

If the Price Ended in 99, You Probably Overpaid

The age-old practice of prices ending with a 9 now serves to camouflage bad deals



The strategy of pricing items just below a dollar threshold has been around so long no one is sure of its origins. PHOTO: FREDERIC J. BROWN/AGENCE FRANCE-PRESSE/GETTY IMAGES

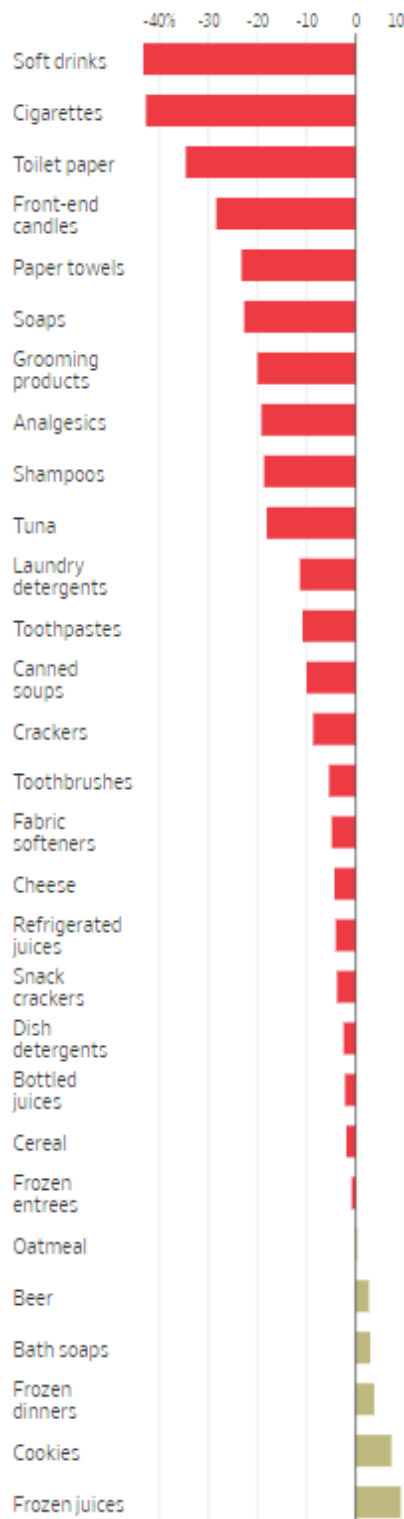


By [Josh Zumbrun](#)

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As you wander the aisles this holiday season you're likely to encounter the number 9 everywhere. There's \$4.99 for that box of Christmas candy, \$299 for that TV, and \$99.99 for those stylish headphones.

Price difference between average non-9-ending and 9-ending goods prices, by category



Note: Prices at Dominick's Finer Food between Sept. 14, 1989 and May 8, 1997.
Sources: Journal of the Association for Consumer Research; Avichai Snir; Daniel Levy

The trick of using 9s to price items just below some major threshold is so common that we rarely think about it, and if we do it's likely to pity the poor suckers who don't know \$99.99 is the same as \$100.

But the truth is you've probably been tripped up by 9-ending prices without even realizing it. A number of researchers have found something surprising about 9-ending prices. It's not just that \$9.99 isn't a better deal than \$10; it's that it's often actually a bad deal.

"The 9-ending does some magic to us," said Daniel Levy, an economics professor at both Emory University and Israel's Bar-Ilan University. In a 2021 paper, Mr. Levy and Avichai Snir of Netanya Academic College in Israel found, based on years of data from American grocery stores, that when items' prices ended in 9, [they were on average 18% higher](#) than when those same items' prices had different endings.

The finding held across a range of items such as cheese, crackers, bottled juices, canned soups, dish detergents, painkillers, cigarettes, toilet paper, soft drinks, shampoos: When an item's price ended in 9 it was typically more expensive than when it didn't.

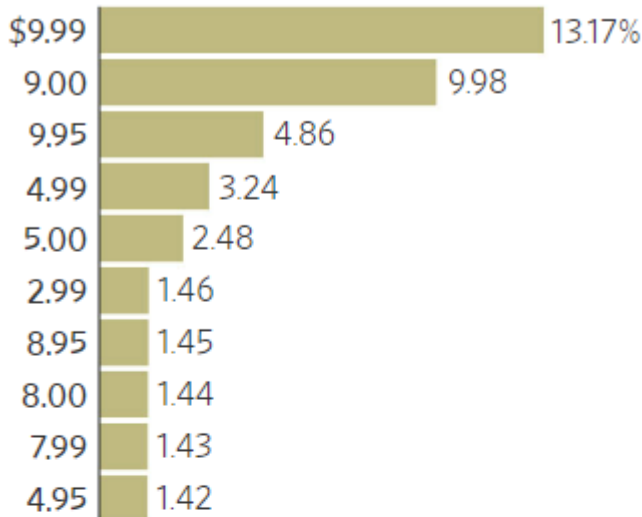
The strategy, called "just below" pricing, as in "\$9.99 is just below \$10," as well as psychological, odd or charm pricing, has been around so long no one is sure of its origins. One theory is that the advent of the cash register, which was originally marketed as a device to stop employees from stealing, led to -9 and -99 ending prices because they forced the clerk to open the register—ding!—and record the sale to produce change, making it harder for them to steal the money they had just received.

Robert Schindler, a marketing professor at the Rutgers School of Business-Camden, is skeptical of the cash-register theory because he's found [Macy's](#) newspaper advertisements as early as 1880 touting prices like \$.99 and \$1.99 and proclaiming them "positively the best bargains ever offered, and cannot be equaled by any other house." He believes the origin was always the psychological trick: consumers associate 99-cent pricing with good deals because it has been heavily used in advertisements over the years for sales.

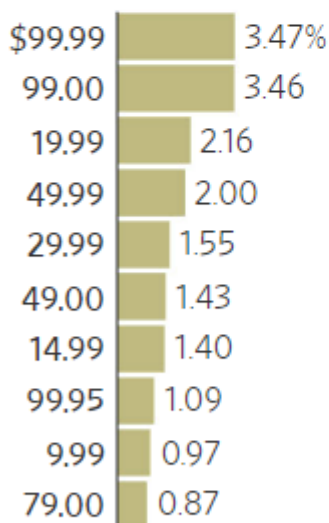
Mr. Schindler, 15 years ago, proposed the existence of a “99-meaning paradox”: Consumers strongly associate prices ending in .99 as being low, but that this cannot be due to a correlation between the 99-ending and low prices because such a correlation doesn’t exist.

Top 10 most frequent prices

Three-digit price endings



Four-digit price endings



Note: Shows personal-electronic-product prices gathered from BizRate between March 26, 2003 and April 15, 2005.

Sources: Review of Economics and Statistics; Daniel Levy; Dongwon Lee, Haipeng (Allan) Chen; Robert J. Kauffman; Mark Bergen

Yet if consumers know by now that \$9.99 is basically the same as \$10, why do retailers, who after all put serious thought into their pricing strategy, still use it?

There are two possible reasons that 9-ending prices still work. The first is simply the familiar idea that consumers read prices from left to right, and so might tend to interpret \$9.99 as \$9-something, and who wouldn’t rather pay \$9 than \$10?

The second is that people associate 9-ending prices with good deals, or items that are on sale. They don’t see \$3.99 is a lot less than \$4—obviously, it isn’t. People often buy dozens of items at once and can’t recall the prices they typically pay. It is exhausting to wander the aisles of the grocery store trying to remember what eggs and nutmeg and cinnamon and vanilla and milk and bacon and sausage cost the last time you bought them.

The presence of a 99 serves as a rule of thumb to determine whether a price is better than is typical.

In another paper, Profs. Levy and Snir, along with Alex Gotler of Israel’s Open University and Haipeng Allen Chen of the University of Kentucky, uncovered [why retailers use 9-ending prices](#).

It is simply this: When stores raise a price, they strongly prefer charm prices to soften the blow. When they lower prices, however, they have many

ways to call attention to the sale, such as tags with bright red letters at the grocery store that say “SALE: 2 for \$7.00” or “SALE: \$8.50. Usual price \$8.99” which don’t depend on the 9-endings, or dropping the price all the way to the next major pricing threshold.

“When I raise the price, I make them 9 ending,” said Mr. Levy. “We don’t want people to notice price increases. The retailer wants people to think the price is still low.”

A companion study in Israeli grocery stores found the same effect, suggesting it isn’t just a quirk of U.S. retailers. The prevalence of 9-endings is common far outside of grocery stores too. In other research, Mr. Levy has documented charm pricing extensively in a database of prices across the internet for items such as CDs, videogames, DVD players, digital cameras, computers and so on.

When prices hit a major 9-threshold, they tend to stick there. Prices ending in \$.99 or \$9.99 or \$99.99 are even stickier and less likely to be good deals. You can intuit why. What are the odds that the lowest price someone could profitably sell you a certain size TV would be \$399.99? It’s obvious, when you think about it, that \$399.99 is probably marked up from the best price that the market could offer.

“Most of us see 9 and think it’s a bargain. It’s exactly the opposite,” Mr. Levy said.

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