Readings

Flying High

The Economic Effects of Airline Deregulation, by Steven Morrison and Clifford Winston (The Brookings Institution, 1986), 84 pp.

Reviewed by David R. Graham

Steven Morrison and Clifford Winston provide a careful and well-structured analysis of the significant economic consequences of airline deregulation. They add to a growing body of convincing quantitative evidence that airline deregulation is fulfilling its promise of improved industry efficiency, lower costs and prices, improved quality, and added consumer convenience. Their book is an important contribution to the study of the effects of deregulation, both for its findings and for its innovative methodology.

The book takes a careful look at the effects of deregulation on fares, travel times, and departures for a wide range of markets, as well as on airline costs and profits, and airline workers. The bottom line: Deregulation is yielding net welfare gains of roughly $8.5 billion annually.

To measure the benefits of deregulation the authors create a counterfactual view of the industry for 1977, the year prior to the passage the Airline Deregulation Act. They ask how the airlines would have performed that year had they been operating under the rules in effect in 1983. Statistical equations describing airline behavior in 1983 are used to estimate how a deregulated airline would have behaved given the fuel costs and wages that existed in 1977. Comparison of this counterfactual view with actual industry performance in 1977 provides estimates of how fares, schedules, and airline costs have been affected by deregulation.

The authors note that there are pitfalls in this approach. It is impossible to precisely account for all of the factors, other than deregulation, that differed between 1977 and 1983. Four major unexplained factors affected the industry in this period: (1) deregulation, (2) an enormous increase in fuel prices, (3) the strike by the Professional Air Traffic Controllers Organization (PATCO) in 1981, and (4) differences in the national economy. (The counterfactual comparisons controlled for the effect of fuel prices, but only to a limited degree.) Since none of these factors are fully accounted for in the counterfactual view of 1977, the findings surely understate the deregulation's benefits.

The authors also are conservative in choosing the years for comparison. In selecting 1977 as the base year, they do not attribute to deregulation much of the benefit from discount fares that were introduced earlier. Although data limitations undoubtedly dictated that the end point of the comparison be 1983, picking this year again understates the effects of deregulation. As the authors note in their concluding chapter, not all of the adjustments to the new deregulated environment had occurred by then.

Morrison and Winston's conservatism is to their credit. It instills added confidence in their results, and bolsters the credibility of their qualitative finding that deregulation has significantly increased consumer welfare.

Three dimensions of air travel important to passengers are studied: fares, travel times, and the frequency of service. With respect to fares, two distinct patterns of change are observed. First, coach fares have risen for all classes of markets, except for a relatively small number of long-haul markets. Overall, the average coach fare is found to have risen 10.3 percent. Second, discount fares have fallen in the largest markets, especially those involving long-haul travel. However, discount fares have risen in markets between smaller airports. The passenger-weighted discount fare is found to have fallen by 15.3 percent. As the authors conclude, these results confirm the standard wisdom that discount flyers

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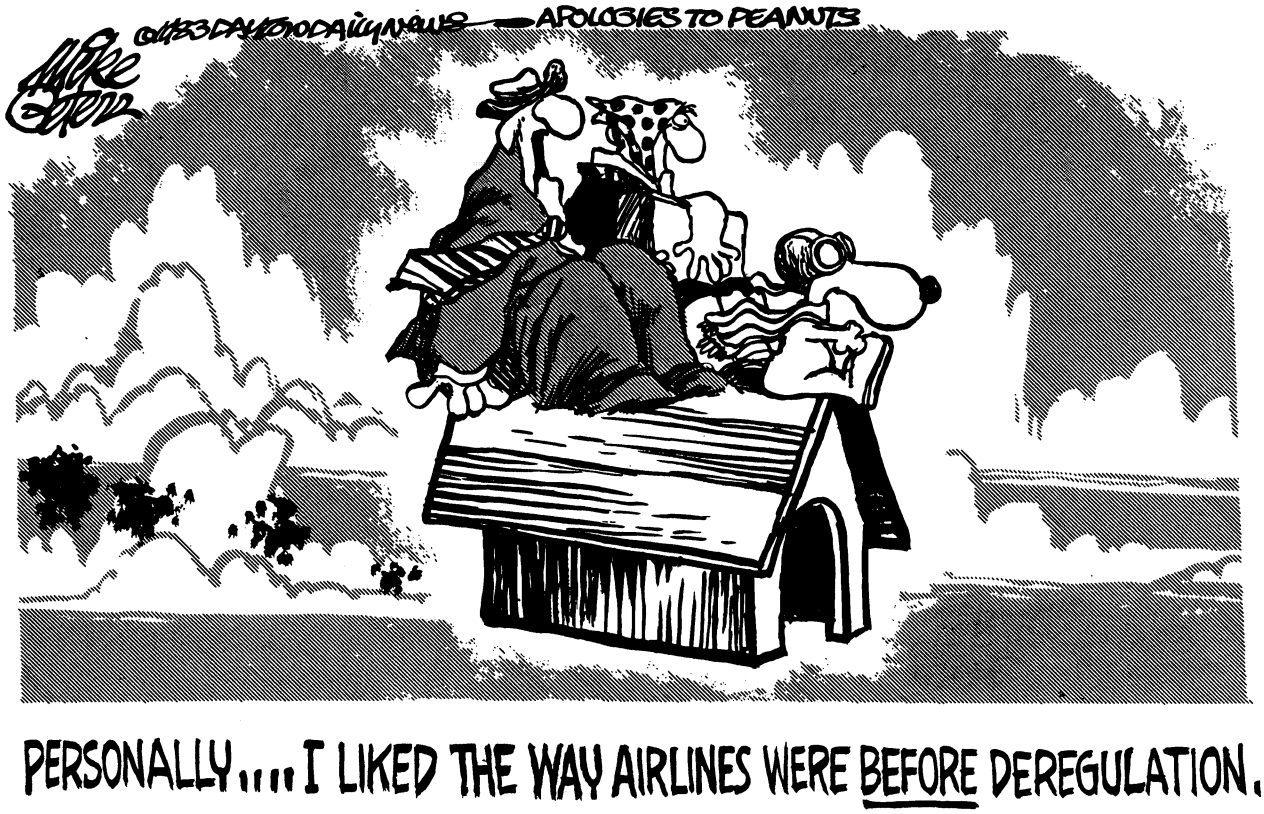

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have benefited from deregulation while full-fare passengers have suffered from the growing spread between discount and coach fares.

Travel time is estimated to have increased by 5.4 percent for the average traveler. Travel times on lower density routes have declined, but these improvements have been outweighed by increases in more heavily traveled markets. This pattern is consistent with increased congestion at major airports. It is also consistent with the further growth of hub-and-spoke flight operations, which have improved flight connections to and from smaller communities.

The authors estimate that there are 9.2 percent more flights at U.S. airports since deregulation. This pattern could be a residual effect of the PATCO strike which restricted operations at major airports; no doubt it also reflects the airlines' creation of new hub airports and the further integration of hub-and-spoke operations. Flights should increase as the industry grows.

Obviously, some dimensions of air service have improved, while others have not. In order to estimate the overall welfare effects of these changes, it was necessary for Morrison and Winston to refer to a demand-for-travel model they developed in an earlier study. Such a model shows the relative weights that travelers place on fares and schedule convenience in making their travel arrangements, and thus allows these different dimensions of airline service to be measured in dollar value terms.

Using this methodology, Morrison and Winston estimate that airline deregulation increased the welfare of airline travelers by $5.7 billion in 1977 dollars. To put this number in context, this estimate is an astounding 35 percent of airline revenues in 1977. Perhaps even more surprising, and contrary to conventional wisdom, is the conclusion that "... the benefits from deregulation largely accrue to business travelers because of improved service convenience attributable to the accelerated development of hub-and-spoke operations and to the frequency improvements in low-density markets." This latter point warrants elaboration.

How is it that Morrison and Winston find that the business traveler has been the big winner under deregulation, when it is commonly held that the opposite is the case? First, the authors find that business travelers have found the new flight schedules created under deregulation to be an improvement—a result that should not be surprising given the airlines' incentives to compete for business travel. The slight increase in travel times is more than made up for by increases in the number of available flights.

Second, casual assessments of deregulation often focus on coach fares, ignoring the fact that an increasing fraction of business trips are flown on discount. Moreover, many business travelers receive implicit discounts in the form of frequent flier bonuses.

Third, criticisms of deregulation often focus on several dimensions of service quality that are not included in the study's calculations. These include amenities such as ample leg room and seat width, meals, hanging lockers, and so forth. In the end, one has to agree with the authors that these amenities are of second-order significance in calculating total net welfare. Indeed their affect on welfare is partly offset by other improvements that are also not included in the analysis, such as advanced computerized seating assignments, which reduce check-in time.

A fourth reason why business travelers appear to benefit relative to leisure travelers is that the study deliberately understated the benefits of deregulation for leisure travelers. The calculations assume that all leisure travelers were already flying on discounts in 1977, so they attribute no welfare gains for leisure travelers to the increased use of discount fares either before or after 1977. In contrast, the calculations do assume that the share of business travel flown on discount rises, from zero to 50 percent between 1977 and 1983.

I raise these issues because it is important to square the authors' conclusion that business travelers have benefited most from deregulation with the conventional wisdom. On the one hand, Morrison and Winston are probably right that business travelers have fared better than is often claimed. On the other hand, their counter-intuitive result also stems from the fact that they have underestimated the benefits of deregulation to pleasure travelers.

Because of the poor state of the economy and earlier increases in fuel prices, the airlines incurred substantial losses in the early 1980s. Had they not had the flexibility afforded them under the Airline Deregulation Act, losses would have been even higher. Morrison and Winston find that deregulation allowed the airlines to substantially reduce costs in 1983, by about $2.5 billion relative to what they otherwise would have been. This finding is consistent with the estimates of efficiency gains due to deregulation that have been found by others.

The high variance in profits across airlines and the extent of merger activity since deregulation both suggest that a fundamental restructuring of the industry is inevitable. The range of experience for the airlines has been at least as great as the distributional effects of deregulation on the traveling public. The newly competitive environment has surely increased efficiency for exactly the same reason that it has led to winners and losers in the industry.

Assessing the effect of deregulation on airline employees, Morrison and Winston find little measurable effect either in terms of wages or levels of employment. As they note, however, it is probably too early for the full effect of changes in employment practices to be reflected in the data. The industry has experienced significant expansion of nonunion airlines, the introduction of two-tiered labor contracts, and many cases of labor concessions on both workrules and wages. It is likely that in the long run, the effect of deregulation on airline workers will be substantial.

Morrison and Winston conclude with a demonstration that the industry has not achieved the competitive ideal as defined in a purely economic sense. They estimate that additional welfare gains of perhaps 25 percent are possible, although they see little prospect for achieving this level of perfection. The problem lies in practices that potentially restrict entry into the airline industry or into particular markets, such as practices limiting access to major airports or to airline computerized reservation systems. They argue for public policies designed to maximize the extent of contestability in airline markets, a notion that already has wide support within the economic profession. This requires ensuring that there are no undue barriers to entry.

As noted in this study, the airline industry is continuing to evolve under deregulation. The developments analyzed in this study and in the others that preceded it give good reason to be confident that the greater competitive freedoms brought about by deregulation will continue to pay handsome dividends to the traveling public and the airline industry.

L'Amerique de M. Crozier

The Trouble With America, Why the System is Breaking Down, by Michael Crozier, translated by Peter Heinegg (University of California Press, Berkley, 1984), 156 pp.

Reviewed by Jeremy Rabkin

Michael Crozier is a French social scientist with a considerable reputation in the United States. His latest offering, *The Trouble with America, Why the System is Breaking Down,* is a French intellectual's essay, rather than an American scholar's notion of social science. Few American social scientists would attempt so much in so few pages—nor, for that matter, dare to cover it all with such a bombastic title. Part personal memoir, part philosophic rumination, this book is heavy with abstraction and generalizations, painfully short of substantiating detail and specific recommendations. Still, it is a thought-provoking book and the author's evident distance from his subject lends a certain credibility to his claims about "the big picture." Crozier's analysis focuses attention on trends that are often obscured in more limited or more detailed studies.

Crozier first came to the United States as a student in the late 1940s and was tremendously impressed by what he saw. After periodic visits during the 1950s and early 1960s, he was removed from American affairs for more than a decade and was then shocked by the changes he encountered when he finally returned in 1980. *The Trouble with America* tries to explain or at least interpret these changes.

What impressed Crozier most about the America of the 1940s and 1950s, he tells us, was the amazing openness of the country, its freedom from the stifling bureaucratic traditions of his native France. What most impressed—or rather depressed—Crozier about the America he found in 1980 was the prevailing atmosphere of defensiveness. Business and government leaders, he felt, were afraid of taking risks and afraid of making decisions altogether. Interest groups, ethnic communities, and ordinary citizens were obsessed with their "rights." The consequence of the new climate, according to Crozier, was an insane preoccupation with law and procedure, described as "due process delirium," and an absurd inflation of judicial authority:

> Government by judges is the most significant symptom of 'the trouble with America'.... [S]ociety is no longer capable of getting hold of itself, and so afraid of making choices that it shifts the burden to the judiciary... suffer[ing] a kind of hardening of the arteries....

Crozier attributes part of the change to the shattering of American self-confidence brought on by the Vietnam debacle and the Watergate scandals, and part to the dislocations of a weakening economy in the late 1970s. But he is most interesting and suggestive in his claim that the trends of the 1970—the legalism, proceduralism, and indecision—were in many ways simply extensions of historic American tendencies into settings and circumstances where they no longer made sense. He singles out a "Puritan" streak of moralism, a naive Enlightenment faith in "rationality," and an egalitarian disdain for institutions and elites as tendencies that make it hard for Americans to accept moderate, compromise courses in public life. People insist on asserting their full rights under the law instead of coming to agreement on sensible compromise courses.

Of course, much has changed since 1980 in the American national mood and the fortunes of the economy. Crozier acknowledges the fact but tries hard to minimize its significance, suggesting that the seeming revival of recent years is superficial and unsustainable. Regarding the economy, it may be that Crozier is too taken with his own diagnosis to accept the evidence that the patient has already recovered. Or it may be that the evidence cannot fully penetrate Crozier's partisan filters. In the 1940s, he tells us, he studied America from the perspective of labor leaders, whom he grew to admire very much. In the 1950s and 1960s, he was closely associated with liberal academics at Harvard (where Henry Kissinger had "far too intimate ties to the Republicans" and so "was not one of us"). Like a number of prominent scholars at Harvard, Crozier insists that, over the long run, only some sort of government-sponsored industrial policy can deal with the economic challenges of an era when—as he puts it—"the frontier has closed" and America has reached "economic saturation." He does not take seriously the possibility that due process delirium is a reaction to excessive gov-

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ernment that might be cured by increased reliance on markets rather than by a further extension of government control. A less ambitious government would be easier to trust.

Crozier's prescription for our underlying ailments is, indeed, greater trust in a governing "elite" which can look to the "long term" without always worrying about precise legal formulas, technical decisionmaking criteria and elaborate safeguards for due process. While Crozier praises the open, entrepreneurial spirit America helped to nurture in postwar Europe, he evidently thinks the United States could learn a few lessons from the longer governing experience of France's *grands corps d'administration*, its bureaucratic elite.

If the economic revival of recent years should turn sour, Crozier's views may receive a more sympathetic hearing. Ironically, though, it is his analysis that makes one wonder whether Americans, with all their national tendencies that Crozier so deplores, could ever adapt to French-style government planning, *dirigism*. Crozier's analysis may thus point to the opposite conclusion from the one he draws. If our national character frustrates ambitious government planning ventures, the most practical solution to this "trouble with America" may be a less ambitious government.

Markets and Medicine

The Health Economy, by Victor R. Fuchs (Harvard University Press, 1986), 411 pp.

Reviewed by Charles E. Phelps

In *The Health Economy*, Stanford University professor Victor R. Fuchs has compiled a collection of his essays on the economics of the health care sector. Taken together with his landmark book *Who Shall Live*, this represents almost the entire body of his work in this field. Anyone interested in health economics is familiar with at least some of this important work.

Though seldom writing on regulation per se, Fuchs makes a valuable contribution in providing a framework for thinking about regulatory policy. His work focuses on how decisions are made by economic agents involved in producing health—both medical practitioners and patients—and thus is of great importance to the intelligent design and revision of health regulation. In this brief review, I set out what I believe are the primary issues we confront in contemporary health regulation, and address how *The Health Economy* sheds light on these issues.

A point worth noting at the outset, given that Fuchs is an economist writing about economic issues, is that his work generally lacks any discussion of prices. In health care, of course, the widespread availability of public and private insurance has important implications for individual choices and market outcomes because of the effect on the prices faced by consumers. Fuchs incorporates this insight into some of his studies (for example, those on demand-inducement), but it is absent from others (such as studies on the rate of surgery by different patient groups). This does not blunt the force of this work; the reader should anticipate, however, that the analysis proceeds in a way other than traditional supply and demand analysis.

On the critical issue of quality assurance for manpower and the role of entry restrictions such as physician licensure, Fuchs has written a great deal. Much of what he has to say is of considerable interest and importance. The primary message to emerge from his work: medical care markets don't always "clear" the way we would expect, therefore, don't jump too quickly to the conclusion that markets are the solution to society's problems. In his words:

> The virtues of competitive markets are considerable, but it is questionable whether the transformation of the health care industry into an approximation of the used car industry would represent social progress.

Fuchs reaches this conclusion on the basis of several lines of research. One involves the study of the market for surgeons and other physicians. Here he finds a significant degree of underutilization of manpower resources in the United States as compared with other nations or with alternative physician payment arrangements in the United States, such as health maintenance organizations (HMOs). In addition, he finds the average annual remuneration of surgeons is high relative to other physicians. These findings conflict with the way we would expect a

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typical market to operate, where underutilization would signal excess supply which, would lead to price cutting and exit from the industry.

Fuchs buttresses these studies with more formal analyses of "supplier-induced demands," focusing on surgical markets. Two chapters, which he describes as the "most controversial in the book," are devoted to presenting the key evidence he has compiled on the subject. The results of his empirical analyses of surgical markets indicate that both the rate and the price of surgery respond to the supply of surgeons in seemingly anomalous ways. Most disturbingly, Fuchs reports a positive effect of supply on price. While he does not draw strong policy or regulatory conclusions from this work—and the issue is by no means closed—those who support restricting physician supply or at least redirecting supply away from surgical specialties will find plenty of ammunition in these chapters.

Another area of regulatory importance involves consumer protection, taken broadly to include such social issues as smoking, drinking, driving, environmental hazards, and the like. In this area, Fuchs has made, in my view, his strongest contributions. He has repeatedly provided both stimulating and powerful evidence on the importance of each individual's choices in affecting their health. Fuchs and others working in the area have highlighted the investment-like aspects of behavior as they affect health. Fuchs, however, refuses to blindly adopt a *caveat emptor* attitude about health and safety regulation, preferring instead to delve into some extremely interesting and intricate relationships between education, time preference, and human behavior.

The Health Economy contains analyses of specific areas of regulatory concern, including auto safety inspections and low-level radiation hazards. More interesting and, in the long term, more provocative for regulators and regulatory analysts are several studies of the effects of regulation and government-provided information on human behavior as it affects health. As fundamental explanations of differences in health-related choices, Fuchs focuses on the role of education and rates of time preference (or rates at which individuals are willing to trade off future wealth or well-being for present wealth or well-being). These areas, I feel, deserve greater attention and exploration.

One key study assesses the relationship between government-provided information on the risks of smoking (the Surgeon General's report in 1964) and education. The data uniformly show bigger reductions in smoking among the more highly educated following the release of new information. The common interpretation is that education allows the consumer to make better-informed judgments about the risks of smoking, and thus is associated with greater reductions in smoking. This view has strong policy implications: If educated consumers can make use of appropriate information, additional government intervention is not warranted; if, on the other hand, an important class of individuals—those with less education—do not respond to appropriate information, the argument for intervention of other types is strengthened.

The fly Fuchs drops into the ointment, however, is the suggestion that education is not the key to understanding smoking behavior. As Fuchs shows through some ingenious cohort studies, education seems to act as a marker for some other factor that really affects behavior. Fuchs has speculated that the factor may be the individual's rate of time preference.

As Fuchs points out, with imperfect markets, where there are restrictions on some voluntary transactions, individuals will not necessarily adjust their consumption patterns so as to equalize rates of time preference. Individuals with a greater preference (at the margin) for current consumption will logically choose less education and more consumption now, even if that harms health later. Smoking provides a classic example. Fuchs wonders if the apparent relationship between education and smoking cessation, concentrated as it is among the better educated, really stems from differences in time preferences. (Some direct studies of time preferences are reported in one of the chapters of this book.) While this research is still in the exploratory stage, Fuchs concludes with a note of "cautious optimism" that it will lend considerable power to efforts to explain the health-affecting behavior of individuals.

The importance of this view for those seeking further government intervention cannot be overstated. We are not likely to repeal all the laws that make human capital markets imperfect (such as laws against slavery). If these laws create differences in rates of time preference that cause people to make different life-style choices, is that any cause for government intervention? I think not. This may prove to be one of Fuchs' most lasting contributions to the area of health regulation.

I would note in closing that this volume really does not deal with the critical issues of cost containment. Government policies aimed at constraining the ability of suppliers to build new facilities or expand existing facilities (particularly "Certificate of Need" regulation for hospitals and nursing homes) or that alter the incentives of suppliers to operate in a least-cost manner (particularly limits on hospital reimbursement rates) are not the subject of careful analysis.

Fuchs' new book is welcome, if for no other reason than it brings together a disparate set of articles that have been scattered across space and time. Taken together, they provide many thoughtful reminders about the unique issues in the economics of health and medical care. Many will quarrel with the conclusions Fuchs draws, but these are not new quarrels: some of these articles have been with us for over a decade. Perhaps my only regret is that Fuchs did not take the opportunity to respond to and assess the critiques and extensions of his many ideas, now that he has had the chance to look back upon the literature that he has helped spawn. However, his own contributions to that literature are usefully assembled here, and should be a welcome addition to analysts' bookshelves.

Back to the Drawing Board

Regulating the Automobile, by Robert W. Crandall, Howard K. Gruenspecht, Theodore E. Keeler, and Lester B. Lave (The Brookings Institution, 1986), 202 pp.

Reviewed by Jerry Flint

Government regulation of the automobile industry costs consumers between $1,300 and $2,200 a car and isn't worth it. Worse, the regulations have made for bad cars and weakened the industry against foreign competition. That's the general conclusion of this study by Robert W. Crandall, Howard K. Gruenspecht, Theodore E. Keeler, and Lester B. Lave. As they put it, "The very structure of these programs has been counterproductive to the rapid achievement of clean air, safe highways, and reduced gasoline consumption."

We should have seen it coming. After all, the government ordered car makers to build high mileage cars and then held down gasoline prices, which discouraged people from buying the cars the government ordered the companies to build. That same government pushed up fuel use with its emission regulations at the same time it enforced rules to reduce fuel use. Safety standards had the same built-in conflict. And increases in the price of new cars caused by all the regulations helped keep older, less safe, more emission prone, and more fuel consuming cars on the road. Quality suffered as the American car companies made dramatic changes in their cars to meet government rules.

Of the three regulatory areas—safety, emissions, and fuel economy—the authors find that only the safety regulations are worth the cost. But when it comes to the one great undecided safety issue, air bags or no air bags, debated for 20 years without resolution, the authors provide little help:

> If one views with equanimity motorists' decisions to risk their lives without a belt or other restraint system, the decision can be left to the market. In contrast, a more paternalistic view, accompanied by a high valuation of fatalities averted makes the air bag attractive.

I sometimes wish that everyone who writes about air bags would be required to test one. After having the experience, I can say with some emotion that a driver who is not in an accident when an air bag goes off, may well be in an accident afterward. Of course, there are all kinds of tests to prove this isn't so. I recall an engineer at a test track with proof, filmed proof, that the bag didn't cause a loss of driver control. The film showed bags going off and drivers keeping control of their cars. Then he gave me the traditional wink and a nod. "They go off without warning," he whispered "but the cameras are set up at a fixed spot along the side of the track." It would be a pretty dim-witted test driver who couldn't figure out that the air bag will go off when he drives past the camera, and to hang on tight.

Another finding is that emission controls, aimed at reducing carbon monoxide pollution,

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unburned gasoline fumes, and nitrogen oxides, are costing more than $10 billion a year. Everything has gone wrong here, the authors say. The Congress, without knowing enough about the problem of emissions and health, ordered the car makers to meet extremely ambitious goals with tight deadlines. Result: Expensive systems that work poorly and may have little effect on the quality of our air or our health.

The fuel economy standards, put on during the first oil crisis, aimed to lift mileage to 27.5 m.p.g. by the mid-1980s. These were largely irrelevant—the industry was going that way anyway, say the authors:

> From the perspective of 1985, none of the problems [particularly the air pollution and fuel economy] were crises requiring immediate action. All would have benefited from a more leisurely pace and detailed analysis.

Ease up, they say, ease up.

If you were in Detroit during the critical days, it is impossible to forget the arrogance of some of the industry executives (especially the financial types). Like the old joke about the sergeant and the mule, they had to be clubbed to get their attention. To Detroit's credit, though, the most important achievements, such as the collapsing steering column and computer controlled truck brakes (coming on 1987 models) were developed and installed before any government rules were issued.

A nagging and still unanswered question is why the U.S. companies had so much trouble with the regulations while the Japanese auto makers seemed to have no trouble. It might be that the regulations were so written to make it easier on foreign companies than domestic producers. Perhaps someone will look into this one day soon.

Assuming the authors are correct and regulation has been a damaging exercise, the important issue is what's to be done. Alas, the authors seem to think that giving the regulators more time and money should do the trick. But these are the same regulators that made the mistakes in the first place, and there is no reason to think that given another chance—and "the time and the budget for the data collection and analysis"—they would do any better. The Army Materiel Command is proof to the contrary.

What I missed in the book was an interview, a chat, or just a comment from someone who really knew the auto industry. Someone who might have suggested how the safety regulations could be changed to produce more or as much safety at less cost, how to improve the emission regulations to make the controls work better or cheaper, how to give the customers what they want in engines without allowing the nation to become as vulnerable to the oil shock again. One good Detroiter, with a wink and a nod, can provide a surprising amount of useful information.

With that said, this book, especially considering its source, should be welcome in Detroit, welcome in the offices of *Car & Driver* and *Motor Trend* magazines (who have been saying the same thing for years but without the statistics), and welcome among the critics of regulation. Despite its many statistics, formulas and charts, *Regulating the Automobile* can be read and understood by the amateur. Opponents will argue with the conclusions, of course, and will be able to come up with their own statistics, formulas, and charts to prove the Brookings team wrong. Even those in sympathy with the general conclusions may have some problems with some of the thoughts (like the idea that drivers, knowing their cars are safer, get cocky and knock off more pedestrians and bikers.) But this is a worthwhile book that confirms many things that people close to the auto industry—those inside the industry and close observers—have believed for a long time. If only Brookings could have published it 10 or 20 years ago before all the damage was done; but better late than never.

Safety Caps and Child Poisonings

"Consumer Behavior and the Safety Effects of Product Safety Regulation," by W. Kip Viscusi in *The Journal of Law and Economics*, Vol. 28, No. 3 (October 1985), pp. 527-53.

When government regulators are confronted with a perceived inadequacy in health and safety, their typical approach is to mandate a technological solution to the problem. The Occupa-

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tional Safety and Health Administration has promulgated standards that dictate many aspects of workplace design. Similarly, the Consumer Product Safety Commission (CPSC) regulates many features of consumer products, and other government agencies also specify safety-related characteristics of products, such as seatbelts in cars. The underlying motivation behind many of these measures is the belief that increasing the technological features pertaining to safety should produce the desired safety improvement. From this perspective, safety devices on handguns or on machines, for example, should lead to an improved level of safety by relieving technological shortcomings in these products.

This study casts considerable doubt on the validity of the technological approach to safety. Through an extensive analysis of all major data series on products covered by the CPSC, no beneficial effect of the agency is found and, in some cases, a counterproductive influence is found. The findings of greatest interest pertain to the surprising effect of safety caps on child poisonings.

Viewing the level of consumer product safety as being determined by not only the characteristics of the products, but also by the behavior of consumers, three possible effects of CPSC regulations are analyzed. As CPSC regulations boost the technological characteristics pertaining to safety, consumers will decrease the safety precautions they take. A similar phenomenon has been hypothesized by University of Chicago economist Sam Peltzman for the response to automobile seatbelts.

A second influence termed a "lulling effect," is when consumers who are faced with products that are protected with safety caps or other such safety-enhancing devices are lulled into a false sense of security. Government regulations, for example, may lead consumers to falsely believe that safety caps are child-proof rather that simply child-resistant, which is a very important distinction that is often not recognized by CPSC commissioners.

The third influence considered is a spillover effect. Safety caps on some medicines may reduce the precautions taken for other medicines stored in a similar locations, such as in medicine cabinets or on closet shelves.

Overall, the analysis suggests that the presence of safety devices such as safety caps should typically improve safety even with diminished consumer care if consumers are fully rational. There may, however, be a counterproductive effect of the regulation if consumers are lulled into a false sense of security by the presence of the safety measure. If the presence of safety devices does diminish consumer precautions, one would predict an adverse spillover effect of these related products.

The evidence for aspirin and analgesic poisonings is quite striking. As shown in the table, during the 1970s, the fraction of all aspirin sold in safety cap bottles remained roughly constant. The relative share of all poisonings from bottles that had safety caps, however, rose between 40 percent and 73 percent from 1972 to 1978. At the very minimum, these poisonings suggest that safety caps do not make the product risk-free. Two types of phenomena have contributed to this increase in safety cap poisonings. First, because of the presence of the safety cap, consumers appear to have increased children's access to such products. Second, in many cases consumers are unable to grapple with these caps and simply leave the caps off the bottle. (Aspirin poisonings from open bottles rose from 41 percent in 1972 to 49 percent in 1978 according to CPSC data.)

CHARACTERISTICS OF POISONING INCIDENTS

	1971	1972	1973	1974	1975	1976	1977	1978
Aspirin:								
Sold with Safety Caps (%)	. . .	53	56	59	56	56	55	52
Poisonings from Safety Cap Bottles (%)	. . .	40	52	60	59	67	71	73
Open Bottle Share of Poisonings (%)	. . .	41	43	44	48	46	44	49
Aspirin and Analgesics:								
Poisonings from Safety Cap Bottles (%)	. . .	34	44	53	54	63	67	66
Open Bottle Share of Poisonings (%)	. . .	43	43	44	47	44	39	47
Total Poisonings	168,930	167,270	153,670	126,520	137,010	112,860	112,840	111,420

Source.—Based on unpublished Poison Control Center computer printouts and pharmaceutical industry data on aspirin sales.

Although suggestive, these statistics are not sufficient to conclude that safety caps were completely ineffective on balance. To investigate this hypothesis, trends in the overall aspirin poisoning rate and in the aspirin poisoning death rate are analyzed. In each case, no significant shift in the poisoning rate trend is found to occur with the advent of safety caps in 1972. Although safety caps were first introduced for aspirin, a variety of other product groups such as internal antibiotics and turpentine are also now protected by safety cap requirements. In an analysis of poisoning rate trends for 19 product groups of this type, no significant beneficial effects of safety caps are found.

To investigate the possibility of a spillover effect of safety cap requirements on unprotected products, the poisoning rate trends are analyzed for analgesics that were not covered by safety cap requirements. For these products, the poisoning rate was found to exhibit a significant upward jump beginning with the introduction of safety caps on aspirin. After netting out other factors affecting the poisoning rate trend, the spillover effect is estimated to lead to an increase in the poisoning rate by almost one-fifth. Viewed somewhat differently, 47 percent of the increase in the analgesic poisoning rate between 1971 and 1980 was due to the adverse effect of safety caps on consumer precautions for other products. Overall, there were 3,500 additional analgesic poisonings of children under five each year because of the diminished consumer care that resulted from the introduction of safety caps. In conjunction with the absence of a significant beneficial effect on protected products, these results imply that the net effect of the CPSC requirements was adverse.

The overall verdict is that the regulations issued by the CPSC have failed to produce a demonstrable improvement in safety. The lesson to learn is that the safety of product use is determined both by the characteristics of the product and the actions of consumers. Government regulations influence each of these components of the safety-generating process and may have unintended effects to the extent they lull consumers into a false sense of security and thus lead them to reduce their own precautions. This lulling effect may diminish or offset any beneficial effects of the regulation and ultimately may lead to net adverse consequences for consumer health and safety.

Plugs for Drugs

Alison Masson and Paul H. Rubin

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deal directly with consumers is the way Boots introduced the Rufen brand of ibuprofen. Boots chose not to develop a detailing force but instead offered Rufen in bottles prepackaged for final sale with a consumer rebate coupon fastened around the neck of the bottle.

Conclusions

Under the current regulatory regime, where there is almost no direct-to-consumer prescription drug advertising, consumers forego valuable information on drugs and drug prices, and on disease symptoms, treatments and preventatives. The prescription drug market, in turn, is spared the competitive pressures that would result were consumers better informed. And drug manufacturers and retailers, deprived of an important medium of communication, are restricted to other, possibly more costly marketing strategies. By eliminating excessive disclosure requirements, the advertising of prescription drugs would be encouraged. This would increase the amount of information made available to consumers, improve the match between patients and drugs, and lower drug prices. The gains to consumers—both financially and in terms of their health—could be substantial. ■

Selected Readings

Benham, Lee K. "The Effect of Advertising on the Price of Eyeglasses." *Journal of Law and Economics*, Vol. 15 (1972).

Calfee, John E. *Cigarette Advertising, Health Information and Regulation Before 1970.* Federal Trade Commission, Bureau of Economics, Working Paper, 1985.

Masson, Alison and Paul H. Rubin. "Matching Prescription Drugs and Consumers: The Benefits of Direct Advertising." *The New England Journal of Medicine*, No. 313 (1985).

Masson, Alison and Robert L. Steiner. *Generic Drug Substitution and Prescription Drug Prices: Economic Effects of State Drug Product Selection Laws.* Staff Report to the Federal Trade Commission, 1985.

U.S. Congress. House. *Prescription Drug Advertising to Consumers.* Committee on Energy and Commerce. Staff Report to the Subcommittee of Oversight and Investigations, 1984.

AIDS and the Blood Bankers

Ross D. Eckert

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Finally, firms in Miami and New York have begun to store blood for an upcoming surgery or freeze it for three years for either the donor's use or a designation. They operate on a 7-day, 24-hour basis and say they will ship anywhere. An Arizona firm is franchising personal blood-storage operations in hospitals. Patients or friends donate whole blood, the red cells are frozen for transfusion, and the hospital owns the various by-products.

These developments may do more to improve the operations of the established nonprofit blood banks than anything the FDA is likely to contemplate. Although the FDA has yet to act on its advisory committee's recommendations for the two additional hepatitis tests, this past spring the Red Cross announced it would require one of them at some future date, and shortly afterwards the AABB said it would require both of them before the end of this year. More AABB members are also beginning to accomodate demands for designated blood. And most gratifying is the recent complaint of an official of the American Blood Commission that "there is substantial evidence that competition is beginning to erode the effectiveness of some regional associations."

AIDS surfaced in 1977 but was not scientifically described until 1981, not officially recognized as a threat to the blood supply until 1983, not isolated in this country until 1984, and not countered with a surrogate blood test until 1985. Eight years is not a very long time in medical research or in government rulemaking, but it is an eon in the marketplace. The AIDS epidemic might just be dislodging the sclerosis in our blood supply system so that it will be better prepared to respond to the next health threat. ■

Selected Readings

Drake, Alvin W., Stan W. Finkelstein, and Harvey M. Sapolsky. *The American Blood Supply.* Cambridge: MIT Press, 1982.

Eckert, Ross D. and Edward L. Wallace. *Securing a Safer Blood Supply: Two Views.* Washington, D.C.: American Enterprise Institute for Public Policy Research, 1985.

Hillsborough County, Fla. v. *Automated Medical Laboratories, Inc.* 105 S.Ct. 2371 (1985).

Kessel, Reuben. "Transfused Blood, Serum Hepatitis, and the Coase Theorem." *Journal of Law and Economics,* Vol. 17 (1974).

New Light on Punitive Damages

William M. Landes and Richard A. Posner

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cases, actually overstate the success of plaintiffs in obtaining punitive damage awards: many jury awards are reduced by the trial judge or on appeal, and the Rand study did not include this subsequent history. Unfortunately, the study does not indicate the dates of the punitive damage awards, so we do not know how many of the eight awards in products liability cases fell in a period comparable with our study. The Rand study does show an increase in punitive damage awards in personal injury cases in the period from 1980 to 1984—modest in San Francisco, steep in Chicago—but no breakdown is provided by type of case.

The data we have presented do not prove that there is no problem with punitive-damage awards. Although such awards seem to be neither frequent nor crushing in any absolute sense, they may still be too frequent, or too heavy in relation to the actual conduct of the defendants. It is also possible that the threat of punitive damages may be forcing inappropriate settlements of products liability suits—although this would present another puzzle because it is hard to imagine, on the objective evidence, why defendants' lawyers would think the threat substantial. Perhaps all that our data show is the need for a deeper understanding of the punitive damages issue—but this is not a trivial point given the intensity of the public debate. ■

Selected Readings

Landes, William M. and Richard A. Posner, "An Economic Theory of Intentional Torts." *The International Law and Economics Review,* Vol. 1 (1981).

Peterson, Mark. "Punitive Damages: Preliminary Empirical Findings." Rand Corp., 1985.

Priest, George L. and Benjamin Klein. "The Selection of Disputes for Litigation." *The Journal of Legal Studies,* Vol. 13 (1984).

Takeovers and Economic Performance
Pound, Lehn, and Jarrell
(Continued from page 30)

institutional ownership and R&D expenditures. Our regressions show that there is a statistically significant *positive* relationship between institutional ownership and R&D expenditures—not the negative relationship that takeover critics have predicted.

Table 5
INSTITUTIONAL HOLDINGS IN 324 RESEARCH-INTENSIVE CORPS., 1980-83

Year	Avg. Inst. Hldgs.	Avg. R&D Exp.
1980	30.0%	3.38%
1981	31.2	3.58
1982	34.3	3.98
1983	38.0	4.03

Average institutional holdings as % of capital expenditures and average R&D expenditures as % of revenues.

Finally, in Table 6, we list the average change in R&D expenditures for firms that experienced a decline in institutional ownership in the period 1980-83, and for groups of firms that experienced progressively larger increases in institutional ownership. By the logic of the critics' arguments, firms experiencing a decline in institutional ownership should have greater freedom to invest in R&D programs. Similarly, firms experiencing relatively large increases in institutional ownership should feel pressured to cut back their expenditures on R&D programs. The findings presented in the table contradict this argument; no discernible differences exist between the groups.

Table 6
CHANGES IN INSTITUTIONAL HOLDINGS AND R&D EXPENDITURES, 1980-83

Changes in Institutional Holdings		
Change (# of Firms)	Average Amount	Chg. in R&D Exp.
Decline (88)	−5.53%	0.67%
Increase (236)	13.02	0.65
Largest Inc. (80)	24.33	0.64
Median Inc. (77)	10.67	0.41
Smallest Inc. (79)	3.84	0.89

Average change in institutional holdings as % of common equity and average change in R&D expenditures as % of revenues.

• **Stock Prices Climb with R&D Announcements.** Takeover critics' charges also imply that the stock market will devalue firms that invest in projects which impair short-term earnings to boost future performance. To test this prediction, we examined stock price reactions to a set of announcements in the *Wall Street Journal* that firms were embarking on new R&D projects. Selected for investigation was a random sample of 62 announcements, made between 1973 and 1983, of large firms' plans to undertake major R&D initiatives. Using the conventional methods of empirical financial economics, we estimated the net-of-market stock returns to shareholders of these firms around the dates on which the R&D projects were announced.

We found that, on average, shareholders experienced a positive return in reaction to the announcements. The price increases are statistically significant, and represent a substantial increase in the net-of-market value of the firms' equity. Evidently, investors view new R&D activities as favorable economic news and the market, in turn, rewards such activities.

What is Left of the Critics' Arguments?

Our data suggest that takeover targets are not more oriented toward long-term activity than other firms in the market; that the market, and institutional investors in particular, do not discourage—but probably encourage—long-term commitments; that institutional investors do not foster takeover activity or make it more difficult for target managements to resist takeover attempts; and that the economic performance of takeover targets in the period preceding takeover is consistent with the predictions of the economic theory of takeovers. We certainly do not claim that these results constitute conclusive proof that the charges of takeover critics are wrong. However, our results do make these charges considerably more difficult to accept—despite their undeniable popular appeal. These arguments have been shown here and elsewhere to be inconsistent with the available, systematic evidence.

This should not be not terribly surprising, given existing evidence on how takeover attempts and outcomes affect stock values. Studies show, among other things, that stock prices of defeated targets almost always revert to their pre-offer levels in the period after the defeat. This implies that the capital market usually does not revise its valuation of target corporations under incumbent management, despite the glaring spotlight of media attention and intense study by armies of professional analysts that normally accompany control contests. This evidence makes students of takeover activity skeptical, and rightfully so, of the myopia theory which rests so singularly on the assumption that takeover targets are undervalued by the stock market.

While we believe that the data support the economic theory of takeovers, showing them to be caused primarily by competition encouraging more efficient use of assets, we would add a caution. This theory suggests only that takeovers occur due to potential gains from recombination or redeployment of corporate assets; it does not directly imply anything about the competence or motivations of target management. We would thus stress, once again, that those subscribing to this view do not necessarily believe that all hostile takeovers are caused by inefficient target managements or that takeover defenses by target managements are usually bad for target shareholders. To the contrary, managers may be doing a good job of managing a target firm, yet be subject to a takeover bid because the bidder can realize special synergies from the asset combination. Similarly, target managements may undertake defensive measures not to preserve their jobs, but in order to generate higher premiums for shareholders. It is unfortunate that the economic view of takeovers, which is inherently a synergistic view, has come to be equated with an implicit criticism of target management. Entrenched management is only one of many possible reasons that bidders may perceive substantial gains from takeover activity. ■

Selected Readings

Bradley, Michael, A. Desai, and E.H. Kim. "The Rationale Behind Interfirm Tender Offers: Information or Synergy?" *Journal of Financial Economics*, Vol. 11 (1983).

Jarrell, Gregg. "The Wealth Effects of Litigation By Targets: Do Interests Diverge In a Merge?" *Journal of Law and Economics*, Vol. 28 (1985).

Jarrell, Gregg, and Ken Lehn. "Institutional Ownership, Tender Offers and Long-Term Investments." Securities and Exchange Commission, Office of Chief Economist, 1985.

Pound, John. "Institutional Investors' Effects on Takeover Activity: A Quantitative Analysis." Washington, D.C.: Investor Responsibility Research Center, 1985.

Pound, John. "Are Takeover Targets Undervalued? An Analysis of the Financial Characteristics of Target Companies." Washington, D.C.: Investor Responsibility Research Center, 1986.

Letters

(Continued from page 4)

dicted by IBM, see Fisher, Mancke and McKie, *IBM and the Data Processing Industry*, 1983, chapter 10). To suggest that IBM generally raised prices does not necessarily mean that it was going to sit idly when faced with a major threat in a particular segment of the market. It is important to examine long-term trends in share of market rather than isolated incidents. The fact is that efficient plug-compatible companies such as Storage Technology survived and prospered during the 1970s.

In response to Petty's second point, there are strong reasons to believe that IBM began to feel confident of its future antitrust prospects as early as 1976. The Appeals Court decided the important *Telex* case in favor of IBM in 1975 and the District Court judge dismissed the *Calcomp* case in 1977 without even a hearing. Although several suits were still outstanding in 1979, IBM was not to lose any. Furthermore, by the late 1970s, many of the issues in the original complaint, such as IBM's practice of bundling, were moot. Also, the market had expanded substantially to include substitutes such as the plug-compatible machines and superminicomputers, and the political climate toward antitrust had changed considerably with the Burger Court and a perceived threat of foreign competition.

In response to Petty's third point, we do not deny that IBM lost share of market in the early 1960s, but that is not inconsistent with our hypothesis. This loss in share of market is consistent with a number of hypotheses, including the possibility that IBM was restrained by the threat of antitrust in the early 1960s. (Remember its earlier history with antitrust.) However, the crucial points to note are the glaring increase in the rate at which IBM's share of the market fell starting about 1968 when the suit was initiated, and the dramatic reversal in trend in the late 1970s once IBM expected a favorable end to the suit.

Finally, the low price/higher volume trend noted by Petty is not inconsistent with our hypothesis that this business strategy is appropriate for a maturing market. But, what does he mean by a mature market? The mainframe market has been experiencing rapid growth in the 1980s, especially at the upper end, where industry observers have noted that IBM has been particularly aggressive in their pricing and introduction of new machines. Furthermore, their aggressive approach to the emergent microcomputer market and the relatively young minicomputer market of the 1980s contrasts with their late and slow entrance into the early minicomputer market of the 1970s.

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