

Indicator MT4

YY Line of Renko on the Chart

User's guide

English edition

Indicator MT4. YY Line of Renko on the Chart



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YY Line of Renko on the Chart

This indicator is the basis for an Expert Advisor that can be categorized as "almost Grail". See details below.

This indicator displays the projection of the Renko chart on the price chart. This projection is displayed as a stepped line, not as "bricks" (rectangles). See slides 1 and 2. Abbreviated name of the indicator: LRC – Line of Renko on the price Chart.

The principle of its construction is very simple. First, a grid of horizontal lines (levels) is built with a given step and offset. Then a Renko Line is built using these levels: if the price touches a new neighboring level, then the Renko Line "jumps" to this level, forming a "step". If the price of this candle does not touch any of the neighboring levels, then the Line continues to the right.

Despite its simplicity, on the basis of this indicator (as mentioned above) it is possible to build an Expert Advisor that has the characteristics of "almost Grail". An example of such an Expert Advisor called "Renko Random Robot" can be seen here [\[link\]](#). But first things first. First, let's take a closer look at this indicator, and why it is the basis of the "almost Grail". Then (optionally) you can view the Expert Advisor built on the basis of this indicator using the link above.

Parameters

- **Step of Levels in points** – level grid step in points, on the basis of which the Renko Line is built;
- **Shift of Levels in points** – shift of the entire grid of levels in points (a negative number means a shift down);
- **Show Level Lines** – show the level grid;
- **Level Line Color** – the color of the grid lines of the levels;
- **Level Line Style** – the style of the grid lines of the levels;
- **Level Line Width** – the width of the grid lines of the levels.

Why is this indicator needed?

Firstly, it shows the price movement in a more general (compressed) and simplified way. And this, in turn, simplifies the analysis of price movements. What is meant? As you know, the most detailed price chart is a tick chart: it displays absolutely all prices that took place during the entire trading period. There is a lot of information, and this greatly hinders the qualitative analysis of price movements. That is why other charts are used in technical analysis (for example, bar charts or candlestick charts), which show price movements in a "compressed" form: several tens, hundreds and even thousands of ticks can be displayed as a single candlestick or bar.

As for the Renko chart, it has a direct analogy with the tick chart. Indeed, this chart shows the price movement not on every tick, but only when it changes by some significant amount. (This value is preset by the user in the '**Step of Levels in points**' parameter.) Each such significant price movement along the vertical can be called a "macrotick". Thus, this indicator can be called a "macrotick" price chart. However, tick and "macrotick" charts have a difference. On a tick chart, the price can change by any number of points (one point is equal to the minimum possible price change). And the Renko chart is built in such a way that its price always changes exactly by one "macropoint", the value of which is just set in the '**Step of Levels in points**' parameter.

In passing, we note that in the future, along with the term "macropoint", its synonym will be used: "price movement step" or simply "price step".

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Secondly, a more detailed analysis of this "macrotick" chart shows that the price movement is very similar to the random discrete walk process. This is supported by the fact that (with a sufficiently large number of "macroticks" price movements – at least 10,000 "macroticks") the number of price steps directed upwards is approximately equal to the number of steps directed downwards. In other words, the ratio of the probabilities of price movement up or down is approximately 50% to 50%.

This may sound depressing to many traders (especially beginners). This is because there is an authoritative opinion that "you can't make money on a random walk". In fact, this statement is true only for some limited set of trading strategies. But we will talk about this a little later.

Thirdly, this indicator allows you to visually highlight the main types of "macrotick" (or "stepping") figures (or patterns), which are very useful for successful trading. See the descriptions of these figures in the next section.

The main types of shapes (Patterns)

The main types of shapes (Patterns) are shown on slide 3. Let's take a closer look at them. There are four main types of figures in total.

1st type: no retracement trend (see slides 3a and 3b). Since the trend can be either up or down, there are two variants of Patterns of this type: Pattern #+10 for an uptrend, and Pattern #-10 for a downtrend.

Here and below, Patterns are denoted by three symbols:

- the first character denotes a trend sign: the "+" sign (may be omitted in the designation for flat Patterns) means the predominant price movement up, the sign "-" means the predominant price movement down;

- the second character means the number of "macroticks" (or "macropoints" – in this case they are the same thing) included in each impulse (in this case it is the number 1);

- the third symbol means the number of "macroticks" (or "macropoints") included in each rollback (in this case, it is the number 0, i.e. the movement is recoilless).

2nd type: a trend with minimal regular pullbacks (see slides 3c and 3d). This Pattern also has two variants: Pattern #+21 for an uptrend and Pattern #-21 for a downtrend. That is this price Pattern after each impulse (which has a size of two "macroticks"/"macropoints") has a pullback (which has a size of one "macroticks"/"macropoints"). This figure has another very apt name: "21st ladder".

3rd type: channel (see slide 3e). This Pattern has only one variant: Pattern #11. That is this figure has impulses and pullbacks indistinguishable from each other (and their value is equal to one "macrotick"/"macropoint"). In classical technical analysis, this figure (unlike the two previous ones) is considered flat.

4th type: double channel (see slide 3f). This Pattern also has only one variant: Pattern #22. That is this figure also has impulses and pullbacks indistinguishable from each other (and their value is equal to two "macroticks"/"macropoints"). This figure is also considered flat.

Slides 4 – 10 show how these Patterns look on a candlestick chart. (Note that slide 10 shows a more complex Pattern that is a mixture of Patterns #11 and #22.)

Of course, this is not a complete list of all possible Patterns. Here are only the most common and most frequently encountered of them. In other words, these are the most significant Patterns that must be taken into account (and first of all) when creating trading systems. Moreover, the more of these Patterns the trading system will work out in "plus", the more "grailness" this trading system will be.

"Grails" classification

Thus, based on the great significance of the price Patterns listed above, it is possible to make a (very conditional) classification of trading systems according to the degree of their "graility".

So, trading systems can be divided into the following categories:

1. **"Not Grail"**: if the trading system goes into the "minus" on at least one of the figures shown on slide 3;
2. **"Semi Grail"**: if the trading system goes into "plus" on at least one of the figures (shown on slide 3), and on the rest – either does not trade, or goes to "zero";
3. **"Almost Grail"**: if the trading system goes positive on all (!) figures shown on slide 3;
4. **"Pure Grail"**: if the trading system goes positive on all possible (!) figures, both shown and not shown on slide 3.

Examples

An example of "not Grail"

An example of such a trading system is any trend or flat system. Any more or less experienced trader knows that any trending system will make a profit on trending sections (such as Pattern #±10 or Pattern #±21). But on flat sections (such as Pattern #11 or Pattern #22), this trading system will bring continuous losses. Thus, any standard trending system will formally fit the definition of "not Grail".

As for the flat trading system, it will behave exactly the opposite. On flat sections (Pattern #11 and Pattern #22) it will bring profit, but on trend sections (Pattern #±10 and Pattern #±21) it will lose.

An example of "semi Grail"

As an example, consider the following trading system. Here are her rules.

Rules for a long position (see slide 11):

1. The "trend up" state is determined (this is a situation when there are two or more upward price movements in a row, i.e. at least the last two "macroticks" raised the price by two "macropoints"). The "trend up" state will be canceled as soon as two or more price moves down in a row are detected.
2. If there is a "trend up" condition, a Buy limit order is immediately placed one "macropoint" lower than the current price.
3. This order has a take profit equal to one "macropoint".
4. This order has a stop loss equal to two "macropoints".
5. If the price continues to go up, then the Buy limit order (together with its stop loss and take profit orders) moves up so that it is always one "macropoint" away from the current price.

Rules for a short position (see slide 12):

1. The "trend down" state is determined (this is a situation when there are two or more price movements down in a row, i.e. at least the last two "macroticks" lowered the price by two "macropoints"). The "trend down" state will be canceled as soon as two or more price moves up in a row are detected.
2. If there is a "trend down" condition, a Sell limit order is immediately placed one "macropoint" higher from the current price.
3. This order has a take profit equal to one "macropoint".
4. This order has a stop loss equal to two "macropoints".

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5. If the price continues to go down, then the Sell limit order (together with its stop loss and take profit orders) moves down so that it is always one "macropoint" away from the current price.

Let us consider in more detail what results this trading system will bring on each of the Patterns.

Pattern #±10. This system will not trade on this Pattern. Why? The fact is that, on the first two "macroticks", the system only recognizes the state of "trend up" or "trend down". But for to enter the market, this system needs a rollback of the price by one "macropoint" against the trend. And Pattern #±10 does not have any such rollback. Therefore, this system will never enter the market, and, accordingly, will not trade on this Pattern.

Pattern #11. This system will also not trade on Pattern #11. Here the situation is even simpler. The fact is that Pattern #11 does not have a single pair of "macroticks" going in a row one after the other in the same direction. Therefore, on this Pattern, the "trend up" or "trend down" state, which is a prerequisite for placing an order, cannot even occur. Thus, the system will never enter the market, and, accordingly, will not trade on this Pattern.

Pattern #±21. On this Pattern, this system will only make positive trades. Indeed, if, for example, you look at slide 3c depicting this Pattern, you can see that all the trading rules on it will be executed one after another. First (after the price rises by two "macropoints"), the "trend up" state will be identified. A limit order for Buy will be placed immediately, located one "macropoint" below the current price. On the next "macrotick" this order will work, and a long position will be opened. And, finally, on the next "macrotick" take profit will work, and the position will close in "plus". And this process will be repeated many times as long as this Pattern exists. Thus, on this Pattern, the trading system will not have a single losing trade.

Pattern #22. On Pattern #22, this system will (oddly enough) also make only positive trades. The only difference from the previous Pattern (for the case of a long position) will only be that after the stages of detecting the "trend up" state and opening a long position, the price will drop by one more "macropoint", but the stop loss will not be hit (because it is two "macropoints" below the market entry point). After that, the price (in accordance with the chart of this Pattern) will rise by two "macropoints" up, which will trigger the take profit. And this process will also continue many times, bringing more and more positive results. Thus, on this Pattern, the trading system will not have a single losing trade.

So, summing up, we can state the following:

- on two Patterns (#±10 and #11) this trading system will not perform trading operations;
- on the other two Patterns (#±21 and #22) this trading system will perform only profitable trading operations.

Thus, this trading system formally satisfies the definition of "semi Grail".

It is also interesting to pay attention to the fact that this system (unlike most other systems) is trend-flat system, i.e. it earns equally well both on trend Patterns (#±21) and on flat ones (#22). That is in a sense, this system is universal.

An example of "almost Grail"

Recall that a trading system that satisfies the definition of "almost Grail" should bring only positive results on all (!) four Patterns shown on slide 3. At first glance, it may seem that this is simply impossible. Actually it is not. It is possible to create such a system, but some nuances must be taken into account.

The most important nuance is that the behavior of the Renko price chart is random, as mentioned above. This, in turn, entails some special requirements for the trading rules of this system. But, in the end, the implementation of these requirements leads to the fact that the trading

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system becomes profitable not only on the four Patterns indicated on slide 3, but also on many other (almost all possible!) Patterns, incl. on the most unexpected and bizarre.

But, unfortunately, there is only one (!) Pattern on which this trading system suffers losses. If not for this Pattern, then this trading system would belong to the "pure Grail" class!

It all sounds fantastic. But you can see this fantastic with your own eyes. To do this, you just need to familiarize yourself with the Expert Advisor called "Renko Random Robot". The link to this Expert Advisor is given above, at the very beginning of this description.

In the description of the expert "Renko Random Robot":

- considered (in general terms) the basics of building this Expert Advisor;
- the work of the expert on all four Patterns shown on slide 3 is shown;
- explains why this Expert Advisor works on many other Patterns;
- describes the Pattern that "prevents" this Expert Advisor from becoming a "pure Grail".

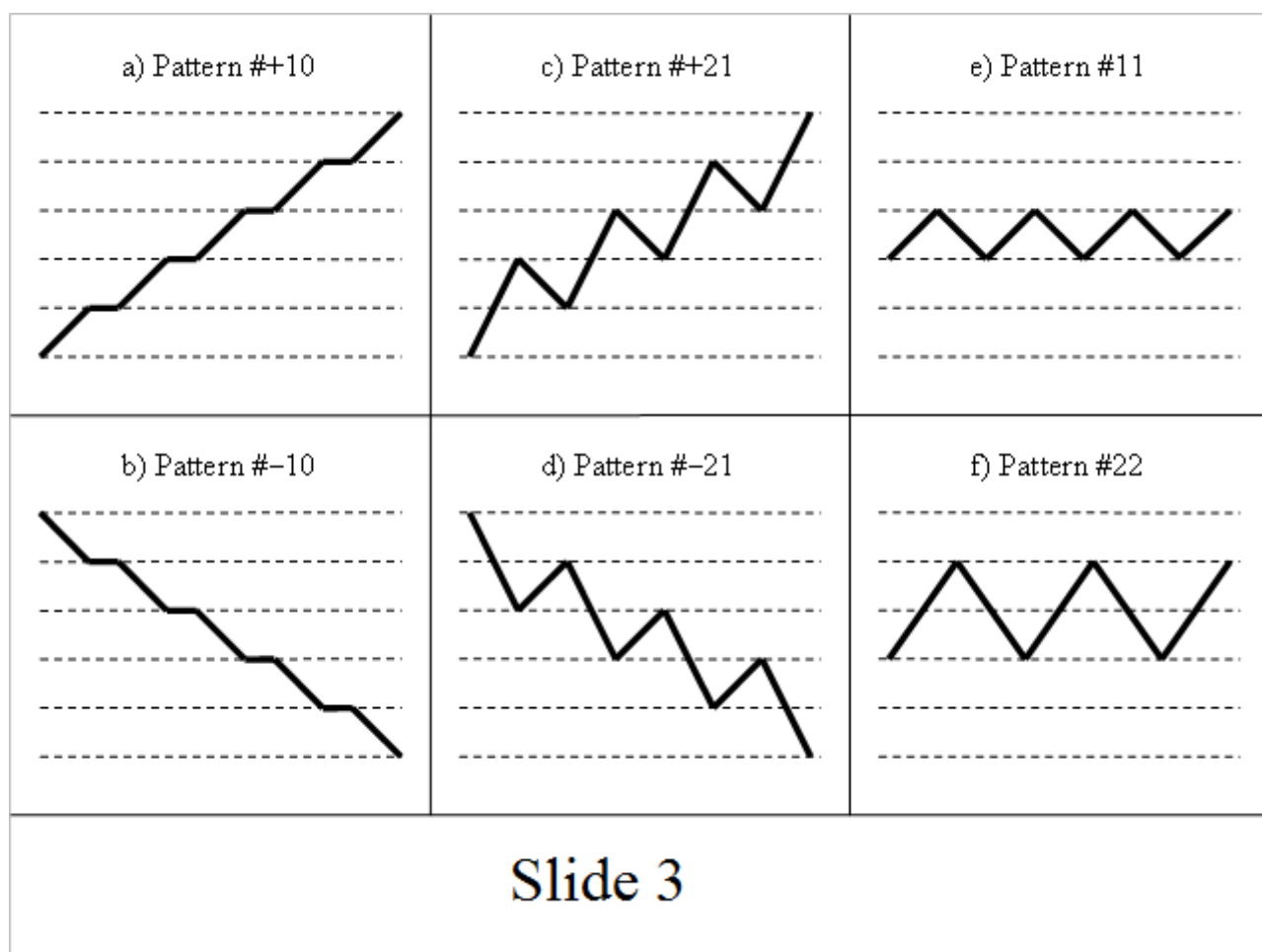
Appendix. Slides



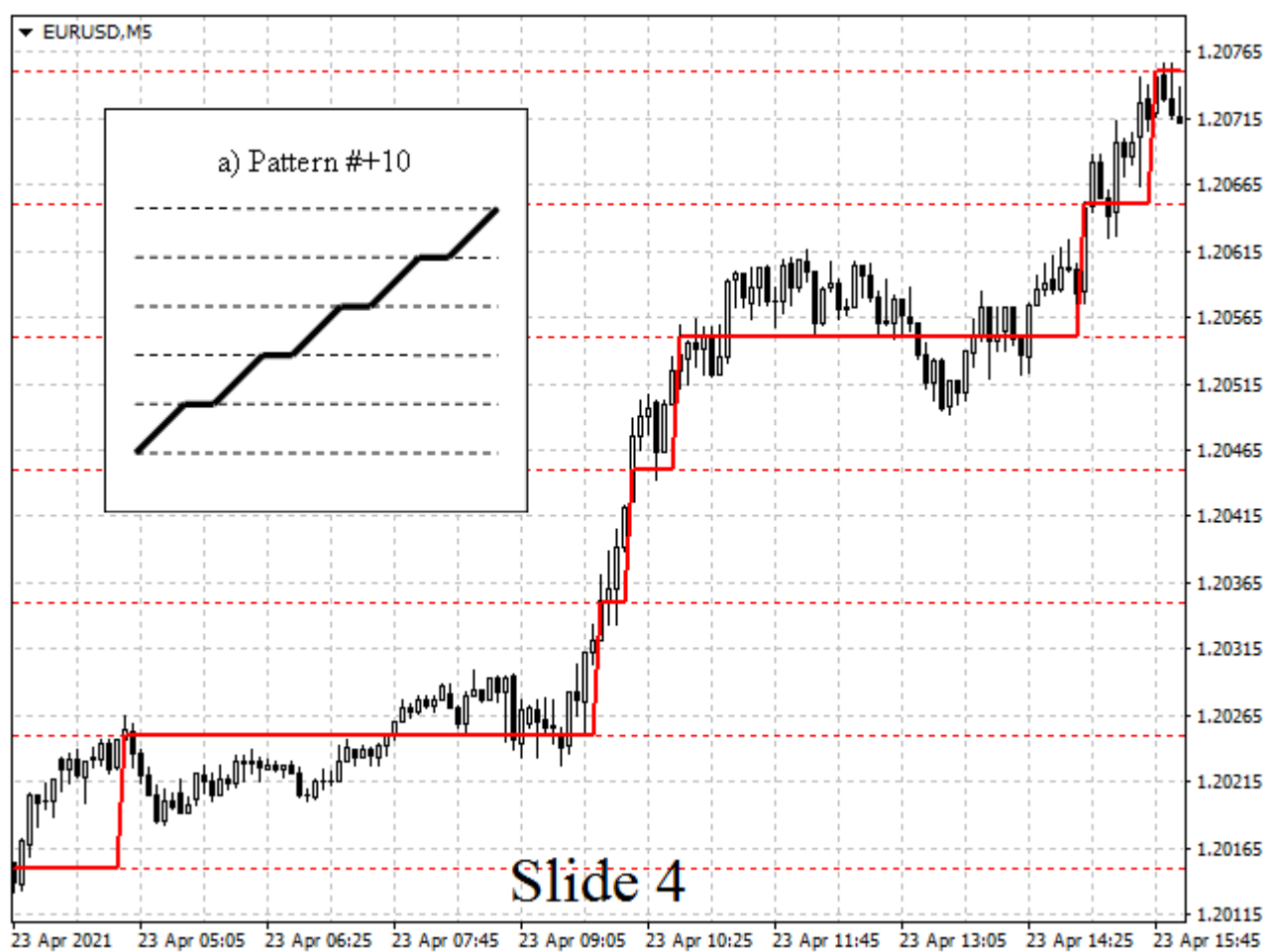
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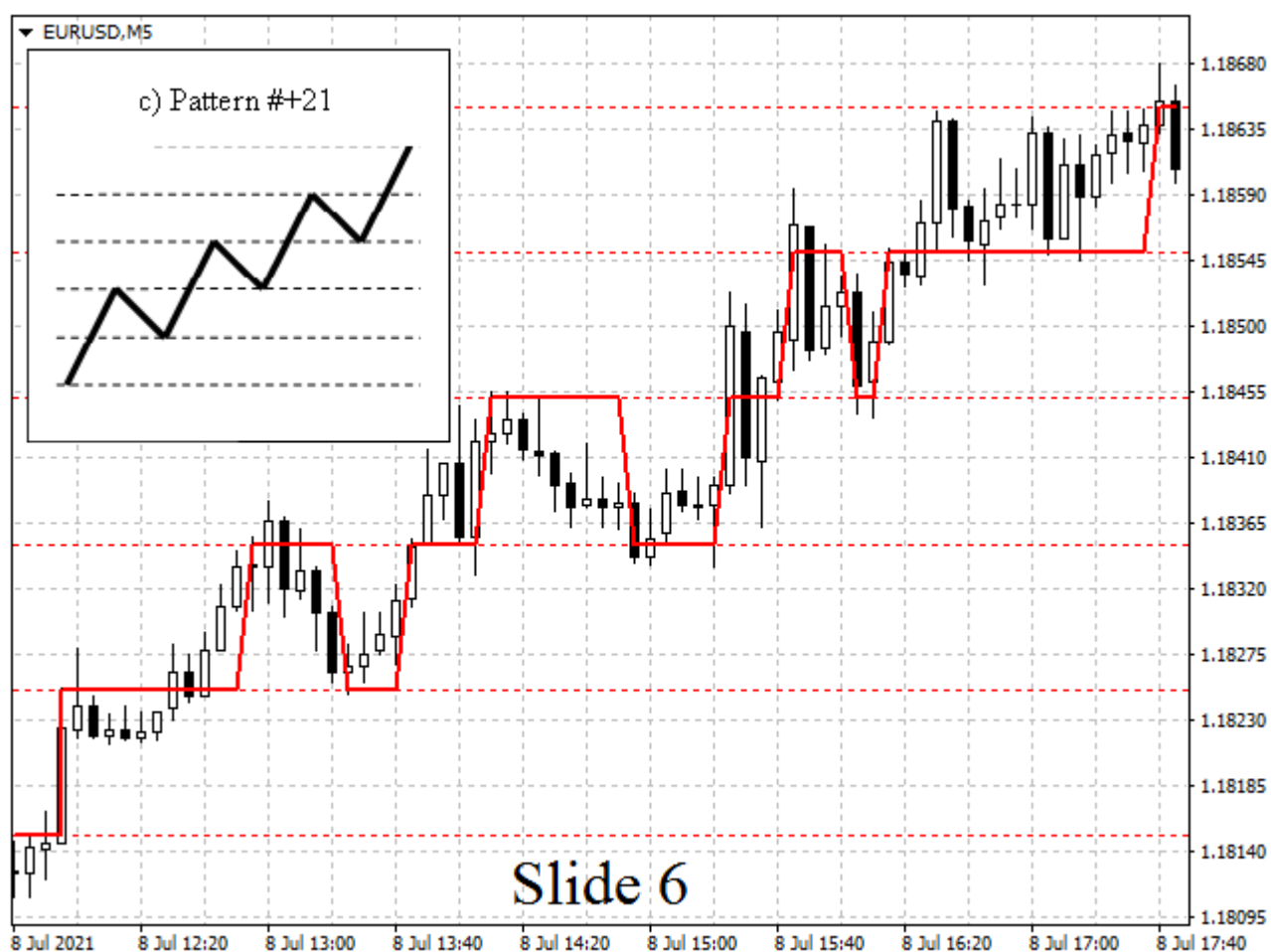
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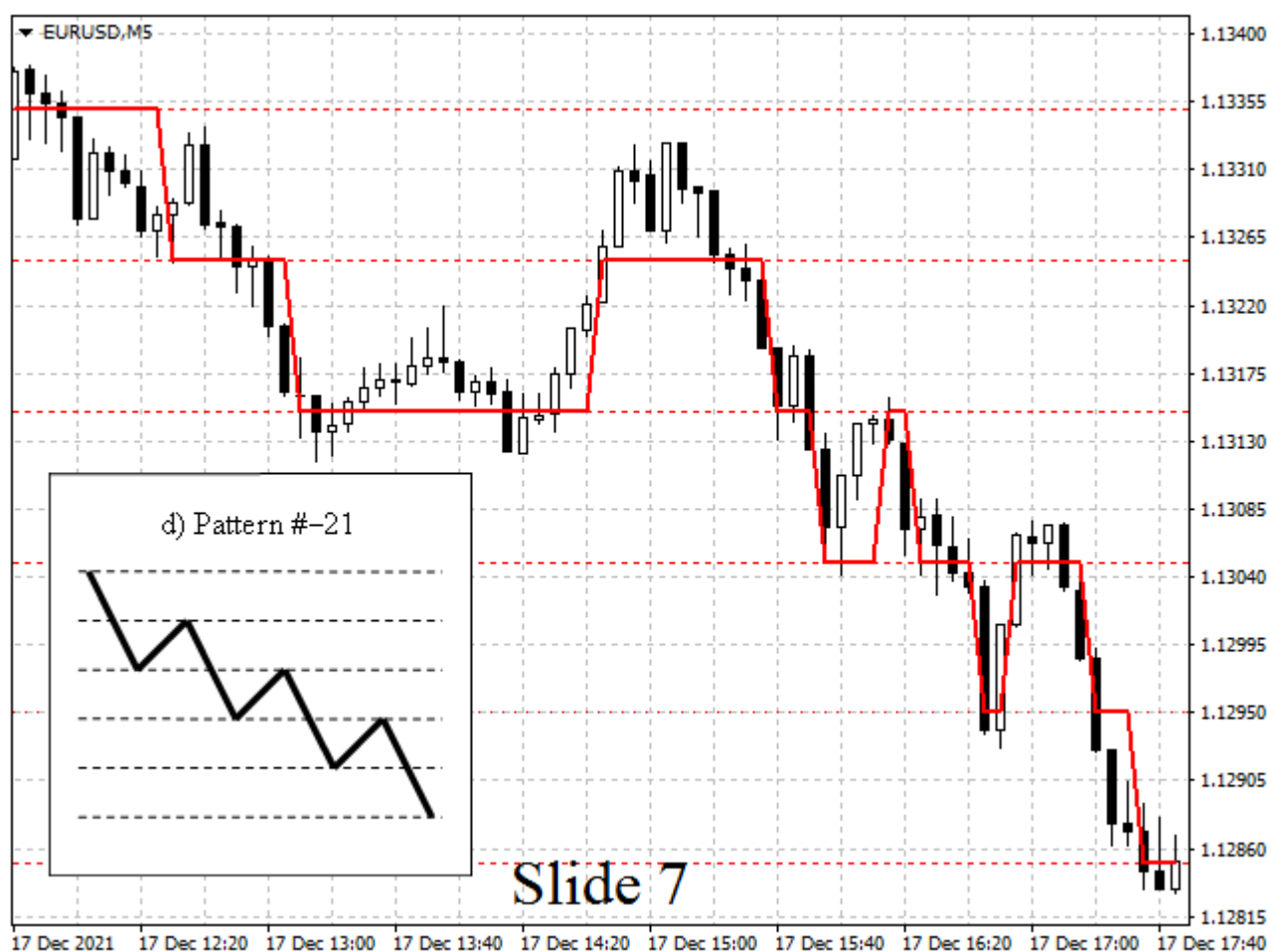
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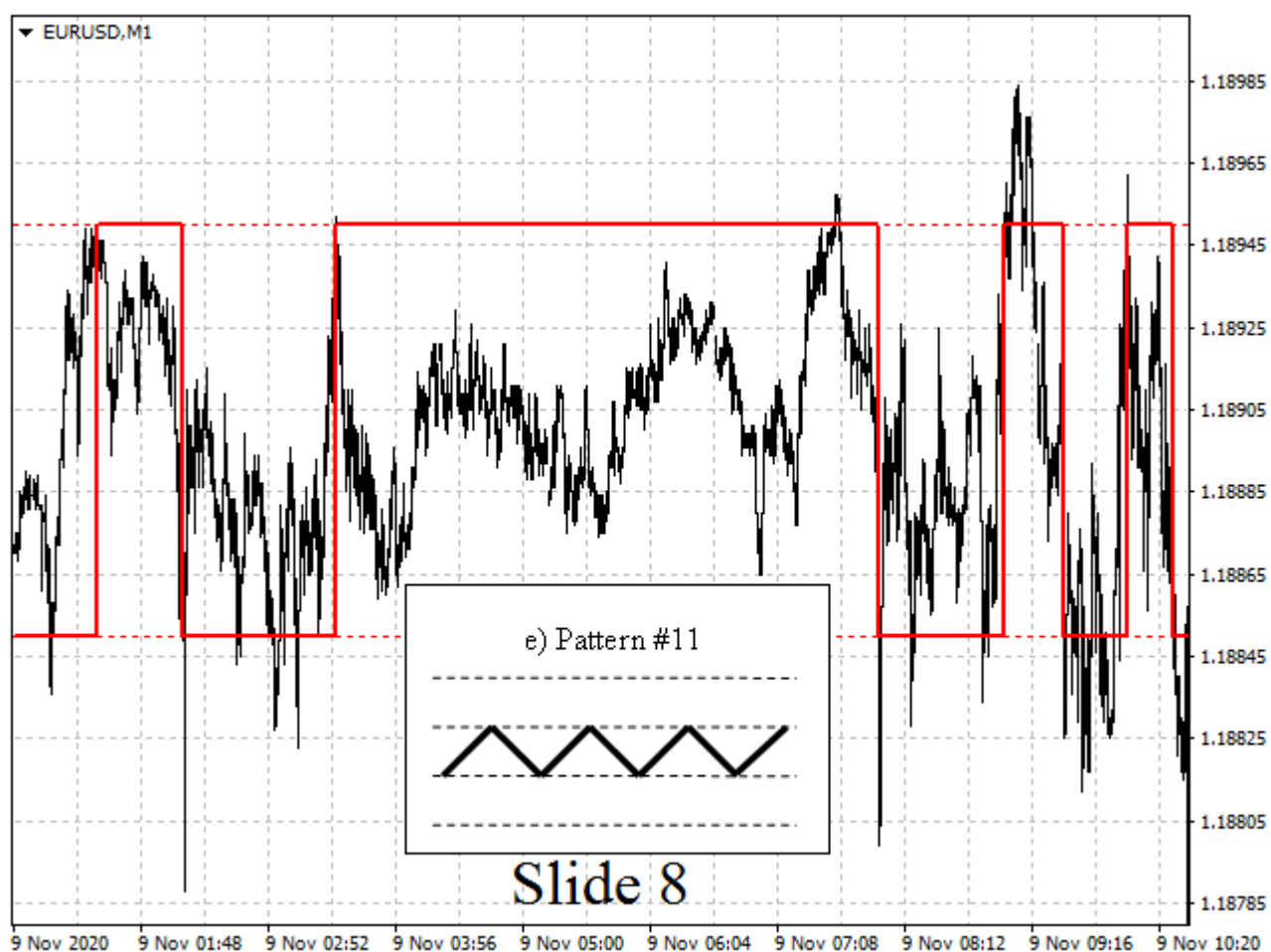
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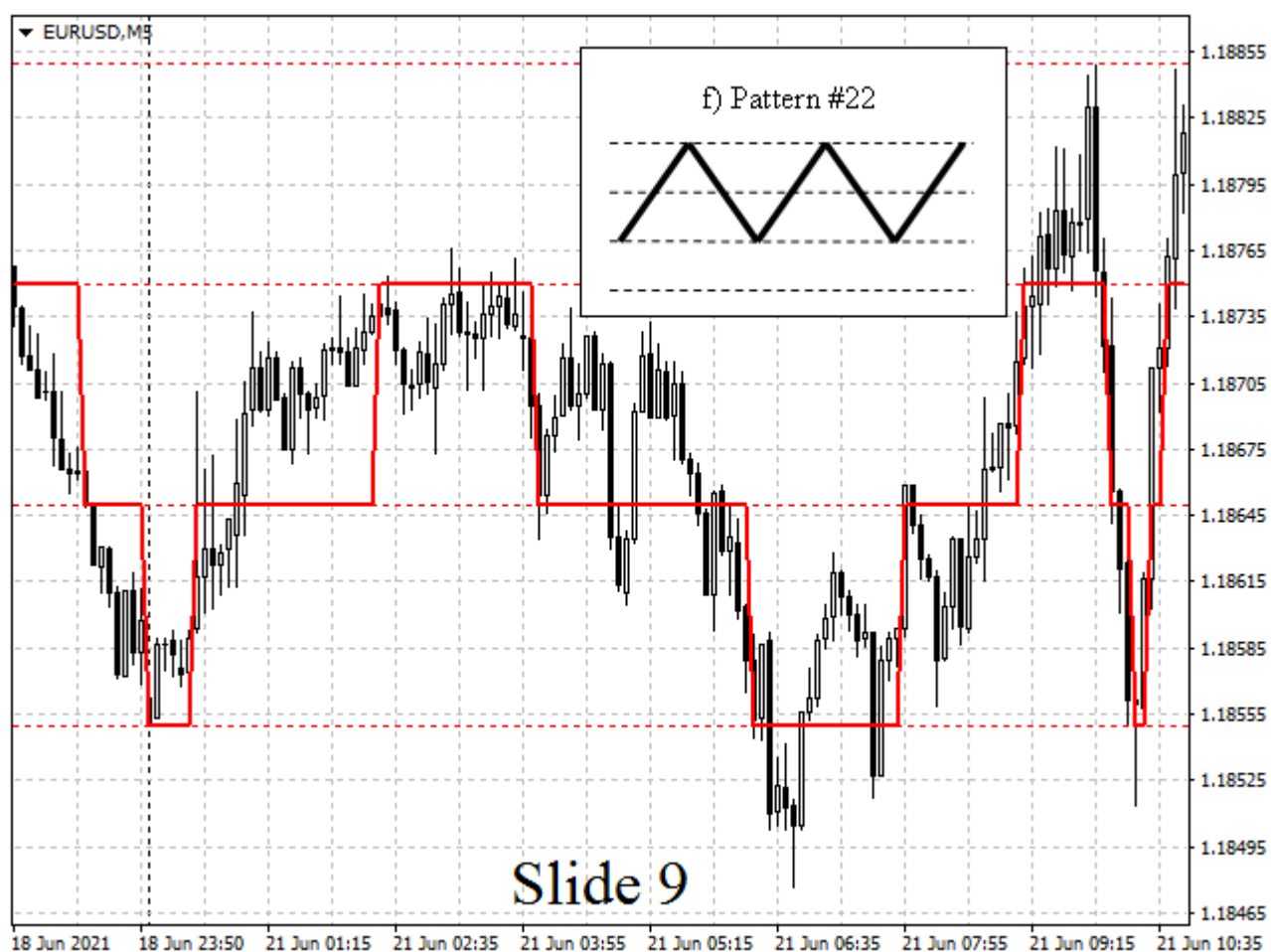
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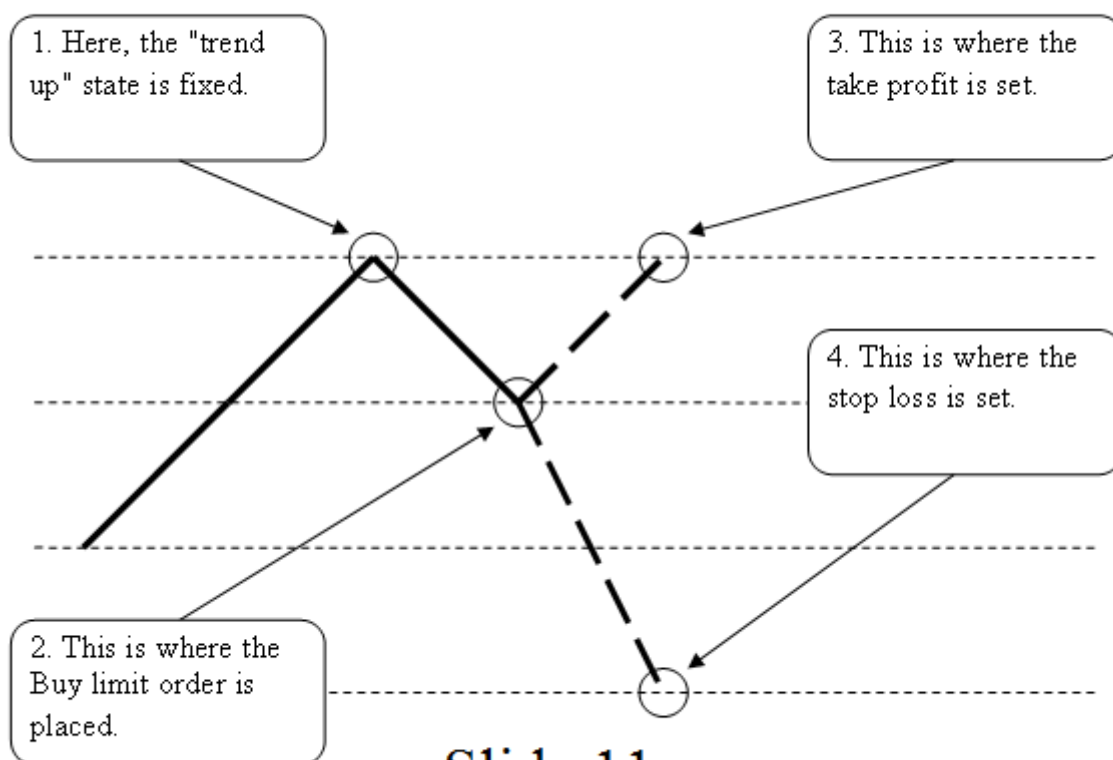
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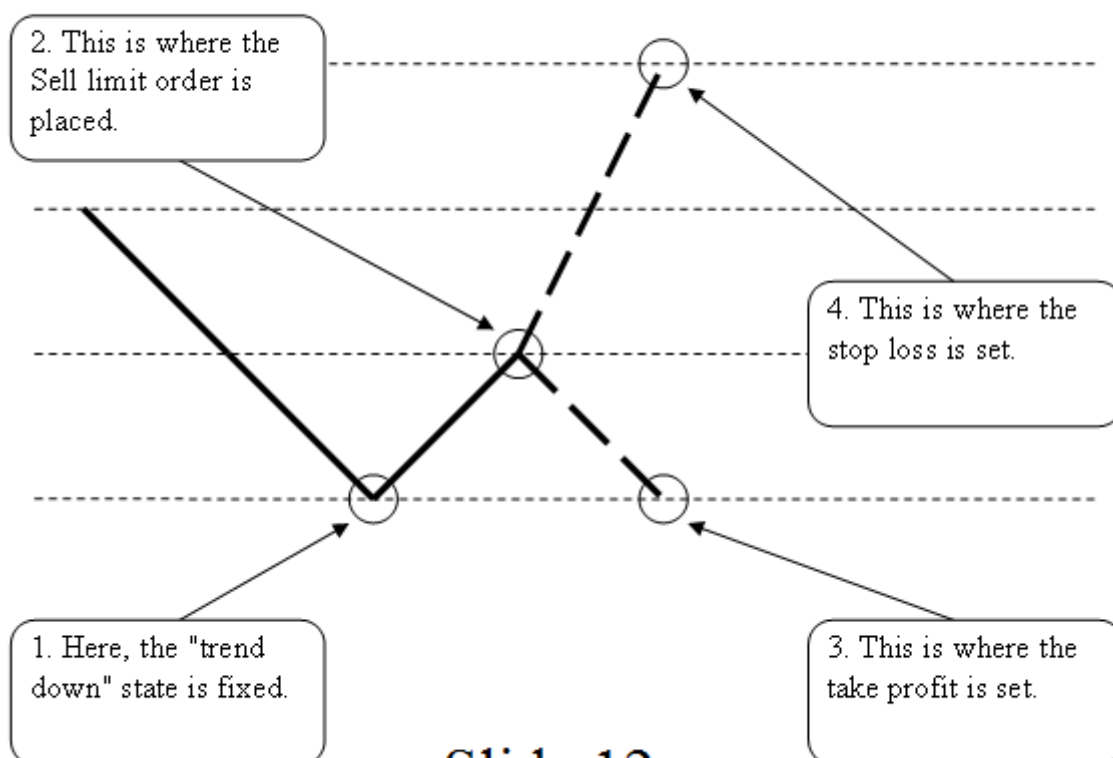


Rules of the "semi Grail" class trading system (for a long position)



Slide 11

Rules of the "semi Grail" class trading system (for a short position)



Slide 12