



Introduction To

MACROECONOMICS

2 *Second Edition*

ALAN C. STOCKMAN

Includes "What Economists Do" by Nobel Prize winner Robert E. Lucas, Jr.

Introduction To

MACROECONOMICS

② Second Edition

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University of Rochester



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1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
236	238	241	243	245	247	250	253	255	258	261	263	265	268
74.7	74.7	74.7	74.9	74.9	75.1	75.4	75.5	75.8	75.5	75.7	75.8	75.9	—
3,902	4,181	4,422	4,692	5,050	5,439	5,744	5,917	6,244	6,558	6,947	7,265	7,636	8,083
5,778	5,984	6,168	6,350	6,593	6,814	6,897	6,834	7,019	7,182	7,431	7,578	7,788	8,083
24,446	25,093	25,632	26,154	26,907	27,549	27,595	27,049	27,484	27,828	28,514	28,811	29,338	30,173
3,841	4,020	4,180	4,308	4,478	4,581	4,657	4,628	4,756	4,896	5,056	5,179	5,313	5,489
865	855	843	853	860	896	846	766	820	896	1,013	1,029	1,110	1,238
1,165	1,236	1,299	1,334	1,351	1,389	1,431	1,439	1,446	1,433	1,433	1,433	1,439	1,454
-187	-217	-241	-230	-168	-122	-91	-33	-43	-103	-154	-145	-168	-209
3,342	3,472	3,588	3,732	3,883	3,948	4,026	3,994	4,097	4,178	4,291	4,397	4,515	4,703
1,343	1,371	1,364	1,428	1,529	1,561	1,560	1,506	1,512	1,590	1,689	1,770	1,864	1,854
4.6	3.8	3.7	4.9	6.0	5.0	4.0	2.4	0.8	2.8	5.4	5.7	6.0	—
7.5	7.2	7.0	6.2	5.5	5.3	5.6	6.8	7.5	6.9	6.1	5.6	5.4	4.9
105	107	110	112	115	117	119	118	118	120	123	125	127	130
35.2	34.9	34.8	34.8	34.7	34.6	34.5	34.3	34.4	34.5	34.7	34.5	34.4	34.6
12.97	12.92	12.99	12.86	12.79	12.71	12.51	12.39	12.33	12.29	12.31	12.29	12.36	12.54
64.7	67.0	68.3	70.8	73.7	77.3	81.4	84.9	87.4	90.0	92.3	95.0	97.8	100.0
4.3	3.6	1.9	3.6	4.1	4.8	5.4	4.2	3.0	3.0	2.6	2.8	3.0	2.3
9.6	7.5	6.0	5.8	6.7	8.1	7.5	5.4	3.5	3.0	4.3	5.5	5.0	5.1
1,261	1,355	1,382	1,359	1,390	1,433	1,505	1,530	1,553	1,543	1,563	1,581	1,592	1,601
987	1,051	1,073	1,156	1,187	1,242	1,239	1,218	1,227	1,264	1,346	1,410	1,482	1,579
-274	-304	-309	-203	-203	-191	-266	-311	-326	-279	-217	-171	-110	-22
22.3	23.1	22.6	21.8	21.5	21.4	22.0	22.6	22.5	21.8	21.4	21.1	20.7	20.1
17.5	17.9	17.6	18.6	18.4	18.5	18.2	18.0	17.8	17.8	18.4	18.8	19.3	19.8
-4.9	-5.2	-5.1	-3.3	-3.1	-2.8	-3.9	-4.6	-4.7	-3.9	-3.0	-2.3	-1.4	-0.3
1,797	1,877	1,947	1,995	2,027	2,080	2,163	2,194	2,321	2,351	2,369	2,422	2,466	2,511
1,694	1,774	1,832	1,934	1,981	2,057	2,073	2,056	2,103	2,172	2,272	2,347	2,461	—
-102	-103	-115	-61	-46	-23	-89	-139	-219	-179	-96	-74	-5	—
31.1	31.4	31.6	31.4	30.7	30.5	31.4	32.1	33.1	32.7	31.9	32.0	31.7	31.1
29.3	29.7	29.7	30.5	30.0	30.2	30.1	30.1	30.0	30.2	30.6	31.0	31.6	—
-1.8	-1.7	-1.9	-1.0	-0.7	-0.3	-1.3	-2.0	-3.1	-2.5	-1.3	-1.0	-0.1	—
111,830	105,935	109,509	114,337	117,440	122,090	126,893	125,331	128,344	132,228	134,196	138,186	132,121	—

*To Cindy, Gwendolyn,
Madeleine, and Rebecca*

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PREFACE

I'll confess: This book has a secret agenda. I wrote this book to teach students how to think like economists, but my ultimate motive for writing it was my own satisfaction—I seek the delight that arises in me when a student becomes enthusiastic about economics; when he proudly explains his new application of economic reasoning; when she decides to major in economics because of my course. These occasions generate feelings (with less intensity) similar to my immense joy in sharing some beautiful aspect of the world, such as the emotions of music or the pride of accomplishment, with my own children. The gratification of teaching occurs when students rekindle their natural curiosities to feed the appetite that curiosity creates.

Students who enroll in a principles of economics course seldom have more than the vaguest idea of its subject, let alone why they should care about it. Many of them expect economics to be boring and enroll in the course only to satisfy a requirement. They have no awareness of the market, let alone any sort of *awe* of the market. It has never occurred to them that our economy, without any central plan or direction, somehow coordinates the activities of millions of people to produce efficiently the goods and services that they want. Most students have never been exposed to the kinds of questions that economics answers. Although the results of those questions and answers profoundly affect their lives, they take them for granted.

Introduction to Economics inspires students not to take those results for granted but to think like economists instead. It does so by leading them on a path of inquiry and discovery, fostering the experience of its joys. Of course, the book does teach the substantive results of economics, such as the effects of an increase in demand on price, for example. More importantly, though, the book helps students acquire *new skills* that they can apply in their own lives. It teaches students the answers, but first and foremost, it helps them learn to formulate the questions. If this book accomplishes its goal, it will evoke in students an excitement of economics and appreciation for the power of economic analysis. They will share (with those of us who love economics) that “Aha!” feeling of new discovery, and their newfound abilities to think like economists will change their lives.

Information and Analysis

The relative price of facts and analysis has changed. Since the first edition of *Introduction to Economics*, the information revolution has swept our society, reducing the price of facts. Students can obtain data at a vastly lower time cost than ever before. But facts and analysis are complements. Without tools for analysis, students may drown in a sea of facts. The widening gulf between wages of unskilled workers and wages of skilled, “knowledge workers” is one outcome of the information revolution. The gulf may widen even further in coming decades as the information age continues to raise the marginal product of analysis.

This second edition of *Introduction to Economics* reflects these changes with a fresh focus on helping students learn how to *apply* economics to solve new problems and analyze new issues, ask new questions, formulate new ideas, and view old issues in new ways. It separates explanations and examples from main points. It employs examples as memory aids and develops applications to deepen understanding. The best way to learn how to think analytically and apply economics is to practice, and then to practice again. Students learn by practicing applying concepts that relate to their own daily lives and to the greater world around them. This book provides that opportunity, and makes it both

easier and fun. It helps students to venture beyond the description of economic models to the *uses* of those models. It encourages them to explore new vistas and supports their explorations by providing them with the maps and tools to do so.

A Personal Note

I expected to become a physicist or political scientist when I entered college in the fall of 1969. My interest in political science sprang from my fascination with political philosophy and broad social issues, but most political science courses appeared to focus more on the institutions of government than on fundamental questions. Meanwhile, outside reading led me to the works of Milton Friedman, Friedrich Hayek, and Ludwig von Mises, and inspired me to learn more economics. However, I found my introductory economics course dry and intellectually unsatisfying. The textbook required for the course never discussed (or even raised) the many fundamental questions to which economics applies. Rather than show me how to apply logical reasoning, the book implied that experts had already resolved most economic issues. It implied that these authorities armed with technical skills could manage government policies to correct the failures of markets and fine-tune the economy. How boring! Even if it were true (something I could not evaluate at the time), that approach to economics rejected the joy of discovery; the process of learning to think; the crucial ability to raise new questions.

Despite that experience, my outside reading (and some good professors in my classes at Ohio State University) sustained my interest in economics. When I decided to pursue economics in graduate school, I promised myself that someday I would write a better introductory economics textbook through which I could share with other people the fun and intellectual excitement I found in economics. After getting my Ph.D. at the University of Chicago and spending two years at UCLA, I found myself teaching a principles course at the University of Rochester in the fall of 1979. I have taught principles every year since then (two decades that have gone by very quickly!). The first edition of this book grew from my attempt to fulfill my promise to myself. The second edition, which you hold in your hands, grew from my desire to improve it. I hope you find that I have succeeded.

Applied, Analytical Approach to Macroeconomics

This book takes an applied analytical approach to macroeconomics. Students learn to construct models, or logical stories, of the operation of the economy and the effects of government policies. They learn how to begin with simple stories to explore key logical points, before embellishing those stories with additional features. This book begins with a long-run, neoclassical model before adding short-run complications associated with sticky prices. Numerous applications help to illustrate the relevance of these logical stories to real-life issues, including historical case studies as well as recent macroeconomic news stories, such as banking crises and recessions in Asia and Russia, introduction to the Euro and the new European Central Bank, and Federal Reserve policies to maintain economic growth with low inflation in the United States.

Fundamental Issues and Everyday Applications

Discussions or questions about important social and political issues appear throughout the book, enticing students to broaden the set of questions that they ask about the world, to understand both sides of controversial issues, and to combine economic analysis with their own value judgments as they think about current events and fundamental social issues. The book also strives for a real-life flavor through the use of data, examples, applications of economics to personal and business decisions, and the extensive use of news clippings.

Chapter-by-Chapter Changes from the First Edition

Part 1: Issues and Methods

Chapter 1 *Mysteries and Motives: What Economics Is About* Chapter 1 has been rewritten to place students directly into the center of economic analysis. Consistent with this edition's enhanced focus on thinking skills, the chapter now opens with a simple but very important economic model of gains from trade. The implications of this model will surprise many students. Discussion of the model leads to a discussion of what economics is about, with key facts about the world economy presented in easily-digestible form and key issues of economic analysis appearing in clear examples.

Chapter 2 *Solving Puzzles: The Methods of Economics* This revised chapter contains a new discussion of economic models as artificial economies, similar to simulations in computer games. The new chapter also has more concise explanations and examples of logical fallacies.

Part 2: Fundamental Tools

Chapter 3 *Let's Make a Deal: The Gains from Trade* This substantially rewritten chapter now presents production possibility frontiers within the chapter rather than in an appendix. The two-student example of gains from trade in this chapter complements the shoe-store example of gains from trade from the beginning of Chapter 1, and it is thoroughly integrated with the discussion of production possibility frontiers.

Chapter 4 *Supply and Demand* This chapter has been streamlined for even easier reading and clarity than in the first edition. The chapter contains a new early section on the concept of price-taking behavior. Some more difficult material has been omitted from this edition. (All such omitted material will be available on the Web pages for the book for instructors who wish to cover those more advanced topics. However, the second edition focuses more strongly than ever on basic skills.)

Part 3: Macroeconomics: Mysteries, Measurement, and Models

Chapter 5 *Macroeconomic Issues and Measurement* This revised introduction to macroeconomics provides a shorter, yet more comprehensive introduction to main concepts and issues, with the same strong real-life focus present in the first edition. Growth rates, the rule of 72, the circular flow, and coverage of AS/AD have

been moved to later chapters. This revised chapter has a stronger focus on macroeconomic questions and measurement of GDP, its components, the price level, employment, and unemployment.

Chapter 6 *Simple Economic Models of GDP, Prices, and Employment* This is an almost entirely new chapter that builds a basic macroeconomic model. The chapter focuses on the models as logical stories, and need for models to think about real-life economic issues.

The chapter begins with an essay from Professor Robert E. Lucas, Jr., "What Economists Do," which describes:

1. how economists think about the economy, and how they answer "what-if" questions about the economy, by telling logical stories (constructing models)
2. the creation of a recession in an amusement park

Next, the chapter develops a story (model) of a Robinson Crusoe economy to examine the factors determining real GDP. This model illustrates:

1. production functions and diminishing returns to labor effort
2. factors that affect investment
3. real GDP as the sum of consumption and investment

Finally, the chapter extends the model to a large number of people, like Crusoe, who trade with each other. This extension adds two new features to the model:

1. money, with the circular flow to illustrate the equation of exchange
2. labor markets

The chapter includes new discussions of:

1. the neutrality of money
2. why money is *not* neutral in Lucas's amusement-park model
3. labor markets, employment, and unemployment

Part 4: Savings, Investment, and Growth

Chapter 7 *Interest Rates, Savings, and Investment* This chapter (formerly Chapters 7 and 8) contains an entirely reorganized discussion of interest rates, savings, and investment, with new, streamlined discussions of:

1. the distinction between real and nominal interest rates
2. investment decisions
3. connections between goods-market equilibrium and loan-market equilibrium

After summarizing the basic macroeconomic model, the chapter applies the model to answer “what-if” questions on the effects of changes in:

1. consumer patience (or confidence)
2. technology
3. taxes

Each discussion is newly rewritten and significantly shorter and easier.

New material includes greater emphasis on the supply-side effects of changes in tax rates.

Chapter 8 Economic Growth This chapter has been rewritten for greater clarity and to emphasize use of the macroeconomic model developed in previous chapters. New material includes graphs of production functions to help illustrate the basic economic model of growth and the key issue of diminishing returns.

Part 5: Inflation, Money, and Banks

Chapter 9 Inflation This streamlined chapter now includes a focused discussion of the demand for money, and a new section on foreign exchange rates.

Chapter 10 Money and Financial Intermediaries This newly rewritten and reorganized chapter now begins with the advantages of monetary exchange over barter, followed by a streamlined discussion of the history of money. While maintaining coverage of basic issues such as the money supply, and the role of the banking system in the money multiplier, this edition places a new focus on the economics of financial intermediation. Recent financial crises in Asia illustrate the connections between the banking system and GDP, employment, and the exchange rate.

Part 6: Business Cycles

Chapter 11 Business Cycles 1: Aggregate Demand and Supply This first of two chapters on business cycles, substantially rewritten and shortened in this edition, introduces the AS-AD model and its applications.

Chapter 12 Business Cycles 2: Applications of Aggregate Demand and Supply This second chapter on the applications of the AS-AD model and the Phillips Curve is substantially rewritten and reorganized. Discussions of aggregate supply, the multiplier, and the Phillips Curve are easier to understand. The new chapter places greater emphasis on real-world applications and contains increased discussion of financial crises with applications to recent episodes in Latin America and Asia.

Part 7: Macroeconomic Policies

Chapter 13 Monetary Policy This shorter, streamlined chapter includes new material on the design of monetary systems and institutions, with applications to the new European currency and monetary institutions and to major monetary policy issues in Asia and elsewhere (connecting these monetary-policy issues to financial crises).

Chapter 14 Fiscal Policy This revised fiscal policy chapter contains new applications to issues such as the current Japanese recession, fiscal reform in Russia, and the issue of social security that looms over official U.S. government budget surpluses.

Part 8: Advanced Topics in Macroeconomics

Chapter 15 Financial Markets This shorter chapter on financial markets continues to introduce key facts and basic skills (such as reading financial news). However, this revised chapter also places a greater focus on *skills* of logical thinking about financial markets.

Chapter 16 International Trade This streamlined international trade chapter is reorganized for better comprehension and a stronger focus on the basic principles.

EXAMPLE

Pedagogical Features

1. *Personal decisions on spending money* Is it cheaper to buy or rent? Should you repair your old car or buy a new one?

In-Chapter Examples and Exercises Paired with Explanations

This book maintains a reader-friendly organization that helps students by pairing main points with explanations and examples. This organization increases student understanding by “walking” readers step-by-step through the main concepts of economics. In addition, this delivery method helps students review material with less study time. Some sections deviate from this organization, but always for a reason.

Main Points to Understand and Thinking Skills to Develop Sections

New to this edition, “Main Points to Understand” and “Thinking Skills to Develop” sections now appear at the beginning of every chapter. Written in an outline format, these sections provide a quick walk-through of the chapter’s core concepts, guiding students toward the important ideas about to be discussed.

News Clippings

The book makes extensive use of real news clippings to help students practice applying economic principles as they read about or listen to reports of current or historical events. The news clippings also increase student familiarity with news stories on economic topics, alleviating fears that such stories are beyond their comprehension and elevating their self-confidence not only to read but also to evaluate such stories. Chapter-by-chapter links to late-breaking news stories can be found on the Web site for this book.

Review Questions and Thinking Exercises

“Review Questions” and “Thinking Exercises” appear at the ends of sections, not just the ends of chapters. Some questions are mainly for review, while others require student analysis. This placement of the questions allows students to query themselves about the material in each section before continuing to the next. These questions and problems cover each level of learning, helping students learn to restate main points, to work through applications in the text and through genuinely *new* applications, and to apply economics to everyday life, current events, and broad social issues. Many problems help students learn to work with graphs (and some with numerical examples) and to state verbally the conclusions of the graphical analysis.

Decision-Making and Social and Economic Issues Boxes

Many chapters also contain boxes presenting the main arguments on both sides of important social and economic issues. The book’s strong emphasis on how economics relates to major social issues and political debates stimulates student interest and ties economics to students’ lives. Some chapters also have boxes applying economic analysis to business decision making or personal decision making, showing students how they can use economics to help achieve their own goals.

Marginal “Advice” and “Making Smart Decisions” Boxes

New boxes on “Advice” and “Making Smart Decisions” appear in the margins of this edition. The “Advice” boxes offer students helpful hints on economic reasoning and common pitfalls. “Making Smart Decisions” boxes show students how economics can help them in their daily lives. Marginal boxes provide students with information on how economics can help in making predictions, diversifying risks, and making strides toward personal improvement.

Internet References

Internet references available at the Web site for this book, <http://www.dryden.com>, and at the author’s Web site, <http://www.economics101.org> give students the opportunity to enhance their learning. Unlike many Internet resources that simply point to the latest data, Internet resources for this edition guide students on how to *use* the information and data. References to Internet sites that *apply* economic analysis supplement references to data from government agencies, think tanks, and private industry. This book’s Internet resources include advanced topics and additional text-related explanations and examples.

Conclusion

The concluding sections of each chapter are organized by section, making it easier for students to identify sections that they need to reread. On a second reading, many students will find that they can skip explanation and example sections if they already understand the issues.

IN THE NEWS

Japanese tell U.S. that their banks are in big trouble

WASHINGTON—Japan’s top financial officials told their American counterparts this weekend that their country’s banking system was acutely short of capital, with the top 19 banks in deeper trouble than Tokyo has ever before admitted, according to officials familiar with the discussions.

Source: *New York Times*

PERSONAL DECISION MAKING

Diversifying Risks

The key to diversifying risks is to choose investments whose returns move in opposite directions. An investment is diversified if some of that person’s investment returns in those situations where her other investments provide low returns, and vice-versa. This mix of investments protects the investor, rather like insurance: at least some investments are likely to do well.

Advice

Don’t make the common mistake of thinking that competition always creates a winner and a loser. Remember that *both* sides win in a voluntary trade—as Lisa and Mitch did.

Inquiries for Further Thought

35. Should the United States adopt policies to reduce consumption spending and increase savings? What are the benefits and costs of a policy like this? Why did earlier chapters imply that an increase in savings raises productivity and future output, while according to this chapter, an increase in savings reduces aggregate demand and real GDP?

Inquiries for Further Thought

“Inquiries for Further Thought” are one of the most important features of the book. These distinctive inquiries supplement other end-of-chapter questions and problems. They challenge students to use economic analysis to formulate positions on issues of fundamental social importance. The inquiries raise positive and normative questions on important public issues related to economics, teaching students (a) how to raise new questions and think about issues in new ways, (b) to distinguish between the positive and normative components of such questions, (c) that these positive and normative components are related to each other, (d) that economic analysis helps provide a logical way to approach many questions, and (e) that big-issue questions make economics interesting and important. The inquiries help students practice combining economic analysis with their own values and opinions about fundamental issues. Because most of the inquiries involve value judgments, they have no “correct” answers.

Supplements**Student Study Guide**

Written by John Dodge (Indiana Wesleyan), the study guide utilizes numerous strategies for active learning and practice, thereby helping students improve their grades. Elements of this supplement include: learning goals, key-term quizzes, true-false questions, multiple-choice questions, fill-in-the-blank problems, priority lists of concepts, short-answer questions, and basic and advanced problems. All the problems have been checked for accuracy.

Web Sites

Located at <http://www.dryden.com/econ>, the Web site for the book has been newly reorganized on a chapter-by-chapter basis. This new organization makes the vast and sometimes overwhelming array of resources found on the Web intelligible. Each Web chapter provides a mini-learning module that students can learn from as they work their way chapter-by-chapter through the printed textbook. The new organization also enables professors to find more readily the material related to any particular chapter. The following are among the teaching and learning materials that can be found on the Web site:

For Instructors and Students:

Late-breaking news articles augmenting the textbook’s “In the News” feature
Chapter-by-chapter links to economic Web sites
An economic URL database
Discussions of advanced topics

For Instructors:

Instructor’s Manual
Overhead transparency masters
PowerPoint presentation slides

For Students:

Career listings
Chapter summaries
Chapter notes
Chapter-by-chapter, automatically graded, practice quizzes
Interactive learning graphs
“Cyber” problems
Glossary from the textbook

Additional resources for students are available at the author’s online site at <http://www.economics101.org>

Tutorial, Analytical, and Graphical (TAG) Software

Created by Andrew Foshee (McNeese State University) and Tod Porter and Teresa Riley (both of Youngstown University), this award-winning educational software for students consists of extensive chapter-by-chapter tutorials. Included are practice exams, hands-on graphic sections in which students are required to draw or adjust curves, “news” articles with word-substitution choices to evaluate their comprehension, and an “Econoquest” feature that requires them to solve economic problems by choosing among various economic data tools. TAG can be obtained at no additional charge with the purchase of the

textbook from the publisher. Instructors can now customize TAG for their students, by requesting a copy of the TAG Editing System software. This software allows them to modify, add, and delete questions. The Dryden Press is also happy to grant permission to instructors wishing to use the software in a lab setting.

On-Line Course Management

The Dryden Press is proud to offer a new course offering and delivery software package that helps instructors build sophisticated Web-based learning environments for their students. This nontechnical software package can be used to create on-line courses or simply to post office hours or materials on-line that supplement the instructor's course. Instructors can design their own Web sites that provide a full array of educational tools including communication, testing, student tracking, access control, database collaboration tools, on-line searching and navigation tools and much more. Instructors interested in taking their courses to the Web can learn more about this important new resource by contacting their Dryden Press sales representative.

PowerPoint Presentation Software

Developed by Anthony Zambelli (Cuyamaca College), this easy-to-use, overhead lecture software has been vastly improved for the second edition, with the graphs now perfectly replicating those found in the textbook. Professors can now edit the graphs and the text to customize their presentations as they please. The PowerPoint presentation covers all of the essential materials found in the book. Colorful graphs, tables, lists, and concepts are developed sequentially at the click of the button.

Wall Street Journal Edition

Instructors can enhance the real-life applications in the text by using the special *Wall Street Journal* Edition. This special edition of the textbook is the same as the standard edition but includes a discounted ten-week subscription to the *Wall Street Journal*. The addition of the *Wall Street Journal* to the study program of students provides a nice tie-in with the "In the News" boxes found in the text, since new examples of economic principles can be found in each day's paper. Students can activate their subscriptions by simply completing and mailing the business reply card found in the back of the book. Instructors interested in finding out more about this program can contact their Dryden sales representative or simply call 1-800-782-4479 and reference the following ISBN: 0-03-021837-3.

Instructor's Manual

This supplement contains valuable outlines, teaching tips, and answers to all of the review questions, thinking exercises, and problems in the book. This information is also available on disk and the Web site, which allows instructors to customize their lecture notes.

Test Bank

Revised and organized by Dean Croushore (Federal Reserve Bank of Philadelphia), the test bank contains more than 3,500 multiple-choice and critical-thinking questions. Each question is graded by level of difficulty and all questions new to this edition are highlighted. All questions were checked for accuracy.

Computerized Test Bank

The test bank is available electronically in DOS, Windows and Macintosh versions. The ExaMaster system accompanying the computerized test banks makes it easy to create tests, print scrambled versions of the same test, modify questions, and reproduce any of the graphing questions.

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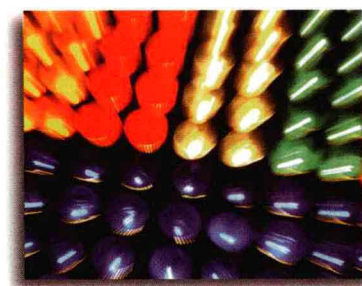
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