

How does the tone of tax-related political advertisements affect personal income tax compliance?

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Abstract: We examine the relation between the tone of political advertisements and federal personal income tax compliance. Based on prior studies that find negative campaigning reduces individuals' perception of political efficacy and their trust in government (Lau, Sigelman, and Rovner 2007), we expect tax-related political advertisements will similarly reduce tax morale and therefore be associated with lower levels of individual tax compliance. Using data on televised political advertisements by metropolitan broadcast area and tax return outcomes from the IRS Statistics of Income individual taxpayer dataset, we find that a higher concentration of negative tax-related advertisements is associated with higher levels of self-reported income, while tax-related advertisements that criticize one candidate while promoting another is associated with lower levels of self-reported income. These opposing results indicate that the combination of advertisement tone and tax content may differentially influence tax morale. Results from this study contribute to the literature on tax morale by enhancing our understanding of the effects of political polarization and media political campaigns on tax compliance in the United States.

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1. Introduction

Negative political advertisements have exploded in recent years. In the 2018 midterm elections, 69 percent of political advertisements featured an attack and nearly half of all political advertisements aired were purely negative (WMP, 2018). These statistics reflect a rise in the total number of political advertisements aired relative to prior elections, as well as a marked rise in the number of negative ads. Against the backdrop of rising political polarization in the media and in the United States more broadly, understanding its impact on the proper functioning of government institutions is vital. In this study, we examine the relation between the tone of tax-related political advertisements and federal personal income tax compliance.

The prevalence of tax-related political advertisements provides a context to study the relation between political rhetoric and tax morale. The content of political advertisements may reference a variety of social, economic and cultural issues. In this study, we focus on political advertisements referencing taxation, as we believe individual perceptions of political efficacy and trust in government (and further, tax morale) are most likely to be influenced by advertisements highlighting economic concerns. This restriction allows us to more directly test the relation between advertisements and taxes by eliminating the noise from other common election topics (e.g. foreign policy, immigration, abortion).

The tone of political advertisements falls into three broad categories: positive, negative and contrast. Political advertisements can have a predominately positive tone and focus on highlighting the qualities of the candidate. On the other hand, these advertisements can have a predominantly negative tone and focus on attacking the record and reputation of the other candidate. Finally, political advertisements can combine positive and negative tone by comparing and contrasting two candidates (“contrast ads”). Advertisements with negative tone

have been shown to reduce individuals' perceptions of political efficacy and their trust in government (Lau, Sigelman, and Rovner 2007). Lower perceptions of political efficacy and trust in government can similarly reduce tax morale, which is the social norm of complying with tax laws (Cullen et al., 2021). We therefore predict that a higher share of tax-related political advertisements that include negative or contrast tone are associated with lower levels of individual tax compliance. We predict that a higher share of tax-related political advertisements with positive tone is not associated with lower levels of tax compliance.

However, there are several reasons we may not observe the predicted relations. First, prior work demonstrates the impact of negative political advertisements on public trust or perceptions of political efficacy is typically small (Lau et al., 2007). Second, results of laboratory experiments have generally not been replicated in field experiments that emphasize tax morale (Dwenger et al., 2016; Slemrod et al., 2001). Third, other potential impacts of political advertisements, such as decreased charitable giving (through decreased itemized deductions) or increased patriotism, could increase empirical measures of tax compliance (Karol, 2025; Konrad & Qari, 2012). Whether negative political advertisements are detrimental to tax compliance is therefore an open empirical question.

To address our research question, we collect data on tax-related political advertisements from the Wesleyan Media Project (WMP). The dataset tracks the details of individual airings of political advertisements, including the timing, metropolitan television broadcast area, candidate, party affiliation, tone, emotion and topics covered (Fowler et al., 2017, 2019, 2020b, 2020a). The dataset covers the top seventy-five media outlets (approximately 80 percent of the United States) and twenty-five major cable networks (West, 2018). We measure tax compliance using tax return outcomes from the IRS Statistics of Income individual taxpayer dataset measured annually by

zip code for six levels of adjusted gross income (AGI). Our approach follows the concept of “invisible income” from Feldman and Slemrod (2007) and the tax gap approach from Cullen et al. (2021). Specifically, we use measures of self-reported income with varying levels of third-party reporting as proxies for “invisible income” to capture self-reported income that is commonly misreported by individuals to reduce their tax liability (Feldman and Slemrod, 2007; Cullen et al. 2021).

We limit our analysis to the influence of Congressional campaigns, as Senate and House races provide local variation (unlike Presidential campaigns) while maintaining a direct link to the Federal government (unlike gubernatorial and down ballot elections). Further, we only consider tax-related political advertisements as we believe these are most likely to influence taxpayer tax morale. We control for state level tax effects (Giroud & Rauh, 2019) and county level economic variables from the Bureau of Economic Analysis (BEA) and American Community Survey (ACS) databases. We additionally control for income level, geographic location, and time period fixed effects.

In supplemental analyses, we restrict our analysis to crossborder advertisements to help mitigate concerns about the non-random assignment of advertisements to particular geographical areas. Specifically, we consider advertisements aired in market areas that span state borders (e.g., advertisements related to Congressional campaigns in New Jersey that are also viewed in New York) and consider outcomes related to taxpayers in the unintended state. These advertisements may create awareness surrounding tax topics but do not address similar election issues in both states that could confound inferences.

We find evidence of an association between the tone of tax-related political advertisements and the level of self-reported invisible income. The results indicate a significant,

positive relation between self-reported invisible income and the percentage of negative advertisements and a significant, negative relation between self-reported invisible income and the percentage of contrast advertisements. These results suggest that negative tax-related advertisements may be associated with higher levels of tax compliance, whereas contrast tax-related advertisements may be associated with a reduction in levels of self-reported income, which could reflect a decrease in tax compliance. Breaking self-reported invisible income down into its components, we observe similar opposing results for business income and net capital gains. We do not find any effect of the tone of political advertisements and the level of flow-through income reported.

We conduct a related analysis following the tax gap approach from Cullen et al. (2021). We summarize the SOI income data into categories based upon the level of third-party reporting (substantial, some, and little) to identify categories where misreporting is most likely to occur. Consistent with the results of our initial tests, we find an association between the tone of tax-related political advertisements and income subject to some information reporting. The results are consistent with the capital gains analysis, which is included in this category. One limitation of this approach using the public SOI data is that most tax return line items subject to “little” information reporting are not separately reported and therefore are computed as the residual of all other categories.

Our paper is not without limitations. First, our current research design does not permit a causal interpretation of results. As such, we are limited to inferences suggesting an association between political advertisements and tax morale. We hope to expand our crossborder analysis to create a cleaner identification free from underlying state-specific issues that may be correlated with advertisements. We also plan to expand our empirical analysis to include a study of

incumbent candidates, which may be more directly tied to government trust, and incorporate tests on the advertisement content from ad transcriptions.

This study contributes to our understanding of the effects of political polarization and rising media usage in political campaigns on tax administration in the United States. We also aim to contribute to the literature on tax administration and tax morale by examining the effects of negative political discourse. In a study related to ours, Karol (2025) finds that negative political advertisements are associated with decreased private charitable giving. We extend this line of research to examine whether political advertisements have a similar influence on taxpayer morale and overall individual taxpayer behavior.

2. Background and predictions

2.1 Negative political advertisements

Political advertisements are a key element of modern campaigning. Single advertisements may be used to promote a candidate (“positive” advertisement), criticize the opponent (“negative” advertisement) or combine the two strategies (“contrast” advertisement) by comparing candidates. Among these strategies, academic study has often focused on negative political advertisements, both individually and collectively as a component of campaign strategy. Lau, Sigelman, and Rovner (2007) conduct a meta-analysis to identify major themes and takeaways from existing research. The primary focus of studies on negative political advertisements in political science and psychology has been to understand the efficacy of negative political advertisements in swaying voters and increasing turnout. Lau et al. (2007) conclude from their meta-analysis that there is inconsistent evidence supporting hypotheses that negative campaigning effects candidate outcomes and voter turnout.

However, academic studies consistently find that negative campaigning is significantly associated with reduced perceptions of political efficacy and trust in government (Lau, Sigelman, and Rovner 2007). The constructs of political efficacy and trust in government capture broader systemic consequences, most often measured by participant responses to survey or experimental prompts. For example, Brooks and Geer (2007) measure political trust based upon participants' ranking of "I think most officials can be trusted" on a scale from 1-5. In the same study, efficacy is a composite measure of agreeance with the statements "I don't think public officials care much what people like me think" and "People like me don't have a say about what the government does" (Brooks & Geer, 2007). Leshner and Thorson (2000) conduct phone interviews and find that a campaign perceived to be more negative is positively associated with increased political cynicism, a construct related to political efficacy and trust, and measured by agreeance to the following statements: "Sometimes politics and government seem so complicated that a person like me can't really understand what's going on," "Politicians' votes are for sale to the highest bidder," and "Government spending is usually inefficient and wasteful."

Contrast or comparative political advertising pairs negative messaging targeting an opposing candidate with positive messaging for the favored candidate. Research in advertising suggests that contrast advertisements retain some benefits of negativity, which has been shown to increase message believability and credibility, without sacrificing the perception of balance and fairness (Robideaux, 2013; Sorescu & Gelb, 2000). Studies have found that mixed tone advertisements are not only viewed more favorably than wholly negative advertisements, but are also more effective at influencing voter behavior by avoiding the stigma of attacking (Meirick, 2002; Pinkleton et al., 2002).

Incumbent candidates face additional challenges in the face of negative campaigning. Prior literature has documented that incumbents are more likely to face voter “backlash” following the use of negative political advertising against a challenger (Fridkin & Kenney, 2011). In the context of the existing literature, backlash represents a decrease in the evaluation of the incumbent candidate. Further, incumbents often face an expectations gap from the public following election, which has been partially attributed to public opinion surrounding views of government efficacy and trust in government (Jenkins-Smith et al., 2005). Relatedly, the public perception of incumbents has been associated with individual life satisfaction (Flavin & Keane, 2012; Ng et al., 2022). In addition to potential backlash for utilizing negative political advertisements, if negative political advertisements targeting the incumbent candidate highlight perceived shortcomings, it is possible that public trust and satisfaction will be negatively impacted.

Changes in perception may have unintended consequences beyond direct election outcomes. For example, Karol (2025) finds that higher shares political attack advertisements influence private charitable giving by decreasing gifts to ideological charities and increasing gifts to moderate non-ideological charities. The study attributes the shifts in charitable giving to increased political polarization, which in turn discourages donations to charities with political leanings that may further such polarization. Our analysis extends this area of research to understand if political advertisements have a similar influence on taxpayer morale and individual taxpayer behavior.

2.2 *Tax morale*

Allingham and Sandmo (1972) model the basic trade-off individual taxpayers face between the cost (risk of detection) and benefits (cash savings) of tax evasion. The literature has

since evolved to consider other influences on taxpayer behavior, including tax morale. Luttmer and Singhal (2014) define tax morale as “increasing voluntary compliance with tax laws and creating a social norm of compliance” (p. 149). The authors highlight five mechanisms through which tax morale is influenced: 1) intrinsic motivation, 2) reciprocity, 3) peer effects and social influences, 4) cultural factors and 5) information imperfections and deviations from utility maximization.

Intrinsic motivation may reflect a sense of pride or civic duty from complying with tax laws (Luttmer & Singhal, 2014). For example, Konrad and Qari (2012) use survey evidence to document a positive association between patriotism and attitudes toward tax compliance. Alternatively, reciprocity highlights the perception that government benefits are provided in exchange for tax dollars (Luttmer & Singhal, 2014). Tax morale operates through peer effects when individuals wish to use tax compliance to signal conformity or type (Luttmer & Singhal, 2014). Culture operates similarly to social norms, however, it is distinguished by intergenerational persistence (Luttmer & Singhal, 2014). Information imperfections and deviations from utility maximization refer to any other considerations that may influence the rational decision-making of taxpayers, including loss aversion and misperceptions about the likelihood of audit (Luttmer & Singhal, 2014).

The broader systemic consequences of negative political advertising, reduced trust in government, political cynicism, and reduced perception of political efficacy may influence tax morale through the reciprocity channel if taxpayers perceive the government spending of tax dollars to be inefficient or wasteful. Research in social psychology and advertising indicate that policy relevant advertisements, particularly those related to everyday life, are more persuasive and effective at influencing viewer attitudes (Fridkin & Kenney, 2011). Taxation is not only

policy relevant (versus commentary on character and personal life) but also has practical implications for viewers. Prior research indicates individual tax compliance is influenced by attitudes toward the government and perceptions of legitimacy (Hofmann et al., 2008; Levi, 2008; Luttmer & Singhal, 2014). Cullen, Turner, and Washington (2021) use political alignment (i.e., whether partisan counties come into or fall out of alignment with the President following turnover elections in 2000 and 2008) to test the impact of attitudes towards government on tax evasion. The study finds that tax evasion, proxied by reported Schedule C & E income, suspect EITC claims, and audit frequency increase (decrease) following a shift out of (into) political alignment (Cullen et al., 2021).

2.3 *Empirical prediction*

The prior literature in advertising, political science and economics shows that negative political ads may decrease perceptions of political efficacy and trust in government and that these perceptions can lead to changes in behavior (Karol, 2025; Lau et al., 2007). The tax morale literature indicates that attitudes toward government are associated with increased tax evasion (Cullen et al., 2021). On average, negative political advertisements are more likely to include policy-related criticism of the opposing candidate to provide a clear message and avoid the appearance of being mean-spirited (West, 2018). Taxation is a common policy issue referenced in political advertisements and directly related to the tested outcome. Taken together, these streams of literature lead to our primary hypothesis:

H1: A higher share of negative tax-related political advertisements is associated with lower levels of tax compliance.

In our analysis, we also consider the relation between positive tax-related political advertisements and tax compliance. Positive tone political advertisements avoid the combative or

aggressive nature of negative tone political advertisements and simply focus on the attributes of an individual candidate. Several studies indicate that experiment participants like sponsors of positive advertisements more than sponsors of negative advertisements and express a higher likelihood to vote (Basil et al. 1991; Shapiro and Reger 1992; Lemert, Wanta and Lee 1999; Kahn and Geer 1994; Houston and Doan 1999; Houston et al. 1999; Brooks and Geer 2007, Lau et al. 2007). In the context of tax-related political advertisements, positive messaging could increase perceptions of political efficacy and trust in government by highlighting a candidate's past victories or focus on helping taxpayers. However, the literature on political advertising has suggested that positive ads are less memorable (Brians and Wattenberg 1996; Chang 2001; Brader 2005; Lau et al. 2007) and studies examining the actual impact of ad tone on turnout are inconclusive (Lau et al. 2007). Given the limited evidence that positive advertisements have impact on actual election outcomes, hypothesis 2 is stated in the null form:

H2: A higher share of positive tax-related political advertisements is not associated with tax compliance.

Contrast political advertisements have not garnered as much specific research as negative or attack advertisements. Contrast advertisements combine elements of both positive and negative political advertisements. The combination of tone may differentially impact tax compliance than negative and positive tone individually. Contrast or comparative advertisements have been shown to be viewed as more credible, increasing the impact on end behavior (Meirick, 2002; Robideaux, 2013; Sorescu & Gelb, 2000). In the setting of political advertisements, it is also possible that contrast advertisements, which use opposing tones, may highlight political division more than a strictly negative or positive tone, resulting in lower perception of

government efficacy and consequently, lower tax morale. We predict that contrast tone tax-related political advertisements will be associated with lower levels of tax compliance.

H3: A higher share of contrast tax-related political advertisements is associated with lower levels of tax compliance.

These predictions are not without tension. Although consistently negative and significant, the estimated impact of negative political advertisements on public trust or perceptions of political efficacy is typically small in magnitude (Lau et al., 2007) and, therefore, a second order impact on tax compliance may not be observed. Additionally, other potential impacts of political advertisements, such as decreased charitable giving (through decreased itemized deductions) or increased patriotism, could cause an increase in tax compliance (Karol, 2025; Konrad & Qari, 2012). Further, although laboratory experiments have found that tax evasion decreases when participants feel engaged and support the recipient social program (Alm et al., 1993), the results have generally not been replicated in field experiments that emphasize moral suasion (Dwenger et al., 2016; Slemrod et al., 2001).

3. Research design

Data

Our sample includes annual, location-based measures from a variety of datasets. We measure tax compliance using tax return outcomes from the IRS Statistics of Income individual taxpayer dataset. Tax return line items from Form 1040 are measured annually by zip code for six levels of AGI. We use political advertisement data from the WMP, which provides academic access to comprehensive tracking data for broadcast television political advertising from Kantar Media and Campaign Media Analysis Group (CMAG). The dataset tracks individual airings of political advertisements, capturing details including the date, time, media market, candidate,

party affiliation, tone, emotion and topics covered (Fowler et al., 2017, 2019, 2020b, 2020a). CMAG records commercials from the top seventy-five media outlets (approximately 80 percent of the United States) and twenty-five major cable networks (West, 2018). The media market or designated market area (DMA) reflects the metropolitan television broadcast area, encompassing multiple counties and zip codes. To align with our outcome measure of Federal taxes reported for individuals within a local geography, we restrict our sample of political advertisements to advertisements for a Congressional election which include a reference to taxes.¹ A descriptive analysis of the WMP advertisement data is conducted in Section 6. We control for state level tax effects (Giroud & Rauh, 2019) and county level economic variables from the Bureau of Economic Analysis (BEA) and American Community Survey (ACS) databases.

Identification strategy

As reflected in the CMAG data, televised political advertisements are purchased and delivered to geographic markets across the United States. An advantage of the television advertisement setting is that the viewing areas, or DMAs, encompass multiple counties and zip codes. Our identification strategy measures the relative concentration of political advertisement tone by DMA, which we then match to the individual counties and zip codes located within the viewing area.² This identification enables the analysis of individual taxpayer behavior across counties and zip codes that are similar on other dimensions. Wang et al. (2018) utilizes a similar county-level identification strategy to study the impact of higher levels of political advertising on turnout and vote share in senate races.

¹ Appendix A includes transcribed examples of tax-related Congressional campaign ads from our sample period.

² Some zip codes cross county borders. For simplicity, we force individual zip codes to match to a single county based up on the residential ratios obtained from the US Department of Housing and Urban Development (HUD).

In supplemental analyses, we extend our identification to leverage differences across state borders. DMAs commonly cross state borders, resulting in heterogenous exposure to political advertisements within states. For example, in the context of presidential elections and the electoral college, viewers located on the border of a battleground state receive higher exposure to advertisements than those in DMAs wholly within the same uncontested state (Huber & Arceneaux, 2007; Krasno & Green, 2008). Previous research utilizes this “natural experiment” to examine the impact of heightened political advertisement activity on survey outcomes related to voter turnout and persuasion (Huber & Arceneaux, 2007; Krasno & Green, 2008). We conduct a similar analysis with Congressional campaigns, which have even clearer identification of unintended viewership across borders.³ We construct an alternative sample of advertisements subject to crossborder viewership (where the viewer state and race state do not align) and re-examine the individual tax return outcomes in our primary tests. Although the tests sacrifice the power of our larger, comprehensive tax ad sample, we believe this sample highlighting exposure to political advertising for “irrelevant” races provides an opportunity to separate the influence of political advertisement tone from underlying social and economic factors that may directly impact the race jurisdiction.

Specification

To test our hypotheses, we examine the relation between the tone of tax-related political advertisements and individual tax compliance.

$$Invisible_{atz} = \beta_1 ToneShareAds_{atz} + \beta_2 WID_{atz} + \beta_3 X_{atz} + \alpha_c + \alpha_a + \alpha_t + \varepsilon_{atz} \quad (1)$$

³ Li et al. (2024) compare border approaches to instrumental variable estimation in the setting of political advertisements. In future analyses, we will consider the suggestions to improve border research designs, including the consideration of special correlation and the elimination of certain localities.

WMP identifies common economic and social issues (i.e., abortion, taxes, gender discrimination, civil liberties, family values) and includes a list of topics referenced in the advertisement. For our purposes, we determine the share of ads referencing “tax” in the issue description. We measure tax compliance following the concept of “invisible income” from Feldman and Slemrod (2007). The methodology is similar to that utilized in Cullen et al. (2021) and Belnap et al. (2024), a concurrent working paper, who use a measure of commonly misreported income at the aggregate zip code level. We use two measures of “invisible income” to capture that self-reported income is commonly misreported by individuals to reduce their tax liability (Feldman and Slemrod, 2007). The first measure *Invisible* is log of the sum of business income reported on Schedule C, net capital gains and flow-through income. *Invisible2* presents a similar measure, calculated as the log of total adjusted gross income less the three types of income that are subject to third-party reporting and therefore, rarely misreported: wages, interest and dividends. Individual observations of *Invisible* are recorded at the year (t), zip code (z), and AGI (a) level. We calculate our primary independent variable *ToneShareAds* as the annual percentage of political advertisements coded as each respective tone category (positive, negative and contrast) by CMAG for each media market (Karol, 2025). “Positive” advertisements focus on support for a candidate. Alternatively, “negative” advertisements focus on criticism of a candidate. “Contrast” advertisements combine attributes from “positive” and “negative” by combining support for one candidate and criticism of another. The 2002 Wisconsin Advertising Project Codebook⁴ further illustrates the distinction with example language provided to guide coding (Goldstein & Rivlin, 2005; Krasno & Green, 2008):

- *Positive* - “In his distinguished career, Senator Jones has brought millions of dollars home. We need Senator Jones”

⁴ In 2010, the Wesleyan Media Project succeeded the Wisconsin Advertising Project, which tracked political advertising from 1998 to 2008.

- *Negative* - “In his long years in Washington, Senator Jones has raised your taxes over and over. We can’t afford 6 more years of Jones.”
- *Contrast* - “While Senator Jones has been raising your taxes, Representative Smith has been cutting them.”

To capture the anticipated level of income, we control for the log of wages, interest and dividends (*WID*). The vector of control variables, X , reflects social and economic factors that could also influence individual tax compliance. We include county-level controls for population, higher education, unemployment, poverty level, personal income, per capita personal income and real gross domestic product. We also control for state tax rates for wages, individual capital gains and property taxes, mortgage interest deductibility, maximum tax rate, and level of unemployment insurance. Finally, we control for the percentage of Republican party advertisements at the media market level to capture overarching political leanings and the percentage of Senate versus House races to control for any inherent differences in advertising for each race. We also include AGI (a), county (c), and year (t) fixed effects to control for the unobservable effect of the income level, geographic location, and time period. Standard errors are clustered at the county level for consistency with control variables.

Sample selection

Table 1 details our sample selection. We begin with all available SOI and WMP data for the period between 2014 and 2017. We select this time period due to the format and availability of ACS US census data necessary for our county-level control variables of socio-economic conditions. Prior to 2014, differences in county-level reporting led to significant sample attrition. We end our sample before 2017 to avoid the potential of confounding changes due to the Tax Cuts and Jobs Act of 2017. Next, we eliminate all observations that do not have any wage, interest or dividend income reported, as third-party reported income is unlikely to be misreported and provides a necessary baseline for measuring tax compliance. Finally, we eliminate

observations with missing zip code, county identifiers and missing ACS or BEA control variables.

Additionally, we match the advertisement air date and annual control variables to the timing of tax preparation, instead of examining the relation between the same calendar year. Any advertisement aired before October 16th (the typical extended due date for individual taxpayers) is matched to tax-data from the previous year, as taxpayer influence would be expected to surface in the tax return year being prepared, and not the tax return year for which the individual is currently earning wages and other income. For example, an advertisement aired April 1, 2016 would be matched to the 2015 tax year (regular and extended due dates of April 15, 2016 and October 15, 2016, respectively). Alternatively, an advertisement aired shortly before the 2016 election on November 1, 2016 could not reasonably be expected to influence 2015 tax filings and is therefore matched with outcomes from the 2016 tax-year.

For the primary tests of political advertisement tone, this process provides 208,255 observations at the year, zip code and AGI level. Subsequent tests on other dependent variables may be reduced further due to data availability. Descriptive statistics are included in Table 2. On average, observations have a negative (positive) tax-related political ad share of 50.6 percent (25.9 percent). Advertisements are generally mixed along party lines with 55.3 percent (43.5 percent) of tax-related advertisements associated with the Republican (Democratic) parties. Tax-related advertisements are also balanced across political office with 45.3 percent (54.7 percent) of advertisements involved candidates for Senate (House) races. However, there is significant variation, from 0 percent to 100 percent, enabling our analysis.

4. Results

Tax-related advertisement tone and invisible income

Table 3 reflects the results of our tests of political advertisement tone on individual taxpayer compliance as detailed in equation 1. Columns 1, 3, and 5 detail the results for the first measure of invisible income, the log of the sum of self-reported business income, net capital gains and flowthrough income. Columns 2, 4, and 6 detail the results for the second measure of invisible income, *Invisible2*, which captures income subject to misreporting by subtracting third-party verified sources of income (wages, interest and dividends) from total adjusted gross income. Columns 1 and 2 present results for the share of negative tax-related advertisements. Columns 3 and 4 present results for the share of positive advertisements. Columns 5 and 6 present results for the share of contrast advertisements. We observe a significant, positive relation between self-reported invisible income and negative tax-related advertisements indicating an increase in levels of self-reported income or increase in compliance (Column 2). These results are inconsistent with H1 predicting that negative advertisements will be associated with lower tax compliance. Alternatively, we observe a significant, negative relation between self-reported invisible income and contrast ads (Column 6), indicating a reduction in levels of self-reported income or decrease in compliance, consistent with our prediction in H3. Consistent with our predictions in H2, we fail to find a significant relation between the share of positive advertisements and self-reported invisible income.

Overall, these results indicate that the concentration of advertisement tone can influence individual taxpayer compliance in some circumstances. However, the direction of influence differs between tone categories. As a result, we find evidence consistent with our prediction of a negative relation between contrast ads and individual tax compliance (H3), but find an opposite, unpredicted result for our prediction of a negative relation between negative-tone tax-related advertisements and individual taxpayer compliance (H1). As predicted in H2, we do not find a

significant relation between positive tax-related political advertisements and individual taxpayer compliance.

Consistent with studies on contrast or comparative advertisements, taxpayers may view contrast advertisements to be more credible, increasing the impact on end behavior (Meirick, 2002; Robideaux, 2013; Sorescu & Gelb, 2000). Further, it is also possible that contrast advertisements, which use opposing tones, may highlight political division more than a strictly negative tone, resulting in lower perception of government efficacy and consequently, lower tax morale. The potentially counterintuitive association of negative advertisements with increased tax compliance could result from increased patriotism or a heightened desire to differentiate away from perceived bad actors (Belnap et al. 2024).

Components of invisible income

Table 4 expands the analysis of invisible income by individually considering each component: business income, net capital gains and flowthrough income. Table 4, Columns 1, 4 and 7 presents results of equation 1 with the dependent variable replaced with the log of business income reported on Schedule C of Form 1040. Columns 2, 5, and 8 present results of equation 1 with a dependent variable of the log of flowthrough income and Columns 3, 6, and 9 present results of equation 1 with a dependent variable of the log of net capital gains. Columns are organized similarly to Table 3, with the test of each dependent variable occurring by relative prevalence of tone (negative, positive, and contrast). Similar to the tests of overall invisible income, differences are noted between tones, with business income reflecting the same significant, positive relation for the share of negative advertisements and significant, negative relation for the share of contrast advertisements. Interestingly, an offsetting relation exists in both tone groups for net capital gains, which shows a significant, negative relation with the share

of negative ads and a significant, positive association with contrast ads. Notably, these differences contribute to the lack of an overall significant effect for our first measure of invisible income as reported in Table 3. Flowthrough income does not display a significant relation with any tone measure. Of each measure, it is possible that flowthrough income is most challenging to manipulate, given the need for additional reporting on entity Forms 1065 and 1120-S.

Tax gap analysis

The Internal Revenue Service regularly issues research on Federal tax compliance and the estimated tax gap. In Publication 1415, the IRS provides estimates of the underreporting tax gap for individual taxpayers for each level of third-party reporting and withholding. The following misreporting estimates for the individual tax gap come from the IRS report best aligning with our sample period (tax years 2014-2016). Income subject to substantial information reporting and withholding includes wages and salaries, which have an estimated net misreporting percentage of only 1%. Income subject to substantial information reporting without withholding includes pensions and annuities, unemployment compensation, dividend income, interest income, State income tax refunds and taxable Social Security benefits, have only a slightly higher estimated net misreporting percentage of 6%. Income subject to some information reporting includes flowthrough income, capital gains and alimony income. Income subject to little or no information reporting includes nonfarm proprietor income, other income, rents and royalties, farm income and Form 4797 income.

To supplement our analysis of invisible income, we follow the approach of Cullen et al. (2021) the corresponding line items from the SOI zip code level data to reconstruct these informational reporting categories and test the association with the tone of tax-related political advertisements. One challenge of implementing this approach with the public SOI data is that

every Form 1040 line item is not individually disclosed, especially those subject to little or no information reporting. All line items subject to substantial information reporting and/or withholding are reflected in the data. For income subject to some information reporting, flowthrough income and capital gains are reported, and therefore, can be combined into a separate category. For income subject to little or no information reporting, only business income is separately disclosed. Consequently, for the construction of this category, we estimate the total amount by subtracting each identifiable category from total income reported. Although not specifically referenced in the tax gap publication, we also quantify the total expenses reported as another mechanism for potentially misreporting taxable income.

Table 5 presents the results of this analysis. As anticipated, our results are consistent with the tests identifying the components of invisible income. We find that the significant relation with capital gains drives directionally consistent results for the share of negative and contrast tax-related political advertisements. In Table 5, Column 2, a significant, negative relation is found between income items subject to “some” information reporting and the share of negative tone advertisements. This direction, magnitude and significance are consistent with the results in Table 4, Column 3 for only net capital gains. In Table 5, Column 3, a significant, negative relation is also found between the share of negative tone tax political advertisements and total expenses reported on Form 1040. This result is consistent with the share of negative tone political advertisements reducing the amount of expenses reported or increasing taxable income. Compared to the overall results in Table 3, this provides additional evidence of negative ads being associated with increased reporting of taxable income.

5. Supplemental Analyses

Advertisement Characteristics

To provide additional insight into the mechanisms through which political advertisements could influence taxpayer behavior, we run additional tests on select features of political advertisements. First, we consider the type of programming during which political advertisements air. For specific outlets, such as politically leaning cable news networks, viewership has likely “opted in” to a specific messaging presented in political advertisements. Ideally, we would avoid this confound by considering advertisements that are not associated with other content. To examine this relation, we consider the portion of tax-related political advertisements aired during sporting events as a relatively “neutral” setting. We identify sporting events through a keyword listing (ex. football, Olympics, volleyball, wrestling, baseball) of commonly televised sports and events. The results of this analysis are found in Table 6, Panels A and B. We find consistent evidence of a positive relation between the share of tax-related political advertisements aired during sporting events and our measures of invisible income. A significant, positive relation is found for both measures of Invisible income (Panel A, Columns 1-2) and for both business income and capital gains (Panel B, Columns 1 and 3). These results are consistent with ads viewed during a “neutral” setting increasing tax compliance and are similar to those observed for higher levels of negative tax-related political advertisements.

In addition to programming, we also consider the influence of advertisement frequency on taxpayer behavior. The WMP data identified approximately 1,500 unique tax-related advertisements that are aired a varying number of times across DMAs. We use this information to compute the average advertisement airing frequency for each DMA. Our intention is to identify if commonly repeated tax-related advertisements have a differential impact on taxpayer behavior. The results of this analysis are also found in Table 6, Panels A and B. We find consistently negative associations between average advertisement frequency and invisible

income. A significant, negative relation is found for Invisible Income (Panel A, Column 3), business income (Panel B, Column 4) and net capital gains (Panel B, Column 6). These results are similar to those reported for contrast advertisements and are consistent with repeated advertisements eroding tax morale and reducing tax compliance.

In future analyses we will consider the joint influence of programming, content, and frequency with the tone of tax-related political advertisements. Preliminary descriptives for this analysis are discussed in Section 6. These tests will hopefully provide additional insight into whether the impact of tone is compounded or moderated by programming features.

Crossborder political advertisements

We also consider the impact of crossborder tax-related advertisements on individual taxpayer compliance. One benefit of broad television viewing areas is that DMA's often include divisions by state border, which has been used in prior research to sidestep endogeneity concerns in the selection of political advertisements and underlying economic concerns in a specific area. For example, in the context of presidential elections and the electoral college, viewers located on the border of a battleground state (e.g. individuals in New York, a historically blue state, viewing ads aimed at Pennsylvania swing voters) receive higher exposure to advertisements than those in DMAs wholly within the same uncontested state (Huber & Arceneaux, 2007; Krasno & Green, 2008). Previous research utilizes this "natural experiment" to examine the impact of heightened political advertisement activity on survey outcomes related to voter turnout and persuasion (Huber & Arceneaux, 2007; Krasno & Green, 2008). We conduct a similar analysis with Congressional campaigns, which have even clearer identification of unintended viewership across borders.

Currently, we have constructed a preliminary sub-sample of tax-related political advertisements receiving crossborder exposure. We consider an advertisement airing to be “crossborder” if the DMA includes zip codes/counties outside of the candidate’s state. We use this sub-sample to examine the individual tax return outcomes in zip codes where there is exposure to political advertising for out-of-state races. Our intention in future drafts is to expand this analysis to help separate the influence of political advertisement tone from underlying social and economic factors that may directly impact the race jurisdiction.

Table 7 presents results for our supplemental analyses utilizing the preliminary crossborder sample. This sample of zip-codes by AGI level and year only includes zip codes with exposure to crossborder advertisements. The tone share percentages are calculated using only the crossborder population of advertisements for the zip code. Currently, we are still refining this sample and therefore, only present the tax gap analyses, which should highlight areas where an effect is most likely to be detected in our smaller sample. Consistent with the results of our primary sample in Table 5, we find a significant, negative association between the share of negative tax-related advertisements and total expenses (Table 7, Column 3), consistent with increased tax compliance. We also find a significant, negative relation between income subject to “little” information reporting and contrast advertisements, providing additional evidence that contrast advertisements are associated with reduced tax compliance. Interestingly, we also find a significant, positive association between positive tax-related political advertisements and both income subject to “little” information reporting and total expenses. As we continue to refine our crossborder analysis, we intend to expand these analyses to include all of our primary tests.

6. Textual Analysis of Tax-Related Advertisements

Data validation and descriptive analysis

Wesleyan Media Project also provides access to the corresponding video files for aired advertisements. From this data, we have collected and transcribed 1,523 unique tax-related video advertisements from the 2014 and 2016 Congressional elections. Appendix A details a selection of advertisements from these races. Most advertisements are 30 seconds long and average 79 words in length (untabulated). “Tax” is mentioned explicitly in 92.7% of transcribed advertisements, with 32.5% including two or more references (untabulated).⁵ These statistics provide validation that the WMP coding is capturing advertisements with direct tax messaging.

Figure 1 presents a word cloud depiction of the most common content words featured in the advertisements with larger words representing greater frequency. The figure excludes common function words (e.g. “the,” “and,” “but”), approval boilerplate (e.g., “approve this message”), and contraction shards (“m,” “s,” “re,” “ll,” “ve”). Tax-root terms (e.g., “tax,” “taxes,” “taxation,” “taxpayer”) are also excluded to better focus on underlying content. Full details of the exclusions are detailed in Appendix B. As demonstrated by the largest font size, “Washington” (602), “voted” (585), “jobs” (581), and “Congress” (446) are among the highest frequency words in the unweighted advertisement transcripts. This exercise provides additional validation that the content of tax advertisements not only reflects a discussion of taxation, but that discussion is linked both to Federal policymaking and larger economic outcomes. Further, the counts indicate that although tax advertisements have common features, there is not a singular, or even dominant message among our sample.

⁵ Search term includes any direct variant of “tax” including plural forms, such as taxes, taxation, and taxpayer. The basic validation does not capture tax-specific policies (e.g., “Obamacare”) or generic terminology (e.g. “loophole,” “spending”), by design.

Advertisements contain a variety of tax-related content – ranging from past voting records and platform policies to candidate’s personal misconduct. Figure 2 presents descriptive evidence on the relative frequency of topical content featured in the sample of unique tax advertisements. General references to business and the economy are most common and feature in approximately half (49.3%) of the advertisement transcripts. Language discussing families, workers, and the middle-class are also a common topic (45.3%). Directional policy implications, including government spending (30.7%), tax increases (27.3%), and tax cuts (26.3%) appear in a large percentage of ads. Relatively fewer ads focus on inequity, such as elite and high-income taxpayers (18.7%) and fairness (4.8%), and a candidate’s personal tax behavior (4.3%). Full details of key-word construction are included in Appendix B. The content categories are not mutually exclusive, so a unique advertisement may feature in many categories. For example, an advertisement could describe a tax cut for corporations and billionaires at the expense of middle-class families, and therefore, be simultaneously included in “business”, “tax cuts”, and “elite and high-income”. This high-level topical analysis indicates that, although tax advertisements share some common themes, there is substantial heterogeneity in the underlying content.

Advertisement tone and content

We further expand the analysis by considering differences in the direction (tax cut or tax increase) and targets (business, working class, or wealthy) of tax policy references by the advertisement tone as coded by WMP (positive, negative, and contrast). Figure 3 details the composition of advertisements referencing tax cuts (Panel A) and tax increases (Panel B) by both the targeted group, if applicable, and WMP coded tone. For example, as shown in Panel A, positive tones are most commonly associate with tax cuts. Alternatively, messaging surrounding the wealthy is most commonly associated with negative tone advertisements for tax cuts (Panel

A) and contrast tone advertisements for tax increase (Panel B). Alternatively, businesses and the working class/families are common targets in advertisements referencing both tax cuts and increases for all tone types.

Further, we consider whether the observed concentration of advertisement content by tone category is changed by the frequency of airings. WMP coding is available for 1,497 unique, transcribed advertisements. Descriptive details are included in Table 8. Of these advertisements, negative tone is most common (788), followed by positive tone (428), and contrast tone (281). Negative tone ads also have the highest average frequency at 525 airings, followed by contrast tone (439 airings), and positive tone (281 airings). The unweighted (unique) and weighted (airings) percentage of advertisements for tax cuts and tax increases by tone are directionally consistent for each tone type.

7. Conclusion

Negative political advertisements have become a commonplace feature of the modern political landscape. Prior literature has shown that negative campaigning can reduce perceived political efficacy and trust in government (Lau, Sigelman, and Rovner 2007), which in turn can reduce tax morale (Cullen et al., 2021). We directly explore the relation between negative political advertisements and tax morale through differences in individual taxpayer compliance.

Our results indicate that the tone of tax-related advertisements may differentially influence taxpayer behavior. We find that a higher concentration of negative tax-related political advertisements is associated with higher levels of self-reported income, indicating an increase in tax compliance, while a higher concentration of contrast political advertisements is associated with lower levels of self-reported income, indicating a decrease in tax compliance. Contrast advertisements contain both negative and positive tone, directed at two opposing candidates or

parties. These advertisements may have a more detrimental impact on political efficacy, trust in government and subsequently, tax morale by going beyond negative language to specifically highlight political division. Consequently, it is not surprising that contrast ads are associated with reduced tax compliance. The opposing relation with the share of strictly negative ads may relate to increased levels of patriotism in response to criticism or a desire to self-differentiate from perceived bad actors.

In supplemental analyses, we find that programming attributes, such as airing during a sporting event or advertisement frequency also differentially impact individual taxpayer before. In future versions of the paper, we hope to expand these analyses to also consider the content of tax-related political advertisements from our sample of transcribed video files.

Overall, our study provides insight into a potential unintended consequence of political advertisements. We find evidence consistent with the tone of tax-related advertisements having differential impact on taxpayer reporting of income, suggesting that the prevalence of different tones may either increase or decrease individual taxpayer compliance.

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Appendix A

Examples of transcribed tax-related political advertisements

Too many Arkansans know the fear of layoffs and pay cuts, but not millionaire banker French Hill. Hill and others at his bank gave thousands to reelect corrupt State Treasurer Martha Schaffner. Then 700 million taxpayer dollars were directed to Hill's bank. Hill sold the bank and made millions. But his employees faced possible layoffs and pay cuts. French Hill got millions. His employees paid the price. The Democratic Congressional Campaign Committee is responsible for the content of this advertising.

2014, House Race – Arkansas

Obamacare isn't healthy for California, but Congressman Ami Bera voted to keep it. It's expected to cost taxpayers \$2 trillion, increase taxes by 800 billion, and cut 700 billion from our Medicare. Millions were told their plans were canceled and Obamacare could cause women to lose their doctors and pay higher deductibles and co pays. Tell Congressman Bera, do what's healthy for California, Repeal Obamacare.

2014, House Race – California

Big money handouts to political friends, corporate welfare at its worst. When Ohio was bleeding cash and shedding jobs, Governor Ted Strickland raised our taxes and gave millions to a company tied to a major campaign donor. The company was supposed to hire 450. Never happened. Today, it's closed. Ohio taxpayers, they lost millions. Ted Strickland, Good for insiders, bad for Ohio. Freedom Partners Action Fund is responsible for the content of this advertisement.

2016, Senate Race – Ohio

Big issues, big differences. Katie McGinty wants to raise middle class taxes. Pat Toomey wants lower taxes. McGinty supports the job killing regulations that devastate western Pennsylvania jobs. Toomey stands up for our jobs against big government and foreign trade cheaters. McGinty would allow sanctuary cities for dangerous illegal immigrants. Toomey is fighting to end sanctuary cities. Pat Toomey for jobs and security. I'm Pat Toomey and I approve this message.

2016, Senate Race – Pennsylvania

Appendix B

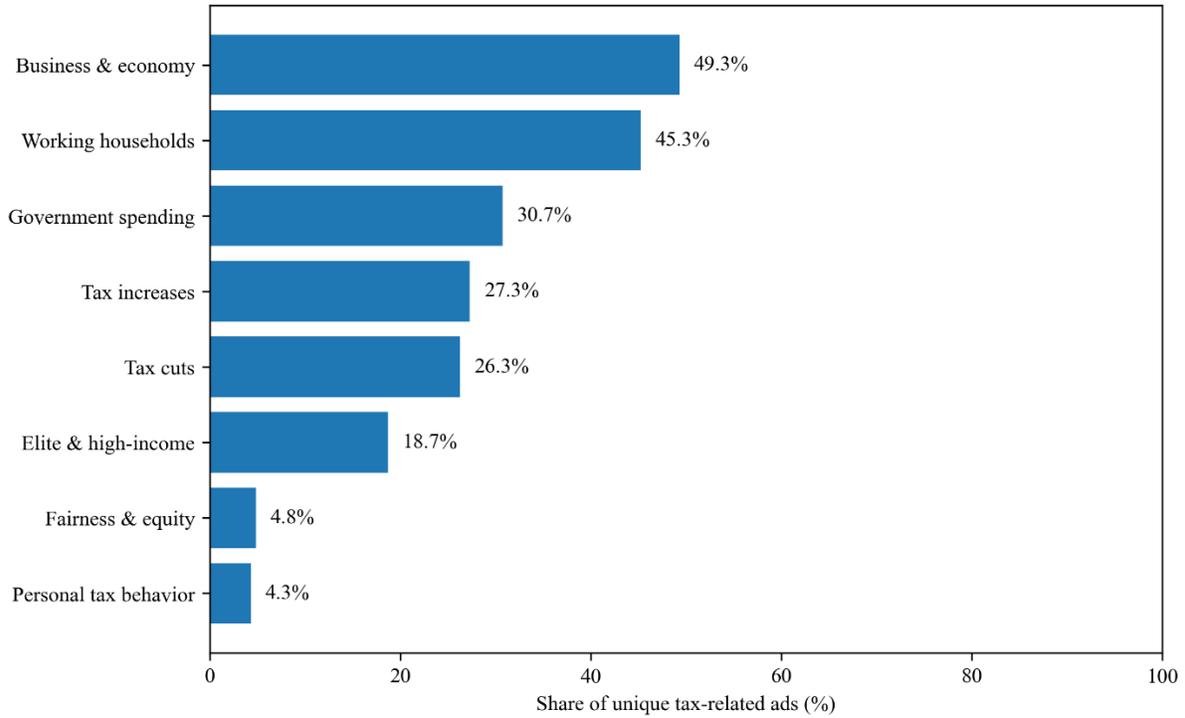
Details of textual analysis

Removal of words in construction of Figure 1	
Core function words	"the", "and", "to", "for", "a", "of", "this", "in", "is", "i", "that", "our", "we", "on", "it", "as", "be", "are", "at", "with", "by", "from", "an", "or", "was", "your", "you", "they", "their", "them", "his", "her", "he", "she"
Other commonly used filler	"but", "because", "however", "though", "although", "yet", "have", "has", "who", "will", "like", "thats", "its", "would", "dont", "been", "just", "get", "got", "make", "made", "one", "also", "more", "even", "can", "cant", "need", "about", "into", "out", "over", "under", "up", "down", "than", "then", "there", "here", "when", "while", "where", "what", "why", "how", "all", "any", "some", "most", "many", "much", "very", "so", "no", "not", "too"
Contraction remnants	"im", "ive", "ill", "youre", "theyre", "were", "re", "ll", "ve", "t", "m", "s", "d", "hes", "shes", "weve", "youve"
Boilerplate	"approve", "approved", "approves", "message", "responsible", "content", "paid", "advertising", "ad", "ads"
Tax roots	"tax", "taxes", "taxation", "taxpayer", "taxpayers"
Identification of content classification	
<i>Actions & policy direction</i>	
Tax cuts	"cut", "cuts", "lower", "reduce", "reduction", "relief"
Tax increases	"raise", "raises", "raised", "increase", "increases", "hike", "hikes"
<i>Beneficiary and/or target</i>	
Elite & high-income	"millionaire", "millionaires", "billionaire", "billionaires", "wealthy", "rich", "yacht", "yachts", "ceo", "ceos"
Working households	"working", "worker", "workers", "middle", "families", "family", "kids", "children", "seniors", "small"
Business & economy	"business", "businesses", "corporation", "corporations", "corporate", "company", "companies", "job", "jobs", "economy", "economic"
<i>Other framing</i>	
Government spending	"spend", "spending", "waste", "wasting", "deficit", "budget", "debt"
Fairness and equity	"fair", "unfair", "burden", "share"
Personal tax behavior	Requires ± 6 token co-occurrence of misconduct and personal cues or an explicit personal tax phrase
Misconduct	"cheat", "cheats", "cheated", "cheating", "evade", "evades", "evaded", "evasion", "fraud", "frauds", "fraudulent", "illegal", "illegally", "hide", "hides", "hid", "hidden", "hiding", "offshore", "shell", "shelter", "shelters", "sheltered", "sheltering", "loophole", "loopholes", "scheme", "schemes", "scam", "scams", "audit", "audits", "audited", "underreport", "underreported", "underreporting"

Personal cues	"he", "his", "him", "she", "her", "hers", "they", "their", "them", "candidate", "opponent", "senator", "congressman", "congresswoman", "governor", "millionaire", "millionaires", "billionaire", "billionaires", "wealthy", "rich", "ceo", "ceos"
Personal tax phrase	"his", "her", or "their" + "tax" variant

Note: Words are matched using exact token-based rules following text normalization. No stemming or lemmatization is applied beyond explicitly listed plural and tense variants.

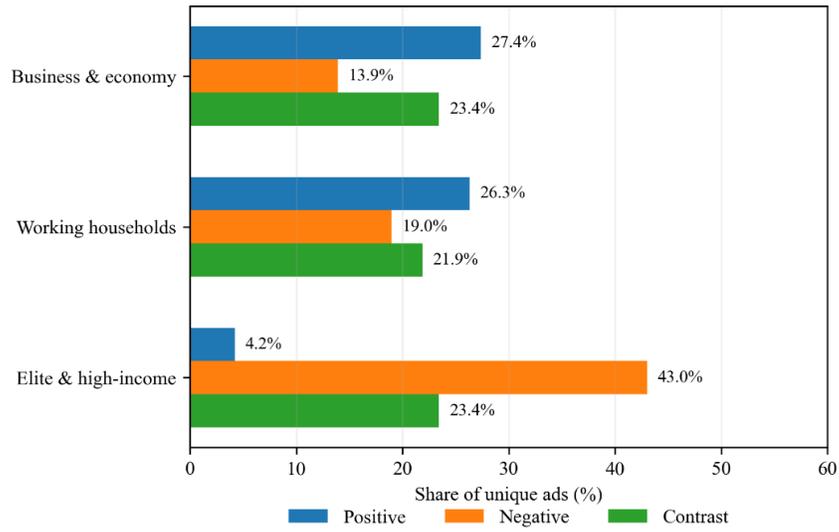
Figure 2
Content of tax-related political advertisements



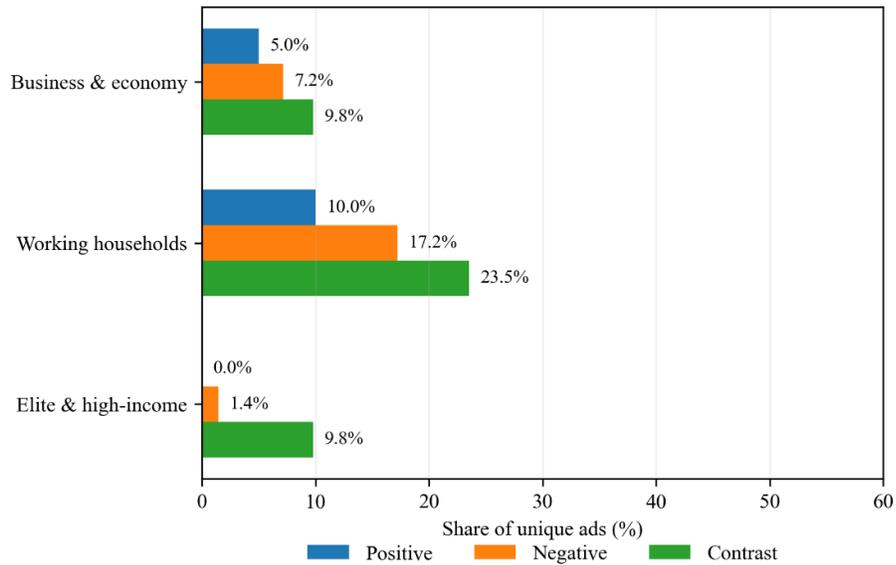
Note: This figure presents the relative occurrence of content categories in the transcripts of tax-related political advertisements. Horizontal bars report the share of unique, English-language tax-related advertisements whose transcript contains at least one term from each topical category. Categories are not mutually exclusive. Shares are computed at the unique-ad level and are not weighted by airings.

Figure 3
Tone and target of tax-related political advertisements

Panel A: Tax Cuts



Panel B: Tax Increases



Note: Figure 3 reports the share of unique, English-language tax-related advertisements that reference a given beneficiary group, conditional on advertisement tone and tax policy direction. Panel A reflects advertisements with at least one reference to tax cuts, and Panel B includes advertisements with at least one reference to tax increases. Beneficiary categories are not mutually exclusive, so a given advertisement may reference multiple groups. Shares are calculated at the unique-advertisement level and are not weighted by airings.

Table 1
Sample Selection

	Observations
SOI data available for years 2014-2019	550,476
Drop if WMP coding unavailable for DMA	-177,405
Drop if no observations with wages, interest and dividends	-47,487
Drop if missing dependent variables	-62,456
Drop if missing control variables	-54,873
Final sample for analysis (due date)	208,255

Table 2
Descriptive Statistics

Variable	Observations	Mean	Std. dev.	Min	Max
log(Invisible)	208,255	7.661	1.784	0.000	15.810
log(Invisible2)	208,255	8.997	1.456	0.000	15.842
Adjusted Gross Income	208,255	91,346	235,450	280	12,300,000
log(Wages, Income, Dividends)	208,255	10.135	1.437	1.386	15.555
% Negative Ads	208,255	0.506	0.350	0.000	1.000
% Positive Ads	208,255	0.259	0.344	0.000	1.000
% Contrast Ads	208,255	0.235	0.275	0.000	1.000
% Democratic Ads	208,255	0.435	0.361	0.000	1.000
% Republican Ads	208,255	0.553	0.363	0.000	1.000
% Senate Ads	208,255	0.453	0.432	0.000	1.000
% House Ads	208,255	0.547	0.432	0.000	1.000
% Crossborder Ads	208,255	0.504	0.256	0.000	1.000
Population	208,255	808,054	1,717,170	17,519	10,200,000
% Bachelors Degree	208,255	0.177	0.062	0.023	0.451
% Unemployment	208,255	0.063	0.023	0.000	0.246
% Poverty	208,255	0.144	0.053	0.013	0.431
Personal Income	208,255	42,800,000	92,500,000	486,852	562,000,000
Per Capita Personal Income	208,255	46,406	14,295	19,685	207,571
Real GDP	208,255	49,400,000	112,000,000	169,551	640,000,000
State Rate - Wages	208,255	5.866	3.731	0.000	14.100
State Rate - Gains	208,255	5.731	3.704	0.000	14.100
State Rate - Mortgage Interest	208,255	-3.558	4.216	-13.300	0.000
Maximum Local Tax Rate	208,255	0.032	0.017	0.003	0.080
Unemployment Insurance	208,255	1,021	571	378	3,279
Property Tax	208,255	0.137	0.040	0.057	0.268

Table 3
Political Advertisement Tone and Invisible Income

Variables	(1) Invisible	(2) Invisible2	(3) Invisible	(4) Invisible2	(5) Invisible	(6) Invisible2
%Negative Ads	-0.00427 (-0.76562)	0.00797*** (2.83722)				
%Positive Ads			0.00547 (0.76235)	-0.00447 (-1.39691)		
%Contrast Ads					0.00084 (0.12444)	-0.00939** (-2.35043)
% Republican Ads	-0.00365 (-0.56584)	0.00631* (1.94288)	-0.00546 (-0.73815)	0.00801** (2.42413)	-0.00357 (-0.50990)	0.00350 (0.99406)
% Senate Ads	-0.00358 (-0.52969)	-0.00132 (-0.34324)	-0.00363 (-0.54448)	0.00018 (0.04586)	-0.00490 (-0.74760)	0.00051 (0.13980)
Population	0.00000** (2.34908)	-0.00000 (-0.27035)	0.00000** (2.50008)	-0.00000 (-0.49336)	0.00000** (2.41632)	-0.00000 (-0.21272)
% Bachelors Degree	0.00403 (0.03262)	0.02540 (0.45267)	0.00243 (0.01972)	0.03286 (0.58503)	-0.00133 (-0.01078)	0.03076 (0.54532)
% Unemployment	-0.16392 (-1.43988)	0.14252** (2.29758)	-0.16655 (-1.46322)	0.15389** (2.47010)	-0.17191 (-1.52661)	0.15015** (2.43079)
% Poverty	-0.04356 (-0.56527)	0.02190 (0.50423)	-0.04516 (-0.58666)	0.02496 (0.57284)	-0.04491 (-0.58302)	0.02145 (0.49184)
Personal Income	0.00000*** (5.97485)	0.00000 (1.10344)	0.00000*** (6.03470)	0.00000 (1.15164)	0.00000*** (5.77226)	0.00000 (1.56915)
Per Capita Personal Income	0.00000* (1.93354)	-0.00000 (-0.11904)	0.00000* (1.92139)	-0.00000 (-0.14469)	0.00000* (1.95379)	-0.00000 (-0.20355)
Real GDP	-0.00000*** (-4.31856)	-0.00000* (-1.70116)	-0.00000*** (-4.38707)	-0.00000* (-1.69901)	-0.00000*** (-4.26780)	-0.00000* (-1.87050)
State Tax Rate - Wages	0.00347 (0.21851)	-0.02636*** (-3.53288)	0.00109 (0.06660)	-0.02614*** (-3.42616)	0.00541 (0.33712)	-0.03271*** (-4.34911)
State Tax Rate - Gains	-0.00270 (-0.19411)	0.01768*** (2.78531)	-0.00155 (-0.10900)	0.01962*** (3.02630)	-0.00549 (-0.40275)	0.02344*** (3.82644)
State Tax Rate - Mortgage Interest	-0.00230 (-0.98336)	0.00129 (1.53697)	-0.00232 (-0.99143)	0.00123 (1.44696)	-0.00223 (-0.95413)	0.00117 (1.39065)
Maximum Local Tax Rate	0.77551 (1.53982)	-0.17568 (-0.58994)	0.83070 (1.58456)	-0.18191 (-0.58946)	0.73173 (1.46697)	-0.02989 (-0.10031)
Unemployment Insurance	-0.00007*** (-3.86168)	-0.00001 (-0.91213)	-0.00007*** (-3.99526)	-0.00001 (-0.56181)	-0.00007*** (-3.92803)	-0.00001 (-0.88917)
Property Tax Rate	-2.14560*** (-6.09592)	-0.27659 (-1.54568)	-2.17954*** (-6.03774)	-0.27957 (-1.54923)	-2.11246*** (-5.98060)	-0.37522** (-2.09735)
WID	0.91721*** (156.40980)	0.87092*** (204.12823)	0.91721*** (156.40974)	0.87091*** (204.13337)	0.91721*** (156.40790)	0.87091*** (204.12842)
Observations	208,255	208,255	208,255	208,255	208,255	208,255
R-squared	0.838	0.912	0.838	0.912	0.838	0.912
Adjusted R-squared	0.837	0.912	0.837	0.912	0.837	0.912
AGI Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes
County Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes

Notes: This table presents results test of tone-share of tax-related political advertisements on invisible income. Columns vary by measure of invisible income and tone-share type: share negative tone (1-2), share positive tone (3-4), and share contrast tone (5-6). All regressions include county, year and AGI-level fixed effects. Standard errors are clustered at the county level with robust t-statistics presented in parentheses. *** p<0.01, ** p<0.05, * p<0.10

Table 4
Political Advertisement Tone and Components of Invisible Income

Variables	(1) Business Income	(2) Flowthrough	(3) Net Capital Gains	(4) Business Income	(5) Flowthrough	(6) Net Capital Gains	(7) Business Income	(8) Flowthrough	(9) Net Capital Gains
%Negative Ads	0.00910* (1.80124)	0.00250 (0.35153)	-0.01783** (-2.10924)						
%Positive Ads				-0.00302 (-0.51216)	-0.00388 (-0.45464)	-0.00149 (-0.14087)			
%Contrast Ads							-0.01375** (-2.12265)	0.00061 (0.05449)	0.03706*** (3.46445)
% Republican Ads	-0.01312** (-2.43115)	-0.00787 (-0.97017)	-0.00288 (-0.32054)	-0.01173** (-2.15782)	-0.00661 (-0.80828)	-0.00359 (-0.36211)	-0.01736*** (-3.00326)	-0.00737 (-0.83616)	0.00878 (0.91298)
% Senate Ads	-0.00496 (-0.74580)	-0.00072 (-0.06306)	0.00925 (0.97919)	-0.00269 (-0.40958)	-0.00079 (-0.06862)	0.00282 (0.30051)	-0.00314 (-0.49632)	0.00028 (0.02530)	0.00651 (0.71303)
Population	-0.00000 (-0.93230)	0.00000 (0.12647)	0.00000* (1.67486)	-0.00000 (-1.13500)	0.00000 (0.09191)	0.00000* (1.81705)	-0.00000 (-0.79099)	0.00000 (0.09484)	0.00000 (1.45720)
% Bachelors Degree	0.23058** (2.16461)	-0.08657 (-0.49712)	-0.29504* (-1.85256)	0.24057** (2.26810)	-0.08649 (-0.49750)	-0.32072** (-2.00282)	0.23514** (2.20640)	-0.08314 (-0.47684)	-0.29740* (-1.86657)
% Unemployment	-0.10958 (-0.90180)	-0.20301 (-1.03508)	-0.19380 (-1.20869)	-0.09436 (-0.77503)	-0.20181 (-1.03229)	-0.23382 (-1.45736)	-0.10391 (-0.85936)	-0.19648 (-1.00479)	-0.19636 (-1.22396)
% Poverty	0.08381 (1.05901)	0.17193 (1.31415)	-0.03084 (-0.29189)	0.08716 (1.09862)	0.17293 (1.32373)	-0.03801 (-0.35964)	0.08205 (1.03399)	0.17351 (1.32632)	-0.02389 (-0.22779)
Personal Income	0.00000*** (3.62187)	0.00000*** (3.31930)	0.00000* (1.85307)	0.00000*** (3.65103)	0.00000*** (3.30117)	0.00000 (1.33325)	0.00000*** (3.94951)	0.00000*** (3.38377)	0.00000 (1.25285)
Per Capita Personal Income	0.00000*** (3.47061)	0.00000 (1.02272)	-0.00000** (-2.23882)	0.00000*** (3.42992)	0.00000 (1.03427)	-0.00000** (-2.15697)	0.00000*** (3.40693)	0.00000 (1.01995)	-0.00000** (-2.14338)
Real GDP	-0.00000*** (-3.50998)	-0.00000*** (-2.80115)	-0.00000 (-0.11630)	-0.00000*** (-3.48898)	-0.00000*** (-2.79315)	0.00000 (0.00085)	-0.00000*** (-3.63709)	-0.00000*** (-2.82252)	0.00000 (0.13088)
State Tax Rate - Wages	-0.02086 (-1.35319)	-0.04475* (-1.85076)	0.04340* (1.66195)	-0.02209 (-1.40548)	-0.04264* (-1.69045)	0.05133* (1.93039)	-0.02942* (-1.88479)	-0.04543* (-1.84367)	0.06392** (2.51374)
State Tax Rate - Gains	0.02174 (1.54151)	0.04274** (2.08131)	-0.02595 (-1.09935)	0.02546* (1.76592)	0.04149* (1.95641)	-0.03873 (-1.61590)	0.02860** (2.09811)	0.04437** (2.22746)	-0.04051* (-1.78038)
State Tax Rate - Mortgage Interest	0.00176 (0.90057)	0.01014*** (3.67411)	-0.00440 (-1.56189)	0.00165 (0.84493)	0.01016*** (3.67949)	-0.00405 (-1.43573)	0.00163 (0.83162)	0.01009*** (3.66360)	-0.00412 (-1.46103)
Maximum Local Tax Rate	0.48839 (0.89366)	0.64579 (0.82397)	0.80470 (1.02587)	0.51682 (0.92997)	0.59552 (0.73891)	0.61538 (0.80990)	0.68077 (1.25521)	0.66922 (0.85936)	0.32214 (0.43304)
Unemployment Insurance	0.00000 (0.16340)	-0.00008*** (-3.06265)	0.00001 (0.17666)	0.00001 (0.43958)	-0.00008*** (-3.07364)	-0.00000 (-0.11873)	0.00000 (0.09945)	-0.00008*** (-2.97625)	0.00001 (0.39659)
Property Tax Rate	-1.01970*** (-3.06994)	-0.69176 (-1.23542)	-3.28813*** (-5.74657)	-1.04860*** (-3.14996)	-0.66642 (-1.18591)	-3.14692*** (-5.39310)	-1.14386*** (-3.43004)	-0.70989 (-1.28727)	-2.99262*** (-5.26414)
WID	0.85766*** (133.41868)	0.49442*** (42.60836)	0.74110*** (98.86627)	0.85766*** (133.42712)	0.49442*** (42.60775)	0.74111*** (98.87256)	0.85766*** (133.42924)	0.49442*** (42.60788)	0.74111*** (98.87654)
Observations	189,776	140,193	189,411	189,776	140,193	189,411	189,776	140,193	189,411
R-squared	0.804	0.823	0.801	0.804	0.823	0.801	0.804	0.823	0.801
Adjusted R-squared	0.802	0.822	0.800	0.802	0.822	0.800	0.802	0.822	0.800
AGI Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
County Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: This table presents results test of tone-share of tax-related political advertisements on the components of invisible income. Columns vary by component of invisible income and tone-share type: share negative tone (1-3), share positive tone (4-6), and share contrast tone (7-9). All regressions include county, year and AGI-level fixed effects. Standard errors are clustered at the county level with robust t-statistics presented in parentheses. *** p<0.01, ** p<0.05, * p<0.10

Table 5
Political Advertisement Tone and Tax Gap Categories

Variables	(1) Little reporting	(2) Some reporting	(3) Total expenses	(4) Little reporting	(5) Some reporting	(6) Total expenses	(7) Little reporting	(8) Some reporting	(9) Total expenses
%Negative Ads	0.00666 (0.83174)	-0.01774** (-2.18602)	-0.00439* (-1.74867)						
%Positive Ads				-0.00577 (-0.62685)	-0.00093 (-0.09507)	0.00386 1.22142			
%Contrast Ads							-0.00501 (-0.46363)	0.03602*** (3.57270)	0.00328 (0.87609)
% Republican Ads	-0.00560 (-0.63312)	0.00016 (0.01895)	0.00165 (0.57568)	-0.00357 (-0.39446)	-0.00072 (-0.07555)	0.00029 (0.09758)	-0.00689 (-0.71601)	0.01147 (1.26082)	0.00254 (0.81743)
% Senate Ads	-0.00185 (-0.17289)	0.01022 (1.13948)	0.00028 (0.07533)	-0.00105 (-0.09941)	0.00400 (0.44609)	-0.00021 (-0.05790)	-0.00003 (-0.00288)	0.00743 (0.85654)	-0.00088 (-0.24098)
Population	0.00000 (0.32051)	0.00000* (1.90265)	0.00000 (1.37507)	0.00000 (0.23265)	0.00000** (2.04738)	0.00000 (1.43228)	0.00000 (0.29607)	0.00000* (1.64617)	0.00000 (1.29897)
% Bachelors Degree	0.07578 (0.42165)	-0.06768 (-0.43908)	-0.06560 (-1.16336)	0.08072 (0.44914)	-0.09271 (-0.60000)	-0.06859 (-1.21519)	0.08190 (0.45356)	-0.07089 (-0.46058)	-0.06972 (-1.23538)
% Unemployment	-0.31776* (-1.72568)	-0.11815 (-0.75519)	0.02372 (0.37543)	-0.31002* (-1.69934)	-0.15729 (-1.00036)	0.01898 (0.29903)	-0.30832* (-1.68027)	-0.12159 (-0.78052)	0.01779 (0.28143)
% Poverty	-0.00300 (-0.02356)	0.00726 (0.06879)	0.03875 (0.94949)	-0.00018 (-0.00144)	-0.00003 (-0.00032)	0.03712 (0.91020)	-0.00224 (-0.01759)	0.01368 (0.13054)	0.03830 (0.93842)
Personal Income	0.00000*** (4.18747)	0.00000*** (5.39077)	0.00000*** (2.95105)	0.00000*** (4.06520)	0.00000*** (4.74070)	0.00000*** (2.92369)	0.00000*** (4.31713)	0.00000*** (5.06716)	0.00000*** (2.76653)
Per Capita Personal Income	0.00001*** (4.84065)	-0.00000 (-0.84822)	0.00000*** (2.79989)	0.00001*** (4.83084)	-0.00000 (-0.75993)	0.00000*** (2.79275)	0.00001*** (4.83698)	-0.00000 (-0.72499)	0.00000*** (2.85476)
Real GDP	-0.00000*** (-4.23431)	-0.00000*** (-3.60470)	-0.00000*** (-2.82183)	-0.00000*** (-4.18835)	-0.00000*** (-3.38042)	-0.00000*** (-2.82045)	-0.00000*** (-4.26847)	-0.00000*** (-3.39141)	-0.00000*** (-2.78770)
State Tax Rate - Wages	-0.05043** (-2.06145)	0.03228 (1.34146)	0.01119 (1.17800)	-0.04871* (-1.92622)	0.03979 (1.60249)	0.01002 (1.02545)	-0.05490** (-2.21307)	0.05232** (2.22612)	0.01406 (1.45057)
State Tax Rate - Gains	0.09685*** (4.45876)	-0.01532 (-0.77067)	-0.01230 (-1.42416)	0.09702*** (4.36515)	-0.02761 (-1.34926)	-0.01236 (-1.40608)	0.10162*** (4.83523)	-0.02968 (-1.51973)	-0.01537* (-1.78735)
State Tax Rate - Mortgage Interest	-0.00247 (-0.50997)	-0.00433 (-1.37927)	-0.00057 (-0.39570)	-0.00250 (-0.51581)	-0.00399 (-1.26725)	-0.00056 (-0.38723)	-0.00259 (-0.53423)	-0.00405 (-1.29408)	-0.00050 (-0.34675)
Maximum Local Tax Rate	0.13469 (0.16352)	1.24036* (1.76823)	0.90968*** (2.92870)	0.09442 (0.11112)	1.06186 (1.54512)	0.93701*** (2.96154)	0.23540 (0.28163)	0.77056 (1.14849)	0.84437*** (2.68941)
Unemployment Insurance	-0.00004 (-1.59295)	-0.00008*** (-3.25214)	-0.00002* (-1.90006)	-0.00004 (-1.50751)	-0.00009*** (-3.61075)	-0.00002** (-2.10697)	-0.00004 (-1.54234)	-0.00007*** (-3.03180)	-0.00002* (-1.94185)
Property Tax Rate	0.16072 (0.30248)	-2.53361*** (-4.71106)	-0.35839** (-1.96906)	0.18037 (0.33250)	-2.39888*** (-4.36196)	-0.37260** (-2.01270)	0.09190 (0.17151)	-2.24169*** (-4.12696)	-0.31280* (-1.71087)
WID	0.64242*** (101.51103)	0.79161*** (118.70595)	0.86753*** (173.51257)	0.64242*** (101.50930)	0.79162*** (118.71438)	0.86753*** (173.50970)	0.64241*** (101.51589)	0.79162*** (118.71238)	0.86753*** (173.50832)
Observations	178,412	192,835	201,016	178,412	192,835	201,016	178,412	192,835	201,016
R-squared	0.658	0.817	0.897	0.658	0.817	0.897	0.658	0.817	0.897
Adjusted R-squared	0.655	0.816	0.896	0.655	0.816	0.896	0.655	0.816	0.896
AGI Fixed Effect	Yes								
County Fixed Effect	Yes								
Year Fixed Effect	Yes								

Notes: This table presents results test of tone-share of tax-related political advertisements on the tax gap information reporting categories (some information reporting, little information reporting and total expenses). Columns vary by component of tax gap category and tone-share type: share negative tone (1-3), share positive tone (4-6), and share contrast tone (7-9). All regressions include county, year and AGI-level fixed effects. Standard errors are clustered at the county level with robust t-statistics presented in parentheses. *** p<0.01, ** p<0.05, * p<0.10

Table 6, Panel A
Political Advertisement Features and Invisible Income

Variables	(1) Invisible	(2) Invisible2	(3) Invisible	(4) Invisible2
% Sports Programming	0.11515* (1.66918)	0.07164* (1.67843)		
Average Ad Frequency			-0.00007*** (-3.03202)	-0.00002 (-1.48277)
% Republican Ads	-0.00586 (-0.88339)	0.00547* (1.64790)	-0.00751 (-1.11331)	0.00576* (1.69660)
% Senate Ads	-0.00534 (-0.81959)	0.00103 (0.27901)	-0.00481 (-0.74588)	0.00131 (0.35823)
Population	0.00000** (2.44345)	-0.00000 (-0.51866)	0.00000** (2.44690)	-0.00000 (-0.45993)
% Bachelors Degree	-0.00201 (-0.01632)	0.03622 (0.64354)	-0.00717 (-0.05831)	0.03495 (0.62056)
% Unemployment	-0.16575 (-1.47240)	0.16323*** (2.64339)	-0.16405 (-1.45066)	0.16115*** (2.58701)
% Poverty	-0.04165 (-0.53928)	0.02724 (0.62383)	-0.04302 (-0.55758)	0.02559 (0.58669)
Personal Income	0.00000*** (5.92970)	0.00000 (1.34991)	0.00000*** (5.50278)	0.00000 (1.40390)
Per Capita Personal Income	0.00000** (2.01801)	-0.00000 (-0.12756)	0.00000 (1.41265)	-0.00000 (-0.39642)
Real GDP	-0.00000*** (-4.31130)	-0.00000* (-1.71848)	-0.00000*** (-4.04527)	-0.00000* (-1.77825)
State Tax Rate - Wages	0.00414 (0.26469)	-0.03003*** (-4.01673)	0.01443 (0.88653)	-0.02701*** (-3.52068)
State Tax Rate - Gains	-0.00474 (-0.35460)	0.02322*** (3.75167)	-0.01082 (-0.77847)	0.02139*** (3.42510)
State Tax Rate - Mortgage Interest	-0.00206 (-0.88460)	0.00126 (1.46413)	-0.00186 (-0.79485)	0.00126 (1.47882)
Maximum Local Tax Rate	0.75615 (1.52580)	-0.09568 (-0.32034)	0.77256 (1.52170)	-0.09780 (-0.32382)
Unemployment Insurance	-0.00008*** (-4.10008)	-0.00001 (-0.63168)	-0.00008*** (-4.11949)	-0.00001 (-0.56622)
Property Tax Rate	-2.14637*** (-6.04436)	-0.34982** (-1.97810)	-2.11813*** (-6.01481)	-0.33162* (-1.85925)
WID	0.91722*** (156.40294)	0.87091*** (204.11946)	0.91722*** (156.38910)	0.87091*** (204.12184)
Observations	208,255	208,255	208,255	208,255
R-squared	0.838	0.912	0.838	0.912
Adjusted R-squared	0.837	0.912	0.837	0.912
AGI Fixed Effect	Yes	Yes	Yes	Yes
County Fixed Effect	Yes	Yes	Yes	Yes
Year Fixed Effect	Yes	Yes	Yes	Yes

Notes: This table presents results test of features of tax-related political advertisements on measures of invisible income. Columns vary by the measure of invisible income and ad feature: sports broadcast (1-2) and average advertisement frequency (3-4). All regressions include county, year and AGI-level fixed effects. Standard errors are clustered at the county level with robust t-statistics presented in parentheses. *** p<0.01, ** p<0.05, * p<0.10

Table 6, Panel B
Political Advertisement Features and Components of Invisible Income

Variables	(1) Business Income	(2) Flowthrough	(3) Net Capital Gains	(4) Business Income	(5) Flowthrough	(6) Net Capital Gains
% Sports Programming	0.13886* (1.80318)	-0.04849 (-0.51387)	0.32623*** (3.09958)			
Average Ad Frequency				-0.00004* (-1.80112)	-0.00003 (-1.03504)	-0.00009*** (-2.60954)
% Republican Ads	-0.01505*** (-2.72206)	-0.00678 (-0.81750)	-0.00945 (-1.01960)	-0.01456*** (-2.59986)	-0.00948 (-1.15017)	-0.00904 (-0.93477)
% Senate Ads	-0.00239 (-0.38350)	0.00008 (0.00743)	0.00241 (0.26474)	-0.00179 (-0.28621)	0.00052 (0.04683)	0.00356 (0.38955)
Population	-0.00000 (-1.20294)	0.00000 (0.11190)	0.00000* (1.80920)	-0.00000 (-1.11274)	0.00000 (0.12773)	0.00000* (1.80669)
% Bachelors Degree	0.24324** (2.29074)	-0.08359 (-0.47965)	-0.32143** (-1.99417)	0.23945** (2.24917)	-0.08770 (-0.50455)	-0.32793** (-2.04810)
% Unemployment	-0.08236 (-0.67935)	-0.20126 (-1.03086)	-0.21137 (-1.33030)	-0.08608 (-0.70990)	-0.19142 (-0.97972)	-0.21910 (-1.36325)
% Poverty	0.09141 (1.15044)	0.17156 (1.31290)	-0.02870 (-0.27279)	0.08813 (1.11033)	0.17366 (1.33111)	-0.03572 (-0.33758)
Personal Income	0.00000*** (3.78047)	0.00000*** (3.39036)	0.00000 (1.39383)	0.00000*** (3.65561)	0.00000*** (3.56170)	0.00000* (1.69018)
Per Capita Personal Income	0.00000*** (3.55175)	0.00000 (0.99231)	-0.00000** (-1.96960)	0.00000*** (2.97003)	0.00000 (0.84706)	-0.00001*** (-2.62945)
Real GDP	-0.00000*** (-3.50677)	-0.00000*** (-2.85023)	0.00000 (0.18124)	-0.00000*** (-3.41122)	-0.00000*** (-2.98079)	-0.00000 (-0.17920)
State Tax Rate - Wages	-0.02550* (-1.66647)	-0.04524* (-1.89164)	0.04717* (1.87225)	-0.01926 (-1.23172)	-0.04072* (-1.67453)	0.06299** (2.40581)
State Tax Rate - Gains	0.02844** (2.09612)	0.04403** (2.22931)	-0.03536 (-1.59712)	0.02473* (1.79517)	0.04171** (2.09840)	-0.04497* (-1.94675)
State Tax Rate - Mortgage Interest	0.00181 (0.92935)	0.01000*** (3.63529)	-0.00356 (-1.27002)	0.00180 (0.92457)	0.01030*** (3.73605)	-0.00357 (-1.26806)
Maximum Local Tax Rate	0.59024 (1.09111)	0.65990 (0.85293)	0.69615 (0.92834)	0.58770 (1.08326)	0.69429 (0.89124)	0.69227 (0.88117)
Unemployment Insurance	0.00001 (0.32701)	-0.00008*** (-3.01925)	-0.00001 (-0.28205)	0.00001 (0.38255)	-0.00008*** (-3.11461)	-0.00001 (-0.21133)
Property Tax Rate	-1.11927*** (-3.32071)	-0.69700 (-1.25168)	-3.24402*** (-5.41655)	-1.08404*** (-3.24326)	-0.71536 (-1.29905)	-3.16929*** (-5.37315)
WID	0.85766*** (133.42771)	0.49442*** (42.60698)	0.74112*** (98.87723)	0.85766*** (133.42281)	0.49442*** (42.60879)	0.74111*** (98.87090)
Observations	189,776	140,193	189,411	189,776	140,193	189,411
R-squared	0.804	0.823	0.801	0.804	0.823	0.801
Adjusted R-squared	0.802	0.822	0.800	0.802	0.822	0.800
AGI Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes
County Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes

Notes: This table presents results test of features of tax-related political advertisements on the components of invisible income. Columns vary by component of invisible income and ad feature: sports broadcast (1-3) and average advertisement frequency (4-6). All regressions include county, year and AGI-level fixed effects. Standard errors are clustered at the county level with robust t-statistics presented in parentheses. *** p<0.01, ** p<0.05, * p<0.10

Table 7
Crossborder Political Advertisement Tone and Tax Gap Categories

Variables	(1) Little reporting	(2) Some reporting	(3) Total expenses	(4) Little reporting	(5) Some reporting	(6) Total expenses	(7) Little reporting	(8) Some reporting	(9) Total expenses
%Negative Ads	-0.03948 (-1.23311)	-0.00136 (-0.04930)	-0.02676** (-2.19261)						
%Positive Ads				0.07808** (2.45592)	-0.00161 (-0.05741)	0.02752** (2.09638)			
%Contrast Ads							-0.06798* (-1.65435)	0.00629 (0.17844)	0.00390 (0.24308)
% Republican Ads	0.00292 (0.07294)	0.02441 (0.67519)	0.00908 (0.56400)	-0.02531 (-0.64854)	0.02523 (0.65071)	0.00015 (0.00949)	-0.01474 (-0.32246)	0.02653 (0.64688)	0.01315 (0.69148)
% Senate Ads	0.02438 (0.60150)	0.01087 (0.32890)	0.00961 (0.60225)	0.03341 (0.88598)	0.00998 (0.31370)	0.00833 (0.53211)	0.00687 (0.17699)	0.01076 (0.35065)	0.00093 (0.06217)
Population	-0.00000 (-0.88366)	0.00000 (1.37239)	0.00000 (0.59439)	-0.00000 (-0.49527)	0.00000 (1.50091)	0.00000 (0.99107)	0.00000 (0.19059)	0.00000 (1.38988)	0.00000 (1.05748)
% Bachelors Degree	-0.09419 (-0.24136)	0.70838** (2.09664)	-0.27048** (-1.99478)	-0.07897 (-0.20541)	0.70800** (2.09513)	-0.26602* (-1.93603)	-0.08482 (-0.21895)	0.70752** (2.09411)	-0.26994* (-1.91972)
% Unemployment	0.21056 (0.46639)	-0.06774 (-0.20364)	0.05082 (0.36955)	0.21313 (0.47946)	-0.07036 (-0.21241)	0.04271 (0.31239)	0.14512 (0.32911)	-0.06660 (-0.20023)	0.02842 (0.20851)
% Poverty	-0.47809* (-1.87989)	0.04420 (0.20319)	-0.04182 (-0.44273)	-0.49909** (-1.98899)	0.04551 (0.20887)	-0.04421 (-0.46516)	-0.47592* (-1.85355)	0.04511 (0.20895)	-0.03201 (-0.33793)
Personal Income	0.00000 (0.45455)	-0.00000 (-0.88294)	0.00000 (0.27877)	0.00000 (0.19866)	-0.00000 (-0.92687)	-0.00000 (-0.14135)	-0.00000 (-0.33905)	-0.00000 (-0.82770)	-0.00000 (-0.14918)
Per Capita Personal Income	0.00001 (1.13955)	-0.00001 (-0.78578)	0.00001** (2.42176)	0.00001 (1.20799)	-0.00001 (-0.78097)	0.00001*** (2.65958)	0.00001 (1.54377)	-0.00001 (-0.79121)	0.00001*** (2.63999)
Real GDP	0.00000 (0.76869)	0.00000 (0.68122)	-0.00000 (-0.22283)	0.00000 (0.91793)	0.00000 (0.66843)	-0.00000 (-0.09478)	0.00000 (0.81909)	0.00000 (0.66571)	-0.00000 (-0.28745)
State Tax Rate - Wages	-0.07096 (-0.91884)	0.04808 (0.71173)	-0.01624 (-0.60039)	-0.03045 (-0.40109)	0.04698 (0.66785)	-0.00306 (-0.11611)	-0.04054 (-0.48803)	0.04489 (0.62932)	-0.02022 (-0.66364)
State Tax Rate - Gains	0.08529* (1.87044)	0.00948 (0.19095)	0.00276 (0.17197)	0.07875* (1.75478)	0.01000 (0.20209)	0.00230 (0.14448)	0.08969** (1.97110)	0.00981 (0.19981)	0.00687 (0.41695)
State Tax Rate - Mortgage Interest	0.02859*** (3.55710)	0.00172 (0.29553)	0.00853* (1.71934)	0.02458*** (3.25254)	0.00170 (0.29425)	0.00654 (1.44955)	0.02181*** (2.85357)	0.00213 (0.31366)	0.00755* (1.65329)
Maximum Local Tax Rate	-0.05433 (-0.01782)	-0.30773 (-0.14832)	3.26456*** (2.91497)	0.18080 (0.05915)	-0.34835 (-0.17096)	3.15359*** (2.78183)	-0.98350 (-0.33419)	-0.30046 (-0.14789)	2.85179** (2.58566)
Unemployment Insurance	0.00006 (0.86056)	-0.00006 (-1.15868)	-0.00001 (-0.57023)	0.00006 (0.94314)	-0.00006 (-1.14769)	-0.00001 (-0.47126)	0.00007 (0.95901)	-0.00006 (-1.16183)	-0.00001 (-0.58613)
Property Tax Rate	-1.69885 (-0.86430)	-4.51585*** (-3.32087)	-0.23027 (-0.39542)	-1.36467 (-0.69727)	-4.51028*** (-3.30292)	-0.04765 (-0.08041)	-0.98139 (-0.49675)	-4.55238*** (-3.31449)	-0.10948 (-0.18475)
WID	0.61248*** (54.14621)	0.77101*** (69.76233)	0.85506*** (109.56899)	0.61247*** (54.14795)	0.77101*** (69.76330)	0.85505*** (109.57735)	0.61243*** (54.13477)	0.77101*** (69.77531)	0.85506*** (109.54980)
Observations	31,363	33,775	35,902	31,363	33,775	35,902	31,363	33,775	35,902
R-squared	0.636	0.792	0.890	0.636	0.792	0.890	0.636	0.792	0.890
Adjusted R-squared	0.631	0.789	0.889	0.631	0.789	0.889	0.631	0.789	0.888
AGI Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
County Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Crossborder Sample	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: This table presents results test of tone-share of tax-related political advertisements on the tax gap information reporting categories (some information reporting, little information reporting and total expenses). Columns vary by component of tax gap category and tone-share type: share negative tone (1-3), share positive tone (4-6), and share contrast tone (7-9). The tests in this table on conducted on a reduced sample of zip codes with exposure to crossborder advertisements. The tone share is calculated only on advertisements with crossborder exposure. All regressions include county, year and AGI-level fixed effects. Standard errors are clustered at the county level with robust t-statistics presented in parentheses. *** p<0.01, ** p<0.05, * p<0.10

Table 8
Tone and direction of tax-related political advertisements

<i>Ad Tone</i>	<i># Unique ads</i>	<i># Ad airings</i>	<i>Mean airings</i>	<i>Median airings</i>	<i>Max airings</i>	<i>% Tax "cut" (Unique)</i>	<i>% Tax "cut" (Airings)</i>	<i>% Tax "raise" (Unique)</i>	<i>% Tax "raise" (Airings)</i>
Positive	428	148,766	347.58	232	3,878	22.20%	21.90%	9.30%	6.50%
Negative	788	413,904	525.26	419	2,589	10.00%	11.50%	26.50%	23.80%
Contrast	281	123,238	438.57	374	2,092	22.80%	22.70%	18.10%	17.70%

Note: This table summarizes the distribution of advertisement airings at the unique-ad level, separately by ad tone. Each observation corresponds to a distinct advertisement identified by a unique video file. Airings reflect the total number of times each advertisement aired in the WMP data. Statistics include the mean, median, and maximum of airings per unique ad. Tone classifications (positive, negative, contrast) are mutually exclusive and assigned at the ad level. The percentage of advertisements including tax cuts and tax increases for both the unweighted (unique) and weighted (airings) number of ads are also presented.

