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Welfare Economics

Introduction and Development of Basic Concepts

YEW-KWANG NG

Reader in Economics

Monash University, Australia 3168

Simon Senior Research Fellow

University of Manchester

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DEDICATED TO

**Siang, Aline, Eve and the
welfare of all sentients**

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Preface

The persons who are responsible for encouraging me to write this book are Ross Parish of Monash University and John Dillon of the University of New England. After labouring with my poor English on the drafts of the first few chapters, I was not only ungrateful to them but cursed them bitterly for getting me into such a dreadful endeavour. It was only because of my irrational inability to accept the economist's dictum that 'bygones are bygones' (sunk costs should not affect decisions) that I had not thrown away the first few shabby chapters but have persisted in writing to the end. However, as with learning Chinese, more or less straight sailing comes after the initial painstaking endurance. (Any reader who may toy with the idea of learning Chinese is advised either not to attempt it, or, having spent some time learning it, not to give up.) Now, looking at the finished product, I feel reasonably satisfied and am grateful for their encouragement. It seems that both irrationality and imperfect foresight (discussed in Chapter 1) were productively involved in securing the outcome. (After writing the final draft, I feel obliged to say that the final stages of standardising notations, proof-reading, etc., are rather dull, tedious, and time-consuming.)

The intended audience of this book includes advanced undergraduates, graduates, and specialists. A conflict arises from the diversity of the intended audience and is resolved by putting more technical and advanced sections into appendixes and by using asterisks (*) to denote more advanced sections which the beginner may omit without much loss of continuity. The expert may, however, be particularly interested in them. The same applies to footnotes, which usually contain bibliographical references or comment on some technical or advanced complications. Sections with double asterisks contain new arguments. An asterisk after a reference indicates that it is more advanced, mathematical, or touches on a technical point. A 'U' after a reference, e.g. Groves (1978U), indicates that it is unpublished.

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It may be thought that the diversity of the intended audience will make the book an inefficient tool either as a basic textbook or as a treatise. It is hoped that the following explanations will largely dispel such apprehensions. First, a textbook is not only read by students but also by the lecturer. The former will benefit more from the basic discussion and the latter from the more advanced parts. By getting the lecturer actively interested in reading the book, more effective teaching may be achieved by using it as a text. (When using a purely basic textbook, a lecturer may not even have the patience to just read through the book.) Moreover, for the elementary student (learning welfare economics for the first time), though he may have a very slight inconvenience of having to skip some sections with asterisks in the first reading, he will find that they are useful and provide the interest for a second reading. This second reading may then bring him to a much deeper understanding of welfare economics. Furthermore, he may use this book (including Appendix 10A) as a guide to his further study. By that stage, he may find the book worth more than a basic text plus an advanced treatise (since the two usually do not completely cohere with and complement each other).

Second, as a treatise, it is also useful for the author to explain clearly the basic concepts and theories and his own opinions towards them before he embarks on his own argumentation. Experts may therefore also find the basic discussion useful. It is true that many may find it too elementary to read. But they will have little difficulty in deciding which parts to skip over. Similarly, for those (e.g. graduate students, economists not specialising in welfare economics) who have some elementary training in or understanding of welfare economics and who wish to advance their understanding, it may be desirable to review the basic concepts before going further. An explanation of the organisation of the book is provided in Section 1.5 and a summary in Section 10.1. A separate summary is also provided at the end of each chapter, before the corresponding appendix.

Partly because of the semi-treatise nature of the book and partly because it is more efficient to deal with those topics I am familiar with, the selection of the non-basic topics is admittedly idiosyncratic. But I believe that a largely unbiased coverage has been achieved for the basic

topics. Nevertheless, due to space limitation, I have not been able to include detailed discussions of as many topics as I would have wished. Appendix 10A is provided as a remedy. On the other hand, due to time limitation and my other commitments, I have not been able to improve the quality of the book within its given length as much as I would have liked. Partly because of space limitation, the discussion may be a little terse in places. At the cost of some possible ambiguities, this has the advantage of provoking independent reasoning. In any case, if the reader has the patience to reread unclear parts, comprehension should not be difficult to achieve. Beginners would find lecturers' instruction and seminar discussion helpful in this respect. For average beginners, the book could thus most profitably be used under instruction.

To make the book accessible to as large an audience as possible given the content, the discussion is mainly non-mathematical and relies heavily on simple two-dimensional illustrations. Mathematics is used only when essential and appears mainly in appendixes. The conceptual discussion starts from the very basic and proceeds to the fairly complicated, including some new arguments. The main features of the book include: a methodological argument for a positive welfare economics (Chapter 1 and Appendix 1A), a proposed rehabilitation of Little's welfare criterion (Sections 3.2.2* and 3.3*), resolution of Arrow's paradox of social choice by revealing the intensities of preferences (Section 5.4*), the 'conscience effect' in externalities (Section 7.4**) and above all, a theory of third-test (Sections 9.4 and 9.5) with an extension to the equity-efficiency consideration (Appendix 9A**) and a plea for a complete study of welfare (Chapter 10). It is hoped that both the novice and the expert will find the book useful.

I am grateful to the following persons for reading and commenting on the first draft: Micheal Burns, Yew-Giam Chen, John Dillon, Avinash Dixit, Theodore Groves, John Head, Murray Kemp, David Mayston, Warren Musgrave, Luat Nguyen, Amartya Sen, Manimay Sengupta, Ian Wearing, and Patrick Xavier. My special thanks must go to Mendel Weisser for very patient reading and detailed comments. I am also grateful to the publishers of *Economica*, *Economic Journal*, *Economic Record*, *Journal of Economic Theory*, *Kyklos*, *Public Finance*, and *Review of Economic Studies* for permission to the use

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here of material from my articles published in these journals. I also wish to thank the Technical Service in the Department of Geography, Monash University, for expert drawing of figures. Lastly but not least, I wish to thank Jan Ottrey for her efficiency and tolerance in typing both the first and the final drafts. (By coincidence, she and her husband Kevin make up the pair of heroine and hero, *J* and *K*, of this book.)

Common Abbreviations

AC	: Average cost
CIC	: Community indifference contour
CS	: Compensating surplus
CV	: Compensating variation
ES	: Equivalent surplus
EV	: Equivalent variation
GUFF	: Grand utility feasibility frontier
IIA	: Independence of irrelevant alternatives
MC	: Marginal cost
MDE	: Marginal-dollar equivalent
MRS	: Marginal rate of substitution
MRT	: Marginal rate of transformation
MU	: Marginal utility
MV	: Marginal valuation
SWF	: Social welfare function
UPC	: Utility possibility curve
WMP	: Weak majority preference

Common Symbols

Note: Superscripts indicate different individuals, different situations, or different bundles of goods; subscripts indicate different goods of the same bundle or different indifference levels of a given preference pattern (except Chapter 7, where individuals J and K appear in subscripts).

G	: Number of goods
I	: Number of individuals
xI^Jy	: Individual J is indifferent between alternatives x and y
J, K	: Our two individuals, Jan and Kevin
p	: Price
xP^iy	: Individual i prefers x to y
q	: A given distribution of a collection (bundle) of goods
Q	: A given collection of goods
xR^iy	: xP^iy or xI^iy
U	: Utility
W	: Welfare
x_g^i	: Amount of good g consumed by individual i
X, Y	: Two representative goods