UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Faculty of Economic and Management Sciences

Department of Economics

Subject: *EKN819 (CGE Modelling)*

Date: *11 June 2012*

Time Duration: *130 minutes*

Total Marks: *60 marks*

This exam constitutes the theoretical part of your final examination for EKN819. It will count 30 per cent towards your final mark for this subject. Your semester assignment on the real wage cut simulation counts 20 per cent towards your final mark. The practical part of your final examination, to be completed during the semester break, will count 50 per cent towards your final mark. The practical exam will be sent to you via e-mail after the completion of the theoretical exam. Details concerning the completion of the practical exam will be given in the e-mail.

UNIVERSITY OF PRETORIA
FACULTY OF ECONOMIC AND MANAGEMENT SCIENCES
DEPARTMENT OF ECONOMICS

ECONOMICS 819   CGE THEORY EXAM   JUNE 2012

Total: 60 Marks
Time: 130 Minutes

Examiners: Dr Heinrich Bohlmann
**   Prof Jan van Heerden**

External Examiner: Dr Theuns de Wet

ANSWER ALL QUESTIONS

QUESTION 1

1.1   Give a comprehensive definition of Monash-style computable general equilibrium modelling.   (10 marks)

1.2   What are the four main tasks in CGE based analysis? Briefly discuss each of these four components.   (12 marks)

1.3   Give a brief (not overly technical) explanation as to how Monash-style CGE models overcome the linearisation error associated with its implementation. You may use an example to support your answer.
                                                                                            (5 marks)

1.4   Briefly describe the main features distinguishing a baseline forecast closure from a policy closure.   (5 marks)

1.5   Given your knowledge of Monash-style CGE models and the modelling methodology, how would you describe the main advantages and features of dynamic CGE models over comparative-static models.
                                                                                            (5 marks)

QUESTION 2

2.1   Consider the basic structure of the UPGEM CGE model database. Briefly describe the four main balancing conditions required for the database to be implemented in a comparative-static CGE model environment. Also show, for the values given in the UPGEM database, if these balancing conditions are met on an aggregate level.   (20 marks)

2.2   What are some of the main data sources required for constructing a Monash-style CGE model database?   (3 marks)

BASIC STRUCTURE & AGGREGATES OF THE 2006 UPGEM CGE MODEL DATABASE OF SOUTH AFRICA

← *All intermediate (1) and final (2-6) users or buyers in the economy are shown across these columns* →

		1	2	3	4	5	6	
		Producers	Investors	Households	Export	Government	Inventories	
	Dimension	← IND →	← IND →	← HOU →	← 1 →	← 1 →	← 1 →	
Basic Flows	COMxSRC ↕	V1BAS	V2BAS	V3BAS	V4BAS	V5BAS	V6BAS	DOM 3236042 IMP 573495
Margins	COMxSRCxMAR ↕	V1MAR	V2MAR	V3MAR	V4MAR	V5MAR	zero	MARUSE 363037
Indirect Taxes	COMxSRC ↕	V1TAX	V2TAX	V3TAX	V4TAX	V5TAX	zero	TLSP incl V0TAR 197123
BAS+MAR+TAX equal PUR values	COM ↕	V1PUR 2055141	V2PUR 324203	V3PUR 1088852	V4PUR 515794	V5PUR 338646	V6PUR 47061	TOTAL DEMAND 4369697
Labour Inputs	OCC ↕	V1LAB 755311						
Capital Rentals	1 ↕	V1CAP 758676						
Land Rentals	1 ↕	V1LND part of V1CAP						
Production Taxes	1 ↕	V1PTX 29951						
Other Costs	1 ↕	V1OCT part of COSTS						
		INDUSTRY COSTS 3599079						

COM = number of commodities ; IND = number of industries ; SRC = ("dom", "imp")
MAR = commodities used as margins ; OCC = occupation types

MAKE MATRIX	
Dimension	← IND →
COM ↕	DOM SUPPLY 3599079

IMPORT DUTIES	
Dimension	← 1 →
COM ↕	V0TAR part of TLSP