Exploring General Equilibrium

'This book makes compelling reading for anyone interested in exploring the foundations of monetary theory from a rigorous general equilibrium perspective.' – Gabriele Camera, Purdue University, US 'Introducing the Arrow-Debreu-Starr model of monetary general equilibrium, Professor Starr provides the best defense ever made for the relevance of the Walrasian model to the pure theory of money. While most monetary theorists ventured to the overlapping generations model and then to the search model, only to create recently a hybrid search-Walrasian model, Starr presents the culmination of a patient, career-long effort to integrate money into the basic Walrasian model, with realistic taxation critically helping the government's money to dominate.' – Dror Goldberg, Bar Ilan University, Israel The microeconomic foundation of the theory of money has long represented a puzzle to economic theory. Why is there Money? derives the foundations of monetary theory from advanced price theory in a mathematically precise family of trading post models. It has long been recognized that the fundamental theoretical analysis of a market economy is embodied in the Arrow-Debreu-Walras mathematical general equilibrium model, with one great deficiency: the analysis cannot accommodate money and financial institutions. In this groundbreaking book, Ross M. Starr addresses this problem directly, by expanding the Arrow-Debreu model to include a multiplicity of trading opportunities, with the resultant endogenous derivation of money as the carrier of value among them. This fundamental breakthrough is achieved while maintaining the Walrasian general equilibrium price-theoretic structure, augmented primarily by the introduction of separate bid and ask prices reflecting transaction costs. The result is foundations of monetary theory consistent with and derived from modern price theory. This fascinating book will provide a stimulating and thought-provoking read for academics and postgraduate students focusing on economics, macroeconomics, macroeconomic policy and finance, money and banking. Central bankers will also find much to interest them within this book.

General Equilibrium Theory: An Introduction presents to students general equilibrium analysis. Modern business cycle theory and growth theory uses stochastic dynamic general equilibrium models. In order to solve these models, economists need to use many mathematical tools. This book presents various methods in order to compute the dynamics of general equilibrium models. In part I, the representative-agent stochastic growth model is solved with the help of value function iteration, linear and linear quadratic approximation methods, parameterised expectations and projection methods. In order to apply these methods, fundamentals from numerical analysis are reviewed in detail. In particular, the book discusses issues that are often neglected in existing work on computational methods, e.g. how to find a good initial value. In part II, the authors discuss methods in order to solve heterogeneous-agent economies. In such economies, the distribution of the individual state variables is endogenous. This part of the book also serves as an introduction to the modern theory of distribution economics. Applications include the dynamics of the income distribution over the business cycle or the overlapping-generations model. In an accompanying home page to this book, computer codes to all applications can be downloaded.

This laboratory manual is intended for a two-semester general chemistry course. The procedures are written with the goal of simplifying a complicated and often challenging subject for students by applying concepts to everyday life. This lab manual covers topics such as composition of compounds, reactivity, stoichiometry, limiting reactants, gas laws, calorimetry, periodic trends, molecular structure, spectroscopy, kinetics, equilibria, thermodynamics, electrochemistry, intermolecular forces, solutions, and coordination complexes. By the end of this course, you should have a solid understanding of the basic concepts of chemistry, which will give you confidence as you embark on your career in science.

A detailed overview of the classical model of general equilibrium theory.

This advanced textbook aims at providing a simple but fully operational introduction to applied general equilibrium. General equilibrium is the backbone of modern economic analysis and as such generation after generation of economics students are introduced to it. As an analytical tool in economics, general equilibrium provides one of the most complete views of an economy since it incorporates all economic agents (households, firms, government, foreign sector) in an integrated way that is compatible with microtheory and microdata. The integration of theory and data handling is required for successful modeling but it requires a double ability that is not found in standard books. With this book we aim at filling the gap and provide advanced students with the required tools, from the building of consistent and applicable general equilibrium models to the interpretation of the results that ensue from the adoption of policies. The topics include: model design, model development, computer code examples, calibration and data adjustments, practical policy examples.

An incisive, unconventional assessment of general equilibrium theory; with a previously unpublished paper. Fischer Black is known for his brilliance as well as his sometimes controversial opinions. Highly respected for his scholarly writings in finance, he now moves into different territory with this incisive, unconventional assessment of general equilibrium theory and what that theory reveals about business cycles, growth, and labor economics. The general equilibrium approach, Black asserts, can be used to explain most of the economy's behavior. It can explain business cycles and growth without using sticky prices, irrationality, economies of scale, or imperfect competition. It can explain the volatility of consumption, output, sales, investment, and inventories with axiomatic utility and constant-returns-to-scale production. It can explain temporary layoffs, job changes with and without intervening unemployment, and the behavior of vacancies. It can explain lower wages in part-time jobs, wages that increase rapidly with time on the job, and the forces that cause migration from poor to rich countries. Although the general equilibrium approach can't be tested in conventional ways, it can be used to generate examples that explain stylized facts—generalized observations from the real world—that have preoccupied macroeconomists for the last decade. Black contrasts his interpretation of these facts with conventional interpretations. Finally, he reviews a substantial body of literature on these topics.

In this authoritative Handbook, leading experts from international statistical offices and universities explain in detail the treatment and role of input-output statistics in the System of National Accounts. Furthermore, they address the derivation of input-output coefficients for the purpose of economic and environmental modeling, the building of applied general equilibrium models, the use of these models for efficiency analysis, and the extensions to stochastic and dynamic input-output analysis. As well as revealing and exploring the theoretical foundations, the Handbook also acts as a useful guide for practitioners.

This book features tutorials about the role of money and bonds in Dynamic

General Equilibrium models. It includes a step-by-step guide to the endogenous derivation of the price kernel employed for the term structure of interest rates and asset pricing.

Suitable for students and researchers seeking coverage of the developments in macroeconomics, this title lays out the core ideas of modern macroeconomics and its links with finance. It presents the simplest general equilibrium macroeconomic model for a closed economy, and then gradually develops a comprehensive model of the open economy.

The central idea underlying this work is to convert the Walrasian general equilibrium structure (formalized in the 1950s by Kenneth Arrow, Gerard Debreu and others) from an abstract representation of an economy into realistic models of actual economies.

praise for FISCHER BLACK AND THE REVOLUTIONARY IDEA OF FINANCE "The story of Fischer Black. . . . is remarkable both because of the creativity of the man and because of the revolution he brought to Wall Street. . . . Mehrling's book is fascinating." —FINANCIAL TIMES "A fascinating history of things we take for granted in our everyday financial lives." —THE NEW YORK TIMES "Mehrling's book is essential reading for anyone interested in the development of modern finance or the life of an idiosyncratic creative genius." —PUBLISHERS WEEKLY

"Fischer Black was more than a vital force in the development of finance theory. He was also a character. Perry Mehrling has captured both sides of the picture: the evolution of thinking about the pricing of risk and time, as well as the thinkers, especially this fascinating eccentric, who worked it out." —ROBERT M. SOWLO, Nobel laureate and Institute Professor of Economics, Emeritus, Massachusetts Institute of Technology "Although I worked closely with Fischer for nine years at Goldman Sachs and clearly recognized both his genius and the breadth and originality of his ideas, until I read this book, I had only the vaguest grasp of the source of his inspiration and no understanding at all of the source of his many idiosyncrasies." —BOB LITTERMAN, Partner, Kepos Capital "Perry Mehrling has done a remarkable job of tracing the intellectual and personal development of one of the most original and complex thinkers of our generation. Fischer Black deserved it: a charming and brilliant book about a charming and brilliant man." —ROBERT E. LUCAS JR., Nobel laureate and Professor of Economics, The University of Chicago

"This book focuses on the foundations of general equilibrium theory, more specifically on the existence, uniqueness, stability, optimality and comparative static properties of equilibrium states. It also explores the question of the empirical relevance of equilibrium states. It highlights a series of 'relationship conditions' which are essential for the existence of equilibrium, but appear in optimality results." -- PUBLISHER WEBSITE.

The setting: individual economic agents; The setting: supply and demand, competitive equilibrium; Existence and uniqueness; Welare economics.

The aim of this book is to incorporate Marshallian ideas such as external increasing returns and monopolistic competitions into the general equilibrium framework of Walrasian tradition. New chapters and sections have been added to this revised and expanded edition of General Equilibrium Analysis of Production and Increasing Returns (World Scientific, 2009).The new material includes a presentation of equilibrium existence and core equivalence theorems for an infinite horizon economy with a measure space of consumers. These results are currently the focus of extensive studies by mathematical theorists, and are obtained by an application of an advanced mathematical concept called saturated (super-atomless) measure space.The second major change is the inclusion of a simple toy model of a liberal society which implements the difference principle proposed by J Rawls as a principle of distributive justice. This new section opens up a possibility to connect theoretical economics and political philosophy.Thirdly, the author presents the marginal cost pricing equilibrium and discusses welfare properties of the external increasing returns, which also belong to Marshall/ Pigou tradition of the Cambridge school.Finally, a new mathematical appendix treats basics of singular homology theory. Although the fixed point theorem is originally a theorem of algebraic topology, most economic students know its proof only in the context of the differentiable manifold theory presented by J Milnor. Considering the significance of the fixed point theorem and its playing a key role in general equilibrium theory, the purpose of this new appendix is to provide readers with the idea of a proof of Brower's fixed point theorem from the 'right place'.This volume will be helpful for graduate students and researchers of mathematical economics, game theory, and microeconomics.

Over the last decade or so, applied general equilibrium models have rapidly become a major tool for policy advice on issues regarding allocation and efficiency, most notably taxes and tariffs. This reflects the power of the general equilibrium approach to allocative questions and the capability of today's applied models to come up with realistic answers. However, it by no means implies that the theoretical, practical and empirical problems faced by researchers in applied modelling have all been solved in a satisfactory way. Rather, a promising field of research has been opened up, inviting theorists and practitioners to further explore and exploit its potential. The state of the art in applied general equilibrium modelling is reflected in this volume. The introductory Chapter (Part I) evaluates the use of economic modelling to address policy questions, and discusses the advantages and disadvantages of applied general equilibrium models. Three substantive issues are dealt with in Chapters 2-8: Tax Reform and Capital (Part II), Intertemporal Aspects and Expectations (Part III), and Taxes and the Labour Market (Part IV). While all parts contain results relevant for economic policy, it is clear that theory and applications for these areas are in different stages of development. We hope that this book will bring inspiration, insight and information to researchers, students and policy advisors.

This book brings together the author's pioneering work, written over the last twenty years, on the use of differential methods in general equilibrium theory.

'Fabio Petri has been a persistent critic of marginalist theories of value and distribution. In this provocative book, he presents an extensive scrutiny of the reasons why many economists are unsatisfied with the Neo-Walrasian approach to General Equilibrium theory and why some reject it altogether. General Equilibrium, Capital and Macroeconomics throws down a challenge to all economic theorists.' - Neri Salvadori, University of Pisa, Italy 'General Equilibrium, Capital and Macroeconomics is a thorough and deep book. It contains a remarkably clear and precise statement of the conceptual, methodological and analytical difficulties besetting the demand and supply approach to economics as it is advocated in partial and general equilibrium models, old and new, micro and macro. This work covers essential parts of modern economics, it is well written and the subject matter is carefully arranged. The book will be of interest to a wide range of economists.' - Heinz D. Kurz, University of Graz, Austria This book argues that the shift in general equilibrium theory, from its early long-period to the modern very-short-period versions, has had very important consequences which are insufficiently appreciated by large parts of the economics profession. This shift has produced new difficulties, and has undermined central tenets of neoclassical macroeconomic theory (such as the negative dependence of aggregate investment on the interest rate, or the existence of a downward-sloping demand curve for labour) which had their basis in the long-period versions where capital was treated as a single factor.

This book provides an accessible, undergraduate-level introduction to computable general equilibrium (CGE) models, a class of model that has come to play an important role in government policy decisions. The book uses a graphical approach to explain the economic theory that underlies a CGE model, and provides results from simple, small-scale CGE models to illustrate the links between theory and model outcomes. The book includes eleven guided, hands-on exercises that introduce modeling techniques that are applied to real-world economic problems. Students will learn how to integrate their separate fields of economic study into a comprehensive, general equilibrium perspective as they develop their skills as producers or consumers of CGE-based

analysis.
This book expounds trade theory emphasizing that a trading equilibrium is general rather than partial, and is often best modelled using dual or envelope functions. This yields a compact treatment of standard theory, clarifies some errors and confusions, and produces some new departures. In particular, the book (i) gives unified treatments of comparative statics and welfare, (ii) sheds new light on the factor-price equalization issue, (iii) treats the modern specific-factor model in parallel with the usual Heckscher-Ohlin one, (iv) analyses the balance of payments in general equilibrium with flexible and fixed prices, (v) studies imperfect competition and intra-industry trade.
This is a new kind of textbook in microeconomic theory. In place of the usual concentration on partial equilibrium analysis and discussion of a standard series of topics, the authors seek to introduce the student from the start to the general equilibrium approach to microeconomics, in the form of the two-sector model. This model is then applied to a variety of subjects in different special fields of economic analysis: welfare economics, international trade, public finance and income distribution.
This book represents a very different approach to the teaching of micro-economic theory than normally followed, and one that will be of greater long-run value to the serious student of economics. In place of the usual textbook development of the subject as traditionally conceived through topics of increasing complexity and analytical difficulty, using partial equilibrium techniques of analysis, the book concentrates on the

exposition and application of a more logically integrated set of tools that have been found of greater use in the analysis of problems arising not only in traditional micro-economics but also in a number of fields of economics that have customarily been hived off into separate specialized advanced courses. General Equilibrium Analysis starts with the description of the two-sector model and how these two sectors are built based on the individual micro-units in which they made up of and how they fit into the concept of the circular flow of income. Subsequent chapters deal with the evaluation of changes in factor endowment, demand preferences and technical progress by means of the model; and the theory of government, which includes both the theory of government expenditure, or public goods, and the theory of government tax and/or subsidy programmes-changes in budgetary scale, tax substitution and expenditure substitution. The model is then extended to an open economy-the so-called "two by two by two"--to consider both the normative effect of inte

This book, as the title suggests, explains how General equilibrium, the dominant conceptual framework in mainstream economics, describes a perfectly impossible world. Even with its counterfactual assumptions taken for granted, it fails on many levels. Under the impressive editorship of Ackerman and Nadal, this book will appeal to students and researchers in economics and related social science disciplines.

This book presents general equilibrium theory for advanced undergraduate and graduate-level economics students. It discusses economic efficiency, competitive equilibrium, the welfare theorems, the Kuhn-Tucker approach to general equilibrium, the Arrow-Debreu model, and rational expectations equilibrium and the permanent income hypothesis.

Fischer Black is known for his brilliance as well as his sometimes controversial opinions. Highly respected for his scholarly writings in finance, he now moves into different territory with this incisive, unconventional assessment of general equilibrium theory and what that theory reveals about business cycles, growth, and labor economics. The general equilibrium approach, Black asserts, can be used to explain most of the economy's behavior. It can explain business cycles and growth without using sticky prices, irrationality, economies of scale, or imperfect competition. It can explain the volatility of consumption, output, sales, investment, and inventories with axiomatic utility and constant-returns-to-scale production. It can explain temporary layoffs, job changes with and without intervening unemployment, and the behavior of vacancies. It can explain lower wages in part-time jobs, wages that increase rapidly with time on the job, and the forces that cause migration from poor to rich countries. Although the general equilibrium approach can't be tested in conventional ways, it can be used to generate examples that explain stylized facts—generalized observations from the real world—that have preoccupied macroeconomists for the last decade. Black contrasts his interpretation of these facts with conventional interpretations. Finally, he reviews a substantial body of literature on these topics.

Originally published in 1971, this book presents in a lucid form the basic model of distribution in a two-sector general equilibrium system. While this model has been used by many economists, this was the first synoptic exposition of it to become readily available to students. The first part develops the two-sector model and its properties, using the geometrical tools of international trade theory. The second applies the model to some standard problems in the theory of income distribution, including the economics of redistributive taxes and subsidies, of trade union organization, and of minimum wage laws. The third part converts the model into a growth model and develops the conditions for convergence on a steady-state growth path and for the maximization of consumption per head at all points of time.
Finding Equilibrium explores the post–World War II transformation of economics by constructing a history of the proof of its central dogma—that a competitive market economy may possess a set of equilibrium prices. The model economy for which the theorem could be proved was mapped out in 1954 by Kenneth Arrow and Gerard Debreu collaboratively, and by Lionel McKenzie separately, and would become widely known as the "Arrow-Debreu Model." While Arrow and Debreu would later go on to win separate Nobel prizes in economics, McKenzie would never receive it. Till Düppe and E. Roy Weintraub explore the lives and work of these economists and the issues of scientific credit against the extraordinary backdrop of overlapping research communities and an economics discipline that was shifting dramatically to mathematical

modes of expression. Based on recently opened archives, Finding Equilibrium shows the complex interplay between each man's personal life and work, and examines compelling ideas about scientific credit, publication, regard for different research institutions, and the awarding of Nobel prizes. Instead of asking whether recognition was rightly or wrongly given, and who were the heroes or villains, the book considers attitudes toward intellectual credit and strategies to gain it vis-à-vis the communities that grant it. Telling the story behind the proof of the central theorem in economics, Finding Equilibrium sheds light on the changing nature of the scientific community and the critical connections between the personal and public rewards of scientific work.

A collection of published papers in general equilibrium that explore the basic problems of extensive interdependence in models incorporating oligopoly, space, time and money. Robert E. Kuenne has also written "The Theory of General Economic Equilibrium".

An economist's attempt to interpret a critical period of US history, from Civil War to World War I.

Emerging markets business cycle models treat default risk as part of an exogenous interest rate on working capital, while sovereign default models treat income fluctuations as an exogenous endowment process with ad-noc default costs. We propose instead a general equilibrium model of both sovereign default and business cycles. In the model, some imported inputs require working capital financing; default on public and private obligations occurs simultaneously. The model explains several features of cyclical dynamics around default triggers an efficiency loss as these inputs are replaced by imperfect substitutes; and default on public and private obligations occurs simultaneously. The model explains several features of cyclical dynamics around deraults, countercyclical spreads, high debt ratios, and key business cycle moments.

2010 marks the hundredth anniversary of the death of Léon Walras, the brilliant originator and first formaliser of general equilibrium theory – one of the pillars of modern economic theory. In advancing much derided practical solutions Walras also displayed more concern for the problems of living in a second best world than is common in modern pure theories of the invisible hand, efficient market hypothesis, DSGE macroeconomics or the thinking of some contemporary free market admirers all based on general equilibrium theory. This book brings contributions from the likes of Kenneth Arrow, Alan Kirman, Richard Posner, Amartya Sen and Robert Solow to share their thoughts and reflections on the theoretical heritage of Léon Walras. Some authors reminisce on the part they played in the development of modern general economics theory; others reflect on the crucial part played by general equilibrium in the development of macroeconomics, microeconomics, growth theory, welfare economics and the theory of justice; others still complain about the wrong path economic theory took under the influence of post 1945 developments in general equilibrium theory.

First published in 1997, this volume builds an economic model in which a model of the policy-formation process was grafted onto an economic model of the traditional kind. Politics are not made in a vacuum; they have their basis in the politico-economic system which economists have been modelling and analysing for a very long time. For economists, government policies are particularly important as they determine the environment within which all agents make their choices and the way in which the market allocates resources. Through an examination of tariffs and an equilibrium model of the economic sphere of a small open political economy, Hom Moorti Pant aims to explore some of the reasons and effects of government policy decisions on the economy.

In recent years certain leading figures in the world of economics have called the usefulness of general equilibrium theory into question. This superb new book brings together leading economic theorists with important contributions to the ongoing debate. General equilibrium theorists including Michio Morishima, Michael Magill and Martine Quinzii debate strengths, weaknesses and possible futures with leading thinkers such as Herb Gintis, Pierangelo Garegnani and Duncan Foley, who seek to explain the rejection of general equilibrium. Uniquely, none of the contributors portray general equilibrium theory as the perfect guide to market economies actual behaviour, but rather illustrate that there is insufficient acquaintance with existing alternatives and that general equilibrium theory is often used as an ideal 'benchmark'.

This punchy book unites mainline mathematical economics and sometimes idiosyncratic political economy. Freshness is brought to the market concept giving general equilibrium theory a new lease of life, and an opening of thought on such matters as free trade, globalization and the environment. Where most theories of general equilibrium have been based on utility maximizing traders, Afriat here maintains the view that the topic essentially is concerned with aggregates and that anything to do with utility is at best secondary if not spurious. The book goes on to discuss political economy, in particular the idea of 'optimum', and its abuses, especially in doctrine related to the market. This novel book will be of equal appeal to mathematical thinkers, those interested in the theory of market and political economists.

This title, first published in 1984, is a contribution to applied international trade theory. The author explores the specification and estimation of a multisector general equilibrium model of the open economy. The model is formulated with the aim of assessing empirically the effects of three key policy variables on trade flows, domestic prices, and the trade balance. The policy variables with which the author is concerned are the rate of growth of the stock of domestic credit, commercial policy, as represented by tariffs, and, finally, the exchange rate. This title will be of interest to students of economics.

An updated look at what Fischer Black's ideas on business cycles and equilibrium mean today Throughout his career, Fischer Black described a view of business fluctuations based on the idea that a well-developed economy will be continually in equilibrium. In the essays that constitute this book, which is one of only two books Black ever wrote, he explores this idea thoroughly and reaches some surprising conclusions. With the newfound popularity of quantitative finance and risk management, the work of Fischer Black has garnered much attention. Business Cycles and Equilibrium-with its theory that economic and financial markets are in a continual equilibrium-is one of his books that still rings true today, given the current economic crisis. This Updated Edition clearly presents Black's classic theory on business cycles and the concept of equilibrium, and contains a new introduction by the person who knows Black best: Perry Mehrling, author of Fischer Black and the Revolutionary Idea of Finance (Wiley). Mehrling goes inside Black's life to uncover what was occurring during the time Black wrote Business Cycles and Equilibrium, while also shedding light on what Black would make of today's financial and economic meltdown and how he would best advise to move forward. The essays within this book reach some interesting conclusions concerning the role of equilibrium in a developed economy Warns about the use and abuse of modeling Explains the risky business of risk in a straightforward and accessible style Contains chapters dedicated to "the effects of uncontrolled banking," "the trouble with econometric models," and "the effects of noise on investing" Includes commentary on Black's life and work at the time Business Cycles and Equilibrium was written as well as insight as to what Black would make of the current financial meltdown Engaging and informative, the Updated Edition of Business Cycles and Equilibrium will give you a better understanding of what is really going on during these uncertain and volatile financial times.

This book offers an introductory step-by-step course to Dynamic Stochastic General Equilibrium modelling. Modern macroeconomic analysis is increasingly concerned with the construction, calibration and/or estimation and simulation of Dynamic General Equilibrium (DGE) models. The book is intended for graduate students as an introductory course to DGE

modelling and for those economists who would like a hands-on approach to learning the basics of modern dynamic macroeconomic modelling. The book starts with the simplest canonical neoclassical DGE model and then gradually extends the basic framework incorporating a variety of additional features, such as consumption habit formation, investment adjustment cost, investment-specific technological change, taxes, public capital, household production, non-ricardian agents, monopolistic competition, etc. The book includes Dynare codes for the models developed that can be downloaded from the book's homepage.
A profound, innovative, and lively exploration of the nature of the theory at the very center of economics