

EDITORIAL BOARD

Tyler Cowen, Professor of Economics at George Mason University and Director of the James Buchanan Center and the Mercatus Center Robert W. Crandall, Senior Fellow at the Brookings Institution Kevin D. Hoover, Professor of Economics and Philosophy at Duke University Russell Roberts, Professor of Economics and the J. Fish and Lillian F. Smith Distinguished Scholar at the Mercatus Center at George Mason University

The Concise Encyclopedia of Economics | Edited by David R. Henderson

☐

★

LIBERTY FUND Indianapolis

This book is published by Liberty Fund, Inc., a foundation established to encourage study of the ideal of a society of free and responsible individuals.

The cuneiform inscription that serves as our logo and as the design motif for our endpapers is the earliest-known written appearance of the word "freedom" (amagi), or "liberty." It is taken from a clay document written about 2300 B.C. in the Sumerian city-state of Lagash.

 $\ ^{\odot}$ 1993, 2002, 2008 by David R. Henderson All rights reserved

"Free Trade" is adapted from Alan S. Blinder, *Hard Heads*, *Soft Hearts: Tough-Minded Economics for a Just Society*, © 1988 by Alan S. Blinder. Originally published in 1988 by Addison-Wesley, and reprinted with the permission of Basic Books, a member of Perseus Books Group.

"Keynesian Economics" is adapted from Alan S. Blinder, "The Rise and Fall of Keynesian Economics," *Economic Record*, December 1988. Reprinted with the permission of Blackwell.

"Marginalism" is adapted from Steven E. Rhoads, *The Economist's View of the World,* © 1985 by Cambridge University Press. Reprinted with the permission of Cambridge University Press.

Printed in the United States of America

C IO 9 8 7 6 5 4 3 P IO 9 8 7 6 5 4 3 Library of Congress Cataloging-in-Publication Data

The concise encyclopedia of economics / edited by David R. Henderson.

p. cm.
Includes bibliographical references and index.
ISBN-13: 978-0-86597-665-8 (hardcover: alk. paper)
ISBN-13: 978-0-86597-666-5 (pbk.: alk. paper)
I. Economics—Encyclopedias. I. Henderson, David R.
HB61.c66 2007
330.03—dc22

2007015993

Liberty Fund, Inc. 8335 Allison Pointe Trail, Suite 300 Indianapolis, Indiana 46250-1684



Contents

Corporate Taxation, Rob Norton 92 Corporations, Robert Hessen 95

Corruption, François Melese 98 Creative Destruction, W. Michael Cox and **ARTICLES** Richard Alm 101 Crime, David D. Friedman 104 Advertising, George Bittlingmayer 1 Defense, Benjamin Zycher 107 Agricultural Subsidy Programs, Daniel A. Sumner 4 Demand, David R. Henderson III Airline Deregulation, Fred L. Smith Jr. and Braden Cox 6 Disaster and Recovery, Jack Hirshleifer 113 Antitrust, Fred McChesney 11 Discrimination, Linda Gorman 116 Apartheid, Thomas W. Hazlett 14 Distribution of Income, Frank Levy 119 Arts, Tyler Cowen 19 Economic Freedom, Robert A. Lawson 124 Auctions, Leslie R. Fine 21 Economic Growth, Paul M. Romer 128 Austrian School of Economics, Peter J. Boettke 23 Education, Linda Gorman 131 Balance of Payments, Herbert Stein 27 Efficiency, Paul Heyne 136 Bank Runs, George G. Kaufman 29 Efficient Capital Markets, Steven L. Jones and Bankruptcy, Todd J. Zywicki 31 *Jeffry M. Netter* 138 Behavioral Economics, Richard H. Thaler and Electricity and Its Regulation, Robert J. Michaels 142 Sendhil Mullainathan 34 Empirics of Economic Growth, Kevin Grier 145 Benefit-Cost Analysis, Paul R. Portney 38 Energy, Jerry Taylor and Peter Van Doren 150 Bonds, Clifford W. Smith 40 Entrepreneurship, Russell S. Sobel 154 Brand Names, Benjamin Klein 42 Environmental Quality, Terry L. Anderson 158 Bubbles, Seiji S. C. Steimetz 44 Ethics and Economics, Stephen R. C. Hicks 160 Business Cycles, Christina D. Romer 47 European Union, Marian L. Tupy 163 Campaign Finance, Jeffrey Milyo 51 Experimental Economics, Don Coursey 166 Capital Gains Taxes, Stephen Moore 53 Externalities, Bryan Caplan 169 Capitalism, Robert Hessen 57 Fascism, Sheldon Richman 172 Cartels, Andrew R. Dick 61 Federal Reserve System, Richard H. Timberlake 174 Charity, Russell Roberts 63 Financial Regulation, Bert Ely 178 Communism, Bryan Caplan 66 Fiscal Policy, David N. Weil 182 Comparative Advantage, Donald J. Boudreaux 69 Fiscal Sustainability, Laurence J. Kotlikoff 185 Competing Money Supplies, Lawrence H. White 71 Forecasting and Econometric Models, Competition, Wolfgang Kasper 73 Saul H. Hymans 188 Conscription, Christopher Jehn 76 Foreign Aid, Deepak Lal 194 Consumer Price Indexes, Michael J. Boskin 77 Foreign Exchange, Jeffrey A. Frankel 197 Consumer Protection, Daniel B. Klein 81 Free Market, Murray N. Rothbard 200 Consumption Tax, Al Ehrbar 83 Free-Market Environmentalism, Richard Stroup 202 Corporate Financial Structure, Annette Poulsen 86 Free Trade, Alan S. Blinder 205 Corporate Governance, Randall S. Kroszner 89 Futures and Options Markets, Gregory J. Millman 207

Introduction xi

Acknowledgments xv

Game Theory, Avinash Dixit and Barry Nalebuff 211 Gender Gap, Claudia Goldin 214 German Economic Miracle, David R. Henderson 216 Global Warming: A Balance Sheet, Thomas Gale Moore 219 Gold Standard, Michael D. Bordo 222 Government Debt and Deficits, John J. Seater 224 Government Growth, Robert Higgs 227 Great Depression, Gene Smiley 230 Health Care, Michael A. Morrisey 235 Health Insurance, John C. Goodman 241 Housing, Benjamin Powell and Edward Stringham 245 Human Capital, Gary S. Becker 248 Hyperinflation, Michael K. Salemi 251 Immigration, George J. Borjas 253 Industrial Concentration, William F. Shughart II 257 Industrial Revolution and the Standard of Living, Clark Nardinelli 260 Inflation, Lawrence H. White 262 Information, Joseph E. Stiglitz 267 Information and Prices, Donald J. Boudreaux 270 Innovation, Timothy Sandefur 272 Insider Trading, Stanislav Dolgopolov 276 Insurance, Richard Zeckhauser 281 Intellectual Property, Stan Liebowitz 284 Interest Rates, Burton G. Malkiel 288 International Capital Flows, Mack Ott 290 International Trade, Arnold Kling 295 International Trade Agreements, Douglas A. Irwin 298 Internet, Stan Liebowitz 301 Investment, Kevin Hassett 304 Japan, Benjamin Powell 308 Job Safety, W. Kip Viscusi 311 Junk Bonds, Glenn Yago 313 Keynesian Economics, Alan S. Blinder 316 Labor Unions, Morgan O. Reynolds 319 Law and Economics, Paul H. Rubin 322 Liability, W. Kip Viscusi 326 Marginal Tax Rates, Alan Reynolds 329 Marginalism, Steven E. Rhoads 331 Market for Corporate Control, Jonathan R. Macey 333 Marxism, David Prychitko 337 Mercantilism, Laura LaHaye 340 Microeconomics, Arnold C. Harberger 343 Minimum Wages, Linda Gorman 346 Monetarism, Bennett T. McCallum 350 Monetary Policy, James Tobin 353

Monetary Union, Paul Bergin 358

Monopoly, George J. Stigler 363

Money Supply, Anna J. Schwartz 360

National Income Accounts, Mack Ott 366

Natural Gas: Markets and Regulation, Robert J. Michaels 370 Natural Resources, Sue Ann Batey Blackman and William J. Baumol 372 New Classical Macroeconomics, Kevin D. Hoover 376 New Keynesian Economics, N. Gregory Mankiw 379 OPEC, Benjamin Zycher 382 Opportunity Cost, David R. Henderson 385 Pensions, Henry McMillan 385 Pharmaceuticals: Economics and Regulation, Charles L. Hooper 388 Phillips Curve, Kevin D. Hoover 392 Political Behavior, Richard L. Stroup 396 Pollution Controls, Robert W. Crandall 399 Population, Ronald Demos Lee 402 Poverty in America, Isabel V. Sawhill 405 Present Value, David R. Henderson 408 Price Controls, Hugh Rockoff 409 Prisoners' Dilemma, Avinash Dixit and Barry Nalebuff 412 Privatization, Robert W. Poole Jr. 414 Productivity, Alexander J. Field 417 Profits, Lester C. Thurow 419 Property Rights, Armen A. Alchian 422 Protectionism, Jagdish Bhagwati 425 Public Choice, William F. Shughart II 427 Public Goods, Tyler Cowen 431 Rational Expectations, Thomas J. Sargent 432 Recycling, Jane S. Shaw 435 Redistribution, Dwight R. Lee 437 Regulation, Robert Litan 439 Rent Control, Walter Block 442 Rent Seeking, David R. Henderson 445 Risk and Safety, Aaron Wildavsky and Adam Wildavsky 446 Sanctions, Kimberly Ann Elliott, Gary Clyde Hufbauer, and Barbara Oegg 451 Saving, Laurence J. Kotlikoff 456 Savings and Loan Crisis, Bert Ely 459 Social Security, Thomas R. Saving 463 Socialism, Robert Heilbroner 466 Spatial Economics, Wolfgang Kasper 468 Sportometrics, Robert Tollison 471 Sports, Gerald W. Scully 473 Standards of Living and Modern Economic Growth, John V. C. Nye 475 Stock Market, Jeremy J. Siegel 478 Supply, Al Ehrbar 480 Supply-Side Economics, James D. Gwartney 482 Surface Freight Transportation Deregulation, Thomas Gale Moore 485

Taxation, Joseph J. Minarik 489
Telecommunications, John Haring 494
Tragedy of the Commons, Garrett Hardin 497
Transition Economies, Anders Åslund 499
Unemployment, Lawrence H. Summers 502
Unintended Consequences, Rob Norton 505
Urban Transportation, Kenneth A. Small 507
Welfare, Thomas MaCurdy and Jeffrey M. Jones 510

BIOGRAPHIES

Editor's Note 519

George A. Akerlof 521 Armen A. Alchian 522 Maurice Allais 523 Kenneth Arrow 523 Frédéric Bastiat 524 Gary Stanley Becker 525 Jeremy Bentham 525 Eugen von Böhm-Bawerk 526 James M. Buchanan 527 Arthur Frank Burns 528 Gustav Cassel 528 Ronald H. Coase 528 Gerard Debreu 530 Robert F. Engle 530 Irving Fisher 531 Robert W. Fogel 532 Milton Friedman 533 Ragnar Frisch 535 John Kenneth Galbraith 535 Henry George 536 Clive W. J. Granger 537 Trygve Haavelmo 538 Roy F. Harrod 539 John C. Harsanyi 539 Friedrich August Hayek 540 James J. Heckman 543 Walter Wolfgang Heller 544 John R. Hicks 544 David Hume 545 William Stanley Jevons 545 Harry Gordon Johnson 547 Daniel Kahneman 547 Leonid Vitalievich Kantorovich 549 John Maynard Keynes 549 Lawrence Robert Klein 551 Frank Hyneman Knight 551

Tjalling Charles Koopmans 552

Simon Kuznets 552

Oskar Ryszard Lange 554 Wassily Leontief 555 Abba Ptachya Lerner 556 W. Arthur Lewis 557 John Locke 558 Robert E. Lucas Jr. 559 Fritz Machlup 561 Thomas Robert Malthus 561 Harry Markowitz 562 Alfred Marshall 562 Karl Marx 563 Daniel L. McFadden 564 James Edward Meade 564 Carl Menger 565 Robert C. Merton 566 John Stuart Mill 566 Merton H. Miller 567 James A. Mirrlees 568 Ludwig von Mises 569 Franco Modigliani 569 Oskar Morgenstern 570 Robert A. Mundell 571 Gunnar Myrdal 572 John F. Nash Jr. 573 John von Neumann 574 Douglass C. North 575 Bertil Gotthard Ohlin 575 Arthur M. Okun 576 Vilfredo Pareto 577 Arthur Cecil Pigou 577 Edward C. Prescott 578 François Quesnay 579 David Ricardo 579 Lionel Robbins 581 Joan Violet Robinson 581 Paul Anthony Samuelson 582 Jean-Baptiste Say 584 Myron S. Scholes 584 Theodore William Schultz 585 Joseph Alois Schumpeter 586 Reinhard Selten 587 Amartya Sen 588 William F. Sharpe 589 Herbert Alexander Simon 589 Adam Smith 590 Vernon L. Smith 592 Robert Merton Solow 593 Michael Spence 594 George J. Stigler 594 Joseph E. Stiglitz 596

Finn E. Kydland 553

x | Contents

John Richard Nicholas Stone 597
Jan Tinbergen 598
James Tobin 598
Anne-Robert-Jacques Turgot 599
Thorstein Veblen 600
William S. Vickrey 600
Jacob Viner 601
Leon Walras 602
Max Weber 603
Knut Wicksell 603

APPENDIXES

Nobel Memorial Prize Winners in Economic Science 607 Chairmen of the Council of Economic Advisers 608 Presidents of the American Economic Association 609 Contributors 611

Index 615

Introduction

An old joke says that if you laid all the economists in the world end to end, they would not reach a conclusion. What makes the joke work are the popular perceptions that economists never agree and that economists (unlike biologists or the practitioners of any other science) do not share a common set of beliefs. Given all the conflicting pronouncements by economists that appear almost daily in the press, these perceptions are understandable. They are also dead wrong. While economists disagree on many matters, they have reached virtually unanimous agreement on a multitude of others. One purpose of this book is to illuminate the many, many areas where economists agree (while also describing where and why they disagree). The main purpose, however, is to show how economic analysis can illuminate large parts of our daily world that are otherwise a mystery.

Most of the disagreement among economists concerns "macroeconomics," which deals with nationwide or worldwide phenomena such as inflation, unemployment, and economic growth. Adherents of the various "schools" (Keynesians, monetarists, supply siders, rational expectationists, new classicals, new Keynesians, and Austrians) disagree a fair bit. Some of their disagreements reflect different judgments about the relative importance of, say, inflation versus unemployment. Others stem from basic disagreement on the ability of government policy to affect the total economy in predictable ways. Even here, though, viewpoints have converged: on macroeconomic policy, one of the big differences concerns whether the central bank should target the price level loosely or strictly—certainly not a major disparity. This encyclopedia reflects the disagreements and the points of convergence, with authors chosen from each school to explain and justify their views of how the "macro" world works. One of the most important issues in macroeconomics, incidentally, is what caused the Great Depression and what made it last so long. The article GREAT DEPRESSION lays out the author's view of the causes as well as the issues on which there is an emerging consensus.

Macroeconomics, however, is only a small part of the total science of economics. The vast majority of economic questions and public-policy issues fall in the realm of microeconomics. And the vast majority of economists agree on the underlying economics of most micro issues, including rent controls, minimum wages, and the need to reduce pollution. Some may disagree on the policy implications of the analysis, but remarkably few disagree on the analysis itself.

The early evidence that economists agree on many micro issues first became clear in the late 1970s, when the *American Economic Review*, the world's largest-circulation economics journal, published an opinion poll of 211 economists. The poll found that

I. J. R. Kearl, Clayne L. Pope, Gordon C. Whiting, and Larry T. Wimmer, "A Confusion of Economists?" *American Economic Review* 69 (May 1979): 28–37.

98 percent agreed with the statement, "A ceiling on rents reduces the quantity and quality of housing available." Similarly, 90 percent of economists agreed that "a minimum wage increases unemployment among young and unskilled workers." And 97 percent agreed with the statement, "Tariffs and import quotas reduce general economic welfare." Another poll, reported in 1992, found somewhat less, but still fairly widespread, agreement, with 93 percent agreeing on rent ceilings, 79 percent agreeing on the minimum wage, and 92 percent agreeing on tariffs and import quotas.² A survey in 2000 found similar agreement. Seventy-four percent agreed about the minimum wage, and 93 percent agreed about tariffs and import quotas.³ (The survey did not ask about rent ceilings.) The entries on those topics in this encyclopedia explain why economists are in such startling agreement on these and many other issues. See, for example, the articles on MINIMUM WAGES, PRICE CONTROLS, and RENT CONTROLS.

And this just scratches the surface of the agreement. Take one example among many: government-mandated benefits for employees. Many people believe that if the government requires employers to provide benefits that employees value at, say, two thousand dollars a year, then the employees are better off by two thousand dollars a year. Economists know better. They understand, based both on simple economic reasoning and on growing evidence, that the employees pay most of the cost of such mandates in the form of lower wages. Even more important than the fact that economists agree on this conclusion is the reasoning that gets them there. The article that lays out this issue quite clearly was written by Lawrence Summers while he was a Harvard professor. He later served as a member of the Clinton administration, which tried to mandate that employers provide health insurance for employees. Summers does an especially good job of laying out the economic reasoning, but many other economists could have reached the same conclusions by applying basic Econ 101 analytics, shifting demand and supply curves.⁴

In fact, the story of how I first had the idea for an encyclopedia of economics involves Larry Summers. It was the fall of 1982, when he was a domestic policy economist and I was a senior staff economist under Martin Feldstein, the new chairman of President Ronald Reagan's Council of Economic Advisers. Several of us would sometimes lunch together and, of course, would mix it up on various issues. Macroeconomics brought out a wide range of opinions. For instance, Larry and our colleague Paul Krugman, now a regular economics columnist with the New York Times, worried that the high deficits of the time would cause high inflation. Ben Zycher and Lincoln Anderson, fellow senior economists, and I were fairly confident that the policies would not cause high inflation because the Federal Reserve Board under Paul Volcker seemed to be keeping the growth of the money supply low. But on various microeconomic issues and on free trade we were almost completely unanimous. We all thought price controls are generally a bad idea. We all favored free trade and were critical of Reagan for his restrictions on Japanese auto exports to the United States. We often agreed that this or that government policy was counterproductive and that free people, left to their own devices, would work things out better than governments would. It was after one of those conversations that I started thinking that the world

^{2.} Richard M. Alston, J. R. Kearl, and Michael B. Vaughan, "Is There a Consensus Among Economists in the 1990s?" *American Economic Review* 82 (May 1992): 203–209.

^{3.} Dan Fuller and Doris Geide-Stevenson, "Consensus Among Economists: Revisited," *Journal of Economic Education* (Fall 2003): 369–387.

^{4.} Lawrence H. Summers, "Some Simple Economics of Mandated Benefits," *American Economic Review* (May 1979): 177–183.

could use an encyclopedia. And an encyclopedia makes much more sense if there is agreement among the experts.

Interestingly, the difference between the liberals and the libertarians was less on the economic analysis and even the bottom-line policy conclusions than it was on our feelings about the bottom line. The libertarians—Anderson, Zycher, and I—loved it when the answer was that free markets work; and that was usually the answer. The liberals, Krugman more than Summers, seemed often upset when that was the answer; they seemed to want a big role for government.

This fact about economics has led many noneconomists who want government to restrict economic freedom to express disappointment with economists. Steven Kelman, a budget official in the Carter and Clinton administrations, wrote:

At the government agency where I have worked and where agency lawyers and agency microeconomists interact with each other . . . the lawyers are often exasperated, not only by the frequency with which agency economists attack their proposals but also by the unanimity among the agency economists in their opposition. The lawyers tend to (incorrectly) attribute this opposition to failure to hire "a broad enough spectrum" of economists, and to beg the economists, if they can't support the lawyers' proposals, at least to give them "the best economic arguments" in favor of them. . . . The economists' answer is typically something like, "There are no good economic arguments for your proposal."

So, why do people think economists disagree about everything? One reason is that the media present all economic issues as if they are inherently controversial. The issues themselves are controversial, but the economics of the issues more often are not. A journalist writing a piece on free trade versus trade barriers, for example, would be hard put to find an economist who will defend trade barriers (economists know that free trade virtually always improves a nation's economic well-being). But many journalists feel compelled to present a "balanced view." So they go to economists who work for interest groups that favor trade barriers—groups such as the National Association of Manufacturers or the AFL-CIO—to get an opinion against free trade. Or they turn to a business person or labor leader whose industry faces tough competition from imports. The result is that readers and viewers get the false impression that economists are divided on free trade. The articles in this encyclopedia, though, reflect the consensus. See, for example, FREE TRADE by Princeton economist Alan Blinder, a former Clinton administration economist, and PROTECTIONISM by noted Columbia economist Jagdish Bhagwati.

Another important source of the misimpression about economics comes from the often overlooked distinction that economists make between "positive" and "normative" analysis. Positive analysis is the application of economic postulates and principles to a question—in other words, finding out the way things *are* and why the world behaves as it does. Normative analysis, in contrast, deals with the way things *ought to be* and unavoidably involves the noneconomic value judgments of the analyst. For example, positive analysis says that licensing physicians will result in fewer doctors and higher prices for medical care. Whether states should license doctors to protect patients from quacks is a normative matter. In other words, there are no "shoulds" in purely positive economic analysis, but every economist has views on how things should be done.

In preparing this encyclopedia, the members of the Board of Editors and I tried to separate positive and normative positions, to emphasize the areas where economists agree while also specifying where and why they disagree. The goal is to communicate just how much economic analysis can teach us about the important issues we face as voters, as consumers, as employees, and as people who care about the world. As such, the encyclopedia gives a comprehensive yet readable and engaging survey of mainstream economic thought. Topics that will interest noneconomists are covered by economists who can make their ideas accessible to the general reader. The entries on conscription, discrimination, health insurance, insider trading, job safety, liability, and pharmaceuticals: economics and regulation, for example, cover issues whose important economic aspects are often overlooked. Also not to be missed are savings and loan crisis, which shows what caused, and what did not cause, that crisis; inflation, which gives one of the clearest expositions ever of the causes and effects of inflation; opec, which points out, among other things, that OPEC was an unintended consequence of President Dwight D. Eisenhower's quotas on oil imports; and risk and safety, which gives startling statistics on the risks of various activities.

One last note. Various people who read and loved the first edition of the encyclopedia told me that they did not try to read it cover to cover, but instead hopped from interesting issue to interesting issue. I recommend that strategy.

David R. Henderson Monterey, California October 2005

Acknowledgments

want to thank six people who were all a pleasure to work with and who were each important in getting this book done. First are the four members of the Board of Editors: Tyler Cowen, Bob Crandall, Kevin Hoover, and Russell Roberts. They gave me good comments and criticisms on all the articles, and their responses improved the articles immensely. I particularly want to single out Kevin Hoover, for his detailed comments and suggestions that were easy to follow and implement; and Tyler Cowen, for his incredibly quick turnaround and, well, encyclopedic knowledge. Also, Rena Henderson used her prodigious editing skills to make the articles more understandable to someone like herself, an intelligent reader with no background in economics. The sixth person is Laura Goetz of Liberty Fund, whom I have never met but who was always responsive to my questions, supportive of the project, friendly, and professional.

Alan Russell, chairman of Liberty Fund, deserves credit for thinking of putting the first edition of the encyclopedia on the Web. Andy Rutten, then an economist with Liberty Fund, and my agent, Henning Gutmann, did much of the tough work of bringing Liberty Fund and me to an agreement. I particularly appreciate Henning's persistence.

My friends gave me moral support, especially Charley Hooper, Arunas Kuciauskas, Tom Lee, François Melese, and Greg De Young. Alan Reynolds was particularly helpful, giving me quick feedback on an article on an issue I knew little about.

Doug Brook, the dean of the Graduate School of Business and Public Policy for the whole time I worked on this book, gave me more than a year of unpaid leave, allowing me to finish it.

Harry E. Teasley Jr. gave a generous gift to the Hoover Institution that allowed me to take time to complete this massive project.

Finally, I thank the authors of these excellent articles. They were willing to share their knowledge with a wider audience and to do so for a modest fee. I enjoyed working with them, getting to know them, and learning from them, particularly Paul Bergin, Bryan Caplan, Jeffrey Frankel, John Goodman, Kevin Hassett, Jonathan Macey, Bennett McCallum, Paul Rubin, Kenneth Small, John Seater, Richard Thaler, and Adam Wildavsky.

David R. Henderson Monterey, California December 2005

Articles

Advertising

George Bittlingmayer

Economic analysis of advertising dates to the 1930s and 1940s, when critics attacked it as a monopolistic and wasteful practice. Defenders soon emerged who argued that advertising promotes competition and lowers the costs of providing information to consumers and distributing goods. Today, most economists side with the defenders most of the time.

Advertising comes in many different forms: grocery ads that feature weekly specials, "feel-good" advertising that merely displays a corporate logo, ads with detailed technical information, and those that promise "the best." Critics and defenders have often adopted extreme positions, attacking or defending any and all advertising. But, at the very least, it seems safe to say that the information firms convey in advertising is not systematically worse than the information volunteered in political campaigns or used car ads.

Modern economics views advertising as a type of promotion, in the same vein as direct selling by salespersons and promotional price discounts. If we focus on the problems firms face in promoting their wares, rather than on advertising as an isolated phenomenon, it is easier to understand why advertising is used in some circumstances and not in others.

Scope

While advertising has its roots in the advance of literacy and the advent of inexpensive mass newspapers in the nineteenth century, modern advertising as we know it began early in the twentieth century with two new products, Kellogg cereals and Camel cigarettes. What is generally credited as the first product endorsement also stems from this period: Honus Wagner's autograph was imprinted on the Louisville Slugger in 1905.

Advertising as a percentage of GDP has stayed relatively constant since the 1920s, at roughly 2 percent. About 60 percent of advertising is national rather than local. Table 1 shows national and local expenditures since 1940. In 2002, newspapers accounted for some 19 percent of total advertising expenditures; magazines for 5 percent; broadcast and cable television for 23 percent; radio for 8 percent; direct mail for 19 percent; and miscellaneous techniques such as yellow pages, billboards, and the Goodyear blimp for the remaining 27 percent. Internet advertising accounted for 2 percent of total advertising expenditures.

One popular argument in favor of advertising is that it provides financial support for newspapers, radio, and television. In reply, critics remark that advertiser-supported radio and television programming is of low quality because it appeals to those who are easily influenced by advertising. They also charge that advertiser-supported newspapers and magazines are too reluctant to criticize products of firms that are actual or potential advertisers.

Table 1 Advertising Expenditures (billions \$)

	National	Local	Total	% of GDP
1940	1.2	0.9	2.1	2.11
1950	3.3	2.4	5.7	1.98
1960	7.3	4.7	12.0	2.28
1970	11.4	8.2	19.6	1.89
1980	29.8	23.7	53.5	1.91
1990	73.6	56.3	130.0	2.24
2000	151.7	95.8	247.5	2.52
2002	145.7	91.8	237.4	2.27

Sources: Statistical Abstract of the United States, 1987, 537; and 2002, 438 and 772; U.S. Historical Statistics, Colonial Times to 1970, Series T444; and Advertising Age, May 6, 1991, p. 16. Numbers may not add up due to rounding.

While aggregate expenditures on advertising have remained steady as a percentage of GDP, the intensity of spending varies greatly across firms and industries (see Table 2). Many inexpensive consumer items, such as overthe-counter drugs, cosmetics, and razor blades, are heavily advertised. Advertising-to-sales ratios also are high for food products such as soft drinks, breakfast cereals, and beer. And there is remarkable stability in this pattern from country to country. A type of product that is heavily advertised in the United States tends to be heavily advertised in Europe, as well. Even within an industry, however, some firms will advertise more than others. Among pharmaceutical manufacturers, for example, Merck and Bayer spend less than 5 percent of sales on advertising, while Pfizer spends in excess of 12 percent.

The differences among industries, while stable, are deceptive. For example, automakers typically spend only I to 2 percent of sales on advertising, but their products are heavily promoted by the sales staffs in dealer showrooms. Similarly, industrial products are not heavily advertised because trade fairs and point-of-sale promotion are often more cost-effective than advertising. Products with relatively few customers may not be advertised at all or advertised solely in specialized publications.

Economic Function

While discussions of advertising often emphasize persuasion and the creation of brand loyalty, economists tend to emphasize other, perhaps more important, functions. The rise of the self-service store, for example, was aided by

Table 2 Advertising-to-Sales Ratios, Top Twenty Industries, 2003

Loan brokers	38.4
Health services	32.5
Distilled and blended liquor	14.9
Miscellaneous publishing	12.9
Sugar and confectionery products	11.7
Soap, detergent, and toilet preparations	11.3
Amusement parks	10.7
Food and kindred products	10.2
Special cleaning and polishing preparations	9.7
Knitting mills	9.6
Television broadcast stations	9.3
Beverages	9.2
Water transportation	8.8
Malt beverages	8.5
Heating equipment and plumbing fixtures	8.4
Motion picture and video tape production	8.4
Rubber and plastic footwear	8.4
Games, toys, children's vehicles, except dolls	8.2
Dolls and stuffed toys	7.8
Cable and other pay TV services	7.7

Source: Advertising Age, online at: http://www.adage.com/page.cms?pageId = 1013.

Note: Top twenty industries among the two hundred industries spending the most on advertising.

consumer knowledge of branded goods. Before the advent of advertising, customers relied on knowledgeable shop-keepers for help in selecting products, which often were unbranded. Today, consumer familiarity with branded products is one factor making it possible for far fewer retail employees to serve the same number of customers.

Newly introduced products are typically advertised more heavily than established ones, as are products whose customers are constantly changing. For example, cosmetics, mouthwash, and toothpaste are marked by high rates of new product introductions because customers are willing to abandon existing products and try new ones. Viewed this way, consumer demand generates new products and the advertising that accompanies them, not the other way around.

In a similar vein, "noninformative," or image, advertising can be usefully thought of as something that customers demand along with the product. Customers often want to see themselves as athletic, adventuresome, or spontaneous, and vendors of beer, cars, and cell phones bundle the image and the physical product. When some custom-

ers are unwilling to pay for image, producers that choose not to advertise can supply them with a cheaper product. Often, the same manufacturer will respond to these differences in customer demands by producing both a high-priced, labeled, heavily advertised version of a product and a second, low-priced line as an unadvertised house brand or generic product. In baked goods, canned goods, and dairy products, for example, some manufacturers sell one version under their own nationally known label and another slightly different version under a particular grocery chain's private label.

Advertising messages obviously can be used to mislead, but a heavily advertised brand name limits the scope for deception and poor quality. A firm with a well-known brand suffers serious damage to an image that it has paid dearly to establish when a defective product reaches the consumer (see BRAND NAMES). Interestingly, even under central planning, officials in the Soviet Union encouraged the use of brand names and trademarks in order to monitor which factories produced defective merchandise and to allow consumers to inform themselves about products available from various sources.

Monopoly

Early opinion among many economists was summarized by Henry Simons, who wrote in 1948 that "a major barrier to really competitive enterprise and efficient service to consumers is to be found in advertising—in national advertising especially, and in sales organizations which cover great national and regional areas." Economic debate in the 1950s focused on whether advertising promotes monopoly by creating a "barrier to entry." Heavy advertising of existing brands, many economists thought, might make consumers less likely to try new brands, thus raising the cost of entry for newcomers. Other economists speculated that advertising makes consumers less sensitive to price, allowing firms that advertise to raise their prices above competitive levels.

Economic researchers addressed this issue by examining whether industries marked by heavy advertising were also more concentrated (see INDUSTRIAL CONCENTRATION) or had higher profits. The correlation between advertising intensity and industry concentration turned out to be very low and varied from sample to sample, and it is largely ignored today. What is more, early research found that high levels of advertising in an industry were associated with unstable market shares, consistent with the idea that advertising promoted competition rather than monopoly.

The idea that advertising creates monopoly was supported by studies that found high rates of return in industries with high levels of advertising. As other economists