

DIRECTED RISK RESEARCH PROPOSAL

Risk Theme	Credit Risk
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Client Info:

Problem Title	Multi-Period Credit Portfolio Optimisation				
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Research Team:

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University	NWU	Classification	Confidential		
Problem Nr.	PS15013	Type	Technology-Pull		
Proposal Nr.	RP15033	Date	20 August 2015		

PROJECT TITLE: Multi-Period Credit Portfolio Optimisation

PROJECT GOAL:

The development of an optimisation framework for credit portfolios over a multi-period planning horizon.

PROJECT SCOPE

One of the main objectives in managing a credit portfolio is the maximisation of profitability while maintaining some level of risk exposure. The drivers of profitability could e.g. include pricing, exposure at default, probability of default, cost of capital etc. In most cases a myopic single period optimisation approach is followed that might lead to sub-optimal solutions. Furthermore, changing the composition of a credit portfolio is costly and there is some degree of operational risk involved when dealing with large scale portfolios.

A multi-period approach could, therefore, be viewed as a more cost efficient and cautious way of restructuring a credit portfolio towards optimality with respect to profitability and risk.

PROJECT OBJECTIVES

The suggested approach is set within a mathematical programming framework that will allow for a holistic approach in dealing with credit portfolio management over time. The approach will specifically address the evolving nature of risk models over time and the effect of maturing assets and write-offs on the balance sheet. Specific attention will be given to the identification of appropriate risk and return measures for multi-period credit portfolios.

RESEARCH OUTPUTS / DELIVERABLES

PUBLICATIONS:	Name(s) / Title(s)
Articles	2
STUDENTS:	Name(s) of Student(s)
Ph.D	None
M.Sc (Dissertation)	None
M.Sc (BMI Project)	None
OTHER:	

APPROACH TO BE FOLLOWED

- 1) Study of relevant literature
- 2) Client requirements analysis
- 3) Acquisition of data
- 4) Formulation of a mathematical model
- 5) Empirical tests and model validation
- 6) Closing presentation to client

STRATEGIC VALUE TO DIRECTED RISK RESEARCH

This research will contribute both commercially and academically. The benefit to the client is a direct application of a newly developed optimisation model that will assist them in strategic decision making. The academic benefit will be realized in the form of journal publications and the project also gives the academic team much needed industry exposure.