9/18: no-repret learning in general games Cearning outcome same game each iteration ployer i si... Sit... Vi loss player i $\mathcal{C}_{t}^{i}(x) = C_{i}(x, s_{-i}^{t})$ no repret for player;

her cost: $\sum_{t=1}^{T} c_i(s^t) \leq \min_{t=1}^{T} \sum_{t=1}^{T} c_i(x,s^t)$ vechor of strategies

choosen at time t + error Consider distribution J si--- st all prob + Special case RPS RPS row player play R too much arrows = resulting dynamic

Made with Goodnotes

Resulting average

R D 1/6 1/3 for each player

R 1/6 0 1/6 1/3 x Dash

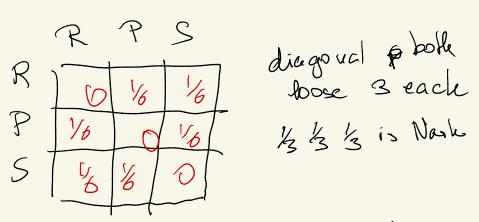
Surply by the state of the player

R 1/6 0 1/6 1/3 x Dash

Surply by the state of the player

Surply by the state of the play is correlated

Shapleg game



teaning outcome in limit

back to general case 0 = 25t -- st -- st all prob = no repret meers $E(c_i(s)) \leq E(c_i(x_is_{-i})) + error$ sno seo alifallx Def: coarse correlated equilibrium dist, of vector of strategies E (G(8)) 4 E (C; (x, s-i)) soro: soro all x & all i Coarse correlated equibbrium is Nooh if I only is D=D, X--- XCL for the u player Note: learners correlate due do

shered history.

Correlated equibrium

(2nd lecture)

5 prob dist on strategy vectors s

no-repret condition for player i $E(C_i(S)|S_{i=X}) \in E(C_i(X,S_{i-i})|S_{i=X})$ sec all i all x all y