

Horse-race betting

- ▶ You go to the horse races with one dollar $b_0 = 1$
- ▶ m horses compete in each race.
- ▶ Before each race, the odds for each horse are announced: $o_t(1), \dots, o_t(m)$ (arbitrary positive numbers)
- ▶ You have to divide *all* your money among the different horses. $\sum_{j=1}^t \hat{p}_t(j) = 1$
- ▶ The horse $1 \leq y_t \leq m$ is winner of the t th race.
- ▶ After iteration t , you have $b_t = b_{t-1} \hat{p}_t(y_t) o_t(y_t)$ dollars
- ▶ After n races, you have $b_n = \prod_{t=1}^n \hat{p}_t(y_t) o_t(y_t)$ dollars.