

# The Index Number Problem Construction Theorems

Utz-Peter Reich addresses economists interested in a sound empirical foundation for their theoretical concepts. He investigates economic value and determines how value is defined in theory, which is microeconomic, and how it is measured in practice in national accounts. He demonstrates that microeconomic theory is not made to guide or interpret national accounts figures and he offers an alternative theory. Index numbers of price and quantity play an important role in the index-linking of government loans. The object of this study is to ascertain what formulae should be used in the construction of new index numbers to replace those known to produce biased measures of price and volume change. Major changes are taking place in the Chinese countryside as China rushes to modernize and urbanize its rural fabric. The transformation is improving the quality of life of rural inhabitants, but also brings about challenges as people strive to adjust. This book systematically examines the impact of change on the daily lives and activities of the residents of Sichuan Province, in China's South-west. It examines the themes of infrastructure, transport modes and preferences, sanitation, water conservation, earthquake and flood disaster preparedness, and the impact these have on villager behavior and quality of life. This book is an essential reference guide for graduate students and practitioners in the fields of rural planning, renewal, and construction.

The Preface Elucidates That The Text Is Designed For Degree Courses In India. However, I Imagine That It Could Play A Useful Role For Those In Britain. It Is Mainly Intended As An Introductory Text For Those Studying Social Sciences And Economics. Individuals From Other Disciplines Would,

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No Doubt, Still Find It Useful As A General Reference. The Chapters Are Well Written And Easy To Follow. An Appealing Feature Of The Book Is That Much Emphasis Is Placed On The Understanding And Application Of Statistical Methods. There Is Avoidance Of Excessive Presentation Of Formulae. For These Reasons Alone I Think That Students Will Find The Text Attractive. Each Chapter Finishes With A Series Of Well-Formulated Questions, Which Test The Readers' Understanding. The Two Chapters On Statistical Inference And Tests Of Significance Are Excellent. It Is A Comprehensive And Interesting Text, One That I Think Most Students Would Find Useful. Indeed, It Is An Useful Addition To My Library, Having Already Referred To It Often. The Statistician, London, Vol. 45, No. 3 (1996).

This volume addresses the search for a true price index, the need to know how to convert an amount at one date into the right amount at another date. The index number problem is the longstanding question concerning how such an index should be constructed.

Publishes in-depth articles on labor subjects, current labor statistics, information about current labor contracts, and book reviews.

Index Numbers A Stochastic Approach  
Palgrave Macmillan

This is a book on the theory behind the construction of production index numbers. Well-known examples of such indexes are the Gross Domestic Product, the Producer Price Index, and labor productivity. Fisher and Shell provide the analysis behind this class of index numbers. They treat separately the different production units and different forms of industrial organization. They show the direction of bias in traditionally calculated index numbers

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and how biases can affect fundamental conclusions about the growth or stagnation of the economy.

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There is no book currently available that gives a comprehensive treatment of the design, construction, and use of index numbers. However, there is a pressing need for one in view of the increasing and more sophisticated employment of index numbers in the whole range of applied economics and specifically in discussions of macroeconomic policy. In this book, R. G. D. Allen meets this need in simple and consistent terms and with comprehensive coverage. The text begins with an elementary survey of the index-number problem before turning to more detailed treatments of the theory and practice of index numbers. The binary case in which one time period is compared with another is first developed and illustrated with numerous examples. This is to prepare the ground for the central part of the text on runs of index numbers. Particular attention is paid both to fixed-weighted and to chain forms as used in a wide range of published index numbers taken mainly from British official sources. This work deals with some further problems in the construction of index numbers, problems which are both troublesome and largely unresolved. These include the use of

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sampling techniques in index-number design and the theoretical and practical treatment of quality changes. It is also devoted to a number of detailed and specific applications of index-number techniques to problems ranging from national-income accounting, through the measurement of inequality of incomes and international comparisons of real incomes, to the use of index numbers of stock-market prices. Aimed primarily at students of economics, whatever their age and range of interests, this work will also be of use to those who handle index numbers professionally. R. G. D. Allen (1906-1983) was Professor Emeritus at the University of London. He was also once president of the Royal Statistical Society and Treasurer of the British Academy where he was a fellow. He is the author of Basic Mathematics, Mathematical Analysis for Economists, Mathematical Economics and Macroeconomic Theory.

This Handbook provides, for the first time, comprehensive guidelines for the compilation of Residential Property Price Indexes and explains in depth the methods and best practices used to calculate an RPPI.

Index numbers are used to aggregate detailed information on prices and quantities into scalar measures of price and quantity levels or their growth. The paper reviews four main approaches to bilateral index number theory where two price and quantity vectors are to be aggregated: fixed basket and average of fixed baskets, stochastic, test or axiomatic and economic approaches. The paper also considers multilateral index number theory where it is necessary to construct price and quantity aggregates for more than two value aggregates. A final section notes some of the recent literature on related aspects of index number theory the construction of indexes when there is seasonality in the underlying data, sources of bias in consumer price indexes, the use of index numbers in measuring productivity, the problem of quality change and

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index number theory that is based on taking differences rather than ratios.

Discusses budgetary implications of changes in the Consumer Price Index (CPI) overstating changes in the cost of living. Presents an overview of the CPI, details why it is not a true cost of living index, & discusses substitution bias.

Describes procedures employed to adjust for quality change, presents a survey of studies & the Commission's judgment on the bias from quality change & new products, & summarizes findings on the size of the bias. Discusses the issue of separate price indexes for different groups & of aspects of quality of life that fall outside the market based consumption focus of cost-of-living measures.

This volume addresses the search for a true price index, the need to know how to convert an amount at one date into the right amount at another date. The longstanding question concerning how such an index should be constructed is known as 'The Index Number Problem'.

The price index, a pervasive long established institution for economics, is a number issued by the Statistical Office that should tell anyone the ratio of costs of maintaining a given standard of living in two periods where prices differ. For a chain of three periods, the product of the ratios for successive pairs must coincide with the ratio for the endpoints. This is the chain consistency required of price indices. A usual supposition is that the index is determined by a formula involving price and quantity data for the two reference periods, always joined with the question of which one to choose, and the perplexity that chain consistency is not obtained with any. Hence finally they should all be abandoned. This situation reflects 'The Index Number Problem'. This book brings together a coherent discussion of fifty years of astonishingly creative work on this subject.

This book deals with many of the most relevant topics in price

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index numbers theory and practice. The problem of the harmonization of CPIs and the time-space integration of baskets is analyzed at the Eu-zone level, with methodological and actual proposals on how to proceed for an overall treatment of the matter. Likewise, the construction of sub-indexes for households economic and social groups is investigated, in order to obtain specific inflation measurement instruments. Evidence from most updated databases is given. The questions of the spatial comparisons of price levels through PPPs and th.

'An authoritative survey with exciting new insights of special interest to economists and econometricians who analyse intertemporal and interspatial price relationships.' - Professor Angus Maddison, Groningen University This book presents a comprehensive review of recent developments in the theory and construction of index numbers using the stochastic approach, demonstrating the versatility of this approach in handling various index number problems within a single conceptual framework. It also contains a brief, but complete, review of the existing approaches to index numbers with illustrative numerical examples. The stochastic approach considers the index number problem as a signal extraction problem. The strength and reliability of the signal extracted from price and quantity changes for different commodities depends upon the messages received and the information content of the messages. The most important applications of the new approach are to be found in the context of measuring rate of inflation; fixed and chain base index numbers for temporal comparisons and for spatial intercountry comparisons; the latter generally require special index number formulae that result in transitive and base invariant comparisons.

Resources, Values and Development contains many of Amartya Sen's path-breaking contributions to development

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economics, including papers on resource allocation in nonwage systems, shadow pricing, employment policy, welfare economics, poverty assessment, gender-based inequality, and hunger and famines.

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