

observations



A biodiesel-fueled truck transports coal to make energy for the UMass Amherst campus.

Fill'er up

RUN YOUR VEHICLE on vegetables! Biodiesel fuel—processed veggie oil that can be used to run diesel trucks, buses, and cars—sounds like the perfect remedy for our current reliance on pollutant-potent diesel fuel. Biodiesel cuts emissions up to 45 percent, lowers our reliance on foreign oil, requires no new equipment purchases, and is safe enough to drink. Sound too good to be true? Maybe it is—biodiesel can cost up to 50 cents more per gallon than regular diesel, it underperforms in cold weather, and it actually emits more nitrogen oxide, the main ingredient in smog.

Add biodiesel to the dizzying list of alternative fuels being experimented with nationwide as Americans seek to mitigate the impacts of diesel fuel. Accounting for a mere 5 percent of driven miles, diesel-powered vehicles are responsible for one-third of the nation's nitrogen oxide emissions and one-half of urban particulate matter, the soot linked by the Environmental Protection Agency to 15,000 premature deaths each year. Despite the plethora of fuel alternatives, not one has emerged as the ultimate solution to our woes. Compressed natural gas, embraced for its low soot and smog output and historically cheaper than diesel, requires buying new vehicles, building new maintenance facilities, and installing expensive high-pressure fueling stations. Ultra-low sulfur diesel, which can be readily used with existing infrastructure and cuts particulate matter emissions up to 95 percent, is pricey, and special particulate traps—at \$5,000 to \$8,000 a pop—must be installed on vehicles to fully capture the environmental benefits. Electric vehicles require time to recharge. Hybrids do not meet federal standards for alternative fuel credits. Methanol has abysmal fuel efficiency.

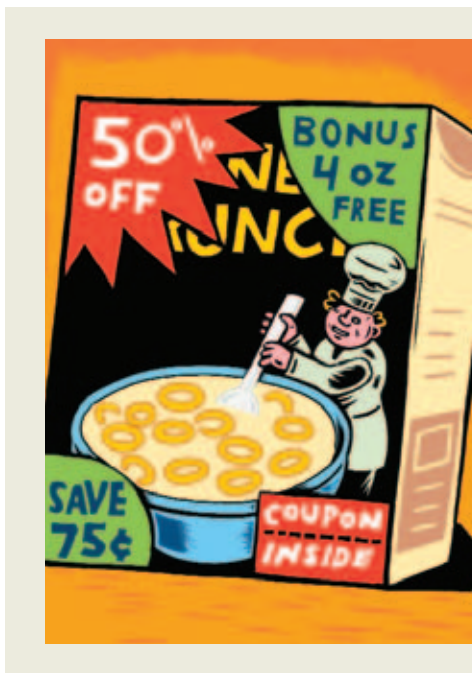
Given this array of substandard options,

New England fleet managers are grappling to find the best solution. In Norwalk, Connecticut, experiments with both natural gas and biodiesel yielded high costs, prompting officials to invest in ultra-low sulfur diesel and a new fleet of buses outfitted with particulate traps. UMass Amherst's Fleet Services, seeking to save up to \$20,000 per year through federal clean fuel incentives, opted for biodiesel because of the lack of nearby natural gas or ethanol fueling facilities. The Massachusetts Bay Transportation Authority ini-

tially chose compressed natural gas buses to clean up air quality around Boston, but costly delays in building new natural gas facilities have compelled them to supplement with new ultra-low sulfur diesel vehicles.

With no clear winner in the alternative fuels game, transit fleets are relying on trial and error to find the best balance of cost and effectiveness. But they remain hopeful that one day reducing the impact of diesel fuel will not mean wrestling with imperfect options.

—Mary C. Fitzgerald



Easy money?

Coupons are a bargain for people who take the time to clip them, but everyone else pays a higher price, right? Wrong—at least for breakfast cereals. Shelf prices on cereals are actually lower when coupons are offered, according to recent research by Aviv Nevo and Catherine Wolfram at the University of California at Berkeley. Like the market for many products, the cereal market is dominated by a few large producers. So if Post offers a coupon on Raisin Bran, Kellogg's often reacts by lowering its shelf price or offering a coupon, (continued on next page)

Observations

CONTINUED FROM PREVIOUS PAGE

too. This may force Post to cut its shelf price to compete; then all consumers pay less.

Yet despite the threat of these price wars, manufacturers still distributed about 300 billion coupons in 2001. Why? Because coupons are one of the most effective ways of introducing new products and increasing market share. Discounts can entice price-sensitive and non-brand-conscious customers to try a new product, and some of those who try it will then continue to purchase it even without the price break. Plus the mere existence of a coupon alerts consumers about the product, which may lead them to buy the product in the future. Best of all, coupons are cost-effective. A recent study by Promotion Decisions showed that coupons generate almost as much sales volume as discounts direct to retailers, at half the cost.

But manufacturers would prefer to reap the benefits of coupons while avoiding their price war side effect. To this end, some have started putting their coupons on complementary products; for example, a cereal company might put one on a milk carton. Unlike traditional coupons in Sunday newspapers, these cross-coupons are not publicly published, making them difficult for competitors to detect and therefore lessening the chance of price slashing. Other manufacturers use information from customer purchases to generate instant coupons at the cash register for competing products (if a customer buys Dannon yogurt, they might get a coupon for Colombo)—also hard for competitors to track. And companies are using Internet and paperless coupons to reduce distribution costs and better target their customers. It looks like the days of unintended discounts for nonclippers may be numbered.

—Jiaying Huang

WRITE TO US We are interested in hearing from you. Please address your letters to Federal Reserve Bank of Boston, Regional Review, P.O. Box 2076, Boston MA 02106-2076. Or send us an email at jane.katz@bos.frb.org.

SPENDING CUTS mean making difficult tradeoffs; every line item matters to someone.

