

Saliency and Taxation: Evidence and Policy Implications

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by

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Economists and policy makers have traditionally focused on the financial incentives created by the tax code when predicting its effects on the economy. However, recent research shows that the salience and transparency of tax incentives matters as much or more than the financial incentives themselves. This testimony reviews some examples of such evidence and then discusses their implications for tax policy. I will focus on taxation of households, but many of the lessons discussed below also apply to the taxation of corporations and small businesses.

1 Evidence

The tax code in the United States is highly complex and is becoming increasingly so as reforms are implemented piece-by-piece. Figure 1 depicts the federal income tax schedule (including employer and employee payroll taxes) faced by a single earner with two children in the United States in 2006. The figure plots the marginal tax rate – that is, the tax rate on a family’s last dollar of earnings. This marginal income tax rate is relevant for making economic choices ranging from work decisions to IRA contributions to home mortgages. The figure shows that marginal income tax rates vary considerably with income. Moreover, Figure 1 does not account for transfer programs such as food stamps or welfare that further change incentives. Nor does it account for provisions such as the Alternative Minimum Tax (AMT). Families also pay many taxes beyond the income tax: sales taxes, property taxes, excise taxes, all of which further complicate decisions. The complexity of the tax system raises the possibility that many individuals may not fully account for the tax implications of their economic decisions.

Recent research has demonstrated that tax complexity affects a broad range of economic choices, ranging from commodity purchases to college enrollment decisions. The following are five illustrative examples of the findings of these studies.

1. *Sales taxes.* Even relatively simple taxes, such as the sales tax levied by states, are not fully salient to consumers. Posted prices in the United States typically do not include the sales tax. To test if people under-react to the sales tax, an experiment posted tags showing the tax inclusive price below the original pretax price tags (Chetty, Looney, and Kroft 2009). Figure 2 shows the original tags as well as the new tax inclusive price tags. The demand for the goods that had the new tax inclusive price tags decreased by 8% when the new tags were posted. If consumers had

been taking the sales tax into account to begin with, there would have been no change in demand. Chetty, Looney, and Kroft (2009) also show that changes in excise taxes that are included in posted prices have larger effects on consumer behavior than equivalent changes in sales taxes that are not included in posted prices. Hence, the lack of transparency of the sales tax mitigates its impact on consumer decisions.

2. *Green taxes.* Gallagher and Muehlegger (2008) compare the impact of sales and income tax rebates on hybrid vehicle purchases. Sales tax rebates are received at the time of the purchase and are thus highly salient and visible. Income tax rebates are received later, as a credit when income taxes are filed, and are thus less transparent at the time of purchase. The sales tax rebate has seven times as large an effect on the number of hybrid cars sold as an equivalent-sized income tax rebate. Thus, two policies that cost the government exactly the same amount have very different impacts on encouraging environmentally friendly choices purely because of how they are perceived by consumers.

3. *Earned Income Tax Credit.* The Earned Income Tax Credit (EITC) is a major cash transfer program whose goal is to increase work among low-income individuals by providing a subsidy for working. Unfortunately, knowledge about the incentives created by the EITC is limited. 50-90% of low income families have heard about the EITC and know that it is a tax refund for working (Maag 2005, Romich and Weisner 2002). However, less than 5% of these families know how the amount they earn affects the size of their EITC refund, which is critical for the program to affect earnings decisions. This may be because the EITC refund depends in a somewhat complex manner on earnings levels, number of dependents, marital status, and other characteristics, as shown in Figure 3. A recent experiment directly tested whether providing simple information about the work incentives created by the EITC would amplify its effects on earnings (Chetty and Saez 2009). The experiment involved 43,000 EITC claimants in Chicago, half of whom received simple information about the marginal tax incentives created by the EITC tailored to their situation when filing their tax returns. For instance, individuals in the phase-in region of the program were told, “Suppose you earn \$10 an hour, then you are really making \$14 an hour [because of the EITC program].” The experiment tracked earnings over time for the treated and control groups. The provision of information had significant impacts on earnings for many individuals, although the effects varied substantially based on how tax preparers explained the program.

The most recent evidence shows that responsiveness to the EITC also varies considerably across communities (Chetty, Friedman, and Saez 2011). One simple way to analyze the extent that households respond to EITC incentives is to consider how many of them bunch at the portion of the EITC schedule where they receive maximum benefits. Figure 4a shows the amount of bunching at the peak of the EITC schedule in each state in 2008. There is substantial geographic heterogeneity in response to the EITC across the United States despite the fact that it is a federal program.* The variation in responsiveness is prevalent even at the local level. Figure 4b depicts bunching in 2008 by 3-digit zip code in Kansas, Louisiana, Oklahoma, and Texas. For example, Austin and San Antonio, cities within 80 miles of each other, have substantially different levels of response to the EITC. This differential responsiveness to the EITC across regions of the country is consistent with spatial diffusion of knowledge about the tax code, and may also reflect the impact of local culture and mores or heterogeneity across tax preparers.

4. *Retirement savings.* The tax code includes several provisions intended to increase the incentive to save, such as tax-deferred savings accounts (e.g. IRAs and 401(k)s) and the Saver's Credit for low-income households. The Saver's Credit provides a 100% match on savings in tax-deferred accounts of up to \$2000 for eligible households in certain income ranges. Despite the large incentive to save, a 100% match created by the Saver's Credit raises participation in IRAs by less than 2.5 percentage points (Duflo et al. 2006). In contrast, an experiment conducted by Duflo et al. (2006) that offered 50% matches in a transparent and salient manner at the time of tax filing increased participation in IRAs by 11 percentage points. The incentive effects of the Saver's Credit may be dulled because the rules associated with the credit are very complex, and it is hard for filers to predict their effective matching rate.

The impacts of tax-deferred accounts are also relatively modest in comparison to other tools that aim to change savings behavior. Defaults that automatically enroll workers in tax-deferred savings plans are a far more powerful determinant of behavior than changes in incentives to save. Figure 5 compares participation rates in a company's 401(k) program across cohorts (Madrian and Shea 2001). New hires were automatically enrolled in the 401(k) plan (and could choose to opt out), while previously hired employees were required to elect participation by filling out a form. The

*Some states have add-on state EITC's, but the differences shown in Figure 4a are not correlated with these state EITC programs.

figure shows that new hires have a participation rate of 86%, which is nearly twice the participation rate of workers hired just before automatic enrollment was implemented. This doubling in 401(k) participation occurred without any change in real incentives and dwarfs the impacts of changes in 401(k) tax incentives on savings rates.

5. *College tax credits and subsidies.* A broad range of federal policies are intended to increase higher education by reducing the cost of attending colleges via either tax credits (e.g. the Hope and Lifetime learning credits) or interest-free loans (e.g. Pell grants). Dynarski and Scott-Clayton (2008) argue that the complexity of filling out the FAFSA form needed to obtain Pell grants and Stafford loans explains why these programs have little impact on increasing college attendance rates in the U.S. They show that simpler state-level programs increase college attendance much more than complex federal programs that offer similar financial incentives to attend college. An experiment conducted by Bettinger et al. (2009) found that individuals who received assistance from tax professionals in filling out the FAFSA were substantially more likely to submit an aid application and enroll in college. These findings suggest that the lack of transparency of existing incentives to stimulate college attendance may substantially dull their intended impacts, particularly for low income individuals.

2 Policy Implications

The evidence reviewed above shows that policy makers have a powerful lever at their disposal in deciding how to frame and advertise tax policies. While the appropriate method of optimizing tax salience will vary across policies, economic theory offers several general principles that are relevant for many policies (Chetty, Looney, Kroft 2009, Congdon, Kling, and Mullainathan 2009).

1. *Minimize non-transparent tax incentives.* There is little justification for tax credits and expenditures that are automatically offered to individuals but whose intended incentives are not understood. Such tax expenditures cost the government money but have little impact in changing economic behavior as intended. The government would be better off scaling back the size of these programs and increasing their transparency.

2. *Invest in marketing.* While the private sector devotes extensive resources to marketing and information dissemination, such expenditures are much smaller for government programs. For

example, the official IRS publication on the EITC intended for the public (Internal Revenue Service, 2007, Publication 596) is 57 pages long and never explicitly mentions the incentive parameters of the credit. The publication simply states the EITC amounts in the form of a 7 page table that has 4,770 entries. Low-cost efforts to explain the incentives created by the EITC more transparently to the public may be very valuable. As another example, tax credits to reduce electricity usage are likely to be more effective if coupled with smart meters that allow consumers to directly monitor their electricity usage in real time.

3. *Build tax incentives into prices and use defaults.* Mechanisms that do not require consumers to pay special attention to the tax code may be even more effective than information provision. Including tax credits directly in advertised prices and salaries could substantially increase their impact. Setting defaults (with opt-out provisions) that encourage choices such as saving for retirement can be more effective than providing financial incentives to do so.

4. *Minimize the salience of negative incentives.* Some taxes are needed purely for revenue collection. For instance, income taxation raises revenue but may reduce labor supply or the growth of small businesses. While the government cannot hide taxes, increasing the salience of such negative incentives is less desirable from the perspective of maximizing economic efficiency and growth.

5. *Salience can affect the income distribution.* Lower income individuals may not have the resources to obtain information about all aspects of the tax code. As a result, tax complexity may amplify inequality by making it harder for low income individuals to take advantage of advantageous provisions.

6. *Salience affects how tax burdens are shared between consumers and businesses.* Policies regulating tax salience also affect how tax burdens are shared between businesses and consumers. If companies are allowed to post pre-tax prices (rather than tax-inclusive prices), consumers are likely to bear more of the economic burden of the tax. For example, the prices of many widely used services are commonly advertised excluding fees and taxes. If companies were forced to advertise tax-inclusive prices, they would have an incentive to reduce the prices they charge (i.e., bear more of the burden of the tax themselves) in order to compete and attract customers.

7. *Tax policy may have smaller impacts in the short run.* Since information takes time to diffuse, the impacts of tax changes may be much smaller in the short run than the long run (Chetty

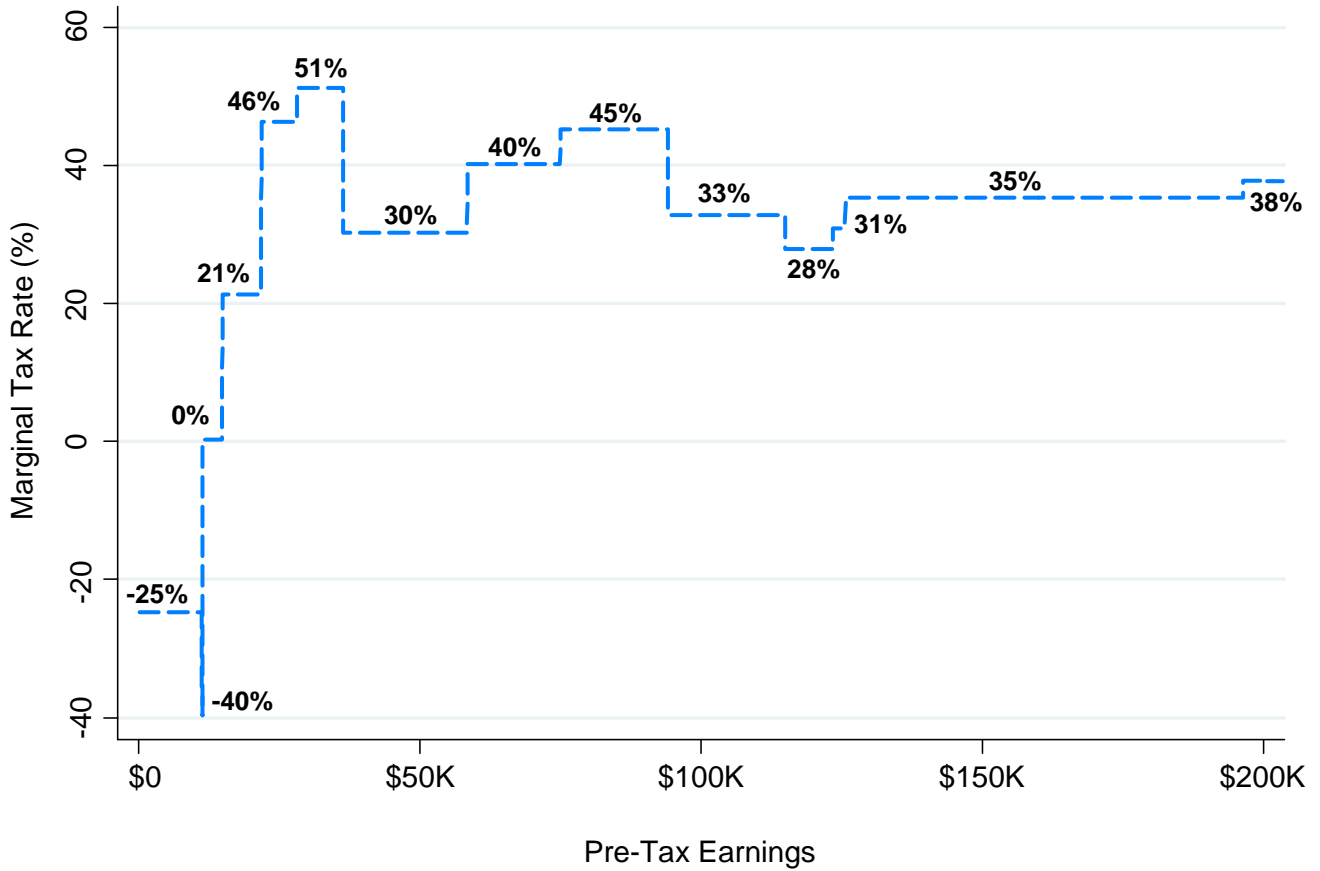
2009). Thus one cannot directly predict the long-term impacts of tax policies from their immediate impacts on economic behavior. The costs and benefits of tax policies must therefore be assessed either over long horizons or using pilot studies where the policies are made highly salient.

To summarize, policy makers should consider the transparency of proposed tax policies to the same extent that they consider the financial implications of proposed reforms. Reforms targeted at improving tax salience offer a rare opportunity to increase the benefits of tax incentives and expenditures with little budgetary cost.

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FIGURE 1
Marginal Federal Income Tax Rates in 2006



Source: Chetty (2009, Figure 9)

Notes: This figure plots marginal federal income tax rates for a single tax filer with two children and no other exemptions or deductions in 2006. Tax rates were calculated using NBER TAXSIM. See Chetty (2009) for details.

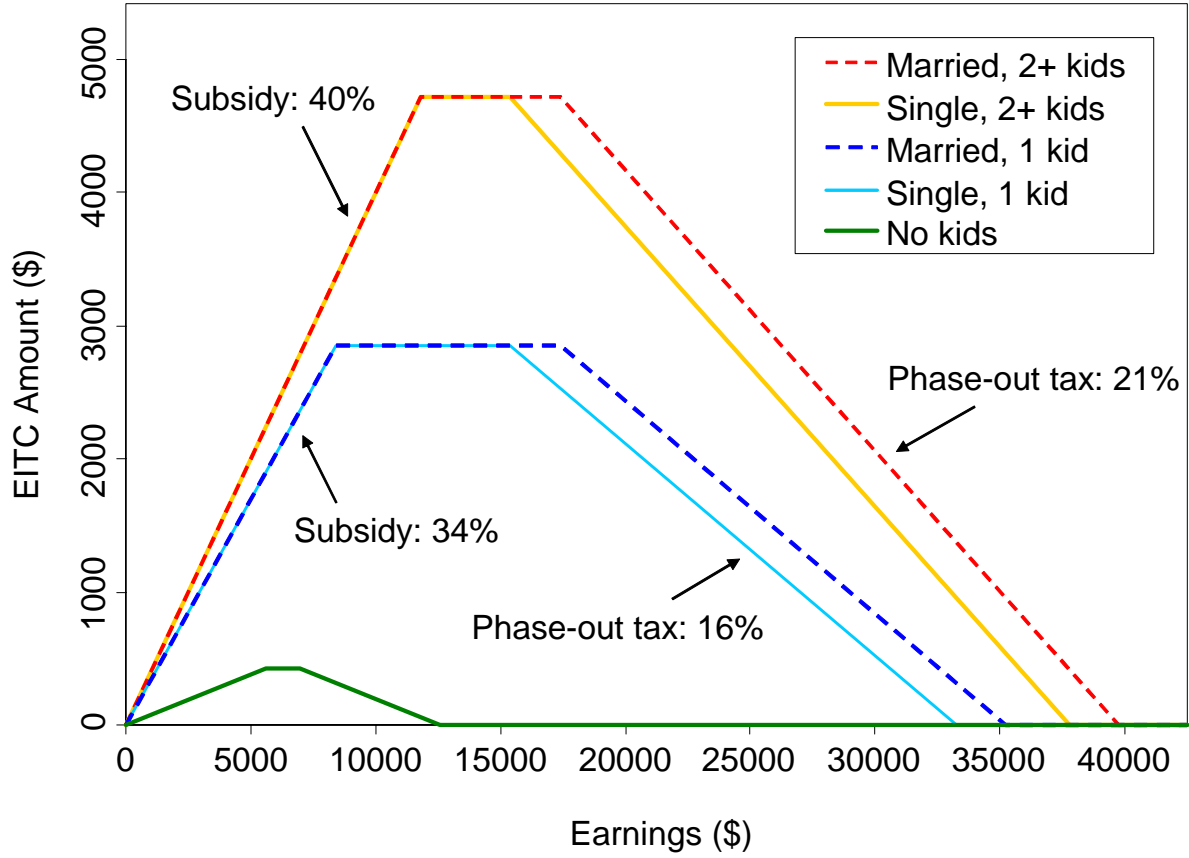
FIGURE 2
Sales Tax Inclusive Price Tags



Source: Chetty, Looney, and Kroft (2009, Exhibit 1)

Notes: This figure shows the price tags that were added to products in a grocery store in the experiment conducted by Chetty, Looney, and Kroft (2009). Tax-inclusive price tags were added for roughly 1,000 products in one aisle of the store.

FIGURE 3
EITC Refund Amount as a Function of Earnings in 2007

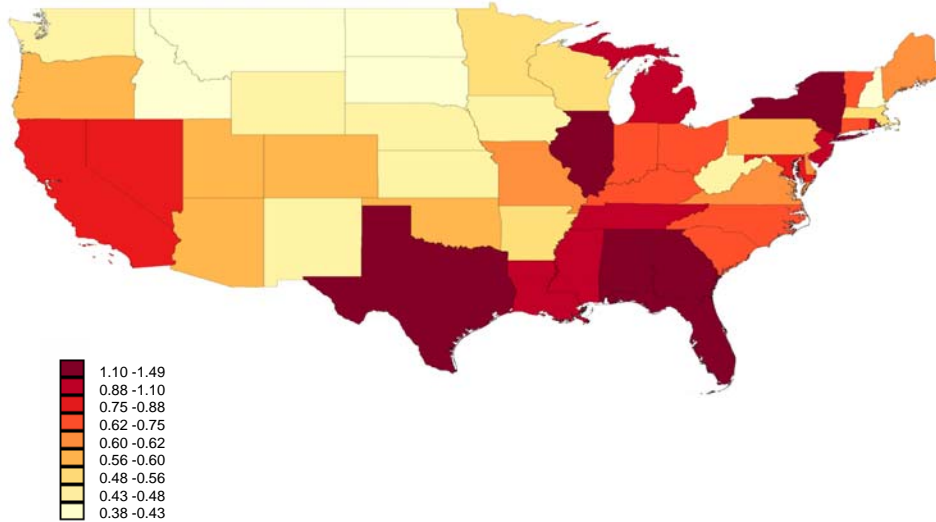


Source: Chetty and Saez (2009, Figure 1a).

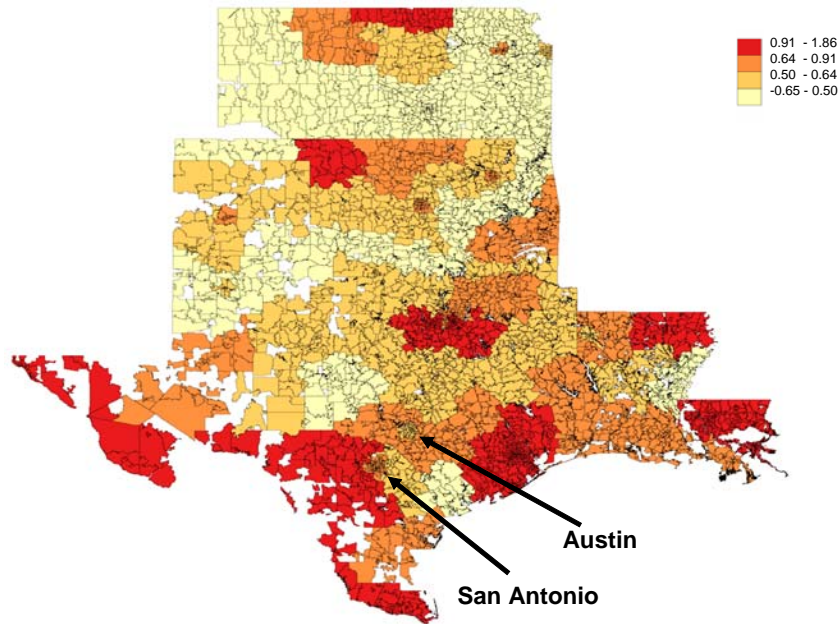
Notes: This figure plots the size of the EITC refund amount vs. earnings for various family structures. See Chetty and Saez (2009) for more details.

FIGURE 4 Geographic Variation in Responses to the Earned Income Tax Credit

a) EITC Bunching by State in 2008



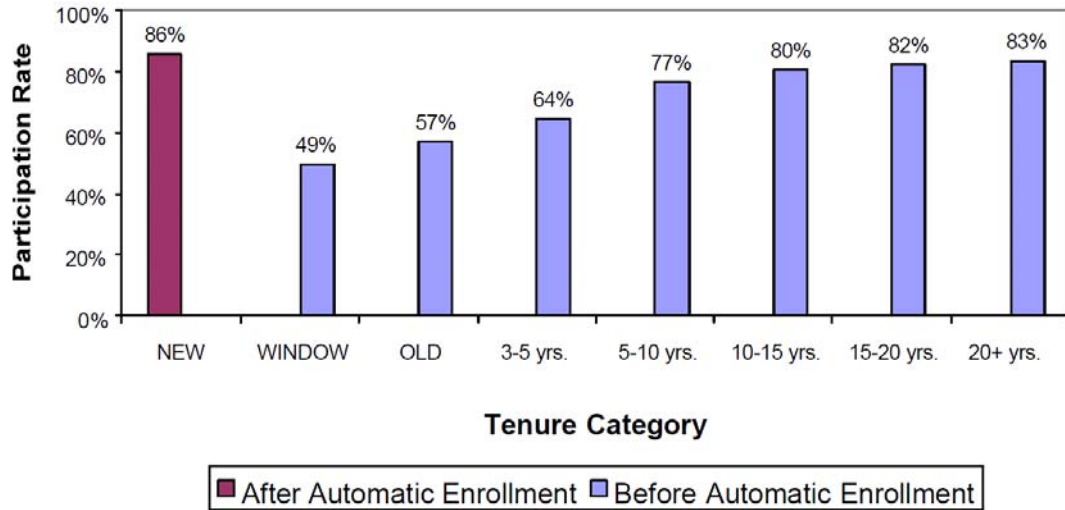
b) EITC Bunching by 3-Digit Zip Code in Kansas, Louisiana, Oklahoma, and Texas in 2008



Source: Chetty, Friedman, and Saez (2011, Figure 2)

Notes: This figure plots a measure of the impacts of the EITC on reported taxable income across geographic regions in the United States. Responsiveness is measured by the fraction of individuals who “bunch” at the first kink point of the EITC schedule shown in Figure 3, which is the point at which the refund amount is maximized. Darker shaded areas have more tax filers whose reported taxable income maximizes their EITC refund, indicating greater responsiveness to the EITC. See Chetty, Friedman, and Saez (2011) for details.

FIGURE 5
Effects of Defaults on Retirement Savings



Source: Madrian and Shea (2001, Figure 3)

Notes: This figure compares the 401(k) participation rates at a private corporation for individuals who were automatically enrolled into 401(k) plans (the first bar) with participation rates for earlier cohorts who were eligible for the same program but were not automatically enrolled. See Madrian and Shea (2001) for details.