





# Games and Information

### **Problems Sets**

#### Summer Semester 2025

### Karl-Josef Koch

## Problem Set 2

#### Exercise 3

Recall the *Follow the Leader* game with two states of nature as discussed in the lecture.

- (1) Choose a reasonable notation for strategies and explain it.
- (2) Express the *Follow the Leader* Nash-equilibrium in your notation of strategy profiles.
- (3) The Perfect Bayesian equilibrium of this game is a strategy profile together with a set of Bayesian beliefs of player *Jones*. Reconfirm that the Bayesian belief of the *Follow the Leader*-strategy profile consists of zero-one probabilities only.
- (4) Comment on the claim that the example with this pay-off structure is a robust version of a *Follow the Leader* game.
- (5)\* Imagine *Jones* is not sure how to use Bayes rule and tends to use intuitive beliefs instead of priors or Bayesian beliefs. Find the constraints for the intuitive beliefs that are compatible with the *Follow the Leader* equilibrium.
- (6)\* Can you find priors  $(\pi_A, \pi_B)$  such that  $\sigma_{Jones} = (Small|Small, Small|Large)$  and  $\sigma_{Smith} = (Small|A, Large|B)$  form a Nash-equilibrium strategy profile on the basis of the priors  $\pi$  but not a Bayesian equilibrium profile?

The asterisk (\*) indicates an advanced exercise. The question goes beyond the scope of the course, but may be helpful for a better understanding of some fundamental issues.