

Upfront

A Lot of Hot Air: A popular program for cutting air pollution from vehicles doesn't work

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To its residents who still have a sense of smell, Mexico City is redolent with the perfumes of exhaust and ozone. The metropolis's air pollution levels routinely rocket past the World Health Organization's maximum limits, leaving people sick in their wake. Vehicles are the most generous contributors to the city's acrid cloak, chortling forth 99 percent of the carbon monoxide, 81 percent of the nitrogen oxides, and 46 percent of the volatile organic compounds in the atmosphere, according to a Mexican federal report.

And so in 1989, the Mexico City government rolled out a new program to get its denizens out of their cars and onto public transportation. The program, called Hoy No Circula, forces most drivers to give up their cars one weekday every week according to the last number of their license plate. For example, people with license plates ending in "5" cannot drive on Fridays.

Regardless of what number their license plates end in, many residents seem to manage to drive on all days ending in "y," finds Lucas W. Davis, an economist at the University of Michi-

gan. In the February 2008 issue of the *Journal of Political Economy*, Davis shows that air pollution levels have not improved since the government implemented Hoy No Circula. Ridership on subways and buses has likewise remained the same. Yet sales of new cars, used cars, and gasoline have climbed, suggesting that many people



Morning rush hour is exhausting in Mexico City, where vehicles contribute the bulk of pollution to the city's notoriously acrid smog. Driving restrictions have failed to spare the air.

buy second cars—often older cars with worse emissions—so that they can sidestep the driving restrictions.

The problem with Hoy No Circula is that "it's arbitrary, it's inconvenient, and it doesn't get the prices right," says Davis. "A better solution is to raise gas taxes. There is a substantial literature showing that people respond to a rise in the price of driving by driving less," he notes. "With higher gas taxes, some people are going to drive as much as before. But

others are going to stop driving altogether. And that's efficiency." He further notes that because most drivers in Mexico are middle- and upper-class people, raising the price of driving would not adversely affect the poor.

To measure the effects of Hoy No Circula, Davis examined eight years' worth of hourly measures of five major pollutants all around Mexico City, taken both before and after the program's implementation. Exploring how residents got around the regulations required him also to track measures such as car sales, gasoline sales, and vehicle registrations.

Not all attempts to change drivers' behavior end in failure, notes Davis. For example, London's congestion pricing—which charges motorists who use particularly choked motorways—has reduced both greenhouse gases and particulates in the center of the city, recent studies find. But congestion pricing would not work in Mexico City because the city does not have a well-defined center, he says: "It's not clear where the congestion is, because people live and work everywhere. Different strategies work in different places."

Because Hoy No Circula is cheap and easy to enforce, Bogotá, Santiago, and São Paulo have adopted similar programs. As a result, some 50 million people are subject to driving restrictions based on license plates. Likewise, Mexico City is expanding the program to include Saturdays—despite the evidence that Hoy No Circula has not only failed to improve air quality, but also increased the number of vehicles on the road.

"Policymakers would like to do something," Davis says. "But it's hard to separate wanting to do something from wanting to *appear* to be doing something." —Alana Conner