ALPEN-ADRIA UNIVERSITÄT KLAGENFURT

INVITATION TO THE PRESENTATION ABOUT THE WORK-PLACEMENT

Quantitative Tools for Strategic Asset Allocation in the Insurance Industry

Christoph Krainbucher | University of Klagenfurt

Chaired by Michaela Hitz | Department of Statistics

Wednesday, 2 December 2026 | 10:00–10:45

Z.1.09

ABSTRACT

Insurance companies do not merely provide insurance products and assume financial risks; they also manage substantial investment portfolios. The premiums collected today must be invested in a way that enables the insurer to meet its future obligations towards policyholders. Consequently, the management of financial assets represents a fundamental part of an insurance company's business model. In this context, Strategic Asset Allocation (SAA) plays a particularly important role, as it determines the long-term composition of an investment portfolio while balancing expected returns, investment risks and the insurer's specific requirements.

During my internship at Kärntner Landesversicherung, I developed two quantitative applications in R Shiny to support the Strategic Asset Allocation process. The first application combines financial asset analysis, CAPM-based evaluation and portfolio optimisation under various investment constraints. The second applies Bayesian time-series models, including Student-t, AR-GARCH and multivariate AR-DCC-GARCH models, to analyse asset returns and simulate future

price developments while accounting for parameter uncertainty.

Together, these applications provide complementary tools for assessing investment opportunities, evaluating portfolio risks and exploring alternative asset allocations. They aim to support a more systematic and forward-looking approach to investment decisions within an insurance company.

We hope to see you there!