

**Adjustments to the National Income Accounts:
A Theoretical Framework with Applications to
Government Defensive Expenditure and Leisure**

by

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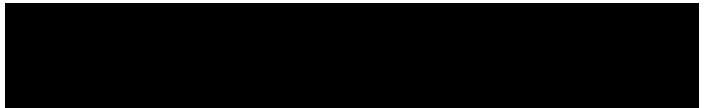
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Declaration

I certify that the substance of this thesis has not already been submitted for any degree and is not currently being submitted for any other degree.

I certify that, to the best of my knowledge, any help received in preparing this thesis, and all sources used, have been acknowledged.



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ABSTRACT

The measurement of overall economic performance, as a guide to macroeconomic policy, makes use of the conventional measure of Gross National Product and its variants such as Gross Domestic Product and Net National Product. Critics argue that the system of national accounts should be revised because of (a) inadequacies in the measurement of economic performance, (b) inconsistencies in the treatment of income and wealth, and (c) failure to include important variables explaining economic activity. Furthermore, an increasing awareness of resources and environmental quality problems has led to considerable interest in making Gross National Product reflect more fully the cost of environmental deterioration.

In view of the fact that international consensus has not been reached on how to incorporate the environment and leisure into the national accounts, it seems premature to radically change a well-established system of economic accounts. Thus, the objective of this study is to show how the environment and leisure can be analysed within the neoclassical framework of income accounts. The study concentrates on government defensive expenditures and hours of leisure. Government defensive expenditures are defined as outlays with which the government attempts to eliminate, mitigate, neutralise, and avoid the damages that the economic process of industrial societies have caused to living and environmental conditions.

The study was conducted in three stages. The first stage was to test and determine the long-run relationships of government defensive expenditure to some selected macroeconomic variables. The results show that government defensive expenditure is positively cointegrated with private investment expenditure and government investment expenditure, but negatively cointegrated with government expenditure on goods and services. An impulse response analysis showed that only government expenditure on goods and services is inversely affected by an unexpected increase in government defensive expenditure initially. The second stage was to impute for the value of leisure. The five methods of imputation in the literature were applied and the results show that the conclusion depends upon the method which is selected. The third stage was an attempt to solve for the environmental productivity disturbances variable (ε_t). The parameter (ε_t) has a value greater than zero but less than one, and captures the decrease in utility that individuals associate with environmental exploitation through increases in production. Finally, the value of (ε_t) for each

period was determined, and an attempt was made to adjust the national accounts by integrating the environment and leisure.

TABLE OF CONTENTS

	Page
DECLARATION	ii
ABSTRACT	iii
LIST OF TABLES	x
LIST OF FIGURES	xiii
LIST OF APPENDICES	xvi
ACKNOWLEDGEMENT	xvii
DEDICATION	xviii
1. INTRODUCTION TO THE RESEARCH	1
1.1 Background	1
1.2 Development of National Accounting	2
1.3 Need for an Adjusted National Accounts	3
1.3.1 Shortcomings of the present national accounts	4
1.3.2 Environmental concerns and attitudes in Australia	6
1.3.3 Leisure in Australia	9
1.3.4 Lack of macroeconomic studies	10
1.4 Objectives of the Study	11
1.5 Outline of the Study	11
2. LITERATURE REVIEW	13
2.1 Introduction	13
2.2 A Review of the National Accounting System	14
2.2.1 The circular flow of product and income	14
2.2.2 The expenditure approach	16
2.2.3 The income approach	18
2.3 Welfare Measurement and the National Accounts	19
2.4 Motivations for Change	23
2.5 Approaches to Adjusted National Accounts	24
2.5.1 Purely economic approach	24
2.5.2 Purely physical approach	25
2.5.3 Mixture of physical and economic approaches	25

2.6	A Survey of the Revised and Extended Accounts	26
2.6.1	Purely economic approach	26
2.6.2	Purely physical approach	39
2.6.3	Mixture of physical and economic approaches	41
2.7	Evaluation of the Approaches	43
2.7.1	Purely economic approach	43
2.7.2	Purely physical approach	43
2.7.3	Mixture of physical and economic approaches	44
2.8	Concluding Remarks	44
3.	THEORETICAL FOUNDATIONS	45
3.1	Introduction	45
3.2	The Economy and the Environment	46
3.2.1	Economy-environment model	46
3.2.2	Environment in the national accounts	51
3.2.3	Environment in macroeconomic studies	51
3.3	The Welfare of the Representative Consumer	55
3.3.1	How does a representative household (consumer) make a choice?	55
3.3.2	How does a representative household (consumer) maximise welfare?	57
3.4	The Welfare of the Community	59
3.4.1	How does the community maximise welfare?	60
3.4.2	Is aggregation possible?	62
3.4.3	What is the relationship between national income and household income?	63
3.5	Changes in the environment	64
3.5.1	Theoretical Basis	64
3.5.2	Why defensive expenditures?	67
3.5.3	Applying the theory	69
3.6	Changes in Leisure Hours	73
3.6.1	Theoretical Basis	73
3.6.2	Why leisure?	74
3.6.3	Applying the theory	76
3.7	Real Business Cycle Model	84
3.8	Concluding Remarks	85

4. Method 1: MODEL STRUCTURE	86
4.1 Introduction	86
4.2 Model 1: Unadjusted GNE	87
4.2.1 Basic equations for Unadjusted GNE	88
4.2.2 Model solution for unadjusted GNE	93
4.3 Model 2: A Adjusted GNE (1)	100
4.3.1 Basic equations for adjusted GNE (1)	100
4.3.2 Model solutions for adjusted GNE	115
4.4 Model 3: Adjusted GNE (2)	111
4.5 A Summary	116
5. DATA COLLECTION	117
5.1 Introduction	117
5.2 Sources of Data	117
5.2.1 Description of the Australian National Accounts	117
5.2.2 Current developments in ANA	119
5.2.3 Definitions and relationships of income concepts	119
5.2.4 Specific data requirements	121
5.3 Government Defensive Expenditures	122
5.4 Data on Leisure Imputation	130
5.5 Distribution Procedure	133
5.5.1 Government defensive expenditures	133
5.5.2 Number of hours worked	134
5.6 Summary	135
6. Method 2: APPLICATION OF THE MODEL	136
6.1 Introduction	136
6.2 Estimating Long-run Relationships	136
6.2.1 Testing for Non-stationarity	137
6.2.2 Cointegration	140
6.2.3 Test for exogeneity	142
6.2.4 Impulse response analysis	143
6.3 Imputing for the Value of Leisure	145
6.4 Solving for the Environmental Variables	149
6.4.1 Solving for $g(G_{31t}, G_{32t})$	149
6.4.2 Solving for ε_t	151

6.5	Integration of the Changes	153
6.5.1	GNE without government defensive expenditures	153
6.5.2	GNE with government defensive expenditures	154
6.5.3	Unadjusted GNE with leisure imputation	154
6.5.4	Adjusted GNE (1) with leisure imputation	154
6.6	Summary	154
7.	Empirical Results 1: MACROECONOMIC RELATIONSHIPS	156
7.1	Introduction	156
7.2	Tests for the Order of Integration	157
7.2.1	Unit root tests on the levels of the variables	157
7.2.2	Unit root tests on first differences	159
7.3	Testing the Adequacy of the Model	160
7.3.1	The univariate statistics	161
7.3.2	Multivariate statistics and information criteria	165
7.3.3	Eigen values of the companion matrix	167
7.4	Tests for Exogeneity	168
7.5	Testing the Cointegrating Rank	169
7.6	Short-run Dynamics	171
7.7	Cointegrating Relationships	172
7.8	Impulse Response Analysis	174
7.9	Evaluation of the Derived Model	179
7.10	A Summary of Results	180
8.	Empirical Results 2: LEISURE VALUATION	182
8.1	Introduction	182
8.2	Adjustments for leisure	182
8.2.1	Estimate I	183
8.2.2	Estimate II	186
8.2.3	Estimate III	191
8.2.4	Estimate IV	193
8.2.5	Estimate V	200
8.3	Comparison of the Approaches	202
8.4	Problems of Leisure Valuation	204
8.5	A Summary of Results	205

9. Empirical Results 2: ADJUSTMENTS TO THE NATIONAL ACCOUNTS	208
9.1 Introduction	208
9.2 Computed Value of the Unknown Parameters	208
9.2.1 The derived value of the thetas	209
9.2.2 The derived value of alpha	211
9.3 Unadjusted GNE (1)	211
9.4 Unadjusted GNE (2)	217
9.5 Adjusted GNE (1)	221
9.6 Adjusted GNE (2)	224
9.7 Evaluation of Fitness of the Model	230
9.7 A Summary	231
10. ASSESSMENT OF THE STUDY	233
10.1 Introduction	233
10.2 Review of the Study	233
10.2.1 The problem	233
10.2.2 Analytical approach	234
10.2.3 The findings	235
10.2.4 Contributions	237
10.2.6 Limitations of the study	238
10.3 Implications of the Study	239
10.3.1 Increased allocation on defensive expenditure	239
10.3.2 Policy of differentiated development	239
10.3.3 Inclusion of leisure in the national accounts	240
10.3.4 Increased efforts on research and training	241
10.3.5 Closer linked between revenues and uses	241
10.3.6 Effects on macroeconomic performance	241
10.4 Implications for Future Research	242
10.4.1 Improvements to this Study	242
10.4.2 Extensions to this Study	242
REFERENCES	244
APPENDICES	257

LIST OF TABLES

Table	Page	
1.1	Concern About Environmental Problems, States and Territories: Percentage of Persons	7
1.2	Attitude to Environmental Protection and Economic Growth, States and Territories: Percentage of Persons	8
2.1	The Expenditure Approach	17
2.2	The Income Approach	18
2.3	Nordhaus and Tobin's Approach: GNP and MEW 1965 in 1958 Prices	27
2.4	Peskin's Consolidated National Income and Product Approach	30
2.5	Zolotas' Approach: Magnitudes Forming the EAW-Index 1977, in constant 1972 prices	32
2.6	Jorgenson and Fraumeni's Gross Private Domestic Product and National Receipts and Expenditure, 1982 (in billion dollars)	34
2.7	Adjustment of GNP by Kendrick (1976): 1969 (in billion dollars)	36
2.8	Gillen's Measure of Economic Welfare for Australia \$million at average 1966-67 prices	38
3.1	Methods to value leisure to extend the National Accounts	77
4.1	Methods to Impute for the Value of Leisure	113
5.1	Classification of Government: Defensive Expenditure as per ABS Classification	124
5.2	The Use of Time in Australia, 1992: hours per week	132
6.1	Procedure for imputing for the Value of Leisure	146
7.1	Results of the Augmented Dickey-Fuller (ADF), Park-Choi (PC) and the Phillips-Peron (PP) Unit Root Tests at Level	158

7.2	Results of the Augmented Dickey-Fuller (ADF), Park-Choi (PC) and the Phillips-Peron (PP) Unit Root Tests on First Differences	160
7.3	Results of Residual Analysis	162
7.4	Tests for Normal Errors	163
7.5	Tests for Weak Exogeneity	169
7.6	Cointegrating Rank Test	170
7.7	Short-run Dynamics of Endogenous Variables	171
8.1	Adjustments to Gross National Expenditure for the value of leisure for 1963 to 1991 using Estimate I	184
8.2	Adjustments to Gross National Expenditure for the value of leisure for 1963 to 1991 using Estimate IIa	187
8.3	Adjustments to Gross National Expenditure for the value of leisure for 1963 to 1991 using Estimate IIb	189
8.4	Adjustments to Gross National Expenditure for the value of leisure for 1963 to 1991 using Estimate IVa	194
8.5	Adjustments to Gross National Expenditure for the value of leisure for 1963 to 1991 using Estimate IVb	198
8.6	The relationships between Job Vacancies and Unemployment	205
8.7	Adjustments to Gross National Expenditure for the Value of Leisure for 1963 to 1991, using the different methods to estimate leisure values	206
9.1	Relationship of Selected Macroeconomic Variables	209
9.2	Adjustments to Gross National Expenditure for the environmental disturbance for 1963 to 1990	216
9.3	Adjustments to Gross National Expenditure for ε_t and the value of leisure for 1963 to 1990	220
9.4	Adjustments to Gross National Expenditure for $g(G_{31t}, G_{32t})$ for 1963 to 1990	223
9.5	Adjustments to Gross National Expenditure for $g(G_{31t}, G_{32t})$ and the value of leisure for 1963 to 1990	227

9.6	Adjustments to Gross National Expenditure for government defensive expenditure for 1963 to 1990	228
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LIST OF FIGURES

Figure		Page
2.1	The Circular Flow of Income and Expenditure	15
2.2	The Relationship between Gross National Product and Social Welfare	19
3.1	Economy-environment Linkages	48
3.2	A Flow Diagram of Economic-Environmental Interaction	49
3.3	Walrasian Equilibrium in Markets for Goods and Environmental Services	52
3.4	Environmental Cost-National Income Relationships	54
3.5	A model of Household Choice	56
3.6	Maximisation of the Household's Welfare	58
3.7	Maximisation of the Community's Welfare	61
3.8	An imputation to real income for a change in the environment	66
3.9	The Transformation of Gross to Net Production Return	68
3.10	Long-run Relationships of Government Defensive Expenditure to Selected Macro Variables	71
3.11	An imputation to real income for changes in leisure hours	74
3.12	Leisure and Social Welfare	75
5.1	The System of National Accounts	118
5.2	Relationship between the Main Identities of Gross Domestic Product	120
7.1	A Scatter Plot of the Eigenvalues of the Companion Matrix	168

7.2a	Response of i_t^w to One-Standard Deviation Shock in g_{3t}^w	176
7.2b	Response of g_{1t}^w to One Standard Deviation Shock in g_{3t}^w	176
7.2c	Response of g_{2t}^w to One Standard Deviation Shock in g_{3t}^w	177
7.2d	Response of g_{3t}^w to One Standard Deviation Shock in g_{3t}^w	177
7.2e	Response of c_t^w to One Standard Deviation Shock in g_{3t}^w	178
7.2f	Response of x_t^w to One Standard Deviation Shock in g_{3t}^w	178
8.1	Reported GNE, Adjusted GNE and Leisure Value for 1963 to 1991 using Estimate I	185
8.2	Reported GNE, Adjusted GNE and Leisure Value for 1963 to 1991 using Estimate IIa	188
8.3	Reported GNE, Adjusted GNE and Leisure Value for 1963 to 1991 using Estimate IIb	190
8.4	Reported GNE, Adjusted GNE and Leisure Value for 1963 to 1991 using Estimate IVa	195
8.5	Reported GNE, Adjusted GNE and Leisure Value for 1963 to 1991 using Estimate IVb	200
9.1	The ε_t value from 1962:4 to 1991:2	213
9.2	Y_t^n and Y_t^{nl} from 1962:4 to 1991:2	214
9.3	Growth rate of Y_t^n and Y_t^{nl} from 1962:4 to 1991:2	215
9.4	Y_t^n and Y_t^{nl} from 1962:4 to 1991:2	218
9.5	Growth rate of Y_t^n and Y_t^{nl} from 1962:4 to 1991:2	218
9.6	The $g(G_{31t}, G_{32t})$ value from 1962:4 to 1991:2	221
9.7	Y_t^w and Growth rate of Y_t^w from 1962:4 to 1991:2	222

9.8	Y_t^w and $Y_t^{w'}$ from 1962:4 to 1991:2	225
9.9	Growth rate of Y_t^w and $Y_t^{w'}$ from 1962:4 to 1991:2	225
9.10	Comparison of the Different Income Measures from 1962:4 to 1991:2	230

LIST OF APPENDICES

Appendix	page
A Detailed Derivation of the Unadjusted GNE (Model 1) and the Adjusted GNE (Model 2) Models	257
B Regression Result Used in the Distribution Procedure	270
C Detailed Results of the Phillips-Perron (PP) Unit Root Test	273
D Detailed Results of the Cointegration Analysis	274
E Detailed Results of the Short-run Dynamics	278
F Detailed Results of the Impulse Response Analysis	282
G Leisure Valuation Using Estimate III	293
H Leisure Valuation Using Estimates Va and Vb	298
I Regression Results to Determine the Value of the Thetas	299
J Regression Results to Determine the Parameter Alpha	302
K Relative Importance of Government Defensive Expenditure in Australia for Selected Years	304
J Data Used in the Study	305

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DEDICATION

To my late father

Reynaldo Mendoza Alvarado

To my daughters

*Ana Habel and
Amelia Teresa*