

**A DISAGGREGATED MARSHALLIAN MACROECONOMETRIC
MODEL OF SOUTH AFRICA**

by

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SUMMARY

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Abstract

The thesis enticingly describes a synergetic mix of productivity related topics at macroeconomic level. It aims at whetting potential readers to understand in more insightful ways topics such as: (1) the use of human capital in sectoral growth; (2) the role played by rising public expenditures (health and education) in strengthening production activities; (3) the role played by disaggregation in improving models' forecasting ability and policy guidance; etc. The current research constitutes a valuable tool for understanding and predicting a country's overall economic behavior and the behavior of important industrial sectors.

In the present study, lack of data on important variables at sectoral level led to the use of advanced econometric estimation methods such as the implied transfer function equations system. As cited in the thesis, the literature reports a set of interesting economic investigations in this field that have been successful in describing some of the features included in this study. However, this research not only enhances the theoretical discussion on the issue but also provides empirical evidence using South African data. It is anticipated that further use and development of the outcomes of this thesis will yield additional explanatory, predictive and policy-making results that will be useful to many. In addition to the usefulness of this thesis' contribution to the body of knowledge, several suggestions for further improvement are considered.

Most predominantly, the work presented in this thesis has been reported in two interrelated papers (chapters). In the first paper, a methodical discussion is provided on the use and the size of social ingredients estimated as the level of normalized human capital per capita together with the conditional convergence process applied to South African sectoral growth. In the second paper, the parameters obtained are embodied into a full-fledged Macroeconometric (Marshallian) Model employing South African economic sectors. In fact, the second paper goes beyond the simple discussion of a Disaggregated Macroeconometric Model. It provides a comprehensive analysis of the effects that freedom (Thatcher-like) reforms may induce to the South African economy.

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LIST OF ABBREVIATIONS

AIDS	Acquired immune deficiency syndrome
ARIMA	Autoregressive Integrated Moving Average
ARLI	Autoregressive leading indicator
ARV	Antiretroviral
CGE	Computable General Equilibrium
DMC	Direct Monte Carlo Simulations
DSGE	Dynamic Stochastic General Equilibrium
EBMF	Excel-based model for forecasting
ECA	Economic Commission for Africa
EL	Effective labour per sector
GDP	Gross Domestic Product
GLS	Generalised Least Square
HIV	Human immunodeficiency virus
IID	Identically Independently Distributed
IMF	International Monetary Fund
ISUR	Iterative Seemingly Unrelated Regressions
MAE	Mean Absolute Error
MCMC	Markov Chain Monte Carlo Simulations
MDG	Millennium Development Goal
MLE	Maximum Likelihood Estimator
MMM	Marshallian Macroeconometric Model
MMM-DA	Marshallian Macroeconometric Model (Disaggregated)
RFE-DA	Reduced-Form Equations disaggregated by sector
RMMM-DA	Restricted Marshallian Macroeconometric Model (Disaggregated)
RMSE	Root Mean Squared Error
RMSM	Revised Minimum Standard Models
SADC	South African Development Community
SARB	South African Reserve Bank
SSA	Sub-Saharan Africa
SSA	Statistics South Africa
SUR	Seemingly Unrelated Regression



TFP Total Factor Productivity
UN United Nations
VAR Vector Autoregression