

# Supporting Information for "Causes and Extent of Increasing Partisan Segregation in the U.S. – Evidence from Migration Patterns of 212 Million Voters"

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# A The Catalist and TargetSmart Data

## A.1 Processing the TargetSmart Data

While Catalist provided us with anonymized, processed voter files – i.e., without identifying information such as names or residential addresses, the TargetSmart data include voters’ names and addresses. Using this information, we process the TargetSmart data in two ways: 1) we further de-duplicate the data relative to what was already done by the data vendor and 2) we build on TargetSmart’s work to identify movers. In the following sections, we detail these processing steps and present summary statistics of the pre-processed and processed TargetSmart voter data. The description of the TargetSmart data processing was developed in [1], and this section is largely reproduced from that paper’s Supporting Information.

### A.1.1 Initial Cleaning and De-duplication

TargetSmart provides a “voterbase ID” field (henceforth VBID) that uniquely identifies a row in the data for a given state and year. TargetSmart also provides an “exact track ID” (henceforth ETID), which represents TargetSmart’s efforts to link individuals *across* states and years. We use this information plus first name, middle name, last name, date of birth, and vote history to de-duplicate the TargetSmart data, so that for each year the record used in the analysis is the most likely current record for each voter. We also use this information to build on TargetSmart’s linkage model to further link voters across states and years.

First, we take the following steps to clean the raw TargetSmart files:

1. Use TargetSmart’s field on whether a voter is found in the Social Security Death records to drop voters that are deceased.
2. Use TargetSmart’s information from the United States Postal Service National Change of Address database to drop voters that no longer reside at their listed residence.

3. Remove hyphens and spaces from first and last names. Capitalize all letters of first and last names.
4. Recode invalid ZIP codes and Census IDs as missing.
5. De-duplicate records with the same ETID, first name, and last name, giving preference to the record whose registration status is “Registered” (vs. “Unregistered”), whose voter status is “Active” (vs. “Inactive,” based on recent election participation), and with the most recent registration date.
6. Drop any records where the voter’s age is listed as under 18 and the individual is listed as “Registered.”

### **A.1.2 De-duplicating within States**

To link rows *within the same state* corresponding to the same individual but across multiple years – in other words, to assign a state unique identifier (henceforth “SUID”) – we take the following steps:

1. Assume records that share a VBID are the same person, and assign them the same SUID. However, if the same VBID has been assigned to two rows where the first name, last name, and date of birth are *all* different, or where the maximum difference in birth year is more than five years *and* the month and day of birth are different too, then break this link.
2. Drop individuals with a SUID that is never associated with a name or date of birth.
3. Group by ETID.
  - Case 1: If *at least one* of the first name, last name, and DOB are the same among all members of the group, and there is only one record per year, and the maximum age difference is less than or equal to five years, then assign all rows the same SUID.

- Case 2: If not everyone in the group shares *either* a first name, last name, or DOB, group them by name and DOB and – as long as there is only one record per year – assign rows within each group the same SUID.
4. For records that are unique *within a year* by first name, last name, and DOB, group records by these variables and assign them the same SUID.
  5. For records that are unique *within a year* by first name, middle name, last name, and DOB, group records by these variables and assign them the same SUID.

### A.1.3 De-duplicating across States

To link rows corresponding to the same individual *across* states – in other words, to assign a nationally unique identifier (henceforth “UID”) – we take the following steps.

1. Drop rows missing first name, last name, or DOB.
2. Split the DOB field into year, month, and day. If the DOB ends in “01,” set the DOB day to missing. If the DOB ends in “0101,” set the DOB month and day to missing.<sup>1</sup>
3. Group by ETID and check that the maximum vote count for any election is 1. If so, assign these rows the same UID.
4. Group by first name, last name, and year, month, and day of birth. Ensure that:
  - Each record has non-missing information for all of the grouping variables.
  - Each record is uniquely identified by these variables within state.
  - The group has a record from at least two states.
  - The records do not have different middle initials.
  - The maximum vote count among records in the group for any election is one.

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<sup>1</sup>We lose information by excluding some people who were actually born on the first of the month, or who were actually born on January 1. But there is no reliable way of determining whether a DOB ending in “0101” actually corresponds to a January 1 birthday, or whether it indicates that the month and day are missing.

If so, assign these rows the same UID.

5. Repeat the previous step using the following sets of grouping variables:

- First name, middle name, last name, and year, month, and day of birth.
- First name, last name, and year and month of birth.
- First name, middle name, last name, and year and month of birth.
- First name, last name, and year of birth.
- First name, middle name, last name, and year of birth.

## **A.2 Catalist and TargetSmart: A Comparison**

In SI Table S1, we provide year-by-year comparisons of summary statistics in states recording partisan registration for comparable variables in the Catalist and TargetSmart data. The proportions of Democratic, Republican, Black, Hispanic, white, and male voters are similar between the two datasets. However, we note a slight difference in the number of registered voters, which is lower in the TargetSmart data.<sup>2</sup>

The number of counties and Census Tracts in the Catalist data is slightly lower than in the TargetSmart data. We exclude from the Catalist data several sparsely populated Alaskan county equivalents and their Census Tracts as they were divided into multiple counties between 2008 and 2018. We proceed that way as it is unclear whether the county FIPS codes for individuals in the original counties changed due to relocation or reassignment to new counties without moving. Additionally, we drop Mono county, California (FIPS code 06-051), Broomfield County, and Colorado (FIPS code 08-014), due to apparent inconsistencies in voter partisanship classification during certain years. For example, in some years, most or all voters in these counties are reported as having missing party affiliation.

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<sup>2</sup>The numbers presented in this subsection are based on TargetSmart counts following the processing outlined in Section A.1.

Table S1: Summary Statistics, Catalist and TargetSmart Data

	Catalist (1)	TargetSmart (2)
<u>Panel A. 2008</u>		
States	30	-
Counties	1,373	-
Census Tracts	36,541	-
Registered voters	99,239,654	-
Share Democrat	0.435	-
Share Republican	0.305	-
Share Black	0.099	-
Share Hispanic	0.089	-
Share white	0.763	-
Share male	0.461	-
<u>Panel B. 2010</u>		
States	30	-
Counties	1,373	-
Census Tracts	36,532	-
Registered voters	97,234,739	-
Share Democrat	0.428	-
Share Republican	0.305	-
Share Black	0.100	-
Share Hispanic	0.093	-
Share white	0.756	-
Share male	0.461	-
<u>Panel C. 2012</u>		
States	30	30
Counties	1,373	1,378
Census Tracts	36,543	40,944
Registered voters	100,387,678	84,797,031
Share Democrat	0.419	0.420
Share Republican	0.300	0.303
Share Black	0.104	0.089
Share Hispanic	0.100	0.092
Share white	0.742	0.763
Share male	0.461	0.461
<u>Panel D. 2014</u>		
States	30	30
Counties	1,373	1,380
Census Tracts	36,544	41,015
Registered voters	100,266,211	88,916,458
Share Democrat	0.412	0.415
Share Republican	0.296	0.297
Share Black	0.106	0.089
Share Hispanic	0.104	0.096
Share white	0.734	0.755
Share male	0.462	0.463

*(continued)*

	Catalist (1)	TargetSmart (2)
<u>Panel E. 2016</u>		
States	30	30
Counties	1,373	1,380
Census Tracts	41,010	41,020
Registered voters	106,278,208	92,171,092
Share Democrat	0.411	0.415
Share Republican	0.296	0.299
Share Black	0.105	0.089
Share Hispanic	0.114	0.102
Share white	0.720	0.746
Share male	0.463	0.462
<u>Panel F. 2018</u>		
States	30	30
Counties	1,373	1,380
Census Tracts	41,074	41,022
Registered voters	107,182,121	95,770,825
Share Democrat	0.404	0.406
Share Republican	0.290	0.292
Share Black	0.105	0.087
Share Hispanic	0.120	0.111
Share white	0.709	0.735
Share male	0.463	0.462
<u>Panel G. 2020</u>		
States	-	30
Counties	-	1,380
Census Tracts	-	41,024
Registered voters	-	103,676,124
Share Democrat	-	0.409
Share Republican	-	0.295
Share Black	-	0.085
Share Hispanic	-	0.118
Share white	-	0.723
Share male	-	0.460

*Notes:* The table reports year-specific summary statistics of comparable variables from the Catalist (column 1) and the TargetSmart data (column 2). For both datasets, the sample is restricted to registered voters in the 29 states plus DC that record party affiliation in every general election, 2008-2020.



## B Materials and Methods

### B.1 Measures of Segregation

We define Exposure to Democrats as the two-party Democratic registration share, which is:

$$\text{Two-party Democratic registration share}_{i,t} = \frac{\sum_{v \in i,t} D_{v,t}}{\sum_{v \in i,t} (D_{v,t} + R_{v,t})}, \quad (1)$$

where  $D_{v,t}$  and  $R_{v,t}$  are equal to 1 if voter  $v$  is registered as Democrat and Republican, respectively, in year  $t$  in geographic unit  $i$  and 0 otherwise. This measure ranges from 1 (all voters are Democrats) to 0 (all voters are Republicans).

The index of Dissimilarity, which measures the evenness of the distribution of partisans across sub-units within a geographic area, is defined as:

$$\text{Index of Dissimilarity}_{i,t} = \frac{1}{2} \sum_{j \in i} \left| \frac{\sum_{v \in j,t} D_{v,t}}{\sum_{v \in i,t} D_{v,t}} - \frac{\sum_{v \in j,t} R_{v,t}}{\sum_{v \in i,t} R_{v,t}} \right|, \quad (2)$$

where  $j$  is a sub-unit within  $i$ ,<sup>3</sup> and  $D_{v,t}$  and  $R_{v,t}$  are defined as before. This index ranges from 0 (complete evenness) to 1 (complete segregation). It can be interpreted as the proportion of Democrats (Republicans) who would have to move to make Democrats (Republicans) evenly spread throughout unit  $i$ .

### B.2 Classifying Geographic Units as Increasing versus Decreasing Segregation

To classify geographic units into those that contribute to increasing or decreasing geographic partisan segregation, we compute the change in each unit's contribution to the weighted variance of Exposure to Democrats.

Let  $x_{i,t}$  be the Exposure to Democrats for unit  $i$  at time  $t$ , and  $w_{i,t}$  the unit's weight defined as the fraction of registered voters living in that unit, so that  $\sum_{i=1}^n w_{i,t} = 1$ . The

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<sup>3</sup>For our main calculations, we use Census Tracts as the sub-unit.

weighted variance  $\sigma_t^2$  of the Exposure to Democrats at time  $t$  is given by:

$$\sigma_t^2 = \frac{\sum_{i=1}^n w_{i,t} \times (x_{i,t} - \mu_t)^2}{\sum_{i=1}^n w_{i,t}}, \quad (3)$$

where the weighted mean  $\mu_t$  at time  $t$  is:

$$\mu_t = \frac{\sum_{i=1}^n w_{i,t} \times x_{i,t}}{\sum_{i=1}^n w_{i,t}}. \quad (4)$$

The contribution of unit  $i$  to the weighted variance at time  $t$  is:

$$c_{i,t} = w_{i,t} \times (x_{i,t} - \mu_t)^2. \quad (5)$$

The change in the contribution of unit  $i$  to the weighted variance between  $t$  and  $t + 1$  is:

$$\Delta c_i = c_{i,t+1} - c_{i,t}. \quad (6)$$

With this, we obtain:

$$\text{Contribution to partisan segregation} = \begin{cases} \text{Increased it} & \text{if } \Delta c_i > 0 \\ \text{Decreased it} & \text{if } \Delta c_i \leq 0 \end{cases}$$

### B.3 Decomposing the Increase in Segregation into Contributing Factors

The change in Exposure to Democrats  $\frac{D}{(D+R)}$  between years  $y_1$  and  $y_2$  in a particular area can be written as follows, after using partial derivatives:

$$\begin{aligned} \Delta \frac{D}{(D+R)} &\approx \frac{R_{y_1}}{(D_{y_1} + R_{y_1})^2} \Delta D - \frac{D_{y_1}}{(D_{y_1} + R_{y_1})^2} \Delta R \\ &\approx \sum_f \left( \frac{R_{y_1}}{(D_{y_1} + R_{y_1})^2} \Delta D_f - \frac{D_{y_1}}{(D_{y_1} + R_{y_1})^2} \Delta R_f \right) \\ &\approx \sum_f \Delta f, \end{aligned} \quad (7)$$

where  $\Delta$ 's indicate changes between  $y_1$  and  $y_2$ ,  $R_{y_1}$  and  $D_{y_1}$  are counts of Republicans and Democrats in the area in  $y_1$ , and contributing factors are indexed by  $f$ .  $\Delta D_f$  and  $\Delta R_f$  denote net changes in counts of Democrats and Republicans due to factor  $f$ , and  $\Delta_f$  is the contribution of factor  $f$  to the change in Exposure to Democrats, and is equal to:

$$\Delta_f = \frac{R_{y_1}}{(D_{y_1} + R_{y_1})^2} \Delta D_f - \frac{D_{y_1}}{(D_{y_1} + R_{y_1})^2} \Delta R_f. \quad (8)$$

For all factors except voters switching between the Democratic and Republican parties,  $\Delta D_f$  and  $\Delta R_f$  can be written as:

$$\Delta D_f = N_{I,f} \times s_{I,f}^D - N_{O,f} \times s_{O,f}^D$$

$$\Delta R_f = N_{I,f} \times s_{I,f}^R - N_{O,f} \times s_{O,f}^R,$$

where  $N_{I,f}$  is the number of voters who, due to factor  $f$ , were registered Democrats or Republicans in the area in  $y_2$  but not in  $y_1$ ;  $N_{O,f}$  is the number of voters who, due to factor  $f$ , were registered Democrats or Republicans in the area in  $y_1$  but not in  $y_2$ ;  $s_{I,f}^D$  (resp.  $s_{I,f}^R$ ) is the share of voters who were newly registered as Democrats (resp. Republicans) in the area in  $y_2$  due to factor  $f$ ; and  $s_{O,f}^D$  (resp.  $s_{O,f}^R$ ) is the share of voters who were no longer registered Democrats (resp. no longer registered Republicans) in the area in  $y_2$  due to factor  $f$ . For instance, when we consider the contribution of voters moving across locations to changes in Exposure to Democrats,  $N_{I,f}$  is the number of voters registered as Democrats or Republicans in the area in  $y_2$  who used to live in another area before, and  $s_{I,f}^D$  is the share of those voters registered as Democrats in  $y_2$ .

Replacing  $\Delta D_f$  and  $\Delta R_f$  in Equation (8), we obtain the following equation:

$$\begin{aligned} \Delta_f = & N_{I,f} \times \left( \frac{R_{y_1}}{(D_{y_1} + R_{y_1})^2} s_{I,f}^D - \frac{D_{y_1}}{(D_{y_1} + R_{y_1})^2} s_{I,f}^R \right) \\ & - N_{O,f} \times \left( \frac{R_{y_1}}{(D_{y_1} + R_{y_1})^2} s_{O,f}^D - \frac{D_{y_1}}{(D_{y_1} + R_{y_1})^2} s_{O,f}^R \right). \end{aligned} \quad (9)$$

A factor  $f$  can contribute to the change in Exposure to Democrats for two reasons: i) if the number of Democrats and Republicans concerned by factor  $f$  is large (i.e.,  $N_{I,f}$

and  $N_{O,f}$  take large values), and ii) due to behavioral differences between Democrats and Republicans, reflected in differences between  $s_{I,f}^D$  and  $s_{I,f}^R$  or between  $s_{O,f}^D$  and  $s_{O,f}^R$ .

For each explaining factor  $f$ , we disentangle reason i) from reason ii) by checking the values of  $N_{I,f}$  and  $N_{O,f}$  and by measuring the strength and the sign of the correlation between  $\Delta \frac{D}{(D+R)}$  on one hand, and  $\frac{s_{I,f}^D}{s_{I,f}^D+s_{I,f}^R} - \frac{D_{y_1}}{D_{y_1}+R_{y_1}}$  or  $\frac{s_{O,f}^D}{s_{O,f}^D+s_{O,f}^R} - \frac{D_{y_1}}{D_{y_1}+R_{y_1}}$  on the other. This correlation is informative because affiliated voters appearing in (resp. disappearing from) the area between  $y_1$  and  $y_2$  due to factor  $f$  generate a positive  $\Delta_f$  and contribute to increasing  $\frac{D}{(D+R)}$  if and only if  $\frac{s_{I,f}^D}{s_{I,f}^D+s_{I,f}^R} - \frac{D_{y_1}}{D_{y_1}+R_{y_1}}$  is positive (resp.  $\frac{s_{O,f}^D}{s_{O,f}^D+s_{O,f}^R} - \frac{D_{y_1}}{D_{y_1}+R_{y_1}}$  is negative). Intuitively,  $\frac{D}{(D+R)}$  increases if there are relatively more Democrats appearing in the area and relatively fewer Democrats disappearing from the area than at baseline.

For switches between Democrats and Republicans,  $\Delta D_f$  and  $\Delta R_f$  are defined as follows:

$$\Delta D_f = -\Delta R_f = \beta R_{y_1} - \alpha D_{y_1},$$

with  $\beta$  the share of Republicans who become Democrats, using the initial number of Republicans as denominator, and  $\alpha$  the share of Democrats who become Republicans, using the initial number of Democrats as denominator. Replacing  $\Delta D_f$  and  $\Delta R_f$  by their respective definitions in Equation (8), we obtain that:

$$\Delta_f = \frac{\beta R_{y_1} - \alpha D_{y_1}}{R_{y_1} + D_{y_1}}. \quad (10)$$

$\Delta_f$  is positive if and only if  $\frac{\beta}{\alpha+\beta} - \frac{D_{y_1}}{D_{y_1}+R_{y_1}}$  is positive. Therefore, for this factor, we disentangle reason i) from reason ii) by checking the number of switches between Democrats and Republicans and by measuring the strength and the sign of the correlation between  $\Delta \frac{D}{(D+R)}$  and  $\frac{\beta}{\alpha+\beta} - \frac{D_{y_1}}{D_{y_1}+R_{y_1}}$ .

## B.4 Decompositions by Demographic Groups

For decompositions by demographic groups, we drop voters with missing demographic information. For example, for the decomposition by age, we drop voters with missing age information. Let  $i$  be a geographic unit (e.g., county) identifier classified in geographic category  $I$  (e.g., all counties trending Democratic). Let  $g$  be a socio-demographic

sub-category in group category  $G$  (e.g., male or female in the group category gender). Let  $f$  be a contributing factor (e.g., generational change). We can decompose the change in Exposure to Democrats explained by factor  $f$  in geographic category  $I$  into the sum of the change explained by that factor in each group for all groups  $g$  in demographic category  $G$  and all geographies  $i$  comprising geographic category  $I$ :

$$\Delta \frac{D_I}{D_I + R_I} = \sum_{i \in I} \sum_{g \in G} \Delta_{i,g,f}. \quad (11)$$

Per the decomposition formalized in the previous section, we define  $\Delta_{i,g,f}$  as follows:

$$\Delta_{i,g,f} = \frac{R_{y_1}}{(D_{y_1} + R_{y_1})^2} \Delta D_{i,g,f} - \frac{D_{y_1}}{(D_{y_1} + R_{y_1})^2} \Delta R_{i,g,f}. \quad (12)$$

We are interested in the share of an explaining factor explained by a socio-demographic group computed across all counties that share the same trend in partisan composition (either trending Democratic or trending Republican). Mathematically, we want to compute the following share,  $S_{g,f}$ , per factor  $f$  and socio-demographic sub-category  $g$ , knowing that  $\sum_{g \in G} S_{g,f} = 1$ :

$$S_{g,f} = \frac{\sum_{i \in I} \Delta_{i,g,f}}{\sum_{g \in G} \sum_{i \in I} \Delta_{i,g,f}}. \quad (13)$$

We compute the above statistics for each race, gender, and age category in our data. We do so separately for counties that trended Democratic and trended Republican across the time period. For gender, the categories are male and female. For race, the categories are white, Black, Hispanic, and other. For age, we group voters into age quartiles based on their age at first registration in the voter files.

## **C Increase in Geographic Partisan Segregation Across all Years, Using Different Geographic Units, and Using Presidential Election Results**

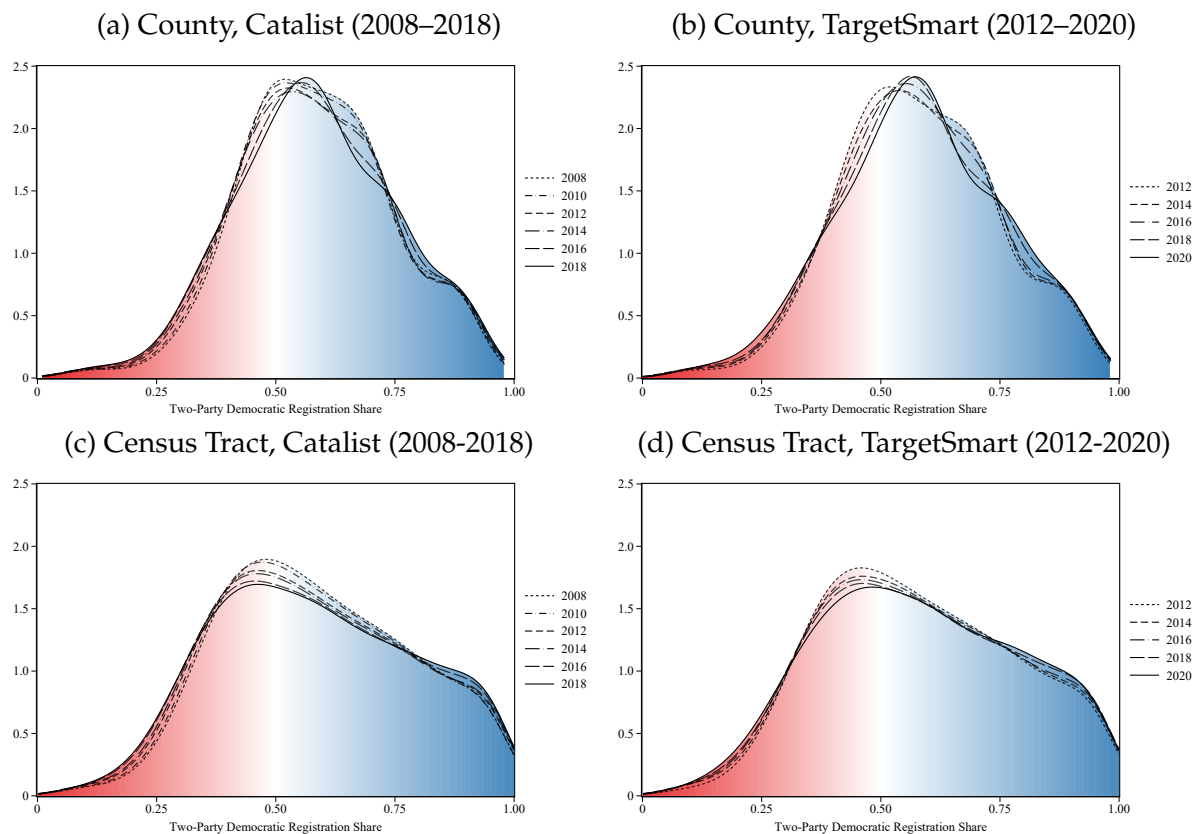
In the main paper, we document rising geographic partisan segregation across counties and Census Tracts. This is evidenced by the widening distributions of Exposure to Democrats in these geographic units and the increasing segregation of partisan groups across neighborhoods within counties, as measured by the index of Dissimilarity. Here, we demonstrate the robustness of these trends across all years covered by our data, across different geographic units (i.e., Congressional Districts, Census Block Groups, and Census Blocks), and using both Catalist and TargetSmart voter files. We also validate these trends using alternative data sources, such as presidential election results, and assess the overall increase in the proportions of Democrats or Republicans out of total registrants.

### **C.1 Year-to-year Increase in Geographic Partisan Segregation at the County and Census Tract Levels**

SI Figure S1 shows the weighted distributions of Exposure to Democrats in each election year at the county and Census Tract levels, using the Catalist data from 2008 to 2018 (left panel) and the TargetSmart data from 2012 to 2020 (right panel). The standard deviation, mean, and kurtosis – each weighted by counts of registered voters in a given year in a county (resp. Census Tract) – are presented in SI Table S2.

Both data sources show year-to-year increases in geographic partisan segregation across counties. This is evidenced by a widening distribution, with the weighted SD increasing by 7.7% between 2008 and 2018 in the Catalist data, and by 6.9% between 2012 and 2020 in the TargetSmart data. The near-identical year-by-year weighted standard deviations at the county level between the two datasets indicate that geographic partisan segregation has increased by approximately 9.7% from 2008 to 2020 at this level. Wider distributions imply that more people in the electorate are living in homogeneous

Figure S1: Distribution of Exposure to Democrats at the County and Census Tract Levels, All Years, Catalist and TargetSmart Data



*Notes:* The figure plots kernel density estimates of Exposure to Democrats at the county and Census Tract levels. Panels A and C use Catalist data for the 2008–2018 elections. Panels B and D use TargetSmart data for the 2012–2020 elections. All kernel density estimates are weighted by counts of registered voters in a given election and use a Gaussian kernel with bandwidth of 0.05.

counties, trending either Democratic or Republican. However, the decrease in the weighted kurtosis shows that the likelihood of having counties in the extreme tails of this distribution has decreased.

The equivalent distributions and statistics at the Census Tract level are also shown in SI Figure S1 and SI Table S2. They confirm the continuous increase in geographic partisan segregation, with year-to-year increases in weighted standard deviations and the widening of the distribution at the Census Tract level. While slightly smaller than those at the county level, Census Tract-level shifts are still substantial, with an increase of 7.2% between 2008 and 2018 in the Catalist data and 4.5% between 2012 and 2020 in the TargetSmart data. The weighted kurtosis also decreases at the Census Tract level in both datasets.

Table S2: County- and Census Tract-Level Summary Statistics of Exposure to Democrats, All Years, Catalist and TargetSmart Data

	Catalist			TargetSmart		
	Std. Dev.	Mean	Kurtosis	Std. Dev.	Mean	Kurtosis
	(1)	(2)	(3)	(4)	(5)	(6)
<u>Panel A. Counties</u>						
2008	0.155	0.587	2.956	-	-	-
2010	0.157	0.583	2.948	-	-	-
2012	0.161	0.582	2.920	0.159	0.581	2.869
2014	0.163	0.581	2.864	0.163	0.582	2.856
2016	0.165	0.581	2.784	0.164	0.582	2.819
2018	0.167	0.583	2.759	0.167	0.584	2.786
2020	-	-	-	0.170	0.584	2.703
<u>Panel B. Census Tracts</u>						
2008	0.195	0.587	2.291	-	-	-
2010	0.197	0.584	2.282	-	-	-
2012	0.202	0.582	2.250	0.200	0.579	2.214
2014	0.204	0.581	2.224	0.204	0.580	2.225
2016	0.207	0.581	2.169	0.206	0.580	2.189
2018	0.209	0.583	2.148	0.208	0.581	2.169
2020	-	-	-	0.209	0.581	2.150

*Notes:* The table reports county-level (Panel A) and Census Tract-level (Panel B) year-specific standard deviations, means, and kurtoses of Exposure to Democrats, based on the Catalist and TargetSmart data. All statistics are weighted by counts of registered voters in each geographic unit in a given year.

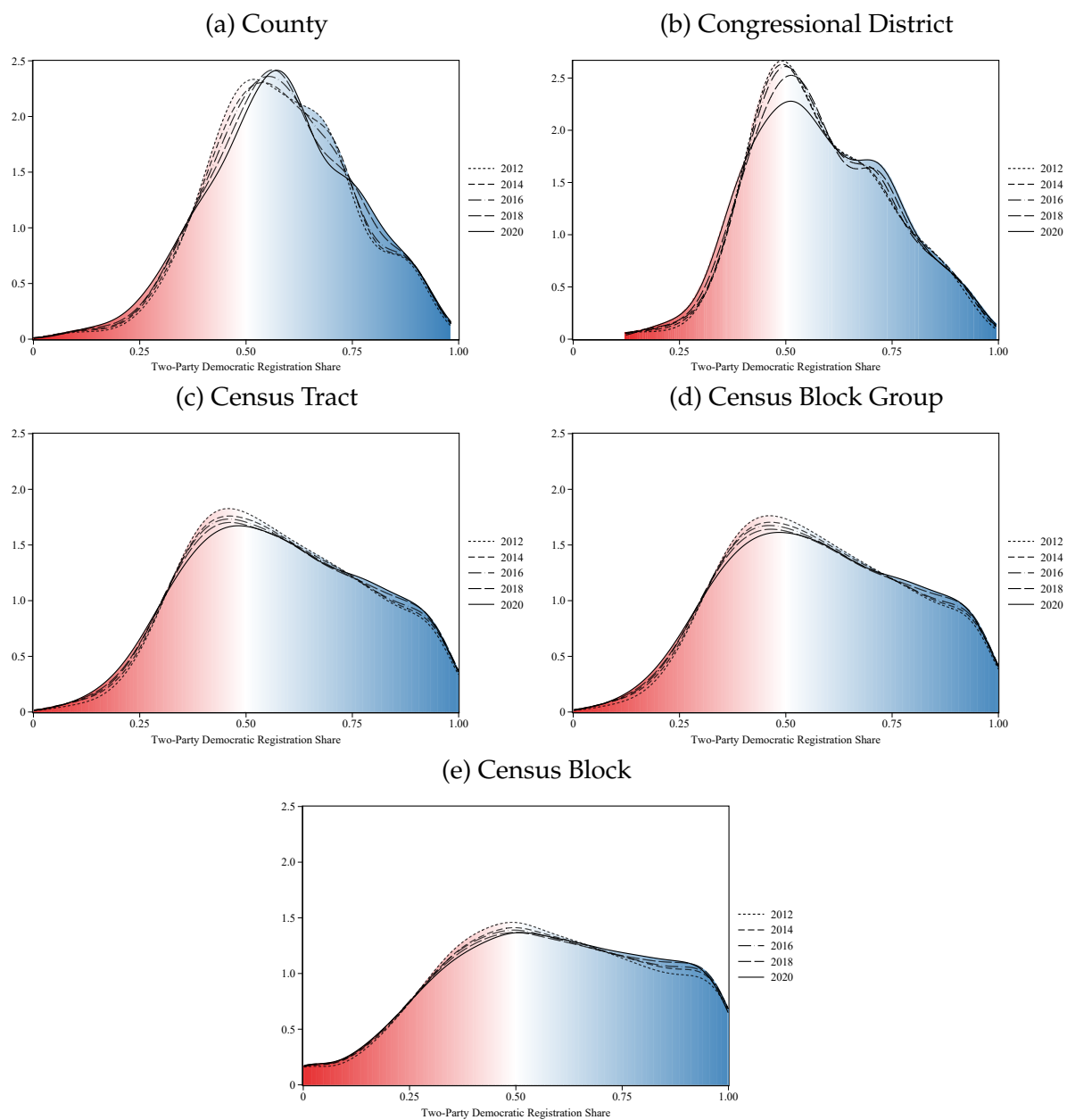
## C.2 Increase in Geographic Partisan Segregation across other Geographic Units Using the TargetSmart Data

SI Figure S2 presents year-by-year distributions of the Exposure to Democrats at other geographic levels: Congressional Districts, Census Block Groups, and Census Blocks. We use the TargetSmart data for these analyses, because these data feature detailed residential address information and consistent Congressional District boundaries, 2012–2020 (i.e., coverage of the TargetSmart data does not span a Decennial Census, which would result in redistricting).

SI Table S3 provides the weighted standard deviation, mean, and kurtosis for Congressional Districts, Census Block Groups, and Census Blocks using the TargetSmart



Figure S2: Distribution of Exposure to Democrats, All Years and Geographic Levels, TargetSmart Data



*Notes:* The figure plots kernel density estimates of Exposure to Democrats at the county (Panel A), Congressional District (Panel B), Census Tract (Panel C), Census Block Group (Panel D), and Census Block (Panel E) levels. All panels use TargetSmart data for the 2012–2020 elections. All kernel density estimates are weighted by counts of registered voters in a given election and use a Gaussian kernel with bandwidth of 0.05.

data across election years from 2012 to 2020. Trends and distributions at the Congressional District level largely reflect those observed at the county and Census Tract levels, with a 5.1% increase in the weighted standard deviation between 2012 and 2020. The distribution also widens at smaller geographic levels, such as Census Block Groups and

Census Blocks, although less than at the county and Census Tract levels. Specifically, the weighted standard deviation increased by 4.4% at the Census Block Group level and by 1.6% at the Census Block level between 2012 and 2020.

Table S3: Congressional District-, Census Block Group-, and Census Block-Level Summary Statistics of Exposure to Democrats, All Years, TargetSmart Data

	TargetSmart		
	Std. Dev.	Mean	Kurtosis
	(1)	(2)	(3)
<u>Panel A. Congressional Districts</u>			
2012	0.156	0.581	2.678
2014	0.158	0.582	2.679
2016	0.158	0.582	2.659
2018	0.160	0.584	2.604
2020	0.164	0.584	2.444
<u>Panel B. Census Block Groups</u>			
2012	0.205	0.581	2.179
2014	0.210	0.581	2.188
2016	0.211	0.581	2.152
2018	0.213	0.583	2.132
2020	0.214	0.583	2.119
<u>Panel C. Census Blocks</u>			
2012	0.243	0.579	2.284
2014	0.245	0.582	2.253
2016	0.247	0.582	2.233
2018	0.248	0.584	2.229
2020	0.247	0.584	2.243

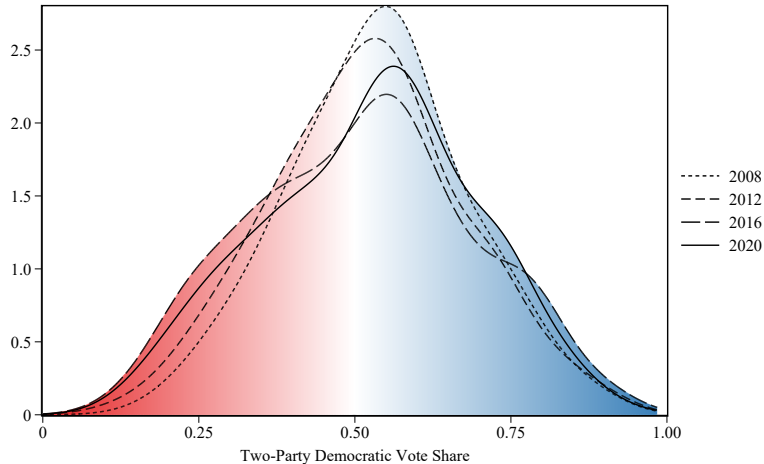
*Notes:* The table reports Congressional District- (Panel A), Census Block Group- (Panel B), and Census Block-level year-specific standard deviations, means, and kurtoses of Exposure to Democrats, based on the TargetSmart data. All statistics are weighted by counts of registered voters in each geographic unit in a given year.

The consistency of these trends across different geographic units confirms an overall increase in geographic partisan segregation. While the trend is more salient in larger geographic units, smaller geographic areas exhibit an initially higher concentration of registrants in homogeneously Democratic or Republican areas, as evidenced by the larger weighted standard deviations in these smaller geographies.

### C.3 Increase in Geographic Partisan Segregation Using Electoral Results

We now use county-level vote share data from Dave Leip’s Atlas of U.S. Presidential Elections [2] to check that our main findings are not limited to states with available partisan registration data. SI Figure S3 displays the weighted distribution of the two-party Democratic vote share at the county level for all presidential elections from 2008 to 2020. Consistent with our previous findings, there is an overall widening of the distribution over time, except for the period between 2016 and 2020. SI Table S4 further confirms this observation, showing an 18.1% increase in the standard deviation of the two-party Democratic vote share distribution in presidential elections between 2008 and 2020.

Figure S3: Distribution of County-Level Two-party Democratic Vote Share in Presidential Elections, Dave Leip’s Atlas



*Notes:* The figure plots kernel density estimates of the county-level two-party Democratic vote share in presidential elections, 2008–2020, using data from Dave Leip’s Atlas of U.S. Presidential Elections. All kernel density estimates are weighted by counts of total ballots cast in a given election and use a Gaussian kernel with bandwidth of 0.05.

Table S4: County-Level Statistics of the Two-Party Democratic Vote Share in Presidential Elections, Dave Leip’s Atlas

	Dave Leip's Atlas of U.S. Presidential Elections		
	Std. Dev.	Mean	Kurtosis
	(1)	(2)	(3)
2008	0.144	0.537	2.810
2012	0.155	0.520	2.774
2016	0.179	0.511	2.362
2020	0.170	0.523	2.444

*Notes:* The table reports county-level year-specific standard deviations, means, and kurtoses of the two-party Democratic vote share in presidential elections, based on Dave Leip’s Atlas of U.S. Presidential Elections data. All statistics are weighted by county-level total votes cast in a given election.

#### C.4 Increase in Geographic Partisan Segregation within Larger Geographies Using the Index of Dissimilarity

To check the robustness of the increase in geographic partisan segregation *within* larger geographic units, we present the distributions of the index of Dissimilarity at the county and Congressional District levels.

SI Figure S4 displays the weighted distribution of the index across counties for each election year, using the Catalist and TargetSmart data. SI Table S5 reports the weighted statistics across years for both datasets. There is a general increase in the index of Dissimilarity over time, with an overall rightward shift in the distributions. The increase was particularly pronounced up to 2018, with a 9.6% increase in the mean of the index of Dissimilarity in the Catalist data between 2008 and 2018, and a 3.5% increase in the TargetSmart data between 2012 and 2018. We then observe a 1.7% decrease between 2018 and 2020 using the TargetSmart data.

SI Figure S4 and SI Table S6 demonstrate a similar pattern at the Congressional District level, with an overall increase of 2.9% between 2012 and 2020, which compounds a 5.0% increase between 2012 and 2018 and a 2.0% decrease between 2018 and 2020.

Table S5: County-Level Summary Statistics of the Index of Dissimilarity, Catalist and TargetSmart Data

	Catalist			TargetSmart		
	Std. Dev.	Mean	Kurtosis	Std. Dev.	Mean	Kurtosis
	(1)	(2)	(3)	(4)	(5)	(6)
2008	0.088	0.218	3.025	-	-	-
2010	0.088	0.220	3.070	-	-	-
2012	0.092	0.227	4.023	0.087	0.230	3.205
2014	0.092	0.230	3.052	0.091	0.233	3.266
2016	0.091	0.237	3.056	0.090	0.237	3.235
2018	0.089	0.239	3.243	0.089	0.238	3.267
2020	-	-	-	0.086	0.234	3.625

*Notes:* The table reports county-level, year-specific standard deviations, means, and kurtoses of the two-party index of Dissimilarity (using Census Tracts as subunits), based on the Catalist and TargetSmart data. All statistics are weighted by county-level counts of registered voters in a given year.

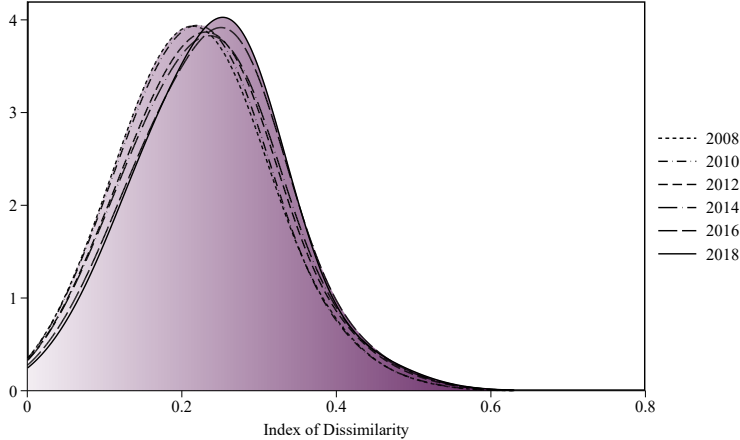
Table S6: Congressional District-Level Summary Statistics of the Index of Dissimilarity, TargetSmart Data

	TargetSmart		
	Std. Dev.	Mean	Kurtosis
	(4)	(5)	(6)
2012	0.081	0.241	5.173
2014	0.083	0.247	5.174
2016	0.083	0.252	5.162
2018	0.082	0.253	5.438
2020	0.082	0.248	5.354

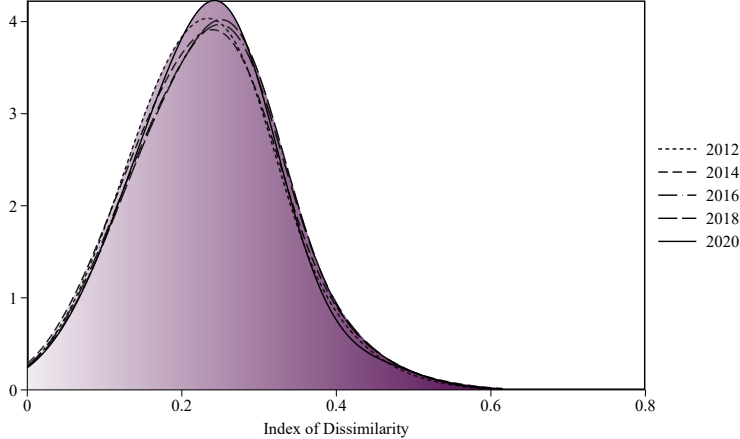
*Notes:* The table reports Congressional District-level, year-specific standard deviations, means, and kurtoses of the two-party index of Dissimilarity (using Census Tracts as subunits), based on the TargetSmart data. All statistics are weighted by Congressional District-level counts of registered voters in a given year.

Figure S4: Distribution of the Index of Dissimilarity at the County and Congressional District levels, Catalist and TargetSmart Data

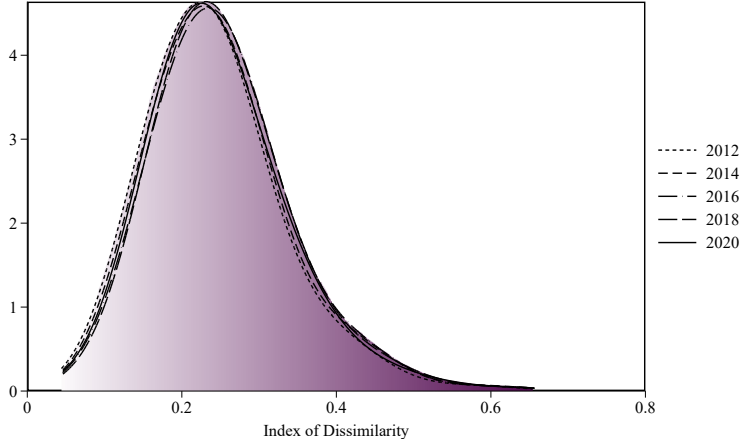
(a) County, Catalist (2008–2018)



(b) County, TargetSmart (2012–2020)



(c) Congressional District, TargetSmart (2012–2020)



Notes: The figure plots kernel density estimates of the index of Dissimilarity at the county and Congressional District levels, using Census Tracts as sub-units and weighting by counts of registered voters in a given geographic unit-year. Panel A is based on Catalist data, 2008–2018. Panels B and C are based on TargetSmart data, 2012–2020. All kernel density estimates use a Gaussian kernel with bandwidth of 0.05.

## **C.5 Comparing Trends in the Nationwide Index of Dissimilarity Computed with Different Data Sources**

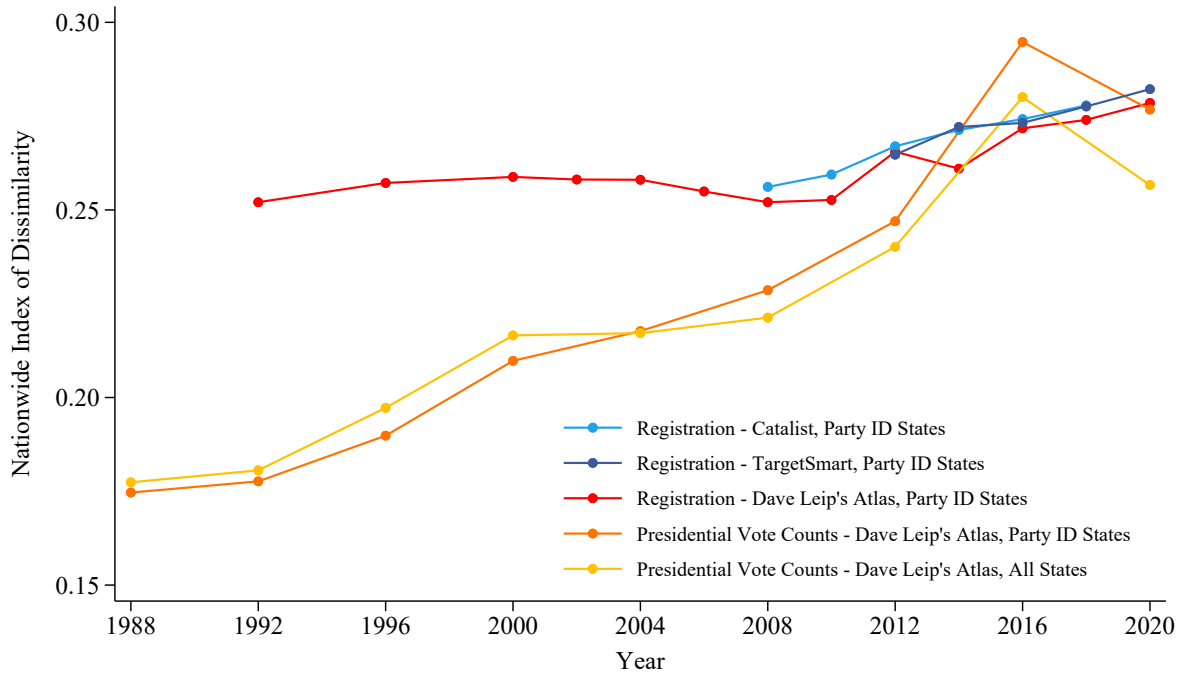
Here, we investigate whether geographic partisan segregation within the United States has increased, using the nationwide index of Dissimilarity computed with different data sources.

SI Figure S5 shows the trend in the nationwide index of Dissimilarity over time using different datasets: individual registration data from Catalist and TargetSmart, as well as county-level aggregate registration data and vote counts from Dave Leip's Atlas of U.S. Presidential Elections. All series use counties as sub-units. We observe that the nationwide index of Dissimilarity has generally increased since the respective starting dates of the different data sources (namely, 1988 for aggregate presidential vote counts, 1992 for aggregate registration data, 2008 for the Catalist data, and 2012 for the TargetSmart data). Compared to aggregate vote counts, registration data (both aggregate and individual) tend to show a higher value of the nationwide index of Dissimilarity, but a less pronounced increase over time and no abrupt decrease between 2016 and 2020.

Overall, we find that the results obtained using individual partisan registration data closely align with the trends observed using aggregate registration data. In addition, the use of vote counts confirms that the states for which partisan registration data are available follow a similar trend as the rest of the United States.

SI Figure S6 demonstrates that the nationwide increase in geographic partisan segregation is visible irrespective of the choice of geographic sub-unit: Congressional Districts, counties, Census Tracts, Census Block Groups, or Census Blocks. We find that the smaller the geographic sub-unit, the greater the magnitude of the nationwide index of Dissimilarity. This result is expected, given the higher level of partisan segregation observed across smaller geographic units (see SI Figure S2). The trends are similar in the TargetSmart and Catalist data, regardless of the specific geographic sub-units studied.

Figure S5: Nationwide Index of Dissimilarity Across Data Sources



*Notes:* The figure plots the over-time evolution of the nationwide index of Dissimilarity using data from Catalist, TargetSmart, and Dave Leip’s Atlas of U.S. Presidential Elections. All series use counties as sub-units. For both Catalist and TargetSmart, the plotted index of Dissimilarity is computed for the 29 states plus D.C. that record party affiliation in every general election, 2008–2020. For Dave Leip’s Atlas of U.S. Presidential Elections, we plot three series of the index of Dissimilarity: one for two-party voter registration shares in the 29 states plus D.C. that record party affiliation; one for two-party vote shares in presidential elections in all 50 states plus D.C.; and one for two-party vote shares in presidential elections in the 29 states plus D.C. that record party affiliation.

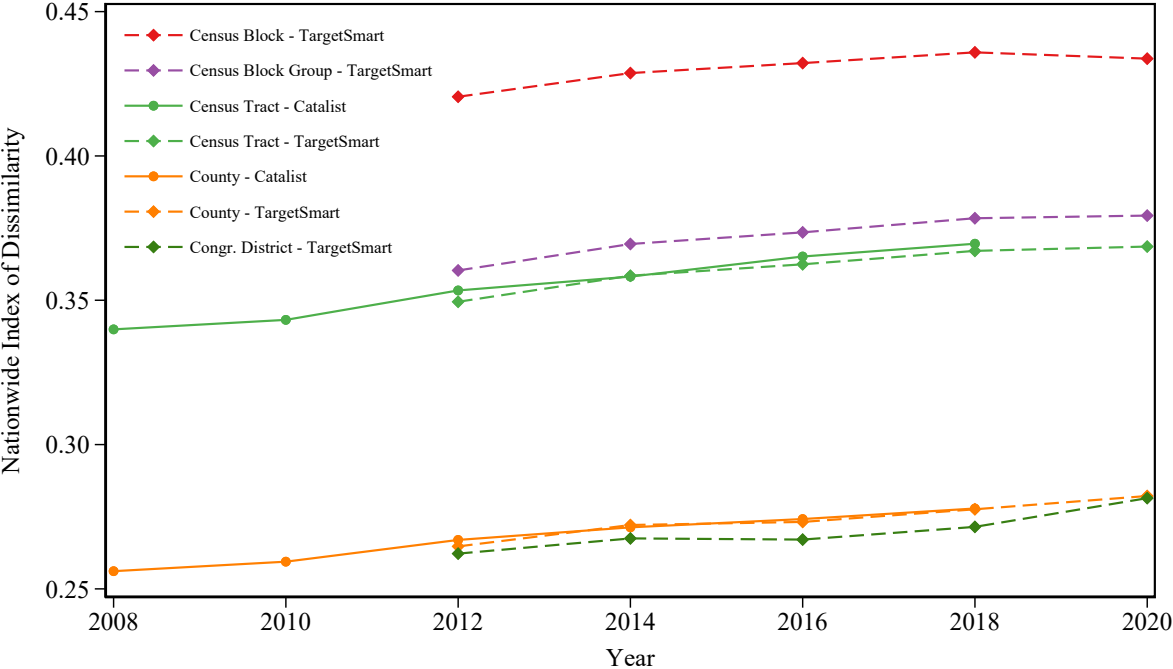
## C.6 Shifts in the Relative Proportion of Democrats or Republicans out of Total Registrants

Our preferred measure of Exposure to Democrats is the two-party Democratic registration share (i.e., the proportion of Democrats out of the total number of Democrats and Republicans). This statistic symmetrically indicates whether a place is more Democratic or more Republican by excluding non-partisans from the denominator. Here, we present statistics showing the proportions of Democrats and Republicans out of total registrants across counties and Census Tracts (SI Tables S7 and S8).

One general pattern is the increasing number of non-partisan voters over this period, resulting in a decrease in the weighted averages of both the proportions of Democrats and Republicans over time. This decrease is more pronounced for Democrats at the



Figure S6: Nationwide Index of Dissimilarity Across Geographic Sub-Units, Catalist and TargetSmart Data



Notes: The figure plots the over-time evolution of the nationwide index of Dissimilarity using data from Catalist and TargetSmart, for different types of geographic sub-units. Different colors denote indices of Dissimilarity computed using different geographic sub-units (e.g., red for Census Blocks and purple for Census Block Groups). Solid and dashed lines refer to indices of Dissimilarity computed using Catalist and TargetSmart data, respectively.

county and Census Tract levels, particularly in the Catalist data,<sup>4</sup> although there are more registered Democrats than Republicans overall.

While the standard deviation of the proportion of Democrats fluctuates, there is a consistent increase in the standard deviation of the proportion of Republicans. This trend suggests that counties and Census Tracts are increasingly likely to contain either a small or a large proportion of Republicans over time.

<sup>4</sup>Specifically, we observe a 7.1% decrease (resp. 2.6%) in the proportion of Democrats compared to a 4.9% (resp. 2.6%) decrease in the proportion of Republicans in the Catalist data between 2008 and 2018 (resp. in the TargetSmart data between 2012 and 2020) at the county level. We find similar magnitudes at the Census Tract level: a 7.1% (resp. 2.9%) decrease in the proportion of Democrats compared to a 4.9% (resp. 2.3%) decrease in the proportion of Republicans in the Catalist data (resp. in the TargetSmart data).

Table S7: County- and Census Tract-Level Summary Statistics of the Democratic Registration Share Using All Registrants, Catalist and TargetSmart Data

	Catalist			TargetSmart		
	Std. Dev.	Mean	Kurtosis	Std. Dev.	Mean	Kurtosis
	(1)	(2)	(3)	(4)	(5)	(6)
<u>Panel A. Counties</u>						
2008	0.138	0.435	3.535	-	-	-
2010	0.139	0.428	3.528	-	-	-
2012	0.139	0.419	3.516	0.137	0.420	3.570
2014	0.139	0.412	3.530	0.140	0.415	3.549
2016	0.137	0.411	3.554	0.136	0.415	3.565
2018	0.134	0.404	3.694	0.135	0.406	3.698
2020	-	-	-	0.135	0.409	3.458
<u>Panel B. Census Tracts</u>						
2008	0.171	0.437	2.907	-	-	-
2010	0.172	0.431	2.914	-	-	-
2012	0.173	0.421	2.952	0.170	0.420	3.008
2014	0.173	0.415	2.981	0.172	0.413	3.003
2016	0.171	0.413	2.943	0.170	0.413	2.946
2018	0.168	0.406	3.024	0.167	0.405	3.054
2020	-	-	-	0.165	0.408	2.909

*Notes:* The table reports county-level (Panel A) and Census Tract-level (Panel B) year-specific standard deviations, means, and kurtoses of the Democratic registration share (i.e., the share of Democrats among all registered voters), based on the Catalist and TargetSmart data. All statistics are weighted by counts of registered voters in each geographic unit in a given year.

Table S8: County- and Census Tract-Level Summary Statistics of the Republican Registration Share Using All Registrants, Catalist and TargetSmart Data

	Catalist			TargetSmart		
	Std. Dev.	Mean	Kurtosis	Std. Dev.	Mean	Kurtosis
	(1)	(2)	(3)	(4)	(5)	(6)
<u>Panel A. Counties</u>						
2008	0.122	0.305	2.928	-	-	-
2010	0.123	0.305	3.075	-	-	-
2012	0.125	0.300	3.073	0.125	0.303	2.931
2014	0.125	0.296	3.215	0.127	0.297	3.211
2016	0.128	0.296	3.150	0.129	0.299	3.194
2018	0.131	0.290	3.287	0.131	0.292	3.334
2020	-	-	-	0.136	0.295	3.251
<u>Panel B. Census Tracts</u>						
2008	0.153	0.305	2.327	-	-	-
2010	0.154	0.304	2.377	-	-	-
2012	0.156	0.300	2.363	0.156	0.303	2.330
2014	0.156	0.296	2.413	0.157	0.298	2.439
2016	0.159	0.296	2.384	0.160	0.300	2.423
2018	0.160	0.290	2.452	0.161	0.293	2.501
2020	-	-	-	0.164	0.296	2.499

*Notes:* The table reports county-level (Panel A) and Census Tract-level (Panel B) year-specific standard deviations, means, and kurtoses of the Republican registration share (i.e., the share of Republicans among all registered voters), based on the Catalist and TargetSmart data. All statistics are weighted by counts of registered voters in each geographic unit in a given year.

## D Additional Results on the Overall Changes in Geographic Partisan Segregation

### D.1 Statistical Significance of Changes in Geographic Partisan Segregation

To test the statistical significance of changes in geographic partisan segregation, we estimate the following model:

$$c_{i,t} = \alpha + \beta t + \mu_i + \epsilon_{i,t},$$

where  $t$  represents time measured as the order of the election (one for the first election, two for the second one, etc.),  $\mu_i$  is a unit fixed effect, and  $c_{i,t}$  is the contribution of unit  $i$  to the weighted variance of the Exposure to Democrats at time  $t$  as defined in Section B.2. The coefficient on time  $\beta$  reflects the average rate at which a unit's contribution to the weighted variance changes across elections. Standard errors are clustered at the geographic unit level.

SI Table S9 presents the time coefficients for each type of geographic unit based on the Catalist and TargetSmart data. All columns point to a statistically significant increase in geographic partisan segregation over time.

We estimate a similar model using the index of Dissimilarity at the county level at time  $t$  as the dependent variable. Again, SI Table S10 shows a positive and significant correlation between time and the index of Dissimilarity.

### D.2 Partisan Composition Trends by Baseline Partisan Composition

Here, we investigate whether geographic units that are initially Democratic (Republican) tend to become even more Democratic (Republican) over time. We do so by examining the relationship between the baseline partisan composition and the subsequent change in Exposure to Democrats.

A positive correlation is not required for the overall distribution to widen. For example, areas that are initially Democratic could become more homogeneously Republican,

Table S9: Regressions of the Contribution to Geographic Partisan Segregation on Electoral Years

Outcome: Contribution to the Weighted Variance of Exposure to Democrats							
	County		Census Tract		Congr. Dist.	Census Block Group	Census Block
	Catalist	TargetSmart	Catalist	TargetSmart	TargetSmart	TargetSmart	TargetSmart
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Time	0.0020 ** (0.0007)	0.0017 ~ (0.0010)	0.0021 ** (0.0001)	0.0019 ** (0.0001)	0.0020 * (0.0010)	0.0019 ** (0.0001)	0.0009 ** (0.00002)
R <sup>2</sup>	0.937	0.931	0.957	0.924	0.878	0.920	0.833
Observations	2,746	2,758	77,518	81,871	481	243,005	5,665,403
Unit FEs	✓	✓	✓	✓	✓	✓	✓

*Notes:* The table reports estimates from linear regressions of a geographic unit's contribution to partisan segregation on election years. We use two observations per unit, corresponding to 2008 and 2018 for the regressions using Catalist data, and to 2012 and 2020 for the regressions using TargetSmart data. All regressions, as well as year averages used to construct the dependent variable, are weighted by counts of registered voters in a given geographic unit in a given year.

\*\* p < .01, \* p < .05, ~ p < .10

Table S10: Regressions of the Index of Dissimilarity on Electoral Years

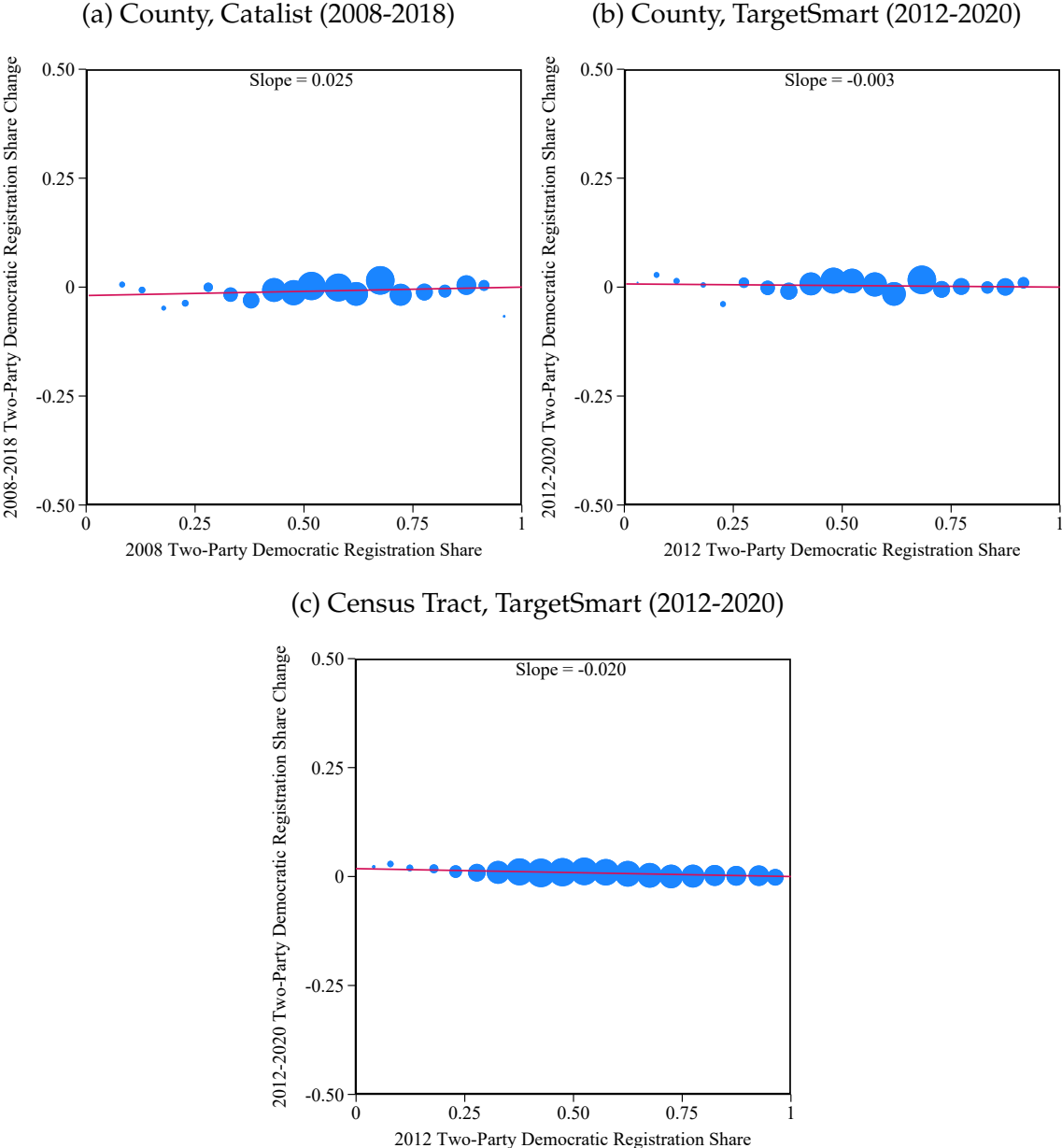
Outcome: County-Level Index of Dissimilarity		
	Catalist	TargetSmart
	(1)	(2)
Time	0.0039 ** (0.0004)	0.0013 ** (0.0005)
R <sup>2</sup>	0.976	0.967
Observations	2,494	2,493
Unit FEs	✓	✓

*Notes:* The table reports estimates from linear regressions of a county's index of Dissimilarity (using Census Tracts as subgeographies) on election years. We use two observations per unit, corresponding to 2008 and 2018 for the regressions using Catalist data, and to 2012 and 2020 for the regressions using TargetSmart data. All observations are weighted by the corresponding number of registered voters.

\*\* p < .01, \* p < .05, ~ p < .10

and vice versa. SI Figure S7 (a) displays the correlation between the change in Exposure to Democrats between 2008 and 2018 (y-axis) and its baseline value in 2008 (x-axis), using the Catalist data at the county level. We observe a consistent positive relationship, with Democratic (Republican) counties becoming more Democratic (Republican).

Figure S7: Change in Exposure to Democrats against Initial Levels, Catalist and TargetSmart Data



Notes: The figures plot the binned scatterplot of the relationship between the change in Exposure to Democrats – on the y-axis – and its baseline value in 2008 (Catalist data) or 2012 (TargetSmart data) – on the x-axis, weighting by counts of registered voters in 2008 (Catalist data) or 2012 (TargetSmart data). The red line represents the best linear fit. Dot size reflects how many counties (resp. Census Tracts) are included in each bin.

However, this trend is not consistent across different geographic units or time periods. SI Figure S7 (b) presents the same relationship at the county level from 2012 to 2020, using the TargetSmart data. In that case, the correlation between the change in Exposure to Democrats and the baseline value is close to zero, perhaps reflecting a reversal in segregation in the TargetSmart data between 2018 and 2020. At the Census Tract level – SI Figure S7 (c), the relationship is negative, indicating that the widening of the distribution at the Census Tract level has primarily been driven by Democratic places becoming more Republican.

## **E Areas Contributing to the Increase in Geographic Partisan Segregation**

Here, we present details about the areas contributing to the increase in geographic partisan segregation, categorizing geographic units as trending Democratic or Republican and evaluating whether they contributed to or alleviated segregation.

### **E.1 County Maps of Geographic Partisan Segregation Trends**

SI Figure S8 maps the geographic distribution of county-level shifts in partisanship within states that track partisan affiliation, with counties shaded by their Exposure to Democrats in 2008 (using the Catalist data, top graph) or 2012 (using the TargetSmart data, bottom graph). Darker blue represents stronger Democratic exposure, while darker red indicates stronger Republican exposure. Arrows, colored blue or red, indicate counties that became more Democratic or Republican between 2008 and 2018 in the Catalist data (resp. between 2012 and 2020 in the TargetSmart data), with the arrow size proportional to the number of registered voters in each county as of 2008 (resp. 2012). Thus, the maps capture both the initial partisan composition and the trajectory of counties over the subsequent decade, highlighting the counties that experienced the largest partisan shifts in terms of net gains in the number of Democrats or Republicans.

Democratic exposure increased the most in large, urban coastal counties, especially in California, Florida, and the Northeast – areas already predominantly Democratic at baseline. Fewer instances of Democratic gains occurred in places that were initially Republican. In contrast, Republican exposure grew in diverse regions, including areas that had a higher Democratic base, such as counties in the Southwest, South, and the coal belt regions of Kentucky, West Virginia, and Pennsylvania.

SI Figure S9 shades counties by whether they are trending Democratic or Republican, and whether or not they contributed to the increase in partisan segregation from 2008 to 2018 (Catalist data, top graph) or from 2012 to 2020 (TargetSmart data, bottom graph). The increase in geographic partisan segregation is also well-clustered spatially, for both



Democratic and Republican-leaning places. Democratic-leaning counties that have become more homogeneous are primarily located on the East and West coasts. In contrast, Republican-leaning counties contributing to the rise in partisan segregation are concentrated in states like Nevada, Oregon, Kansas, Nebraska, South Dakota, and Iowa.

The places contributing to the rise in geographic partisan segregation *across* geographic units may not be the same as those experiencing an increase in partisan segregation *within* their boundaries. SI Figures S10 and S11 display county-level maps of the index of Dissimilarity, based on the Catalist and TargetSmart data, respectively. Republican-trending counties that contribute to partisan segregation *across* the U.S. tend to have lower values of the index of Dissimilarity, indicating a partisan population evenly distributed across their Census Tracts. In contrast, East- and West-coast Democratic-trending urban areas, which also contribute to partisan segregation *across* the U.S., typically have a higher index of Dissimilarity and have experienced a more pronounced increase in partisan segregation *within* their boundaries, with an increasingly heterogeneous partisan composition of their Census Tracts.

## **E.2 Socio-demographic Characteristics and Geographic Partisan Segregation Using the TargetSmart Data**

We now present descriptive statistics of geographic units based on their contribution to geographic partisan segregation. These tables replicate Table 1 from the main paper, using TargetSmart data instead of Catalist data.

SI Table S11 categorizes counties by whether they contributed to or alleviated rising segregation and whether they were trending Democratic or Republican. SI Table S12 provides similar statistics by Census Tract.

In both tables, we confirm that the starkest demographic differences are between Democratic-leaning and Republican-leaning areas. Republican-leaning areas typically have lower population density, lower median income, a higher median age, and are less ethnically diverse, with a lower share of foreign-born and non-white individuals.

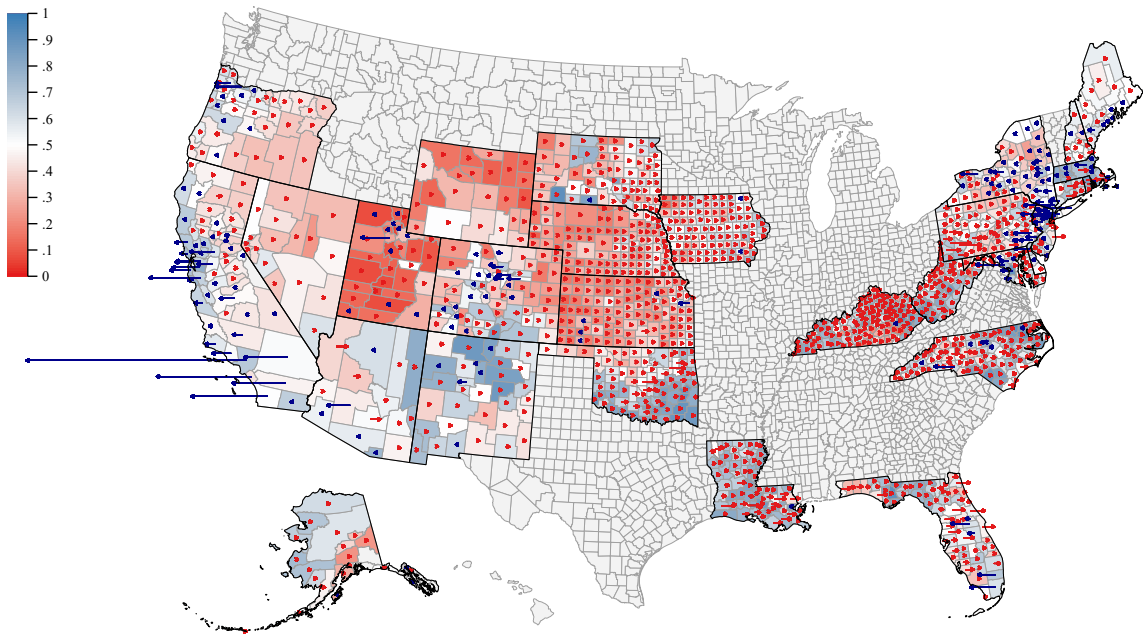
Additionally, Democratic-leaning units that contributed to geographic partisan segregation tend to have higher population densities and more ethnically diverse inhabitants compared to Democratic-leaning units that alleviated segregation, whereas the opposite trend is observed for Republican-leaning places.

### **E.3 Changes in Demographics and Geographic Partisan Segregation**

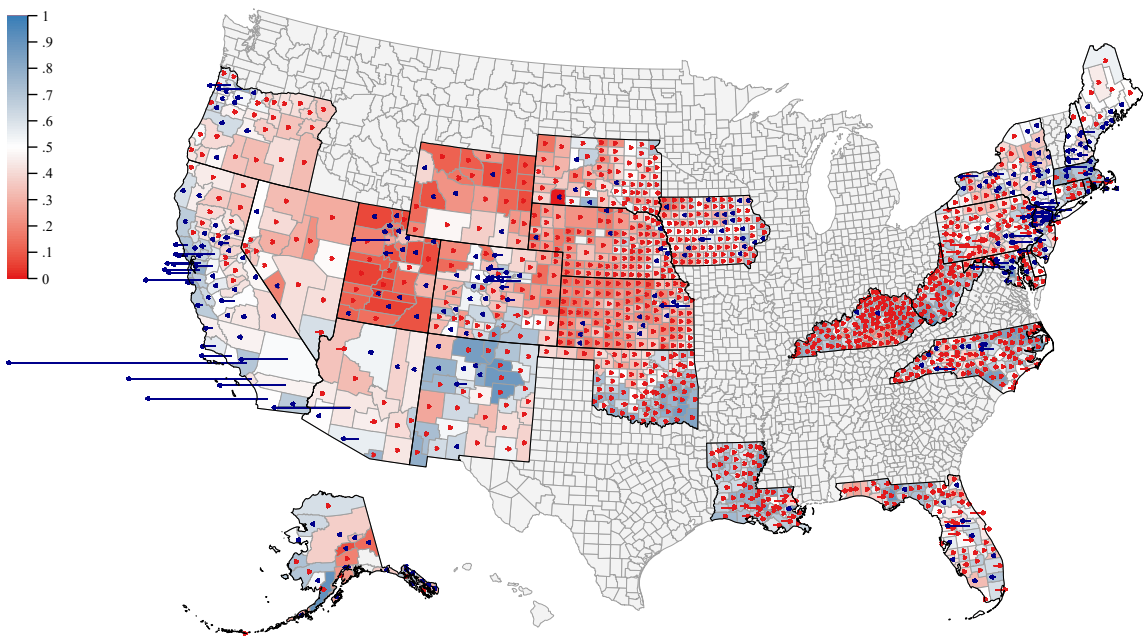
SI Tables S13–S14 present *changes* in average levels of demographic characteristics across counties contributing to or alleviating geographic partisan segregation, using the Catalist and TargetSmart data, respectively. In both tables, we observe a larger increase in the number of inhabitants in Democratic-leaning counties compared to Republican-leaning ones, which is partly due to their initially larger population. Consistent with Democratic segregation increasing in large urban counties, we find that the median age has increased the least in Democratic-leaning counties that contributed to segregation.

Figure S8: Change in County-Level Exposure to Democrats, Catalist and TargetSmart

(a) Catalist, 2008 to 2018



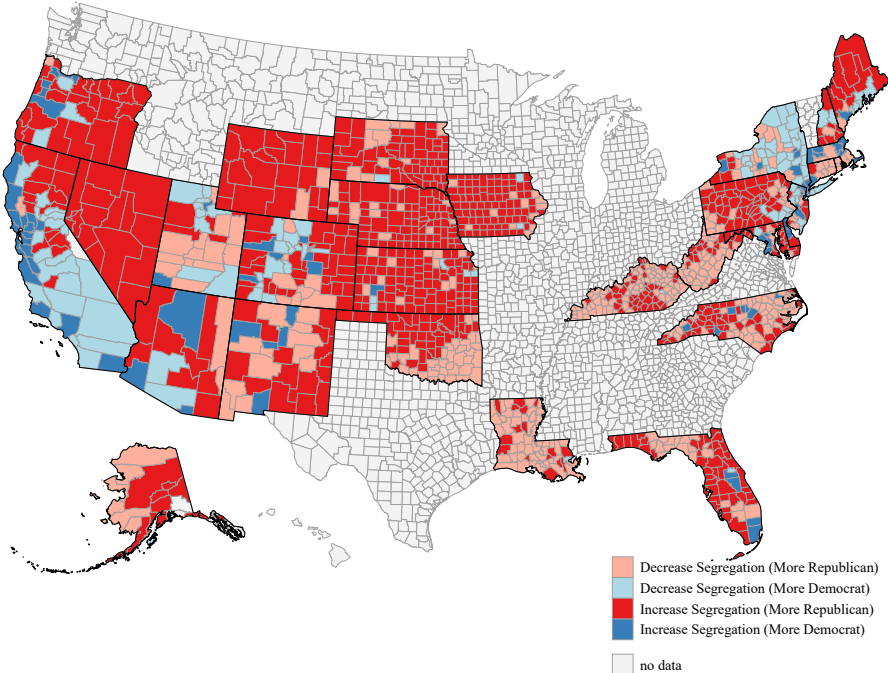
(b) TargetSmart, 2012 to 2020



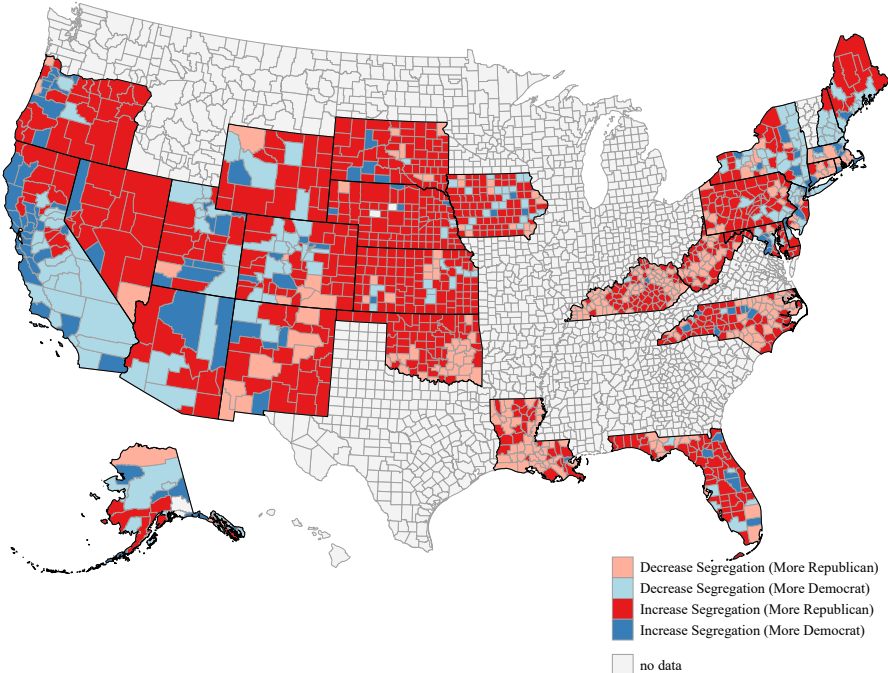
Notes: For the 29 U.S. states (plus D.C.) that record party affiliation in every general election, 2008–2020, counties are shaded red (more Republican) to blue (more Democratic) based on the level of Exposure to Democrats in 2008 (Panel A, based on Catalist data) or in 2012 (Panel B, based on Catalist data). Blue (resp. red) arrows mean that a county’s Exposure to Democrats increased (resp. decreased) between 2008 and 2018 (Panel A) or between 2012 and 2020 (Panel B). Arrow length is proportional to the magnitude of the change in Exposure to Democrats, after weighting by baseline counts of registered voters in the county.

Figure S9: Counties Contributing vs. Resisting the Rise in Partisan Segregation, Catalyst and TargetSmart

(a) Catalyst, 2008 to 2018



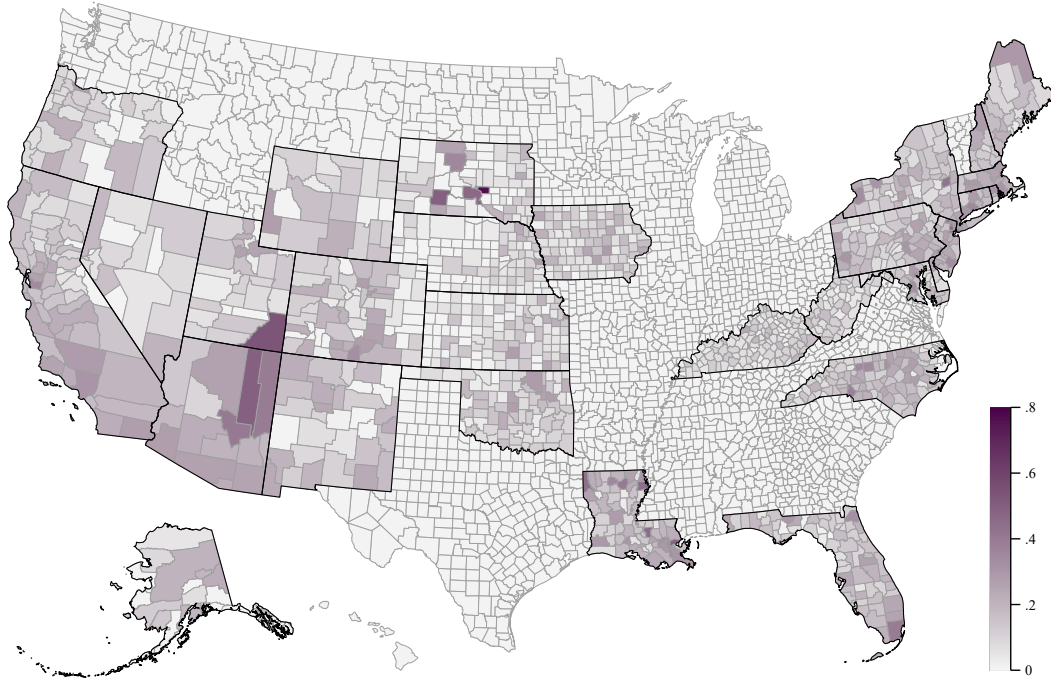
(b) TargetSmart, 2012 to 2020



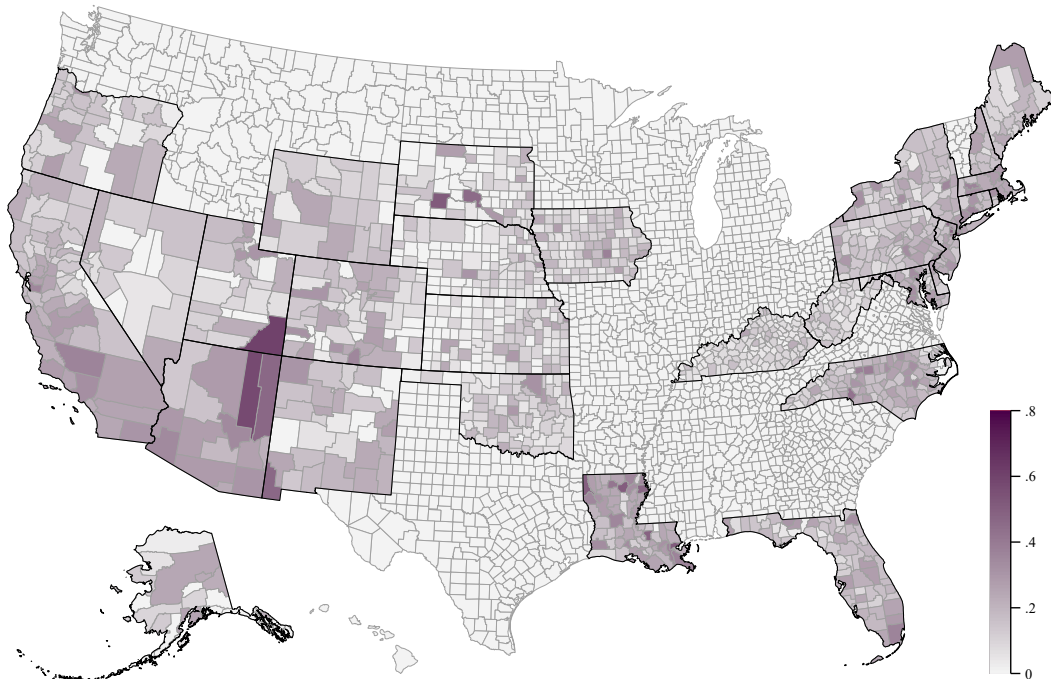
Notes: The maps show counties that, over the sample period, experienced an increase (colored in blue) vs. a decrease (colored in red) of Exposure to Democrats. Light (resp. dark) shades of a color denote counties that, over the sample period, contributed to reducing (resp. increasing) partisan segregation, by reducing (resp. increasing) the variance of Exposure to Democrats. Panel A uses 2008 and 2018 Catalyst data. Panel B uses 2012 and 2020 TargetSmart data.

Figure S10: County-Level Index of Dissimilarity, Catalist, 2008 and 2018

(a) 2008



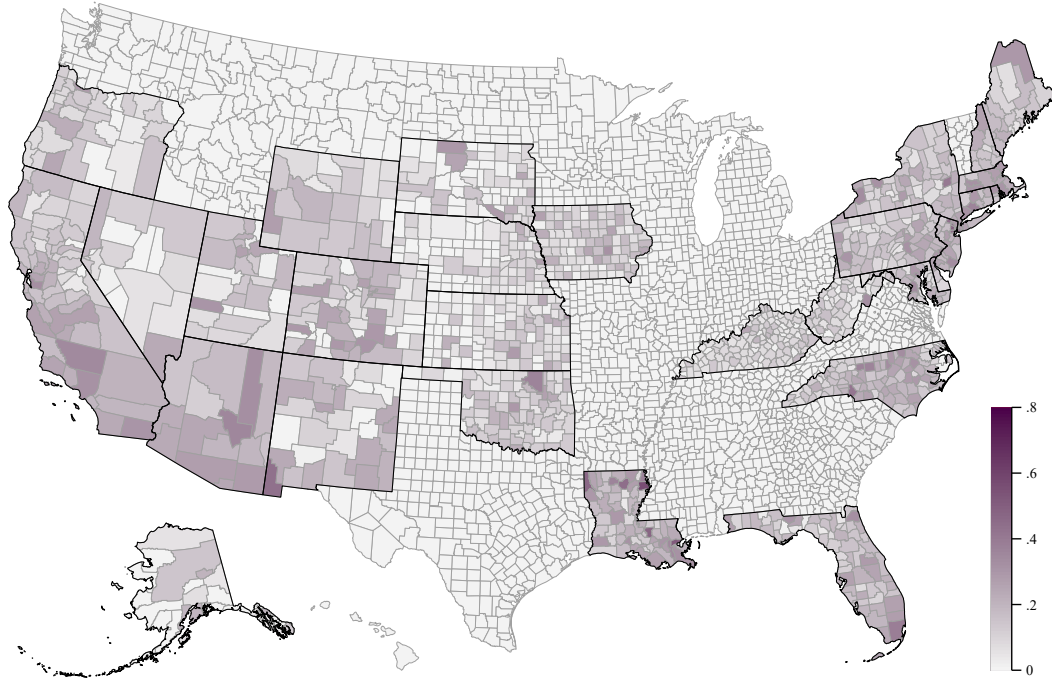
(b) 2018



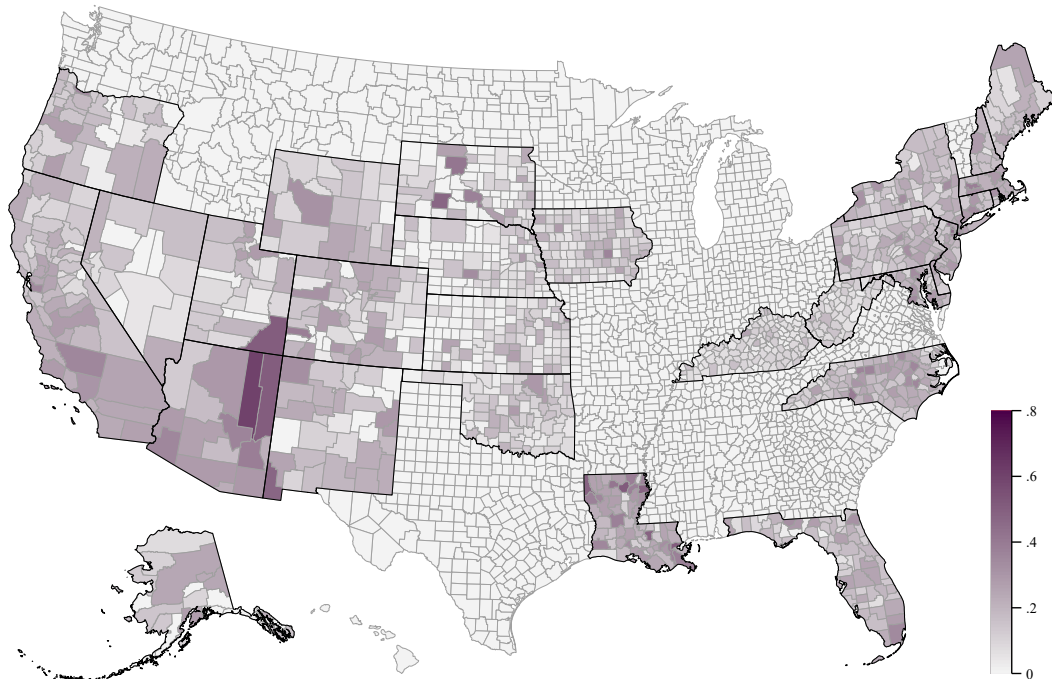
Notes: For counties in the 29 states plus D.C. that record party affiliation, 2008–2020, darker shades of purple denote higher values of within-county index of Dissimilarity (computed with Catalist data for 2008 – top panel – and 2018 – bottom panel – and using Census Tracts as sub-units).

Figure S11: County-Level Index of Dissimilarity, TargetSmart, 2012 and 2020

(a) 2012



(b) 2020



Notes: For counties in the 29 states plus D.C. that record party affiliation, 2008–2020, darker shades of purple denote higher values of within-county index of Dissimilarity (computed with TargetSmart data for 2012 – top panel – and 2020 – bottom panel – and using Census Tracts as sub-units).

Table S11: Demographics of Counties Contributing to the Rise in Partisan Segregation vs. Resisting that Trend, TargetSmart Data

	<u>Increase Segregation</u>		<u>Decrease Segregation</u>	
	<u>More Democratic</u>	<u>More Republican</u>	<u>More Democratic</u>	<u>More Republican</u>
	(1)	(2)	(3)	(4)
<u>Panel A. Census Statistics</u>				
Total population	452,414	49,070	321,808	100,409
Median age	37.11	41.43	37.14	39.78
Share female	0.511	0.505	0.509	0.512
HHI ethnic homogeneity	0.408	0.671	0.498	0.542
Share foreign-born	0.235	0.057	0.152	0.144
Share non-white	0.516	0.206	0.392	0.371
Population/Sq. mile	5,617	323	3,300	1,288
Share urban population	0.952	0.661	0.905	0.820
Median income	64,141	50,765	62,398	52,408
Gini index	0.480	0.442	0.461	0.468
High-school degree or above	0.861	0.877	0.876	0.863
Share homeowners	0.574	0.719	0.641	0.661
<u>Panel B. Voter File Statistics on Registered Population</u>				
Democrats	0.484	0.354	0.380	0.476
Independents	0.297	0.231	0.286	0.285
Republicans	0.219	0.415	0.334	0.239
Black	0.109	0.053	0.081	0.115
White	0.661	0.894	0.772	0.750
Hispanic	0.137	0.028	0.093	0.097
Number of counties	119	802	181	276

*Notes:* The table reports average demographic characteristics of counties that contributed to the increase in partisan segregation and of counties that decreased segregation, separately for counties that trended Democratic or Republican (i.e., counties that featured an increase vs. a decrease in Exposure to Democrats share between 2012 and 2020). All figures are weighted by county-level counts of registered voters in 2012, except for total population figures that are unweighted. Census statistics in Panel A are based on 5-year American Community Survey Data. Voter file statistics in Panel B are based on the 2012 TargetSmart data.

Table S12: Demographics of Census Tracts Contributing to the Rise in Partisan Segregation vs. Resisting that Trend, TargetSmart Data

	Increase Segregation		Decrease Segregation	
	More Democrat (1)	More Republican (2)	More Democrat (3)	More Republican (4)
<u>Panel A. Census Statistics</u>				
Total population	4,545	4,258	4,538	3,903
Median age	37.18	42.51	40.99	39.54
Share female	0.511	0.505	0.513	0.517
HHI ethnic homogeneity	0.515	0.732	0.630	0.622
Share foreign-born	0.226	0.067	0.131	0.133
Share non-white	0.508	0.189	0.321	0.408
Population/Sq. mile	11,782	1,755	6,264	6,750
Share urban population	0.964	0.618	0.912	0.857
Median income	68,605	56,710	77,377	49,072
Gini index	0.425	0.411	0.416	0.431
High-school degree or above	0.860	0.882	0.914	0.838
Share homeowners	0.566	0.750	0.711	0.617
<u>Panel B. Voter File Statistics on Registered Population</u>				
Democrats	0.490	0.346	0.349	0.534
Independents	0.297	0.241	0.287	0.271
Republicans	0.213	0.413	0.364	0.194
Black	0.094	0.036	0.070	0.176
White	0.655	0.896	0.804	0.695
Hispanic	0.159	0.043	0.071	0.088
Number of Census Tracts	12,589	9,653	11,169	7,445

*Notes:* The table reports average demographic characteristics of Census Tracts that contributed to the increase in partisan segregation and of Census Tracts that decreased segregation, separately for tracts that trended Democratic or Republican (i.e., Census Tracts that featured an increase vs. a decrease in Exposure to Democrats between 2012 and 2020). All figures are weighted by Census Tract-level counts of registered voters in 2012, except for total population figures that are unweighted. Census statistics in Panel A are based on 5-year American Community Survey Data. Voter file statistics in Panel B are based on the 2012 TargetSmart data.



Table S13: Changes in Demographics of Counties Contributing to the Rise in Partisan Segregation vs. Resisting that Trend, Catalist Data

	Increase Segregation		Decrease Segregation	
	More Democratic (1)	More Republican (2)	More Democratic (3)	More Republican (4)
<u>Panel A. Census Statistics</u>				
Δ Total population	117,667	39,431	122,219	23,106
Δ Median age	1.61	2.14	2.03	1.69
Δ Share female	0.001	0.0005	0.002	-0.00004
Δ Share non-white population	0.054	0.059	0.062	0.061
Δ Share urban population	-0.004	-0.018	-0.010	-0.024
Δ Median income	29,572	19,578	26,932	18,696
Δ High-school degree or above	0.030	0.034	0.029	0.036
<u>Panel B. Voter File Statistics on Registered Population</u>				
Δ Democrats	-0.011	-0.063	0.001	-0.055
Δ Independents	0.050	0.045	0.045	0.031
Δ Republicans	-0.039	0.018	-0.046	0.024
Δ Black	0.005	0.005	0.005	0.012
Δ White	-0.063	-0.031	-0.057	-0.038
Δ Hispanic	0.035	0.019	0.036	0.016

*Notes:* The table reports 2020-minus-2010 differences of demographic characteristics of counties that contributed to the increase in partisan segregation and of counties that decreased segregation, separately for counties that trended Democratic or Republican (i.e., counties that featured an increase vs. a decrease in Exposure to Democrats between 2008 and 2018). All figures are weighted by county-level counts of registered voters in 2008, except for total population figures that are unweighted. Census statistics in Panel A are based on the 2010 decennial census, the 2008-2012 5-year American Community Survey, the 2020 decennial census, and the 2018-2022 5-year American Community Survey. Voter file statistics in Panel B are based on the 2008 and 2018 Catalist data.

Table S14: Changes in Demographics of Counties Contributing to the Rise in Partisan Segregation vs. Resisting that Trend, TargetSmart Data

	Increase Segregation		Decrease Segregation	
	More Democratic (1)	More Republican (2)	More Democratic (3)	More Republican (4)
<u>Panel A. Census Statistics</u>				
Δ Total population	109,167	20,704	112,888	58,936
Δ Median age	1.71	2.08	1.86	1.77
Δ Share female	0.001	0.0001	0.001	0.001
Δ Share non-white population	0.059	0.056	0.060	0.061
Δ Share urban population	-0.004	-0.022	-0.009	-0.016
Δ Median income	29,484	19,327	26,325	18,938
Δ High-school degree or above	0.028	0.036	0.029	0.037
<u>Panel B. Voter File Statistics on Registered Population</u>				
Δ Democrats	0.014	-0.058	0.021	-0.046
Δ Independents	0.022	0.025	0.012	0.023
Δ Republicans	-0.036	0.034	-0.033	0.024
Δ Black	-0.001	0.001	-0.001	0.001
Δ White	-0.048	-0.021	-0.039	-0.031
Δ Hispanic	0.028	0.012	0.023	0.018

*Notes:* The table reports 2020-minus-2010 differences of demographic characteristics of counties that contributed to the increase in partisan segregation and of counties that decreased segregation, separately for counties that trended Democratic or Republican (i.e., counties that featured an increase vs. a decrease in Exposure to Democrats between 2012 and 2020). All figures are weighted by county-level counts of registered voters in 2008, except for total population figures that are unweighted. Census statistics in Panel A are based on the 2010 decennial census, the 2012 5-year American Community Survey, the 2020 decennial census, and the 2022 5-year American Community Survey. Voter file statistics in Panel B are based on the 2012 and 2020 TargetSmart data.

## **F Drivers of the Increase in Geographic Partisan Segregation**

In this section, we provide detailed analyses supporting the decomposition of changes in partisan composition into several explanatory factors: generational change, internal mobility, adult entry and exit from the electorate, and party switching. After presenting counts by data source, we assess whether the strength of each factor is driven by the number of voters involved or by specific behaviors favoring Republicans or Democrats. We then plot changes in partisan composition relative to these factors. These analyses show the robustness of our results regarding the drivers responsible for the rise in geographic partisan segregation. Next, we investigate which places and socio-demographic groups were most impacted by the different factors. Finally, we show decomposition figures for geographic units trending Democratic or Republican across different pairs of years, using alternative data sources and geographic units. We also explore the decomposition for units that contribute or alleviate segregation, including for units that saw the most extreme changes in partisan segregation.

### **F.1 Total Counts of Voters per Factor Category**

SI Table S15 compares the total counts of voters per factor category – both inflows and outflows – between the Catalist and TargetSmart data. Overall, the numbers are comparable. However, in the TargetSmart data, we find lower counts of movers and deregistered voters, but a larger number of new adult voters and voters who died. These discrepancies likely stem from challenges in accurately tracking voter status over time, and different procedures used by the vendors to accomplish this task.

### **F.2 Inflows and Outflows**

As described in Section B.3, a factor can drive the change in Exposure to Democrats either 1) if this factor accounts for a large number of voters, or ii) if there are behavioral differences between Democrats and Republicans, i.e. if changes in this factor are tilted

Table S15: Counts of Movers, New Registrants, Party Switchers, and Voters who Died or Became Unregistered

	Movers	New Young Voters	New Adult Voters	Party Switchers	Deregisters	Died	Voters First Year	Voters Last Year
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<u>Panel A. Catalist, 2008-2018</u>								
County	12,476,146	16,142,133	15,645,143	8,340,674	18,339,436	9,074,711	99,239,654	107,182,121
Census Tract	36,901,599	14,952,379	14,623,162	3,477,152	17,009,463	7,932,314	93,129,048	101,101,906
<u>Panel B. TargetSmart, 2012-2020</u>								
County	12,298,434	14,772,749	16,514,858	8,244,382	4,829,440	14,460,118	84,797,031	103,676,124
Census Tract	24,927,289	14,758,119	16,358,633	5,182,393	4,766,272	14,280,979	84,140,083	103,275,810

*Notes:* The table reports counts of county- and Census-Tract-specific categories of voters defined using the first and last years of the Catalist (Panel A) and TargetSmart data (Panel B). Movers (column 1) are defined as voters who are registered in different geographies at baseline and endline. New young voters (column 2) are registered voters who are 25 or younger at endline. New adult voters (column 3) are voters who are unregistered at baseline but who, at endline, are older than 25 and are registered. Party switchers (column 4) are registered voters who are affiliated with a different major party at baseline and endline. Deregisters (column 5) are voters who were registered at baseline and who appear in the data as not being registered at endline. Dead voters (column 6) are voters registered at baseline but not in the data (whether as registered or unregistered) at endline. Columns 7 and 8 report total counts of voters in the first and last years for a given data source and geographic sample.

towards the Republicans or the Democrats away from their equilibrium shares, as captured by  $\frac{s_{I,f}^D}{s_{I,f}^D + s_{I,f}^R} - \frac{D_{y_1}}{D_{y_1} + R_{y_1}}$  for inflows and  $\frac{s_{O,f}^D}{s_{O,f}^D + s_{O,f}^R} - \frac{D_{y_1}}{D_{y_1} + R_{y_1}}$  for outflows being different from zero, with  $s_{I,f}^D$  (resp.  $s_{I,f}^R$ ) the share of voters who were newly registered as Democrats (resp. Republicans) in the area in  $y_2$  due to factor  $f$ , and  $s_{O,f}^D$  (resp.  $s_{O,f}^R$ ) the share of voters who were no longer registered Democrats (resp. no longer registered Republicans) in the area in  $y_2$  due to factor  $f$ . SI Tables S16 and S17 provide the weighted average of the number of voters accounted for by each factor across counties and Census Tracts, respectively, for both inflows and outflows.

SI Tables S18 and S19 report, at the county and Census Tract levels respectively, the correlation coefficients obtained by regressing the change in the Exposure to Democrats on  $\frac{s_{I,f}^D}{s_{I,f}^D + s_{I,f}^R} - \frac{D_{y_1}}{D_{y_1} + R_{y_1}}$  for inflows, and  $\frac{s_{O,f}^D}{s_{O,f}^D + s_{O,f}^R} - \frac{D_{y_1}}{D_{y_1} + R_{y_1}}$  for outflows.<sup>5</sup> For example, for internal mobility, the deviation from the equilibrium due to inflows (resp. outflows) is defined as the gap between the number of Democrats who moved into (resp. out

<sup>5</sup>Party switching between the Democratic and Republican parties is an exception as an inflow of Democrats is equal to an outflow of Republicans. SI Tables S18 and S19 report instead the correlation between the change in the Exposure to Democrats and  $\frac{\beta}{\beta + \alpha} - \frac{D_{y_1}}{D_{y_1} + R_{y_1}}$ , with  $\beta$  the share of Republicans who become Democrats, using the initial number of Republicans as denominator, and  $\alpha$  the share of Democrats who become Republicans, using the initial number of Democrats as denominator.

of) a geographic unit divided by the total number of Democrats and Republicans who moved into (resp. out of) that unit and the initial value of the Exposure to Democrats.

The correlation coefficients are generally positive for inflows and negative for outflows, as expected. The more Exposure to Democrats increases, the larger is the fraction of new Democrats appearing as a result of any of the factors compared to the baseline.

Table S16: County-Level Inflows and Outflows by Decomposition Factor, Catalist Data

	All Counties (N = 1,373)		Trending Democrat (N = 206)		Trending Republican (N = 1,167)	
	Inflow (1)	Outflow (2)	Inflow (3)	Outflow (4)	Inflow (5)	Outflow (6)
Mobility	25,367 (14,227)	28,714 (18,120)	38,529 (17,988)	45,152 (26,407)	10,374 (9,942)	9,990 (8,680)
Generational Change	48,537 (15,826)	24,604 (13,955)	80,283 (22,998)	36,890 (20,860)	12,379 (7,658)	10,609 (6,090)
Adult Entry/Exit	57,625 (23,258)	52,672 (31,397)	95,579 (34,612)	84,532 (49,550)	14,395 (10,325)	16,382 (10,720)
Switch Dem./Rep.	5,583 (7,085)		9,045 (9,651)		1,641 (4,163)	
Switch Ind/Dem. or Rep.	12,420 (6,956)	12,778 (8,239)	20,107 (10,191)	21,013 (13,568)	3,664 (3,273)	3,396 (2,169)

*Notes:* The table reports county-level average counts of Democratic voters "entering" or "exiting" each decomposition factor, based on the Catalist data. For example, generational change inflow means new young voters (25 or younger) who are registered as Democrats in 2018; generational change outflow means voters who appear as registered Democrats in 2008 and who disappear from the 2018 voter file. Mobility inflow means voters who were registered in different counties in 2008 and 2018 and who were registered as Democrats in a party affiliation state in 2018; mobility outflow means voters who were registered in different counties in 2008 and in 2018 and who were registered as Democrats in a party affiliation state in 2008. Differences between mobility inflows and outflows in columns 1 and 2 are due to voters who relocate to or from states that do not record party affiliation. In parentheses, we report average Republican inflows and outflows. All figures are weighted by county-level registration counts in 2008.

### F.3 Change in Partisan Composition by Decomposition Factor

SI Figures S12 to S14 display the correlation at both the county and Census Tract levels between the change in Exposure to Democrats and the magnitude of each factor’s contribution in the decomposition analysis. Generational change, party switching

Table S17: Tract-Level Inflows and Outflows by Decomposition Factor, TargetSmart Data

	All Census Tracts (N = 40,856)		Trending Democrat (N = 23,758)		Trending Republican (N = 17,098)	
	Inflow	Outflow	Inflow	Outflow	Inflow	Outflow
	(1)	(2)	(3)	(4)	(5)	(6)
Mobility	315 (238)	300 (230)	364 (216)	331 (238)	241 (271)	254 (218)
Generational Change	171 (97)	179 (129)	205 (84)	169 (124)	120 (116)	194 (136)
Adult Entry/Exit	240 (187)	59 (49)	271 (155)	55 (48)	194 (235)	66 (50)
Switch Dem./Rep.		18 (32)		21 (21)		12 (49)
Switch Ind/Dem. or Rep.	40 (31)	23 (20)	48 (29)	23 (23)	28 (32)	23 (15)

*Notes:* The table reports Census Tract-level average counts of Democratic voters "entering" or "exiting" each decomposition factor, based on the TargetSmart data. For example, generational change inflow means new young voters (25 or younger) who are registered as Democrats in 2020; generational change outflow means voters who appear as registered Democrats in 2012 and who disappear from the 2020 voter file. Mobility inflow means voters who were registered in different Census Tracts in 2012 and 2020 and who were registered as Democrats in a party affiliation state in 2020; mobility outflow means voters who were registered in different Census Tracts in 2012 and in 2020 and who were registered as Democrats in a party affiliation state in 2012. Differences between mobility inflows and outflows in columns 1 and 2 are due to voters who relocate to or from states that do not record party affiliation. In parentheses, we report average Republican inflows and outflows. All figures are weighted by Census Tract-level registration counts in 2012.

between the Democratic and Republican parties, and adult entry / exit from the electorate are strongly correlated with changes in Exposure to Democrats, in both the Catalist and TargetSmart data, at the county and Census Tract levels. Notably, in absolute value, party switching between the Democratic and Republican parties is larger in Republican-leaning areas than in Democratic-leaning areas. This finding underlines the asymmetric role of this factor, as Democrats were more likely to switch to the Republican party over the time period studied, with the reverse being less common.

Table S18: County-Level Pairwise Correlations Between Factor Inflows and Outflows and 2008-to-2018 Change in Exposure to Democrats, Catalist Data

	All Counties (N = 1,373)		Trending Democratic (N = 206)		Trending Republican (N = 1,167)	
	Inflow	Outflow	Inflow	Outflow	Inflow	Outflow
	(1)	(2)	(3)	(4)	(5)	(6)
Generational Change	0.882 **	0.469 **	0.687 **	0.060 **	0.801 **	0.421 **
Mobility	0.932 **	-0.704 **	0.785 **	-0.295 **	0.903 **	-0.541 **
Adult Entry/Exit	0.941 **	-0.083 **	0.790 **	-0.104 **	0.916 **	0.148 **
Switch Dem./Rep.	0.907 **	0.907 **	0.615 **	0.615 **	0.834 **	0.834 **
Switch Ind/Dem. or Rep.	0.906 **	-0.358 **	0.630 **	0.034 **	0.855 **	-0.165 **

*Notes:* The table reports county-level pairwise correlation coefficients between inflow- and outflow-driven decomposition factors' deviations from the equilibrium and the change in Exposure to Democrats between 2008 and 2018, using the Catalist data. For example, for mobility, the deviation from the equilibrium due to inflows (resp. outflows) is defined as counts of Democrats moving into (resp. out of) a county divided by the sum of counts of Democrats and Republicans moving into (resp. out of) that county, minus the county's Exposure to Democrats at baseline.

\*\* p < .01, \* p < .05, ~ p < .10

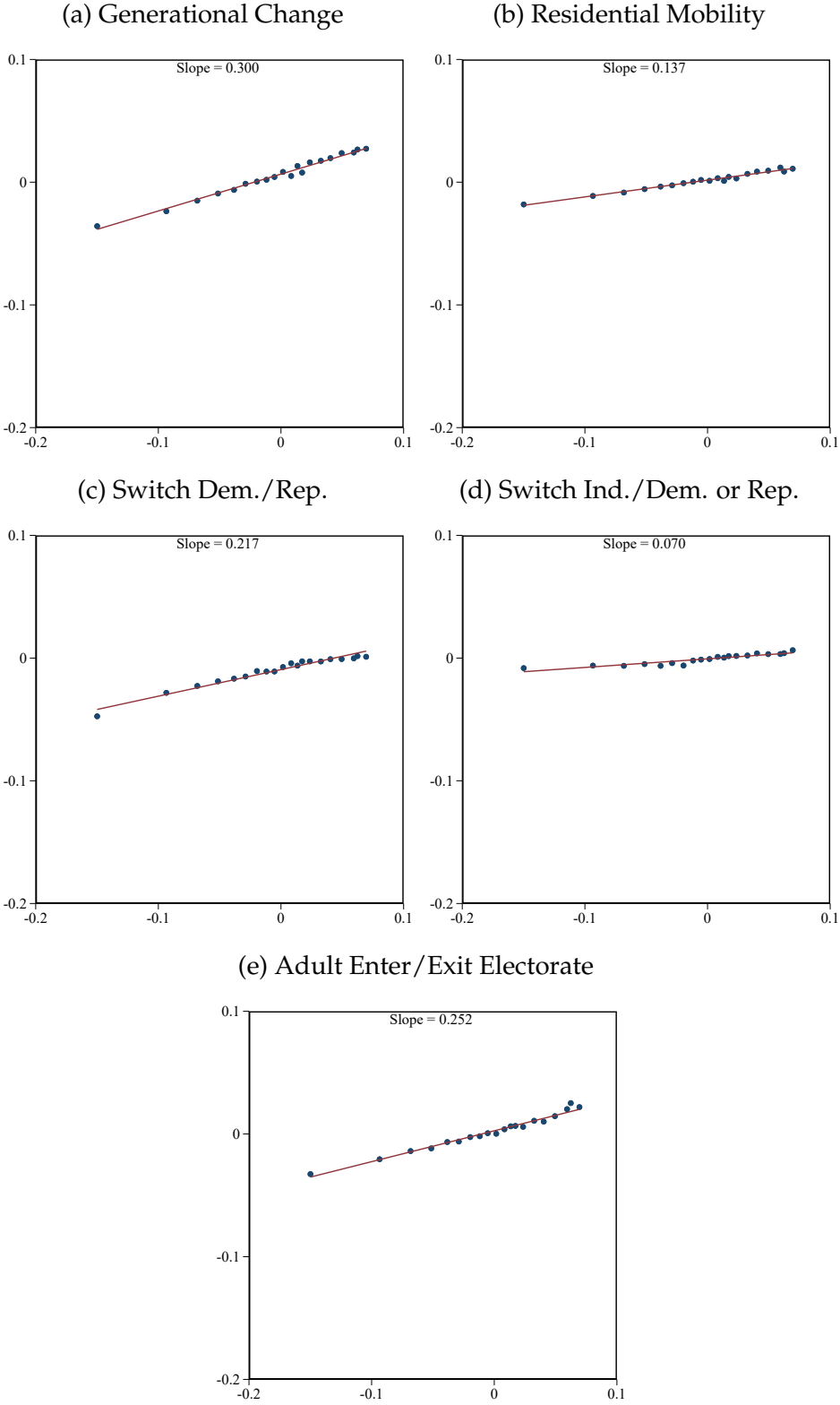
Table S19: Census Tract-Level Pairwise Correlations Between Factor Inflows and Outflows and 2012-to-2020 Change in Exposure to Democrats, TargetSmart Data

	All Census Tracts (N = 40,856)		Trending Democratic (N = 23,758)		Trending Republican (N = 17,098)	
	Inflow	Outflow	Inflow	Outflow	Inflow	Outflow
	(1)	(2)	(3)	(4)	(5)	(6)
Generational Change	0.922 **	0.471 **	0.770 **	0.123 **	0.883 **	0.499 **
Mobility	0.895 **	-0.381 **	0.727 **	-0.185 **	0.844 **	-0.223 **
Adult Entry/Exit	0.930 **	-0.441 **	0.808 **	-0.214 **	0.872 **	-0.313 **
Switch Dem./Rep.	0.737 **	0.737 **	0.458 **	0.458 **	0.631 **	0.631 **
Switch Ind/Dem. or Rep.	0.732 **	-0.339 **	0.465 **	-0.153 **	0.659 **	-0.182 **

*Notes:* The table reports Census Tract-level pairwise correlation coefficients between inflow- and outflow-driven decomposition factors' deviations from the equilibrium and the change in Exposure to Democrats between 2012 and 2020, using the TargetSmart data. For example, for mobility, the deviation from the equilibrium due to inflows (resp. outflows) is defined as counts of Democrats moving into (resp. out of) a Census Tract divided by the sum of counts of Democrats and Republicans moving into (resp. out of) that Tract, minus the Census Tract's Exposure to Democrats at baseline.

\*\* p < .01, \* p < .05, ~ p < .10

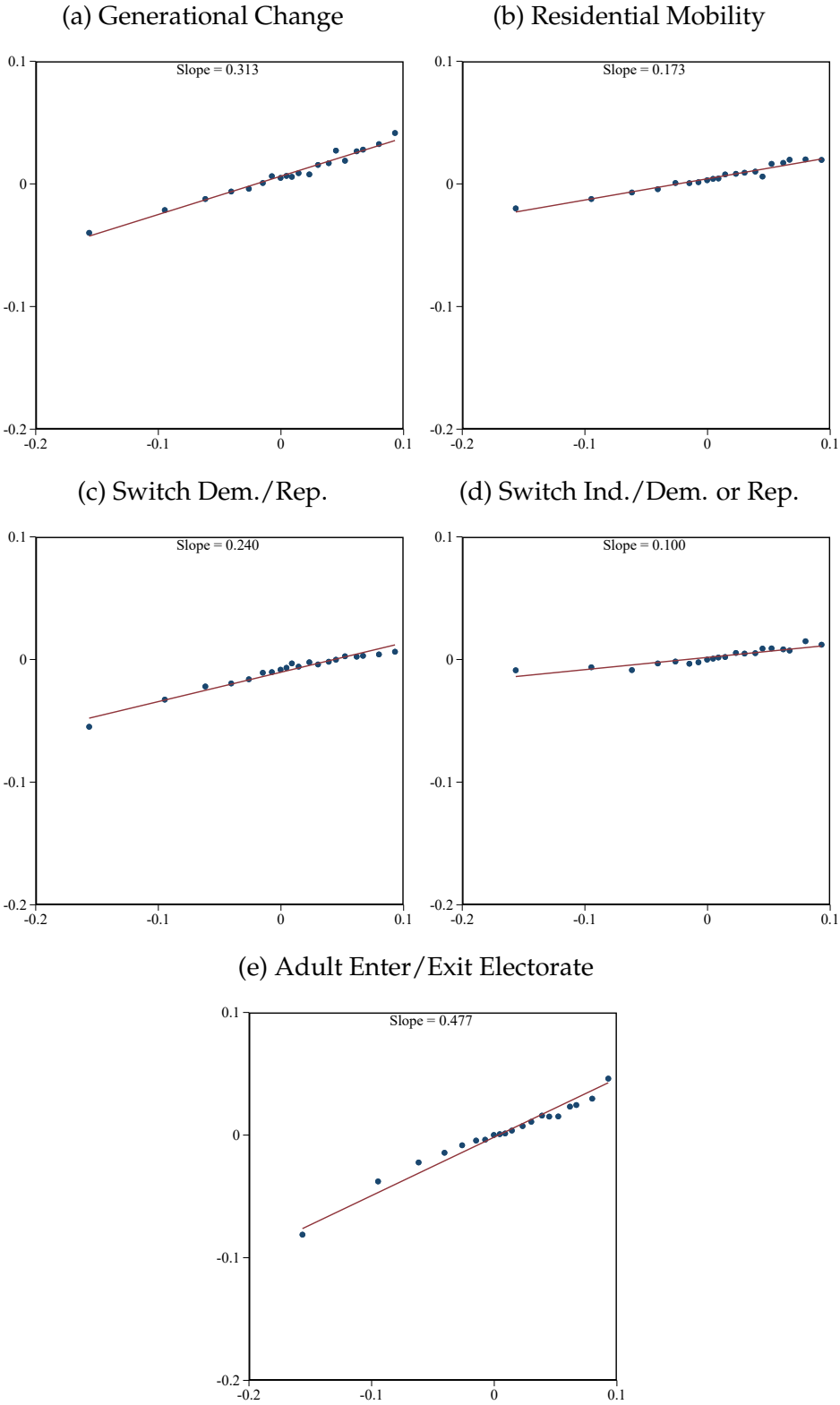
Figure S12: County-Level Decomposition Factors and 2008-2018 Changes in Exposure to Democrats, Catalist Data



Notes: Using 2008 and 2018 Catalist data, each binscatter plot displays the county-level relationship between the over-time change in Exposure to Democrats (x-axis) and a decomposition factor (y-axis). The red line represents the best linear fit, estimated weighting counties by 2008 counts of registered voters.

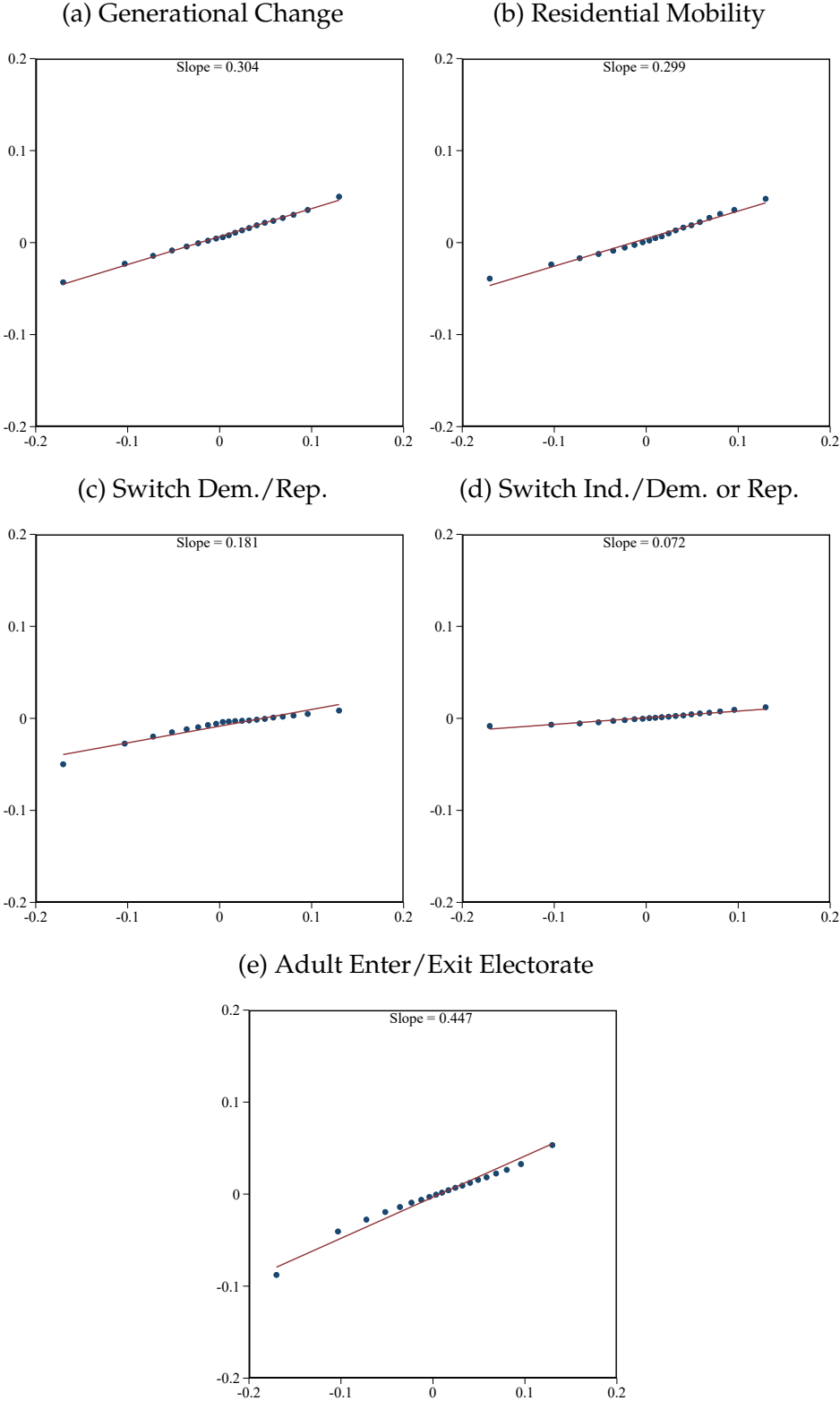


Figure S13: County-Level Decomposition Factors and 2012-2020 Changes in Exposure to Democrats, TargetSmart Data



Notes: Using 2012 and 2020 TargetSmart data, each binscatter plot displays the county-level relationship between the over-time change in Exposure to Democrats (x-axis) and a different decomposition factor (y-axis). The red line represents the best linear fit, estimated weighting counties by 2012 counts of registered voters.

Figure S14: Census Tract-Level Decomposition Factors and 2012-2020 Changes in Exposure to Democrats, TargetSmart Data



Notes: Using 2012 and 2020 TargetSmart data, each binscatter plot displays the Census Tract-level relationship between the over-time change in Exposure to Democrats (x-axis) and a different decomposition factor (y-axis). The red line represents the best linear fit, estimated weighting Census Tracts by 2012 counts of registered voters.

## **F.4 Socio-demographic Characteristics and Decomposition Factors**

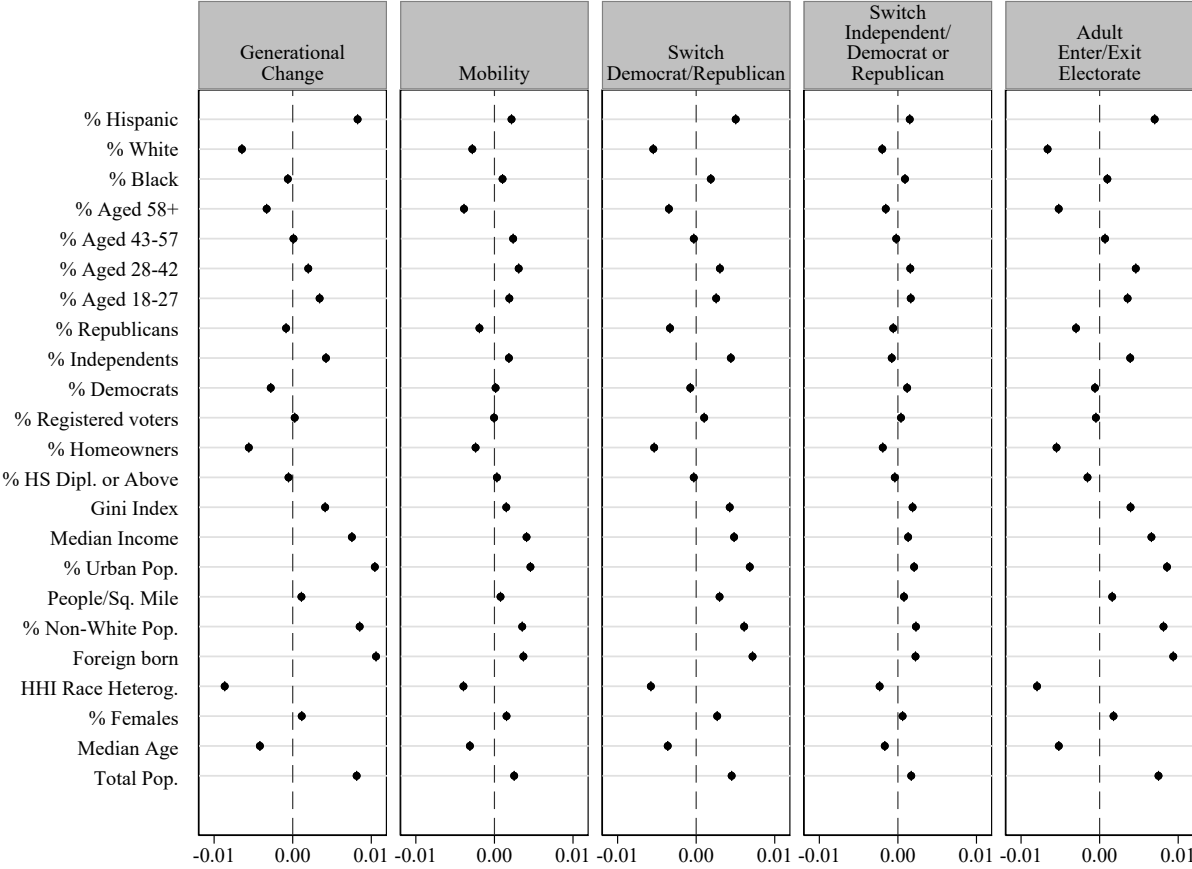
Here, we study the relationship between various ecological demographic characteristics and the decomposition factors to understand how different regions tend to experience Democratic-trending generational change, internal mobility, party switching, and adult entry/exit from the electorate. To do so, we estimate separate regression models for each decomposition factor (as the dependent variable) and each aggregate demographic characteristic (as the sole predictor). We weight observations by the number of registrants at the beginning of the period. The variables are standardized, allowing us to interpret the coefficients as the effect of a one-standard-deviation change in the predictor on the outcome. The resulting coefficients are presented in SI Figure S15 for the Catalyst data (2008-2018) and in SI Figure S16 for the TargetSmart data (2012-2020) at the county level.

In Democratic-leaning counties, the population tends to be younger, more urban, and ethnically diverse, with a higher proportion of Hispanic residents, fewer white residents, and a larger share of foreign-born inhabitants. These counties also have a higher concentration of Independents and fewer Republicans. Consequently, the correlations are positive between these demographic characteristics and the decomposition factors. Notably, they are generally larger in absolute values for generational change, adult entry/exit from the electorate, and party-switching between the Democratic and Republican parties, highlighting the importance of these factors in explaining changes in Exposure to Democrats over time.

## **F.5 Factor Decomposition for Democratic- and Republican-trending Units by Dataset and Year**

SI Tables S20 to S22 present the factor decomposition of changes in partisan composition across various geographic units (Congressional Districts, counties, Census Tracts, Census Block Groups, and Census Blocks) for Democratic-leaning and Republican-leaning areas, separately by year and dataset.

Figure S15: Correlations Between Decomposition Factors and County Characteristics, Catalist Data



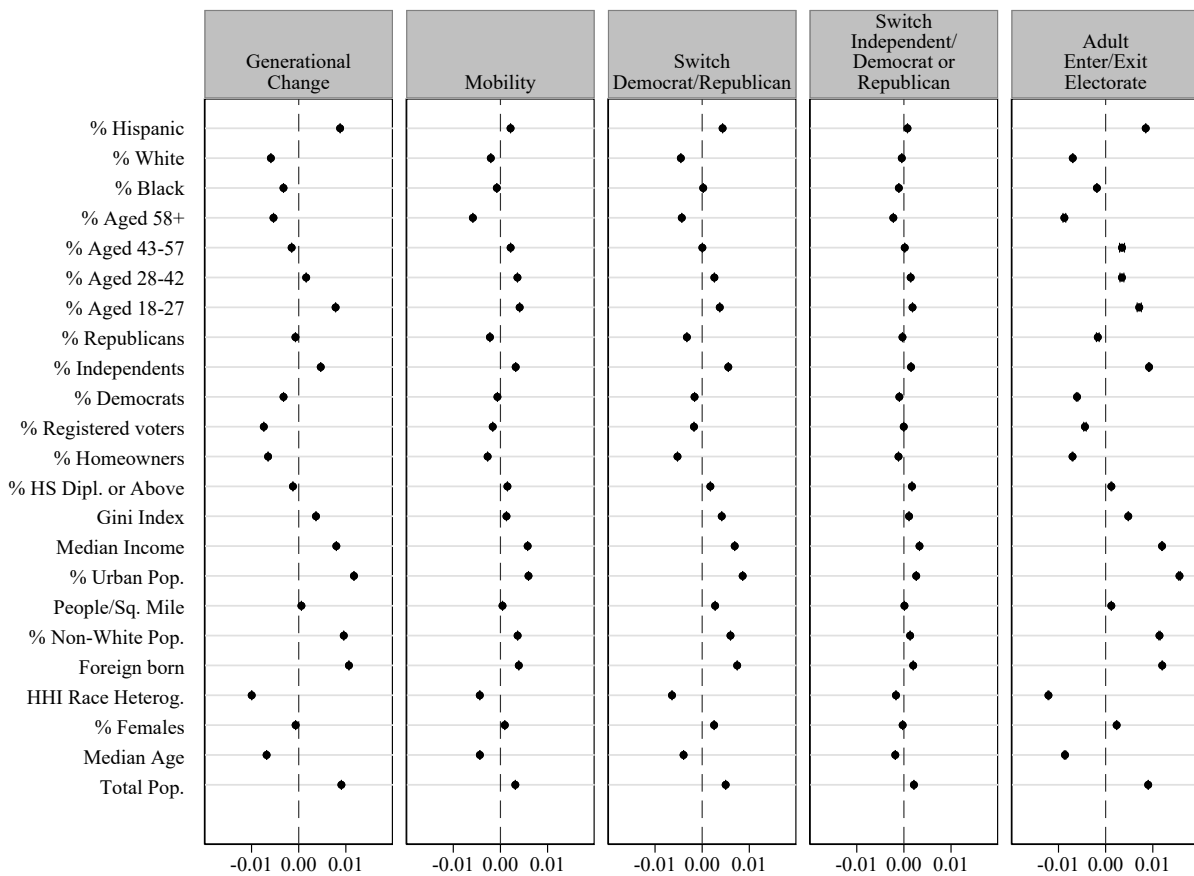
Notes: The figure plots correlation coefficients representing the predictive effect of a one-standard-deviation increase in a given county demographic characteristic (in rows) on a decomposition factor (in panels). Decomposition factors are based on Catalist 2008 and 2018 county-level data. Regressions are weighted by counts of registered voters per county in 2008. County covariates based on voter file data (top rows) come from 2008 Catalist data. County covariates based on census statistics (bottom rows) come from 2015 5-year American Community Survey data.

In general, we find that the drivers of the change in Exposure to Democrats in Democratic-leaning and Republican-leaning places are consistent across years, in both datasets. Still, there is considerable year-to-year variation in the importance of some factors, particularly across shorter time periods.

### E.6 Factor Decomposition by Geographic Partisan Segregation Trends

We examine whether the decomposition factors differ in areas that have contributed to the increase in geographic partisan segregation compared to those that have resisted that trend. SI Figures S17 to S19 split the decomposition at the county or Census Tract levels based on whether the geographic units contribute to or alleviate segregation *and*

Figure S16: Correlations Between Decomposition Factors and County Characteristics, TargetSmart Data



Notes: The figure plots correlation coefficients representing the predictive effect of a one-standard-deviation increase in a given county demographic characteristic (in rows) on a decomposition factor (in panels). Decomposition factors are based on TargetSmart 2012 and 2020 county-level data. Regressions are weighted by counts of registered voters per county in 2020. County covariates based on voter file data (top rows) come from 2020 TargetSmart data. County covariates based on census statistics (bottom rows) come from 2015 5-year American Community Survey data.

whether they trended Democratic or Republican (the results are consistent with those in Figure 3 and SI Tables S20 and S21). Notably, while geographic units become more politically homogeneous over time, the factors driving these changes remain specific to Democratic or Republican-trending areas. This holds true regardless of whether the geographic units saw an increase or decrease in segregation at both the county and Census Tract levels and in both the Catalist and TargetSmart data. Specifically, generational change predominantly explains the increase in segregation in areas that became more Democratic, while party switching between the Democratic and Republican parties explains much of the rise in segregation in areas that became more Republican. Adult

Table S20: Factors Driving Changes in County-level Exposure to Democrats by Pairs of Years, Catalist and TargetSmart Data

	More Democratic					More Republican				
	Mobility	Gen. Change	Adult Enter/Exit	Switch Dem./Rep.	Switch Ind./Dem. or Rep.	Mobility	Gen. Change	Adult Enter/Exit	Switch Dem./Rep.	Switch Ind./Dem. or Rep.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<u>Panel A. Catalist</u>										
2008-2010	17.2	25.8	32.5	7.3	17.3	5.1	25.5	14.6	42.4	12.3
2008-2012	13.6	37.2	48.7	-10.1	10.6	9.6	21.7	12.6	40.0	16.0
2008-2014	15.0	33.1	49.3	-6.7	9.3	11.2	23.8	14.9	37.9	12.3
2008-2016	12.6	48.2	43.3	-8.1	4.0	13.7	18.3	18.6	39.7	9.7
2008-2018	12.0	46.9	41.5	-5.5	5.2	14.1	17.6	19.6	39.6	9.0
2010-2012	11.0	36.5	50.1	-5.3	7.7	10.7	16.8	8.0	43.2	21.4
2010-2014	13.4	28.9	51.9	-3.4	9.2	11.5	18.7	16.9	38.5	14.3
2010-2016	12.1	43.7	45.2	-5.6	4.6	13.4	14.3	20.2	41.5	10.6
2010-2018	12.0	43.6	43.6	-4.9	5.7	13.9	14.7	21.4	40.4	9.5
2012-2014	16.2	14.8	46.2	1.1	21.6	9.8	16.7	28.8	32.4	12.3
2012-2016	15.9	35.6	40.2	-3.2	11.5	12.3	12.5	24.3	41.9	9.0
2012-2018	16.0	36.1	39.2	-2.6	11.3	12.9	13.1	23.5	41.5	9.0
2014-2016	13.9	35.4	37.4	-1.6	14.9	9.4	8.3	25.4	47.8	9.1
2014-2018	15.5	35.2	37.4	-1.5	13.4	10.9	10.9	24.0	44.9	9.3
2016-2018	16.4	32.4	33.3	2.2	15.8	13.7	9.4	24.7	43.7	8.6
<u>Panel B. TargetSmart</u>										
2012-2014	11.2	19.2	55.2	0.6	13.9	8.8	31.3	25.3	29.1	5.5
2012-2016	15.0	36.8	42.6	-3.9	9.5	9.1	16.2	30.6	37.7	6.4
2012-2018	16.3	35.4	40.8	-2.3	9.8	10.9	15.2	32.3	35.3	6.4
2012-2020	19.2	39.4	32.7	-1.5	10.1	12.1	14.3	33.6	33.7	6.3
2014-2016	17.9	40.2	35.1	-5.4	12.1	8.6	16.3	21.8	43.7	9.6
2014-2018	19.1	34.6	35.6	-1.9	12.6	11.3	14.4	21.7	43.8	8.9
2014-2020	20.9	36.9	29.0	0.2	13.0	11.8	12.7	25.8	41.5	8.2
2016-2018	17.1	28.0	35.3	3.7	15.9	14.5	12.0	19.4	48.1	6.1
2016-2020	22.0	30.2	27.0	3.0	17.8	13.3	9.6	27.2	42.4	7.6
2018-2020	22.5	29.2	14.5	3.4	30.5	10.0	9.3	29.9	43.4	7.3

*Notes:* The table reports the percentage of the change in county-level Exposure to Democrats explained by each decomposition factor across pairs of years, using the Catalist (Panel A) and TargetSmart data (Panel B). For each pair of years and data source, we classify counties as Democratic- ("More Democratic") vs. Republican-trending ("More Republican") depending on whether, between those two election years, counties featured an increase vs. a decrease in Exposure to Democrats.

entry/exit plays a larger role in the TargetSmart data than in the Catalist data, both in Democratic-leaning and Republican-leaning places.

Table S21: Factors Driving Changes in Census Tract-level Exposure to Democrats by Pairs of Years, TargetSmart Data

	More Democratic					More Republican				
	Mobility	Gen. Change	Adult Enter/Exit	Switch Dem./Rep.	Switch Ind./Dem. or Rep.	Mobility	Gen. Change	Adult Enter/Exit	Switch Dem./Rep.	Switch Ind./Dem. or Rep.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2012-2014	19.1	23.5	47.0	1.2	9.2	30.2	22.0	29.7	15.7	2.4
2012-2016	21.5	36.6	39.1	-2.5	5.4	22.5	16.3	29.9	26.0	5.4
2012-2018	21.9	35.9	37.8	-1.2	5.6	23.2	15.8	31.9	24.3	4.8
2012-2020	22.6	39.5	31.3	0.4	6.2	23.3	15.2	33.7	23.2	4.6
2014-2016	28.6	34.2	32.4	-2.5	7.3	19.5	14.4	22.5	34.5	9.2
2014-2018	28.2	32.3	33.3	-0.8	7.0	23.8	14.3	23.4	31.2	7.3
2014-2020	28.0	35.7	27.4	0.9	7.9	25.2	13.5	25.4	29.3	6.5
2016-2018	27.2	26.6	30.5	3.6	12.1	28.7	13.1	22.4	29.2	6.6
2016-2020	29.6	29.7	22.6	4.8	13.3	26.3	11.1	24.1	31.7	7.0
2018-2020	30.4	25.7	13.7	8.1	22.2	21.6	7.5	26.7	37.2	7.0

*Notes:* The table reports the percentage of the change in Census Tract-level Exposure to Democrats explained by each decomposition factor across pairs of years, using the TargetSmart data. For each pair of years, we classify Census Tracts as Democratic- ("More Democratic") vs. Republican-trending ("More Republican") depending on whether, between those two election years, Census Tracts featured an increase vs. a decrease in Exposure to Democrats.

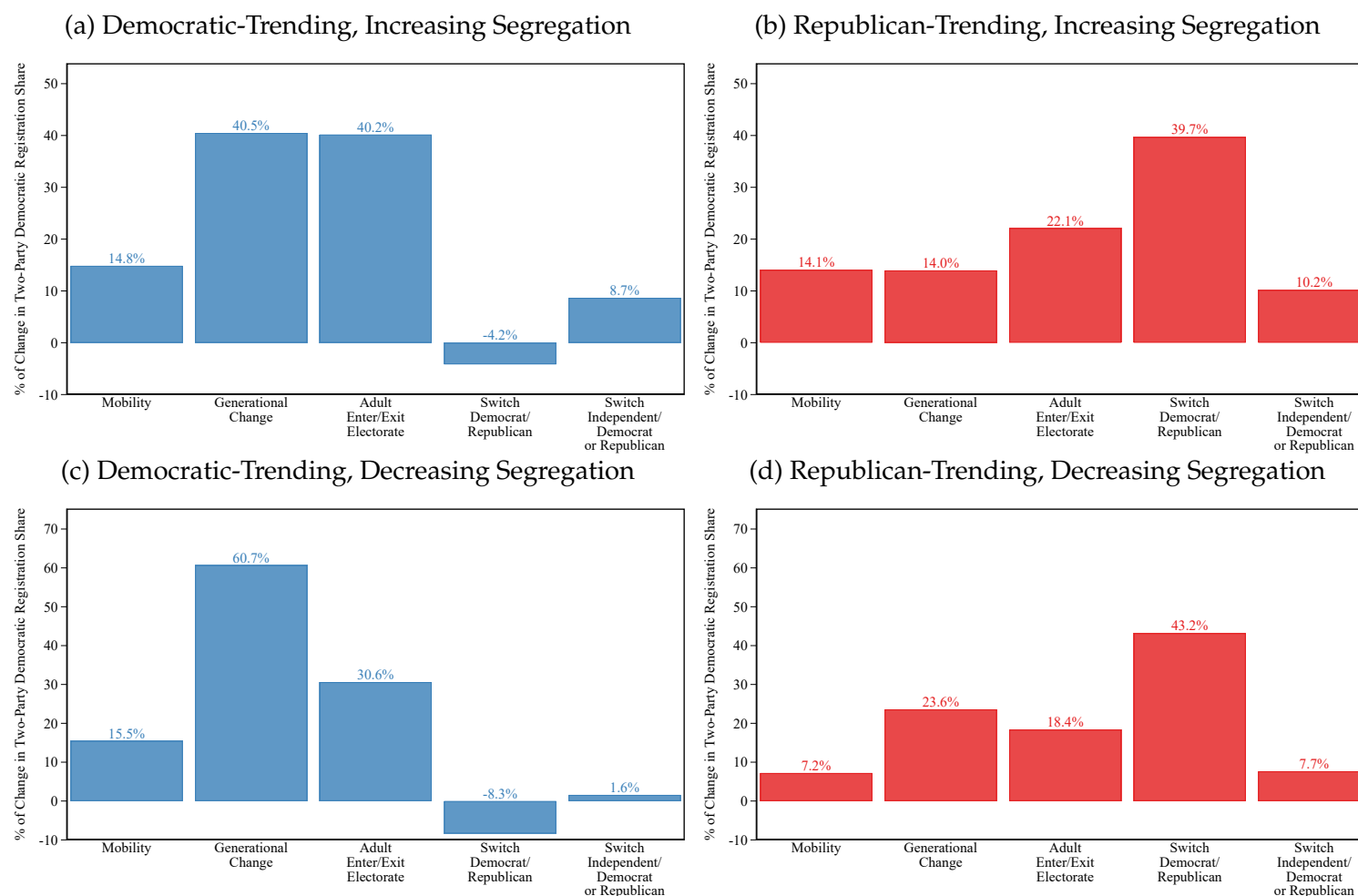
Table S22: Factors Driving Changes in Exposure to Democrats at the Congressional District, Census Block Group, and Census Block Levels by Pairs of Years, TargetSmart Data

	More Democratic					More Republican				
	Mobility	Gen. Change	Adult Enter/Exit	Switch Dem./Rep.	Switch Ind./Dem. or Rep.	Mobility	Gen. Change	Adult Enter/Exit	Switch Dem./Rep.	Switch Ind./Dem. or Rep.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<b>Panel A. Congressional Districts</b>										
2012-2014	11.4	19.8	58.5	-1.3	11.6	5.0	26.4	39.6	26.6	2.5
2012-2016	29.0	34.0	36.2	-5.7	6.4	25.4	13.0	28.1	29.7	3.8
2012-2018	39.0	29.0	29.6	-2.8	5.3	41.5	12.1	25.8	17.5	3.0
2012-2020	33.8	34.7	27.5	-1.9	5.9	35.0	12.4	30.1	19.4	3.1
2014-2016	41.7	31.8	26.2	-7.7	8.1	32.6	10.4	16.6	35.0	5.5
2014-2018	49.1	23.6	24.1	-2.5	5.7	50.6	9.3	16.5	20.0	3.7
2014-2020	40.7	30.5	23.3	-1.7	7.2	40.4	10.8	21.6	23.1	4.0
2016-2018	61.2	14.0	18.9	0.4	5.4	61.9	5.9	13.8	16.5	2.0
2016-2020	49.1	23.4	18.2	-0.1	9.3	44.5	8.7	20.0	23.2	3.6
2018-2020	37.1	29.2	8.8	1.2	23.8	22.2	7.3	26.8	41.0	2.6
<b>Panel B. Census Block Groups</b>										
2012-2014	28.4	21.9	40.5	1.4	7.8	37.8	20.4	27.9	12.1	1.8
2012-2016	26.9	33.7	36.0	-1.9	5.3	28.5	15.8	28.4	22.6	4.8
2012-2018	25.5	33.7	36.3	-0.8	5.4	28.3	15.7	30.1	21.5	4.4
2012-2020	24.6	37.5	31.2	0.7	6.0	27.0	15.2	32.5	21.1	4.2
2014-2016	33.4	31.0	29.9	-1.4	7.0	25.5	14.8	21.1	30.1	8.5
2014-2018	31.5	30.1	32.1	-0.3	6.6	29.2	14.7	21.7	27.6	6.8
2014-2020	29.6	33.7	27.8	1.4	7.6	29.2	13.8	24.5	26.5	5.9
2016-2018	33.1	24.1	29.5	3.3	10.0	36.8	14.1	19.5	23.8	5.8
2016-2020	31.8	27.3	23.6	5.0	12.2	30.9	11.3	23.0	28.6	6.3
2018-2020	32.9	23.1	15.9	8.1	20.0	26.1	8.7	25.8	33.0	6.4
<b>Panel C. Census Blocks</b>										
2012-2014	34.3	13.4	47.7	1.8	2.9	43.6	14.8	34.3	5.5	1.8
2012-2016	32.0	20.3	43.0	1.5	3.3	39.0	14.5	30.7	12.1	3.7
2012-2018	30.7	22.4	41.8	1.7	3.4	38.9	14.3	30.9	12.5	3.4
2012-2020	27.4	26.9	39.1	2.5	4.1	35.4	13.8	33.7	13.8	3.3
2014-2016	42.7	24.0	22.9	3.7	6.7	38.4	17.4	19.2	17.8	7.3
2014-2018	42.8	22.9	25.1	3.3	5.9	42.3	15.2	19.8	16.9	5.8
2014-2020	38.2	26.0	25.2	4.1	6.5	39.3	13.7	23.0	18.6	5.3
2016-2018	45.6	20.0	22.9	4.7	6.8	47.8	16.3	18.6	12.2	5.1
2016-2020	41.7	21.1	22.2	6.3	8.6	42.5	12.5	21.7	18.0	5.3
2018-2020	41.7	18.5	18.4	8.6	12.8	38.7	11.9	22.9	20.1	6.5

*Notes:* The table reports the percentage of the change in Exposure to Democrats explained by each decomposition factor across pairs of years, using the TargetSmart data. Panels A, B, and C report decompositions at, respectively, the Congressional District, Census Block Group, and Census Block levels. For each pair of years, we classify geographic units as Democratic- ("More Democratic") vs. Republican-trending ("More Republican") depending on whether, between those two election years, these geographies featured an increase vs. a decrease in Exposure to Democrats.

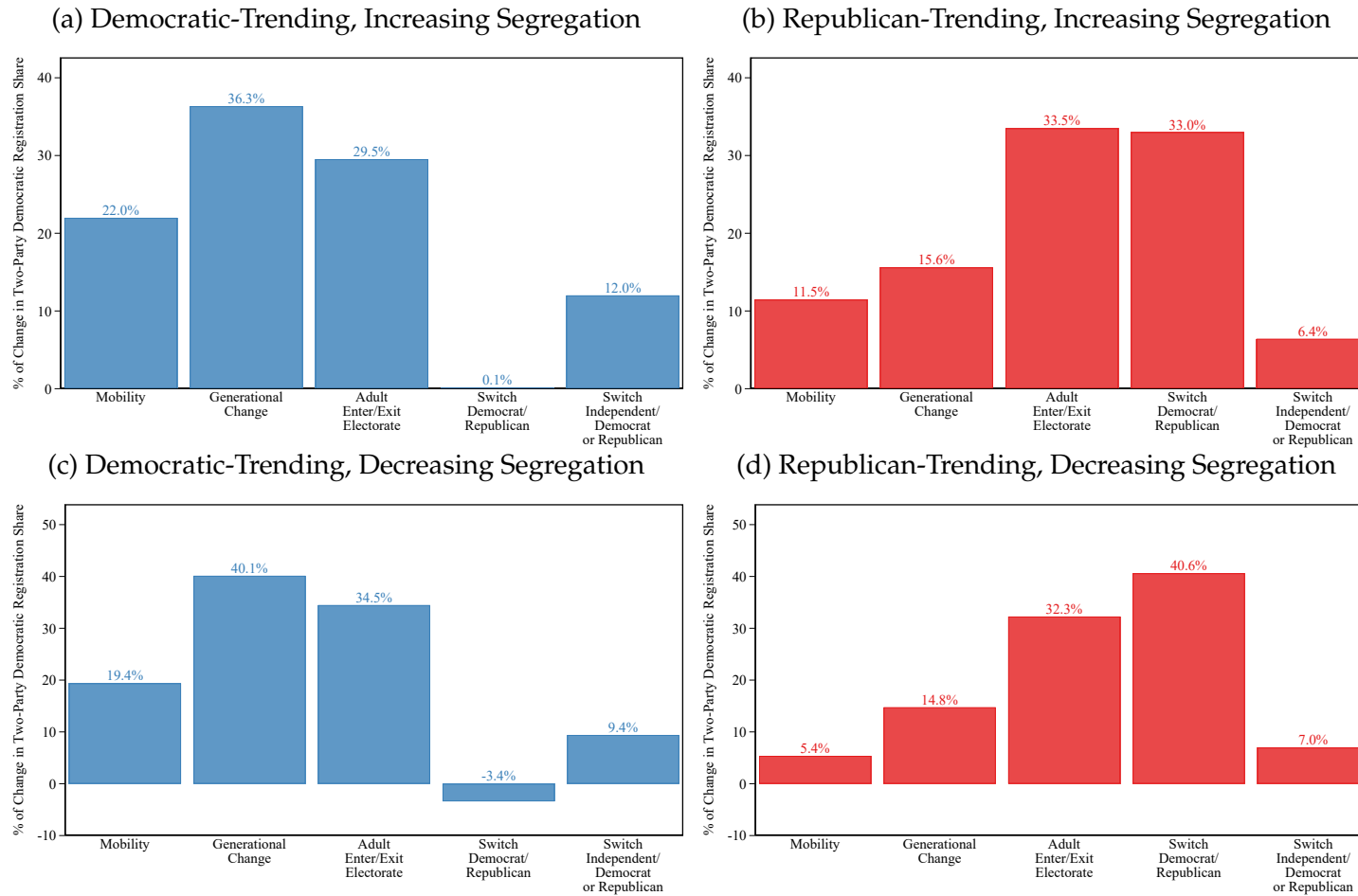


Figure S17: Factors Driving Changes in Exposure to Democrats by County Segregation Trends, Catalist Data



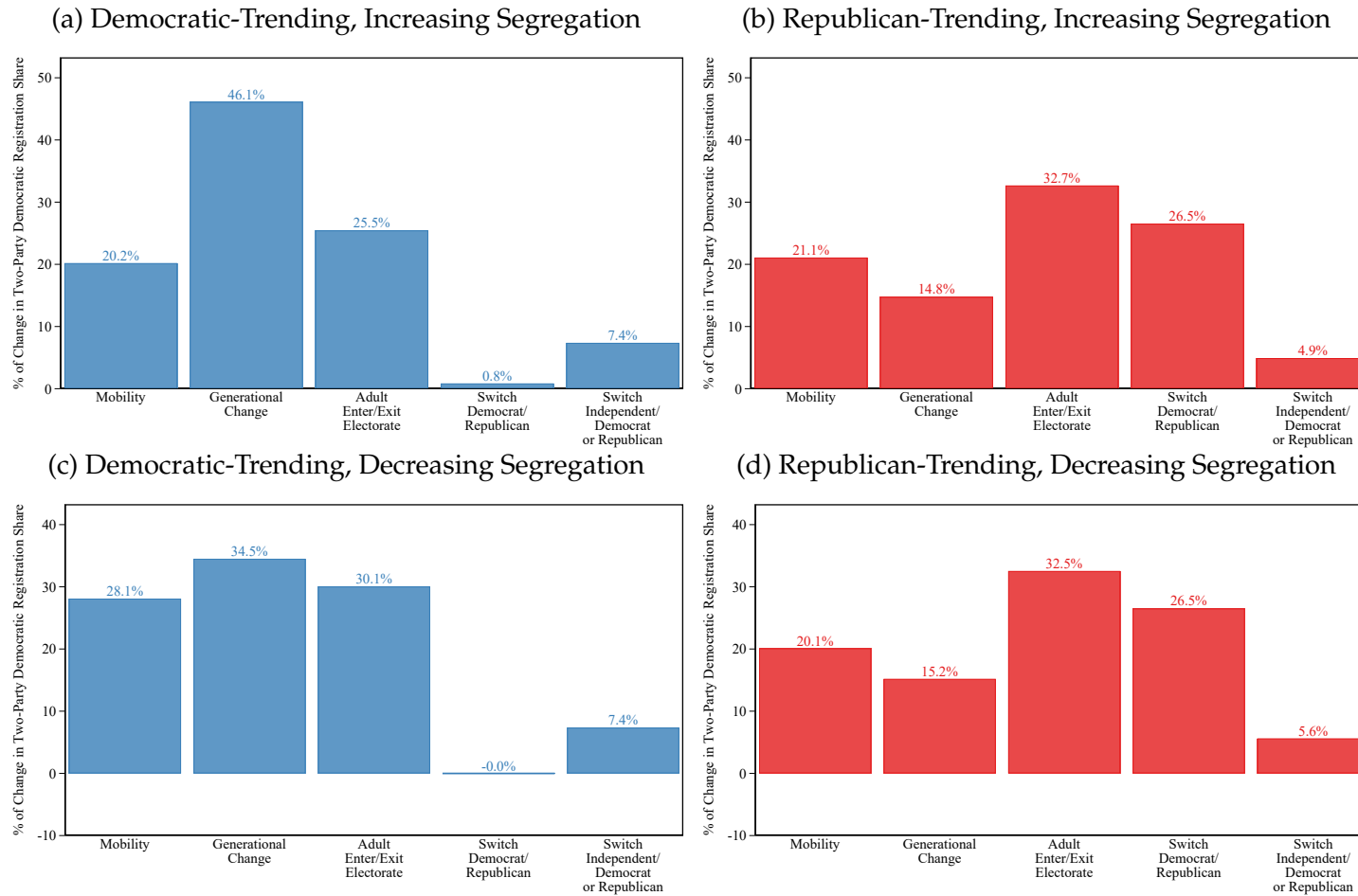
Notes: Each plot shows the percentage of the 2008-to-2018 change in Exposure to Democrats explained by different decomposition factors. All panels are based on Catalist data. Each panel represents a different group of counties. Specifically, we split counties into four groups based on whether, between 2008 and 2018, counties saw an increase vs. a decrease in Exposure to Democrats (Panels A and C vs. Panels B and D) and on whether they contributed to increasing vs. decreasing the variance of the Exposure to Democrats (Panels A and B vs. Panels C and D).

Figure S18: Factors Driving Changes in Exposure to Democrats by County Segregation Trends, TargetSmart Data



Notes: Each plot shows the percentage of the 2012-to-2020 change in Exposure to Democrats explained by different decomposition factors. All panels are based on TargetSmart data. Each panel represents a different group of counties. Specifically, we split counties into four groups based on whether, between 2012 and 2020, counties saw an increase vs. a decrease in Exposure to Democrats (Panels A and C vs. Panels B and D) and on whether they contributed to increasing vs. decreasing the variance of the Exposure to Democrats (Panels A and B vs. Panels C and D).

Figure S19: Factors Driving Changes in Exposure to Democrats by Census Tract Segregation Trends, TargetSmart Data



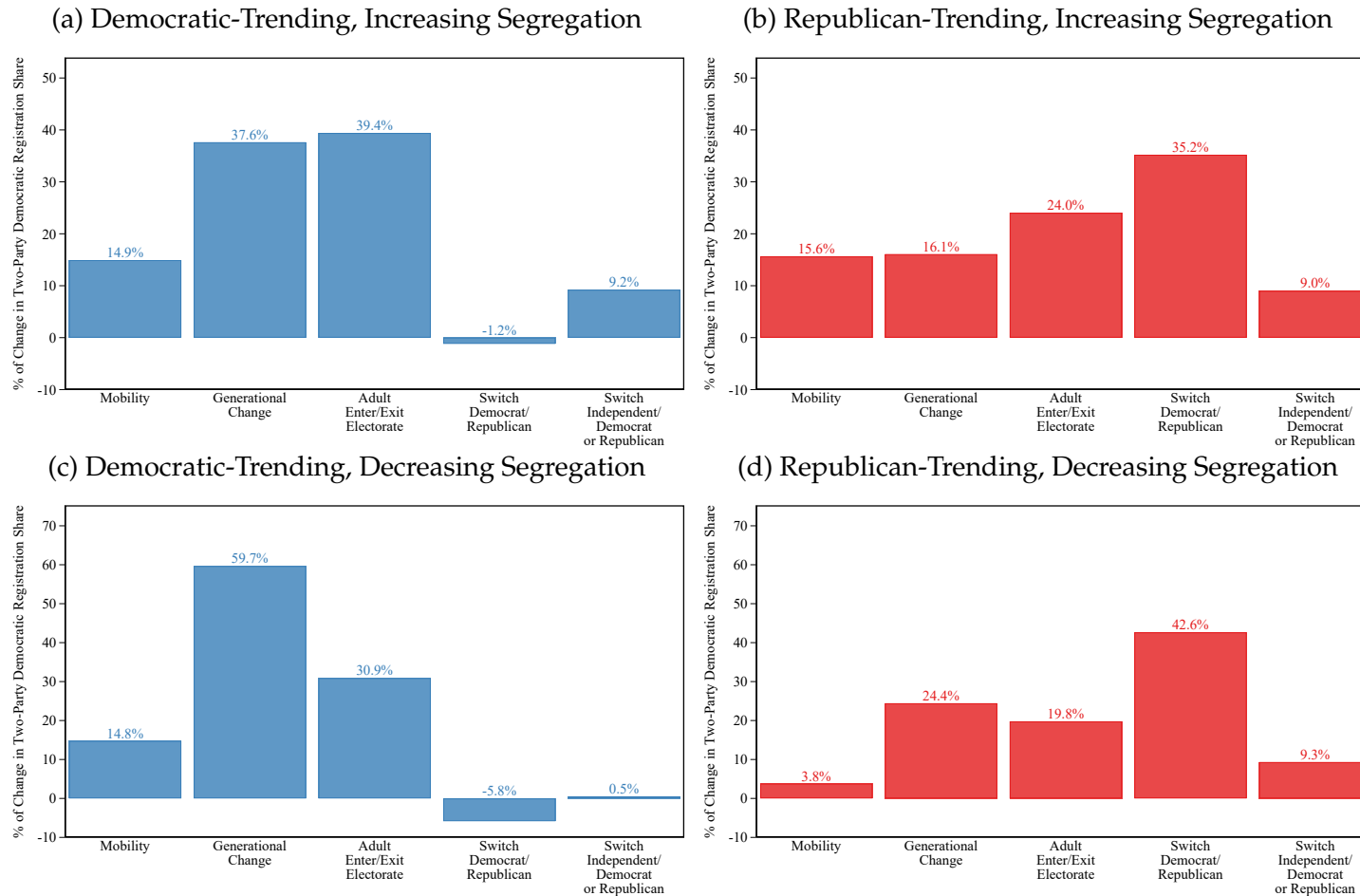
Notes: Each plot shows the percentage of the 2012-to-2020 change in Exposure to Democrats explained by different decomposition factors. All panels are based on TargetSmart data. Each panel represents a different group of Census Tracts. Specifically, we split Census Tracts into four groups based on whether, between 2012 and 2020, tracts saw an increase vs. a decrease in Exposure to Democrats (Panels A and C vs. Panels B and D) and on whether they contributed to increasing vs. decreasing the variance of the Exposure to Democrats (Panels A and B vs. Panels C and D).

## **F.7 Factor Decomposition by Extreme Geographic Partisan Segregation Trends**

Finally, we examine the strength of decomposition factors in counties and neighborhoods that made the largest contributions to partisan segregation. SI Figures S20 to S22 show the percentage change in Exposure to Democrats at the county level (using the Catalist and TargetSmart data) and at the Census Tract level (using the TargetSmart data) due to each decomposition factor. The geographic units are categorized based on whether they experienced an extreme increase or decrease in geographic partisan segregation. An extreme change is defined as being in the 10th and 90th percentile of the change in contribution to segregation, with positive values indicating a positive contribution to segregation and negative values indicating a negative one.

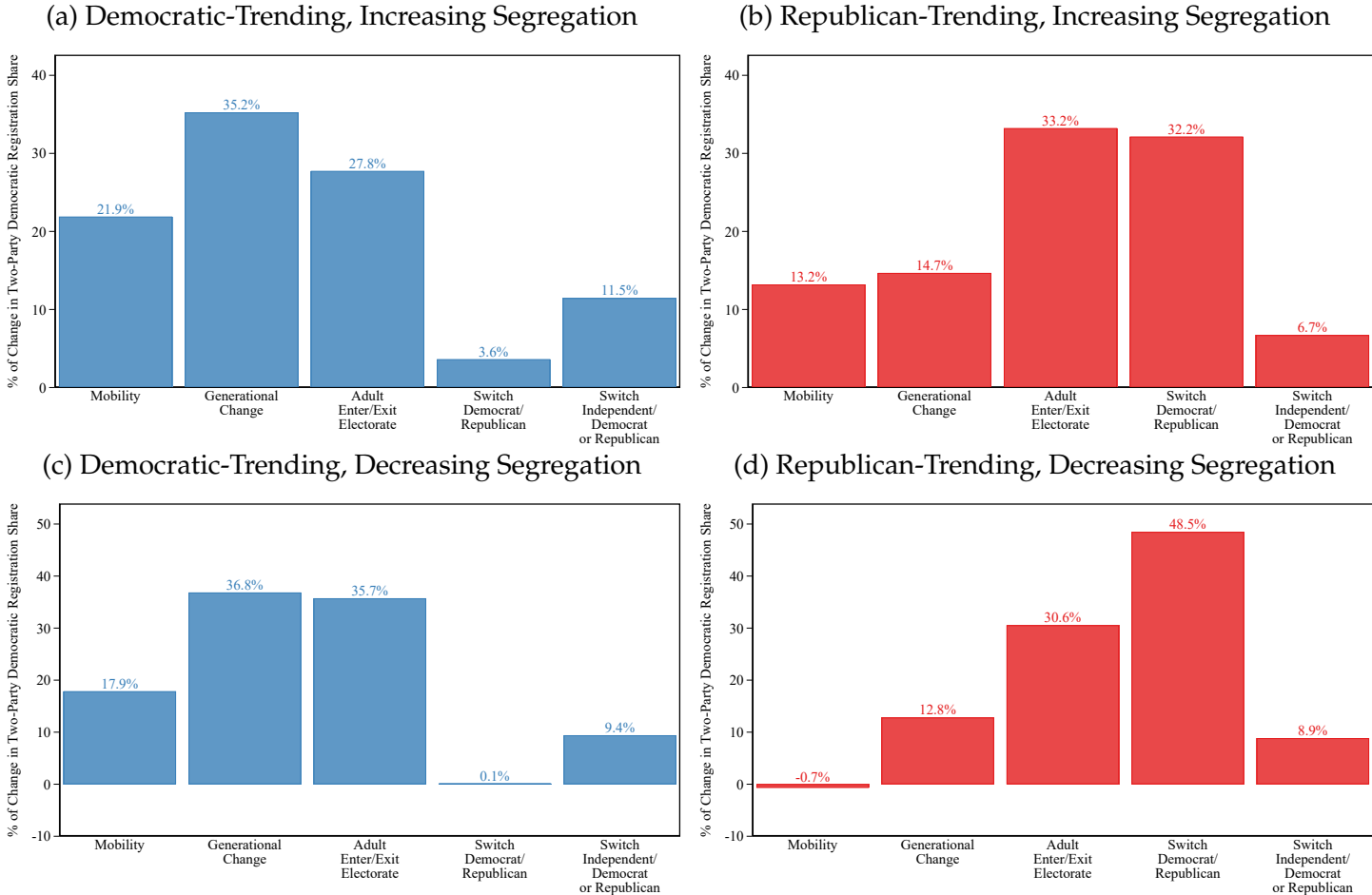
Overall, we find that the patterns in these subsets of counties reflect those from the previous sections. We also find limited differences across counties that experienced extreme increases versus decreases in partisan segregation, conditional on the partisan trend. In Democratic-leaning areas, generational change is the primary driver, while in Republican-leaning areas, party switching between the Democratic and Republican parties plays a more significant role, whether the area experienced an extreme increase or decrease in geographic partisan segregation. Additionally, adult entry/exit from the electorate accounts for a large portion of the change in the Exposure to Democrats in Democratic-leaning areas in the Catalist data and in both Democratic- and Republican-leaning areas in the TargetSmart data. At the neighborhood level, we find more variability across neighborhoods increasing or decreasing segregation.

Figure S20: Factors Driving Changes in Exposure to Democrats by Extreme County Segregation Trends, Catalist Data



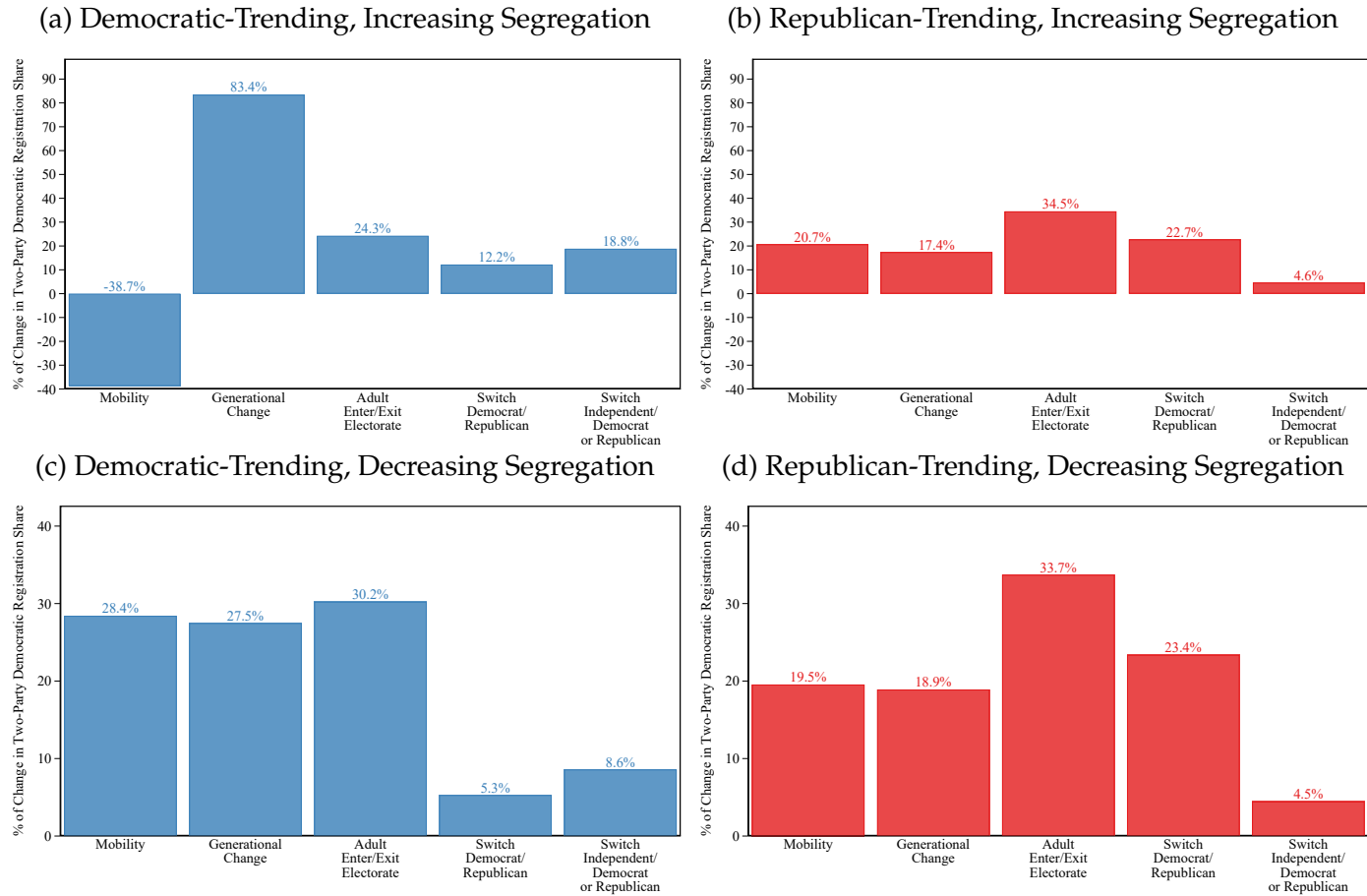
Notes: Each plot shows the percentage of the 2008-to-2018 change in Exposure to Democrats explained by different decomposition factors. All panels are based on Catalist data. Each panel represents a different group of counties. Specifically, we split counties into four groups based on whether, between 2008 and 2018, counties saw an extreme increase vs. an extreme decrease in Exposure to Democrats (Panels A and C vs. Panels B and D) and on whether they were among the 10% of counties that most contributed to increasing vs. the 10% of counties that most contributed to decreasing the variance of the Exposure to Democrats (Panels A and B vs. Panels C and D).

Figure S21: Factors Driving Changes in Exposure to Democrats by Extreme County Segregation Trends, TargetSmart Data



Notes: Each plot shows the percentage of the 2012-to-2020 change in Exposure to Democrats explained by different decomposition factors. All panels are based on TargetSmart data. Each panel represents a different group of counties. Specifically, we split counties into four groups based on whether, between 2012 and 2020, counties saw an extreme increase vs. an extreme decrease in Exposure to Democrats (Panels A and C vs. Panels B and D) and on whether they were among the 10% of counties that most contributed to increasing vs. the 10% of counties that most contributed to decreasing the variance of the Exposure to Democrats (Panels A and B vs. Panels C and D).

Figure S22: Factors Driving Changes in Exposure to Democrats by Extreme Census Tract Segregation Trends, TargetSmart Data



Notes: Each plot shows the percentage of the 2012-to-2020 change in Exposure to Democrats explained by different decomposition factors. All panels are based on TargetSmart data. Each panel represents a different group of Census Tracts. Specifically, we split Census Tracts into four groups based on whether, between 2012 and 2020, Census Tracts saw an extreme increase vs. an extreme decrease in Exposure to Democrats (Panels A and C vs. Panels B and D) and on whether they were among the 10% of Census Tracts that most contributed to increasing vs. the 10% of Census Tracts that most contributed to decreasing the variance of the Exposure to Democrats (Panels A and B vs. Panels C and D).

## G Changes in Geographic Partisan Segregation by Demographic Group

### G.1 Changes by Gender, Age, and Race Groups

We analyze how geographic partisan segregation has evolved *within* groups of citizens. Specifically, we compute the Exposure to Democrats separately for women and men, for voters of different age quartiles, and for white, Black, Hispanic, and registrants of other races. For each demographic group, we plot the distribution of the Exposure to Democrats across counties and Census Tracts.

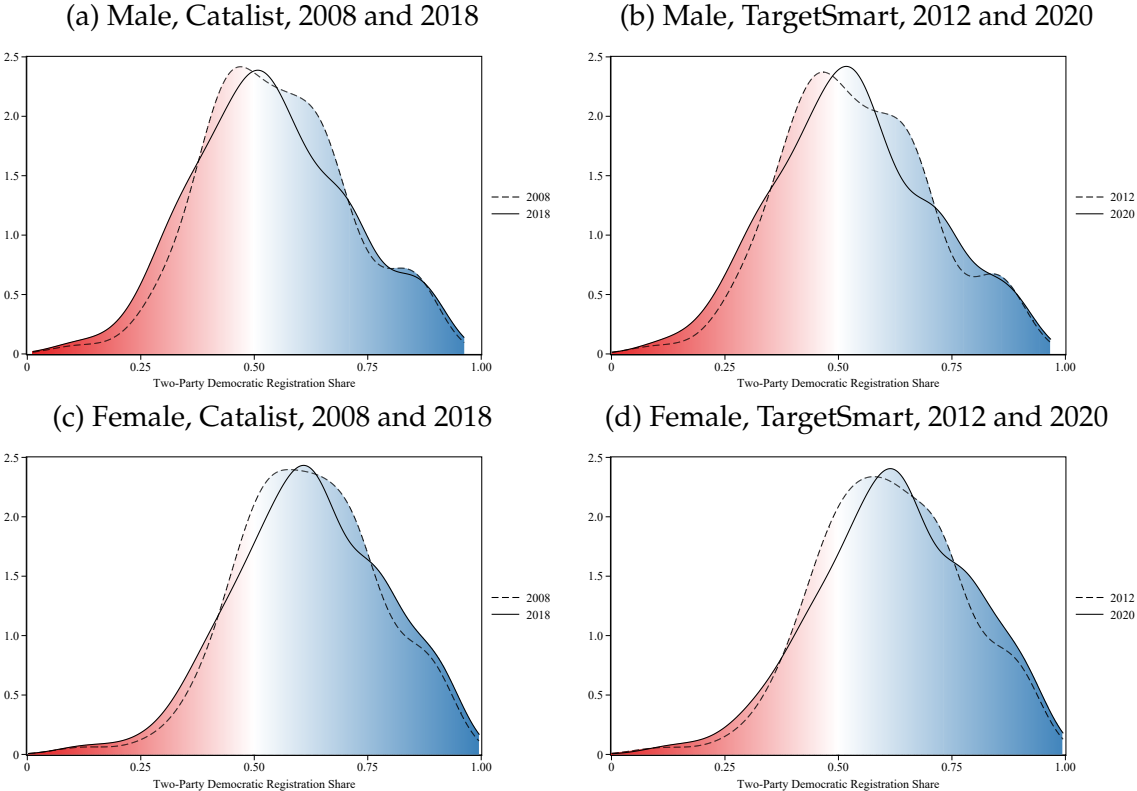
SI Figures S23 and S24 display the distributions of the male and female Exposure to Democrats across geographic units, weighted by sex-specific counts of registrants in each unit. Figure S23 shows the county distributions (using the Catalist data on the left, and the TargetSmart data on the right) while Figure S24 shows the Census Tract distributions. The figures demonstrate that partisan segregation has been increasing over time for both men and women. The weighted standard deviation in the Catalist data increased by 1.3 percentage points for men and 1.2 percentage points for women at the county level (compared to 1.1 and 1.0 percentage points, respectively, in the TargetSmart data), and by 0.9 percentage points for both men and women at the Census Tract level in the TargetSmart data.

SI Figures S25 and S26 show the weighted distributions by age quartile. We observe a widening of the distributions within age groups, although the shape and center of the distributions vary by age quartile. For young voters (i.e., Q1), there is a particularly pronounced leftward shift in the Democratic shoulder of the distributions at both the county and Census Tract levels over time. For older voters (i.e., Q2, Q3, and Q4), the increase in geographic partisan segregation has been driven primarily by growing counts of Republican registrants.

Figure 4 in the main paper displays race-specific distributions of Exposure to Democrats in counties, using the Catalist data, and in Census Tracts, using the TargetS-

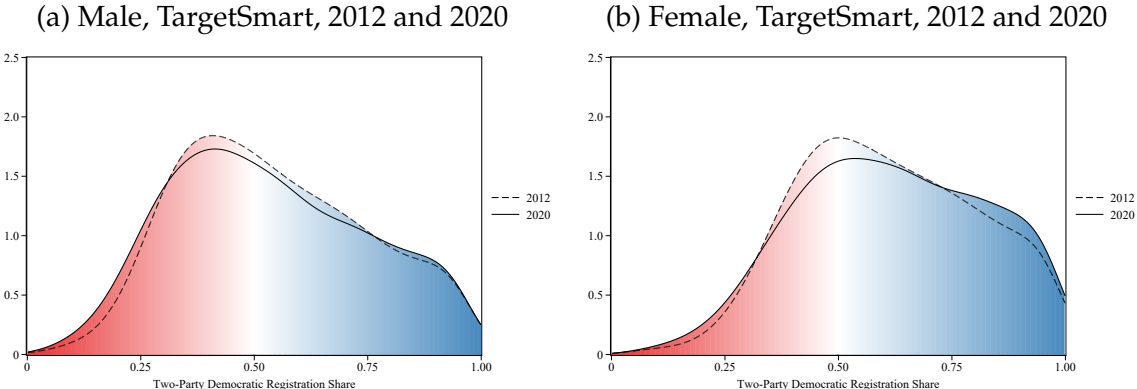


Figure S23: Distributions of County-Level Exposure to Democrats by Gender, Catalyst and TargetSmart Data



Notes: The figure plots kernel density estimates of the gender-specific county-level Exposure to Democrats. Panels A and B focus on registered male voters while Panels C and D focus on registered female voters. Panels are either based on 2008 and 2018 Catalyst data or 2012 and 2020 TargetSmart data. All kernel density estimates use a Gaussian kernel with bandwidth of 0.05, weighting by counts of voters in a given sample/year.

Figure S24: Distributions of Census Tract-Level Exposure to Democrats by Gender, TargetSmart Data



Notes: The figure plots kernel density estimates of the gender-specific Census Tract-level Exposure to Democrats. Panels A and B focus on registered male and female voters, respectively. Both panels are based on 2012 and 2020 TargetSmart data. All kernel density estimates use a Gaussian kernel with bandwidth of 0.05, weighting by counts of voters in a given sample/year.

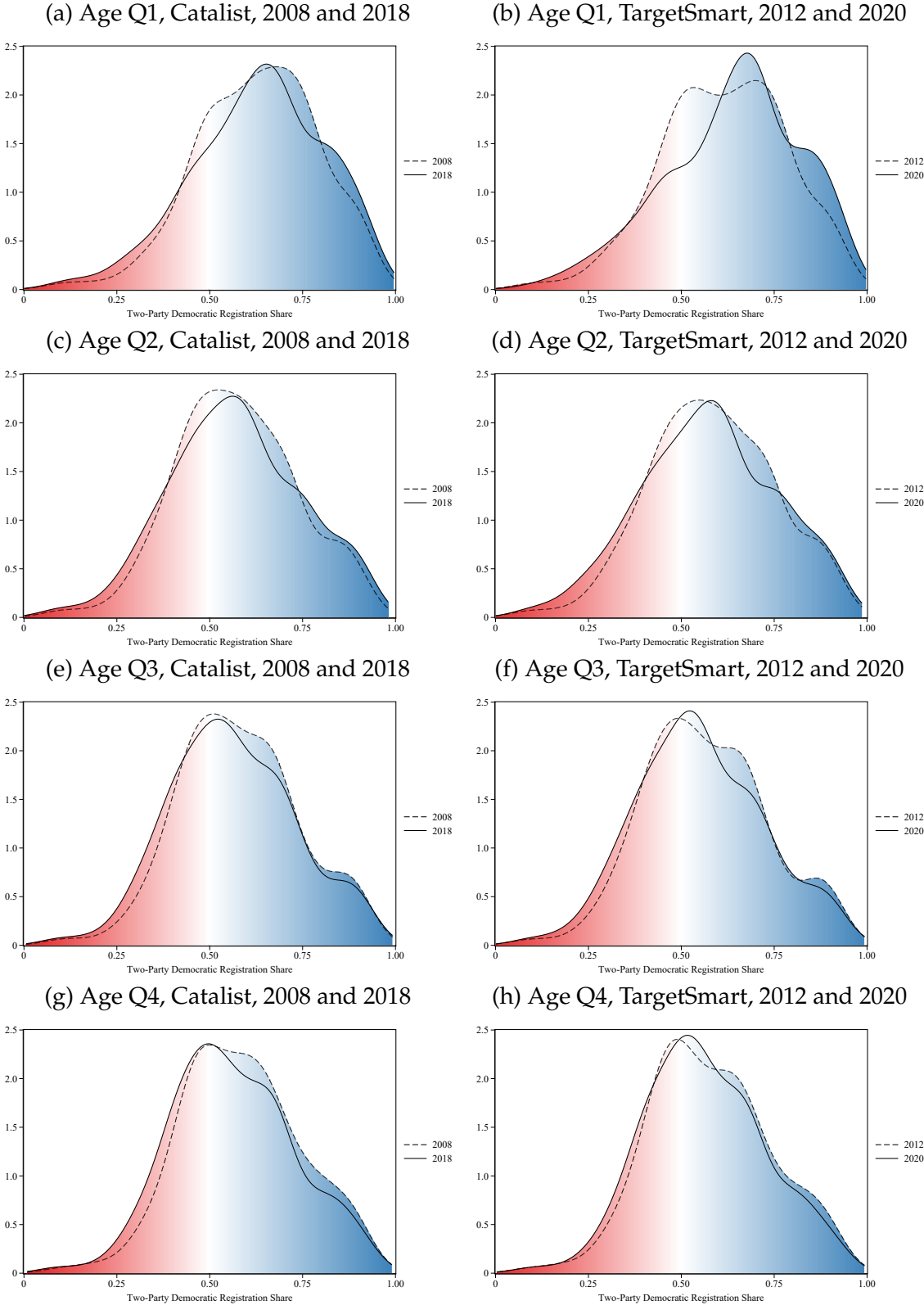
mart data. Corresponding county-level plots based on the TargetSmart data are shown in SI Figure S27.

## **G.2 Demographic Groups' Contribution to Factors Driving Changes in Exposure to Democrats**

Similarly as in Table 2 in the main paper, we present demographic groups' contribution to factors driving changes in Exposure to Democrats but using TargetSmart instead of Catalist data. SI Tables S23 and S24 display results at the county and Census Tract levels, respectively, which are consistent with those in Table 2.

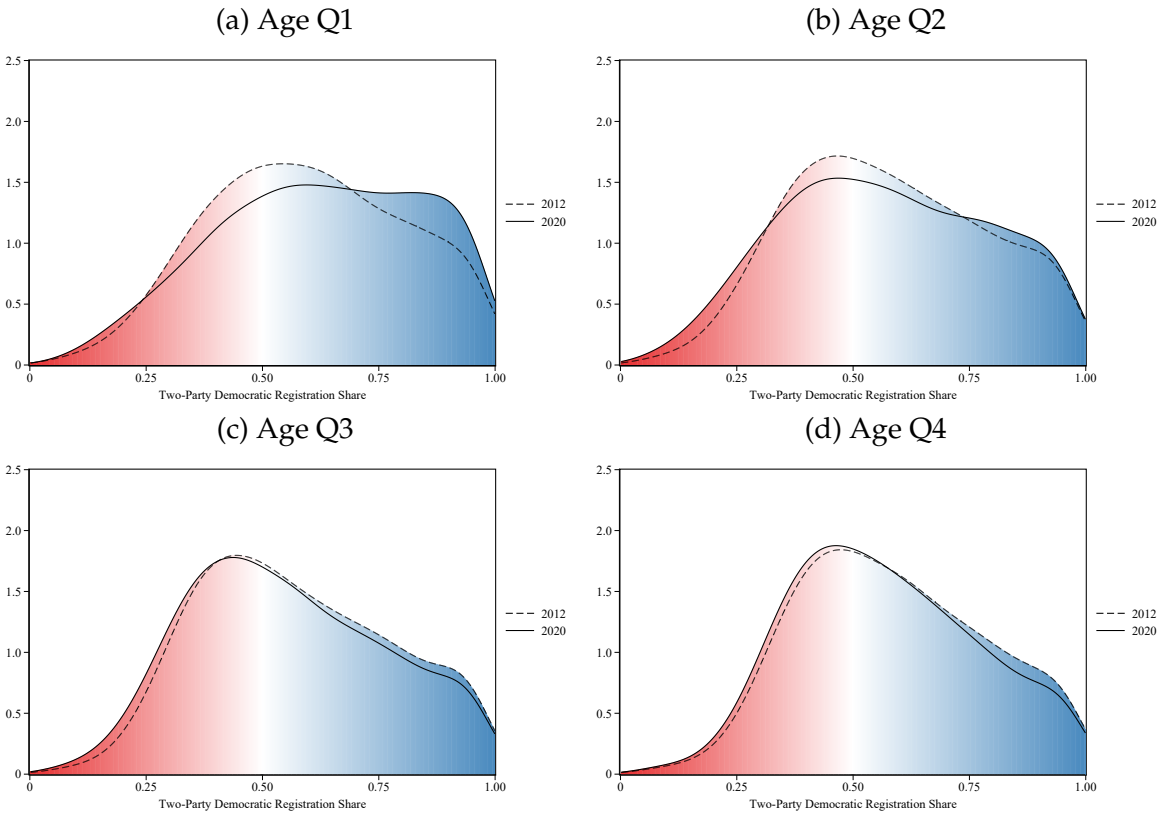
In Democratic-leaning areas, generational change is primarily driven by younger Democratic voters rather than the older population. Female voters, Hispanics, and individuals of other races (e.g., Asians and individuals with mixed races) particularly contribute to generational change in Democratic-leaning places, increasing the Exposure to Democrats at both the county and Census Tract levels. In Republican-leaning areas, Democratic voters who switch to the Republican party are more likely to be middle-aged or older males, predominantly in the second, third, and fourth quartiles of the age distribution. These voters are also mostly white, both at the county and Census Tract levels. Black voters, on the other hand, tend to resist the trend, as they remain slightly more inclined to become Democrats or Independents over the period.

Figure S25: Distributions of County-Level Exposure to Democrats by Age Quartile, Catalist and TargetSmart Data



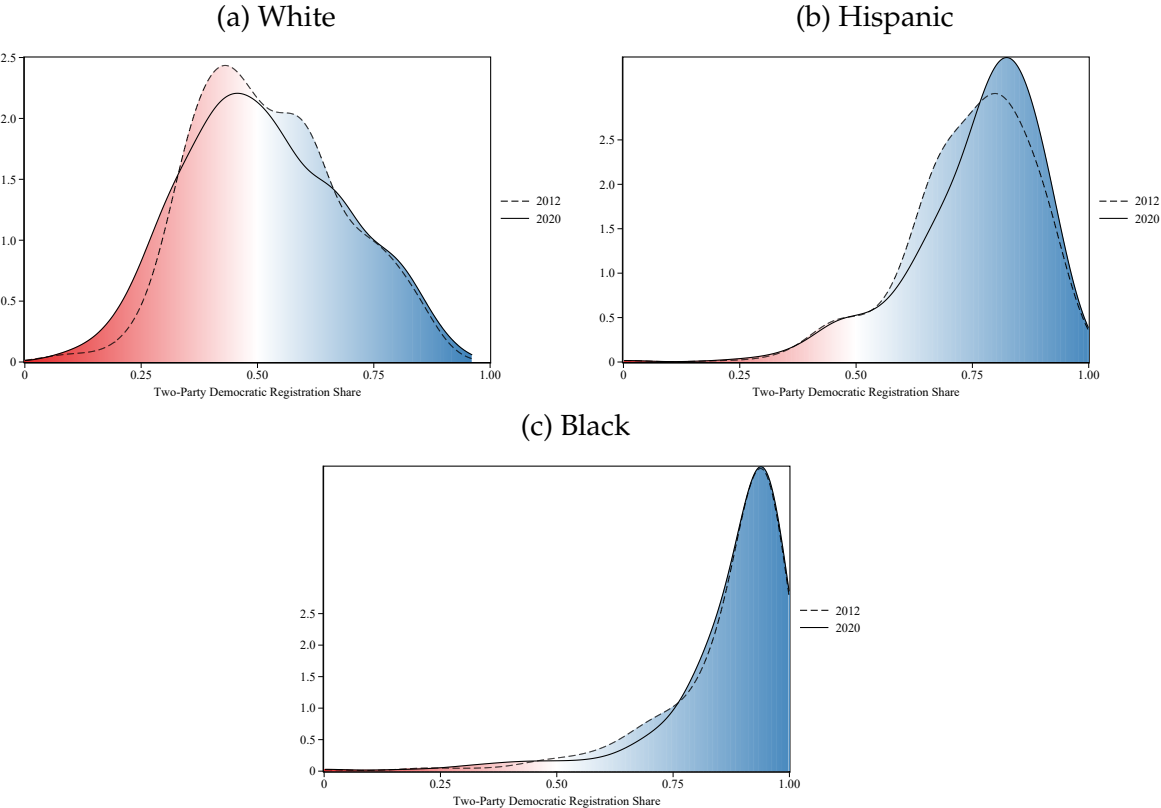
Notes: The figure plots kernel density estimates of the age quartile-specific county-level Exposure to Democrats. The left panels are based on 2008 and 2018 Catalist data while the right panels are based on 2012 and 2020 TargetSmart data. All kernel density estimates use a Gaussian kernel with bandwidth of 0.05, weighting by counts of voters in a given sample/year.

Figure S26: Distributions of Census Tract-Level Exposure to Democrats by Age Quartile, TargetSmart Data, 2012 and 2020



Notes: The figure plots kernel density estimates of the age quartile-specific Census Tract-level Exposure to Democrats. All panels are based on 2012 and 2020 TargetSmart data. All kernel density estimates use a Gaussian kernel with bandwidth of 0.05, weighting by counts of voters in a given sample/year.

Figure S27: Distributions of County-Level Exposure to Democrats by Race, TargetSmart Data, 2012 and 2020



Notes: The figure plots kernel density estimates of the race-specific county-level Exposure to Democrats. All panels are based on 2012 and 2020 TargetSmart data. All kernel density estimates use a Gaussian kernel with bandwidth of 0.05, weighting by counts of voters in a given sample/year.

Table S23: Demographic Groups' Contribution to Factors Driving Changes in Exposure to Democrats, Counties – TargetSmart Data

	More Democratic						More Republican					
	%	Factors					%	Factors				
		Mobility	Gen. Change	Adult Exit	Switch Dem./ Rep.	Switch Ind./ Dem. or Rep.		Mobility	Gen. Change	Adult Exit	Switch Dem./ Rep.	Switch Ind./ Dem. or Rep.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	
<b>Panel A. Overall Contribution</b>						<b>Panel A. Overall Contribution</b>						
	19.2	39.4	32.7	-1.5	10.1	12.1	14.3	33.6	33.7	6.3		
<b>Panel B. By Age Quartile</b>						<b>Panel B. By Age Quartile</b>						
Aged 18-27 (Q1)	20.6	13.8	45.0	10.8	29.9	5.7	17.8	1.3	10.0	7.7	4.3	0.7
Aged 28-42 (Q2)	25.4	2.1	-2.4	10.4	-13.2	1.9	23.5	4.2	1.6	11.6	10.1	2.6
Aged 43-57 (Q3)	26.1	2.3	-2.7	5.7	-7.1	1.8	26.5	4.5	1.2	9.4	11.2	1.9
Aged 58+ (Q4)	28.0	1.1	-0.4	5.8	-11.2	0.7	32.2	2.2	1.4	4.9	8.0	1.1
<b>Panel C. By Sex</b>						<b>Panel C. By Sex</b>						
Male	46.3	10.3	12.2	15.5	-1.9	4.8	46.5	7.3	12.1	18.7	17.6	3.7
Female	53.7	8.9	27.2	17.2	0.4	5.4	53.5	4.8	2.2	14.9	16.1	2.6
<b>Panel D. By Race</b>						<b>Panel D. By Race</b>						
Black	9.4	0.8	1.7	-0.2	-2.0	0.5	7.9	0.2	0.1	2.7	-0.1	-0.2
Hispanic	11.4	0.2	11.1	4.1	0.2	1.7	5.7	1.7	11.7	-5.5	7.3	1.5
White	71.9	11.2	4.8	6.9	1.4	3.7	83.4	5.8	-11.3	23.8	18.1	4.4
Other race	7.2	6.9	21.9	22.0	-1.1	4.2	3.0	4.4	13.7	12.6	8.4	0.6

Notes: The table is based on the TargetSmart data. Panel A reports the share of the change in Exposure to Democrats attributable to each decomposition factor, separately for counties that became more Democratic (columns 1-6) or more Republican (columns 7-12) between 2012 and 2020. Each cell in Panels B, C, and D shows how much a given demographic group (in rows) contributed to a given factor's share of the decomposition (in columns). Vertical sums within panels add up to a given factor's overall contribution reported in Panel A. For example, Democrats changing their party affiliation to Republican or vice versa explain 33.7% of the change in Exposure to Democrats in counties that became more Republican; 4.3, 10.1, 11.2, and 8.0 percentage points of this 33.7% are due, respectively, to voters aged 18-27, 28-42, 43-57, and 58+ (i.e., 4.3% + 10.1% + 11.2% + 8.0% = 33.7%, net of rounding error).

Table S24: Demographic Groups' Contribution to Factors Driving Changes in Exposure to Democrats, Census Tracts – TargetSmart Data

	More Democratic						More Republican					
	% Voters	Factors					% Voters	Factors				
		Mobility	Gen. Change	Adult Enter/Exit	Switch Dem./Rep.	Switch Ind./Dem. or Rep.		Mobility	Gen. Change	Adult Enter/Exit	Switch Dem./Rep.	Switch Ind./Dem. or Rep.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	
<b>Panel A. Overall Contribution</b>						<b>Panel A. Overall Contribution</b>						
		22.6	39.5	31.3	0.4	6.2	23.3	15.2	33.7	23.2	4.6	
<b>Panel B. By Age Quartile</b>						<b>Panel B. By Age Quartile</b>						
Aged 18-27 (Q1)	20.5	16.6	42.6	10.0	0.6	2.5	18.1	5.2	11.1	7.7	2.0	0.2
Aged 28-42 (Q2)	25.2	2.5	-1.6	10.2	-0.1	1.3	23.6	8.2	1.5	11.7	6.4	1.7
Aged 43-57 (Q3)	26.2	2.4	-1.8	5.3	0.05	1.6	26.5	6.5	1.2	9.0	8.5	1.6
Aged 58+ (Q4)	28.2	1.1	0.4	5.8	-0.2	0.7	31.8	3.4	1.4	5.3	6.4	1.1
<b>Panel C. By Sex</b>						<b>Panel C. By Sex</b>						
Male	46.3	11.3	13.9	14.9	-0.9	3.0	46.4	13.2	12.0	18.5	12.0	2.6
Female	53.7	11.3	25.7	16.4	1.3	3.2	53.6	10.2	3.2	15.2	11.2	2.0
<b>Panel D. By Race</b>						<b>Panel D. By Race</b>						
Black	8.2	2.3	2.1	0.5	0.2	0.3	9.5	0.6	56.7	1.8	-0.03	-0.04
Hispanic	11.3	2.5	12.1	7.2	0.1	1.0	6.2	7.3	-624.1	6.2	4.0	0.6
White	73.3	10.4	5.3	6.7	-0.01	2.2	81.1	8.8	1991.2	15.8	13.7	3.0
Other race	7.3	7.4	20.1	17.0	0.1	2.6	3.2	6.6	-1408.6	9.9	5.5	1.0

Notes: The table is based on the TargetSmart data. Panel A reports the share of the change in Exposure to Democrats attributable to each decomposition factor, separately for Census Tracts that became more Democratic (columns 1-6) or more Republican (columns 7-12) between 2012 and 2020. Each cell in Panels B, C, and D shows how much a given demographic group (in rows) contributed to a given factor's share of the decomposition (in columns). Vertical sums within panels add up to a given factor's overall contribution reported in Panel A. For example, Democrats changing their party affiliation to Republican or vice versa explain 23.2% of the change in Exposure to Democrats in Census Tracts that became more Republican; 2.0, 6.4, 8.5, and 6.4 percentage points of this 23.2% are due to, respectively, voters aged 18-27, 28-42, 43-57, and 58+ (2.0% + 6.4% + 8.5% + 6.4% = 23.2%, net of rounding error).

## References

- [1] J. R. Brown, E. Cantoni, S. Chinoy, M. Koenen, V. Pons, The Effect of Childhood Environment on Political Behavior: Evidence from Young U.S. Movers, 1992–2021, *Working Paper 31759*, National Bureau of Economic Research (2023).
- [2] D. Leip, *The Dave Leip's Atlas of the U.S. Presidential Elections*. (2021).