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In this appendix we will show that the time remaining on the clock reduces Tampa Bay's incentive to go for the two-point conversion. The only assumption we will make is that when a team gains possession near the end of the game, trailing by a point, there is a possibility that they will turn the ball over, either directly or on downs. This assumption is strongly supported by observation. To keep things simple, we will ignore onside kicks.

Let p denote Tampa Bay's success probability on a two-point conversion from the 1-yard line. If Tampa Bay is successful, let Q_1 denote Washington's probability of a subsequent score. Alternatively, if Tampa Bay kicks the extra point, let Q_0 denote Washington's probability of a subsequent score, and let q_0 denote Tampa Bay's probability of a subsequent score (due perhaps to a turnover on Washington's possession). Assume each team has win probability $\frac{1}{2}$ in overtime.

If Tampa Bay elects to go for the two-point conversion, their win probability is

$$p(1 - Q_1). \tag{1}$$

If instead Tampa Bay kicks the extra point to tie the game, their win probability is

$$q_0 + (1 - Q_0 - q_0)\tfrac{1}{2} = \tfrac{1}{2}q_0 + \tfrac{1}{2}(1 - Q_0). \tag{2}$$

A consequence of this formula is that if Tampa Bay kicks the extra point, Washington's optimal strategy is the one that maximizes $Q_0 - q_0$.

Going for two is at least as good for Tampa Bay as kicking if

$$p(1 - Q_1) \geq \tfrac{1}{2}q_0 + \tfrac{1}{2}(1 - Q_0), \tag{3}$$

which is equivalent to

$$p \geq \frac{q_0}{2(1 - Q_1)} + \frac{1}{2}\left(\frac{1 - Q_0}{1 - Q_1}\right). \tag{4}$$

Now, $Q_1 \geq Q_0$ because if Washington trails when they gain possession, they will maximize their probability of scoring. Also, if $Q_0 = Q_1$, then $q_0 > 0$, because the strategy that maximizes Washington's probability of scoring sometimes results in a turnover. This shows that the right side of inequality (4) exceeds $\frac{1}{2}$.