Walls, Weed, and Coal: How threats to local industry shape economic voting

IMMEDIATE

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Abstract

Do threats to local economic industry influence voting behavior? While research has shown that voters backlash against candidates whose policies negatively affect their socio-economic status, relatively little research explores if voters can anticipate whether candidates/direct legislation threaten their local economies. We argue that individuals who are economically embedded within industries that serve as the basis of the local economy are especially sensitive to candidates/direct legislation that may harm those industries. We test our argument in three distinct scenarios. First, Texas's Congressional District 28 is between 75-80% Hispanic stretching from San Antonio to Laredo and along the U.S. Mexico border. Between 2008 - 2018 Texas' U.S. Representative Henry Cuellar faced very little opposition in the Democratic Primary and Republicans did not seriously challenge him in general elections. However, Cuellar, who is arguably the strongest Democratic supporter of privatized immigrant detention and receives large donations from prison companies, narrowly defeated Jessica Cisneros, an immigration attorney, in the 2020 primary, and then again in the 2022 primary. Voters living in areas with large shares of protective services workers, in areas that house border patrol headquarters and ICE facilities, and in areas with large shares of oil and gas workers disproportionately backed Cuellar over Cisneros in line with their economic interests. Second, half way across the country in 2016, Californians voted on a ballot measure to legalize marijuana. The "legacy grow" high-density outdoor marijuana cultivation areas inside of the Emerald Triangle (Humboldt, Mendocino, and Trinity Counties) voted down the ballot measure despite otherwise voting strongly Democratic. Third, as the Democratic Party's presidential candidates shifted against coal for environmental reasons, between 2000 and 2012 West Virginia voters in the highest density coal counties disproportionately shifted towards Republican candidates. These findings are consistent with our overarching argument: When faced with keeping or potentially removing industries that serve as economic bedrocks, voters disproportionately favor the former to ensure their continued known economic station.

Keywords: Economic voting; Immigration Politics, Marijuana legalization; Ballot initiatives

Introduction

Do threats to local economic industry influence voting behavior? Research indicates that local economic shocks leading to deindustrialization can affect vote choice (Baccini and Weymouth, 2021). Egli, Schmid and Schmidt (2022) find that voters in Appalachian coal counties with high job losses shifted Republican in 2012 and 2016 due to clear policy demarcations between the two parties on coal/renewable energy. However, informational demands required to induce prospective versus retrospective voting are significantly higher (Lacy and Christenson, 2017). Moreover, over the past 30 years, the United States has undergone significant partisan polarization at both the mass and elite level. From this, research now indicates that economic voting may have weakened as individuals rely more on partisan heuristics (Kayser and Wlezien, 2011; Ellis and Ura, 2021).[1]

We argue that some voters in geographic locations that are economically dependent on one or two industries will disproportionately support candidates aligned with those industries and reject direct legislation/candidates that go against voters' perceived localized economic interests. In other words, in situations where voters live in areas that are highly dependent upon certain industries, and where voters think that the election of a candidate (or passage of a ballot initiative) will result in possible harm to those industries, a disproportionate share of voters will cast ballots against such a candidate or ballot measure.

We test this argument in the context of three very different electoral environments: 1) Democratic primary voting among a largely Mexican American electorate in Texas's Congressional District 28; 2) Ballot initiative voting on legalized marijuana in Northern California's Emerald Triangle region of Humboldt, Mendocino, and Trinity Counties; and 3) Vote switching in West Virginia coal country between 2000 and 2012. Each case features a localized economic vote under a least likely circumstances design. The dynamics surrounding each electoral environment produce clear testable hypotheses of our localized prospective economic voting argument.

To evaluate our argument we gathered precinct-level vote returns in Texas' 28th Congressional district 2020 primary, precinct vote returns on Proposition 64 (2016) in the Emerald Triangle, CA, and county-level vote returns in West Virginia. We augment each respective dataset with variables capturing the location of certain industries – and the people who disproportionately work in them – that dominate each respective region.

In the case of Texas' 28th, we find that precincts containing greater shares of people working in "protective services occupations" and extraction industries disproportionately back the immigration control and pro-oil jobs candidate, Henry Cuellar, over immigration attorney Jessica Cisneros. We also find that

[1]The authors have no conflicts of interest, and received no funding. All data are publicly available. Upon publication, authors will provide all data and replication code on Harvard Dataverse or a similar repository.

voters living near Immigration Customs and Enforcement (ICE) detention facilities and/or Customs and Border Patrol (CBP) headquarters disproportionately back Cuellar and this effect grows in successive elections. Texas' 28th is more than 80% Hispanic, we examine primary contests, and so these results are not a function of partisanship or voter race/ethnicity. Because Latinos disproportionately work in immigration control (Cortez, 2021), we argue that a subset of Latinos voted for Cuellar and not Cisneros most likely because they feared the local economic repercussions of cracking down on the immigration control industry in which they work and/or are economically embedded.

In the case of Prop. 64 voting in the Emerald Triangle, we find the strongest opposition to marijuana legalization came precisely from two of the highest density outdoor illegal cannabis grow areas across the region and across the entire United States. Despite being the epicenter of marijuana culture and identity in the United States, voters in these areas voted no on legalization likely out of fear that legalization would ruin their economic livelihoods. In the case of West Virginia, we find greatest vote switching from Democratic presidential candidates to Republican presidential candidates over time in counties with the highest density of people working in coal mining.

We offer two main contributions. First, in each case study we show that voters anticipate threats to their economic livelihoods by voting against candidates/ballot initiatives that threaten the industries in which they are embedded. Second, we show that voters whose profiles otherwise suggest they would be either strong opponents of anti-immigrant candidates in the case of Texas, strong backers of legalized cannabis in the case of the Emerald Triangle, or geographies with historically strong support for Democratic candidates (WV) instead disproportionately vote against what their profiles might suggest. This shows how local economic voting can subvert ideological and partisan proclivities.

Finally, we are mindful that our analysis relies on aggregate data, and therefore is subject to ecological fallacy. Although our findings are consistent with our theoretical arguments, we cannot fully deduce the reasons why some voters in some precincts / counties are voting the way they do. To that end, we present a variety of auxiliary analyses and placebo tests that buttress our main findings – which strengthen our case. However, while precise identification may be a limitation of our analysis, a strength is that we rely on real election outcomes, and bring in-depth case analysis to bear on theory.

Background and Theoretical Framework

Retrospective economic voting goes local

Most studies of retrospective economic voting find that evaluations of the nation's economy correlate with vote choice. However, operationalization of subjective evaluations of economic conditions is difficult as standard survey questions are a crude instrument (Kramer, 1983; Lewis-Beck and Stegmaier, 2013), and measurement error is a prevalent problem in standard surveys gauging perceptions of the economy (Ansolabehere, Meredith and Snowberg, 2013; Duch, Palmer and Anderson, 2000). Other scholars opted to forgo individual-level analysis altogether, and have searched for correlations between national-level measures such as growth in real GDP and unemployment rates and voting or incumbent popularity (Kayser and Peress, 2012; Soderlund, 2016; Brug, EijK and Franklin, 2007). This approach, often used in cross-national, multi-context settings, has provided some evidence that economic-voting accountability mechanisms are at work.

Powell and Whitten (1993) posited that clearer mechanisms of responsibility attribution – such as greater government control over economic policies – should lead to substantively larger economic voting effects, as voters find it easier to reward/punish incumbents. A flurry of academic work has tested this hypothesis (Royed, Leyden and Borrelli, 2000), examining variation in terms of the legislative, executive, constitutional, and regional configurations (Leon and Orrilios, 2016; Tilly, Garry and Bold, 2008; Valdini and Lewis-Beck, 2018). Overall, cross-national analysis has not solved what Paldam (1991, p. 26) termed the "great instability" in economic voting studies. Work on voting at the supranational level shows that globalization makes attribution of responsibility an even more challenging task, requiring a high degree of voter sophistication (Lobo and Pannico, 2020).

Political and psychological factors might also impact voters' ability to evaluate economic performance. An obvious cause might be the endogeneity inherent in economic evaluations, as partisans see through rose-colored glasses the economic performance of their government of choice (Evans and Pickup, 2010; Wlezien, Franklin and Twiggs, 1997). Even when voters are able to overcome motivated reasoning when evaluating the state of the economy, their blame attribution for economic crises is conditional on their party ID (Bisgaard, 2015; Lavine, Johnston and Steenbergen, 2012). In times of increased polarization, it seems plausible that partisanship would play an even larger role in influencing voters' government economic performance evaluation (Ellis and Ura, 2021). Indeed, if partisan cues impact people's judgement of national-level economic performance and their ability to identify the political actor responsible for this performance, expecting voters to use national-level elections as a sort of retrospective referendum on the

macroeconomic performance of incumbents can be extremely demanding.

Recent work has shifted towards a mid-level analytical framework for understanding economic voting. This work argues that voters develop their perceptions of economic conditions based on what they see and hear in their close economic surroundings. An empirical contribution of this research is to demonstrate that voters base their evaluations of national-level economic conditions on local-level information. For example, Ansolabehere, Meredith and Snowberg (2014) show that state-unemployment is correlated with national economic evaluations and presidential support, and Reeves and Gimpel (2012) found that unemployment rates as well as regional foreclosure rates have operated to shape voters economic perceptions of national-level economy in 2008. Further, Bisgaard, Dinesen and Sonderskov (2016) analyze disaggregated unemployment data within units of radii between 80 and 2,500 meters of an individual's home and demonstrate that residents form perceptions of the national economy by relying on residential micro-contexts. More broadly, what has been named geotropic, mecroeconomic, and communotropic theories of economic voting (Ansolabehere, Meredith and Snowberg, 2014; Reeves and Gimpel, 2012; Rogers, 2014) all claim to show that what the 'economy is' differs across localities, and that voters gathering information of economic conditions varies due to local economic and demographic contexts (Fortunato, Swift and Williams, 2018; Hickel Jr and Bredbenner, 2020).

The case for local prospective voting

There is reason to believe that people can gather relevant information from the environment where they are locally embedded. Egli, Schmid and Schmidt (2022) show that voters in counties with high coal industry job losses punish Democrats for their anti-coal policy agenda while rewarding Republicans for their pro-coal agenda. Essentially, voters blamed the Democrats for their job losses so disproportionately moved away from them.

That is the setting where people go about their daily lives, travel to work, shop, observe changing conditions and have discussions with friends and neighbors. These experiences, interactions, and observations of the changes in the way their local environment looks, as businesses open and shut, acquaintances get hired and fired, are likely to have an impact on peoples' views of the state of the economy. The mecro-economic environment includes voters' close social groups, and local information is easily gathered as a part of a person's interactions in their home, neighborhood, and workplace. Moreover, since economic changes are likely to affect people's inner circle in a similar way, they are more sensitive to this information and it is more likely to affect their perception of the economy as a whole (see also Kiewiet and Lewis-Beck, 2011). Similarly, Rogers (2014) shows that economic information is gathered based on the economic conditions at

the community level, and that local level is easily obtained from a person's local environment via personal experience, conversations, and observing changes in one's neighborhood. What these accounts all have in common is the relative ease with which residents gain economic information at the community level, relative to the demanding cognitive sophistication and information-seeking required for gathering national level data. Overall, then, people are more likely to update their economic perceptions when observing and processing information relating to people in their community.

An important case of salient, informative events – which the economic voting literature has not examined in depth – is economic shocks, which generally impact specific segments of voters more than others. In contrast, the political economy literature provides extensive evidence of localized voting changes stemming from economic shocks (Autor, Dorn and Hanson, 2013; Colantoner and Stanig, 2018). Alt et al. (2022) analyze Danish localities by using population-level administrative data and map respondents. They show that unemployment shocks affect people through community connections; when voters hear about people in the community who have lost their jobs, it increases their sense of unemployment risk and impacts their propensity of voting for left wing parties.

When local economies lack diversification and are centered around specific industries, community life is densely organized around and dependent on specific industries. The impact of economic shocks in these cases can be especially detrimental (Deller and Watson, 2016). When industries in such cases come under threat, we can expect information about it to propagate through community and lead to behavioral changes. One example of such case is US deindustrialization. Baccini and Weymouth (2021) study the implications of the manufacturing sector decline for presidential voting. These scholars document how workers in manufacturing jobs, who enjoyed relatively high pay and economic security were hit hard by the decline of the industry, and how the closure of plants had impacted entire communities. For manufacturing sector workers, the ongoing threat to their livelihood, loss of income and social decline have led voters to engage in *local prospective voting*: they have started to evaluate presidential candidates based on their commitment to reindustrialization or other means of economic compensation and insurance.

While retrospective models have dominated the field of economic voting studies, prospective voting research has looked into the phenomenon of 'looking into the future' in a variety of cases (Harper, 2000; Lewis-Beck, 1988; Lockerbie, 1992). Some studies have found that voters do use prospective logic, while others find no evidence. These studies offer a candidate-centered prospective logic: any measure of future performance requires evaluating and comparing the economic outcomes likely to occur under each electoral alternative. This Downsian (1957) logic seems to be the most intuitive way to think about electoral events and prospective evaluations: voters compare the utility they would derive under each candidate and ultimately vote for the one that would maximize these benefits.

While the informational requirements for prospective voting are considered high (Erikson, MacKuen and Stimson, 2000; Lacy and Christenson, 2017), we believe the barriers for information seeking in the context of local economic shocks are lower. Especially when the impacts of economic shocks are concentrated in dominant industries, and residents have limited economic opportunities beyond their current employment, shocks are likely to become salient. If the possibility of a shock to voters' livelihood induces anxiety, it should lead to a higher degree of information seeking among group members (Valentino et al., 2008; Gadarian and Albertson, 2014). In turn, such shocks will influence the way locals view their economic prospects and their political judgement; electoral contests will become centered around the issue of alleviating economic threats. Although shocks have not materialized yet but are potential, political entrepreneurs can emphasize potential shocks so that the voters have a mapping between electoral choices and the likelihood of a shock occurring by comparing the policies candidates propose (Glasgow, 2005).

The aforementioned background and theorizing produces two clear testable hypotheses with respect to South Texas. On the one hand, voters who disproportionately rely on the economy of immigration control (and oil and gas), should disproportionately back Cuellar because he is the immigration jobs and oil jobs candidate. Meanwhile, voters who do not rely on the immigration control economy (and oil and gas) for their livelihood should disproportionately back Cisneros because she is a strong immigrant advocate whose policy positions are in line with the Democratic Party. Taken to the extreme, Cisneros' policies would upend both the immigration control and oil and gas jobs in the region. We therefore test the following hypotheses:

- **H1 Economic Dependence**: Precincts with greater shares of protective services workers and extraction industry workers will disproportionately support Henry Cuellar in the Democratic Congressional primary.
- **H2 Economic Dependence**: Precincts and their adjacents that contain Customs and Border Protection (CBP) headquarters and/or Immigration and Customs Enforcement (ICE) facilities will disproportionately support Henry Cuellar in the Democratic Congressional primary.

Regarding the Emerald Triangle vote on marijuana legalization, a local economic voting model would predict that legacy grow voters are disproportionately reliant on the illegal cannabis trade and so therefore will disproportionately vote no on Prop. 64. This is because once legalized, the illicit cannabis market will change – producing negative economic outcomes for illegal growers. This will occur even though some legacy grow regions are overwhelmingly Democratic. We therefore test the following hypothesis:

- **H3 Economic Dependence** Precincts residing in the high cannabis producing watershed area known as the legacy grow region of the Emerald Triangle will disproportionately vote no on Prop. 64.

In West Virginia, we hypothesize that counties with large shares of coal miners will disproportionately shift to the GOP as the Democratic party takes more clear national stances against the coal industry. This is because people in these counties are disproportionately dependent on the coal industry for jobs and they will anticipate that the Democratic party they once supported no longer is backing their economic interests.

- **H4 Economic Dependence** Voters living in high density coal producing counties will be most likely to shift from voting Democratic to voting Republican in presidential elections from 2000 to 2008, then also from 2000 to 2012.

Case Selection

Our analysis centers on three case studies. The first case study focuses on the 2020 Democratic primary between Henry Cuellar and Jessica Cisneros in Texas' 28th Congressional District where the main distinction between the two candidates was over their position on immigration policy, as well as on environmental issues. The second case study focuses on California's Emerald Triangle where voters were asked to vote on Proposition 64, a statewide citizen-led initiative that legalized the use of recreational marijuana. The third case study focuses on county-level presidential vote switching in West Virginia. We focus on these case studies for a few reasons. First, research indicates that economic self interest is more likely to occur when issues are both salient and are easier to understand (Green and Gerken, 1989). As we discuss further below, District 28, the Emerald Triangle, and West Virginia coal country are known for having a relatively narrow economic base where voters are likely to consider their economic self-interest when they go to the polls. Second, the case studies present a more difficult test for our theory of local economic voting given increasing political polarization at the national level and its influence on local-level politics (Hopkins, 2018).

The 2020 election featured an incumbent, Cuellar, who had been a Congressman since 2004. Thus, part of the reason why people might be voting for Cuellar over Cisneros in the 2020 primary is prior performance and general incumbency. This raises the question whether this case is more about retrospective than prospective voting. Our argument that this case is more likely to be about prospective than retrospective voting is due to the fact that Cuellar last faced a competitive candidate in 2004. In the 2018 election, Cuellar faced no challenger in the Democratic primary, and won 84% of the vote in the general. In 2016, Cuellar won 90% of the Democratic primary vote, and 66% of the general election vote. What this means overall, is that Cuellar had been receiving almost all of Democratic voters' votes for a long time.

Then, in 2020, a candidate with strong contrasts (Cisneros) related to the economy of the region forced an extremely close contest. We argue that this electoral environment changed the dynamics for voters who

had previously reflexively voted for Cuellar (again, this is true for the vast majority of Democrats across the district – not just in the areas along the border). Thus, our argument is that for Cuellar voters – particularly those tied to the immigration control and oil and gas industries – the threat of economic loss represented by Cisneros is a new prospective phenomenon they had not considered as intensely in earlier contests when Democratic voters were more reflexively voting for Cuellar as the unchallengeable incumbent.

In the case of the Democratic primary for the 28th congressional district, Henry Cuellar (incumbent) and Jessica Cisneros (challenger) took distinct positions on the issue of immigration, border enforcement, detention, and the environment.[2] Henry Cuellar remains one of the lone Democratic representatives who continues to publicly support efforts to fund federal jobs at the U.S.-Mexico Border and federal appropriations for private detention facilities. Such a position, moreover, is especially unusual since Democrats and Republicans typically disagree on the issues of immigration and immigration enforcement (Baker and Edmonds, 2021; Hout and Maggio, 2021). The Democratic challenger, Jessica Cisneros by contrast, opposed the use of for-profit detention centers on ideological grounds, but also argued that Cuellar, by financing federal law enforcement and prison privatization, furthered resident's greater economic dependency within the district, especially those without college degrees.[3] Thus, Cisneros clearly framed the Democratic primary as an election in which voters were given a choice between jobs and their ideological predispositions.

Based on the candidate's positions, one would expect voters – the vast majority of whom are Latino – to be more likely to support Cisneros given her tendency to not only prioritize immigration as a human right's issue, but also take a more liberal stance on immigration that's in line with the Democratic Party. Immigration has remained a top three issue over the last three presidential election cycles despite fluctuations in relative salience (Gomez-Aguinaga, Morín and Sanchez, 2023). In comparison to non-Hispanic whites especially, Pew Research Center polling shows that Latinos are more likely to show support for liberal immigration policies,[4] such as comprehensive immigration reform with a pathway to citizenship, favor fewer restrictions on immigration and workplace raids, and hold positive attitudes towards undocumented immigrants. This is especially the case among Latinos who know someone who is undocumented (Sanchez et al., 2015). Moreover, research demonstrates that Latinos who are threatened by punitive immigration policies and policies that promote stricter immigration enforcement at the national (e.g. HR 4437 (2005), Zero Tolerance (2017)) and local level (e.g. Arizona's SB-1070 (2010), Participation in Secure Communities) can mobilize Latinos to vote (White, 2016). Similar trends have also been found in South Texas and the Rio

[2]We examined several 2016 Democratic primaries in the same geography prior to the 2017 child detention crisis and prior to the Cuellar vs. Cisneros contests. The contests include the 2016 Democratic Presidential Primary, the 2016 Railroad Commissioner, and the 2016 Democratic contest in Webb County for Sheriff. Our results, presented in Table B2 in Appendix B, show no relationship between candidate selection and percent protective service workers or ICE/CBP headquarter adjacent.

[3]https://zora.medium.com/jessica-cisneros-takes-on-her-former-boss-the-private-prison-industry-and-big-oils-fave-democrat-b31a1e3128f7

[4]https://www.pewresearch.org/hispanic/2010/10/28/illegal-immigration-backlash-worries-divides-latinos/

Grande Valley (Kim, Kim and Altema McNeely, 2020; Altema McNeely, Kim and Kim, 2022).

However, both candidates framed the issue of immigration and oil as an economic issue. Indeed, Cuellar's campaign aired an ad attacking Cisneros on abortion, taking outside money, and opposing the oil and gas industry that would result in job loss.[5] A *Mother Jones* article about Cisneros' 2020 campaign noted "But Cisneros is not just running against Cuellar. She is also running against the regional economy as it currently exists."[6] On the flipside, Cuellar's campaign spokesperson stated: "They're welcome to come in here and tell 17,000 oil and gas field workers that they're no longer gonna have jobs under the Green New Deal", and the "3,700 ICE families."[7]

Indeed, large portions of Texas' 28th Congressional district are known for having a relatively narrow economic base. Located in South Texas along the Rio Grande river, the Congressional district is home to a major port of entry between the United States and Mexico. Consequently, many of the district's residents, including Latino residents, are employed by the private prison industry and hold federal government jobs with U.S. Customs and Border Protection (CBP) (Cortez, 2021). Laredo, TX, for instance, is home to "detention alley," where three detention facilities run along Interstate 35. Moreover, CBP boasts that it "employs a workforce of over 1,800 employees with $80 million in salaries on an annual basis for the [Laredo] sector's region."[8] However, other areas of the district, most notably the Bexar County (San Antonio) part of the district, are not at all reliant upon the immigration control economy. Cortez (2021) suggests that economic motivations based on pay, job security, and benefits rather than ideological motivations primarily drive Latino's decision to work in immigration enforcement. This finding, moreover, tends to hold regardless of identity, attitudes towards immigration, and demographic background.

The second case study poses a similar dilemma in which voters in a disproportionately Democratic region considered their economic interests alongside marijuana legalization. In the Emerald Triangle region, residents tend to vote for Democratic candidates and support liberal social policies. If political polarization heightens the role of partisanship on voting behavior, then one would also expect residents of the Emerald Triangle to be more likely to support Proposition 64. According to nationwide polls, 78% of Democrats support the legalization of recreational marijuana compared to just 55% of Republicans.[9] In California, the difference is somewhat larger, with 66% of Democrats supporting the measure compared to just 33% of Republicans.[10] Even though public attitudes toward marijuana have become more favorable over time, the thirty percentage point gap between Democrats and Republicans clearly suggests recreational marijuana

[5]https://twitter.com/PatrickSvitek/status/1227660042364760065
[6]https://www.motherjones.com/politics/2020/01/cisneros-texas-aoc/
[7]https://www.motherjones.com/politics/2020/01/cisneros-texas-aoc/
[8]https://www.cbp.gov/border-security/along-us-borders/border-patrol-sectors/laredo-sector-texas
[9]https://www.pewresearch.org/fact-tank/2019/11/14/americans-support-marijuana-legalization/
[10]https://www.ppic.org/blog/californias-marijuana-majority/

remains a highly partisan issue. Thus, we might expect partisanship to supersede economic voting.

In 2016, the American Community Survey (ACS) estimated Humboldt County's population at 136,290; Mendocino County at 87,285, and 12,828 in Trinity County. Overall, and particularly for California, the region does not have a large population, especially when we consider the relatively large size of the Emerald Triangle (about the size of Massachusetts). Further, the total voting population of our areas of interest is relatively small. Table 1 shows the estimated 2016 voter registration and turnout for key outdoor marijuana growing areas across the region. The legacy grow region – which is a primary focus of the case study – has about 6,500 registered voters, of which 73% showed up to vote in 2016. However, the relatively small size does not reduce the value of the case to testing our economic theory of voting. Further, due to the historically massive amounts of money generated from illegal grows in the Legacy Grow watershed and other outdoor grow areas, many people living inside and outside of these areas economically benefitted from illegally earned money, whether that is car dealerships in Eureka, Hydroponics shops spread across the region, realtors selling large land parcels, the construction industry, and carpenters involved in building grow operations.

Table 1: Estimated registration and voter turnout in watersheds associated with high density cannabis cultivation.

Watershed	Registration	Voted	Turnout
Legacy Grow	6586	4799	72.90
Van Duzen/Hwy 36	3487	2604	74.70
Willow Creek/Trinity	6376	4190	65.70
East Mendo	10211	7673	75.10
Anderson Valley	3622	2963	81.80

Still, support for Proposition 64 is complicated by the Emerald Triangle's historical ties to illicit cannabis cultivation. Cannabis farming in the region can be traced back to the counterculture revolution of the 1960s when individuals primarily from the San Francisco Bay Area opted for a remote lifestyle over city life.[11] Many turned to illicit cannabis farming as a source of revenue given the optimal weather and soil conditions for cannabis growth as well as a mountainous topography that made it difficult for law enforcement authorities to locate.[12] In an interview between Friends of the Eel River (a Southern Humboldt environmental advocacy organization) and the Executive Director of the California Growers Association shortly before the November 2016 vote, the ED took the position that legalization failed to protect small growers, and that legalization would lead to big-agriculture market capture. This, in turn would hurt the local economy.[13]

Today, the promise of high grade cannabis and profits continues to play an important role in the region's

[11] https://emeraldfarmtours.com/blogs/news/brief-history-california-emerald-triangle-cannabis
[12] https://scholarworks.calstate.edu/downloads/pg15bj60x
[13] https://eelriver.org/2016/10/05/north-coast-growers-divided-on-prop-64/

economy – although the fallout from legalization has drastically reduced the price of marijuana throwing the economy of the region into peril.[14] Still, the reliance on cannabis production is especially the case for legacy growers who are the beneficiaries of family plots. According to one estimation, the Emerald Triangle produces an estimated 1.7 million pounds of Cannabis each year. [15] Although alternative job opportunities exist, many jobs, such as logging and fishing, are limited to seasonal employment and are difficult to sustain as a reliable source of income across time for many residents.

The passage of Proposition 64, though, meant that legacy farmers could potentially face several financial costs, including learning costs, compliance costs (e.g. licensing; meeting regulatory standards), and competition costs. In their study of 362 marijuana farmers across 42 counties, Bodwitch et al. (2021) found that approximately a third of legacy growers did not apply for a permit to legally grow marijuana after the Proposition's passage. Among other things, the authors found financial reasons to be a primary explanation – especially among farmers with fewer resources. For example, 59% of farmers who chose to continue illicit marijuana cultivation stated they were deterred due the cost of compliance and that legal markets with high regulatory costs would limit economic opportunities for small farmers especially (Bodwitch et al. (2021), p. 163). In this regard, partisan and ideological tendency to support legal use of marijuana conflicted with growers' financial interest in maintaining regional control over its cash crop.

Finally, one concern with the case of economic voting surrounding Prop. 64 is that voters in high density grow regions might oppose legalization not for economic reasons but because they oppose the expansion of the marijuana industry precisely because the industry heretofore had produced many negative effects associated with criminal activity. Voters in this region are unlikely to oppose legalization for this reason for a few reasons.

First, almost every media story we came across while writing this paper stressed the economy as a concern for people living in legacy grow regions, not the concern that Humboldt will expand marijuana growing operations. Second, the California Voter's guide stressed "tough, common sense regulation...[marijuana would be] safe, controlled, and taxed."[16] This suggests that the passage of Prop. 64 would thus produce a much more carefully regulated marijuana market. Concerned people living near legacy grows and experiencing the negative effects of illegal marijuana growing would likely have the opposite reaction to legalization suggested by the above concern. Instead, those concerned about negative effects of illegal grows would likely be more supportive of legalization due to an advertised safer and more controlled environment.

Third, as noted in the interview between Friends of the Eel River and the ED of the California Growers

[14]https://abcnews.go.com/US/TheLaw/emerald-triangle-marijuana-legalization-destroy-americas-cannabis-capital/story?id=11302182

[15]https://weedmaps.com/news/2020/12/the-emerald-triangle-in-california-explained/

[16]https://vigarchive.sos.ca.gov/2016/general/en/propositions/64/

Association, a more real concern among people living in these areas is that legalization would generate greater outside competition by agri-business, more production in areas heretofore that did not cultivate significant amounts of marijuana, which would: 1) drop the price of marijuana, and 2) eventually reduce the number of local grow operations and farmers who could compete with such overproduction. Indeed, shortly after legalization, Santa Barbara County led the state in legal grow permit requests.[17] Moreover, in a 2019 *New Yorker* article on economic fallout from Prop. 64, the author notes that marijuana prices dropped from more than $2,000 a pound in 2016 to $1,600 in 2017, to less than $1,000 in 2018.[18] This is a huge drop from prices in the 1990s – where farmers routinely sold cannabis for more than $5,000 a pound, with street level prices closer to $6,500 per pound.[19]

The final case study is a well-known example of vote switching in American politics. In year 2000, West Virginia was considered a battleground state, and the timing pre-dated the Democratic party's strong environmental focus on climate change. In 2008, Obama ran on a pro-environment anti-coal position, which only enhanced in 2012. Thus, we can treat 2008 as a prospective economic vote, and 2012 as a retrospective economic vote. We aim to assess whether counties that shifted from Democratic to Republican were disproportionately coal mining counties. If they were, a very plausible reason why people living in those counties shifted was due to their concern the Democratic Party's positioning on environmental positions would cost them and/or people they know their jobs.

South Texas Immigration Enforcement

South Texas: Data and Methods

To evaluate our theory of local economic voting, we constructed two datasets. The first is comprised of Cuellar-Cisneros 2020 primary election precinct vote returns. The total number of precincts in the Congressional District is n=264.[20] Each row is a unique precinct spread across Texas Congressional District 28. The main dependent variable of interest is the count (and percent) of votes for each candidate (see Appendix A for in-depth discussion). See Figure A3 in Appendix A for our dependent variable distribution.

Next, we gathered the latitude/longitude coordinates of all Customs and Border Patrol (CBP) headquarters in the district, as well as Immigration and Customs Enforcement (ICE) centers. There are 9 total facilities in the district – noted in the appendix.

[17] https://www.vcstar.com/story/news/2018/04/29/santa-barbara-county-leads-california-number-permits-legally-grow-marijuana/562364002/

[18] https://www.newyorker.com/news/dispatch/how-legalization-changed-humboldt-county-weed

[19] https://www.economist.com/united-states/2022/05/14/in-california-the-worlds-largest-legal-weed-market-is-going-up-in-smoke

[20] After cleaning and joining, we drop one observation for a total dataset of n=263.

Using GIS software, we conducted a points to polygons spatial overlay and attached each facility to its appropriate precinct. Next, we attached all adjacent precincts to the CBP Headquarter/ICE detention center precincts for a total of 42 precincts we suspect should be disproportionately influenced by the economics of immigration control. This dummy variable becomes one of our main independent variables. This dummy variable therefore captures all precincts and those next to them that have ICE detention centers/CBP Headquarters.

Next, we gathered tract-level data from the 2019 5-year American Community Survey (ACS). The ACS asks questions about occupation and sorts answers into several major categories then minor categories. The tract is the lowest geographical unit where the Census makes major occupational categories available. We therefore gathered tract data for the occupation: protective service occupations and for the occupation construction and extraction occupations. This category – which is defined more in depth in Appendix A – includes jobs such as jailers, corrections, and border protection; then also jobs for people involved in oil and gas.

Also from the ACS, we gathered the following tract level variables: Black, Native American, Asian or Pacific Islander, Hispanic, education, unemployment, household median income, and age. Next, to convert the tract level data to the same geographic unit as the vote data (precinct) we conducted a spatial interpolation between Census unit and precinct. This method converts data from one spatial layer to another, but can result in the occasional outstanding error like overestimating raw counts. To reduce the influence of this type of error, we therefore convert the resulting raw counts (i.e., racial statistics) to percents. Finally, we drop all precincts without at least one vote. We include descriptive statistics of all variables in Appendix A, Table A1.

South Texas: Results

Table 2 presents our findings. Model 1 is our base model, which includes our two measures of the immigration economy (percent protective workers and CBP/ICE facility), and our measure of oil workers (extraction industry workers). Each variable is positive and statistically significant at the .01 level. Thus, in places where there are more protective service workers, precincts close to ICE/CBP facilities, and more people working in extraction, Cuellar did better. Model 2 includes our key independent variables and controls, whereas Model 3 controls for the precinct's conservatism by including Trump's 2016 vote share to evaluate whether conservatism is driving the results.

The first three rows include our key measures of economic dependence. Regarding model 2, we find a statistically significant relationship between percent working in protective services and support for Cuellar

($\beta = 0.544$ in Model 2 and $\beta = 0.537$ in Model 3). Both measures are statistically significant. Substantively, these coefficients mean that for every percent increase in people working in protective services in a precinct, Cuellar's vote is expected to rise by 0.537 to 0.544 percentage points. It is important to note that the relationship between protective services occupation and support for Cuellar changes only minimally with the inclusion of a partisan measure (percent Trump). Similarly, our measure "Percent work in Extraction Industry" shows that for each unit increase in the share of people working in extraction in a precinct, Cuellar will get 0.36 to 0.37 percentage points more vote. Thus, across all models, we find strong support for H1. That is, these results show that voters correctly identified the candidate who would advocate for the maintenance of their jobs.

The CBP/ICE facility variable is also statistically significant. The coefficient suggests that precincts that hold or are adjacent to a CBP/ICE facility are three percentage points more supportive of Cuellar than precincts that do not have such facilities. These results provide support for H2. Finally, the inclusion of percent Trump 2016 (as our measure of ideology) is not statistically related to support for Cisneros or Cuellar.

Table 2: OLS model predicting percent support for Henry Cuellar

	Dependent Variable: Percent Cuellar		
	Models		
	(1)	(2)	(3)
Percent work in Protective Services	0.581***	0.544***	0.537***
	(0.196)	(0.186)	(0.188)
CBP/ICE Facility present/adjacent	0.087***	0.038**	0.038**
	(0.016)	(0.015)	(0.015)
Percent work in Extraction Industry	0.645***	0.372***	0.364***
	(0.082)	(0.095)	(0.100)
Percent College Educated		0.180**	0.172**
		(0.075)	(0.082)
HH Median Income (Logged)		0.0004	0.0004
		(0.002)	(0.002)
Percent Unemployed		0.631***	0.624***
		(0.158)	(0.161)
Median Age		0.002	0.002
		(0.002)	(0.002)
Percent Black		−0.354***	−0.328**
		(0.123)	(0.158)
Percent Native American		2.006	1.968
		(2.964)	(2.983)
Percent AAPI		−0.038	−0.008
		(0.483)	(0.499)
Percent Hispanic		0.232***	0.249***
		(0.067)	(0.093)
Percent Non-Citizen		−0.015	−0.007
		(0.144)	(0.147)
Percent Trump 2016			0.022
			(0.088)
Constant	0.360***	0.093	0.076
	(0.019)	(0.088)	(0.111)
Observations	237	237	236
R^2	0.313	0.601	0.601
Adjusted R^2	0.304	0.580	0.578
Residual Std. Error	1.820 (df = 233)	1.415 (df = 224)	1.420 (df = 222)
F Statistic	35.411*** (df = 3; 233)	28.137*** (df = 12; 224)	25.775*** (df = 13; 222)
Note:			*p<0.1; **p<0.05; ***p<0.01

Overall then, our findings are consistent with our hypotheses and a local prospective economic vote. Even after controlling for alternative vote choice explanations, we find evidence that places with greater shares of people working in the immigration control industry as well as working in oil and gas extraction disproportionately supported Henry Cuellar over Jessica Cisneros. This makes sense when we consider that Cuellar bills himself as the jobs candidates and argues that immigration control brings jobs to his district. Meanwhile, Cisneros attacked Cuellar for backing private prisons and not standing up for immigrants. The choice presented to voters in a Democratic primary could not have been more clear.

As a point of robustness, we also analyzed the 2022 Primary and Runoff between the same two candidates – although the district boundary had changed some. Both elections produced extremely tight results with Cuellar narrowly eking out victories over Cisneros. The results, presented in Table B1 located in Appendix B, conform with our initial analyses and if anything become even stronger for the immigration jobs/economy measures. As a point of confirmation, the regression results conform with the raw data. Indeed, Cuellar's support in precincts with ICE/CBP facilities and their adjacents in the 2020 Democratic Primary was 58%. His support outside of these precincts was 48.9%. In the 2022 primary, Cuellar received 63% of the vote in these same areas, but won just 42.3% of the vote outside of these areas. In the runoff, the margins grew, with Cuellar garnering 65.1% of the vote in ICE/CBP areas, and winning just 32.8% outside of these areas. Therefore, it is safe to say that voters residing in high immigration control economy areas kept Cuellar in office. Our regression results hold true in both the base and control models. This squares with Cuellar's statements in a Fox News interview after his runoff victory: "'I think my district knows I've been very pro law enforcement, very pro Border Patrol, very pro ICE' Cuellar said."[21]

Finally, to provide added confidence that the 2020 CD-28 Democratic Primary is an appropriate case study featuring a "local economy and jobs candidate" (Cuellar) vs. a candidate posing a threat to such jobs (Cisneros), we examined several 2016 Democratic primaries in the same geography prior to the Cuellar vs. Cisneros contests. This included the 2016 presidential primary, U.S. Senate, and Webb County Sheriff, which featured Cuellar's brother.[22] None of these contests feature candidates with starkly different positions on the immigration control industry that would pose a threat to certain voters' jobs. Therefore, a priori we do not expect our measures of economic reliance to relate to voting behavior. Our results, presented in Table B2 in Appendix B, show no relationship between candidate selection and percent protective service workers or ICE/CBP facilities, or percent extraction industry workers.

[21] https://www.houstonchronicle.com/politics/texas/article/Rep-Henry-Cuellar-says-Biden-not-listening-to-17470280.php
[22] Henry Cuellar did not face serious competition, winning 89% of the vote, so we do not analyze that contest.

Emerald Triangle Marijuana Legalization

Emerald Triangle: Data and Methods

From the California Statewide Database,[23] we gathered precinct level vote returns on the 2016 marijuana legalization ballot initiative, Proposition 64. We subset the data to just the Emerald Triangle counties of Humboldt, Mendocino, and Trinity counties. We gathered the California voting district/precinct shape file from the California Statewide Database and joined the two datasets. We subset to just the Emerald Triangle Counties of Humboldt, Mendocino, and Trinity. The vote result by precinct is the dependent variable. Overall, the region voted for the measure 54% Yes to 43% No. However, by county, Humboldt supported the initiative 56% - 42%; Mendocino 53% -44%, and Trinity split 49% -49%. These all fall below the statewide vote of 57% - 43%. See Appendix C for greater detail.

The key set of independent variables measures concentrated outdoor grow regions across the tri-county region. We focus specifically on the legacy grow region of Southern Humboldt and Northern Mendocino Counties because this is where the historical grow concentration of remote cannabis fields and production is the strongest. The entire legacy grow region is extremely dependent on the illegal cannabis industry and therefore our geographic measure proxies economic dependence upon illegal marijuana production. However, we generate measures for all large outdoor grow areas in the region to capture other possible pockets of economic dependence upon illegal marijuana grows.

To develop our geographic cannabis production measure, first we gathered the California watershed polygon shape file. A watershed outlines a geographic area where all outside water (i.e., rain) naturally drains and is connected very directly to where outside grows occur and from where growers extract water to feed their cannabis operations. Next, we located the cannabis priority watershed boundary files from the California State Water Resource Control Board.[24] The water board defines a cannabis priority watershed accordingly: "All Cannabis Priority Watersheds contain a high concentration of cannabis cultivation; non-compliant cannabis cultivation in these high-value areas has the potential to cause severe environmental impacts." There are 14 identified concentrated grow regions across the state, with 10 in Northern California and four along the Central Coast between Santa Barbara and Santa Cruz. The geographically largest grow regions are in the Emerald Triangle and then also in the Sierra Nevadas concentrated around the town of Nevada City in Nevada County.

We develop five separate dummy variable measures (precinct inside of watershed = 1, precinct not inside of watershed = 0) that captures each grow region: 1) The legacy grow region that captures the border

[23] https://statewidedatabase.org/d10/g16.html

[24] https://www.waterboards.ca.gov/water$_issues/programs/cannabis/california_priority_watersheds.html$

area between Humboldt and Mendocino Counties comprised of the Lower South Fork Eel River, Mattole River, and Middle South Fork Eel River watersheds; 2) The Lower Van Duzen River watershed which captures the area along Highway 36; 3) The Horse Linto Creek-Trinity River watershed (Willow Creek area of Eastern Humboldt) combined with the Lower South Fork Trinity River, Middle South Fork Trinity River, Lower Hayfork Creek, Upper South Fork Trinity River, and Upper Hayfork Creek watersheds covering central Trinity County; 4) The Headwaters Russian River and East Fork Russian River watershed areas covering the high density cannabis grow region of Potter Valley; and 5) the Navarro River watershed along Highway 128 (Anderson Valley) connecting Highway 101 to Highway 1. We discuss the variable in-depth in Appendix C.

To rule out alternative confounders, we gathered additional control variables. We use the contemporaneous presidential election vote between Democrat Hillary Clinton and Republican Donald Trump as our latent measure of precinct partisanship. We do not use an earlier presidential vote (i.e., 2012) because the precinct names between the 2016 and 2012 California Statewide Database datasets changed considerably, resulting in more than 8,000 deleted observations in a one-to-one join. However, among the 15,751 joined rows, the correlation between the Democratic vote for present in 2012 and 2016 is very high (0.83). Therefore, in order to keep all data in tact, we use the contemporaneous vote measure.

To measure race/ethnicity, we gathered 2016 American Community Survey (ACS) block group level variables for non-Hispanic white, non-Hispanic Black, non-Hispanic Asian/Pacific Islander, and Hispanic. We also include measures for education (percent with 4-year BA degree or higher), household median income, percent of civilian labor force that is unemployed, and median age. Using a method of spatial aerial interpolation we converted block group data to precinct so that all variables are located at the unit of the precinct (Bivand, Pebesma and Gomez-Rubio, 2013). We then divide the raw number of each variable by its appropriate population variable (count for non-Hispanic white / total population), and use the percentage estimate as a control variable. For income and age, we take the average of that value of the block group region comprising each precinct. We present descriptive statistics in Appendix C, Table C1.

Emerald Triangle: Results

Table 3 presents results for three OLS models: Model 1 is a cannabis-only watershed regression predicting vote outcome based on the five combined grow areas; Model 2 includes our measure of partisanship; and Model 3 includes population-level socio-economic and ethno-racial controls. We weight each model by precinct total vote to account for population differences at the unit level.

Beginning with Model 1, we find overall strong support for H3 (economic dependence) that the precincts

residing in the legacy-grow watershed are less supportive of Prop. 64 than precincts outside of the watershed. Our core results hold whether we include or exclude a contemporaneous measure for partisanship (Percent Clinton 2016). The Legacy Grow Watershed coefficient is -0.185 meaning that just 39.4% of voters in arguably the area most identified with cannabis in the United States supported legalization.

Although not strictly part of our hypothesis testing, we also include the findings from the four other watershed regions. Overall, three of the four other watersheds are negative and statistically significant – which is consistent with the same economic interpretation. The coefficient on the Van Duzen watershed is -0.078 meaning that about 50% of voters supported Prop. 64 and 50% opposed. The coefficient on the Willow Creek/Trinity watershed is similar at -0.074 again meaning that the vote is fairly evenly split between pro and anti Prop. 64 in this area. However, the East Mendocino Russian River watershed area – home to the high grow area of Potter Valley – is -11.4 – meaning that more people voted against than for legalization in this area. The Navarro River watershed does not produce a statistically meaningful result.

Model 2 includes our measure of party as a covariate. Our results for legacy and the Russian River hold, but the Van Duzen River Watershed and Willow Creek/Trinity River watershed areas produce statistically insignificant results. This is not entirely surprising because these areas are more Republican than other parts of the region (1,356 Van Duzen voters cast a ballot for Trump in 2016 but just 879 backed Clinton; in Willow/Trinity, 1,669 voters supported Trump vs. 1,870 for Clinton). Our measure of partisanship (Percent Democrat); however, is large and statistically significant. For each point increase in percent Democrat, a precinct is 0.4 percentage points more supportive marijuana legalization. This finding is consistent with public opinion and ballot initiative data that shows Democrats and Republicans tend to hold diverging perspectives on legalization (Collingwood, O'Brien and Dreier, 2018; Denham, 2019; Beltz, Mosher and Schwartz, 2020). But, it is important to note that this partisanhip measure does not in any way reduce the Legacy Grow variable's effect size.

Model 3 includes more covariates and our core findings of the Legacy Grow region: the coefficient is -0.194. With respect to the control covariates, in particular, precincts with more college graduates disproportionately backed Prop. 64 ($\beta = 0.17$), whereas percent unemployed is associated with opposition to Prop. 64 ($\beta = -0.24$). These findings are consistent with an economic vote interpretation – educated areas are likely less reliant on illegal drug growing for economic ends – and people in higher unemployed areas are more likely to work in an illicit job. Of note, the college town of Arcata, which is the best educated part of the region, brings in outside money due to the local university and from tourism. Therefore, people are free to vote yes on legalization without paying a direct economic penalty (although it's possible they might suffer indirectly in the long run). On the unemployment covariate, areas with higher levels are also more racially diverse areas – which we discuss below.

Finally, on race, we should note that the region resides in one of the remaining areas in the state where non-Hispanic whites are still the dominant population: 73.8% in Humboldt, 64.3% in Mendocino, and 81.9% in Trinity as of the 2020 Census. However, we do observe that the covariates for both Percent Native American and Percent Hispanic are negative and statistically significant. These findings are consistent with Beltz, Mosher and Schwartz (2020) who finds that counties with larger shares of minorities are less supportive of legalization. While the covariate on Percent Black is positive and statistically significant, we should note that very few Black individuals live in the region – comprising just over 1% of all individuals.

Table 3: OLS model predicting percent yes on Proposition 64 – a ballot initiative to legalize marijuana.

	Dependent Variable: Percent Yes Prop. 64		
	Models		
	(1)	(2)	(3)
Legacy Grow Watershed	−0.185***	−0.190***	−0.194***
	(0.021)	(0.018)	(0.016)
Van Duzen River Hwy 36 Watershed	−0.078***	0.019	0.018
	(0.029)	(0.025)	(0.021)
Willow Creek/Trinity Watershed	−0.074***	−0.025	−0.006
	(0.023)	(0.019)	(0.018)
East Mendo: Russian River Watershed	−0.114***	−0.090***	−0.058***
	(0.017)	(0.014)	(0.013)
Anderson Valley Navarro River Watershed	0.022	−0.052**	−0.016
	(0.027)	(0.023)	(0.019)
Percent Democrat (Clinton 2016)		0.398***	0.352***
		(0.031)	(0.033)
Percent College Educated			0.172***
			(0.038)
HH Median Income (Logged)			−0.025
			(0.016)
Percent Unemployed			−0.241***
			(0.064)
Median Age			−0.002***
			(0.0005)
Percent Black			0.785**
			(0.365)
Percent Native American			−0.245***
			(0.054)
Percent AAPI			0.171
			(0.138)
Percent Hispanic			−0.116***
			(0.036)
Constant	0.579***	0.336***	0.728***
	(0.005)	(0.019)	(0.177)
Observations	341	340	337
R^2	0.277	0.522	0.681
Adjusted R^2	0.266	0.513	0.667
Residual Std. Error	1.439 (df = 335)	1.174 (df = 333)	0.968 (df = 322)
F Statistic	25.677*** (df = 5; 335)	60.497*** (df = 6; 333)	49.145*** (df = 14; 322)
Note:			*p<0.1; **p<0.05; ***p<0.01

We also conducted two lagrange multiplier tests for spatial model dependence in linear models. Specifically, we evaluated the need to estimate our models with either a spatial lag or spatial error model. The lagrange multiplier results indicate that we do not need to estimate either model, as the linear model is appropriate. The lag diagnostic value produces 0.61609, df=1, p-value = 0.4325, and the diagnostic value for error produces 1.4835, df=1, p-value = 0.2232.

Finally, as a point of robustness, we evaluated two other contemporaneous ballot propositions: Proposition 62 which banned the death penalty in the state, and Proposition 63 which put further constraints on gun rights. Both of these propositions have ideologically derived bases, which is to say that Democrats in recent years tend to oppose the Death Penalty and oppose gun rights, whereas Republicans tend to support the Death Penalty and gun rights. As displayed in Table C2, in Prop. 62, the legacy grow region voted consistently in line with the Democratic vote – supporting an end to the Death Penalty. On gun control, the legacy grow region has a coefficient of $\beta = -0.013$ and is not statistically significant. Thus, in both of these cases, the legacy grow region is either supporting the mainstream Democratic position (Death Penalty), or is agnostic (guns). These results are clearly different from that concerning marijuana legalization where the legacy grow region decidedly did not support the mainstream Democratic position and in fact opposed it. These findings suggest that the legacy grow region and the marijuana legalization opposition is a unique phenomenon specific to the region's interests.

West Virginia County Vote Switching

West Virginia: Data and Methods

We gathered presidential vote returns at the county level in year 2000, 2008, and 2012. We use year 2000 as the baseline because this was a very competitive year when West Virginia was still considered a swing state. Additionally, the time period is before the Democratic Party had shifted strongly left on the environment and coal. Indeed, in 2000, the Democratic Party still controlled West Virginia state politics. Then in 2008, Obama ran on a pro-environment anti-coal position, which only enhanced in 2012. Thus, we can treat 2008 as a prospective economic vote, and 2012 as a retrospective economic vote. We conduct several difference OLS models from 2000 to 2008, then also 2000 to 2012.

Our dependent variable is the raw percent Republican candidate difference between 2008 and 2000, then again 2012 and 2000. Our key independent variable is percent working in mining as taken from the 2009 ACS – the first time 5-year ACS data are available. Figure D1 in Appendix D maps out the visual relationship between these two variables. For each county we gathered the estimated number of individuals

working in Mining, quarrying, and oil and gas extraction – C24030_005 (male) and C24030_032 female). We divided this by the total number of civilian 16+ workers in the county. Recognizing that this measure is taken after the first time point of the dependent variable (year 2000), we also gathered total coal production for year 2000 from the state of West Virginia, then divided this measure by total population. We present our results for this analysis in Appendix D. The two coal-related variables correlate at 0.80. For our 2000 to 2012 model we include a lagged 2008 indicator. We include several controls, including unemployment rate from the Bureau of Labor Statistics yearly county measure.

West Virginia: Results

The results are presented in Table 4 below. Regardless of the model specification, the percent work in mining variable is statistically significant and substantive, which is supportive of Hypothesis 4. This holds, too, with regard to the total coal production 2000 measure, which are presented in Table D1 in Appendix D.

Table 4: OLS model predicting change in GOP presidential support percent support over time in West Virginia from 2000 to 2008 and 2000 to 2012.

	Dependent Variable: Percent Difference GOP Presidential 00 to 08/12			
	2000 - 2008		2000 - 2012	
	Base 00 - 08	Full 00-08	Base 00 - 12	Full 00-12
	(1)	(2)	(3)	(4)
Percent work in Mining	0.477***	0.408***	1.238***	0.714***
	(0.105)	(0.143)	(0.121)	(0.083)
Percent College Educated		−0.145		0.036
		(0.166)		(0.090)
HH Median Income (Logged)		−0.060		−0.006
		(0.037)		(0.020)
Percent Unemployed		−0.356		−0.122
		(0.360)		(0.195)
Median Age		0.003		0.001
		(0.002)		(0.001)
Percent White		−0.092		−0.077
		(0.166)		(0.090)
Lagged 2000-2008 Difference				0.953***
				(0.078)
Constant	0.019**	0.690	0.048***	0.103
	(0.008)	(0.433)	(0.008)	(0.239)
Observations	55	55	55	55
R^2	0.280	0.450	0.663	0.933
Adjusted R^2	0.267	0.381	0.657	0.923
Residual Std. Error	0.044 (df = 53)	7.364 (df = 48)	8.362 (df = 53)	3.963 (df = 47)
F Statistic	20.642*** (df = 1; 53)	6.535*** (df = 6; 48)	104.357*** (df = 1; 53)	93.375*** (df = 7; 47)
Note:				*p<0.1; **p<0.05; ***p<0.01

Limitations

This study is not without its limitations. Although the results provide a link between economic interest and voting behavior in ostensibly least likely scenarios, this general finding lacks internal validity given our reliance on observational data. Additionally, because the findings are based on aggregate-level data and not surveys, we are unable to directly measure individual's personal economic situation as it relates to voting behavior. Thus, this study cannot entirely rule out the problem of ecological fallacy. Finally, our ability to make inferences is limited to three relatively small, though economically important, regions of the U.S. Further, because the study is based on three case studies, we are unable to say with certainty that a similar pattern holds across other regions or economic contexts. Thus, we hope that future investigation will add to our understanding of voting behavior by extending this analysis to other local economies dominated by a small number of industries. Until then, this study provides clear evidence of local economic voting across three seemingly disparate cases in a heightened era of political polarization.

Future research, could, for example, investigate other cases involving declining industry like steel, auto, and timber, or ballot initiatives around housing where politically liberal homeowners nonetheless may have an economic incentive to oppose growth. Ecological analysis such as what we have done here combined with individual-level surveys could go a long way in increasing our confidence and knowledge that what we are observing here is indeed a broad generalizable phenomenon. Finally, researchers could locate certain geographic locations that fit the dynamics of our outlined cases, and conduct hypothetical candidate survey experiments among voters living in such jurisdictions. Researchers could gather appropriate survey questions to more precisely dial in on the mechanisms leading to candidate support or opposition in such conditions.

Discussion and Conclusion

The purpose of this study was to examine the influence of economic self-interest on voting behavior, and to evaluate whether voters act prospectively regards to local economic voting. In our case studies, Northern California, South Texas, and West Virginia voters were forced to weigh their economic interest against their partisan and/or ideological interests at the polls. Even in an era of heightened political polarization, the results consistently show economic voting to play a significant role in the decisions voters make when going to the polls. In California's Emerald Triangle, voters located near or in legacy grow watershed regions were more likely to vote against the recreational use of marijuana to protect their interests in illicit marijuana cultivation. In Texas' 28th Congressional district, voters residing near private prisons, along the U.S.-Mexico

Border, and in areas with high percentages of individuals employed in protective services were more likely to vote for Henry Cuellar the pro-detention and pro-border enforcement candidate. And in West Virginia, voters in high-density coal counties became much more likely to cast Republican presidential ballots in 2008 and especially in 2012.

The findings add to our understanding of local economic voting in several key ways. Notably, this study adds to the extant literature by offering unique measures of local economies. Although based on three specific economic domains, we hope that future studies will continue to rely on new data sources to capture other local economies. Our study also reinforces, albeit limited, research that suggests voters are more likely to consider the local economy when industries are both important to the community and when information about local industries and how they financially affect voters are relatively easy to obtain. Furthermore, our study demonstrates that even in an era of political polarization economic issues can compete with partisan identities as well as play an influential role in voting behavior.

Overall, the findings have important implications for the future of campaigns and elections. Although candidates often focus on economic issues, our results suggest candidates and political parties should place greater emphasis on the local economy (as opposed to the national economy) when they go to campaign. However, we also suggest that such a strategy may be conditional on campaigning in regions where a small number of industries control the local economy; and thus, subject to local economic shocks. Existing research suggests that communities throughout the U.S. economically dependent on either government or narrow economic interests, such as military bases and prisons, may be prime environments to place greater emphasis on local economic issues given their already significant role in local politics.

The findings also have implications for the Latino vote moving forward, especially in regions of the U.S. where Latinos' economic livelihood is dependent on the survival of certain industries. During the 2020 election, nationwide polls suggest that Trump made electoral gains among Latinos and this was especially the case in South Texas.[25] In Texas' 28th Congressional district, both Hildago and Zapata counties experienced some of the largest shifts in party vote share from 2016 to 2020. In Starr County, Trump's share of the popular vote went from a net loss of 60 percent in 2016 versus Clinton to a net loss of just 5 percent in 2020.[26] The electoral shift was particularly of note since 96 percent of the county's residents identify as Latino.[27] While scholars and pundits offered several explanations for the shift, our findings reinforce prior research that suggests that Latinos are willing to vote for the candidate that is perceived to place greater support for key industries that employ Latinos.

[25]https://electioneve2020.com/poll/#/en/demographics/latino/
[26]https://www.politico.com
[27]https://www.census.gov/quickfacts/starrcountytexas

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Appendix

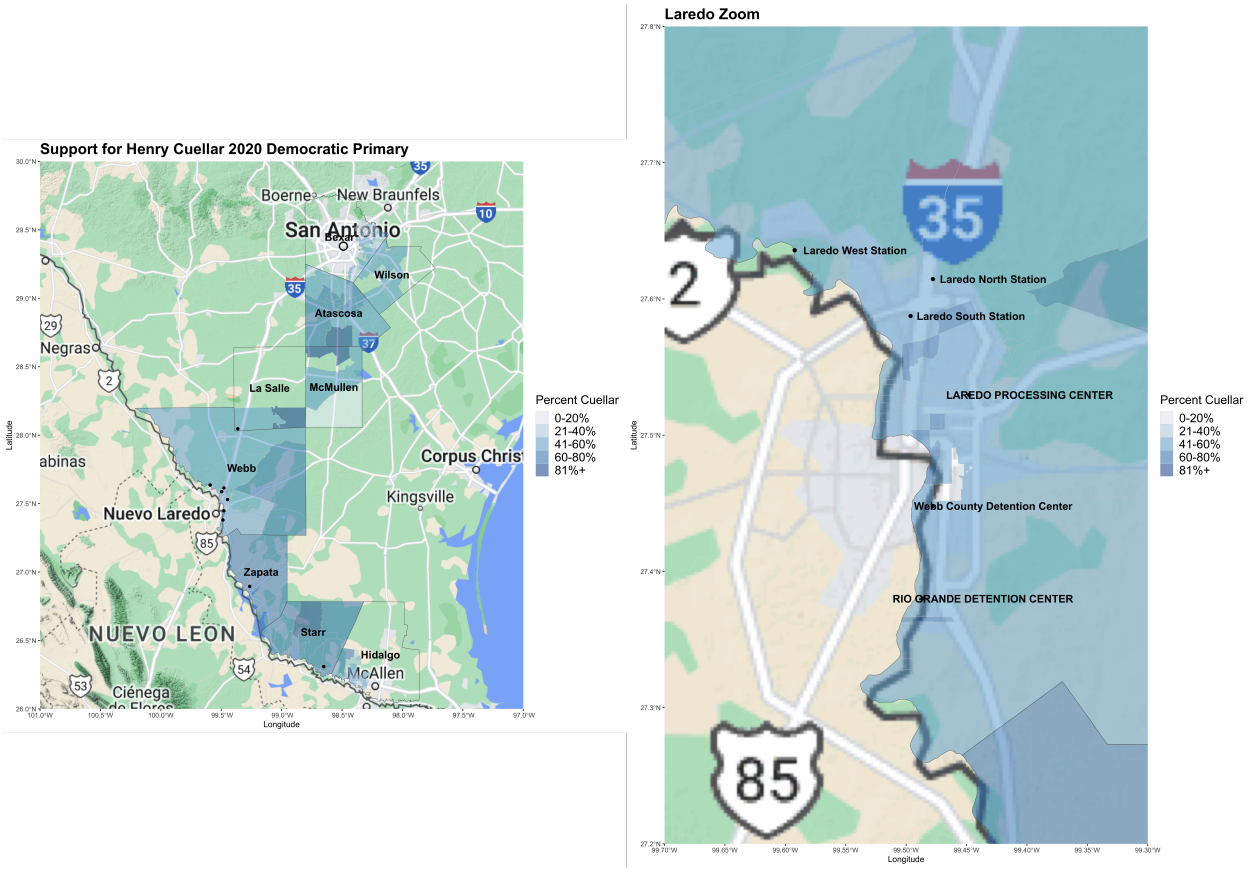
2020 primary CD-28 vote distribution

Figure A1 graphically presents the results by precinct, with lighter colors showing greater support for Cisneros and darker colors greater support for Cuellar. We include dots locating ICE facilities and CBP headquarters. The leftmost panel presents the full district, whereas the rightmost panel zooms into the city of Laredo where six of the nine immigration control facilities are located.

Cuellar clearly receives the strongest support in the border communities south of Laredo particularly in Zapata and Starr Counties. Cisneros performs best in Bexar County in the north, and in Hidalgo County (McAllen) to the south. However, unlike in Hidalgo County (McAllen), Cuellar picks up pockets of support in precincts near CBP headquarters and ICE detention centers in Webb County (Laredo). Furthermore, while Cuellar does reasonably well in Atascosa County, he does particularly poor in the district's Bexar County (San Antonio) precincts.[28]

[28]Two counties – McMullen and Atascosa Counties – require further elaboration. These two joiner counties between San Antonio and Laredo have some areas that are more strongly Cuellar than what an ICE/CBP model of economic voting might suggest since there are no immigration or border patrol facilities in either of these counties. There is a precinct at the top of McMulllen County for instance that gave 100% of its vote to Cuellar ? however, there were just two total voters casting ballots in the Democratic primary. Indeed, just 18 total votes come out of McMullen in the 2020 Democratic primary, so visually the results here can be chalked up to small n. The second county, Atascosa, is characterized by more conservative Democrats who may simply prefer Cuellar for a variety of conservative reasons beyond his economic/jobs position. For instance, the precinct correlation between Cuellar's 2020 primary election vote and Trump?s 2020 general election vote is 0.5 in Atascosa, but only 0.196 in the Congressional District overall. That said, Atascosa has the fourth most share of protective service workers as a percentage of a county's workers, coming after La Salle, Zapata, and Webb, so that also explains Atascosa's disproportionately higher share of support for Cuellar.

Figure A1: **2020 TX-28 Congressional Democratic primary results, percent support for Henry Cuellar.**



Protective Service Workers and Extraction Workers

Figure A2 graphically presents the two key independent variables of percent protective service workers, and percent extraction industry workers. The overall pattern maps to the percent Cuellar distribution, with greater Cuellar support in pockets along the border and in Atascosa County, where there are greater shares of protective service and extraction industry workers.

Figure A2: 2019 ACS distribution of protective services workers (left panel) and extraction workers (right panel) across Congressional District 28.

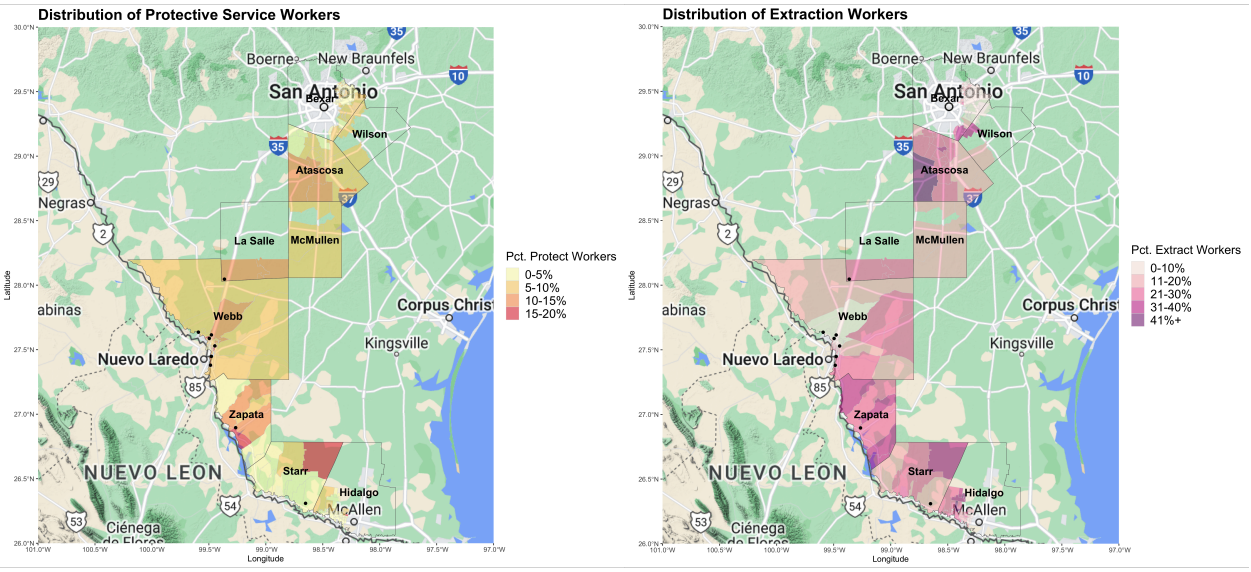
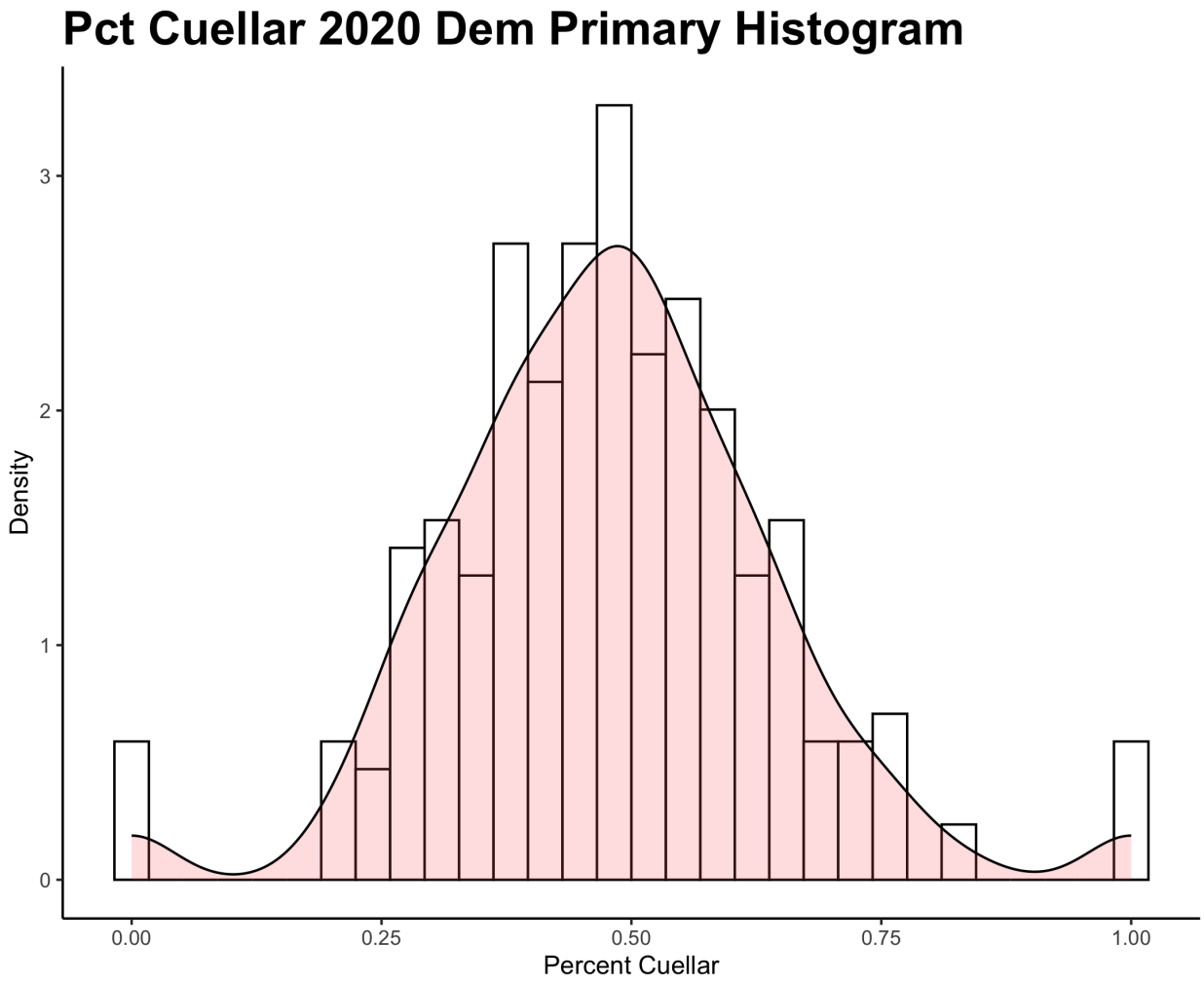


Figure A3 presents the dependent variable distribution.

Figure A3: Histogram distribution vote for Cuellar, 2020 Democratic Primary



CBP and ICE stations

These include the Rio Grande City Station located at 730 Border Patrol Lane Rio Grande City; the Laredo South Station located at 9001 San Dario Avenue in Laredo; the Zapata Station located at 105 Kennedy Street in Zapata; Laredo West Station located at 202 State Highway 255 in Laredo; Laredo North Station located at 11119 McPherson Road in Laredo; the Laredo Processing Center located at 4702 East Saunders Street in Laredo and managed by the Corrections Corporation of America (CCA); the Rio Grande Detention Center located at 1001 San Rio Boulevard in Laredo and run by Geo Group; LaSalle County Regional Detention Center located at 832 E. Texas 44 in Encinal; and the Webb County Detention Center located at 9998 U.S. 83 Laredo and overseen by CCA.

Protective Services

The Census classifies the following jobs as protective service occupations:[29]

- First-line supervisors of correctional officers 3700 33-1011
- First-line supervisors of police and detectives 3710 33-1012
- First-line supervisors of firefighting and prevention workers 3720 33-1021
- First-line supervisors of security workers 3725 33-1091
- First-line supervisors of protective service workers, all other 3735 33-1099
- Firefighters 3740 33-2011
- Fire inspectors 3750 33-2020
- Bailiffs 3801 33-3011
- Correctional officers and jailers 3802 33-3012
- Detectives and criminal investigators 3820 33-3021
- Fish and game wardens 3830 33-3031
- Parking enforcement workers 3840 33-3041
- Police officers 3870 33-3050
- Animal control workers 3900 33-9011

[29] bls.gov

- Private detectives and investigators 3910 33-9021
- Security guards and gambling surveillance officers 3930 33-9030
- Crossing guards and flaggers 3940 33-9091
- Transportation security screeners 3945 33-9093
- School bus monitors 3946 33-9094
- Other protective service workers

We also gathered the total number of employed civilians 16 years or older, which will serve as our occupation denominator. This variable serves as our key independent variable measuring economic dependence on the immigration enforcement industry. The highest concentration of protective service workers are found in Zapata County (10%), La Salle County (10%), and Webb County (8.2%). These counties contain eight of the nine CBP and detention facilities in the Congressional District.[30]

Table A1 presents the Texas CD-28 data's descriptive statistics

Table A1: CD-28 data descriptive statistics

	Mean	Min	Max	SD
Percent Cuellar	0.48	0.00	1.00	0.17
Percent work in Protective Services	0.06	0.00	0.18	0.03
CBP/ICE Facility present/adjacent	0.16	0.00	1.00	0.37
Percent work in Extraction Industry	0.15	0.01	0.48	0.09
Percent College Educated	0.19	0.04	0.66	0.11
HH Median Income (Logged)	10.08	0.00	11.74	2.76
Percent Unemployed	0.07	0.01	0.31	0.04
Median Age	33.26	20.90	45.99	5.16
Percent Black	0.05	0.00	0.45	0.09
Percent Native American	0.00	0.00	0.01	0.00
Percent AAPI	0.01	0.00	0.09	0.02
Percent Hispanic	0.71	0.12	1.00	0.26
Percent Non-Citizen	0.12	0.01	0.36	0.09
Percent Trump 2016	0.40	0.00	2.00	0.25
Total Vote	278.21	0.00	2585.00	344.95

Texas 2016 and 2022 Primary Analyses

[30]It is plausible that areas with more protective service workers are also more conservative. And therefore people voting for Cuellar in these locations is attributable more to conservatism and less to economic dependence. We guard against this by 1) Only looking at a Democratic primary election – which rules out partisanship; 2) Including a measure of Trump vote 2016 to capture possible pockets of conservatism (i.e., conservative Democrats), and 3) Include measures for where CBP/ICE facilities are located. These areas are negatively correlated with Trump 2016 vote. Thus, on balance, we think that by examining the data in all these ways we are more likely finding an effect for economic dependence and not for conservatism.

Table B1: OLS model predicting percent support for Henry Cuellar, in both the initial 2022 Democratic Primary and Runoff, CD-28.

	Dependent Variable: Percent Cuellar			
	Pct Cuellar		Pct Cuellar Runoff	
	Base Primary	Primary	Base Runoff	Runoff
	(1)	(2)	(3)	(4)
Percent work in Protective Services	1.362***	0.824***	2.014***	0.993***
	(0.363)	(0.252)	(0.488)	(0.322)
CBP/ICE Facility present/adjacent	0.140***	0.049**	0.223***	0.093***
	(0.030)	(0.022)	(0.039)	(0.027)
Percent work in Extraction Industry	0.664***	0.303**	0.772***	0.270
	(0.143)	(0.134)	(0.195)	(0.172)
Percent College Educated		0.499***		0.590***
		(0.102)		(0.122)
HH Median Income (Logged)		0.002		0.003
		(0.003)		(0.004)
Percent Unemployed		1.272***		1.747***
		(0.240)		(0.313)
Median Age		0.003		0.004
		(0.002)		(0.002)
Percent Black		−0.209		−0.108
		(0.137)		(0.166)
Percent Native American		1.877		−0.563
		(3.007)		(3.741)
Percent AAPI		−0.820		−0.886
		(0.865)		(1.030)
Percent Hispanic		0.463***		0.621***
		(0.066)		(0.079)
Percent Non-Citizen		0.731***		1.129***
		(0.139)		(0.174)
Constant	0.262***	−0.377***	0.206***	−0.623***
	(0.032)	(0.107)	(0.044)	(0.129)
Observations	255	255	259	259
R^2	0.282	0.722	0.305	0.758
Adjusted R^2	0.274	0.708	0.297	0.747
Residual Std. Error	2.554 (df = 251)	1.620 (df = 242)	3.186 (df = 255)	1.913 (df = 246)
F Statistic	32.901*** (df = 3; 251)	52.249*** (df = 12; 242)	37.382*** (df = 3; 255)	64.377*** (df = 12; 246)

Note: *p<0.1; **p<0.05; ***p<0.01

Table B2: OLS model predicting percent support for 2016 Democratic Primary candidates

	Dependent Variable: Candidate Percent		
	Senate Yarborough	President Sanders	Webb Sheriff Cuellar
	(1)	(2)	(3)
Percent work in Protective Services	−0.220	0.047	0.009
	(0.134)	(0.105)	(0.222)
CBP/ICE Facility present/adjacent	0.015	0.002	−0.004
	(0.010)	(0.008)	(0.016)
Percent work in Extraction Industry	0.026	0.021	−0.084
	(0.062)	(0.049)	(0.117)
Percent College Educated	−0.109*	0.284***	0.021
	(0.063)	(0.050)	(0.178)
HH Median Income (Logged)	0.002	0.003	0.001
	(0.004)	(0.004)	(0.005)
Percent Unemployed	−0.311**	−0.125	0.068
	(0.128)	(0.096)	(0.260)
Median Age	0.007***	−0.002***	0.003
	(0.001)	(0.001)	(0.002)
Percent Black	0.054	−0.208***	−2.832
	(0.091)	(0.073)	(1.898)
Percent Native American	0.416	−0.622	−0.991
	(1.467)	(1.184)	(3.007)
Percent AAPI	0.791*	−0.162	0.222
	(0.462)	(0.368)	(0.973)
Percent Hispanic	0.154***	−0.174***	−0.246
	(0.041)	(0.033)	(0.410)
Percent Non-Citizen	−0.563***	0.021	−0.031
	(0.093)	(0.073)	(0.198)
Constant	0.155**	0.399***	0.848*
	(0.077)	(0.062)	(0.439)
Observations	225	225	59
R^2	0.484	0.515	0.323
Adjusted R^2	0.455	0.488	0.147
Residual Std. Error	0.760 (df = 212)	0.679 (df = 212)	0.843 (df = 46)
F Statistic	16.570*** (df = 12; 212)	18.783*** (df = 12; 212)	1.833* (df = 12; 46)

Note: *p<0.1; **p<0.05; ***p<0.01

Emerald Triangle

Figure C1 maps out the precinct vote with darker blue colors indicating greater support for the ballot initiative and lighter colors greater opposition. Humboldt County is the top left, Trinity County the top right, and Mendocino County is to the south. The map reveals a clear pattern: Greatest opposition to marijuana legalization is found in the southern portions of Humboldt County and northern area of Mendocino County. There are also some pockets of opposition along Highway 36 at the Humboldt-Trinity border in the area around Mad River; and in the geography east of the city of Ukiah in Mendocino County. In the areas bordering Humboldt and Mendocino, the region's economy – centered around the town of Garberville – has been intensely driven by the cultivation and sale of illegal marijuana since the 1960s. It is here where the Campaign Against Marijuana Planting (CAMP) focused a significant amount of its eradication efforts – at least in the 1980s and 1990s – before defunding operations in 2012.

Within Humboldt County, the greatest opposition comes in the high marijuana producing precinct of 2SH-2 – Alderpoint – featured in the Netflix Documentary "Murder Mountain." Just 17% of voters here supported the initiative despite 41% backing Clinton for president. Even within the liberal enclave of Garberville, 2SH-4, of the 540 proposition voters, 339 (63%) voted against the initiative. Meanwhile, 73% backed Clinton. In precinct 2SHS7, also in and around Garberville, 60% of voters backed Clinton, 17% the Green Party candidate, and just 20% Trump. However, just 35% backed Prop. 64 – a difference of 42 percentage points between support for the Democratic/Green Party candidate and legalization. The highest legalization support came from the liberal college town of Arcata, where in precinct 3A–4, 77% of voters supported Prop. 64 and 93% backed Clinton over Trump. In precinct, 3A-J1, 76% voted yes on the proposition and 88% backed Clinton over Trump for a difference of 12 percentage points.

Figure C1: **Emerald Triangle precinct vote on Proposition 64 to legalize marijuana.**

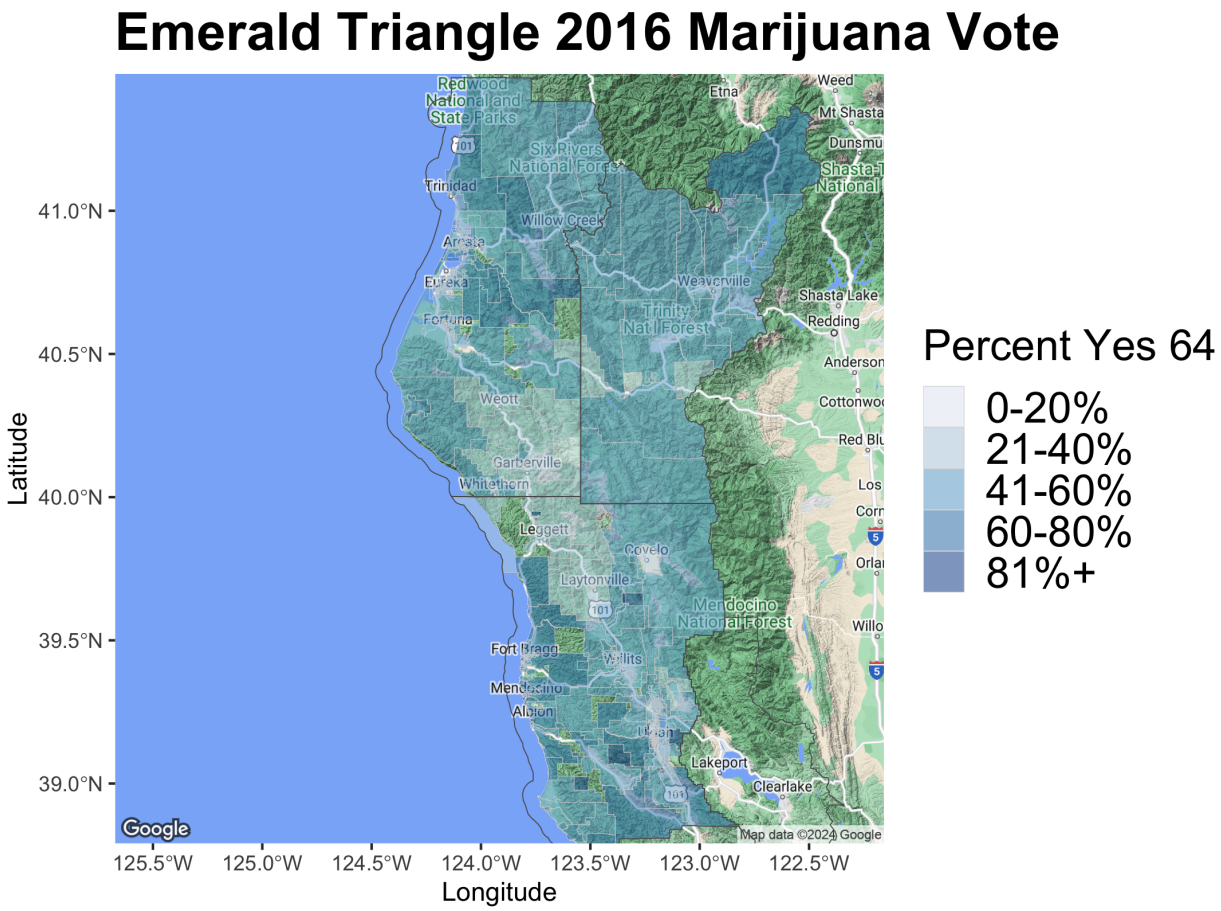


Figure C2 presents the dependent variable distribution in the form of a histogram. The variable clearly approaches a normal distribution.

Figure C2: **Histogram distribution vote on Proposition 64 to legalize marijuana.**

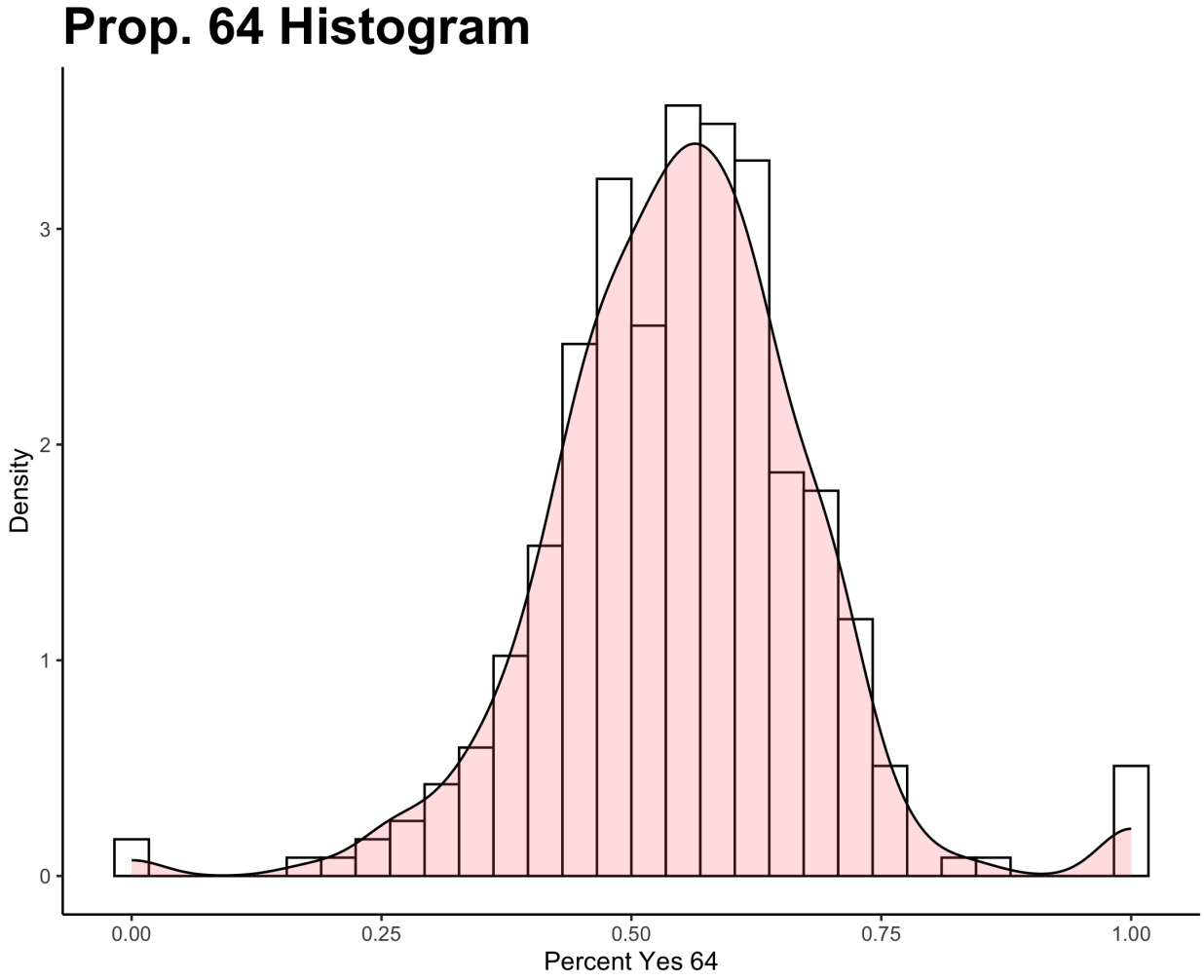
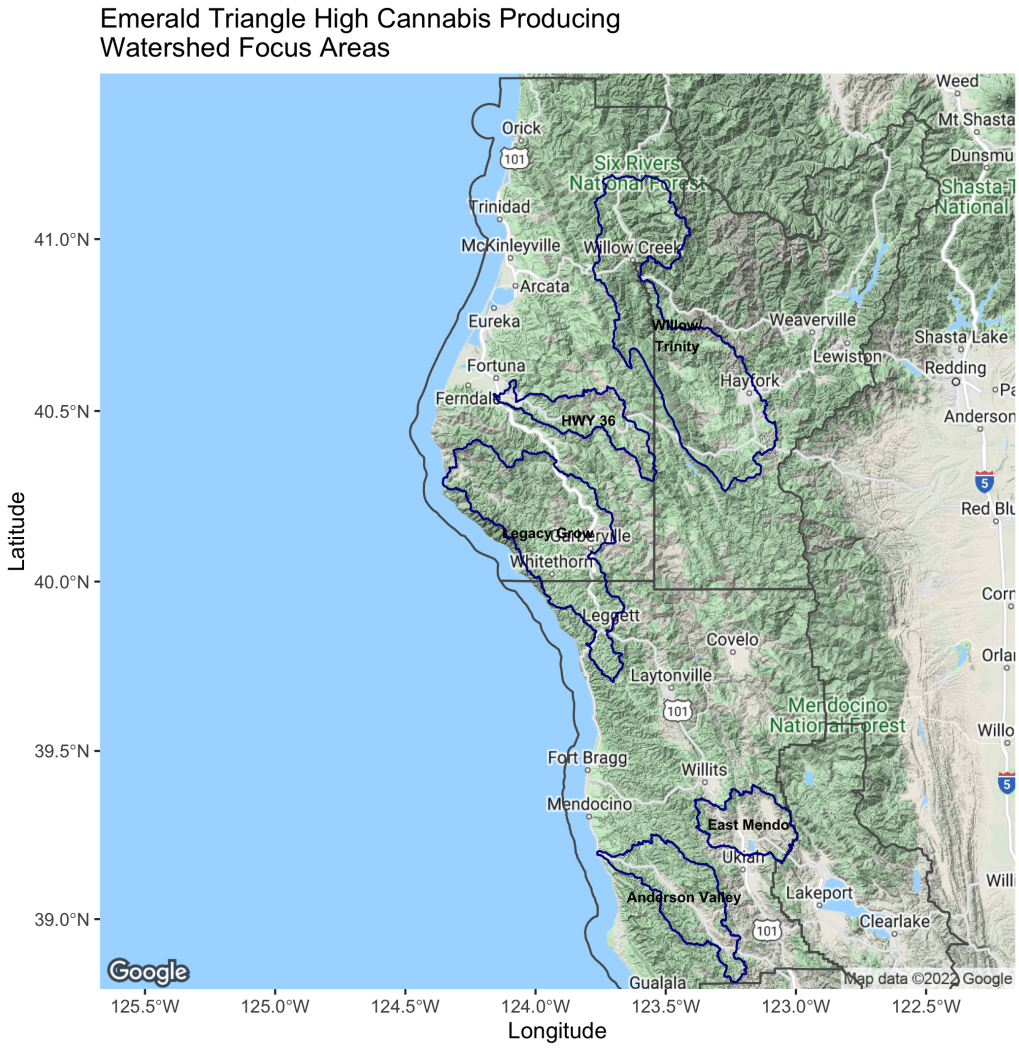


Figure C3 geographically displays the variable with each polygon a separate watershed combination as described above. To merge the data with the precinct data, we calculated the centroid of each voting precinct via GIS tools, then used a points to polygons join to select all precincts (1) as belonging to the watershed if the centroid falls within the fully encompassed watershed boundary. We code precincts whose centroids fall outside the boundary as 0.

Figure C3: **Emerald Triangle high cannabis producing watersheds.**



Beginning with the Legacy Grow region, the watershed's population hub is the Southern Humboldt city of Garberville – perhaps the epicenter of the illegal marijuana industry in the United States. The polygon region captures the towns of Redway, Whitehorn, Petrolia, Piercy, and Leggett but does not include the Census designated place of Alderpoint. As of 2016, 6,586 registered voters lived in the Legacy Grow combined watershed. The region is indeed economically isolated as Garberville is about 70 miles from Eureka the county seat and 90 miles to Ukiah – the largest city in Mendocino County.

To the north the Legacy Grow region is the Van Duzen River Watershed along Highway 36. The total number of registered voters here reported in 2016 was 3,487. The Willow Creek/Trinity County set of connected watersheds had a 2016 registered voter population of 6,376. To the south, the East Mendo watershed of the Russian River between Ukiah and Willits – as shown on the map – is also the most populated of identified high-producing cannabis grow regions with 10,211 registered voters in 2016. Finally, the Anderson Valley area of the Navarro River Watershed contains just 3,622 registered voters.

Table C1: Emerald Triangle data descriptive statistics

	Mean	Min	Max	SD
Pct Yes 64 (Legalization)	0.55	0.00	1.00	0.13
Legacy Grow Watershed	0.06	0.00	1.00	0.24
Van Duzen River Hwy 36 Watershed	0.03	0.00	1.00	0.18
Willow Creek/Trinity Watershed	0.06	0.00	1.00	0.23
East Mendo: Russian River Watershed	0.13	0.00	1.00	0.34
Anderson Valley Navarro River Watershed	0.05	0.00	1.00	0.22
Percent Democrat (Clinton 2016)	0.62	0.00	1.00	0.16
Percent College Educated	0.26	0.00	0.63	0.12
HH Median Income (Logged)	10.71	9.80	11.67	0.29
Percent Unemployed	0.11	0.00	0.39	0.06
Median Age	44.15	19.54	65.46	8.53
Percent Black	0.01	0.00	0.06	0.01
Percent Native American	0.04	0.00	0.82	0.06
Percent AAPI	0.02	0.00	0.15	0.02
Percent Hispanic	0.17	0.00	0.76	0.14
Total Vote	277.56	1.00	1059.00	253.54
Pct Yes 62 (Death Penalty Ban)	0.50	0.00	1.00	0.16
Pct Yes 63 (Gun Control)	0.49	0.00	1.00	0.16

Emerald Triangle Auxiliary Analyses

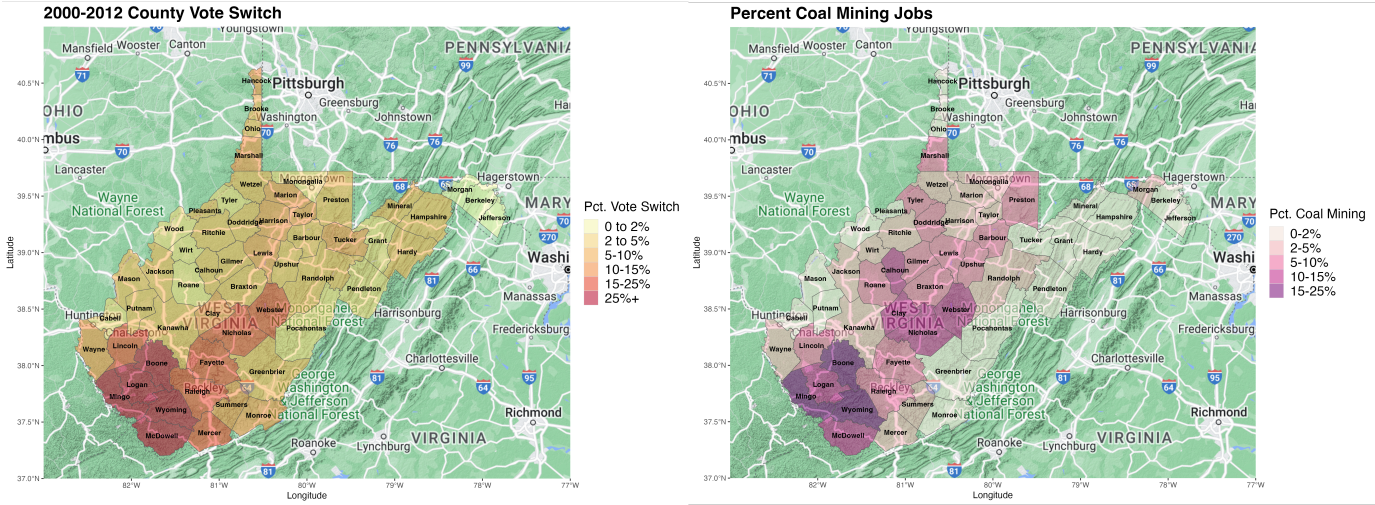
Table C2: OLS model predicting percent yes on Propositions 62 and 63.

	Dependent Variable: Percent Yes Prop. 62 and 63	
	Models	Pct Yes 63
	(1)	(2)
Legacy Grow Watershed	0.106***	−0.013
	(0.015)	(0.013)
Van Duzen River Hwy 36 Watershed	−0.010	−0.039**
	(0.018)	(0.017)
Willow Creek/Trinity Watershed	0.023	−0.058***
	(0.016)	(0.014)
East Mendo: Russian River Watershed	−0.004	−0.032***
	(0.011)	(0.010)
Anderson Valley Navarro River Watershed	0.081***	−0.006
	(0.017)	(0.016)
Percent Democrat (Clinton 2016)	0.650***	0.641***
	(0.030)	(0.027)
Percent College Educated	0.357***	0.298***
	(0.033)	(0.031)
HH Median Income (Logged)	−0.026*	−0.023*
	(0.014)	(0.013)
Percent Unemployed	−0.129**	−0.117**
	(0.057)	(0.053)
Median Age	−0.001***	−0.002***
	(0.0004)	(0.0004)
Percent Black	0.034	0.358
	(0.325)	(0.298)
Percent Native American	−0.123**	−0.151***
	(0.048)	(0.044)
Percent AAPI	−0.152	0.054
	(0.122)	(0.112)
Percent Hispanic	−0.163***	0.013
	(0.032)	(0.029)
Constant	0.384**	0.402***
	(0.157)	(0.144)
Observations	337	337
R^2	0.856	0.871
Adjusted R^2	0.850	0.866
Residual Std. Error (df = 322)	0.862	0.789
F Statistic (df = 14; 322)	136.678***	155.654***
Note:		*p<0.1; **p<0.05; ***p<0.01

West Virginia

Vote and coal jobs maps.

Figure D1: **Vote Switch dependent variable and percent working in coal mining, West Virginia counties**



When also swapped out the percent working in mining variable with a ratio measure for total coal production in year 2000, the substantive results remain as evidenced in Table D1.

Table D1: OLS model predicting change in GOP presidential support percent support over time in West Virginia from 2000 to 2008 and 2000 to 2012. Coal production year 2000 model.

	Dependent Variable: Percent Difference GOP Presidential 00 to 08/12			
	2000 - 2008		2000 - 2012	
	Base 00 - 08	Full 00-08	Base 00 - 12	Full 00-12
	(1)	(2)	(3)	(4)
Coal Production Year 2000	0.0001***	0.0001*	0.0002***	0.0001***
	(0.00003)	(0.00003)	(0.00004)	(0.00002)
Percent College Educated		−0.268*		−0.123
		(0.160)		(0.108)
HH Median Income (Logged)		−0.080**		−0.032
		(0.038)		(0.026)
Percent Unemployed		−0.298		0.047
		(0.382)		(0.251)
Median Age		0.002		0.0001
		(0.002)		(0.002)
Percent White		−0.154		−0.174
		(0.173)		(0.114)
Lagged 2000-2008 Difference				1.067***
				(0.094)
Constant	0.036***	1.019**	0.079***	0.555*
	(0.007)	(0.430)	(0.009)	(0.297)
Observations	55	55	55	55
R^2	0.159	0.406	0.367	0.893
Adjusted R^2	0.143	0.332	0.355	0.877
Residual Std. Error	0.047 (df = 53)	7.651 (df = 48)	11.462 (df = 53)	5.000 (df = 47)
F Statistic	10.004*** (df = 1; 53)	5.466*** (df = 6; 48)	30.750*** (df = 1; 53)	56.149*** (df = 7; 47)
Note:				*p<0.1; **p<0.05; ***p<0.01

Below we provide the descriptive statistics for variables use in the analysis in Table D2, then also the dependent variable histograms in Figure D2.

Table D2: West Virginia data descriptive statistics

	Mean	Min	Max	SD
2000 to 2008 Difference	0.05	-0.03	0.19	0.05
2000 to 2012 Difference	0.11	0.00	0.33	0.08
Percent work in Mining	0.05	0.00	0.24	0.06
Percent College Educated	0.14	0.06	0.34	0.06
HH Median Income (Logged)	10.46	9.97	11.06	0.18
Percent Unemployed	0.09	0.05	0.14	0.02
Median Age	41.54	29.10	47.30	2.60
Percent White	0.95	0.77	1.00	0.04
Total Population	32934.60	5696.00	191624.00	32524.16
Coal Production/Population 2000	104.67	0.00	1297.85	227.08

Figure D2: **Histogram distribution vote on 2000-2008 and 2000-2012 vote change, West Virginia counties.**