

DIRECTED RISK RESEARCH PROBLEM STATEMENT

Risk Theme	Systemic risk	Problem Nr.	PS16003
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PROJECT TITLE: Modelling the effect of banking regulations on the SA economy using computable general equilibrium (CGE) model

PROJECT GOAL:

To extend the standard computable general equilibrium model to include the financial sector in order to assess the effect of banking regulation on the South African economy.

HIGH LEVEL DESCRIPTION OF PROBLEM:

The aim of this project is to apply CGE modelling to assess risks in banking regulation especially in times of financial crisis. CGE models consider the interactions among various economically relevant entities [1]. These models are used to model the economic impact of shocks and other changes on the modelled economic system. Regulation in the banking sector is typically more extensive than in other sectors, leading to higher costs of regulation for financial institutions. Basic CGE models for financial sectors have been developed [2]. However, the incorporation of these models in economy-wide CGE's has not received significant attention.

There is a need to extend an existing CGE for the South African economy to incorporate a financial/banking sector that will receive input from the other model entities and feeds back into the model – hence contributing to the equilibrium state after the introduction of a financial shock. This should enable the economic impact of a range of regulatory interventions to be assessed, as noted under the project objectives.

[1] M.E. Burfisher, Introduction to Computable General Equilibrium Models: Cambridge University Press, 978-0-521-76696-8, Excerpt

[2] C.A.E Goodhart, P. Sunirand and D.P. Tsomocos, 2006. A time series analysis of financial fragility in the UK banking system. Annals of Finance Vol 2 p 1–21.

PROJECT OBJECTIVES:

To extend the standard CGE model to cover the financial sector in order to assess the potential economic effect of the following regulatory interventions in South Africa:

- An expansionary monetary policy
- A positive deposit supply shock
- A positive bank capital shock to a bank
- Changes in capital adequacy requirements

The model can potentially also be used to investigate the impact of changes in other sectors of the economy on the modelled financial sector..

OUTPUTS REQUIRED:

- A paper in the academic financial literature
- Practical Guidance to the industry on local / international best practice

STRATEGIC VALUE TO DIRECTED RISK RESEARCH:

The research will enable decision makers in the banking industry, including regulators, to consider the potential economic impact of financial regulation and other shocks on the South African economy. This can be of significant importance in the current changing regulatory landscape. Other potential uses of the model include:

- Regulation on capital requirements
- Banking sector risk assessment
- Stress testing
- Policy advice and
- Real time forecasting
- Macro-economic stress testing

This research project forms part of an overarching systemic risk research initiative to develop macro-economic models (e.g. for South Africa) that can be used to study systemic risk.