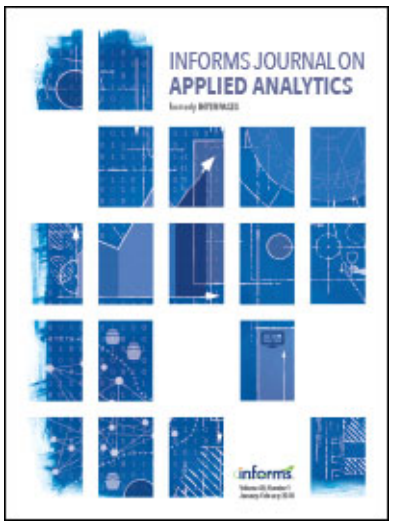

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Book Reviews

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Book Reviews

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In *Book Reviews*, we review an extensive and diverse range of books. They cover theory and applications in operations research, statistics, management science, econometrics, mathematics, computers, and information systems. In addition, we include books in other fields that emphasize technical applications. The editor will be pleased to receive an e-mail from those willing to review a book, with an indication of specific areas of interest. If you are aware of a specific book that you would like to review, or that you think should be reviewed, please contact the editor.

BASU, KAUSHIK. 2011. *Beyond the Invisible Hand: Groundwork for a New Economics*. Princeton University Press, Princeton, NJ. 273 pp. $39.50.

A central tenet of modern neoclassical economics is that selfish behavior by individuals leads to social benefits. More generally, many within the economics profession and some interested journalists outside it have gone to great lengths to popularize the view that the current international economic order, which is supported primarily by the economies of the world's industrialized nations, is "the only viable one not just for now but also in all conceivable future" (p. 4). First, are these two perspectives valid in general? Second, if they are not generally valid, under what circumstances are they valid? Third, what are the implications of believing in these two perspectives? Finally, what are some attributes of a world in which our primary focus is *not* on economic efficiency, but instead, on fairness? The author, Kaushik Basu, uses the 10 chapters of this tome to shed light on these types of questions. In the remainder of this review, I shall sample eclectically from the book's contents. This should provide the reader with an adequate flavor for this book's intellectual contributions.

The proceedings begin with the author explaining the salience of Adam Smith's so-called "theory of the invisible hand" in modern economics. This theory tells us that the free enterprise system is like an invisible hand that effortlessly coordinates the behavior of a "multitude of individuals, interested only in maximizing their own selfish utility, so as to bring about efficiency and a socially optimal outcome" (p. 16). If one does not carefully study this theory, then it is tempting to erroneously conclude that it has *no* role for the state and that all that is required to attain a so-called Pareto optimal state of affairs—in which no one can be made better off without making at least one person worse off—is unfettered individual freedom to choose. The author contends that many "market fundamentalists" (p. 24) have essentially fallen into this trap, and hence they frequently espouse positions that are simply *not* supported by the writings of Adam Smith. This contention is persuasive; unfortunately, the same cannot be said about the author's point that "large amounts of our behavior in reality have little to do with economic incentives" (p. 39).

Using the work of Franz Kafka as background, the author says a number of interesting things about the many nexuses between the law and economics. In particular, Basu uses simple two-player, game-theoretic models to explain the impact that laws can and do have on the behavior of individuals. For example, we learn that the Nash equilibrium of a game such as the so-called "assurance game" is salient because in this equilibrium, the players effectively coordinate their actions; hence, we can think of such an equilibrium as—to borrow Thomas Schelling's terminology—a "focal point." Basu helpfully explains that this notion of a focal point is a psychological concept and that it has no hard definition. Even so, it is useful to think of the effects of laws in terms of the focal points they create. In Basu's words, the "focal view of law opens

the door to a deeper and richer understanding of how laws impact on economic outcomes" (p. 76). Although this is certainly true, when we think about the impact that laws—and on occasion their removal—have on individual behavior in an intertemporal setting, it is crucially important to understand how individuals form *expectations* about the future behavior of others and whether they *change* their expectations over time. This issue of the formation of, and possible changes in, expectations is insufficiently addressed by the author.

What role does the notion of identity play in our social, economic, and political lives? In the course of shedding light on this question, the author makes three noteworthy points. First, we learn that although the act of identifying with a particular group can promote economic cooperation and hence lead to this group's progress, this same act of identification can be "turned *against* other groups, usually minorities, but also majorities that are disorganized and unable to promote their own cooperative spirit of resistance" (p. 98). Second, people typically have multiple identities. Although this can help societies stay united, it is important to comprehend that "this can also lead to a failure of cooperation" (p. 116). Third, every so often, it is necessary for individuals to engage in behavior that is *not* individually rational but that nonetheless "can lead to large social gains" (p. 129).

Although the above discussion is lucid, the same cannot be said about the author's discussion of bureaucratic corruption. In this regard, he first says that this kind of corruption has less to do with incentives and punishments and *more* to do with "the lack . . . of personal integrity and individual moral commitments" (p. 118). However, just a few sentences later, he says that there "is no reason to believe that countries with rampant corruption are populated by citizens who are innately less moral; they *act* less morally in equilibrium" (p. 118). What is unclear here is whether the lack of personal integrity and individual moral commitments are *learned* behaviors and, if yes, then what *factors* help explain this kind of learning, which certainly appears to be more prevalent in some nations than in others.

The author gives the principle of free contract (PFC) a significant amount of attention, and his discussion of this principle is both erudite and thought provoking. The specific topic under discussion is the widely held principle that "if two or more sentient adults voluntarily agree to a contract, then the government should not stop such a contract" (p. 131). Basu rightly points out that although this principle typically enables an economy to function efficiently, the principle must *not* be considered to be sacrosanct. To illustrate this claim, he focuses on yellow-dog contracts (contracts in which workers agree to not join a union as a condition of employment) and on child labor. He points out that although in accordance with the PFC it may be possible to uphold a particular yellow-dog contract, when such contracts become the norm the result can be deeply unsatisfactory. As the author rightly points out, the PFC is an acceptable default rule. "It is not sacrosanct, and there are good moral reasons within the Paretian framework that allow us to suspend the use of the PFC in some contexts" (p. 137).

In summary, *Beyond the Invisible Hand* has a few quixotic aspects, the author relies excessively on two-player games to make general points involving many more players, and he occasionally lets his zeal get the better of him when he discusses his views of globalization and the retreat of democracy. These caveats notwithstanding, I would be remiss in my duties if I did not point out that this book does an excellent job of intelligently questioning the conventional wisdom about seemingly settled aspects of contemporary neoclassical economics. As such, it deserves to be read by all those who wish to learn more about how we might go about creating a world that is desirable for all of us—not only for a small fraction of us.

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Kempf, Karl G., Pinar Keskinocak, Reha Uzsoy (eds). 2011. *Planning Production and Inventories in the Extended Enterprise: A State of the Art Handbook.* Springer, Heidelberg, Germany. Volume 1, 490 pp. $189. Volume 2, 602 pp. $239.

Substantial knowledge exists about production planning and inventory management; however, it is hard to understand in every detail. Therefore, a handbook on this topic is a valuable resource for academics and practitioners who want to access information or research a related topic. Although several handbooks and comprehensive textbooks on the subject are

available, they share one problem: they were already somewhat outdated upon publication. Because several well-received and frequently cited handbooks on production planning and inventory management are now at least five years old, a new handbook is welcome.

This handbook consists of two volumes with 39 chapters and over 1,000 pages; the chapters were written by renowned experts from academia and practice. The objective is to bridge the gap between quantitative academic research on decision support models and algorithms and the practical needs of industry. The book achieves this by giving a state-of-the-art overview of theory, methodologies, modeling approaches, and industrial practices, and by identifying gaps that future research should address. In their preface (Chapter 1 of Volume 1), the editors highlight the planning problems and challenges in traditional production planning and inventory management, and the concepts that have emerged from industry, that motivate the need for new concepts and methods driven by recent economic and technological developments.

The next three chapters of Volume 1 summarize historical and recent challenges. *The Historical Foundations of Manufacturing Planning and Control Systems* by McKay gives an overview of concepts and literature before, during, and beyond the material requirements planning (MRP) age. *Advanced Planning and Scheduling Systems: The Quest to Leverage ERP for Better Planning* by Ovacik provides an overview of enterprise resource planning from a software and practitioner perspective. *The Transition to Sustainable Product Development and Manufacturing* by Carlson and Rafinejad reviews sustainability incentives and metrics for product and process design.

Chapters 5–8 highlight the importance of data and information in an uncertain world. *Uncertainty and Production Planning* by Graves introduces types of uncertainty and strategies from practice to deal with them. *Demand Forecasting Problems in Production Planning* by Hosking reviews types of forecasts and quality measures, and addresses several special topics relevant in practice. *Production Capacity: Its Bases, Functions and Measurement* by Elmaghraby gives an overview of the notions, purposes, and measurements of capacity and basic trade-offs in planning. *Data in Production and Supply Chain Planning* by Dionne and Kempf highlights the types of data required in production planning and inventory management, and its importance, availability, collection, quality, and maintenance.

Chapters 9–14 focus on aspects of supply chain coordination. *Financial Uncertainty in Supply Chain Models* by Heching and King gives a model-based introduction to risk and uncertainty from a contracting and financial market perspective. *Field-Based Research on Production Planning* by McKay introduces empirical (field) research as a methodology. *Collaborative Supply Chain Management* by Erhun and Keskinocak reviews different types of collaboration and basic incentive conflicts, and discusses a variety of practical examples and research results of horizontal and vertical collaboration. *Sequencing Strategies and Coordination Issues in Outsourcing and Subcontracting Operations* by Aydinliyim and Vairaktarakis presents (deterministic) operational coordination and incentive problems; it also discusses capacity and cost allocation in sequencing and scheduling using cooperative game theory. *Inventory Management: Information, Coordination, and Rationality* by Özer analyzes models of demand and lead-time information and contracts to coordinate supply chains, especially using asymmetric information. *Pricing, Variety, and Inventory Decisions for Product Lines of Substitutable Items* by Maddah et al. gives an overview of respective concepts, models, and theoretical results at the interface of marketing and manufacturing.

Chapters 15 and 16 present extensive state-of-the-art literature reviews. *Managing Perishable and Aging Inventories: Review and Future Research Directions* by Karaesmen et al. reviews inventory management for perishable items, including aspects of multiechelon inventories and multiple products. *Optimization Models of Production Planning Problems* by Missbauer and Uzsoy reviews workload control and order release policies and provides an extensive review of mathematical programming models and stochastic approaches.

The next two chapters provide an overview of modeling paradigms. *Aggregate Modeling of Manufacturing Systems* by Lefeber and Armbruster reviews fluid models as a tool for analyzing aggregate manufacturing flows. *Robust Stability Analysis of Decentralized*

Supply Chains by Ouyang and Daganzo presents a theoretical analysis of the bullwhip effect in complex supply chains.

The last two chapters in Volume 1 summarize simulation methodologies in manufacturing. *Simulation in Production Planning: An Overview with Emphasis on Recent Developments in Cycle Time Estimation* by Ankenman et al. is a methodological chapter on discrete-event simulation in production planning, as illustrated by an application of cycle-time and throughput estimation. *Simulation-Optimization in Support of Tactical and Strategic Enterprise Decisions* by Zapata et al. presents different approaches, including (embedded) metaheuristics, and reports on two applications.

Volume 2 contains more detailed research results and applications from different industries. *Production Planning Under Uncertainty with Workload-Dependent Lead Times: Lagrangean Bounds and Heuristics* by Dobson and Karmarkar is a research paper on work-in-process (WIP) lead-time dependency on capacity. *Production Planning and Scheduling: Interaction and Coordination* by Cai et al. is a research paper that presents a (hierarchical) mathematical programming formulation for workload control and scheduling. *The Effects of Production Planning on the Dynamic Behavior of a Simple Supply Chain: An Experimental Study* by Orcun and Uzsoy reports on the results of a numerical study in production control and workload release. *Supply and Demand Synchronization in Assemble-to-Order Supply Chains* by Ettl et al. presents a mathematical programming approach for comparing *Available* to *Sell-Available* to *Promise* systems.

Other chapters discuss applications and cases. *Quantitative Risk Assessment in Supply Chains: A Case Study Based on Engineering Risk Analysis Concepts* by Deleris and Erhun provides a risk management and modeling framework and uses a case to illustrate the framework. *A Practical Multi-Echelon Inventory Model with Semiconductor Manufacturing Application* by Katircioglu and Gallego delivers an inventory management approach for sources of uncertainty (e.g., demand, lead time, yield). *Built-to-Order Meets Global Sourcing: Planning Challenge for the Auto Industry* by Ormeci Matoglu and Vande Vate compares ship-to-forecast and ship-to-average strategies in build-to-order automotive supply chains. *Practical Modeling in Automotive Production* by Owen et al. presents advice and thoughts about model building and model applications. *Production Planning Problem in the Plastics Industry* by Tyagi and Bollapragada discusses a mathematical programming approach. *Model Predictive Control in Semiconductor Supply Chain Operations* by Kempf et al. reports on a large-scale application of a control methodology. In addition, this volume includes *Models and Methods for Production Scheduling in the Pharmaceutical Industry* by Pacciarelli et al. and *Developing a Computerized Scheduling System for Steelmaking-Continuous Casting Process* by Missbauer et al.

Supply chain coordination frameworks are considered in *A Mechanism Design Approach for Decentralized Supply Chain Formation* by Garg et al., who suggest a generic framework for supply chain formation with incomplete information. *Procurement Network Formation: A Cooperative Game Approach* by Chandrashekar and Narahari details the network formation problem in a procurement context. *Designing Flexible Supply Chain Contracts with Options* by Cheng et al. considers supply chain coordination problems with contracts in a newsvendor environment.

Why Is It So Hard to Build and Validate Discrete Event Simulation Models of Manufacturing Facilities by Fischbein and Yellig discusses methodological challenges; the authors provide a conceptual view of and challenges in building discrete-event simulations for real-world manufacturing systems. *A Practical Approach to Diagnosing and Tuning a Statistical Forecasting System* by Tat Leung and Bhaskaran reports on the essentials for setting up and operating practical forecasting systems. *The Ongoing Challenge: Creating an Enterprise-Wide Detailed Supply Chain Plan for Semiconductor and Package Operations* by Fordyce et al. highlights an enterprise-wide planning system. *A Multi-Model Approach for Production Planning and Scheduling in an Industrial Environment* by Artiba et al. presents a combined framework using mathematical programming, metaheuristics, and simulation. *Fuzzy Logic-Based Production Scheduling and Rescheduling in the Presence of Uncertainty* by Petrovic et al. presents a different approach to uncertainty modeling.

Who should buy this book? From this reviewer's (subjective) perspective, these two volumes contain much valuable information; however, their structure sometimes makes following information hard. Some

chapters cover the same information. In addition, the writing styles in the chapters differ; some provide excellent state-of-the-art reviews, whereas others are research papers. Unfortunately, there is no common thread (e.g., from a methodological perspective, from production-planning problems in different industries, or from a process perspective) to unite them. As a handbook, this book is incomplete. For example, a reader interested in mathematical programming formulations and reformulations to enhance computation for lot-sizing and scheduling problems will not find the state-of-the art material covered. Although many real-world applications are mentioned, they are not the core of many chapters. Therefore, a practitioner might find the content to be too research oriented. The subtitle, *A State of the Art Handbook*, raises expectations, which a volume of contributed chapters can never deliver. Therefore, considering the price of both volumes ($428), I recommend them as a "can have"—but not a "must have"—in a researcher's library.

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Stiglitz, Joseph. 2010. *Freefall.* Penguin Books, London, UK. 443 pp. $16.95.
Cassidy, John. 2010. *How Markets Fail.* Penguin Books, London, UK. 409 pp. $16.00.

These two books cover the triggering events and aftermath events of the Great Recession that began in 2008. Both books are good reads for different reasons. Joseph Stiglitz is a Nobel Prize winner in economics, a former head of the Council of Economic Advisers, and former Chief Economist of the World Bank. He has an inside view, as seen in his acknowledgments section, which includes a who's who of the upper echelons of government and the financial sector; he is also a frequent presenter at the Davos World Economic Forum. In some sense, he is the ultimate insider. John Cassidy is the economics reporter for the *New Yorker* and was the editor of the business section of the *New York Post*. These publications are not considered thought leaders in economic policy, yet Stiglitz writes the angry polemic about how those Wall Street and Washington guys screwed up and how he would have done things differently, whereas Cassidy writes the thoughtful piece that weaves the threads of centuries of economic thought into whole cloth to explain what led up to the mess. Stiglitz is the partisan and Cassidy is the observer. However, I am not dismissing Stiglitz. He was awarded his Nobel Prize for good reason, and he knows the actors because he was in the center of economic debates in Washington; he fills his book with the tidbits that add life to events, facts, and figures.

Both books cover much of the same territory. The differences are that Cassidy frames the discussion around the history of ideas in economics and Stiglitz looks at people and events through the lens of his core values: he is very much a political liberal. Stiglitz brings in more societal elements and issues of fairness and raises a broader set of political and social issues beyond the finance sector and the standard themes of economics. Cassidy sticks to the economic ideas, the financial crisis, and its aftermath. He even includes a nice layman's description of convexity. When both authors cover the events surrounding the financial meltdown, they hit the same points. However, the way they choose to cover each event is sufficiently different that both books are worth reading because of the authors' perspectives. Stiglitz rants with great energy and authority about Alan Greenspan, whereas Cassidy builds his case against Greenspan using the ideas of economics and skewers him by contrasting his actions and views with the research on bubbles and Paul Volker's policies at the Federal Reserve (the Fed).

The titles of Stiglitz's chapters show how he frames the issues and events. They include, *Freefall*, *Mortgage Scam*, *The Great American Robbery*, and *Avarice Triumphs*, where he lays blame, traces the Fed and Treasury decisions, and says what he thinks should have been done. He then lays out his policy proposals in chapters entitled *A New Capitalist Order*, *Global Recovery to Global Prosperity*, *Reforming Economics*, and *Toward a New Society*. His experience in the trenches of government policy shows when he lays out basic principles for economic policy. For example, his principles of a stimulus plan are that it should (1) be fast and effective, (2) address long-term investment, (3) be fair, (4) deal with short-run exigencies, and (5) target areas of job loss. He takes to task the Bush rebate checks for their lack of effectiveness on the grounds

that people used their checks to pay debts rather than spend the money and stimulate economic activity. He proposes some very sensible policies to end the housing crisis and address the mortgage market. He advocates a debt-for-equity swap with homeowners by mortgage holders, replacing the mortgage interest deduction with a flat-rate tax credit and requiring a minimum down payment.

He is on weaker ground with his antipathy toward all variable-rate mortgages. He is against them, and attacks Greenspan for saying that they lower borrowing costs, saying that notion is unsupportable under economic theory. However, a sensible variable-rate mortgage with limits on interest-rate changes and no teaser initial rates has lower lender interest-rate risk and correspondingly lower interest rates, consistent with economic theory. Borrowers who are not overextended and pay a little extra each month on their mortgages (e.g., up to what they would pay with a fixed-rate mortgage) almost assuredly will come out ahead with only a little extra risk.

He also has a good handle on the numbers and documents his sources. One shocker is that 40 percent of US corporate profits were in finance before the crisis. Their size explains why the budget deficit of the US government exploded beyond what anyone had seen outside of World War II, and why the amounts of dollars thrown around by the US government to provide liquidity and stabilize the system acquired a few extra zeros to the left of the decimal point since the savings and loan (S&L) crisis of the 1980s, when the finance sector was a much smaller proportion of the US economy. Given the volatility and repeated busts in the financial sector, any further increase in the share of finance in the United States and the United Kingdom will jeopardize these two economies. The experience of Ireland and Iceland shows that the financial sector requires a substantially larger real (i.e., nonfinance) economy to cover the financial sector's lack of creditworthiness during the repeated busts. The United Kingdom is nearing that tipping point, and the United States has a little more leeway.

Stiglitz's ideas for changing the rules to remove some of the profitability of the finance sector are probably necessary to better manage the share of finance in the US economy. Not only are Ireland and Iceland canaries in the financial mine, General Electric is as well. GE Finance garnered its creditworthiness from the balance sheet and income statement of the manufacturing side of the company. The finance side grew too big, and GE had to go hat in hand to the US Treasury during this crisis. Now GE is shrinking its finance businesses to fit within its balance sheet. Maybe the United States and the United Kingdom need to institute polices that do this for the financial sector because of the costs to the real economy.

Another critical point of Stiglitz is that financial innovation has not made a measurable difference in the productivity of the economy. This makes sense. Innovations in transaction processing such as payment mechanisms do filter through the economy because they increase the efficiency of basic business processes, as in supply chains. However, investment technologies such as high-frequency trading only shift around the profits of a zero-sum game and do not add to national wealth.

Stiglitz is very good at pointing out how political processes hide the extent of bailouts. He and Cassidy point out how the current (2011) ultralow interest rates are a huge subsidy for financial institutions, because loan margins and the spread with Treasuries have soared. Stiglitz adds that a little-discussed change in the law requires the Fed to now pay interest on financial institution deposits at the Fed, whereas these required deposits used to be interest-free. The role of these deposits is to manage money supply, and the banks did just fine before with zero interest; however, they complained a lot.

From my perspective, the weakness of the Stiglitz book is that his liberalism too often colors his judgments. He treats all mortgage borrowers as victims. However, the loan-modification programs have mostly failed because too large a portion of the subprime borrowers really did lie on their "liars' loans." Did banks really persuade people to live beyond their means, as he claims, or has consumerism come to dominate American culture, whereas the stigma of carrying consumer debt has decreased? Remember that President Bush's advice in his speech after the leveling of the World Trade Center was for people to go back to the malls and shop as a patriotic duty, and ads for luxury cars describe them as "investments." Federal policies have eased access to credit under all

recent administrations, leading to leveraged households with reduced cushions to cover bad times.

He rants that AIG executives got to keep their contracted bonuses (I agree with him here), but that the government abrogated the contracts of auto workers during the auto bailout. He further states the managers were paid well, with bonuses for running the industry into the ground. He fails to note that the auto workers got a good deal in the bankruptcy agreements in that they were given a share of the business to which they were not legally entitled. Also, the United Auto Workers (UAW) union shares a large part of the blame for the bankruptcies. Stephen Yokich, when heading the UAW in the 1990s, destroyed the joint labor-management initiatives to create a more cooperative culture at the Nummi plant and Saturn division in the United States. Workers used to cost $70 per hour, double the wages in non-US auto companies that have plants in the United States; at one point, the contract included the first day of hunting season as a vacation day. Auto workers have been victimized. However, they and their elected leadership in the UAW share in the responsibility.

Rants about the Reagan and Thatcher deregulation policies are misleading at several levels. First, Jimmy Carter, under the leadership of Alfred Kahn, was the true deregulation president, not Reagan. Carter deregulated oil, natural gas, trucking, railroads, and airlines. Those changes worked. I still pay less in nominal dollars for air fares, whereas flying is safer than ever. There have been no gasoline lines or natural gas shortages. Deregulating railroads brought them back to financial health after they had been a sick industry for decades. Supply chains are more responsive and reliable. Furthermore, fuel consumption per ton moved by trucking has decreased significantly since government rules restricting backhauls were eliminated. Margaret Thatcher had to deal with a stagnant economy and ossified institutions. To govern, she had to break Arthur Scargill and his coal miners union, because he held the country hostage and had a habit of taking down prime ministers with strikes.

The real problem with deregulation is a fundamental problem with useful ideas in political and social processes. People like Alfred Kahn develop insightful models and theories. Forward-looking presidents like Carter try them and they work. Advocates and politicians simplify the subtleties into rules of thumb, or worse, mantras, such as conservative rhetoric about free markets. They apply the rules in areas beyond the applicability of the models and wreak havoc. Deregulation mostly worked in the real economy. We complain about the discomfort of flying while not paying for a first-class ticket, which costs about the same in real dollars as an economy-class ticket did prior to deregulation. However, the financial sector is different and classic free market economics do not apply, as both authors note, simply because if the finance firms screw up, they hurt not only themselves but also take down the economy because credit flows collapse. Banks need national deposit insurance to avoid runs. However, that incentivizes them to take more risks. To protect itself and society, government has the right to restrict banking activities to limit moral hazard even if its actions limit banking profitability.

Cassidy's book is in many ways more interesting for academics. Stiglitz takes economic theory as given and writes about the events. Cassidy takes the events as given and writes about the ideas of economics and how their implementation led to the events. His book is divided into three parts: Utopian Economics, Reality-Based Economics, and The Great Crunch. As he correctly says, he "traces the rise and fall of free market ideology" (p. 7).

In the section on utopian economics, he describes the development of the models of competitive markets from Adam Smith's descriptions to the models of the Austrian school and the Walrasian models of Arrow and Debreu in microeconomics. In doing so, he notes that the leftist economists of the early 20th Century developed a theory of how nationalized firms should operate to maximize welfare and found that their socially optimal behavior is identical to the optimal behavior of private firms. He covers Keynesian macromodels and the rational-expectations models of Lucas. He focuses on the legitimacy of the assumptions in, and implications of, the models and how the different models follow from their predecessors, because the book includes no equations.

He covers the finance literature, including options and portfolio models. Because these models require probability distributions, he then covers the work of

Mandelbrot, who showed that price moves of securities are not normally distributed as assumed in the models. Instead, the distributions have fat tails and the extreme moves clump together. He points out that portfolio theory's biggest weakness is that the correlation matrices are not stable, and in market collapses all assets typically put in a portfolio have a correlation of 1. That is, financial theory offers no protection when you need it the most. Combining models with serious limitations and false precision, such as value-at-risk models, and leverage of 40 times equity, turns out to be an explosive mix.

In covering the behavioral economics literature, he highlights the problems with the classic assumption of rationality that underlies "utopian" economics, the mathematical models of economics that assume full information and correct expectations. I have a basic problem with the rational expectations model: even if you have correct beliefs about inflation, you typically cannot engage in a complete arbitrage. You cannot buy the unconstrained optimal amount of toilet paper if prices are rising because there is only so much room in your bathroom.

He does a wonderful job of describing the literature on why herding behavior is optimal, even bringing in the prisoner's dilemma game in an interesting way. This chapter alone makes the book worth reading. He notes that when running the Fidelity Magellan fund, Jeffrey Vinik correctly saw the tech bubble in 1995, switched to bonds, and left in 1996 after underperforming the market because the bubble did not break during his watch. His successor, Robert Stansky, went into tech and the fund lost large amounts of money. Stansky was not fired because he did no worse than anyone else. Cassidy makes the case for momentum investing as rationally irrational. It is rational because you get bonuses while winning, and you do not get fired if you lose along with everyone else. Of course, this individually optimal strategy exaggerates bubbles, which is what we saw in real estate.

I am skipping Cassidy's description of the events and actions of players during the market collapse, except to say he is more charitable toward Paulson and Bernanke, although he and Stiglitz agree that the government should have extracted more return for the risks the government took on in bailing out these firms. Cassidy's book would be a wonderful addition to a course on decision making because our assumption as operations research professionals is that rational decision making is not only individually optimal but also socially optimal. He shows that this is simply not the case because of information problems and that others use heuristics that distort markets.

Both authors make a valid case for regulating the financial sector, and include some proposals. For example, they want to return to the days when commercial banks and investment banks had to be separate companies. They both agree that there should be some form of credit rationing, such as minimum down payments on mortgages, and consumer protection in financial products. However, neither develops general principles for regulation or devotes much attention to describing situations in which regulation works well or does not work. For example, securitization of mortgages, the elimination of usury laws, and variable-rate mortgages were solutions to the crisis with the S&L institutions. The S&Ls hemorrhaged during the period of high interest rates and inflation in the 1970s and early 1980s because they had too many low-interest-rate mortgages on their books. These changes were designed to help them manage rate risk. Securitization worked for many years, but was pushed too far with subprime loans. Stiglitz points out that it is not appropriate to tax capital gains at a lower rate than regular income. Congress changed the rates because tax laws do not account for the loss of value in financial assets through inflation. In fact, sound economic policy says that government should tax only the real increase in the value of an asset held for a long time, not play with tax rates. Stiglitz and Cassidy must address the question of how to get Congress to pass economically sound legislation rather than rules that profit lobbyists, especially because hedge funds are in the ongoing business of flipping businesses, expensing their losses at income rates, and reporting their profits as capital gains.

Regulations, like markets, are flawed mechanisms. All markets are regulated at least by contract law; therefore, the issue is the appropriate degree of regulation, not whether to regulate. This is an empirical and not a moral question that trades off the imperfections of markets and rules.

Given the obvious need for greater financial regulation, it is worth keeping in mind that the unintended consequences of politically designed rules can

harm more people than this financial implosion. For example, the rules requiring US-produced ethanol in gasoline reduce US oil consumption by less than 5 percent while consuming 40 percent of US corn production. This has led to remarkably high world prices for corn and other grains, thus contributing to riots, revolutions, ethnic wars, and other mayhem as the world's poor resort to violence to avoid starvation. A reasonable gasoline tax would achieve the same consumption reductions, leave the corn for food, reduce inflation, and reduce the federal deficit. Furthermore, such a tax would not be as big a drag on economic growth as other taxes because the US import bill would go down. Stiglitz, Cassidy, and other proregulation economists have to come up with a mechanism that ensures sensible rules and regulations are implemented, not pigs in a poke.

I learned a lot from these books. Stiglitz provides a knowledgeable insider's view of the events. Cassidy brings together streams of literature into a coherent whole, much of which I knew but had not put together in the way he did. Cassidy's book would be useful as an antidote to the simplistic models in the standard economics texts and in a course on decision making to make the topic real and show how ideas matter, even if they are converted into slogans with perverse consequences.

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