

1 The Lorenz Curve Ku

Published once a year under the auspices of the Research Center of Mathematical Economics in Tokyo, this series brings together mathematicians interested in economic theories and economists seeking effective mathematical tools to aid their research. Articles set forth original results and detailed overviews of the problems under discussion, offering readers a clear understanding of both economic and mathematical theories.

This book provides a unified and comprehensive study of welfarism, cooperative games, public decision making, and voting and social choice theory.

This book was written to serve as a graduate-level textbook for special topics classes in mathematics, statistics, and economics, to introduce these topics to other researchers, and for use in short courses. It is an introduction to the theory of majorization and related notions, and contains detailed material on economic applications of majorization and the Lorenz order, investigating the theoretical aspects of these two interrelated orderings. Revising and expanding on an earlier monograph, *Majorization and the Lorenz Order: A Brief Introduction*, the authors provide a straightforward development and explanation of majorization concepts, addressing historical development of the topics, and providing up-to-date coverage of families of Lorenz curves. The exposition of multivariate Lorenz orderings sets it apart from existing treatments of these topics. Mathematicians, theoretical statisticians, economists, and other social scientists who already recognize the utility of the Lorenz order in income inequality contexts and arenas will find the book useful for its sound development of relevant concepts rigorously linked to both the majorization literature and the even more extensive body of research on economic applications. Barry C. Arnold, PhD, is Distinguished Professor in the Statistics Department at the University of California, Riverside. He is a Fellow of the American Statistical Society, the American Association for the Advancement of Science, and the Institute of Mathematical Statistics, and is an elected member of the International Statistical Institute. He is the author of more than two hundred publications and eight books. José María Sarabia, PhD, is Professor of Statistics and Quantitative Methods in Business and Economics in the Department of Economics at the University of Cantabria, Spain. He is author of more than one hundred and fifty publications and ten books and is an associate editor of several journals including *TEST*, *Communications in Statistics*, and *Journal of Statistical Distributions and Applications*.

A Rigorous Treatment of Distribution Patterns

Equity and Well-Being

Majorization and the Lorenz Order

The Effect of Minimum Wage Legislation on Income Equality

The R Book

Advances in Cryptology – EUROCRYPT 2020

Develops techniques to analyze the income inequality and welfare and measure the direct impact of taxes and government cash transfers on the distribution of income. Also reveals the effects of current government programs on the welfare of particular groups in the community.

Jean-Jacques Rousseau wrote in the Preface to his famous Discourse on Inequality that "I consider the subject of the following discourse as one of the most interesting questions philosophy can propose, and unhappily for us, one of the most thorny that philosophers can have to solve. For how shall we know the source of inequality between men, if we do not begin by knowing mankind?" (Rousseau, 1754). This citation of Rousseau appears in an article in Spanish where Dagum (2001), in the memory of whom this book is published, also cites Socrates who said that the only useful knowledge is that which makes us better and Seneca who wrote that knowing what a straight line is, is not important if we do not know what rectitude is. These references are indeed a good illustration of Dagum's vast knowledge, which was clearly not limited to the field of Economics. For Camilo the first part of Rousseau's citation certainly justified his interest in the field of inequality which was at the centre of his scientific preoccupations. It should however be stressed that for Camilo the second part of the citation represented a "solid argument in favor of giving macroeconomic foundations to microeconomic behavior" (Dagum, 2001). More precisely, "individualism and methodological holism complete each other in contributing to the explanation of individual and social behavior" (Dagum, 2001).

Forecasting the future with advanced data models and visualizations. To envision and create the futures we want, society needs an appropriate understanding of the likely impact of alternative actions. Data models and visualizations offer a way to understand and intelligently manage complex, interlinked systems in science and technology, education, and policymaking. Atlas of Forecasts, from the creator of Atlas of Science and Atlas of Knowledge, shows how we can use data to predict, communicate, and ultimately attain desirable futures. Using advanced data visualizations to introduce different types of computational models, Atlas of Forecasts demonstrates how models can inform effective decision-making in education, science, technology, and policymaking. The models and maps presented aim to help anyone understand key processes and outcomes of complex systems dynamics, including which human skills are needed in an artificial intelligence-empowered economy; what progress in science and technology is likely to be made; and how policymakers can future-proof regions or nations. This Atlas offers a driver's seat-perspective for a test-drive of the future.

Majorization and the Lorenz Order with Applications in Applied Mathematics and Economics

An Introduction to Sustainable Development

Directory of Statisticians in Japan

A Study Using Australian Data

A Theoretical Analysis

Modeling and Mapping Desirable Futures

Equity is an abstract concept covering philosophical issues such as fairness and social justice, making its definition and measurement complex. This volume tackles these complexities head-on. The book is enriched with many empirical analyses and provides a comprehensive analysis of equity ranging from concepts and measurements to empirical illustrations and policy implications. After an extensive discussion on equity in the introduction, this volume begins with a chapter on well-being where the concepts of functioning and capability are discussed. This is followed by a few chapters on what an equitable distribution is and how equity can be measured. The volume then provides a definition and a methodology to measure equitable growth, examining the relationship between growth, inequality, and poverty. It also presents various empirical illustrations and country-specific experiences with three country case studies which assess whether publicly provided health and education services are equitable in developing Asia, examining the extent to which these social services favor the poor as well as the policy challenges to a more equitable delivery of these services. Finally, these country studies provide evidence-based policy recommendations to improve equity in social service delivery in developing countries. Achieving social equity has long been an important policy goal. There are relatively few studies on equity. This book aims to help fill this gap with an in-depth analysis of the issues associated with equity, covering its concept, measurement, and policy practices and implications.

This book is about how much people earn and why the distribution of earnings has been changing over time. The gap between the top and bottom in the United States has widened significantly since 1980. Why has this happened? Is it due to new technologies? What is the role of globalisation? Are there historical precedents? The book begins with the "race" between technology and education, and shows that continuing technical progress does not necessarily imply a continuing rise in dispersion. It then examines the experience of 20 OECD countries over the twentieth century, material presented in the form of 20 country case studies. The book breaks new ground in assembling data on the distribution of individual earnings covering much of the twentieth century and drawing on a variety of under-exploited sources. The findings overturn a number of widely-held beliefs. It is not the earnings of the low paid that have been most affected by the recent changes; widening is largely due to what is happening at the top. The recent rise in earnings dispersion is not unprecedented, but should be seen as part of a longer-run history of successive compression and expansion of earnings differences.

This book is the first of a two-volume set that constitutes the refereed proceedings of the 17th International Conference on Artificial Neural Networks, ICANN 2007, held in Porto, Portugal, September 2007. Coverage includes advances in neural network learning methods, advances in neural network architectures, neural dynamics and complex systems, data

analysis, evolutionary computing, agents learning, as well as temporal synchronization and nonlinear dynamics in neural networks.

Poverty and Equity

Journal of the Indian Econometric Society

Naval Research Logistics Quarterly

en festskrift för Jan-Otto Andersson

Optimization Methods in Finance

Analyzing Redistribution Policies

This book provides an up-to-date synthesis of the many standards of distributional analysis used in the fields of social policy, welfare theory, and public finance. Using only basic constructions of calculus, probability, and the economics of consumer behavior, it develops a consistent mathematical approach into a self-contained and unified treatment of the distribution and redistribution of income.

The three volume-set LNCS 12105, 12106, and 12107 constitute the thoroughly refereed proceedings of the 39th Annual International Conference on the Theory and Applications of Cryptographic Techniques, EUROCRYPT 2020, which was due to be held in Zagreb, Croatia, in May 2020. The conference was held virtually due to the COVID-19 pandemic. The 81 full papers presented were carefully reviewed and selected from 375 submissions. The papers are organized into the following topical sections: invited talk; best paper awards; obfuscation and functional encryption; symmetric cryptanalysis; randomness extraction; symmetric cryptography I; secret sharing; fault-attack security; succinct proofs; generic models; secure computation I; quantum I; foundations; isogeny-based cryptography; lattice-based cryptography; symmetric cryptography II; secure computation II; asymmetric cryptanalysis; verifiable delay functions; signatures; attribute-based encryption; side-channel security; non-interactive zero-knowledge; public-key encryption; zero-knowledge; quantum II.

In this book, a model of long-term interrelationships between income distribution, population growth and economic development is developed and estimated from data for 54 countries. The results indicate that a reduction of income inequality leads to lower fertility and mortality, to improved basic needs satisfaction, and to lower labour force participation of young and old males and of females in Asia and Africa. The effect of income distribution on saving and consumption is found to be negligible. These outcomes suggest that family planning and health policies in LDCs will show better results when they are supplemented with policies aimed at making the poor benefit from economic growth. As regards development policy, the

results indicate that a reduction of income inequality does not impair the formation of physical capital, but enhances the formation of human capital and lowers the growth rate of the labour force.

Abstracts

Theory, Methodology, and Empirical Results

Att förstå och att förändra världen

A Cumulative Author List Representing Library of Congress Printed Cards and Titles Reported by Other American Libraries

A Mathematical Analysis

17th International Conference, Porto, Portugal, September 9-13, 2007, Proceedings, Part I

The two-volume set LNCS 5544-5545 constitutes the refereed proceedings of the 9th International Conference on Computational Science, ICCS 2009, held in Baton Rouge, LA, USA in May 2008. The 60 revised papers of the main conference track presented together with the abstracts of 5 keynote talks and the 138 revised papers from 13 workshops were carefully reviewed and selected for inclusion in the three volumes. The general main track of ICSS 2009 was organized in about 20 parallel sessions addressing the following topics: e-Science Applications and Systems, Scheduling, Software Services and Tools, New Hardware and Its Applications, Computer Networks, Simulation of Complex Systems, Image Processing, Optimization Techniques, and Numerical Methods.

The high-level language of R is recognized as one of the most powerful and flexible statistical software environments, and is rapidly becoming the standard setting for quantitative analysis, statistics and graphics. R provides free access to unrivalled coverage and cutting-edge applications, enabling the user to apply numerous statistical methods ranging from simple regression to time series or multivariate analysis. Building on the success of the author's bestselling Statistics: An Introduction using R, The R Book is packed with worked examples, providing an all inclusive guide to R, ideal for novice and more accomplished users alike. The book assumes no background in statistics or computing and introduces the advantages of the R environment, detailing its applications in a wide range of disciplines. Provides the first comprehensive reference manual for the R language, including practical guidance and full coverage of the graphics facilities. Introduces all the statistical models covered by R, beginning with simple classical tests such as chi-square and t-test. Proceeds to examine more advance methods, from regression and analysis of variance, through to generalized linear models, generalized mixed models, time series, spatial statistics, multivariate statistics and much more. The R

Book is aimed at undergraduates, postgraduates and professionals in science, engineering and medicine. It is also ideal for students and professionals in statistics, economics, geography and the social sciences.

Optimization models play an increasingly important role in financial decisions. This is the first textbook devoted to explaining how recent advances in optimization models, methods and software can be applied to solve problems in computational finance more efficiently and accurately. Chapters discussing the theory and efficient solution methods for all major classes of optimization problems alternate with chapters illustrating their use in modeling problems of mathematical finance. The reader is guided through topics such as volatility estimation, portfolio optimization problems and constructing an index fund, using techniques such as nonlinear optimization models, quadratic programming formulations and integer programming models respectively. The book is based on Master's courses in financial engineering and comes with worked examples, exercises and case studies. It will be welcomed by applied mathematicians, operational researchers and others who work in mathematical and computational finance and who are seeking a text for self-learning or for use with courses.

Economics Letters Volume 55, No. 1 15 August, 1997

Physics abstracts

Artificial Neural Networks - ICANN 2007

Modeling Income Distributions and Lorenz Curves

Atlas of Forecasts

Advances in Mathematical Economics Volume 11

Minimum wage legislation is frequently advocated in the belief that it creates a more nearly equal distribution of income. In a one-sector model of general equilibrium is used to analyze a universally applicable minimum wage, and a two-sector model is used to analyze a minimum wage that is only applied to certain industries. In both cases we find that a minimum wage tends to reduce well lower equality (as computed by the Gini index) if we consider reasonable values for the parameters of these two models. In the absence of unemployment compensation, equality can increase only if the elasticity of substitution in production is quite low. In the one-sector case, however, equality necessarily rises if unemployment compensation is present and sufficiently generous.

Economic Theory, academic policy analysis and public policy design are becoming more interdependent. Hence, the demand for close interactions between the policy community and the research community have been rising significantly. This book assesses how recent economic thinking has advanced under these influences. Furthermore, it evaluates the important contribution economics can add to the design and evaluation of public policy, now more than ever before. The study

interest to policy makers, policy analysts, researchers and students of economics at all levels. The authors, which include many of Germany's most eminent economists, draw on their wide experience in research and consultancy to present a coherent view of where European economic theory stands today and how it can play a role in the management of the economy of the new millennium.

This book presents a rigorous treatment of the mathematical instruments available for dealing with income distributions, in particular Lorenz curves and related methods. The methods examined allow us to analyze, compare and modify such distributions from an economic and social perspective. Though balanced income distributions are key to peaceful cooperation within and between nations, it is often difficult to identify the right kind of balance needed, because there is an intense interaction with innovation and economic growth. The issue of justice, as discussed in Thomas Piketty's bestseller "Capital in the Twenty-First Century" or in the important book "The Price of Inequality" by Nobel laureate Joseph Stiglitz, is also touched on. Further, there is a close connection to the issue of democracy in the context of globalization. One highlight of the book is its rigorous treatment of the so-called Atkinson theorem and some extensions, which help to explain under what conditions of societal utility functions nations tend to operate either in the direction of more balance or less balance. Finally, the book offers some completely new insights into changing the balance pattern of societies and the kind of coalitions between rich and poorer parts of society to organize political support in democracies in either case. Oxford University's Sir Tony Atkinson, well known for his so-called Atkinson theorem, writes in his foreword to the book: "[The authors] contribute directly to the recent debates that are going on in politics. [...] with this book the foundation of arguments concerning a proper balance of income distribution in the sense of identifying an 'efficient inequality range' has got an additional push from mathematics which I appreciate very much."

Measurement and Policy Practice

Equity in the City

Frontiers in Economics

Thermal Conductivity of Metals and Alloys at Low Temperatures

Axioms of Cooperative Decision Making

XVI International Botanical Congress, St. Louis, USA, August 1-7, 1999

Equity in the City is a collection of nine studies of the way the results of public investment in urban services are shared out among city-dwellers. The essays describe the way services such as water supply, electricity, roads and parks are financed and they analyse the way certain residents receive benefits from the public purse while others don't. It examines the impact on planning and zoning and building

regulation in terms of who gains the benefits from government. Equity and the city reveals scarce public resources are allocated. This book was first published in 1981

This volume is the most comprehensive textbook on sustainable development. It has been developed with students and professionals from around the world specifically for those who need a thorough grounding in the subject. Coverage includes: background to sustainable development and global environmental issues; measurement and sustainability indicators; environmental assessment, management and policy; approaches and linkages to poverty reduction; impacts and infrastructure development; economics, consumption, production and market failures; governance; participation; disaster management; international financial institutions; international environmental agreements; and the role of civil society.

This text addresses the understanding and alleviation of poverty, inequality, and inequity using a unique and broad mix of concepts, measurement methods, statistical tools, software, and practical exercises. Most of the book's measurement and statistical tools have been programmed in DAD, a well established and widely available free software program that has been tailored especially for income distribution analysis and is used by scholars, researchers, and analysts in nearly 100 countries worldwide. It requires basic understanding of calculus and statistics. There are examples and exercises using real data.

9th International Conference Baton Rouge, LA, USA, May 25-27, 2009 Proceedings

A Brief Introduction

National Union Catalog

Handbook of the American Economic Association

39th Annual International Conference on the Theory and Applications of Cryptographic Techniques, Zagreb, Croatia, May 10-14, 2020, Proceedings, Part II

Measuring Income Inequality