DIRECTED RISK RESEARCH PROPOSAL

Risk Theme	Credit Risk

Client Info: *(only applicable if proposal is in response to a client problem statement)*

Problem Title	Estimation techniques for deriving the Basel LGD estimates on retail bank portfolios				
Client Name	Frederik van der Walt			**Client Org.**	BAG
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Research Team:

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University	NWU	**Classification**	
Problem Nr.	PS15008	**Type**	Technology-Pull
Proposal Nr.	RP15030	**Date**	12 Augustus 2015

PROJECT TITLE: Estimation techniques for deriving the Basel LGD estimates on retail bank portfolios

PROJECT GOAL:

The goal of the project is to propose new methodologies to estimate LGD and to do empirical studies on the performance of these methods

PROJECT SCOPE

Credit risk is defined as the risk/probability that a customer will default due to failure to pay its credit obligations in accordance with agreed terms. If this credit risk realizes then an economic loss (shortfall) may be incurred should the bank not recover all monies due. Expected loss is the economic loss expected to be incurred should a customer default and represents the ex-ante (expected) economic loss in value over a specified outcome period should the default event realise. From a regulatory perspective, provisions are held to cover expected losses; regulatory capital is held to cover unexpected losses as per the Basel accord. Banks adopting the advanced Internal-Rating-Based (AIRB) approach, are allowed to model their own risk parameters as input to the regulatory capital formula. The risk parameters of the regulatory capital include measures of the probability of default (PD), loss given default (LGD), and the exposure at default (EAD).

Loss given default (LGD) is the economic loss incurred by the bank when a customer defaults on a loan and is expressed as a fraction of EAD that is unpaid. There exists a direct relation between LGD and

the required capital to be held. A 10% error in LGD will translate into a 10% error in regulatory capital. Due to the sensitivity of the regulatory capital formulae to LGD it is necessary to ensure that the LGD estimation process is as accurate as possible. Existing methods to estimate the LGD component needs to be analysed and compared. We also require research into possible new methodologies to estimate the LGD component. Emphasis should be placed on the estimation of the so-called downturn LGD (dLGD) that is required by the Basel accords.

PROJECT OBJECTIVES

We will research new methodologies to estimate both the LGD and dLGD in both the unsecured (using direct approaches) and secured (indirect approaches) retail portfolios. These new methods will be compared to standard methodologies. Methodologies will be compared based on academic and commonly employed industry measures of discriminatory and predictive power.

The first objective is therefore to develop new LGD estimation techniques. The second objective will be to conduct an empirical study to compare the performance of current techniques as well as the proposed new techniques.

RESEARCH OUTPUTS / DELIVERABLES

PUBLICATIONS:	**Name(s) / Title(s)**
Articles	2
STUDENTS:	**Name(s) of Student(s)**
Ph.D	Morne Joubert
OTHER:	

APPROACH TO BE FOLLOWED

1. Literature study of current LGD estimation techniques
2. Develop new LGD estimation techniques
3. Empirical studies to test the performance of current and new LGD estimation techniques

STRATEGIC VALUE TO DIRECTED RISK RESEARCH

This research will lead to increased insight into LGD estimation techniques as well as a general improvement in retail LGD modelling methodology.