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Slate

The Mystery of the 5-Cent Coca-Cola

Why it's so hard for companies to raise prices.

By Tim Harford

The price of the first serving of Coca-Cola was 5 cents in 1886, about a dollar in today's money. Coke no longer sells for a nickel, and that is not terribly surprising. What *is* surprising is that it took more than 70 years for the price of Coke to change.*

Economists call this "nominal price rigidity." My salary is not tweaked each month to reflect the latest inflation figures, and neither is yours. Restaurants do not reprint their menus, nor wholesale firms their catalogs, if the cost of their inputs changes by a penny.

That might be a problem. Of course, if inflation is low, money has a predictable value from month to month, and that predictability is worth a lot. But while it is handy to know what your pay packet will buy, prices need to be able to change relative to one another to reflect demand and the underlying costs of production. If prices don't adjust smoothly for any reason, then the economic consequences could be serious. If wages can't fall in a recession, then people will lose their jobs instead. If the price of a car or a restaurant meal can't fall when demand does, sales will collapse with much the same effect.

Coke was clearly an exceptional example of rigid prices. Daniel Levy and Andrew Young, the economists who analyzed the case, report that Coke's price stayed at 5 cents a serving while the price of other products bounced all over the place. The price of sugar tripled after World War I before falling back somewhat; over the past six decades, the price of coffee has gone up eightfold. Coke itself was taxed first as a medicine, then as a soft drink, and survived sugar rationing. All the while, the price stayed at a nickel.

Part of Coke's problem was the cost of replacing vending machines that accepted only nickels—and the fact that the alternative, dimes, represented a 100 percent price hike.

(The boss of Coca-Cola wrote to his friend President Eisenhower in 1953 to suggest, in all seriousness, a 7-and-a-half-cent coin.)

Most companies don't wait so long to change prices if they need to. Researchers have tended to conclude that many prices change every year or so, often sooner. Levy and some colleagues looked at supermarket pricing in the mid-1990s and found, based on detailed accounting data, that to change the price of a single type of product in a typical supermarket cost 52 cents in printing, labor, and errors. The total of all such changes was about $100,000 per store, per year—still less than 1 percent of revenue.

Technology makes it ever easier to change prices using bar codes, Web sites, and laser-printed menus. Amazon always seems to be changing book prices. Coke vending machines now take very little effort to reprogram. So, should we conclude that "menu costs" no longer matter?

That would be too optimistic. Economists have long argued that even small "menu costs" could cause large economic distortions, because when firms are pondering whether to pay those costs, they don't consider the social benefits of a more-accurate price, only their own profits.

A prize-winning paper from Carlos Carvalho recently showed that it does not even help if many prices adjust quickly, because those that change slowly will distort the rest. Amazon may be able to adjust its prices easily to reflect its costs, but that is of little use if those costs are distorted by slow adjustments from the bookbinders or the freight handlers.

Coca-Cola's experience reflected exactly that: Long before the introduction of vending machines, they had signed a perpetual fixed-price contract to supply their bottlers. Without a long-term contract, potential bottlers would have been nervous that Coca-Cola would have screwed them over on the price of Coke syrup after the bottling plant had been built. But these long-term contracts were signed at a time of very low inflation, and nobody appears to have considered the possibility that Coca-Cola's costs might start to take off. The contracts were eventually renegotiated in 1921 to allow them to move up and down with the price of sugar.

I drank a half-liter bottle of Coke while writing this article, and it cost me 85 pence ($1.70) at the corner shop. I'd rather have paid a nickel, but price changes are important. Perhaps I shouldn't be too ungrateful.

***Correction*, May 14, 2007:** *The piece originally said that the price of Coca-Cola remained the same for more than 60 years. In fact, it remained the same for more than 70 years, from 1886-1959. (Return to the corrected sentence.)*

*Tim Harford is a **Financial Times** columnist. His latest book, The Logic of Life, will be published in paperback on Feb. 10.*