → a retracement begins.
3. The other part, which missed the movement, is waiting for a "price drop to enter" the trend.
4. These entry points are actively sought out at key Fibonacci levels, where buyers and sellers meet, creating a new momentum.

Practical task:

1. Open the EUR/USD chart on H4.
2. Find the last clear upward impulse (at least 5-8 candles upward).
3. Properly overlay the Fibonacci grid from the minimum to the maximum of this impulse.
4. Enable the display of the 78.6% level (often hidden by default).
5. Scroll the chart to the right and mark at which Fibo level (23.6, 38.2, 50, 61.8 or 78.6) the price stopped its rollback for the first time and turned around (at least for 1-2 candles). You will see a practical confirmation of the method.

In the next section, we will discuss in detail what a Fibonacci consolidation zone is and how to trade a rebound from a level with confirmation.

• Key levels: 38.2%, 50.0%, 61.8%, and 78.6%

After the correct construction of the grid, a set of horizontal lines appears in front of you. It is important to understand that not all levels are equal. Each has its own mathematical nature, psychological significance, and frequency of "execution" by the market. Let's analyze them as the depth of the correction increases.

1. Level 38.2% – Strong Trend Level

· Origin: 1 – 0.618 = 0.382 or square of 0.618.

· Meaning: A shallow, "healthy" correction. In fact, the market is only taking a short break.

· Psychology: It shows that the trend movement was so powerful that most participants do not want to miss the opportunity to enter, and the pullback is quickly bought/sold.

· How to trade:

· Enter a trend trade at the first reversal signal (for example, a pin bar) at this level.

· The stop loss is usually placed slightly below (for buying) 50.0%.

· Feature: Frequent false breakouts. The price may slightly penetrate the level and immediately return.

2. Level 50.0% – Balance and Psychology Level

· Important: This is NOT a Fibonacci number, but it is perhaps the most respected correction level by the market.

· What it means: Exactly half of the movement. The point of perfect balance between bulls and bears.

· Psychology: A deep correction, but still within the framework of trend logic. Many institutional traders and algorithms use this level for entry.

· How to trade:

· An extremely reliable entry zone. Signals here are often of high quality.

· Requires the same confirmation as other levels.

· A breakout of 50% often leads to a test of 61.8%.

3. Level 61.8% – "Golden" Correction (Main Level)

· Origin: 1 / 1.618 = 0.618. The inverse value of the "golden ratio".

· Meaning: A deep but final "legitimate" correction within the current trend. A threshold where the fate of the trend is decided.

· Psychology: Maximum concentration of orders. Here are gathered:

· Traders adding to the trend position.

· Counter-trend players who are hoping for a reversal.

· Stop-losses of those who entered earlier.

· How to trade:

· The highest probability of a strong reaction. We must wait for a clear confirming signal (absorption model, RSI divergence).

· A breakout of the 61.8% level is the first serious signal of the weakness of the current trend.

· It is often part of a cluster with other Fibo tools (extensions, fan).

4. Level 78.6% – Trend Boundary (Last Hope Level)

· Origin: $\sqrt{0.618} \approx 0.786$. The square root of 0.618.

· Meaning: An extremely deep correction. The trend is on the verge of complete destruction. It often occurs in complex, extended correction patterns (such as a flat or triangle).

· Psychology: If a trend survives such a pullback, it demonstrates tremendous internal strength. If the level is broken, it almost guarantees a change in the trend.

· How to trade:

· The entry here is very risky, but it can give excellent risk/reward if the trend resumes.

· The signal should be crystal clear (perfect pattern, strong divergence).

· It often serves as a stop-loss zone for those who consider a break of 61.8% as a reversal signal.

The rule of thumb: "Zone 50-61.8%"

For most trend trades, the focus should be between the levels of 50.0% and 61.8%. This zone is the "golden mean" where:

1. The correction is already sufficient to get a good price.
2. The trend is not yet critically questioned.
3. The concentration of orders and therefore the probability of reaction is maximized.

The main conclusion of this section:

Fibonacci levels are not magical rebound lines. These are areas of increased market attention, where the probability of an event is higher. Your task is to correctly identify the most important zone (50-61.8%) and patiently wait for a clear signal from the price (Price Action) to enter a trade.

Next, we will discuss the concept of "Fibonacci Consolidation Zones" and specific trading setups for rebounding from a level.

• The concept of "Fibonacci consolidation zones"

Levels between 38.2% and 61.8% are the most likely zone for a correction to stop and turn towards the main trend.

This concept is the heart of practical application of correction levels. Instead of considering each level in isolation, professional traders think in terms of zones where several factors create the

maximum probability of a successful trade.

Why this zone? Mathematics, psychology and statistics.

1. Mathematical harmony: The zone between 38.2% and 61.8% contains two key derivatives from the φ level (0.382 and 0.618), as well as the psychologically important level of 50.0%. This space represents a natural "balance corridor" in the development of a trend.

2. Crowd psychology:

· Level 38.2%: Too shallow a pullback. Most traders waiting for an entry consider it insufficient and miss it.

· Level 50.0%: The perfect balance – the largest number of participants are satisfied.

· Level 61.8%: The last “reasonable” entry point for those who believe in the continuation of the trend.

Thus, between 38.2% and 61.8%, the majority of trend-following traders are concentrated on buying (in an upward trend) or selling (in a downward trend).

Конец ознакомительного фрагмента.