

What do we know about risk and agricultural decision making

David Pannell

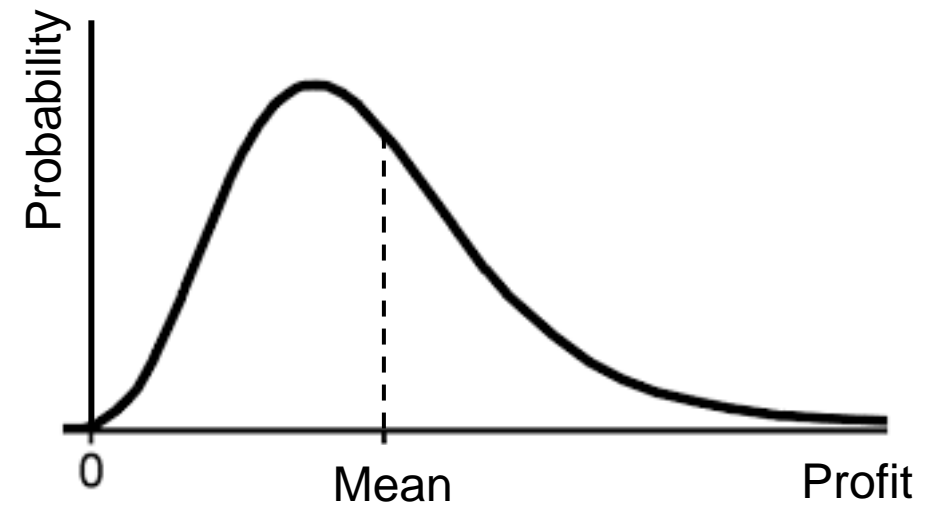
Risk

- Risk = you make a decision without fully knowing the outcomes
- Research on risk in agriculture over past 50 years
 - Measuring riskiness
 - Attitudes to risk
 - Managing risk



Risk is about probabilities

- Could be worse than you expect
- Could be better than you expect
- Most (not all) farmers care more about downside than upside
- “risk averse” or “loss averse”
- Not very risk averse

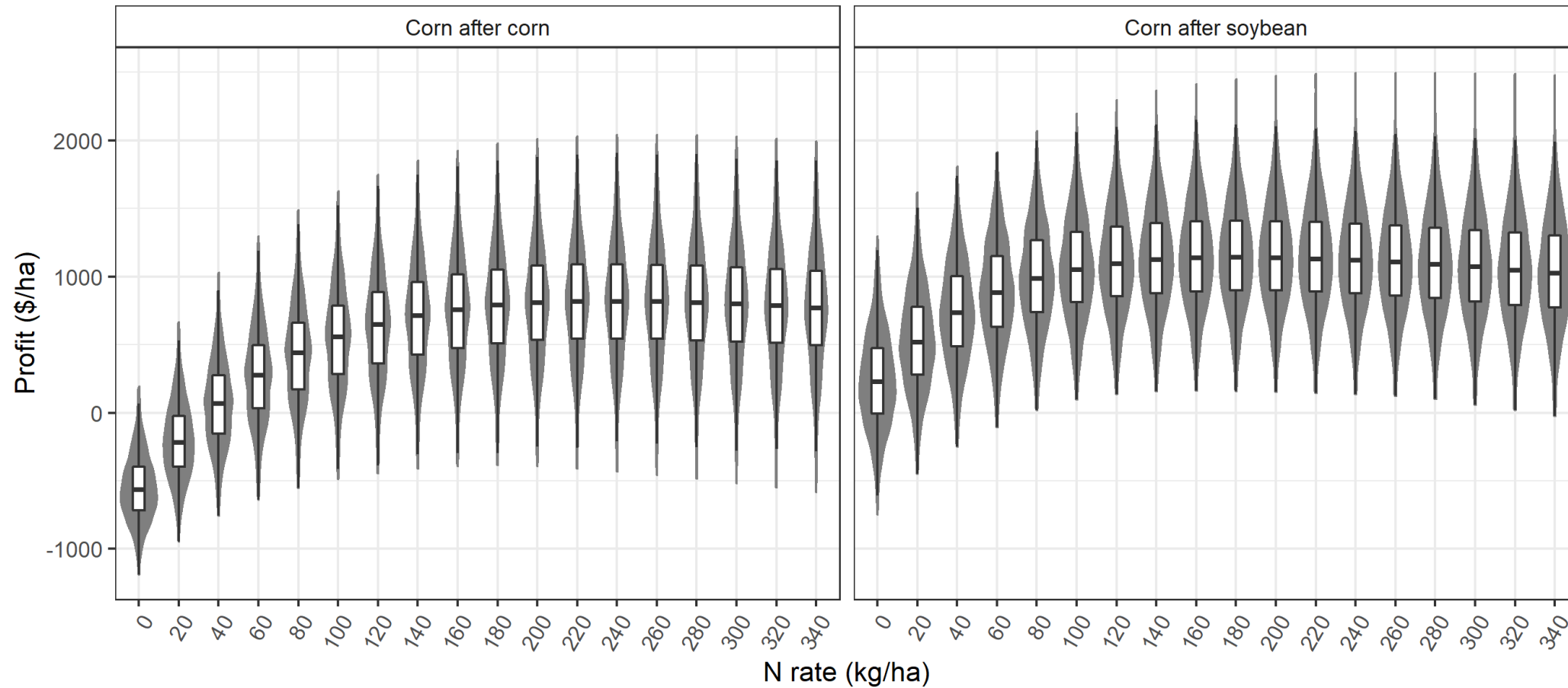


When does risk matter most?

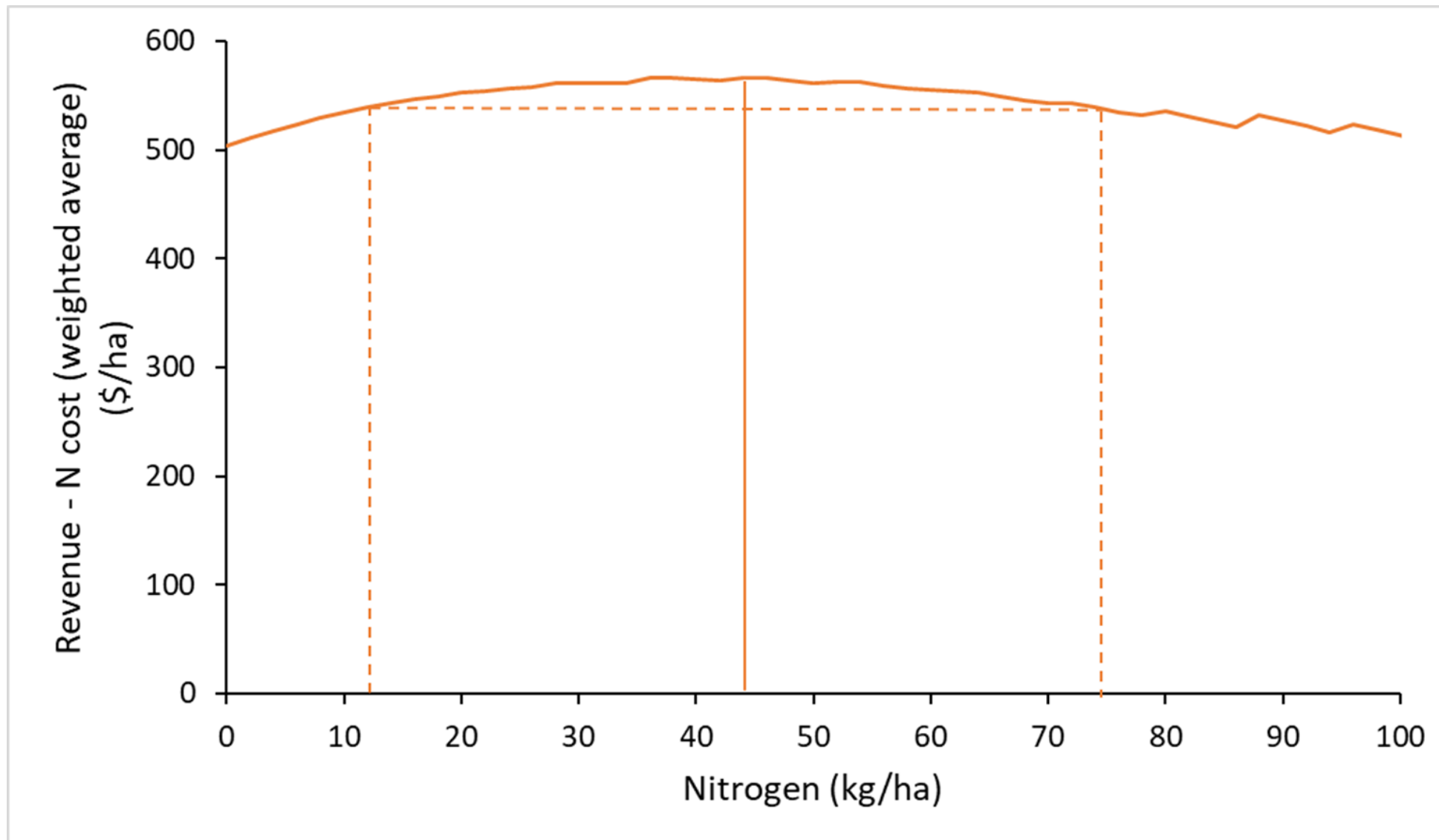
- Risk matters most in big decisions
 - Land purchase
 - Large machinery purchase
- Matters somewhat for adoption of new practices
 - High uncertainty
- Somewhat: playing the seasons
- Matters less in some decisions about inputs
 - Fertilise rates



Changing N rates and risk



Flat payoff functions



Modelling risk for decision making

- Can get very complex
 - Risk not apparent in a three-year trial
 - Multiple risks (prices, costs, weather, disease, storm, drought, critical breakdowns, ...)
 - Risks compounding or offsetting
 - Sequencing of risks
 - Low probability/high impact events

Modelling risk for decision making

- What can non-specialists do?
 - Well-design sensitivity analysis/scenario analysis?
 - Cookbook?
 - Check list of issues/questions?
 - Curated/massaged modelling results?