

Appendix

Game Predictions

2022-10-25

15 Simulations of the Game

Game of 2 firms:

Table 1: Game Payoffs

Scenarios	Si	Vi(Si, Sj)	Sj ¹	Vj(Sj, Si) ²
$\sum_{i=1}^n S_i < K$	0	0.0	[0 - 2]	[0 - 1.5]
$\sum_{i=1}^n S_i < K$	1	0.5	[0 - 1]	[0 - 0.5]
$\sum_{i=1}^n S_i < K$	2	1.5	[0 - 0]	[0 - 0]
$\sum_{i=1}^n S_i \geq K$	1	0.0	[2 - 2]	[0.5 - 0.5]
$\sum_{i=1}^n S_i \geq K$	2	0.5	[2 - 2]	[0.5 - 0.5]
$\sum_{i=1}^n S_i \geq K$	0	0.0	[2 - 2]	[0.5 - 0.5]

¹ Sj = Range of values that Player j can choose.

² Vj(Sj, Si) = Range of payoffs for Player j.

— Pareto Equilibrium — Pareto Optimality is reached when: $S_i = 2$ with $V_i(S_i, S_j) = 1.5$, if $\text{Sum_Si} < K$ & $S_j = 0$, with payoff $V_j(S_j, S_i) = 0$. With 1 other firm choosing 0 and viceversa.

That is: 1 firms choose 0 units, with a payoff of 0 . 1 firm chooses 2 units, with a payoff of 1.5 .

— Nash Equilibrium — There are 2 Nash Equilibriums .

(1) Nash Equilibrium 1 , for $\text{Sum_Si} < K$: 3 firms choose 1 units, each with a payoff of 0.5 .

(2) Nash Equilibrium 2 , for $\text{Sum_Si} \geq K$: 3 firms choose 2 units, each with a payoff of 0.1666667 .

Game of 3 firms:

Table 2: Game Payoffs

Scenarios	Si	Vi(Si, Sj)	Sj ¹	Vj(Sj, Si) ²
$\sum_{i=1}^n S_i < K$	0	0.000	[0 - 2]	[0 - 1.5]
$\sum_{i=1}^n S_i < K$	1	0.500	[0 - 2]	[0 - 1.5]
$\sum_{i=1}^n S_i < K$	2	1.500	[0 - 1]	[0 - 0.5]
$\sum_{i=1}^n S_i \geq K$	1	-0.167	[1 - 2]	[-0.167 - 0.167]
$\sum_{i=1}^n S_i \geq K$	2	0.167	[1 - 2]	[-0.167 - 0.167]
$\sum_{i=1}^n S_i \geq K$	0	0.000	[1 - 2]	[-0.167 - 0.167]

¹ Sj = Range of values that Player j can choose.

² Vj(Sj, Si) = Range of payoffs for Player j.

— Pareto Equilibrium — Pareto Optimality is reached when: $S_i = 2$ with $vi(Si, S_i) = 1.5$, if $\text{Sum_Si} < K$ & $S_j = [0 , 1]$, with payoff $V_j(S_j, S_i) = [0 , 0.5]$. With 1 other firm choosing 0 and 1 other firm choosing 1 and viceversa.

That is: 1 firms choose 0 units, with a payoff of 0 . 1 firm chooses 2 units, with a payoff of 1.5 . 1 firms choose 1 units, with a payoff of 0.5 .

— Nash Equilibrium — There are 2 Nash Equilibriums .

(1) Nash Equilibrium 1 , for $\text{Sum_Si} < K$: 3 firms choose 1 units, each with a payoff of 0.5 .

(2) Nash Equilibrium 2 , for $\text{Sum_Si} \geq K$: 3 firms choose 2 units, each with a payoff of 0.1666667 .

Game of 4 firms:

Table 3: Game Payoffs

Scenarios	Si	Vi(Si, Sj)	Sj ¹	Vj(Sj, Si) ²
$\sum_{i=1}^n S_i < K$	0	0.0	[0 - 2]	[0 - 1.5]
$\sum_{i=1}^n S_i < K$	1	0.5	[0 - 2]	[0 - 1.5]
$\sum_{i=1}^n S_i < K$	2	1.5	[0 - 2]	[0 - 1.5]
$\sum_{i=1}^n S_i \geq K$	1	0.0	[1 - 2]	[0 - 0.5]
$\sum_{i=1}^n S_i \geq K$	2	0.5	[1 - 2]	[0 - 0.5]
$\sum_{i=1}^n S_i \geq K$	0	0.0	[1 - 2]	[0 - 0.5]

¹ Sj = Range of values that Player j can choose.

² Vj(Sj, Si) = Range of payoffs for Player j.

— Pareto Equilibrium — Pareto Optimality is reached when: $S_i = 2$ with $V_i(S_i, S_j) = 1.5$, if $\text{Sum_Si} < K$ & $S_j = [0 , 2]$, with payoff $V_j(S_j, S_i) = [0 , 1.5]$. With 1 other firm choosing 2 ; 0 other firms choosing 1 , and 2 other firms choosing 0 , and viceversa.

That is: 2 firms choose 0 units, with a payoff of 0 . 0 firms choose 1 units, with a payoff of 0 . 2 firms choose 2 units, with a payoff of 1.5 .

— Nash Equilibrium — There are 2 Nash Equilibriums .

(1) Nash Equilibrium 1 , for $\text{Sum_Si} < K$: 3 firms choose 1 units, each with a payoff of 0.5 .

(2) Nash Equilibrium 2 , for $\text{Sum_Si} \geq K$: 3 firms choose 2 units, each with a payoff of 0.1666667 .

Game of 5 firms:

Table 4: Game Payoffs

Scenarios	Si	Vi(Si, Sj)	Sj ¹	Vj(Sj, Si) ²
$\sum_{i=1}^n S_i < K$	0	0.0	[0 - 2]	[0 - 1.5]
$\sum_{i=1}^n S_i < K$	1	0.5	[0 - 2]	[0 - 1.5]
$\sum_{i=1}^n S_i < K$	2	1.5	[0 - 2]	[0 - 1.5]
$\sum_{i=1}^n S_i \geq K$	1	-0.1	[1 - 2]	[-0.1 - 0.3]
$\sum_{i=1}^n S_i \geq K$	2	0.3	[1 - 2]	[-0.1 - 0.3]
$\sum_{i=1}^n S_i \geq K$	0	0.0	[1 - 2]	[-0.1 - 0.3]

¹ Sj = Range of values that Player j can choose.

² Vj(Sj, Si) = Range of payoffs for Player j.

— Pareto Equilibrium — Pareto Optimality is reached when: $S_i = 2$ with $V_i(S_i, S_j) = 1.5$, if $\text{Sum_Si} < K$ & $S_j = [0 , 2]$, with payoff $V_j(S_j, S_i) = [0 , 1.5]$. With 1 other firm choosing 2 ; 1 other firm choosing 1 , and 2 other firms choosing 0 , and viceversa.

That is: 2 firms choose 0 units, with a payoff of 0 . 1 firms choose 1 units, with a payoff of 0 . 2 firms choose 2 units, with a payoff of 1.5 .

— Nash Equilibrium — There are 2 Nash Equilibriums .

(1) Nash Equilibrium 1 , for $\text{Sum_Si} < K$: 3 firms choose 1 units, each with a payoff of 0.5 .

(2) Nash Equilibrium 2 , for $\text{Sum_Si} \geq K$: 3 firms choose 2 units, each with a payoff of 0.1666667 .

Game of 6 firms:

Table 5: Game Payoffs

Scenarios	Si	Vi(Si, Sj)	Sj ¹	Vj(Sj, Si) ²
$\sum_{i=1}^n S_i < K$	0	0.0	[0 - 2]	[0 - 1.5]
$\sum_{i=1}^n S_i < K$	1	0.5	[0 - 2]	[0 - 1.5]
$\sum_{i=1}^n S_i < K$	2	1.5	[0 - 2]	[0 - 1.5]
$\sum_{i=1}^n S_i \geq K$	1	0.0	[1 - 2]	[0 - 0.5]
$\sum_{i=1}^n S_i \geq K$	2	0.5	[1 - 2]	[0 - 0.5]
$\sum_{i=1}^n S_i \geq K$	0	0.0	[1 - 2]	[0 - 0.5]

¹ Sj = Range of values that Player j can choose.

² Vj(Sj, Si) = Range of payoffs for Player j.

— Pareto Equilibrium — Pareto Optimality is reached when: $S_i = 2$ with $V_i(S_i, S_j) = 1.5$, if $\text{Sum_Si} < K$ & $S_j = [0 , 2]$, with payoff $V_j(S_j, S_i) = [0 , 1.5]$. With 2 other firms choosing 2 ; 0 other firms choosing 1 , and 3 other firms choosing 0 , and viceversa.

That is: 3 firms choose 0 units, with a payoff of 0 . 0 firms choose 1 units, with a payoff of 0 . 3 firms choose 2 units, with a payoff of 1.5 .

— Nash Equilibrium — There are 2 Nash Equilibriums .

(1) Nash Equilibrium 1 , for $\text{Sum_Si} < K$: 3 firms choose 1 units, each with a payoff of 0.5 .

(2) Nash Equilibrium 2 , for $\text{Sum_Si} \geq K$: 3 firms choose 2 units, each with a payoff of 0.1666667 .

Game of 7 firms:

Table 6: Game Payoffs

Scenarios	Si	Vi(Si, Sj)	Sj ¹	Vj(Sj, Si) ²
$\sum_{i=1}^n S_i < K$	0	0.000	[0 - 2]	[0 - 1.5]
$\sum_{i=1}^n S_i < K$	1	0.500	[0 - 2]	[0 - 1.5]
$\sum_{i=1}^n S_i < K$	2	1.500	[0 - 2]	[0 - 1.5]
$\sum_{i=1}^n S_i \geq K$	1	-0.071	[1 - 2]	[-0.071 - 0.357]
$\sum_{i=1}^n S_i \geq K$	2	0.357	[1 - 2]	[-0.071 - 0.357]
$\sum_{i=1}^n S_i \geq K$	0	0.000	[1 - 2]	[-0.071 - 0.357]

¹ Sj = Range of values that Player j can choose.

² Vj(Sj, Si) = Range of payoffs for Player j.

— Pareto Equilibrium — Pareto Optimality is reached when: $S_i = 2$ with $V_i(S_i, S_j) = 1.5$, if $\text{Sum_Si} < K$ & $S_j = [0 , 2]$, with payoff $V_j(S_j, S_i) = [0 , 1.5]$. With 2 other firms choosing 2 ; 1 other firm choosing 1 , and 3 other firms choosing 0 , and viceversa.

That is: 3 firms choose 0 units, with a payoff of 0 . 1 firms choose 1 units, with a payoff of 0 . 3 firms choose 2 units, with a payoff of 1.5 .

— Nash Equilibrium — There are 2 Nash Equilibriums .

(1) Nash Equilibrium 1 , for $\text{Sum_Si} < K$: 3 firms choose 1 units, each with a payoff of 0.5 .

(2) Nash Equilibrium 2 , for $\text{Sum_Si} \geq K$: 3 firms choose 2 units, each with a payoff of 0.1666667 .

Game of 8 firms:

Table 7: Game Payoffs

Scenarios	Si	Vi(Si, Sj)	Sj ¹	Vj(Sj, Si) ²
$\sum_{i=1}^n S_i < K$	0	0.0	[0 - 2]	[0 - 1.5]
$\sum_{i=1}^n S_i < K$	1	0.5	[0 - 2]	[0 - 1.5]
$\sum_{i=1}^n S_i < K$	2	1.5	[0 - 2]	[0 - 1.5]
$\sum_{i=1}^n S_i \geq K$	1	0.0	[1 - 2]	[0 - 0.5]
$\sum_{i=1}^n S_i \geq K$	2	0.5	[1 - 2]	[0 - 0.5]
$\sum_{i=1}^n S_i \geq K$	0	0.0	[1 - 2]	[0 - 0.5]

¹ Sj = Range of values that Player j can choose.

² Vj(Sj, Si) = Range of payoffs for Player j.

— Pareto Equilibrium — Pareto Optimality is reached when: $S_i = 2$ with $V_i(S_i, S_j) = 1.5$, if $\text{Sum_Si} < K$ & $S_j = [0 , 2]$, with payoff $V_j(S_j, S_i) = [0 , 1.5]$. With 3 other firms choosing 2 ; 0 other firms choosing 1 , and 4 other firms choosing 0 , and viceversa.

That is: 4 firms choose 0 units, with a payoff of 0 . 0 firms choose 1 units, with a payoff of 0 . 4 firms choose 2 units, with a payoff of 1.5 .

— Nash Equilibrium — There are 2 Nash Equilibriums .

(1) Nash Equilibrium 1 , for $\text{Sum_Si} < K$: 3 firms choose 1 units, each with a payoff of 0.5 .

(2) Nash Equilibrium 2 , for $\text{Sum_Si} \geq K$: 3 firms choose 2 units, each with a payoff of 0.1666667 .

Game of 9 firms:

Table 8: Game Payoffs

Scenarios	Si	Vi(Si, Sj)	Sj ¹	Vj(Sj, Si) ²
$\sum_{i=1}^n S_i < K$	0	0.000	[0 - 2]	[0 - 1.5]
$\sum_{i=1}^n S_i < K$	1	0.500	[0 - 2]	[0 - 1.5]
$\sum_{i=1}^n S_i < K$	2	1.500	[0 - 2]	[0 - 1.5]
$\sum_{i=1}^n S_i \geq K$	1	-0.056	[1 - 2]	[-0.056 - 0.389]
$\sum_{i=1}^n S_i \geq K$	2	0.389	[1 - 2]	[-0.056 - 0.389]
$\sum_{i=1}^n S_i \geq K$	0	0.000	[1 - 2]	[-0.056 - 0.389]

¹ Sj = Range of values that Player j can choose.

² Vj(Sj, Si) = Range of payoffs for Player j.

— Pareto Equilibrium — Pareto Optimality is reached when: $S_i = 2$ with $V_i(S_i, S_j) = 1.5$, if $\text{Sum_Si} < K$ & $S_j = [0 , 2]$, with payoff $V_j(S_j, S_i) = [0 , 1.5]$. With 3 other firms choosing 2 ; 1 other firm choosing 1 , and 4 other firms choosing 0 , and viceversa.

That is: 4 firms choose 0 units, with a payoff of 0 . 1 firms choose 1 units, with a payoff of 0 . 4 firms choose 2 units, with a payoff of 1.5 .

— Nash Equilibrium — There are 2 Nash Equilibriums .

(1) Nash Equilibrium 1 , for $\text{Sum_Si} < K$: 3 firms choose 1 units, each with a payoff of 0.5 .

(2) Nash Equilibrium 2 , for $\text{Sum_Si} \geq K$: 3 firms choose 2 units, each with a payoff of 0.1666667 .

Game of 10 firms:

Table 9: Game Payoffs

Scenarios	Si	Vi(Si, Sj)	Sj ¹	Vj(Sj, Si) ²
$\sum_{i=1}^n S_i < K$	0	0.0	[0 - 2]	[0 - 1.5]
$\sum_{i=1}^n S_i < K$	1	0.5	[0 - 2]	[0 - 1.5]
$\sum_{i=1}^n S_i < K$	2	1.5	[0 - 2]	[0 - 1.5]
$\sum_{i=1}^n S_i \geq K$	1	0.0	[1 - 2]	[0 - 0.5]
$\sum_{i=1}^n S_i \geq K$	2	0.5	[1 - 2]	[0 - 0.5]
$\sum_{i=1}^n S_i \geq K$	0	0.0	[1 - 2]	[0 - 0.5]

¹ Sj = Range of values that Player j can choose.

² Vj(Sj, Si) = Range of payoffs for Player j.

— Pareto Equilibrium — Pareto Optimality is reached when: $S_i = 2$ with $V_i(S_i, S_j) = 1.5$, if $\text{Sum_Si} < K$ & $S_j = [0 , 2]$, with payoff $V_j(S_j, S_i) = [0 , 1.5]$. With 4 other firms choosing 2 ; 0 other firms choosing 1 , and 5 other firms choosing 0 , and viceversa.

That is: 5 firms choose 0 units, with a payoff of 0 . 0 firms choose 1 units, with a payoff of 0 . 5 firms choose 2 units, with a payoff of 1.5 .

— Nash Equilibrium — There are 2 Nash Equilibriums .

(1) Nash Equilibrium 1 , for $\text{Sum_Si} < K$: 3 firms choose 1 units, each with a payoff of 0.5 .

(2) Nash Equilibrium 2 , for $\text{Sum_Si} \geq K$: 3 firms choose 2 units, each with a payoff of 0.1666667 .

Game of 11 firms:

Table 10: Game Payoffs

Scenarios	Si	Vi(Si, Sj)	Sj ¹	Vj(Sj, Si) ²
$\sum_{i=1}^n S_i < K$	0	0.000	[0 - 2]	[0 - 1.5]
$\sum_{i=1}^n S_i < K$	1	0.500	[0 - 2]	[0 - 1.5]
$\sum_{i=1}^n S_i < K$	2	1.500	[0 - 2]	[0 - 1.5]
$\sum_{i=1}^n S_i \geq K$	1	-0.045	[1 - 2]	[-0.045 - 0.409]
$\sum_{i=1}^n S_i \geq K$	2	0.409	[1 - 2]	[-0.045 - 0.409]
$\sum_{i=1}^n S_i \geq K$	0	0.000	[1 - 2]	[-0.045 - 0.409]

¹ Sj = Range of values that Player j can choose.

² Vj(Sj, Si) = Range of payoffs for Player j.

— Pareto Equilibrium — Pareto Optimality is reached when: $S_i = 2$ with $V_i(S_i, S_j) = 1.5$, if $\text{Sum_Si} < K$ & $S_j = [0, 2]$, with payoff $V_j(S_j, S_i) = [0, 1.5]$. With 4 other firms choosing 2 ; 1 other firm choosing 1, and 5 other firms choosing 0, and viceversa.

That is: 5 firms choose 0 units, with a payoff of 0 . 1 firms choose 1 units, with a payoff of 0 . 5 firms choose 2 units, with a payoff of 1.5 .

— Nash Equilibrium — There are 2 Nash Equilibriums .

(1) Nash Equilibrium 1 , for $\text{Sum_Si} < K$: 3 firms choose 1 units, each with a payoff of 0.5 .

(2) Nash Equilibrium 2 , for $\text{Sum_Si} \geq K$: 3 firms choose 2 units, each with a payoff of 0.1666667 .

Game of 12 firms:

Table 11: Game Payoffs

Scenarios	Si	Vi(Si, Sj)	Sj ¹	Vj(Sj, Si) ²
$\sum_{i=1}^n S_i < K$	0	0.0	[0 - 2]	[0 - 1.5]
$\sum_{i=1}^n S_i < K$	1	0.5	[0 - 2]	[0 - 1.5]
$\sum_{i=1}^n S_i < K$	2	1.5	[0 - 2]	[0 - 1.5]
$\sum_{i=1}^n S_i \geq K$	1	0.0	[1 - 2]	[0 - 0.5]
$\sum_{i=1}^n S_i \geq K$	2	0.5	[1 - 2]	[0 - 0.5]
$\sum_{i=1}^n S_i \geq K$	0	0.0	[1 - 2]	[0 - 0.5]

¹ Sj = Range of values that Player j can choose.

² Vj(Sj, Si) = Range of payoffs for Player j.

— Pareto Equilibrium — Pareto Optimality is reached when: $S_i = 2$ with $V_i(S_i, S_j) = 1.5$, if $\text{Sum_Si} < K$ & $S_j = [0, 2]$, with payoff $V_j(S_j, S_i) = [0, 1.5]$. With 5 other firms choosing 2 ; 0 other firms choosing 1 , and 6 other firms choosing 0 , and viceversa.

That is: 6 firms choose 0 units, with a payoff of 0 . 0 firms choose 1 units, with a payoff of 0 . 6 firms choose 2 units, with a payoff of 1.5 .

— Nash Equilibrium — There are 2 Nash Equilibriums .

(1) Nash Equilibrium 1 , for $\text{Sum_Si} < K$: 3 firms choose 1 units, each with a payoff of 0.5 .

(2) Nash Equilibrium 2 , for $\text{Sum_Si} \geq K$: 3 firms choose 2 units, each with a payoff of 0.1666667 .

Game of 13 firms:

Table 12: Game Payoffs

Scenarios	Si	Vi(Si, Sj)	Sj ¹	Vj(Sj, Si) ²
$\sum_{i=1}^n S_i < K$	0	0.000	[0 - 2]	[0 - 1.5]
$\sum_{i=1}^n S_i < K$	1	0.500	[0 - 2]	[0 - 1.5]
$\sum_{i=1}^n S_i < K$	2	1.500	[0 - 2]	[0 - 1.5]
$\sum_{i=1}^n S_i \geq K$	1	-0.038	[1 - 2]	[-0.038 - 0.423]
$\sum_{i=1}^n S_i \geq K$	2	0.423	[1 - 2]	[-0.038 - 0.423]
$\sum_{i=1}^n S_i \geq K$	0	0.000	[1 - 2]	[-0.038 - 0.423]

¹ Sj = Range of values that Player j can choose.

² Vj(Sj, Si) = Range of payoffs for Player j.

— Pareto Equilibrium — Pareto Optimality is reached when: $S_i = 2$ with $V_i(S_i, S_j) = 1.5$, if $\text{Sum_Si} < K$ & $S_j = [0, 2]$, with payoff $V_j(S_j, S_i) = [0, 1.5]$. With 5 other firms choosing 2 ; 1 other firm choosing 1, and 6 other firms choosing 0, and viceversa.

That is: 6 firms choose 0 units, with a payoff of 0 . 1 firms choose 1 units, with a payoff of 0 . 6 firms choose 2 units, with a payoff of 1.5 .

— Nash Equilibrium — There are 2 Nash Equilibriums .

(1) Nash Equilibrium 1 , for $\text{Sum_Si} < K$: 3 firms choose 1 units, each with a payoff of 0.5 .

(2) Nash Equilibrium 2 , for $\text{Sum_Si} \geq K$: 3 firms choose 2 units, each with a payoff of 0.1666667 .

Game of 14 firms:

Table 13: Game Payoffs

Scenarios	Si	Vi(Si, Sj)	Sj ¹	Vj(Sj, Si) ²
$\sum_{i=1}^n S_i < K$	0	0.0	[0 - 2]	[0 - 1.5]
$\sum_{i=1}^n S_i < K$	1	0.5	[0 - 2]	[0 - 1.5]
$\sum_{i=1}^n S_i < K$	2	1.5	[0 - 2]	[0 - 1.5]
$\sum_{i=1}^n S_i \geq K$	1	0.0	[1 - 2]	[0 - 0.5]
$\sum_{i=1}^n S_i \geq K$	2	0.5	[1 - 2]	[0 - 0.5]
$\sum_{i=1}^n S_i \geq K$	0	0.0	[1 - 2]	[0 - 0.5]

¹ Sj = Range of values that Player j can choose.

² Vj(Sj, Si) = Range of payoffs for Player j.

— Pareto Equilibrium — Pareto Optimality is reached when: $S_i = 2$ with $V_i(S_i, S_j) = 1.5$, if $\text{Sum_Si} < K$ & $S_j = [0 , 2]$, with payoff $V_j(S_j, S_i) = [0 , 1.5]$. With 6 other firms choosing 2 ; 0 other firms choosing 1 , and 7 other firms choosing 0 , and viceversa.

That is: 7 firms choose 0 units, with a payoff of 0 . 0 firms choose 1 units, with a payoff of 0 . 7 firms choose 2 units, with a payoff of 1.5 .

— Nash Equilibrium — There are 2 Nash Equilibriums .

(1) Nash Equilibrium 1 , for $\text{Sum_Si} < K$: 3 firms choose 1 units, each with a payoff of 0.5 .

(2) Nash Equilibrium 2 , for $\text{Sum_Si} \geq K$: 3 firms choose 2 units, each with a payoff of 0.1666667 .

Game of 15 firms:

Table 14: Game Payoffs

Scenarios	Si	Vi(Si, Sj)	Sj ¹	Vj(Sj, Si) ²
$\sum_{i=1}^n S_i < K$	0	0.000	[0 - 2]	[0 - 1.5]
$\sum_{i=1}^n S_i < K$	1	0.500	[0 - 2]	[0 - 1.5]
$\sum_{i=1}^n S_i < K$	2	1.500	[0 - 2]	[0 - 1.5]
$\sum_{i=1}^n S_i \geq K$	1	-0.033	[1 - 2]	[-0.033 - 0.433]
$\sum_{i=1}^n S_i \geq K$	2	0.433	[1 - 2]	[-0.033 - 0.433]
$\sum_{i=1}^n S_i \geq K$	0	0.000	[1 - 2]	[-0.033 - 0.433]

¹ Sj = Range of values that Player j can choose.

² Vj(Sj, Si) = Range of payoffs for Player j.

— Pareto Equilibrium — Pareto Optimality is reached when: $S_i = 2$ with $V_i(S_i, S_j) = 1.5$, if $\text{Sum_Si} < K$ & $S_j = [0, 2]$, with payoff $V_j(S_j, S_i) = [0, 1.5]$. With 6 other firms choosing 2 ; 1 other firm choosing 1, and 7 other firms choosing 0, and viceversa.

That is: 7 firms choose 0 units, with a payoff of 0 . 1 firms choose 1 units, with a payoff of 0 . 7 firms choose 2 units, with a payoff of 1.5 .

— Nash Equilibrium — There are 2 Nash Equilibriums .

(1) Nash Equilibrium 1 , for $\text{Sum_Si} < K$: 3 firms choose 1 units, each with a payoff of 0.5 .

(2) Nash Equilibrium 2 , for $\text{Sum_Si} \geq K$: 3 firms choose 2 units, each with a payoff of 0.1666667 .