

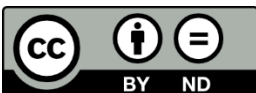
# The illusion of a gambling tip to win: Martingale

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A martingale is a technique giving the illusion of increasing the chances of winning in gambling while respecting the rules. The principle depends completely on the type of game that is the target and, in many cases, the rules are intended to prevent the possibility of a martingale. Nevertheless, the term is accompanied by an aura of mystery that some players would know the secret techniques to cheat the chance and, for example, beat the bank in casinos. To do this, a martingale must change the expectation is such that, in the long term, the chances of winning are lower than those of losing. It is therefore to increase the chances of winning and, ideally, they are superior to those of losing.

### **Different martingale**

Many martingale are only a dream of the author, some are in fact inapplicable, some do allow to cheat a little. Gambling are unfair in general regardless of the strategy adopted, the expected gain from the casino (or state in the case of a lottery) is greater than that of the player. In this type of game, it is not possible to reverse the odds, only to minimize the probability of ruining the player.

### **The classic martingale**

The classic martingale is to play a simple luck at roulette (red or black, odd or even, etc.) to win, for example, a unit in a series of moves by doubling the bet when losing, until the player wins. Example: the player bets 1 unit on red, if red comes out, it stops playing and he won 1 unit, if black comes out he doubles up betting 2 units on red and so on until he wins.

Having an even chance of winning, he may think he will eventually win; when he wins, he is necessarily reimbursed for everything he has done, once more his initial bet.

This martingale seems to be safe in practice. Theoretically, to be sure of winning, you should have the opportunity to play an unlimited number of times. This has major drawbacks:

\* This martingale is limited by bets that the player can do, because you have to double down on every shot as you lose 2 times the initial bet, then 4, 8, 16 .... if you lose 10 times, it must be able to advance 1,024 times the ante for the 11th game. So you have lots of money for little gain.

Example:

Initial bet of 1 euro.

- \* Down 1 euro or 2 euros you earn less your previous bet  $2-1 = 1$  euro, or you lose.
- \* Down 2 euros or 4 euros unless you win your previous bet:  $4-2-1 = 1$  euro, or you lose.
- \* Down 4 euros, or 8 euros unless you win your previous bet  $8-4-2-1 = 1$  euro, or you lose.
- \* Down 8 euros, 16 euros less than you earn your previous bet  $16-8-4-2-1 = 1$  euro, or you lose.
- \* Down 16 euros, 32 euros less than you earn your previous bet  $32-16-8-4-2-1 = 1$  euro, or you lose.
- \* Down 32 euros, 64 euros less than you earn your previous bet  $64-32-16-8-4-2-1 = 1$  euro, or you lose.
- \* Down 64 euros, 128 euros less than you earn your previous bet  $128-64-32-16-8-4-2-1 = 1$  euro, or you lose.
- \* Getting 128 euros, 256 euros less than we earn our previous bet  $256-128-64-32-16-8-4-2-1 = 1$  euro, or you lose.

In short, the more the player bets, the more he must bet to win only 1 euro.

\* The roulette has a "0" that is neither red nor black. The elementary probability  $E_p$  of winning in every draw is  $18/37$  (0.48648) and not  $1/2$ . The probability of winning by having an infinite sum is 1.

\* In addition, to avoid this strategy, the casinos offer table games for every setting: from 1 to 100

euros, 2 to 200, 5-500, etc. So it is impossible to use this method on a large number of shots, which increases the risk of losing everything.

Example: set of 5 with casino limit 500. So you can bet, due to losses, 7 times only (up to 320), this requires an initial sum of 635 and the number of possible victorious in series in this case is 17. If you are "cautious" and there is a series of seven outcomes of the same color, one can expect a gain relatively assured, in 8 victorious series, 40 for a initial capital of 635 or 6.3% gain.

If the probability of losing decreases, the loss increases with the number of consecutive played rows and earnings expectancy remains negative (loss), the risk being run on all of the sums invested.

### The great martingale

It is similar to the classic martingale, except that the player does not just double its every loss bet, it also adds a unit.

For example, the player bets one unit:

\* If he wins, he leaves the game with 2 units - 1 unit he played = 1 unit

\* If he loses once, he played 3 units; if he wins, he wins 6 units - 3 (he has just played in part 2) - 1 (he played in the 1st part) = 2 units

\* If he loses again, he played 7 units; if he wins, he wins 14 units - 7 (he has just played in Part 3) - 3 (he played in the second part) - 1 (he played in the 1st part) = 3 units

\* etc.

This martingale is as insecure as the classic martingale (the player feels that he can not lose anything, but that's true only if he managed to bet just before leaving the game table!), however it increases earnings.

This technique has the same disadvantages as the classic martingale, but mostly it is even more limited by bets that the player can do: it is enough to lose three times, to have to play 15 times his bet next move (2047 times for the 11th bet).

Moreover, the gains may be considered low by money bet, and someone who would gain at tenth trial will bet 1023 units for a gain that amount to only 10 units.

### Piquemouche

This is another variant of the classic martingale. The player starts with a unit when he wins, but when he loses, he increases his bet by one unit, it doubles only after three consecutive losses. It does not need to increase early bets in case of successive losses, it is safer, but the gains are lower (zero if you do not win in the first part) or need to win twice.

Example:

\* The player bets one unit; if he wins, he leaves the game with 2 units - 1 unit he played = 1 unit

\* If he loses once, he plays 1 unit; if he wins, he wins 2 units - 1 (he played in the 2nd part) - 1 (he played in the 1st part) = 0 unit

\* If he loses again, he plays 1 unit; if he wins, he wins 2 units - 1 (he played in part 3) - 1 (he played in the 2nd part) - 1 (he played in the 1st part) - 1 unit

\* So you need a second win to be a winner.

\* Following up if still losing 1 - 1 - 1 - 2 - 2 - 2 - 4 - 4 - 4-8 ...

\* etc.

### Whittaker

The player plays a whittaker when setting the sum of its two previous bets until he loses, and starts a unit when he wins.

### Pyramid of d'Alembert

The name is a reference to Jean le Rond d'Alembert, the eighteenth century mathematician. The idea is to increase the bet by one unit after a loss and decrease the bet by one unit after a win.

Used when thinking that gain decreases the chance to win again, while a loss increases the chance of winning (exemplified by the shadok principle "more it fails, the greater the chances that it works").

### Reverse d'Alembert

This martingale incorporates the principle of the d'Alembert but bets are the other way: here we must decrease the bet by one unit when you lose and increase the bet by one unit when you win .

Conversely to the previous, it is used when we think that the past is likely representative of the future opportunity (eg, facing a row of slot machines).

### Paroli

This martingale is to double the bet every gain (thus betting all we won), then, from a winning number set in advance, stop and start again with the initial bet. We talk about paroli of 1, if we stop after winning twice the bet, paroli 2 for four times if we won the bet, paroli 3 if we stop after winning eight times the bet, etc.

### American martingale

Also known as "America Rising", it asks to bet again the first sum + last loss. The player starts by increasing his bets by one unit until he wins. Once he loses, he keeps the bet he just lost, and bet the amount of the latest and first bet. When he wins, he keeps putting the bet, and scratch the first bet of his list. Then he bet the sum of the last and the first bet of his list, not taking into account that he scratched. example:

- \* The player bets one unit:
- \* If he wins he bets 2, if he loses he notes 1 and bets 2.
- \* If he wins and he won he bets 3 ( $2 + 1$ ), if he loses and he had won he notes 2 and bets 3 (first + last loss =  $1 + 2$ ). In this case the results are the same if he had lost in the first round.
- \* etc.

### Dutch martingale

The player implements this martingale when he loses. He retains all the bets that he has lost. He bets the lowest among from those he has lost (if he has lost several), adding 1. Then he bets the next bet, in ascending order. And with each victory the player wins the amount of a bet previously lost, plus 1.

This martingale is attractive in the sense that it seems as if the player gets as many victories as his failure remains positive gain, equal to  $1/2$  per bet. In reality, this is only true if the winning bets occur after the losing bets. Also after several successive failures, as long as the player has not been repaid by an equal amount of victories, he must constantly increase his bets to try to recover the lost money.

But more the game continues, and more it is likely that this situation appears, which is why the Dutch martingale is a very strong tendency to runaway. In fact, it has a behavior close to the classic martingale with the advantage of not being limited by the maximum bet allowed.

### Labouchere

The name of a British politician of the nineteenth century, Henry Labouchère, this martingale is based on the idea that a winning bet erases two losing bets. The player begins by noting the sequence 1 2 3 4 5 on line (or column). The principle is:

- \* he always put the sum of two extreme numbers of the sequence (for example, at first glance, he put  $6 = 1 + 5$ )

- \* when he loses, he notes the amount he has to bet on the right of the suite

- \* when he wins, he crosses out the two extreme numbers of the sequence which he just used to bet

This is a very attractive method. But his weakness, like d'Alembert and many others, is that it is a rising loss: the higher the player loses, the more it must bet big.

### Reverse Labouchere

This is the reverse of the previous method: the player struck out bets when he loses. This is a rising gain: the player recycles gradually. It was made famous by the book *Thirteen against the bank*, by Norman Leigh (Albin Michel, 1976).