

Letters

We welcome letters from readers, particularly commentaries that reflect upon or take issue with material we have published. The writer's name, affiliation, address, and telephone number should be included. Because of space limitations, letters are subject to abridgment.

The Uncertain Case against Acid Rain

TO THE EDITOR:

In his excellent article on "The I Ching of Acid Rain" (*Regulation*, September/December 1984), Peter Huber suggests that reducing emissions of sulfur dioxide (SO₂) in the United States would not yield proportional reductions in the acidity of rain in the Northeast. I think Huber understates his case. The supposed linkage between sulfate and acidity is much weaker than most people are aware.

Huber notes, for example, that European data for the 1960-75 period showed "significant increases in SO₂ emissions coupled with constant or declining deposition of sulfate." Evidence in the United States shows the same lack of correlation. Part of the case against SO₂ arose from reports that precipitation in the East became markedly more acidic from the mid-1950s to the mid-1970s. However, chemists at the Illinois State Water Survey re-analyzed the data and found that the changes in acidity were not related to the sulfate content of the rain.

In Virginia, for example, the acidity of rain increased by 74 percent during this period, while sulfate concentration fell by 3 percent. In Pennsylvania, acidity was up by 216 percent, while sulfate was down by 23 percent. And in Illinois, acidity increased by 27,000 percent, while sulfate increased by only 22 percent. In addition, the National Academy of Sciences' 1983 report notes that SO₂ emissions fell by 38 percent in the six New England states from

1965 to 1978, but there was no long-term trend either way in the acidity of the rain there.

The NAS report also notes that in EPA Region II (New York and New Jersey) SO₂ emissions fell by 40 percent during the period 1965-78; and the U.S. Geological Survey reports that sulfate concentrations in New York state fell by about 30 percent in that period. Again, there was no significant trend either way in the acidity of rain.

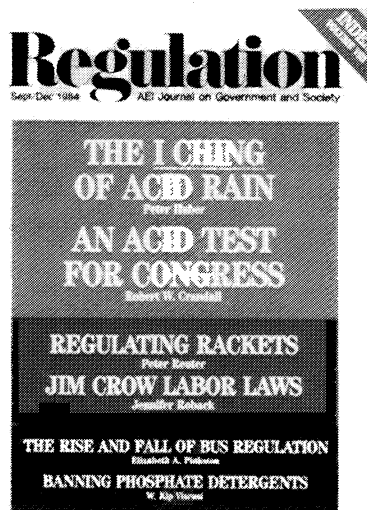
It is noteworthy that the Illinois state chemists cited above ascribe the increases in acidity to the marked drop in acid-neutralizing soil particles, which had been abnormally high in the mid-1950s as the result of widespread drought and accompanying dust storms in the Midwest. Another clue as to the role of these soil particles comes

Calcium in this case undoubtedly came from the airborne soil particles that form the nuclei of eventual raindrops.

As Huber noted, "trees can also add to soil acidity." Data from studies over the past half century show that this source of acidity is neither incidental nor insignificant. The decayed organic litter on the forest floor creates an active acidity in the humus that is typically five to fifty times stronger than the acidity in the rain. To what extent the acidity of the forest floor is neutralized by the alkalinity of the mineral soil beneath depends on a variety of factors in the forested watershed: the slope of the surface, the kinds and amounts of vegetation, the thickness of the mineral soil layer, its chemistry, porosity, structure, degree of saturation, and so forth.

The intensive four-year-long Integrated Lake-Watershed Acidification Study, conducted under the auspices of the Electric Power Research Institute, documented and measured the role of the forest floor in determining the acidity entering mountain lakes and streams. And the 1984 report of the congressional Office of Technology Assessment said: "Because of the large area of a typical watershed, most of the acid ultimately deposited in lakes and streams comes from water that runs off or percolates through the surrounding land mass, rather than from precipitation falling directly on water bodies. The amount of acidifying material that actually enters a given lake or stream is determined primarily by the soil and geologic conditions of the surrounding watershed."

It is also worth noting that a variety of reviews by competent bodies such as the Interagency Task Force on Acid Precipitation, the OTA report cited above, and the recent Critical Assessment Review report to the Environmental Protection Agency, as well as reports in the peer-reviewed scientific literature, specifically note the absence of confirmed evidence linking the acidity of rain with dead fish, dying trees, or threats to human health. Huber bends over backwards in saying, "The fairest conclusion on the scientific side of acid rain . . . is that for North American conditions, no fair conclusion can yet be reached." It might be more realistic to say that the scientific evidence strongly suggests that the measures proposed to reduce SO₂ emissions will not deliver meaningful benefits to sensitive ecosystems hundreds of miles away. The real problem is



from the Geological Survey data that show no significant correlation between sulfate and acidity in New York rain. The same data show a statistically significant correlation ($p > .05$) between acidity and calcium. For six of the nine New York sites, in fact, the correlation is "very highly significant" ($p > .001$), or very unlikely to have been due to chance.

that the facts have not been adequately aired in the media or in the legislative halls where decisions will have to be made.

*Alan W. Katzenstein,
Katzenstein Associates,
Larchmont, New York*

Lemon Aid for Car Buyers

TO THE EDITOR:

The article "Can Regulation Sweeten the Automotive Lemon?" (Perspectives, September/December 1984) perpetuates a confusion about when regulation is appropriate in the used-car market. This confusion also helps explain why the scholars you cite, Michael Pratt and George Hoffer, find that state disclosure laws have no effect on the quality of used vehicles.

The used-car market will not work efficiently when sellers have information about the quality of vehicles that potential buyers do not have and cannot gain by inspecting the car. So long as this informational asymmetry persists, the used market may fill up with "lemons" that appear to be good cars but are much more costly to repair than average.

Your article correctly notes that one of the functions of the used-car market is to transfer old and heavily used cars that will require a lot of maintenance to those who value them most highly (students and the mechanically inclined). It is misleading, however, to call an old car a lemon simply because it requires a lot of maintenance, since we would not expect a buyer to be so naive as to expect an old car to be as trouble-free as a new car. A "lemon" should be thought of as a car that will have more breakdowns than the average car of the same age and previous usage.

A market for lemons could be averted by the development of market institutions, such as warranties, that would eliminate the sellers' incentive to misrepresent the quality of used cars. Regulation of the used-car market is another alternative. But an adequate cost/benefit comparison of the two alternatives (regulation and seller guarantees) requires much more information than is available in the data Pratt and Hoffer use. Demonstrating that states with disclosure laws have no fewer lemons on the market than states without such laws does not prove that regulation provides no benefit; conceivably, regulation might rid the market of

excess lemons at less social cost than the private warranty mechanisms that may be in operation in states with no disclosure law.

In my study of the market for used pickup trucks, I found no evidence that the market for trucks less than ten years old was dominated by lemons. (The opposite was true for trucks more than ten years old.) Pratt and Hoffer find evidence of a lemons market for younger trucks because they fail to distinguish between classes of trucks on the basis of age or lifetime mileage—pieces of information that are available to buyers and therefore should not form the basis for regulation.

In short, the finding that regulation has no effect should not be surprising. The market for trucks less than ten years old had already been resisting domination by lemons, and regulation could hardly improve on this finding. Presumably trucks more than ten years old are sold mostly by owners who, unlike dealers, are not subject to the regulations.

*Eric W. Bond,
Pennsylvania State University*

THE EDITORS respond:

We asked Michael Pratt and George Hoffer to reply. They write:

"The difference between Bond's results and ours derives from our different definitions of the market for used vehicles. Bond compared original-owner vehicles with vehicles of the same age and similar mileage that were purchased used at some date. Our analysis compared recently resold vehicles with those that were kept by their owners. Given that there was not a significant difference between the age and mileage characteristics of these groups, the higher repair record of the recently resold group was supportive of the lemons hypothesis. The conflicting conclusions on whether there is a lemons market in used pickup trucks suggest the fragility of the statistical difference obtained from these models.

"We would not expect Bond to be surprised at our finding that regulation of this market seems to have no effect. However, we are perplexed at his characterization of our results. We do not say that regulation in general provides no benefits; we conclude only that a specific regulation, similar to that originally proposed by the Federal Trade Commission, seems to be no more effective than current state com-

mercial codes and existing market institutions. We do not dispute the possibility that there might exist a regulation that might be more effective than the FTC rule, or that the market institutions presently in place may have costs of their own."

Canadian Aerospace

TO THE EDITOR:

I much appreciated your piece on Canadian industrial policy ("Heavy Landing" for Canadair," Perspectives, September/December 1984). Your readers would profit from an update on the Canadian government's activities in this area.

Recently Ottawa announced that it would purchase twelve unsold Challenger aircraft from Canadair "in order to demonstrate the reliability" of the planes (*Le Devoir*, Montreal, March 6). This rationale seems dubious, since eight of the planes are used Challenger 600s (a discontinued line) that were returned by their owners. A more plausible explanation is that the government is trying to prop up Canadair's balance sheet by boosting its cash level and cutting its inventory of unwanted planes so as to make privatization more feasible. Needless to say, the government paid full price for the planes.

Moreover, a new "Canadair" is in the works—not surprisingly, since the very idea of an "industrial policy" leads to more and more instances of rent-seeking. The Trudeau government decided in 1982 that Canada should get involved in the helicopter industry in a big way. Together with the Quebec government, it proceeded to grant Bell Helicopters, Inc. (a subsidiary of the American company Textron) \$275 million to build a plant at Mirabel airport, fifty kilometers north of Montreal. (Mirabel, opened by the Trudeau government at great cost in the 1970s amid protests that it was unnecessary, is the world's largest airport, and one of the least used.) Depending on the exchange rate used, up to 79 percent of the plant's capital costs are being paid by taxpayers. To lure the plant to Quebec, the provincial government waived the *French Language Charter* so as to allow the children of incoming Bell employees to be educated in English. It also overruled the decision of its Quebec Agricultural Land Zoning Commission, which had forbidden construction on the Mirabel site.

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already posed by most high-technology investments.

Conclusion

The FCC's 1980 decision was based on cost-benefit grounds. That was then, and continues to be, the right criterion. But the balance of costs and benefits has changed. What might have seemed a tenable boundary in 1980 has now become an arbitrary wall that prevents effective efforts to meet consumers' needs and the challenges of competition. The obsolescence of the line can only mount as the technologies involved become increasingly complex and convergent.

It is ironic that among the main beneficiaries of continuation of the FCC's rules are AT&T's integrated foreign competitors, which are not subject to similar restrictions and which market combined computer and communications services on a global scale. Our leading supplier of telecommunications services and products

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is bound up in a net of regulatory restrictions at the same time that its foreign rivals, far from being handicapped by their governments, receive from them systematic aid and encouragement. This is not meant as an argument for trade restrictions of any sort—only for the elimination of the senseless restraints that this country imposes on the conduct of its own, leading firm in the world telecommunications market. If the public is to gain the full benefit of the revolution in computer and telecommunications technology, an equally dramatic revolution will have to take place in the world of regulation. ■

Letters to the Editor (Continued from page 3)

The market for the Mirabel plant's output is uncertain. The plant is to produce light bi-turbo helicopters. The government stipulated in 1982 that Canada's defense forces would not be purchasing any of the 'copters, and light bi-turbos account for only 0.6 percent of the Canadian civilian helicopter market. Indeed, only six helicopters of any type were sold in Canada in 1984, and the total number of 'copters in circulation has actually declined by one (to 956) since 1980.

Bell Helicopters, however, assures the government that its production (to commence in January 1987) will be ten 'copters a month, presumably for export. But the export market seems equally uncertain, for several reasons. First, a 1982 study by the consulting firm Aviation Planning Services (recently leaked to the press) claims that, as far ahead as 1990, light bi-turbo 'copters will hold only 16 percent of the world market, and that their share is not growing. Second, the world supply of light bi-turbo 'copters is more than adequate now. Only about ten such helicopters (of any make) were sold in the world last year, according to Mr. Phillippe Orsetti, vice-president in charge of

American operations for the French firm Aérospatiale.

Bell has made it exceptionally painless for potential buyers to place orders for these helicopters (a mere \$10,000 deposit, interest-bearing and refundable, is all that it requires). Still, it would be interesting to know how many such "firm" orders it has in hand. It is a field where the French Aérospatiale seems to have the technological lead. Bell initially claimed that the Mirabel 'copters would have revo-

lutionary new turbines, but it turns out that these are not available, so Bell will be going with the same motors used by all its competitors.

In its 1983 announcement, the federal cabinet proudly proclaimed that the plant would directly create 2,773 jobs. On March 4, 1985, Bell president Jim Schwalbe said the plant will employ 835 persons, if the ten-helicopter per month schedule can be maintained. This works out to a cost to taxpayers of \$330,000 for each permanent job created (assuming they are permanent).

In part to calm the howls of Ontario residents after this plum was granted to Quebec, the federal government announced, also in 1983, that a similar (but smaller) and equally subsidized helicopter plant would be built by the German firm Messerschmitt-Bolkow-Blohm in Fort Erie, Ontario.

How will these firms sell more than 120 noninnovative 'copters per year? Will the federal government agree to buy dozens of unsold helicopters that taxpayers will already have paid for? Only time can tell whether the new Progressive Conservative government will decide to follow its predecessors up the well-worn path of "industrial policy."

*Michael Krauss,
Université de Sherbrooke,
Quebec, Canada*

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