AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search
http://ageconsearch.umn.edu
aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

Modelling the Risk, Return and Resiliency of Future Dairy Farm Systems

Mark Neal, Simon Cooper

Contributed presentation at the 60th AARES Annual Conference,
Canberra, ACT, 2-5 February 2016

Copyright 2016 by Author(s). All rights reserved. Readers may make verbatim copies of this document for non-commercial purposes by any means, provided that this copyright notice appears on all such copies.

DairyNZ

Profitability. Sustainability. Competitiveness.

Modelling the Risk, Return and Resiliency of Future Dairy Farm Systems

Mark Neal, Simon Cooper

Resilience

- *What doesn't kill you makes you stronger*

- "...farming systems are probably too complex and variable in space and time for resilience models to provide specific, or even closely predictive, guidance to farmers"

DairyNZ

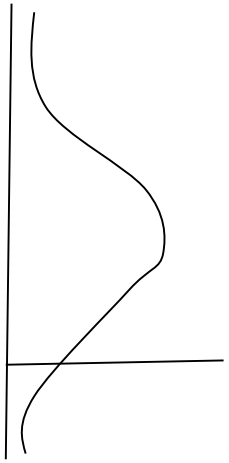
To what? From what?

- Resilience of the farm business
- To financial shocks
  - Affecting solvency/liquidity
- Can be price, production, financial, institutional

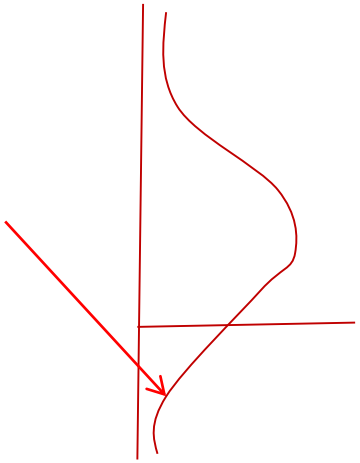
To Bounce without Breaking

- Post-shock two year cash flow
- Bad year (1 in 10), followed by
- Distribution of all returns (or conditional)

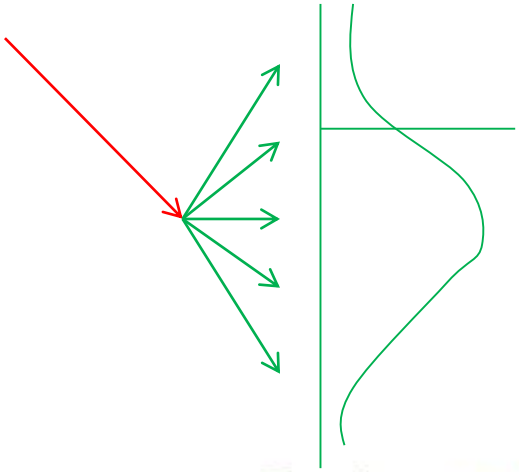
Return on assets ->



Cash surplus ->



Two-year cash surplus

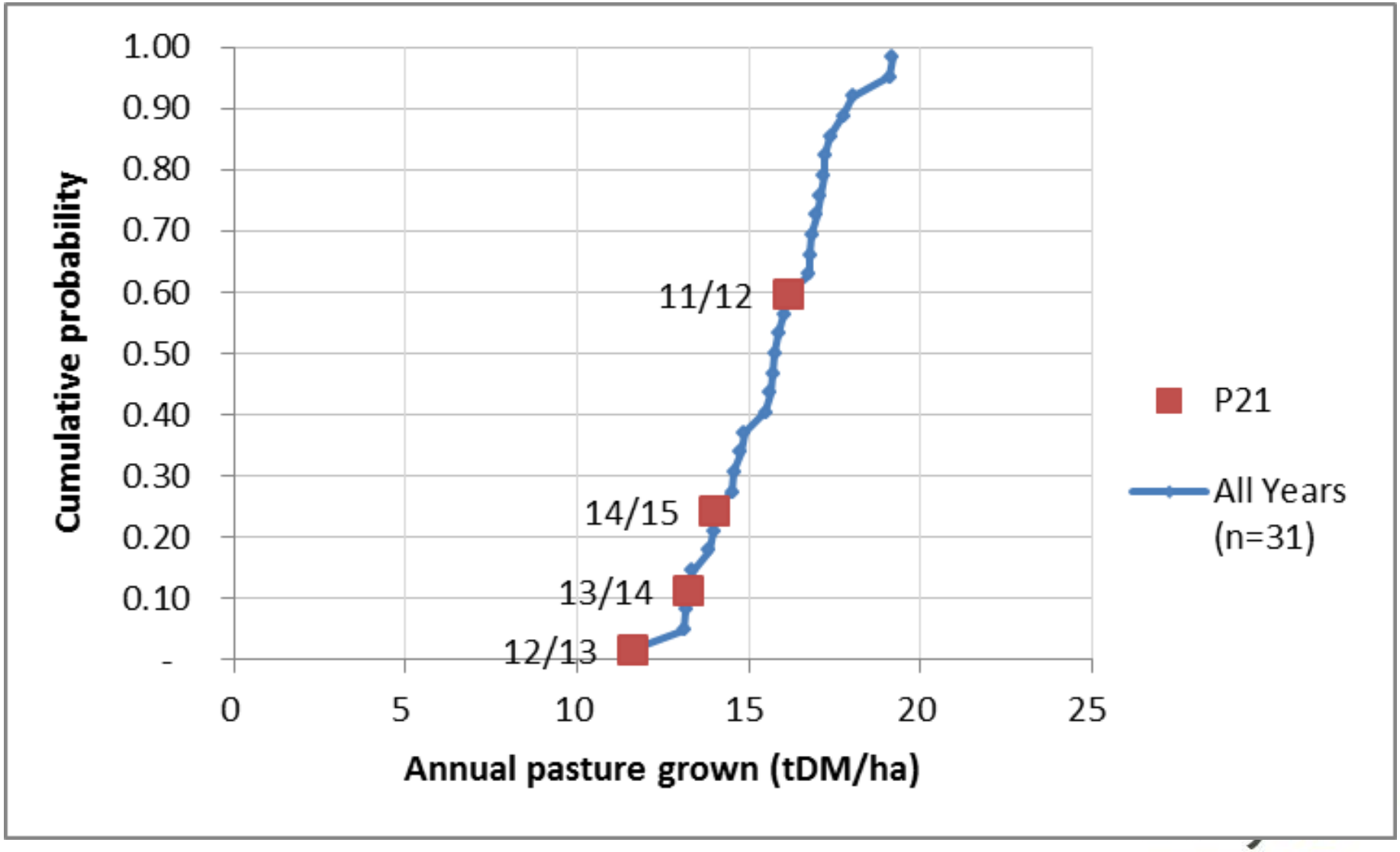


Case study: Pastoral 21

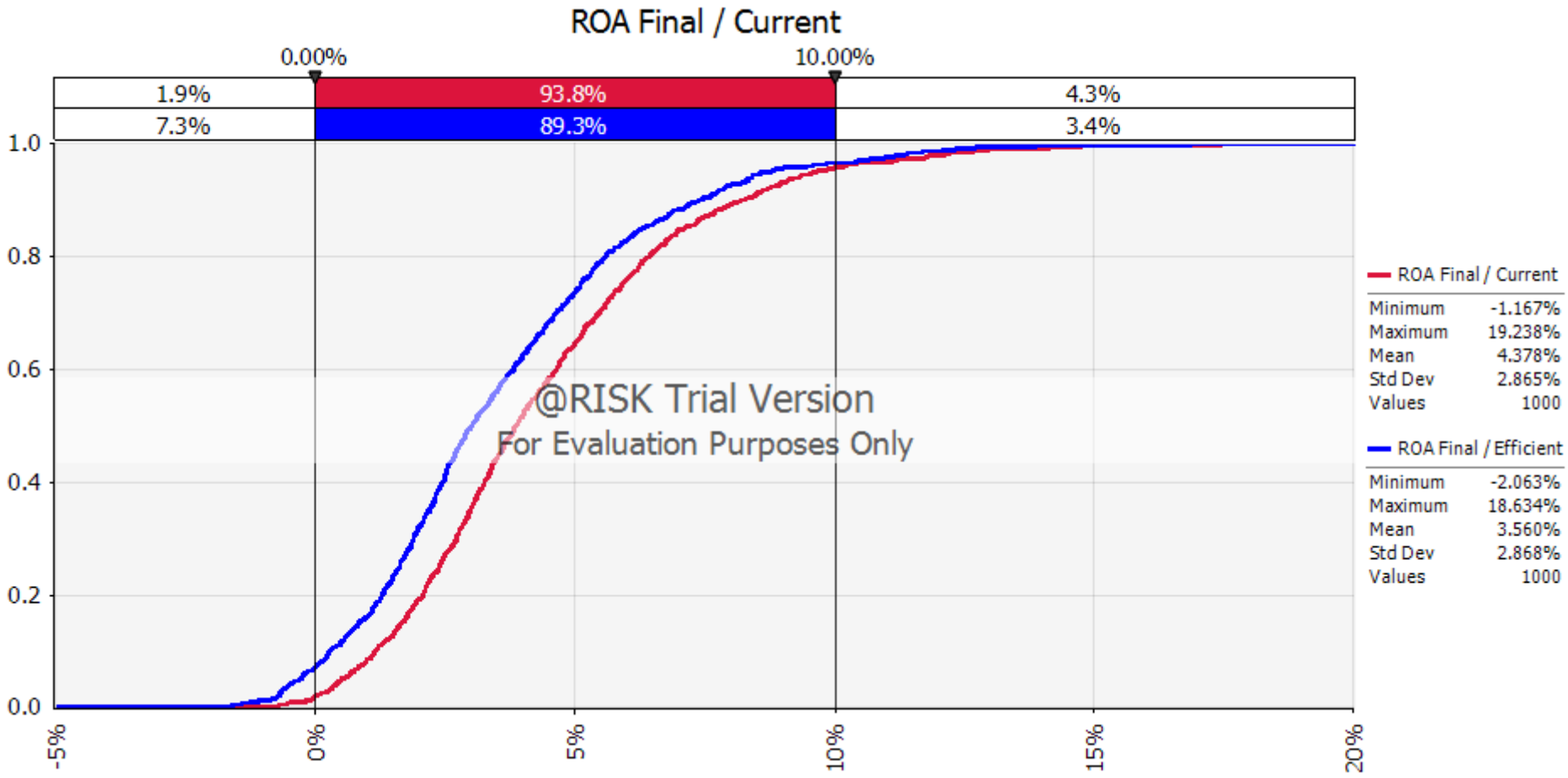
- System change
  - Similar profit
  - Lower nitrate leaching
- Lower stocking rate
  - Higher per cow

DairyNZ

Waikato Pasture Production

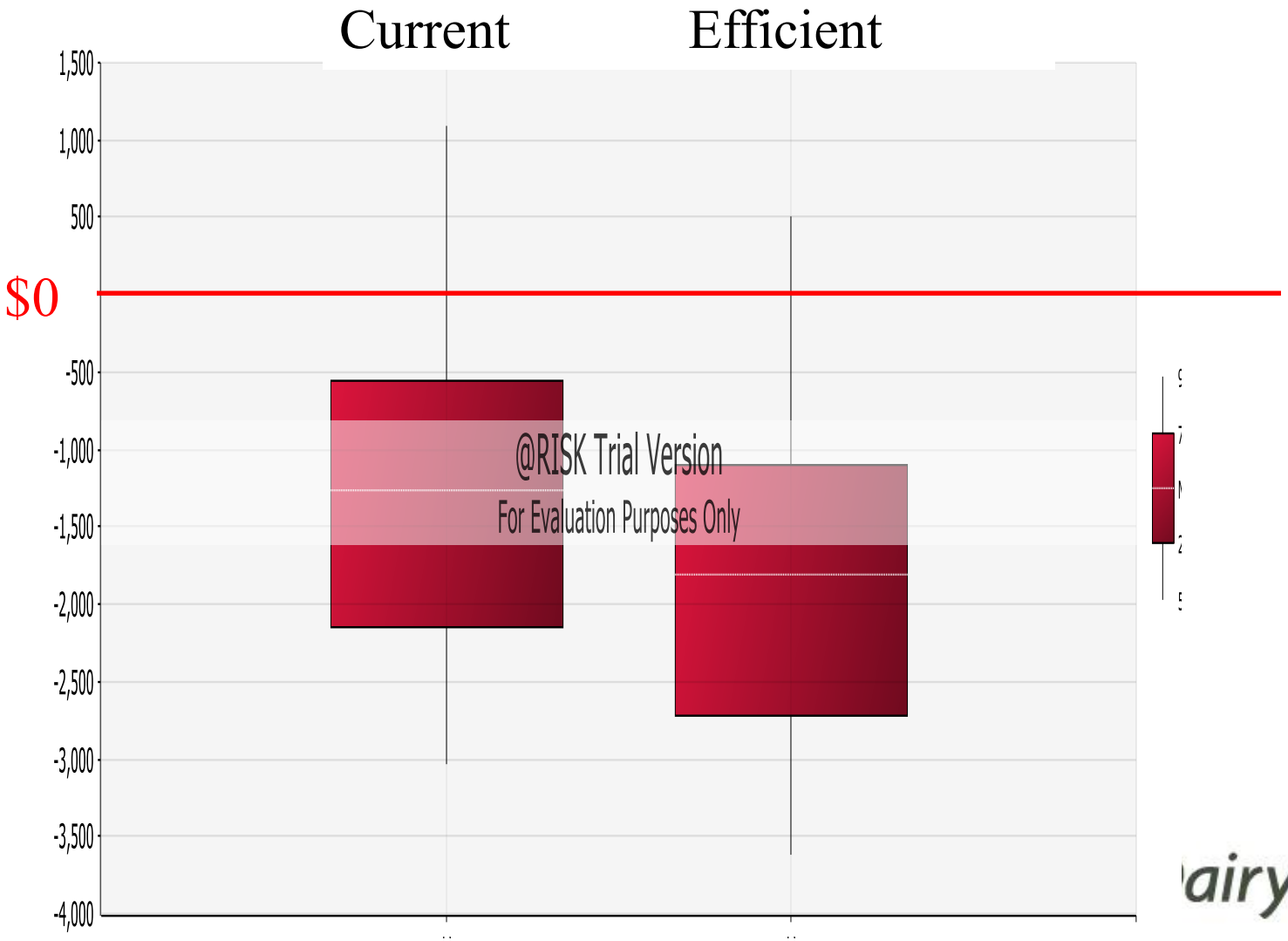


CDF of ROA: Waikato

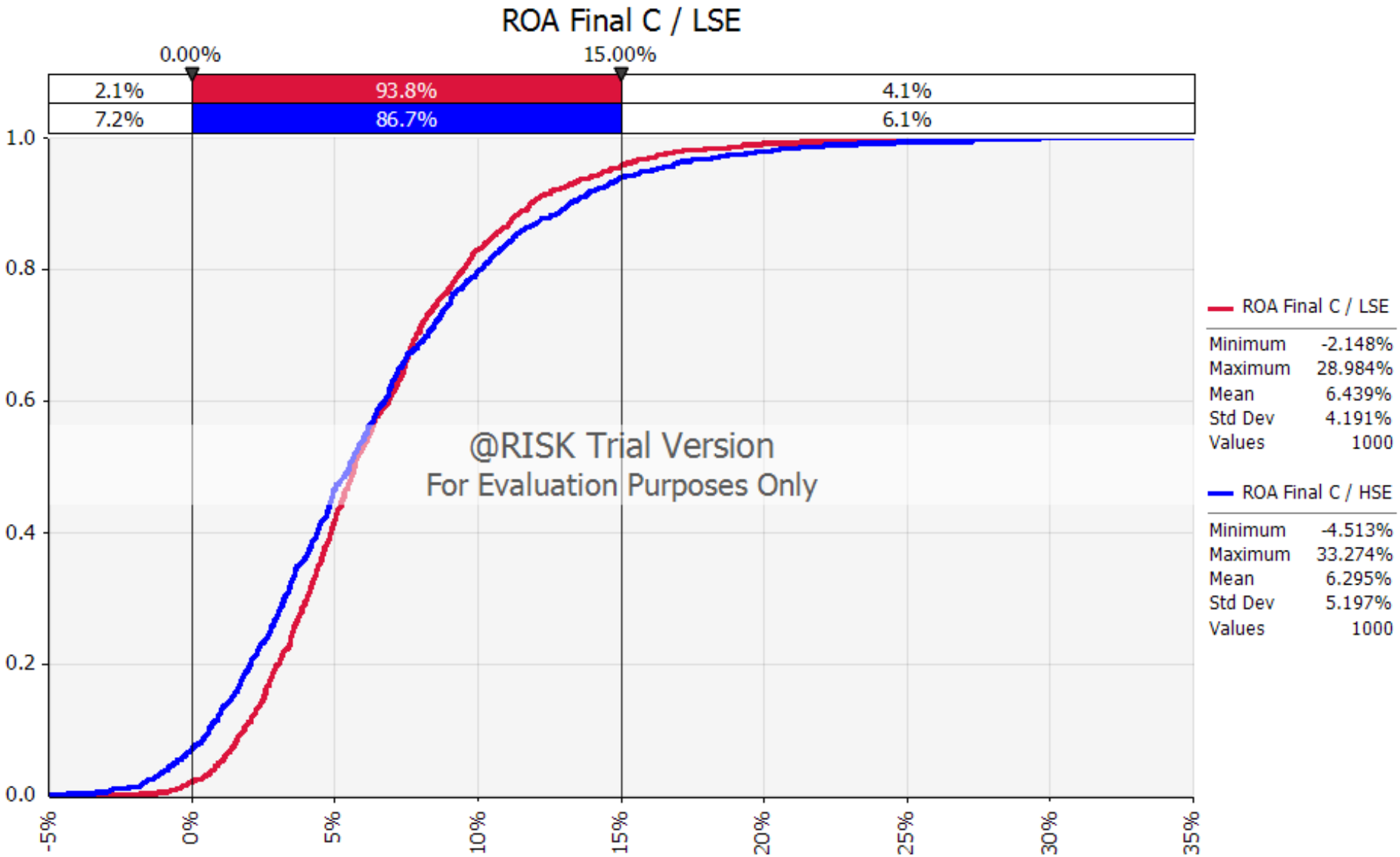


Post-shock two year cash surplus

Waikato

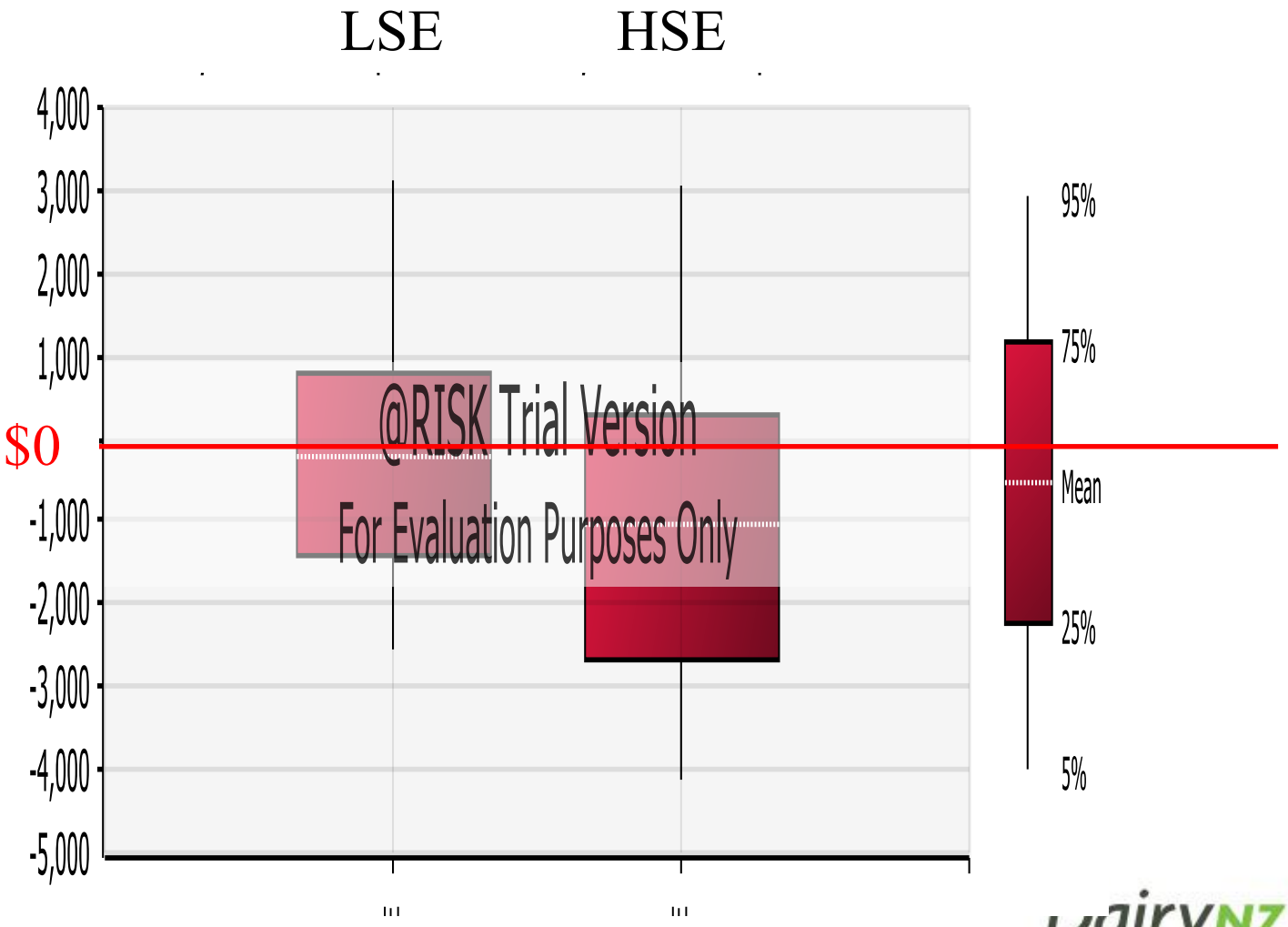


CDF of ROA: Canterbury



Post-shock two year cash surplus

Canterbury



Conclusions

- Resilience with 2 year cash flow
  - Lower tail of cash flows…
  - Reduced profitability…
  - Compound to reduce resilience
- Monte Carlo
  - Ease of use…
  - Needs thought

DairyNZ