

EX. on Voting

Assume 3 individuals need to vote among 3 levels of public education (A,B,C) in a majority voting, preferences are as follows:

Choice	Andy	George	Petra
First	A	C	B
Second	B	B	C
Third	C	A	A

- 1) Assume that the level of provision are such that $A < B < C$ and assume a pairwise majority voting over the levels of education. Find the winning alternative
- 2) Assume now preferences are as follows:

Choice	Andy	George	Petra
First	A	C	B
Second	B	A	C
Third	C	B	A

Assume a pairwise majority voting over the levels of education. Find the winning alternative

- 3) Assume now that any losing alternative in a pairwise election is eliminated. Find the winning alternative.

Solutions:

- 1) Note that the alternative are ordered in a transitive way then the result of the voting is: B beats A by 2-1. B beats C by 2-1. B is then the majority voting rule equilibrium
- 2) Winner cycle: A wins vs B by 2-1, B wins vs C by 2-1, C wins vs A by 2-1. NO winner exists in a pairwise election. George's preferences are not single peaked.
- 3) By introducing a voting agenda (and by its manipulation) it is possible to organize the order of voting round to induce the election of a favorite candidate. For example Petra's most favorite alternative is B, but B would be beaten by A 2-1. Thus it would be optimal for Petra to manipulate the agenda in order to run the election in order to eliminate A. The alternative able to eliminate A is C, by anticipating then that C will in turn be beaten by B in the remaining pairwise election. The final winning alternative will be B.