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Extending Value at Risk to a Corporate Setting

An Application to Fonterra Cooperative

**A thesis presented in partial fulfilment of the requirements for the degree of
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Abstract

This paper demonstrates the development and application of a corporate Value-at-Risk model. Using the RiskMetrics Group's CorporateMetrics as a starting point we show how the framework can be modified to meet the specific needs of Fonterra Cooperative, a major New Zealand dairy exporter. We develop a Monte-Carlo simulation model that uses univariate ARIMA and multivariate Vector Error Correction (VECM) forecast models to estimate the Value-at-Risk on Fonterra Group Treasury's interest rate and FX hedge portfolio over a 15-month period.

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Confidentiality

The commercial sensitivity of certain Fonterra specific information necessitates its removal from the publicly available version of this thesis.

Appendix D, containing information regarding the Group Treasury's FX and interest rate hedging strategies and graphs of proprietary basic commodity price (BCP) data series, has been removed from this report. Requests to access this information should be directed to the author.

It is our intention that the removal of these details does not detract from the academic rigor of the analyses. Rather than focus on the specific model developed for Fonterra, we emphasise the development of a general long-term corporate VaR model.

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