How price shocks in formative years scar consumption for life

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Those shocks scarred their gas consumption for life. "Those who came of driving age during the oil crises of the 1970s drive less in the year 2000," the paper found. The doubling of gasoline prices in the late 1970s saw that generation drive 3.6% to 8.7% less than those born earlier or later, according to data the study tracked on miles traveled and vehicle ownership; a smaller group of 0.4% did not buy cars and used public transit.

The power of 'first impressions'

"Individuals respond to price changes during their formative driving years much more so than to price levels," the paper stated. "[Those] effects are not explained by recessions, income, or costly skill acquisition (learning to drive) and are inconsistent with recency bias, mental plasticity, and standard habit-formation models. Instead, they likely reflect formation of preferences for driving or persistent changes in its perceived cost."

"The lack of an effect of gasoline price shocks outside this formative window suggests that initial experiences are more important than cumulative experience in some settings," the paper continued. "First impressions … matter a lot."

For sure, many teens in the 1970s may have had their parents foot their gasoline bills, but the price of gas would certainly have been dinner-table conversation, van Benthem said. "Gasoline is one of these unusual commodities where the price is on a massive screen. It's extremely visible to you."

The authors embarked on their study while exploring the driving patterns of millennials, given that many of them prefer to live in cities that have mass transit options and therefore may drive less. They discovered a "weird little dip" in driving by people that were born around 1964, and decided to delve deeper, said van Benthem. That got them started on what he saw as the central question of their study: "Could a big shock to the price of gas
scar your consumption behavior for life if it happens exactly during what we call the formative years, like your teenage years in which you learn to drive?"

The study used data on how people commuted to work from the census and the American Community Survey; vehicle and driver data from the National Household Travel Survey; Energy Information Administration data on gas prices; as well as driver licensing data from the Minimum Driving Age Database and the Insurance Institute for Highway Safety.

"Even though we use the oil crises to motivate our finding that gas prices matter decades after you learn how to drive, our main study is not really about those two oil crises," van Benthem said. The focus of the study is on how any gasoline price shock in formative years can shape later-life driving behavior, he explained—and there have been many more than just the two oil crises in the 1970s. He noted that prior research has studied that aspect of scarred consumption in different contexts.

The behavioral patterns rooted in the formative years may play out in other settings, too, van Benthem said. For instance, the electricity price spikes in Texas in early 2021 may have been "scarring events," even though they aren't about occurrences in formative years. "I would imagine that people who live through those sorts of experiences will be more sensitive to electricity prices and maybe more likely to insulate their homes and be more careful about energy consumption when they buy their next home. In all kinds of similar contexts, I would expect similar phenomena."

Americans have an affinity for driving

Unlike in western Europe, the U.S. is "a notably automobile-friendly nation," the paper noted. Data shows that about 76% of workers commute alone in a private vehicle (85% including carpoolers), compared with 56% (64% including carpoolers) in the U.K. Also, it is possible in most U.S. states to obtain a "full-privilege" driver's license before the age of 18, which is the minimum age for those licenses in most of Europe. In the late '70s, the minimum age to get a driver's license was 15 or 16