

1.5 Gambling

“Stock market is gambling.”

Surely, you have heard this phrase many times, perhaps even more frequently during the last few years. While financial engineering has played a role in the crisis, its exact role is misunderstood which led to some insane generalizations like the one above. A clear terminology will be presented in Chapter 3, but let's lay the groundwork here. The stock market, or financial markets in general, serve many beneficial purposes. Can one gamble in the financial markets? Yes, of course. That possibility alone, however, does not make the stock market a gambling operation. One can also use drugs for many harmful purposes, but that does not mean that drugs are inherently bad.

Let's leave it at that for now and talk gambling. Note that when we say gambling, we will exclude sports betting for reasons that will become clear later. Instead we will focus on casino games for now. In the U.S., people went to the casino quite a bit in 2010, and the casino revenues were estimated to be approximately \$60 billion.

Let's focus on one casino game: roulette. The roulette is played when a ball is thrown onto a spinning roulette wheel. As the spin slows down and comes to an end, the ball lands on one of the numbers, which is also marked by a color. In the U.S. version, there are 38 numbers (0, 00, and numbers from 1-36). Numbers 1-36 alternate between red and black. Both 0 and 00 are green. The players can put their chips on a color (red or black), numbers (0, 00, or 1-36), or they can play in various other ways. If you bet on red and win, your bet pays two to one, which means for every dollar you gambled, you'll get two dollars back. If you lose, your money is gone.

Statistics dictates that the average player has to lose in the long term. To see this, consider a simplified game, where one can only bet on red or black. A simple strategy of gambling always on red would break even if there were no zeros in the game. In fact, this simplified roulette would be essentially a coin toss. Consider the “house”, the entity that provides the platform to play the game. Clearly, there would be no incentive for the house to offer this game. The take from the game would sooner or later approach zero by laws or statistics. However, the house still has various expenses: the upkeep of the roulette wheel, the salaries of its employees etc. No profit seeking entity would do this. By introducing 0 and 00 to the game, the house ensures that, on average, at least 5% of all the money that comes in stays with the house. This number could be higher depending on how people play (for roulette, it is approximately 15% in Vegas), but if enough people play, it can't be lower.

Why do we care about casino games? Because they are fundamental to the concept of risk and markets. One must first grasp the roulette. Everything else falls in place.