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DID THE 2017 TAX REFORM DISCRIMINATE AGAINST BLUE-STATE VOTERS?

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The Tax Cuts and Jobs Act of 2017 (TCJA) significantly changed federal income taxation, including limiting SALT (state and local property, income, and sales taxes) deductibility to $10,000. We estimate the TCJA's differential effect on red- and blue-state taxpayers and the SALT limitation's contribution to this differential. We find an average increase in remaining lifetime spending of 1.6 percent in red states versus 1.3 percent in blue states. Among the richest 10 percent of households, red states enjoyed a 2 percent increase compared to 1.2 percent in blue states, with the gap driven almost entirely by the SALT deduction limitation.

Keywords: fiscal policy, elections, Tax Cuts and Jobs Act, federal tax reform, state and local taxes, life-cycle model

JEL Codes: D72, H22, H71

I. INTRODUCTION

The Tax Cuts and Jobs Act of 2017 (TCJA) represents the most significant change to U.S. personal and corporate income taxation since the 1986 Tax Reform Act. The TCJA's personal tax changes reduced the top marginal tax rate, eliminated exemptions, expanded the child tax credit, expanded the standard deduction, lowered the cap on future mortgage-interest deductions, and introduced a $10,000 limitation on the amount of SALT (state and local property, income, and sales taxes) that can be deducted. Previously, there was no limit, except for those subject to the alternative minimum tax (AMT). This paper estimates the effect of these changes on U.S. households and demonstrates

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that the reduction in taxes and corresponding increase in remaining lifetime spending differentially affected residents of particular states, which we classify as blue, red, or purple based on their recent voting behavior in presidential elections.

Our analysis is based on a detailed life-cycle consumption-smoothing program called The Fiscal Analyzer (TFA) described in Kotlikoff (2019). Auerbach, Kotlikoff, and Koehler (2016, 2018) and Auerbach et al. (2017) have used TFA to study overall fiscal progressivity, remaining marginal net lifetime tax rates on working, and the progressivity of the TCJA. This study is the first use of TFA to study how changes in federal taxes differentially affect households that differ not only by resource percentile within age cohort, but also by state.

To explore red–blue TCJA differences, we designate states, including the District of Columbia, as blue, red, or purple based on the average voter margin over the past five presidential elections. States where the Republican share of total votes was, on average, 5 percentage points higher than the Democratic share of total votes over the past five presidential elections are classified as red. States where the Democratic share of total votes was, on average, 5 percentage points higher than the Republican share of total votes over the past five presidential elections are classified as blue. The remaining states are classified as purple.[1]

To examine the distributional impact of the TCJA, we classify households in the Federal Reserve Board's 2016 Survey of Consumer Finances (SCF) into "resource" percentiles based on how much human wealth (such as wage income) and nonhuman wealth (such as home equity) they are projected to have over their lifetime relative to their same-aged peers.[2] Lifetime resources for households, along with lifetime spending and net taxes (taxes minus transfers), are projected using TFA, which incorporates details of all major federal and state tax and transfer payment policies.

TFA also incorporates pre-TCJA personal and corporate income tax codes. As an output, TFA imputes and projects all taxes paid over the lifetime, discounting all to present value.[3] Hence, it can be used to measure the TCJA-induced percentage change in the discounted present value of remaining lifetime spending for each SCF household. To determine differences in annual TCJA treatment by state, each SCF household is run through TFA 51 times (once for each state and the District of Columbia). In each of these 51 runs through TFA, state-specific fiscal policies are applied and state-specific weights are assigned to each SCF observation.

Throughout our analysis, we assume that the provisions of the TCJA are made permanent. According to our findings, red-state households enjoy, on average, a 1.6 percent increase in lifetime spending (henceforth, spending) due to permanent implementation of the TCJA. This compares to a 1.3 percent increase in spending for blue-state households. The state with the highest gain — 2.1 percent — is Wyoming, a red state. The state with the smallest gain — 0.9 percent — is California, a blue state.

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[1] One might be inclined to interpret this classification as standing in for variation in the size of government, with Republican-leaning states being smaller-government states. However, this translation is not straightforward. While Republican vote share has a strong negative correlation with state and local spending per capita, it has a positive correlation with state and local spending as a share of gross state product.

[2] Households are grouped into six age buckets: 20–29, 30–39, 40–49, 50–59, 60–69, and 70–79.

[3] Federal and state corporate income taxes are assumed to be 100 percent borne by owners of all assets. Employer-paid FICA taxes are assumed to be 100 percent borne by workers.

The red–blue differential is explained by the limitation on the SALT deduction. Excluding the SALT limitation from the TCJA, the average red-state spending gain is 1.9 percent versus 2.1 percent for blue states. In particular, "rich" households in blue states receive less favorable treatment than "rich" households in red states, where SALT tend to be much lower. For example, red-state households in the top 10 percent of the national age-specific resource distribution receive a 2 percent boost to their remaining lifetime spending compared to just 1.2 percent for blue-state top 10 percenters. If changes to SALT had not occurred, the gains in spending would have been very similar for the top 10 percent regardless of state. In our "No- SALT-Limit" scenario, the richest 10 percent of households in red states would receive a 2.6 percent increase in spending versus 2.7 percent in blue states. Thus, among the top 10 percent, the differential between red and blue states is driven almost entirely by SALT.

This paper proceeds in Section II with a brief overview of the TCJA. Section III presents our data and methodology for computing the change in lifetime spending. Section IV presents our results, and Section V concludes.

II. THE TAX CUTS AND JOBS ACT OF 2017

The TCJA was the most comprehensive tax reform passed since the Tax Reform Act of 1986. In addition to modifying individual income tax rates, including reducing the top rate from 39.6 percent to 37 percent, the TCJA modified amounts or limits for a number of important individual tax credits, deductions, exemptions, and penalties. In particular, the standard deduction was nearly doubled for both individual and married filers, thresholds for the AMT and the estate tax were raised, and a $10,000 limit for itemized deductions of SALT was introduced. No Democrat voted for passage of the TCJA, while only 12 House Republicans voted against passage. All but 1 of the 12 Republicans who voted "no" represented blue states. In many of these cases, the limit on the SALT deduction was cited as a factor in their vote.[4]

This is not the first time SALT deductions have been under fire. The complete elimination of SALT deductions was included in the initial Reagan Administration Treasury Department 1984 tax reform proposal. However, apart from removing deductibility of retail sales taxes,[5] there were no other changes to SALT deductibility in the 1986 Act (Lindsey, 1988).

Prior to the TCJA's passage, there was evidence to suggest that blue states might be hurt if SALT were modified. For example, Sammartino and Rueben (2016) used the Urban-Brookings Tax Policy Center Microsimulation Model (UBTPC model) to

[4] The Senate passed the TCJA 51 to 48 with no Republicans voting against it and no Democrats voting for it. Of the 12 House Republicans voting against TCJA, five were from New York, four from New Jersey, two from California, and one from the "red" state of North Carolina. For examples of Congressional statements citing the SALT deduction limit as a factor in the "no" votes, see https://zeldin.house.gov/media-center/press-releases/rep-zeldin-votes-nofinal-tax-reform-bill, https://stefanik.house.gov/media-center/press-releases/stefanik-oppose-finaltax-bill, and https://www.silive.com/news/2017/12/rep_donovan_voted_no_on_final.html.

[5] Deductibility was partially restored with the American Jobs Creation Act of 2004 (Sammartino and Rueben, 2016).

show that repealing, modifying, or replacing SALT deductibility would have the most adverse effects for average federal tax rates in high-tax states with a relatively large number of high-income households, such as New York and Connecticut (both of which are blue). The least adverse effects were found for low-tax states such as South Dakota and Wyoming (both of which are red).

Since the passage of the TCJA, several researchers have studied the impact of the law along party lines. Auerbach, Kotlikoff, and Koehler (2018) concluded that the reforms in the TCJA were, on the whole, neither progressive nor regressive. However, Sammartino, Stallworth, and Weiner (2018) found that among the U.S. states, there were "winners" and "losers." Using the UBTPC model, these authors also found that for 2018 income and tax outcomes, the TCJA was more beneficial for red states than for blue.[6] In terms of 2018 outcomes, Sammartino, Stallworth, and Weiner also found the TCJA's $10,000 SALT limit was much of the reason the low-tax state of Texas benefited more, on average, than the high-tax state of New York.

A limitation of Sammartino, Stallworth, and Weiner (2018) is the use of traditional static tax burden analysis, which compares current taxes with current income. Auerbach, Kotlikoff, and Koehler (2018) point out the limitation of this approach, arguing that a forward-looking, lifetime approach is more consistent with economic theory and can produce different answers than static analysis. As in Auerbach, Kotlikoff, and Koehler (2018), the focus of this study is whether permanent implementation of the TCJA disproportionately affects red or blue states in terms of the discounted present value of remaining lifetime spending or remaining lifetime tax rates. We say permanent because a number of the individual tax provisions in the TCJA are set to expire within 10 years to permit passage with a simple majority of voters in the Senate under the reconciliation process. Following Auerbach, Kotlikoff, and Koehler (2018), we assume that these expiring provisions will eventually be made permanent.[7]

III. METHODOLOGY AND DATA

A. Creating Resource Percentiles

Throughout this analysis, we examine changes in spending at different points in the resource distribution, referring to those in the top 10 percent of resources as the "rich" and those in the bottom 10 percent of resources as the "poor." To create these resource

[6] In particular, the authors found that six of the seven states realizing an average after-tax income increase of more than 2.1 percent were red, whereas the three states with increases of less than 1.5 percent were blue. Moreover, the six states, including the District of Columbia, where more than 8 percent of their taxpayers had an increase in their 2018 taxes because of the TCJA were all blue and the five states where less than 4 percent of their taxpayers had increased 2018 taxes were all red.

[7] We do not estimate the effect on pretax incomes here. Simulations of the Global Gaidar Model do suggest that the TCJA could raise real before-tax wages over time by as much as 5.5 percent (see Benzell et al. 2020). We do not consider that scenario here. We also do not attempt to consider the nature and incidence of the fiscal adjustments needed to compensate for the negative impact of the TCJA on the federal government's intertemporal budget constraint.

percentiles, we first calculate the amount of resources each household is expected to have over its lifetime. R (hereafter, resources) is the sum of private net wealth, W, and human wealth, H. H is the expected discounted present value of the household's pretax remaining lifetime earnings from all sources, and W is the expected discounted present value of the household's assets such as home equity and savings for retirement.

(1) $R = H + W$.

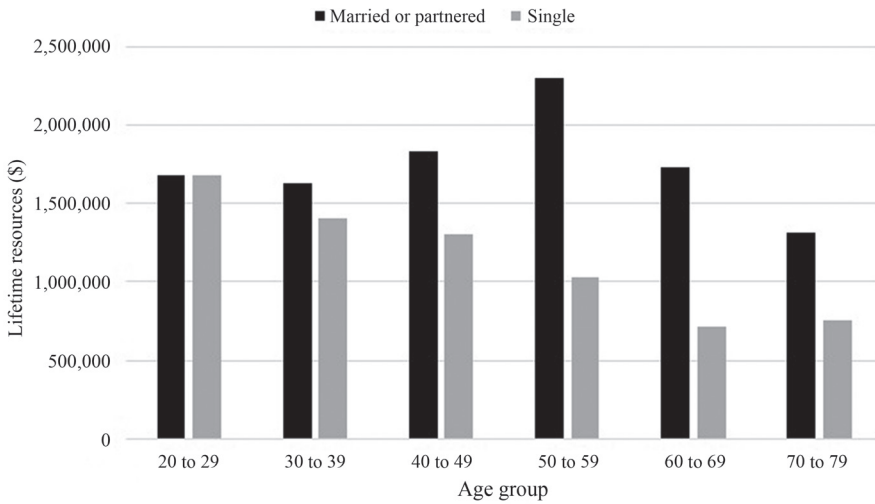
Details on the calculation of Equation (1) are contained in Section III.C.

We group households within 10-year age cohorts and then rank each household's resources to create resource percentiles. As in Auerbach, Kotlikoff, and Koehler (2018), our 10-year age groups reference households whose heads are age 20–29, 30–39, 40–49, 50–59, 60–69, and 70–79. Thus, the rich consist of the 10 percent highest resource households among heads in their twenties, the top 10 percent of heads in their thirties, etc.[8]

We create resource percentiles within age groups for three reasons. First, young households have yet to pay the bulk of their lifetime taxes or receive the bulk of their lifetime transfers. Second, old households have already paid most of their lifetime taxes and, in many cases, have already received a significant share of their lifetime transfers. Third, the life-cycle model predicts what we see in Figure 1 — remaining lifetime

Figure 1

Average Lifetime Resources by Age Group and Marital Status



[8] As in Auerbach et al. (2016, 2017, 2018), prior to ranking the households, we adjust for household size and economies of shared living by dividing resources for married couples by the square root of two.

resources ultimately decline with age. This means that lumping together different age groups will treat older people as poorer than younger people even if they have identical lifetime resources measured as of, say, age 20.

B. Computing TCJA-Induced Percentage Changes in Spending of Households in Specific Age and Resource Percentile Groups

A household's expected discounted present value of remaining lifetime spending, S, is defined as the difference between resources, R, and the expected discounted present value of remaining lifetime net taxes, T, computed as total taxes paid less transfer payments received.[9]

$$S = R - T \tag{2}$$

Throughout this analysis, we consider changes in lifetime spending as a result of the TCJA for particular groups (e.g., the rich). To compute group-specific changes in spending under the TCJA, we sum the weighted reduction in taxes for all households in the group and divide by the weighted sum of spending for all within-group households pre-TCJA.[10] The percent change in the spending for a particular group, G, is

$$\%\Delta S_G = \frac{100\sum_{i\epsilon G}(w_i T_i^{pre-TCJA} - w_j T_i^{post-TCJA})}{\sum_{i\epsilon G} w_i S_i^{pre-TCJA}}. \tag{3}$$

The weighting scheme in our calculations is described in Section III.E.

C. The Fiscal Analyzer

As detailed in Kotlikoff (2019), TFA is a detailed life-cycle consumption-smoothing program that incorporates borrowing constraints. TFA calculates remaining lifetime net taxes and remaining lifetime spending along all survival trajectories and then converts them to present values. TFA includes all federal and state income and sales tax provisions in effect pre- and post- TCJA. It also includes the 2015 changes to Social Security benefit provisions. All federal and some state-specific transfer programs are also included. Transfer programs with eligibility and or benefits defined at the county level, including Section 8 Housing Vouchers, Low Income Energy Assistance, and Child Care Assistance, are excluded for two reasons. First, detailed information is difficult to find across all jurisdictions. Second, due to rationing, not all eligible applicants will obtain these benefits.

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[9] Spending includes the present discounted value of any terminal bequests that arise under a given survival path.

[10] The alternative method is to average, on a weighted basis, each household's remaining lifetime change in spending, but this would be heavily influenced by outliers.

The specific list of tax and transfer programs included in our calculations is as follows:

Taxes	Transfers
Federal Personal Income Tax	Social Security Benefits
Federal Corporate Income Tax	Supplemental Security Income
FICA Tax	SNAP (state specific)
State Income Taxes	Temporary Assistance to Needy Families
State Sales Taxes	Medicaid Benefits (state specific)
State Corporate Income Taxes	Medicare Benefits
Medicare Part B Premiums	Affordable Care Act (state specific)
Federal Estate and Gift Tax	

1. TFA's Consumption-Smoothing Dynamic Program

TFA's lifetime consumption-smoothing procedure begins with the reading in of household demographic and economic data. The demographic data include marital status, birth dates of each spouse/partner, maximum ages of life of spouse/partner, birth dates of children, and ages when children will leave the household. The economic data include detailed measures of earnings and assets (for both the past and the future).[11] TFA assumes inflation and rates of return on regular and retirement account assets, household debts, and current primary home data.[12] Preferences about the desired degree of consumption smoothing are also included (i.e., the preferred age-living standard path).[13] The degree and timing of future changes in Social Security benefits, federal taxes, state taxes, and payroll taxes are also incorporated into the calculations. While TFA is set up to use any data source, including data input directly by an individual, in this study, we feed it data on households in the SCF (see Section III.D).

TFA's default assumption, which can be changed, is that the household aims for the same living standard per household member through time. The program obeys the specified desired standard-of-living profile to the extent possible without violating the

[11] These include past Social Security covered labor earnings, current labor earnings, and projected future labor earnings; regular (nonretirement account) assets; 401(k) and other deductible retirement account assets; Roth retirement assets; current and projected future contributions to each type of retirement account; retirement account withdrawal choices (start and end dates, annuitization, and order of withdrawals as between Roth and 401(k)-type accounts); Social Security benefit collection choices; defined benefit pensions; and information on retirement income from non–Social Security covered employment (this triggers Social Security Windfall Elimination and Government Pension Offset provisions).

[12] Rent, mortgage amounts, mortgage lengths, mortgage payments, property taxes, condo fees, homeowners insurance, maintenance, etc. are included, as well as up to two future changes in the primary home, symmetric data on the current vacation home data and up to two changes in the vacation home, and other real estate properties.

[13] Other items included are funeral expenses, desired bequests, current life insurance (face and cash values), preferences about maintaining living standards of survivors, contingent plans (e.g., what survivors will earn and how they will change their housing), and the maximum amount the household can borrow.

household's borrowing constraint, calculating simultaneously not just the household's smoothest living standard path but also its time-varying demands for life insurance (and, thus, the living insurance premiums it will pay each year) and each of the above-referenced taxes and transfer payments.[14]

The problem TFA solves is computationally challenging for three reasons. First, tens of thousands of potential paths could occur. These alternate paths include, for example, various levels of regular and spouse-specific retirement account assets in the future when both spouses survive and also in each future year when one spouse is deceased and the other alive. Take, for example, a 40-year-old couple that could live to 100. There are over 200,000 survivor-contingent regular and retirement account state variables. Second, annual taxes, annual transfer payments, annual discretionary spending, and annual life insurance holdings must be determined simultaneously since taxes and life insurance premiums constrain what can be spent. But what is spent through time determines the path of asset income, which helps determine the path of taxes. Third, the program needs to run in finite time to be useful for research.

TFA's algorithm handles these complexities in a highly efficient manner. Indeed, it solves the typical SCF observation's consumption-smoothing, net taxation, and life insurance needs problem within a half second and does so with precision below $1.

D. The Use of the SCF

The Federal Reserve's 2016 SCF collected highly detailed data from 6254 households. These data included detailed information on household labor and asset income, assets and liabilities, and demographic characteristics.[15]

The SCF combines an area-probability sample of households with a "list" sample of generally wealthier households from administrative tax records from the Internal Revenue Service. The SCF includes sampling weights to account for oversampling of wealthier households from inclusion of the list sample and for differential response rates among wealthier groups.[16] The oversampling of wealthy households allows for inference about households in the top 1 percent of the resource distribution.[17]

We run each household in the SCF through TFA to generate the TCJA-induced change in taxes and spending for each household. As in Auerbach, Kotlikoff, and Koehler (2016,

[14] The precise algorithm is proprietary to Economic Security Planning, Inc., which uses it in its commercial lifetime financial planning tools. However, its details are available to academic researchers upon receipt of a request emailed to www.kotilkoff@gmail.com, subject to the signing of a nondisclosure agreement.

[15] Using a multiple imputation algorithm, the Fed includes each household's record in the public use SCF data set in five so-called replicates to account for estimation of nonreported values (item nonresponse) or for disclosure limitations. We use the first replicate for our analysis. Auerbach et al. (2016, 2018) report no significant differences in results across replicates.

[16] Wealthier households have lower response rates, particularly at the highest levels. See Bricker et al. (2016).

[17] For the 2004 SCF, Kennickell (2007) shows that 15.8 percent of sampled households were in the top 1 percent of the net worth distribution for the United States, with 96.4 percent of these coming from the list sample. Another 38.5 percent of the 2004 SCF sampled households were in the bottom 50 percent of the net worth distribution, with only 5.7 percent of these households coming from the list sample.

2018), we restrict our analysis to households with heads between 20 and 79 years old. The SCF does not collect data on respondents' past earnings histories, which is needed for TFA's Social Security benefit calculation. Consequently, we follow the methodology in Auerbach, Kotlikoff, and Koehler (2016, 2018) to impute past earnings and forecast future earnings using past waves of the Current Population Survey through 2013. Future mortality of household members, assumed to begin at age 55 and end with certain death at age 100, is also projected using the method described in Auerbach, Kotlikoff, and Koehler (2016, 2018). And, as in those studies, the present values of human resources, spending, and net taxes are calculated as probability weighted averages of their outcomes for all possible survivor paths for either a single person or married couple. Kotlikoff (2019) provides details of updates to TFA subsequent to the Auerbach, Kotlikoff, and Koehler (2016, 2018) studies.

E. Generating State-Level Results

The SCF is a nationwide survey and its household weights permit data aggregations that are representative of the nation but not of any particular state. While the SCF does collect geographic-specific identifiers, such as the state-county FIPS code, they are not available in the public use survey data. Moreover, the sample design of the SCF is not constructed to be representative of states, or other geographies, according to correspondence with administrators of the survey.

In the absence of reliable SCF state-specific data, we perform our state-by-state analysis by running each household in the SCF through TFA for each state and the District of Columbia, assuming in each of the 51 runs that all SCF households lived in the same state. That is, we ran all SCF households through TFA under the assumption that they all lived in Alabama, then Alaska, and so forth.

To form state-specific statistics, we impute a separate weight for each household by doing a statistical match of the SCF data with data from the U.S. Census Bureau's 2016 American Community Survey (ACS).[18] In particular, we first restrict both the SCF and ACS to household heads between the ages of 20 and 79. We then partition households into 1536 distinct cells (c) based on the household head's age, race/ethnicity, marital status, and educational attainment as well as the value of the primary residence, total household income in 2015, and the presence or absence of at least one child under 17 years of age. For households in a given cell c, we create the household's weight for each state by multiplying their SCF sample weight by the weighted fraction of cell-c households in the 2016 ACS that reside in that state. Thus, the sum of all state weights for each state will equal the population of that state. We then duplicate all of the data 51 times, running it through TFA to apply all state-specific tax and transfer program rules.[19] We are left with more than 4,500 SCF records in each of the 51 state residencies.

[18] The ACS includes over 1.3 million households covering 1 percent of the U.S. population.

[19] We remove households with a present value of spending under $5,000 and households where the program does not converge for every state in the sample.

Note that the categorization of rich and poor by resources, *R*, is done at the national level. Thus, examination of the rich is not done within the household's assumed state of residence. So, for example, California has a higher weighted fraction of households (17.1 percent) in the top 10 percentile than does Mississippi (4.5 percent) and has significantly more residents. Thus, rich U.S. households are more likely to be located in California than in Mississippi (18.2 percent of the top 10 percentile of households are in California versus 0.4 percent in Mississippi).

IV. RESULTS

Here, we present evidence that taxpayers living in states that tend to vote Republican in presidential elections (red states) receive a greater benefit, on average, from the TCJA than taxpayers living in states that tend to vote Democratic (blue states). We also find that this cross-state variation is driven by those in the top 10 percent of each age cohort's resource distribution. This appears largely due to variation in SALT and the TCJA provision that affected the ability to deduct these taxes. If we remove the $10,000 limitation on SALT that was introduced in the TCJA, the variation by state mostly disappears, particularly for the rich.

It is possible that this cross-state variation is due to differences in age, home values, or incomes across state. To test for this, we have conducted an experiment where we keep socioeconomic factors across states the same and only allow tax policy to vary. We find our results essentially unchanged by this experiment, suggesting differences across states are mostly due to differences in tax policies between the states.

Section IV.A discusses the variation in the TCJA gains by state and for different points in the resource distribution. In Section IV.B, we remove the limitation on the amount of SALT that can be deducted. This adjustment enables us to see how states would have fared if the SALT limitation had not been implemented.

A. Variation in the TCJA Gains

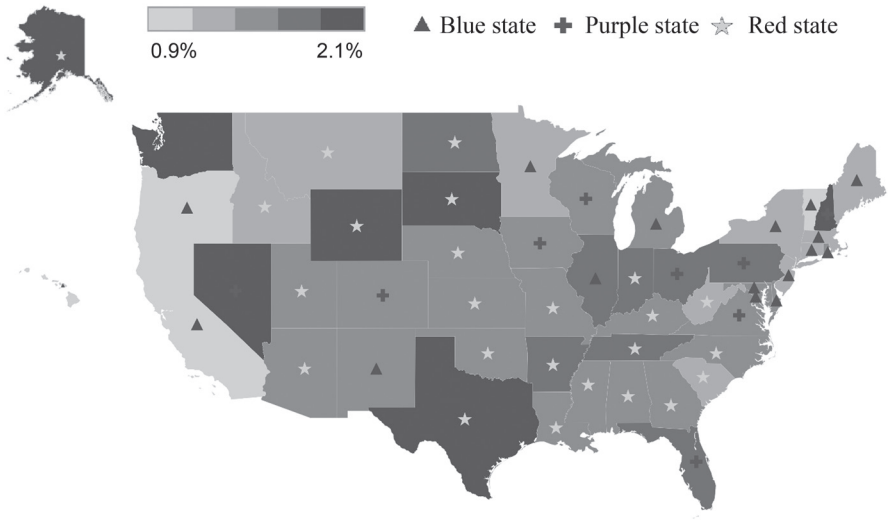
1. Variation by State

According to our calculations, households are projected to pay $25,000 less, on average, in present value, in net taxes over their lifetimes due to permanent implementation of the TCJA. As indicated in Equation (2) and described in Kotlikoff (2019), TFA guarantees that any reduction in expected remaining lifetime net taxes produces an equal-sized increase in expected remaining lifetime spending. Hence, the $25,000 decline in average tax payments translates to a 1.5 percent increase in spending across all states.

Figure 2 provides an overview of the TCJA's impacts across the country. The shade of gray indicates the magnitude of the state's gain in lifetime spending. The darker the shading, the larger the change in lifetime spending of households in the state. States with the darkest or second darkest shade experienced a 1.6 percent to 2.1 percent increase in

Figure 2

Average Percentage Change in Household Lifetime Spending Resulting from the TCJA



remaining lifetime spending per household. Households in states with a very light or light shade experienced, on average, a 0.9 percent to 1.4 percent increase in remaining lifetime spending.

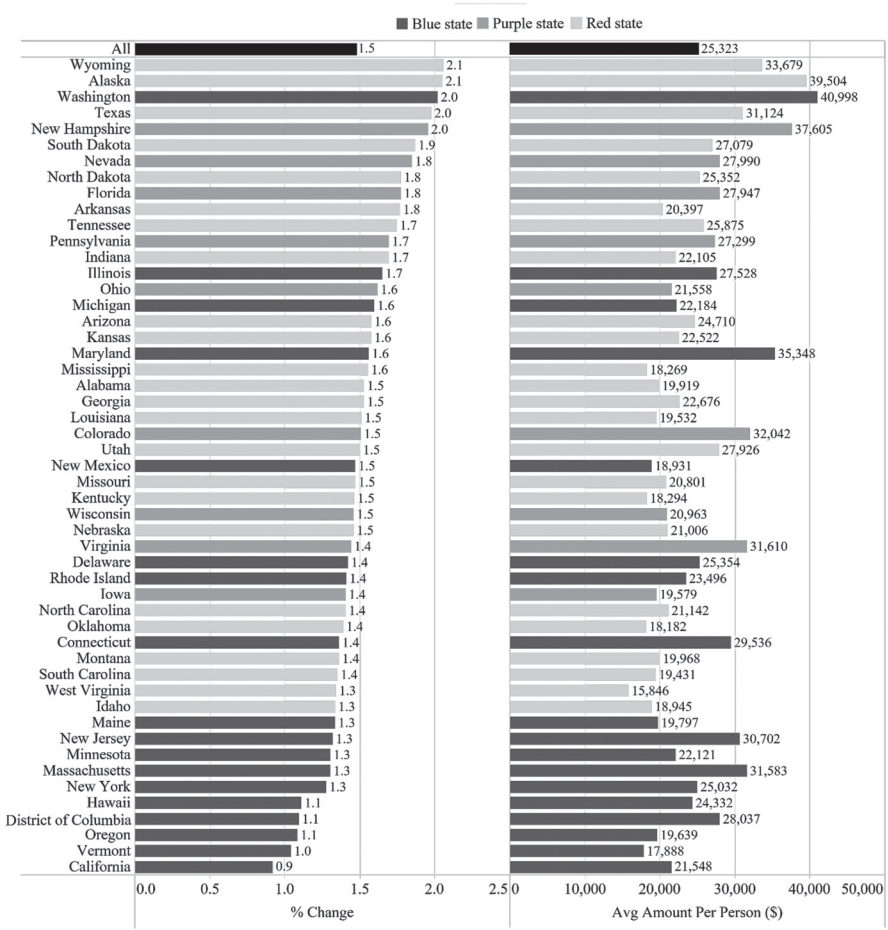
Figure 3 shows the percentage change in spending resulting from the TCJA on the left-hand side and the absolute TCJA-induced spending increase on the right-hand side, ranked by the percentage change from high to low. The state with the smallest percentage increase in lifetime spending is California — a far leaning blue state — with a gain of 0.9 percent. The state with the largest percentage increase is Wyoming — a far leaning red state — with a gain of 2.1 percent. The 10 states receiving the smallest percentage spending gain from the tax reform are all blue. Moreover, of the 10 states with the highest average percent TCJA lifetime spending gains, only one, Washington State, is blue. Six are red and three are purple.

The right side of the figure shows lifetime spending changes in absolute dollar terms. Some states that had a relatively small percentage change averaged relatively larger absolute spending increases. New Jersey is an example. Its spending increase was the ninth lowest in percentage terms (1.3 percent), but its absolute increase in spending exceeds that of all but three of the red states ($31,000).

The left-hand side of Figure 3 suggests a systematic relationship between a state's political leanings and the percentage increase in spending due to the change in tax policy.

Figure 3

Change in Lifetime Spending Resulting from TCJA Rank Ordered by Percent Change in TCJA Gains



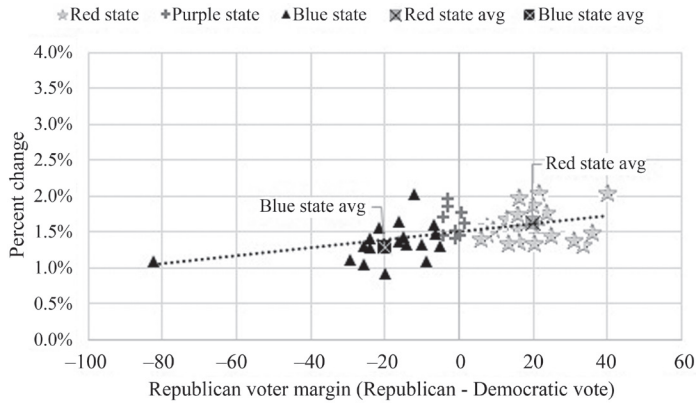
Notes: We define red states as those that voted Republican in the past five presidential elections by a margin of 5 or more percentage points, on average. Blue states are those that, on average, voted Democratic by a margin of 5 or more percentage points in the past five presidential elections. The remaining states are designated as purple states.

As shown in Figure 4(a), there is, in fact, a distinct positive relationship between the percentage gain from the TCJA and the voting pattern of the state. Figure 4(a) plots for each state its average percentage change in lifetime spending against its average net Republican voter margin over the past five presidential elections. The correlation between the two variables is 0.5. The weighted regression of each state's percentage spending change from the TCJA on a constant and its average Republican voter margin

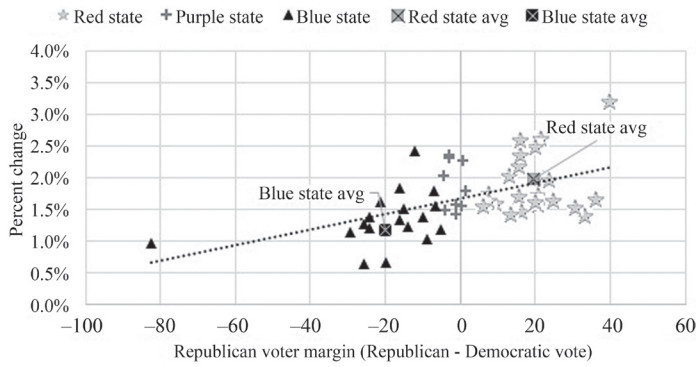
Figure 4

Change in Lifetime Spending Resulting from the TCJA

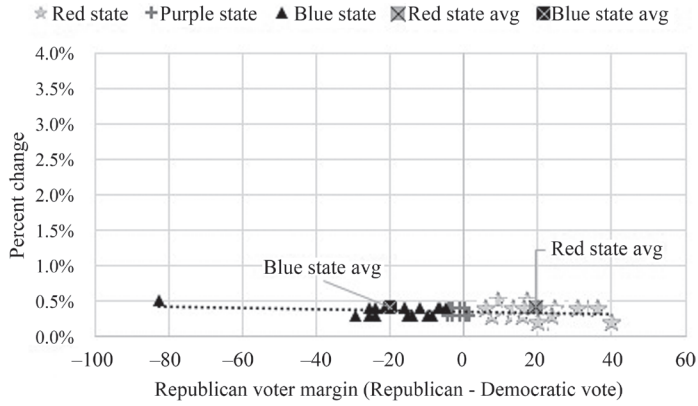
(a) All Households



(b) Richest 10 Percent of Households



(c) Poorest 10 Percent of Households



yields a slope coefficient of 0.009 with a standard error of 0.000002. In other words, a 10-percentage-point higher Republican voter margin corresponds to a 0.09-percentage-point higher increase in average lifetime spending due to the TCJA.

Grouping states together into their Republican or Democratic leanings yields an average of a 1.6 percent gain for red states versus a 1.3 percent gain for blue states. This 30-basis-point difference is statistically significant at the 1 percent level. The average lifetime spending gain for purple states is also 1.6 percent and is significantly different from average lifetime spending of blue states at the 1 percent level.

2. State Variation by Resource Level

State variation in per-household average TCJA gains differs by income level. The TCJA's biggest impact on the middle- and lower-income households was through its elimination of exemptions, increase in the standard deduction, and, in families with children, increase in the child tax credit. Because the standard deduction changed by such a large amount (from $6,350 to $12,000 for single filers, from $12,700 to $24,000 for married filing jointly and widowed taxpayers, and from $9,350 to $18,000 for head-of-household filers), the Joint Committee on Taxation (2018) expected that relatively few people — 18 million (12 percent) down from 46 million (31 percent) — would gain from itemizing their deductions when filing their taxes in 2019. Table 1 shows how the number of people itemizing deductions is expected to change over time by income category.

Table 2 shows how the value of the SALT deduction has changed between 2017 and 2018 for different ranges of income. In total, the amount of tax deductions under SALT is expected to fall from $109 billion to $20 billion, most of which stems from a

Table 1

Estimated Number of Taxpayers Who Itemize Deductions

Income Category ($)	2017 Returns (000s)	2018 Returns (000s)	Percentage Change
Less than 50,000	5,445	1,501	–72
50,000–100,000	13,305	11,091	–17
100,000–200,000	17,959	6,513	–64
200,000–500,000	8,207	4,185	–49
500,000–1,000,000	1,089	791	–27
1,000,000 and over	509	444	–13
Total, all taxpayers	46,514	18,012	–61

Notes: Income is adjusted gross income (AGI) plus (1) tax-exempt interest, (2) employer contributions for health plans and life insurance, (3) employer share of FICA tax, (4) workers' compensation, (5) nontaxable Social Security benefits, (6) insurance value of Medicare benefits, (7) AMT preference items, (8) individual share of business taxes, and (9) excluded income of U.S. citizens living abroad. Categories are measured at 2018 levels. The table includes nonfilers but excludes dependent filers and returns with negative income.
Source: Joint Committee on Taxation (2018).

Table 2
Estimated Value of the SALT Deduction by Income Category

Income Category ($)	2017 Returns (000s)	2017 $Millions	2018 Returns (000s)	2018 $Millions
Less than 50,000	3,303	915	799	224
50,000–100,000	11,988	8,796	4,097	2,580
100,000–200,000	17,650	27,878	6,382	6,920
200,000–500,000	7,816	26,160	4,148	7,081
500,000–1,000,000	1,015	11,491	780	2,191
1,000,000 and over	490	34,202	418	1,287
Total, all taxpayers	42,262	109,443	16,624	20,282

Notes: Income is AGI plus (1) tax-exempt interest, (2) employer contributions for health plans and life insurance, (3) employer share of FICA tax, (4) workers' compensation, (5) nontaxable Social Security benefits, (6) insurance value of Medicare benefits, (7) AMT preference items, (8) individual share of business taxes, and (9) excluded income of U.S. citizens living abroad. Categories are measured at 2018 levels.
Source: Joint Committee on Taxation (2018).

reduction in the benefits for those with incomes over $100,000. In 2017, nearly all of the total value of SALT deductions — $99.7 billion out of $109 billion — accrued to those with incomes over $100,000. In 2018 taxes, this number was expected to fall to just $17 billion, a reduction of $82 billion.

The amount of SALT a household pays is a function of the household's home value, the nature of property taxation (millage rate, assessment policy, homestead exemptions, etc.), income, and the state's income tax rate. The extent to which these factors vary by state will greatly affect the amount of SALT paid, and thus how much can potentially be deducted. State and local tax rates vary substantially by state. As shown in Table 3, blue states tend to face slightly higher taxes (11.3 percent for the median household in blue states versus 10.2 percent in red states). Further, the lowest state and local tax rate is 5.7 percent in Alaska (a red state) and the highest state and local tax rate is 14.5 percent in Illinois (a blue state). The average home value among blue states is also higher ($371 thousand versus $209 thousand).[20]

With itemized deductions far less important to middle- and low-income households, one would expect small differences by state in the TCJA's treatment of such households. That is not the case for high-income households. As Table 1 indicates, among households with more than $1 million in annual income, only 13 percent fewer households are expected to itemize deductions in 2018 compared to 2017. In contrast, among households with incomes below $50,000, there is a 72 percent predicted decline in itemizers. Since the largest itemizable deduction for high-income households is SALT, the TCJA's

[20] See the appendix to Altig et al. (2019) for a full list of average home values and income tax rates by state.

Table 3

Tax Rates, Home Values, and SALT Paid Averaged by Red/Blue/Purple Designation

	State and Local Rates for Median U.S. Household (%)	Average Home Value ($)	Amount of SALT for Median State Household ($)
Red	10.2	208,620	5,219
Blue	11.3	370,863	7,950
Purple	11	260,233	6,371
All	10.8	274,991	6,386

Notes: SALT include real estate taxes, vehicle property taxes, income taxes, and sales excise taxes. Assumes "Median State Household" has an annual income equal to the mean third quintile income of the state, owns a home at a value equal to the median of the state, owns a car valued at $24,350 (the highest-selling car of 2018), and spends annually an amount equal to the spending of a household earning the median state income. Assumes "Median U.S. Household" has an annual income of the mean third quintile of U.S. income ($58,082), owns a home valued at the median U.S. home value ($193,500), owns a car valued at $24,350 (the highest-selling car of 2018), and spends annually an amount equal to the spending of a household earning the median U.S. income.

Sources: Kiernan (2019) and authors' calculations from the ACS.

limitation of the SALT deduction to $10,000 is particularly onerous for higher income households living in high SALT states.

Thus, it is not surprising that when we narrow Figure 4(a) to households who rank among the richest 10 percent in their age cohort by resources, we find even more variation by state in the TCJA's average household treatment. Importantly, the relationship between Republican voter margin and percent change in lifetime spending resulting from the TCJA becomes even stronger (see Figure 4(b)). The weighted regression for rich households of each state's percentage spending change from the TCJA on a constant and its average Republican voter margin yields a coefficient of 0.02, with a standard error of 0.00001. In other words, a 10-percentage-point higher Republican voter margin corresponds to a 0.2-percentage-point higher increase in lifetime spending. In contrast, at the opposite side of the income distribution, those in the bottom 10th percentile experienced similar gains under the TCJA across states (see Figure 4(c)).

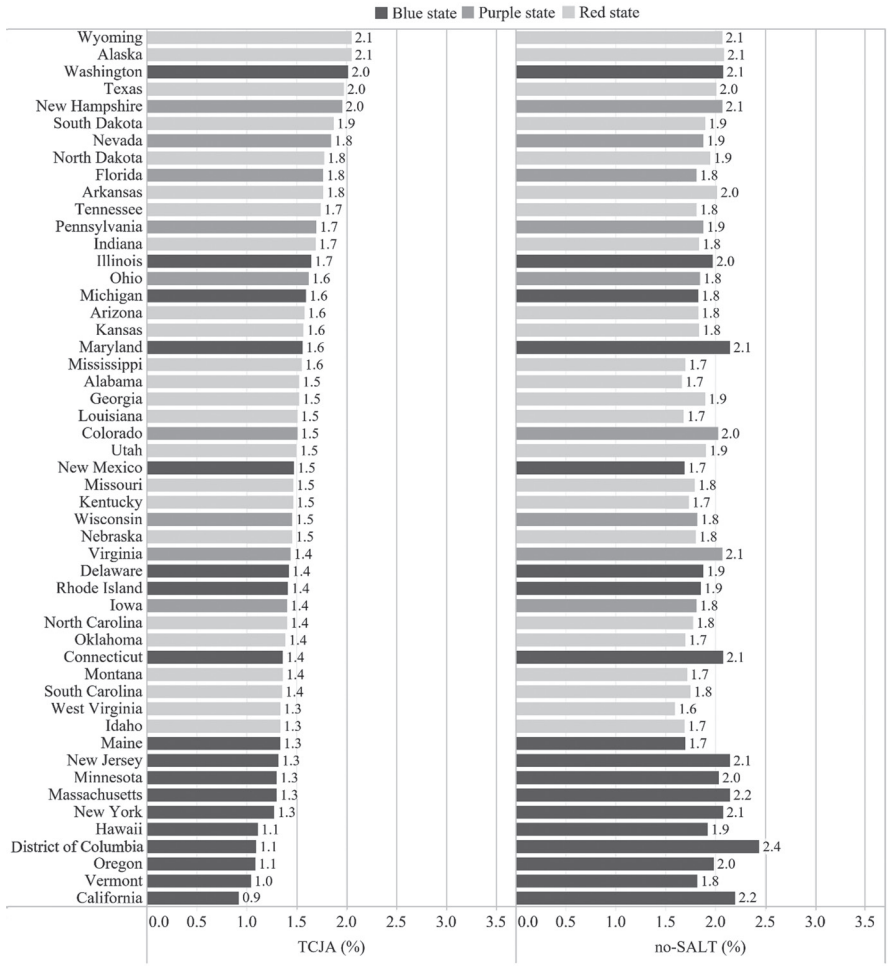
B. The No-SALT-Limit Experiment

We next repeat our analysis of the TCJA's differential treatment of the rich in red versus blue states but under the counterfactual assumption that the TCJA did not include a cap on SALT deductions. The left-hand side of Figure 5 shows average percentage spending changes by state, ranked from high to low, as in Figure 3. The right-hand side of Figure 5 preserves the left-hand-side ordering of states but displays the spending impact of the TCJA assuming it had been passed with no SALT deduction limitation.

The importance of SALT is apparent. On average, spending would increase by 2 percent under the no-SALT-limit scenario versus 1.5 percent under the TCJA. In addi-

Figure 5

Change in Lifetime Spending: TCJA versus No-SALT-Limit Scenario
Rank Ordered by TCJA Gains



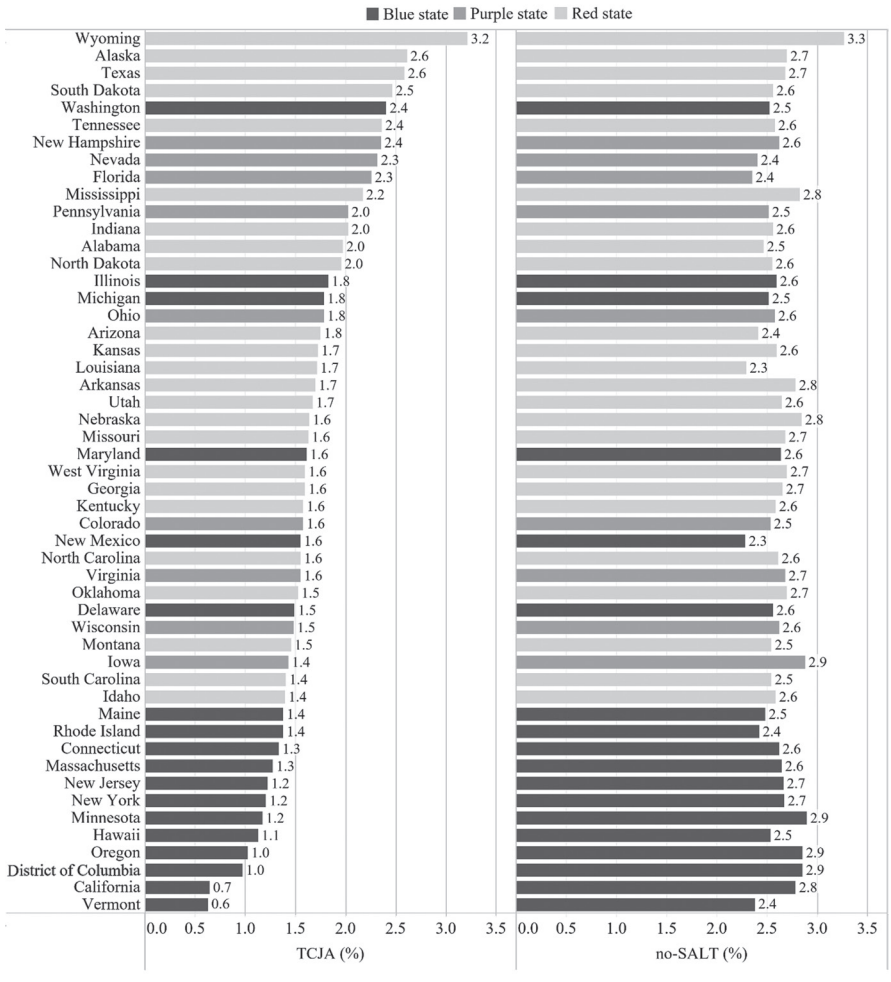
tion, the red–blue differential is reversed in this scenario: Households in blue states experience a 30-basis-point increase in spending relative to those in red states (instead of 30 basis points lower under the TCJA).

The 10 states with the smallest TCJA spending gains with the SALT limitation experience a notably larger spending increase without the limitation. Instead of experiencing an average spending gain of 1.1 percent under the permanent version of the TCJA as legislated, they would have experienced a 2.1 percent gain had the SALT provisions been excluded. This is nearly the same as the average gain of 2 percent across all

states under the no-SALT-limit scenario. Figure 6 repeats this experiment for the top 10 percent of households. Importantly, the same result described with respect to the average across states is generally true when we restrict attention to the rich: There is much less variation across states in the TCJA gains under the no-SALT-limit scenario. However, the difference between the TCJA and no-SALT-limit scenario is larger among those in the top 10 percentile. The average gain under the no-SALT-limit scenario for the top 10 percentile is 2.6 percent, compared to 1.5 percent under the TCJA. There is

Figure 6

Change in Lifetime Spending: TCJA versus No-SALT-Limit Scenario
Rank Ordered by TCJA Gains, Richest 10 Percent of Households



essentially no difference between the TCJA and no-SALT-limit scenario for the bottom 10 percentile (with both scenarios producing a gain of 0.4 percent).

The differential impact of the TCJA that we report above is a result of both differences in tax policies across states and differences in demographic characteristics across states. With respect to the effect of demographics, consider a state that is much younger than an otherwise identical state. Because the older rich are more likely than the younger rich to itemize, the TCJA will appear to be benefiting the younger state relative to the older state simply because SALT deduction restrictions will disproportionately impact the latter. In order to isolate the influence of state-level tax policies from state-level demographics, we can repeat the experiments cited above using U.S. weights from the SCF, rather than the state-specific weights described in Section III.E. The results of these experiments, shown in Altig et al. (2019), suggest that the variation in the TCJA gains by state are mostly a function of differences in tax polices between states. Importantly, significant differences across states remain even when socioeconomic factors are identical across states, for the entire population and for the richest 10 percent of households.

V. SUMMARY AND CONCLUSION

In this paper, we estimate the state-by-state effects deriving from permanent implementation of the TCJA. We find a small but important difference in the effects on households across red and blue states. Households in red states enjoyed, on average, a 1.6 percent increase in remaining lifetime spending due to the TCJA compared with 1.3 percent for blue-state households. Among the top 10 percent of households, the differential is larger. Rich households in red states enjoyed a 2 percent increase relative to a 1.2 increase in blue states.

The major factor underlying the TCJA's distinct impact on rich households across red and blue states is the TCJA's $10,000 limitation on the deductibility of SALT. Indeed, as we show, almost all of the difference in the TCJA's treatment of the rich in red and blue states reflects the TCJA's SALT deduction limitation. Furthermore, it appears that these differential effects are mainly driven by differences in state tax policies, as opposed to differences in demographics across states (including income and property values).

There are hosts of interesting questions that arise from the observations reported in this (and related) work. Do households have incentives to vote for one candidate versus another based on perceived tax advantages offered by the competing political parties? Do voters act on these incentives? As shown by Feldstein and Metcalf (1987), for those that itemize, SALT deductibility acts as a federal subsidy for state and local tax collections at the rate of their marginal federal tax rate. Gramlich (1985) notes that removal of this subsidy, and the possible consequences in terms of lower state and local government spending, may result in migration of high-income households from high-tax areas to low-tax areas. Will this prediction hold if, as we assume here, the relevant TCJA provisions remain permanent? Answers to these questions are well beyond the scope of our analysis here. Nevertheless, our results begin to develop a factual basis for addressing these and a variety of other political economy questions.

DISCLOSURE

The authors have no financial arrangements that might give rise to conflicts of interest with respect to the research reported in this paper.

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