Analyzing redistribution policies
A study using Australian data

NANAK KAKWANI
World Institute for Development Economics Research
Helsinki, Finland
Contents

Part II  Measures of income inequality, redistribution, and equity

4 On the measurement of income inequality  57
4.1  Equity and welfare economics  58
4.2  The Lorenz curve and social welfare  59
4.3  The Gini index and its variants  63
4.4  Additive-separable inequality measures: a brief review  65
4.5  Normative measures of income inequality  68
4.6  Estimation of inequality measures from grouped data  70
4.7  Conclusion  71

5 Measures of redistribution and equity  72
5.1  Axioms of tax progressivity and the redistributive effect of taxes  73
5.2  Ranking of tax systems  76
5.3  A criterion for evaluating alternative measures of tax progressivity  77
5.4  Evaluation of measures of tax progressivity  78
5.5  Derivation of a new measure of tax progressivity  80
5.6  Measures of horizontal and vertical equity  82
5.7  An example  84
  Appendix: proof of Lemma 5.1  86

Part III  Distribution and redistribution of income

6 Distribution of income in Australia  89
6.1  Household income in Australia  90
6.2  Functional distribution of income by income ranges  92
6.3  Income inequality by factor components  93
6.4  Inequality of household income and expenditure  97
6.5  An international comparison of household income distribution  100
6.6  Children and adults in the income distribution  102
6.7  Inequality of household income distribution, adjusted for size and composition  105
6.8  Individual income distribution  109
6.9  Summary of conclusions  112

7 Tax rates and government benefit rates by income ranges  116
7.1  Tax incidence assumptions  116
7.2  Effective personal income-tax rates by income ranges  118
7.3  Relative tax burden of personal income tax for various quintiles  120
Contents vii

7.4 Property taxes by income ranges 120
7.5 Effective government benefits by income ranges 124
7.6 Relative benefit index for various government benefits 126
7.7 Summary of findings 128

8 Effects of taxes and cash benefits on equity 130
8.1 Estimates of horizontal and vertical equity for personal income tax 131
8.2 Progressivity of property taxes 133
8.3 Progressivity of various government cash benefits 134
8.4 Combined redistributive effect of taxes and benefits 135
8.5 Redistributive effects of various cash benefits 138
8.6 Summary of conclusions 139

9 Redistribution of income within and between socioeconomic and demographic groups 141
9.1 Sex of household head 141
9.2 Age of household head 144
9.3 Employment status of household head 147
9.4 The geographical location: urban and rural households 148
9.5 Marital status of household head 150
9.6 Classification by states and territories 153
9.7 Income inequality by predominant source of income 155
9.8 Period of residence of household head 158
9.9 Country of birth of household head 160
9.10 Household size and composition 162
9.11 Summary of conclusions 167

10 Progressivity of sales tax on individual expenditure items 171
10.1 The index of progressivity (or regressivity) used 172
10.2 The appropriate basis for measuring progressivity 172
10.3 The tax-incidence assumptions 173
10.4 Interpretation of the results and policy implications 186
10.5 Some further comments on the results 191
10.6 Concluding remarks 192

Part IV Welfare and poverty 195
11 Distribution of welfare in Australia 195
11.1 Sen's axiomatic approach to measuring welfare 196
11.2 An alternative approach to measuring welfare 197
11.3 Numerical estimates of social welfare 202
11.4 Welfare by factor components 204
11.5 Analysis of welfare disparity between the sexes in Australia 210
11.6 Disaggregation of aggregate welfare according to socioeconomic and demographic characteristics of households 216
11.7 Conclusions 220

12 Optimal negative income taxation, when individuals feel envious 222
12.1 Optimal taxation: a brief review 223
12.2 A work-leisure choice model 224
12.3 Numerical estimates of optimum tax rates: utilitarian case 229
12.4 A generalized maximin criterion 232
12.5 Numerical estimates of optimal tax rates with a generalized maximin objective 235
12.6 Conclusions 237

13 The impact of taxes and cash benefits on poverty 239
13.1 Specification of the poverty line 239
13.2 A probabilistic approach to measuring poverty 240
13.3 The poverty line used 242
13.4 Measures of poverty used 243
13.5 Numerical results of various poverty measures 244
13.6 A breakdown of aggregate poverty according to the socioeconomic and demographic characteristics of households 247
13.7 Summary of policy conclusions 257

Appendix Data sources and their accuracy 259
A.1 The Survey of Consumer Finances and Expenditures, 1966-8 260
A.2 Income surveys, 1968-9, 1973-4, and 1978-9 262
A.3 Household Expenditure Survey, 1975-6 263
A.4 Conclusions 266

Notes 267
References 275
Author index 289
Subject index 292