

Calculated Risk



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Computers have many applications in the world of gambling. Pools programs are even available for home computers

Gambling is all about probability, although most gamblers would prefer to say that it was about winning. Such an assertion is unfounded, of course, for the vast majority of gamblers lose consistently, and sometimes heavily. They do so largely because the odds are against them and in favour of the casino, the bookmaker and the pools operator. To evaluate whether computers could help to redress the balance we must first consider these odds.

Stripped of their outward trappings, all games of chance boil down to betting on the outcome of a chance event. Usually this is generated by some random device, such as a ball spun in a roulette wheel, or a card drawn from a carefully shuffled pack. If the parameters — the number of cards, say — are known, probability theory permits certain predictions to be made about the likelihood of the chance event occurring. For example, the roulette wheel used in British casinos has 37 slots numbered from 0 to 36. There are thus 18 odd and 18 even numbered slots into which the ball might fall, plus the zero. The probability of the ball landing in a slot bearing an odd number can therefore be expressed as $18/37$, or 0.4864864, or a little better than 48.6%. This is somewhat less

than the evens chance of a coin landing head upwards; the difference, accounted for by the presence of the zero slot, representing the house's 'edge' or profit margin.

It is this 'edge' that makes games of chance, and most other forms of gambling, so unrewarding. Despite the claims occasionally advanced by purveyors of gambling systems, there is nothing that a computer can do to improve the basic odds in a given game. Indeed, one leading authority, Professor Hans Sagan, has calculated that in the long run it is impossible to win at any casino game, except possibly blackjack (also known as *vingt-et-un*).

Such theoretical objections have failed to discourage enthusiastic inventors, and home computer owners are now being offered a variety of allegedly fool-proof gambling systems, some of which even appear to work. In the case of casino gaming systems, these almost invariably prove to be variations on 'doubling up', a procedure that suffers from the disadvantage of requiring an infinite amount of stake money to succeed. There is a further problem as well: though not technically illegal, the management of casinos both in the UK and USA will not allow computers of any kind to be used. Computers are arguably of greater assistance where skill or strategy are involved. The computer can be used to instil the necessary discipline into the player, and to act as a memory aid. However, the value of such assistance tends to be in inverse proportion to the skill of the player.

Unfortunately, the skill element involved in most popular forms of gambling is minimal.

A Day At The Races

Horse racing is an interesting application of home computers, but strictly for those who know what they are doing. At least one breeder makes use of an Apple II microcomputer to keep a database of the lineage of all his horses, thereby using the computer to attempt to produce winners