DIRECTED RISK RESEARCH PROPOSAL

Risk Theme	Risk Analysis

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

Problem Title	Emerging best practice in Model Risk Management				
Client Name	Leendert Haasbroek			**Client Org.**	Std Bank
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University		**Classification**	
Problem Nr.	PS16009	**Type**	Technology-Pull
Proposal Nr.	RP16014	**Date**	October 2016

PROJECT TITLE: A proposed best practice model validation framework for banks

PROJECT GOAL:

The goal of the project is investigate and propose a best practice model validation framework for banks.

PROJECT SCOPE

Banks rely heavily on financial risk models to make business decisions and manage risk. These models include application scorecards for e.g. deciding on new or amended credit facilities, behavioural scorecards for e.g. ongoing monitoring of customer credit worthiness, capital-demand models to comply with minimum regulatory capital requirements and estimate economic capital requirements, expected loss models for credit impairments and operational loss provisions, and stress testing models to test risk appetite, budgets and capital planning. As a consequence banks are exposed to model risk should model results deviate from the "true" result.

Model risk management comprises robust, sensible model development, sound implementation, appropriate use, consistent model validation at an appropriate level of detail and dedicated governance. Each of these broad components is accompanied and characterised by unique risks which, if carefully managed, can significantly reduce model risk.

The relevance of model risk in South Africa is highlighted by the Bank Supervision Department of the South African Reserve Bank (SARB) in its 2015 Annual Report, where it is specifically noted that some local banks need to improve model risk management practices (SARB, 2015).

Model validation is a component of model risk management and requires confirmation from independent experts of the conceptual design of the model, as well as the resultant system, input data and associated business process validation. These involve a judgement of the proper design and integration of the underlying technology supporting the model, an appraisal of the accuracy and completeness of the data used by the model and verification that all components of the model produce relevant output. Model validation is the set of processes and activities intended to verify that models are performing as expected, in line with their design objectives and business uses (OCC, 2011b). The Basel Committee for Banking Supervision's (BCBS) minimum requirements (BCBS, 2006) for the

internal ratings-based approach require that institutions have a regular cycle of model validation "that includes monitoring of model performance and stability; review of model relationships; and testing of model outputs against outcomes".

Model validation practices generally are patchy, disparate and sometimes contradictory and although the Basel Accord and some Regulatory Authorities have attempted to establish guiding principles, no definite set of global standards exists.

PROJECT OBJECTIVES

The objectives of this project are:

- To assess the available literature for validation practices and propose a coherent 'best practice' procedure for model validation.
- Present scorecard tools to evaluate if the proposed best practice model validation framework has been adequately assembled and implemented.

RESEARCH OUTPUTS / DELIVERABLES

PUBLICATIONS:	**Name(s) / Title(s)**
Article	1
STUDENTS:	**Name(s) of Student(s)**
OTHER:	

APPROACH TO BE FOLLOWED

In order to achieve the objectives of this project, the following approach is suggested:

1. Literature study on validation practices and regulatory guidance.
2. Review available approaches
3. Recommend coherent 'best practice' procedure for model validation
4. Documentation.

STRATEGIC VALUE TO DIRECTED RISK RESEARCH

This research will contribute conceptually and possibly also materially in many of BMI's fields of competency, namely credit risk analysis in the banking industry.

References

BCBS. 2006. Basel II: International convergence of capital measurement and capital standards: a revised framework. Bank for International Settlements.

OCC (Office of the Comptroller of the Currency). 2011b. Supervisory guidance on model risk management, *Board of Governors of the Federal Reserve System*. Supervisory document OCC 2011-12, 1 – 21.

SARB, 2015. Bank Supervision Department: Annual Report 2015. Online: http://www.resbank.co.za/Lists/News%20and%20Publications/Attachments/7309/01%20BankSupAR2015.pdf, accessed 15 August 2016.