Optimal strategy for gambling pools

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60% - 50% = 10%

80% - 50% = 30%

70% - 50% = 20%
1,370,740 Boards
2,756 ties (all three way)

429,032 = 31%
468,671 = 34%
470,295 = 34%
<table>
<thead>
<tr>
<th>Race</th>
<th>Probability of Winning</th>
<th>Payout for $2 ticket</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Favorite</td>
<td>Underdog</td>
</tr>
<tr>
<td>Race G</td>
<td>2/3</td>
<td>1/3</td>
</tr>
<tr>
<td>Race E</td>
<td>2/3</td>
<td>1/3</td>
</tr>
<tr>
<td>Race B</td>
<td>2/3</td>
<td>1/3</td>
</tr>
<tr>
<td>Label</td>
<td>F3</td>
<td>G</td>
</tr>
<tr>
<td>-------</td>
<td>----</td>
<td>---</td>
</tr>
<tr>
<td><strong>Description</strong></td>
<td>All 3 favorites</td>
<td>2 favorites and</td>
</tr>
<tr>
<td>Good underdog</td>
<td>Even underdog</td>
<td>Bad underdog</td>
</tr>
<tr>
<td><strong>Probability</strong></td>
<td>30%</td>
<td>15%</td>
</tr>
<tr>
<td><strong>Max Payoff</strong></td>
<td>$9</td>
<td>$16</td>
</tr>
<tr>
<td><strong>Expected</strong></td>
<td>$6.00</td>
<td>$7.33</td>
</tr>
<tr>
<td>Picks</td>
<td>Winner</td>
<td>Second</td>
</tr>
<tr>
<td>------------</td>
<td>------------</td>
<td>-----------</td>
</tr>
<tr>
<td>Harvard</td>
<td>Wofford</td>
<td>1%</td>
</tr>
<tr>
<td>Harvard</td>
<td>Arkansas</td>
<td>4%</td>
</tr>
<tr>
<td>Wofford</td>
<td>Harvard</td>
<td>1%</td>
</tr>
<tr>
<td>Wofford</td>
<td>UNC</td>
<td>3%</td>
</tr>
<tr>
<td>UNC</td>
<td>Wofford</td>
<td>15%</td>
</tr>
<tr>
<td>UNC</td>
<td>Arkansas</td>
<td>49%</td>
</tr>
<tr>
<td>Arkansas</td>
<td>Harvard</td>
<td>4%</td>
</tr>
<tr>
<td>Arkansas</td>
<td>UNC</td>
<td>23%</td>
</tr>
</tbody>
</table>
Another view

• Divide picks into favorites (team most probable to take the slot) and upsets (any other team)
• \( S = \text{correct favorite picks} + \text{correct upset picks} \)
• Suppose \( F \) slots are taken by favorites, \( 63 - F \) by non-favorites
• \( S = F - \text{incorrect upset picks} + \text{correct upset picks} \)
• Only upset picks matter
• Distribution of correct upset picks – incorrect upset picks does not depend strongly on \( F \)
• Contrary to popular opinion, popular opinion is usually wrong.
• Despite the name, smart money is usually dumb.
• Orthogonal to popular and smart is the sweet spot.