

Thesis Progress and Current Status

Title Idea: *Statistical Inference in Forecasting Competitions and Prediction Markets*

Overview: Most of the main chapters are now drafted and consistent in structure. The thesis examines how beliefs are formed and aggregated within collective forecasting systems and prediction markets, drawing on Bayesian modelling, statistical inference, and empirical analysis.

Current structure:

- Ch. 1: Foundations of Bayesian inference and aggregation theory.
- Ch. 2: Kairosis (IJF, published): Time-sensitive weighting of crowd forecasts.
- Ch. 3: Order Book Inference: Inferring trader beliefs from market order books.
- Ch. 4: Structural Liquidity and Trader Behaviour: Integration of liquidity and trader-behaviour models explaining volatility and stability.
- Ch. 5: Conclusion and synthesis.

Recent focus: Integrated a microstructure-based model of liquidity, adapted from CARA–utility frameworks, with empirical analysis of trader behaviour on Polymarket. This links classical theory of risk-averse price formation to observed belief dynamics in real-money prediction markets.

Completion and Outlook

Reflection:

- The main chapters are drafted, and the structure is working as intended.
- The link between the theoretical model and empirical analysis is clearer but still needs refining.
- Further work will focus on clarity, consistency, and presentation.

Timeline:

- **Oct–Dec 2025:** Integrate supervisor feedback and revise liquidity and behaviour chapters.
- **Early 2026:** Final edits to introduction and conclusion; prepare submission materials.
- **Target submission:** Mid-2026, within the planned schedule.

Career direction:

- Preparing for quantitative research and risk roles in asset management or investment banking.
- Planning to complete the PhD and begin full-time work in 2026.