



# Behavioral Public Finance: Tax Design as Price Presentation

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## *Abstract*

In this essay we review the evidence from marketing research about price presentation of consumer products and discuss how these lessons have been applied—consciously or unconsciously—in the design of the U.S. tax system. Our perspective is that, in most situations, the designers of the tax system attempt to minimize the perceived burden of any given amount of tax collections. We allow, though, that in certain situations an additional goal is to maximize the perceived burden of others. We also investigate how, when the objective is to encourage a particular activity, price presentation may enhance the achievement of that goal for a given amount of tax subsidy. We conclude by addressing the ethical and normative implications of price presentation in the tax system.

**Keywords:** tax policy, behavioral economics, price presentation

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## 1. Introduction

No one doubts that in the United States, and in many other countries, political campaigns have become sophisticated marketing exercises, featuring television advertising, telephone solicitations, and mass mailings. Candidates and professional consultants to candidates have raced to digest lessons from consumer marketing companies in an effort to persuade voters to elect them in preference to other candidates.

A less remarked upon phenomenon is the extent to which tax systems reflect the lessons of marketing research. The objective in this case is not to increase purchases, but to reduce the perceived burden of the price or, in this case, tax. Holding constant the *actual* burden of taxation, most policymakers<sup>1</sup> would like to minimize the burden that taxpayers *perceive*.<sup>2</sup> This, we suggest, would increase legislators' chances of re-election.<sup>3</sup> In marketing, a similar question has been considered, namely *price presentation*, where the objective is to present prices for products in a way that minimizes the perceived burden of these expenditures (see, e.g., Biswas, Wilson and Licata, 1993; Krishna, Briesch, Lehmann and Yuan, 2002).

In this essay we review the evidence about price presentation of consumer products and discuss how these lessons have been applied—consciously or unconsciously—in the design of the U.S. tax system. Our perspective is that, in most situations, the designers of the tax system attempt to minimize the perceived burden of any given amount of tax collections. However, in certain situations an additional goal may be to maximize the perceived tax

burden of high-income families, so as to reduce the perceived *relative* burden of the vast majority of taxpayer-voters.<sup>4</sup> We also investigate how, when the tax system is used to encourage a particular activity, price presentation may enhance the achievement of that goal for a given amount of tax subsidy.

The idea that people may systematically misperceive their tax burden is not a new one to public finance. Mill (1848) suggested that taxpayers systematically underestimate the burden of indirect taxes as compared to direct taxes. This hypothesis was taken up by Buchanan (1967), who suggested “fiscal illusion” as a reason for excessive government expenditure, and spawned a substantial empirical literature. In his survey of this literature, Oates (1988) concluded that the empirical literature “has not made a persuasive case for [the] existence and importance” of fiscal illusion.<sup>5</sup> Our focus is not how the choice and mix of taxes may affect perceived tax burden, but instead on how the design of a given tax—the income tax, for the most part—can affect this perception. A related and highly insightful paper is McCaffery (1994, 2000), who argues as we do that cognitive biases can help explain major structural features of existing tax systems that are otherwise difficult to understand. He focuses on somewhat different aspects of the tax system than we do, and does not draw on the marketing literature as we do.

We are not arguing in this paper that the desire to capitalize on the lessons of the price presentation literature is the only, or even the principal, explanation of how the U.S. tax system is structured. To be sure, there are alternative explanations for many of the tax features we address, stemming both from the theory of optimal taxation (i.e., minimizing administrative and compliance costs) and from the theory of public choice (i.e., rewards offered through the tax system are a less visible and therefore more attractive means of channeling fiscal resources to special interest groups). Instead we are hoping to add a new perspective on tax design, and to bring to it the insights already garnered in the marketing and psychology literatures. It is a perspective that raises particularly fascinating normative issues, and for that reason we conclude the paper by briefly addressing the ethical and normative implications of price presentation in the tax system.

## 2. Framing and Context

Much of the theory of price presentation is based on the view that consumer behavior deviates in systematic ways from that predicted by the standard economic theory of demand. Standard economic theory would predict that consumer response to equivalent price cuts should not depend on how the price cut is presented, e.g., in percentage or dollar terms, or with or without an external reference price. In contrast, the theory of price presentation builds on framing and context effects in psychology (Tversky and Simonson, 1993), prospect theory (Kahneman and Tversky, 1979, brought to economics by Thaler, 1980), as well as many other psychological theories. The basic insight is that how a situation is framed can affect how people respond to it.<sup>6</sup> There is a vast amount of evidence, largely but not exclusively based on experiments, that indicates that this is a ubiquitous phenomenon. The existence of framing effects has been documented in medical and clinical decisions, perceptual judgments, responses to social dilemmas, bargaining behaviors, auditing evaluations, and many other decisions.<sup>7</sup>

It is certainly taken seriously by those who sell products to consumers. We suggest below that certain aspects of the U.S. income tax system and state and local sales tax regimes appear to reflect, indeed take advantage of, these same behavioral patterns.

### ***2.1. Discounts from a High Base versus Penalties from a Low Base***

We begin with a fundamental aspect of the income tax system. To calculate tax, one first calculates a baseline gross income, and then subtracts a series of exemptions and deductions.<sup>8</sup> These include exemption allowances for dependent children, medical expenses, charitable contributions, and a host of other examples. Ignoring framing or context considerations, one could construct a nearly equivalent income tax system that features a lower baseline tax liability, plus tax *surcharges* for those who are uncharitable, who have low medical expenses, who have few or no children, and who are not blind or elderly.<sup>9</sup>

Schelling (1981) pointed out that the tax table can be constructed by using as a default case either a childless family (as is currently done) or, for example, a two-child family. The tax difference between a childless family and a two-child family is naturally framed as an exemption (for the two-child family) in the first frame and as a tax premium (for the childless family) in the second frame. Schelling reported that this seemingly innocuous difference had a large effect on student judgments of the preferred relationship between income, family size, and tax liability. The students rejected the idea of granting the rich a larger exemption than the poor in the first frame, but favored a larger tax premium on the childless rich than on the childless poor in the second frame.

Of course, the idea that any given price should be framed as a “discount” from an externally provided reference price to make the consumer believe that he or she is getting a bargain or special deal is pervasive in marketing. This “comparative pricing” is practiced widely by retailers, for example in newspaper advertising or freestanding inserts. As the term implies, comparative pricing compares a current selling price to a higher advertised reference price, such as a manufacturer’s suggested list price. (Frankenberger and Liu, 1994). It is also widespread in such areas as insurance, where policies feature non-smoker or safe-driver discounts rather than smoker or bad-driver surcharges.

Having a series of tax exemptions is also consistent with prospect theory (Kahneman and Tversky, 1979). As originally suggested by Kahneman and Tversky (1979), and empirically tested in the domain of price decreases and increases (see, e.g., Kalyanaram and Little, 1994; Kalwani et al., 1990), deviations from a base are regarded in terms of “gains” and “losses.” The value from the gain (loss) is concave (convex) in the amount of the gain (loss), and the value function is steeper for gains than for losses. Thus, a taxpayer should perceive him(her)self to be better off when given two tax breaks of  $\$x$  versus one tax break of  $\$2x$  (disaggregating gains is good based on the concavity of the value function in gains). He or she would prefer a single tax increase of  $\$2y$  versus two tax increases of  $\$y$  each (aggregating losses is good based on the convexity of the value function in losses). Finally, he or she would feel better off when given a mixed loss (loss with smaller gain) versus an equivalent net loss (for further details, see Linville and Fischer, 1991; Thaler, 1985).<sup>10</sup> This last scenario is analogous to paying a large tax amount (loss) and then getting an exemption (smaller gain).

## 2.2. *Aggregating or Segregating Gains and Losses*

Kahneman and Tversky's (1979) results suggest that, for a given total discount (deduction), taxpayers would prefer to have it come as several smaller ones rather than one big one. Their results, however, apply when the increases and decreases are large enough to be noticed by the taxpayer. Other researchers suggest that if gains and losses are not large enough, consumers may ignore them altogether (Morwitz, Greenleaf and Johnson, 1998). This naturally brings up the question of whether it is better, from the "seller's" standpoint, to lump together discounts or to separately delineate each one. In this context, it is interesting to note that many grocery store retailers now present consumers with their "total savings" in the bill generated at the checkout counter. The motivation is presumably that if the total saving is large and each individual saving is small, the total will be more salient and consumers may be more likely to dwell on the savings; if the savings were not aggregated and presented together, consumers may not encode them as savings (Krishna and Johar, 1996) or may ignore them altogether (Morwitz, Greenleaf and Johnson, 1998).

For most taxpayers, however, there are a few big deductions—state and local taxes, charitable deductions, and mortgage payments, the last being the biggest. When these are large, allowing taxpayers to separately deduct them—to "itemize" them, in tax code language—would maximize their visibility. Allowing taxpayers to itemize deductions, rather than offering a standard deduction, may make the sum total of these large deductions appear bigger, consistent with the "aggregating noticeable gains" argument presented earlier. From this perspective, though, offering a large enough standard deduction so that it replaces itemization of deductions for more than 70% of taxpayers, seems not to maximize the positive perception that taxpayers could get from the tax system. However, for many of those who now take the standard deduction, most itemizable deductions may be too small to be salient. The tradeoff from a tax policy perspective is the cost of keeping records of the deductions and, from the IRS's standpoint, monitoring the individual deductions.<sup>11</sup> Having a standard deduction eliminates these costs for 70% of individual taxpayers.<sup>12</sup>

## 2.3. *Implications for Sales Tax*

Morwitz, Greenleaf and Johnson (1998) show that in experimental situations presenting auctioneers' commissions or shipping and handling charges separately for a product purchase reduces the perceived cost for the buyer. They suggest that buyers may focus on the larger, more salient payment and may ignore the smaller one. In one of their experiments subjects are asked to bid in two auctions, one where the auctioneer's commission is included in the final price and one where it is not. They find that people bid a higher price in the latter case.

Based on these results, one would expect that if sales tax is presented separately consumers would perceive paying a lower price for the product, and thus be more inclined to purchase it. This suggests that there may be a conflict of interest between the government's price presentation objectives and those of the companies that sell products to consumers and in many cases remit taxes to the government. The government, to reduce dissatisfaction with taxes, would like the tax to be hidden in the final price, while the retailer would like the tax component to be separately identified.

This reasoning raises the question of why the final income tax liability isn't broken down into too-small-to-be-salient pieces.<sup>13</sup> To a small extent, this does happen, as the standard Form 1040 includes lines for five separate "other" taxes. But these are not substantial components of total income taxes. We suspect that the reward to this strategy is reflected more in the proliferation of scores of small taxes and fees at the local, state, and federal level rate.

### **3. Timing Issues**

Many price presentation issues involve the framing of the price over time. The standard economics model presumes that, in the absence of imperfect capital markets that can lead to liquidity constraints, individuals will be indifferent concerning the timing of payment streams that have the same present value. There is evidence in marketing, however, that framing the time path of a given present-value stream of payments can affect its perceived value.

#### ***3.1. Pennies a Day***

Stating a continuing cost as a price per day rather than per month or per year is a pervasive marketing phenomenon used to sell periodicals, car leases, donations to charities, and many other products. This strategy is supported by research that shows that people perceive the same per-period cost to be lower when it is stated in the smallest possible period. Gourville (1998), for example, demonstrates in two laboratory experiments that people are much more willing to donate to charities when the outlay is presented in "pennies-a-day" terms versus when the same outlay is presented as an aggregate payment. His explanation is that the former framing makes people retrieve and consider small ongoing expenses as the standard of comparison, while the latter framing fosters the retrieval and consideration of large infrequent expenses. Thus, the pennies-a-day framing makes the perceived outlay smaller.

In his nomination acceptance speech and later during the 2000 presidential campaign, Al Gore derided George Bush's tax cut plan on the grounds that the average family would get about enough money to buy one extra Diet Coke a week, "about 62 cents in change." Gore later corrected this to mean a Diet Coke per day rather than per week, but nevertheless his framing effort was clear in comparison to referring to the Bush tax cut plan as a \$1.6 trillion tax cut over a ten-year period.

#### ***3.2. Withholding versus Lump-Sum Payment at the End of the Year***

Whether consumers would feel better or worse off with "withholding" versus a lump-sum payment of taxes at the end of the year is a topic for debate since the literature in marketing and psychology provides evidence for both. The behavioral decision theory literature (Thaler, 1985) suggests that consumers would prefer to aggregate losses into one lump-sum payment, unless the periodic payments become small enough. In that case, Gourville's (1998) study suggests that frequent withholdings may generate a comparison

with other small monthly payments, such as water or electricity bills, and thus the perceived tax burden may be lower.<sup>14</sup>

Many conservative politicians in the United States are convinced that withholding reduces the perceived tax burden, and for that reason many have opposed it. Ronald Reagan talked about challenging state income tax withholding in his campaign for California governor, but he did not pursue this while in office. In the mid-1990's, House Republican majority leader Richard Arney championed a flat tax without withholding. The conservative politician Milton Friedman has called for the abolition of the withholding system.<sup>15</sup>

Aside from its effect on perceived burden, most tax administrators view withholding, along with information reports and random audits, as the backbone of the tax collection and enforcement system. For this reason, abandoning withholding would almost certainly increase the *actual* cost of raising funds aside from its impact on the *perceived* cost.

### 3.3. *Discounting of Future Effort*

“Slippage” (non-redemption) of consumer rebates is very high. Estimates of redemption for manufacturer rebates range from as little as 1/4% (Los Angeles Times, Oct. 9, 1997) to 20% (Wall Street Journal, Feb. 10, 1998). For example, The Learning Company, a maker of educational software, pays out rebates to 8% to 10% of the consumers eligible for its \$10 offers, and 20% of the \$20 offers. Soman (1998) provides an explanation for the high “slippage” rates. He demonstrates through two laboratory experiments that people underweight future effort relative to future savings. The idea is that people buy goods with rebate coupons, but then do not expend the effort to actually send it in: people don't anticipate that they won't bother—or forget—to apply for the rebate, and are enticed to buy the product nevertheless. This phenomenon could be a factor in explaining the political support for targeted credits and deductions, if consumers fail to anticipate the effort involved in documenting the tax-favored activities. The same mechanism may apply to VAT refunds, encouraging consumers to perceive the net-of tax cost and therefore to buy more, with consumers not realizing the real odds of their filling in the paperwork later.

### 3.4. *Price Sales and Tax Sales*

Sales promotions are pervasive, both from manufacturers to the trade (wholesalers, retailers), and from the trade to consumers. U.S. companies spend about three times as much on sales promotions as they do on advertising (Cox Direct, 1997), totaling more than \$400 billion annually (Direct Marketing, 1997) and accounting for the majority of the marketing budgets. Trade deals (that is, temporary price reductions from the manufacturer to the retailer) are an important factor affecting retailer profitability, and can amount to as much as half of retailers' profits (Economist, July 25, 1992). Trade deals, while practiced widely, are also considered a major problem by manufacturers since retailers perfectly anticipate trade deals, and tend to buy from one trade deal to the next.

What are effectively income tax “sales” do occasionally occur, when future tax increases are perfectly anticipated. There is clear evidence that taxpayers respond wholeheartedly to

them, as well. The best example is the anticipated increase in capital gains taxes beginning in 1987. Realizations of capital gains were \$322 billion in 1986, compared to \$167 billion in 1985 and \$137 billion in 1987. Even more striking, Burman, Clausing and O'Hare (1994) have documented that long-term capital gains on corporate stock in December of 1986, the last month of the tax sale, were nearly seven times their level in the same month of 1985.

Temporarily low tax rates are like sales in the fact that they temporarily reduce the price of the taxed activity and induce intertemporal substitution. Thus, comparing frequent, temporary tax cuts to an unchanging tax policy is akin to comparing "hi-low pricing" to an "Every-Day-Low-Price-Strategy," a much-researched topic in marketing. Hoch, Dreze, Purk (1994) did a field experiment in the supermarket grocery industry with an 86-store chain which had a combination of every-day-low-price (EDLP) stores and hi-low stores. They instituted price changes in both types of stores and studied changes in profitability. They found much higher volume changes as a result of price decrease in hi-low versus EDLP stores and also higher profits in hi-low stores versus EDLP stores. However, Mela, Gupta and Lehmann (1997) show that as consumers are exposed to increased price cuts over a long period of time (they study scanner panel data on a frequently purchased packaged good for a 8 1/4 year time period) their price and promotion sensitivity increases, so that consumers lie in wait for promotions. Hence, once temporary price cuts become common, consumers learn to purchase only when there is a price cut.

Although there are analogies in the tax system to sales, it is certainly a less-used technique in that arena. Several states now offer periods in which sales tax is not due on, say, clothing for a week.<sup>16</sup> Occasional, limited tax amnesties have the flavor of a sale, if not on the regular tax price then on the penalty that ordinarily would accompany initially unreported tax liability.

One reason that tax sales are less ubiquitous than product sales is likely that the legislative process is less able to effect frequent changes in tax policy. It may also be that the political cost of raising taxes is higher than the political benefit of reducing taxes. This concern arose in the 2001 debate over a tax cut to stimulate the economy. One method of quickly delivering a retroactive tax cut is to reduce withholding of taxes by employers. This policy was not implemented, and mailed tax rebates were, in part because it would require later offsetting adjustment of the withholding taxes, and subject politicians to the charge that they had "raised" taxes.<sup>17</sup>

### ***3.5. Does Timing of Rewards Affect Incentives?***

In some situations, the overriding objective of price presentation in the tax system is not minimizing the perceived overall burden, but rather to induce a particular set of behaviors. The issue has been raised (Scholz, 1994; Hotz and Scholz, 2001) in the context of the earned income tax credit (EITC), the objective of which is to encourage labor force participation of low-income people. The arguments summarized above suggest that the EITC should be paid out in real time rather than in a lump sum at the end of the year, because it is generally perceived as a better deal to segregate gains.<sup>18</sup> As Hotz and Scholz (2001) note, in part because it was thought to reinforce the pro-work impact, the British EITC-like program, the Working Families Tax Credit, was designed to be received incrementally. There is,

though, one caveat. If the tax credit per paycheck is very small, they may not be encoded by taxpayers as being salient. Krishna and Johar (1996) show that very small deals are not encoded as deals, or may be entirely ignored (Morwitz, Greenleaf and Johnson, 1998), in which case it may be better to aggregate and disburse these tax credits when they are large enough to be encoded as credits. What is “small” and what is “large enough” is of course an empirical question, and may depend on a person’s income level.

A similar issue arises with respect to savings incentives delivered through the tax system. Thaler (1994) mentions that an ideal savings program should “. . . provide an *immediate* reward to savings . . .” and be designed so that “. . . the money is perceived as ‘off-limits’ to current spending. . . .” Thaler suggests that the original front-loaded IRA (in which the deposit to an IRA is tax-deductible, but the withdrawal is taxable) scored well on these criteria. The newer Roth IRA, where the deposit is not tax-deductible (but the income and withdrawal is not taxable) does not.

Lump-sum refunds may also be better from a savings perspective, since there is evidence that people voluntarily save more from lump-sum payments. Shefrin and Thaler (1988) asked 122 part-time MBA students how much they would expect their monthly consumption to increase during the year if their take-home pay increased by \$200 per month for a year, versus if they got a lump-sum bonus of \$2400. The median annual marginal propensity to consume was \$1200 in the first case versus \$785 in the second.

#### 4. Other Framing Issues

##### 4.1. *Percentage versus Absolute Price Contexts*

The marketing evidence on whether percentage (e.g., 20% off) or absolute (\$1 off) price promotion frames are better for presenting deals is inconclusive. A meta-analysis across 30 price framing studies done by Krishna et al. (2002) shows that the deal “frame” (in what manner the deal is presented—e.g., as \$ off or % off) does not significantly affect perceived deal savings. They find, however, that *both* the actual percentage as well as the actual dollar amount of the price promotion significantly affect perceived deal savings, irrespective of how the deal is framed. This result is also supported by Darke and Freedman (1993). Thus, it appears that people may be converting a given percentage deal into a dollar amount, or a given dollar deal into a percentage amount. It also indicates (as stated earlier) that a dollar deal on a ten-dollar item is evaluated better (considered much larger) than a dollar deal on a twenty-dollar item. This is consistent with Kahneman and Tversky’s (1979, p. 278) argument that “diminishing sensitivity” reflects a fundamental nature of human cognition and motivation: “it is easier for human beings to discriminate between a change of 3 and a change of 6 in room temperature, than it is to discriminate between a change of 13 and a change of 16.” This is in contrast to rational utility theory, which would suggest that only the absolute amount of the deal should matter.<sup>19</sup>

Hite and Roberts (1991) find that this aspect of framing, as it applies to tax levels rather than tax (or price) changes, appears to matter in people’s judgments about the appropriate degree of progressivity in the income tax. They surveyed 591 people on what they thought the “right” amount of income tax was at nine different levels of income. The average responses



showed a strong degree of progressivity, with the rates ranging from 2.4% for a family with \$5,000 of income to 29.2% for a family with \$100,000 of income. Strikingly, though, when the same people were asked to give the appropriate tax liability in *dollars* rather than in average or percentage terms, the mean responses converted into average tax rates were almost uniformly lower, and often quite a bit lower. For example, the average tax rate at \$100,000 of income was 20.1% rather than 29.2%. The results are consistent with the notion that the sacrifice of paying taxes becomes more palpable when the responses were measured in dollars, rather than the more abstract concept of average tax rates, and people therefore are less inclined to assign higher taxes when the question is framed in this way.

The difference between percentage and dollar tax cuts played a large role in the debate over the tax cut plan of George W. Bush. His plan was attacked by Al Gore and others for featuring much larger tax cuts, in terms of dollars, to more affluent taxpayers. Bush responded that the largest *percentage* tax cuts were delivered to lower-income taxpayers. Of course, both statements could be, and probably were, simultaneously true.

#### 4.2. 9 Endings

There is quite a robust result in marketing that 9-endings (e.g., \$39.99) result in consumers perceiving a substantially lower price for the product versus practically identical prices with zero-endings. Schindler and Kirby (1997) suggest two reasons for this: (i) a tendency of consumers to perceive a 9-ending price as a round number price with a small amount given back and (ii) a tendency of consumers to underestimate a 9-ending price by encoding it as the first round number evoked during incomplete left-to-right processing. The authors test for the first reason by checking whether among advertised prices, 1-ending prices are underrepresented as compared to chance, and also with respect to the other nine digits. They find weak support for this reason. They test for the second reason by checking whether there is more use of 9-endings among high potential-underestimation prices (e.g., \$49.99) than among moderate (e.g., 47.99) and low potential-underestimation (e.g., 48.59) prices. They find very strong support for this reason.

A policy maker seeking to minimize perceived tax burden would be well advised to take this lesson to heart. Does the U.S. income tax system feature 9 endings? At first glance, yes. After all, the top income tax rate was, from 1993 until the 2001 tax cut, equal to 39.6%, and is at this writing equal to 38.6%.<sup>20</sup> Moreover, the Medicare payroll tax rate is 2.9%.

However, 9 endings have not always prevailed for the top tax rate in the U.S. From 1964 to 1981 the top tax rate was 70%, and from 1981 to 1986, it was 50%. Among all developed countries, the top individual marginal tax rates seem to cluster at low endings rather than high endings. In 1998 among the 27 OECD member countries other than the U.S., thirteen had central government top marginal tax rates within 2 points of a 0 ending (that is, 8, 9, 0, 1, or 2). Of these thirteen, ten had low endings (0, 1 and 2), while only three had high endings (8 and 9).<sup>21</sup> The difference between the two proportions is significant ( $p < 0.01$ ). This bunching at low endings suggests that these tax systems are designed to *maximize* the burden of the richest taxpayers perceived by the typical voter, and thereby to minimize the perceived burden of the typical voter.<sup>22</sup>

### 4.3. *Obfuscation*

Numerous features of the tax code, such as the phase-out of personal exemptions and itemized deductions, seem designed to substitute for more explicit and more transparent increases in tax rates. Arguably, their purpose is to obfuscate the true nature of how tax liability depends on income and other aspects of the taxpayer's activities. But does obfuscation succeed in reducing overall perceived burden? Much research in marketing and psychology demonstrates that consumers pay little attention to fine print or less conspicuous print (Barlow and Wogalter, 1993), and to disclaimers in advertisements (Johar and Simmons, 2000). Barlow and Wogalter found that consumers exposed to less conspicuous (e.g., smaller print) warnings in advertising for alcoholic beverages performed no better on subsequent memory and knowledge tests compared to consumers exposed to no warnings at all. Consumers exposed to highly conspicuous warnings, however, did better than those exposed to less conspicuous warnings. Johar and Simmons (2000) similarly found that consumers focus on the main description of the product (e.g., a camera) and ignore disclosures in advertisements (e.g., what the warranty covers and does not cover).

Marketers seem to take advantage of this tendency of consumers, using fine print to convey a better picture of the product than the reality. In fact, this practice is so prevalent that the Federal Trade Commission's (FTC) "Clear and Conspicuous Standard for Disclosure" has been in effect since 1971. Both the FTC and the Food and Drug Administration have pursued companies for product disclosures and health claim disclosures, respectively, used in advertising. The widespread practice of using fine print in television advertising and its potential for consumer deception has resulted in self-regulatory guidelines (e.g., the National Advertising Division's Self-Regulatory Guidelines for Children's Advertising 1983), as well as standards for appropriate fine print disclosures both at the state and national levels (Muehling and Kolbe, 1997). The mind-boggling idea of the government regulating itself with regard to deceiving the taxpayers leads naturally to our closing topic.

## 5. **Should the Government Take Advantage of Behavioral Anomalies?**

This paper raises the positive question of the extent to which governments do in fact design tax systems to take advantage of the behavioral biases of taxpayer voters. We close by briefly considering the normative question of whether governments *should* do so. To be sure, there are ethical, as well as legal, issues that arise in the marketing of consumer products. Indeed, in the United States the Federal Trade Commission has adopted a set of guidelines, entitled "Guides against Deceptive Pricing," that refers specifically to comparative pricing and single out false claims for which the deception is material.

The issues are somewhat different when the government is on one side of the market. Should we be fooling ourselves into underestimating the tax burden?<sup>23</sup> Does it matter whether the point of the tax feature (other than to reduce the perceived burden through, for example, framing or obfuscation) is to achieve an equitable distribution of the tax burden, to reward particular behaviors, or to encourage some classes of behavior?

Tax presentation with the goal of minimizing perceived burden is certainly more benign in cases where it is achieved without cost. But, in many situations, the costs of collection as well as the equity of the tax burden distribution may be higher for a tax design that makes the burden appear lower. For example, achieving progressivity by means of phasing out deductions rather than explicitly graduating the rate structure increases the complexity of the calculation of tax, and may also increase the error rate.

Moreover, taking full advantage of any behavioral anomalies may bias the political process toward particular outcomes. For example, if voters are induced by price presentation to underestimate the true costs of government, they are likely to vote for larger government than otherwise. This concern is undoubtedly why, contrary to our operating assumption in this paper, some conservatives argue that the perceived burden from taxation ought to be maximized, not minimized, and certainly not be hidden. As we have noted, some conservatives have opposed withholding of income taxes, on the grounds that it softens as well as camouflages the true burden of taxation. From this perspective, one should support policies that do the opposite of what we have suggested here. Note, though, that policy makers who strive to manipulate the tax system to reduce the perceived burden and those who would strive to increase it are both implicitly accepting that there are anomalies in consumer and voter behavior that can be exploited by retailers and by politicians.

This observation has broader policy applications. It could, for example, be extended to budgeting conventions such as trust funds, the use of off-budget versus on-budget accounts, and so on. Do essentially arbitrary distinctions in government accounting systematically affect voters' perceptions of what the government is doing, and what the right policies are? Do they systematically affect how the legislators themselves behave?

These questions suggest a range of research strategies. It would be insightful to apply the standard marketing research tool of laboratory experimentation to questions such as determining whether people respond differently when the issue is framed as a tax one or a price one, or to how exactly the tax is presented.<sup>24</sup> It would also be insightful to apply standard econometric tools based on data of actual decisions to the issues of tax presentation.

The issues raised in this paper relate to the fundamental question of whether understanding the behavioral response to taxation requires a straightforward application of price theory, or something quite different. Do people respond in the same way to the non-tax part of a price as to the tax part? Elsewhere, one of us (Slemrod, 2001b) has argued that because of avoidance and evasion, these responses will be different because a change in tax alters the return-risk-tradeoff of avoidance and evasion in ways that changes in the pre-tax price do not, and the former involves the tax avoidance technology and not only taxpayer preferences. The ideas explored in this paper suggest another reason why the two responses may be systematically different.

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## Notes

1. As we elaborate on below, some conservatives have suggested that the tax system should be designed to maximize the visible burden, so as to make clear to voters the cost of government programs. For example, the original flat tax bill introduced by House majority leader Richard Armey abolished employer withholding, so that the employees would have to remit all taxes themselves.
2. A lower perceived burden may also increase voluntary compliance with the tax law, although this effect would occur only to the extent that taxpayers look past their utility-maximizing interest, balancing the potential tax savings against the chance of incurring a penalty, in making tax evasion choices (Slemrod, 2001a).
3. The question of who is fooling whom is not always straightforward. Birnbaum and Murray (1988), in their book on the events leading up to the landmark Tax Reform Act of 1986, argue that some of its complicated provisions were partly designed to fool President Reagan, who had committed his administration to a low top tax *rate*, but was not perhaps aware that phase-outs of deductions effectively raised the top marginal tax rate.
4. The tax system can be structured to suit the current government's position, either playing down the perceived burden to suit a liberal slant or exaggerating it to suit a more conservative one. We are suggesting that this can be done, and showing how it can be done.
5. Dolly and Worthington (1996) offer a more recent survey of the fiscal illusion literature. See Tyran and Sausgruber (2001) for an interesting recent experiment that concludes that the tax burden associated with indirect taxation is systematically underestimated, although this is not the case with an equivalent direct tax.
6. Kahneman and Tversky (1979), and much of the subsequent literature, focused on framing effects involved in risky choice. Here we focus on how framing affects the evaluation of a situation that doesn't necessarily involve risk. This is what Levin, Schneider and Gaeth (1998) call "attribute framing" as opposed to "risky choice framing."
7. Levin, Schneider and Gaeth (1998) offer a useful review and taxonomy of these studies.
8. The story is a bit more complicated in the case of calculating tax liability for a given taxable income. In this case, although certain tax credits are subtracted from a basic tax liability, some additional taxes are added to that basic tax, as well.
9. Bill Gale has suggested to us that the graduated tax rate structure itself could be re-framed to take advantage of the discount mentality. The existing rate structure could be posed as a flat tax of 39.6%, the current top rate, with subsidies/discounts for lower-income taxpayers.
10. There is mixed empirical evidence in marketing about whether the value function is steeper in gains or losses. While Putler (1992) and Hardie, Johnson and Fader (1993) find, consistent with prospect theory, that the effect of a loss is larger than that of an equal gain, Greenleaf (1995) finds the opposite.
11. Doug Shackelford has suggested to us that the standard deduction may appear to some taxpayers as getting something for nothing—getting credit for deductions that they really don't qualify for. On the other hand, as a referee pointed out to us, some people discount the standard deduction as an entitlement. This reasoning is behind the argument that it is unfair that nonitemizers cannot deduct their charitable contributions, which ignores the fact that the standard deduction is offered as a concession to nonitemizers. See footnote 10.
12. See also Slemrod and Yitzhaki (1994), who model the choice between a standard deduction and itemized deductions as one between horizontal equity on the one hand and administrative and compliance costs on the other hand.
13. We thank a referee for raising this issue.
14. A separate issue is whether and why taxpayers prefer *over* withholding that provides a later but substantial tax refund as a means of forced saving, and at the cost of foregone interest.
15. The history of the introduction of withholding in the United States is instructive. Large tax increases to help finance World War II were accompanied in 1943 by withholding and a kind of amnesty that granted taxpayers forgiveness of 75 percent of the lower of a taxpayer's 1942 or 1943 liability designed to alleviate the burden of the one-time acceleration of tax payments. A key proponent of this plan was Beardsley Ruml, Chairman of the Federal Reserve Board and, more important for the issue at hand, Treasurer of R. H. Macy & Company. According to Shlaes (1999), "he, like other retailers, had observed that customers don't like big bills," and "preferred making payments bit by bit, in the installment plan . . ." Thus, a veteran of the retail sales business was instrumental to the beginning of income tax withholding in the United States. See also Paul (1947) for a retelling of this episode.
16. There has been extensive research on whether tax changes deemed to be temporary are more or less effective in changing behavior than tax cuts deemed to be likely to persist.

17. The problem arose because the income tax cut for 2001 applied to income earned for the entire year, but was passed mid-year. To deliver the tax cut via a change in withholding would then have required a larger per-period adjustment in 2001 compared to 2002.
18. In the United States EITC recipients have the *option* of receiving the EITC incrementally—the “advance payment option.” Strikingly, in 1998 only 1.1 percent of EITC recipients with children used the advance payment option in 1998. (Hotz and Scholz, 2001). They argue that the transaction costs of setting up advanced payments can be fairly high, given that low-wage workers change jobs relatively frequently. The preference for a lump-sum payment may also be due to its use as a forced-saving device, similar to taxpayer withholding of income tax.
19. Note that the preferential treatment of capital gains has varied between having a percentage (less than 100) of gains included in taxable income and subject to regular tax, and having capital gains be directly subject to a lower tax rate than applies to other income.
20. Note also that the single tax rate of the flat tax, as proposed by Hall and Rabushka (1995), is 19%.
21. See Slemrod and Bakija (2000), Table A-2.
22. Empirical findings in sociology (e.g., Stark and Taylor, 1989) show that one’s propensity to feel mistreated is as much a function of how others “nearby” are treated as it is of objective levels of deprivation. Linder (1996) cites the legitimizing advantage of steeply progressive paper rates, citing Senator Paul Douglas as follows: “when a person consults the rate table to figure his own tax, his eye wanders down to the rate on higher incomes . . . the taxpayer is willing to pay the Government on the basis of his own rates, since those with higher incomes pay a steeper percentage.”
23. John Fox has reminded us that there are also aspects of tax design that cause taxpayers to systematically overestimate their own tax burdens. As an example, consider the apparently pervasive perception that upon reaching a new tax bracket, *all* taxable income (and not just subsequent dollars) becomes subject to that tax rate.
24. See McCaffery and Baron (2002) for an interesting experimental analysis of disaggregation bias.

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