

KellyCom Poker Services

KellyCom evaluates and develops models for video poker. That is, a one player game in which the player is paid a prize for a predefined outcome.

Multi-deck games are not offered; nor are multi-player interactive games.

Poker has attracted many commentators who claim expertise in mathematically optimizing play techniques. A large number of the offerings put forward by these commentators is of fairly low quality and utility ¹.

There are inherent difficulties.

The first rests with mathematically defining a perfect strategy. One would intuitively expect that this can be done. What such an approach seeks to do is to define what players must hold or discard from any possible deal to ensure that the Return to Player reaches the highest possible level. What such an approach does is to define the operator's position – that is, if the strategy is slavishly followed, the operator will make the minimum possible profit. The inverse of this is that if all players slavishly follow the defined strategy, a maximum Return to Player Percentage will occur per force of averaging. It does not, however, define certitude for individual players – we are dealing with averages here. This applies to any methodology that might be employed.

The second issue is a pragmatic one. The mathematical approach takes no account of a player's penchant for risk. Many players of video poker will always hold a prize-winning set of cards rather than take a risk for a bigger win. For example, if a deal presents a Flush, a non-risk taking player will hold all five cards. In particular cases, the risk taker may be tempted to hold 4 of the cards to chance getting a Royal Flush – that is he would discard one card (thereby vandalizing a prize guarantee for Flush). If the prize for a Royal Flush is substantial enough, this can be good 'economic' strategy.

KellyCom's approach is to simulate games with a defined strategy and to keep refining that strategy until a Return to Player Percentage cannot be increased.

It is interesting to compare this to a strategy derived from mathematical models. For example, the 'Wizardofodds' has published on his web site a 48 step strategy for a Jacks or Better game that will maximize the player return. Kellycom's simpler 20 step strategy is worth a comparison. Using the Microgaming scorecard for a jacks or better game has, according to the 'Wizardofodds' the following outcomes:

¹ A typical example can be found in "Video Poker, Your Best Bet – Tactics and Strategy" by William Gunn, L & G Audio Travels Ltd, Richmond, B.C., Canada, 1st edition, 1984.

Jacks or Better - Microgaming score card used.

Wizardofodds Results			
	Pays	Probability	Return
Royal Flush	800	0.000025	0.019808
Straight Flush	50	0.000109	0.005465
4 Kind	25	0.002363	0.059064
Full House	9	0.011512	0.10361
Flush	6	0.011015	0.066087
Straight	4	0.011229	0.044917
3 Kind	3	0.074449	0.223346
2 Pair	2	0.129279	0.258558
Jacks or Better	1	0.214585	0.214585
Nothing		0.545435	0
Total		1.00000	0.99544

KellyCom - Run 1 *		KellyCom - Run 2 *	
200000		500000	
Actual Ratio	Return	Actual Ratio	Return
0.00004	0.032	0.000028	0.0224
0.00012	0.006	0.000104	0.0052
0.00244	0.061	0.002514	0.06285
0.01173	0.10557	0.01175	0.10575
0.010135	0.06081	0.01012	0.06072
0.01004	0.04016	0.01005	0.0402
0.075275	0.225825	0.075602	0.226806
0.13228	0.26456	0.131338	0.262676
0.201305	0.201305	0.20025	0.20025
0.556635	0	0.558244	0
1.00000	0.99723	1.0000	0.986852

Different RNG seeds are used for each simulation.

The differences between the derived return percentages are somewhat trivial (Wizard : 99.54% - KellyCom : 99.72% or 98.68%). The simulation methodology is far more flexible in analyzing and developing poker and poker derived games and is exclusively used by KellyCom.

The Jacks or Better game does not have much currency in the Australian environment. Joker Poker, Deuces Wild and various other derivatives are used. Maximum strategies for these types of games are developed by KellyCom again using the simulation methodology. Simulation can be applied to 52 card decks, 53, 54; it can be applied to 6 card deal games and various other exotic 'pokers'.

KellyCom normally runs a number of simulations each with a minimum of 10 million deals and each sample using a different randomizer seed.

KellyCom analyses strategies proposed by customers; it will assist in developing strategies; it will test games to derive Player Return Values of existing designs. In whatever case, highly detailed statistics are supplied which include:

1. The number of occurrences of each defined strategy in the deal phase.
2. The number of occurrences of each defined strategy in the draw phase.
3. The conversion rate (occurrences) where deals are either upgraded by the draw. Additionally, the number of non-upgrades of a 'held' deal is also provided.
4. Probabilities of each defined strategy.
5. The payback rate of each prize-winning card combination.
6. The overall game return

KellyCom Pty. Ltd.