

Numbers Game

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You just started offering a brand new payable-based game on your website. It's been running for a couple of days, and player interest is really picking up. Your game is attracting lots of attention, but wait... why is it paying out at 105% RTP!?! Are you in fact losing money?

As a gaming operator, you'll need to understand the mathematical nature of your games in order to answer questions like this.

Without this knowledge, you won't be able to tell whether there's a problem until it's too late. Sure, game mathematics may not be the most exciting material for most of us. But if you make the mistake of ignoring it, you may find yourself in some very hot water!

It all starts with something called %RTP.

Let's get technical... %RTP means 'Percentage Return to Player'. This is the expected percentage of wagers that a game will return to the player over the long run. In other words, it is the opposite of 'House Hold' (or 'House Edge'). For example, if a game has a 95% RTP, then on average, for every pound bet, the player will see 95 pence in winnings, and the operator will see 5 pence in profits.

Each game offered on your website may have different %RTPs, depending on your game mix and how the games were designed. The biggest factors that affect the %RTP are the game's payable and rules.

That's easy enough, but things can get tricky from there. Just because a game is designed to pay out at 95% RTP, doesn't necessarily mean that it will do so each and every play from day one!

Let's investigate how this happens...

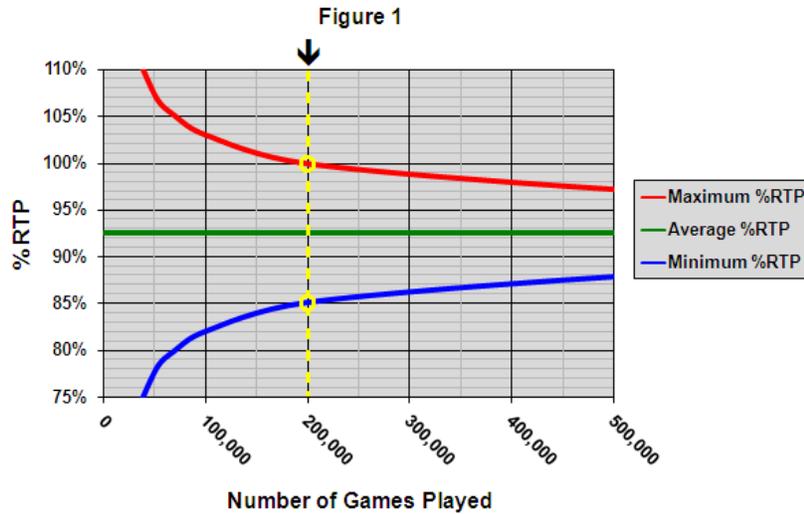
In addition to %RTP, each game also has a Standard Deviation (STD) value associated with it. Although the mathematicians that designed your game will be very interested in this value, for the rest of us it is just a stepping stone to where we need to get: 'Volatility'.

Volatility explains how much the game's %RTP will vary, as more and more games are played over time. This is critically important for operators, since this will show you exactly how long a game has to operate on your website before it will start to pay out the way you expect.

It all sounds complicated at first, so let's look at some simple Volatility Graphs to plainly illustrate how this impacts your business.

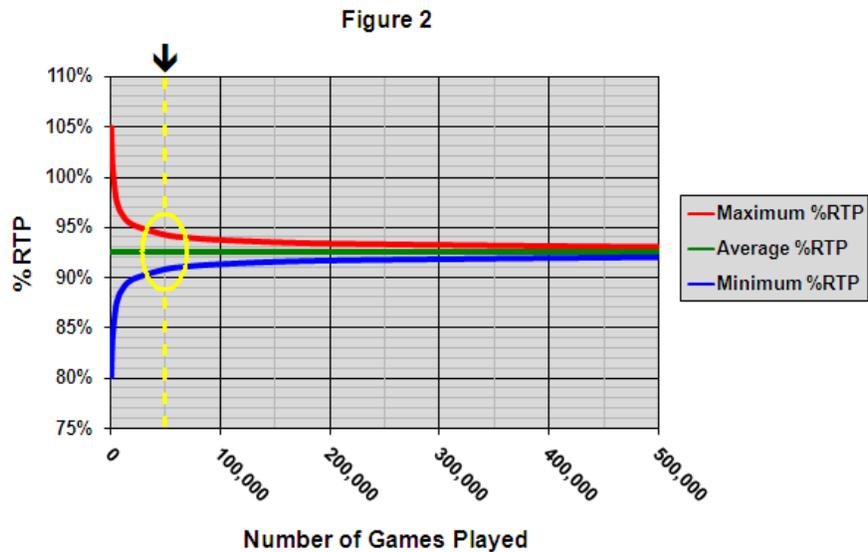
Let's use an example payable-based game with a 92.5% RTP value.

First, **figure 1** shows how our game will pay out over time, if it's designed with a relatively higher volatility value. The green line in the middle represents the average %RTP value (in this case 92.5% RTP). The red line and the blue line represent the maximum and minimum %RTP values respectively, given the number of games played over time.



As you can see, after as many as 200,000 games played, the game could potentially be paying out at as much as 100% RTP (on the maximum line in red), or as little as 85% RTP (on the minimum line in blue), or anything else in between those two values. That's a pretty big range, especially considering that the game was designed to pay out at 92.5% RTP. Remember that at 100% RTP, the worst-case scenario, you would not have made a single pence in profit after all those games!

Next, **figure 2** shows how the same game will pay out over time, if it is designed with a much lower volatility value. The lines are much closer together this time.



With the lower volatility, after as few as 50,000 games played, the game should be paying out well within the 90% to 95% RTP range. That's much more comfortable, since you're guaranteed to make good profits almost right away!

You might be asking yourself how to apply this knowledge to your business in order to better stabilize your gaming revenue.

First, by working closely with your game designers, you can ensure that your games have a healthy Volatility value. Too high can mean waiting a long time before your games pay out the way you expect. Too low can mean boring paytables that don't interest the players, resulting in them checking out the competition.

Next, you're going to have to put a great deal of trust in your game mathematics. Game mathematics can be incredibly complex, so you can have your games independently tested and certified to make sure that they're correct.

With all of these checks and balances in place, you'll be able to know whether high payouts on your new game are just an acceptable temporary blip due to the game's volatility, or an indication of a serious problem needing immediate attention!

Sidebar

When it comes to payable-based games, it's all about the mathematics. Every detail counts! Even a tiny mistake can make the difference between guaranteed profits, and unanticipated losses.

Bio



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