

Risky Business Week 10

Some Perspective on the Strange, Short-Sided and Improbable

Week 10 will be remembered for a collection of unusual plays, controversial choices and late-game drama. While it was all very entertaining, we are here to cast some perspective through the lens of Game Winning Chance ("GWC") on three particularly notable plays.

The Strange (Texans vs Browns):

With 1:07 remaining in the game and holding onto a 10-7 lead, the Browns faced a critical 3rd and 3 from their own 40 yard line. A first down would seal the victory as the Texans were out of timeouts. When Nick Chubb turned the corner, he found daylight and was cruising to the endzone for an easy touchdown. Seems simple enough, but at the last second, he ducked out of bounds at the 1 yard line. While it was a trivial difference (<1% GWC), Chubb actually did the right thing by showing restraint. Once the first down was accomplished, the game was basically over as the Browns can run out the clock. If he goes into the endzone, the Texans could theoretically score quickly after the kickoff, recover an onside kick and score again. This is a highly improbable parlay, but it IS greater than zero. While either choice by Chubb did not make a material difference in the outcome of the game, it did create a bad beat story for the ages. For the unfortunate bettor backing the Browns and laying points (the line opened at -3 and closed at -4.5) this 3 point victory for the Browns had to really sting.

The Short-Sided: (Seahawks vs Rams):

With their loss to the Rams on Sunday, Pete Carroll and the Seahawks find themselves in a three-way tie for first in the NFC West. If Carroll continues to squander GWC at the current rate, expect his post-season prospects to deteriorate over the next several weeks. Facing a 4th and inches early in the 2nd half and trailing 17-13, the Seahawks tried to get cute with a delay of game penalty instead of simply going for it. Punting is approximately -7% GWC worse than a rushing attempt in this situation. While this wasn't the very worst 4th down decision of the week (that honor goes to the Green Bay Packers late 4th and 1 that gave up -18% GWC), it adds to Carroll's mounting errors this year. Through week 10, he has given up approximately ¾ of a game in expected wins on suboptimal fourth down decisions according to the EdjSports simulation model. This is an NFL worst. Pete Carroll tried to defend his decision in the post-game press conference saying he would do it again, but the math does not support his logic.

To illustrate why his decision is so clearly misguided we can stretch some assumptions and look at the required conversion rate. In reality, a first down conversion would net AT LEAST one yard and a punt downed at the one yard line would be extraordinary.

- Seahawks convert first down with exactly one yard: GWC = 36%
- Seahawks are stopped at line of scrimmage and lose possession: GWC = 21%
- Seahawks execute a perfect punt to the Rams 1 yard line: GWC = 30%

Even under these unrealistic assumptions the required success rate of the first down attempt would be:

- GWC Gain (36% - 30%) = 6%
- GWC Risk (30% - 21%) = 9%
- $9/(6 + 9) = \mathbf{60\%}$

An average NFL team would be expected to convert a true 4th and 1 about 70% of the time in this situation which is well above the required rate. Additionally, the Seahawks are ranked 5th in offensive rushing and the Rams are 17th in defensive rushing per the Edj Power Index, and this was less than a 4th and 1.

The Improbable (Bills vs Cardinals):

Kyler Murray and DeAndre combined for the most dramatic finish to an NFL game that you are likely to see this season. With just 11 seconds remaining, the Cardinals managed to work their way to the Bills' 43 yard line for one, or possibly two, shots at the endzone for the win. Prior to the snap, the Cardinals had only 7% GWC. Just 9 seconds later, Hopkins leaping grab alluded three defenders for a most improbable win. This 93% gain in GWC is about as much as you will ever witness on a single play.