2022 Update to the EPI Methodology

Contents

1 About the MIT Election and Data Science Lab (MEDSL)

By applying scientific principles to how elections are studied and administered, MEDSL aims to improve the democratic experience for all U.S. voters. MEDSL was founded at MIT in 2017 by Charles Stewart III. We are a dedicated group of social scientists and researchers who are committed to improving democracy in the United States by promoting the application of scientific principles to the understanding of election administration.

The 2022 EPI was supported by the efforts of Samuel Baltz, Claire DeSoi, Zachary Djanogly Garai, Joelle Gross, Kate Murray, and Charles Stewart III at MEDSL. Previous versions were also supported by Abigale Belcrest, John Curiel, Stephen Pettigrew, Jack R. Williams, and Cameron Wimpy. MEDSL would like to thank the Pew Charitable Trusts for its initial support of the EPI, along with generous funding from the William and Flora Hewlett Foundation, Democracy Fund, and the provost of MIT.

2 Introduction

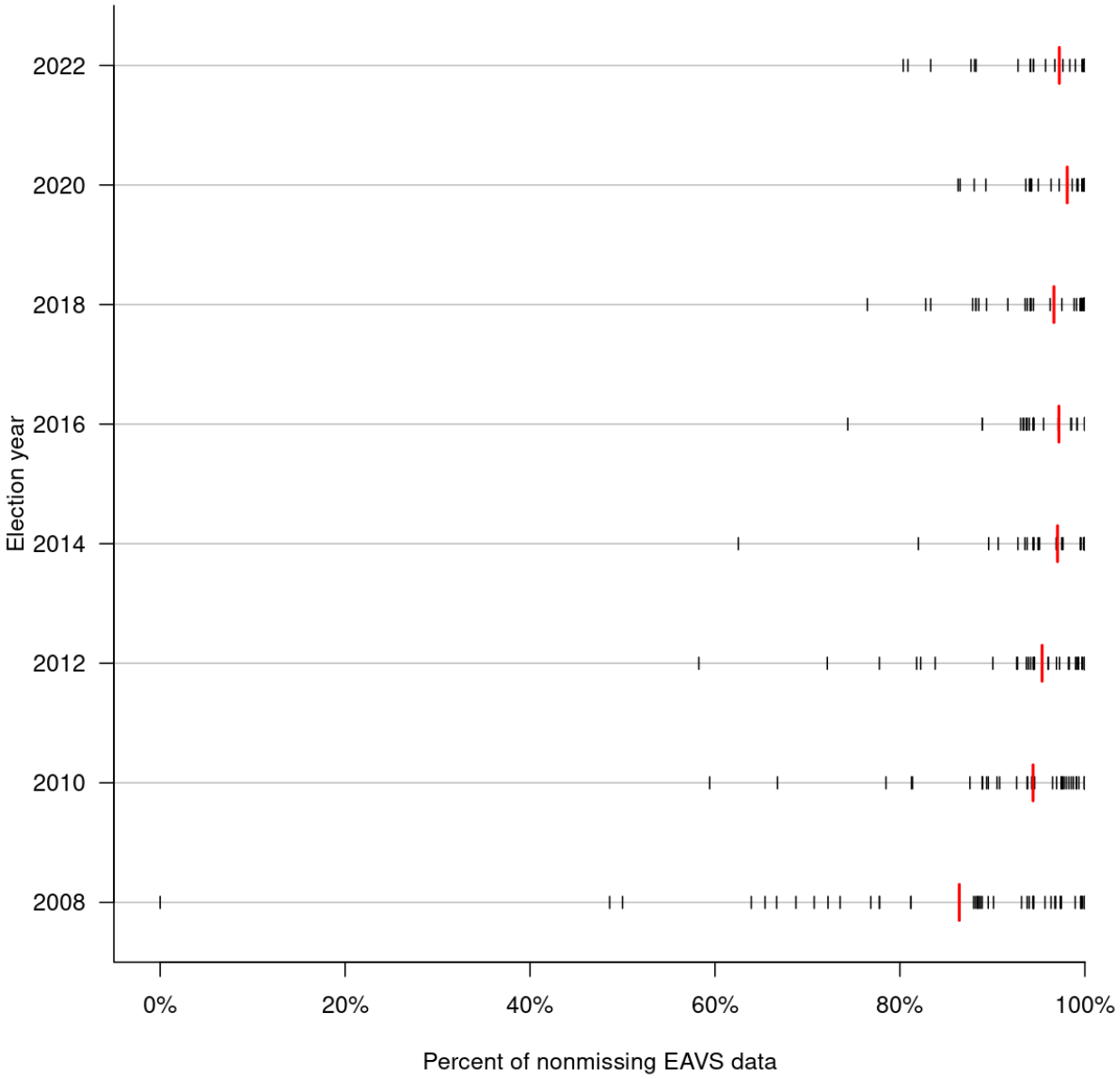
The Elections Performance Index (EPI) is the first objective measure created to comprehensively assess how election administration functions in each state. This document describes the creation and values of the index for the 2022 election, and is intended as a companion document to the 2020 EPI methodology document. To read the full methodology of the EPI (including more information about previous years, data sources, missing values, and scaling), please see the 2020 methodology document. No major updates were made to the EPI indicators, data sources, or calculation between 2020 and 2022.

3 Indicators in detail

3.1 Data completeness

Data completeness assesses states according the number of counties that report core statistics describing the workload associated with conducting elections. This indicator is based on the degree to which counties in a state reported 18 important metrics from the Election Administration and Voting Survey of the U.S. Election Assistance Commission (which we will refer to as the EAVS). Scores for this indicator are based on a low score of 0 percent from New York in 2008 to a high of 100 percent, which multiple states have achieved. For more information on this indicator's background and how it is calculated, please see the 2020 methodology document.

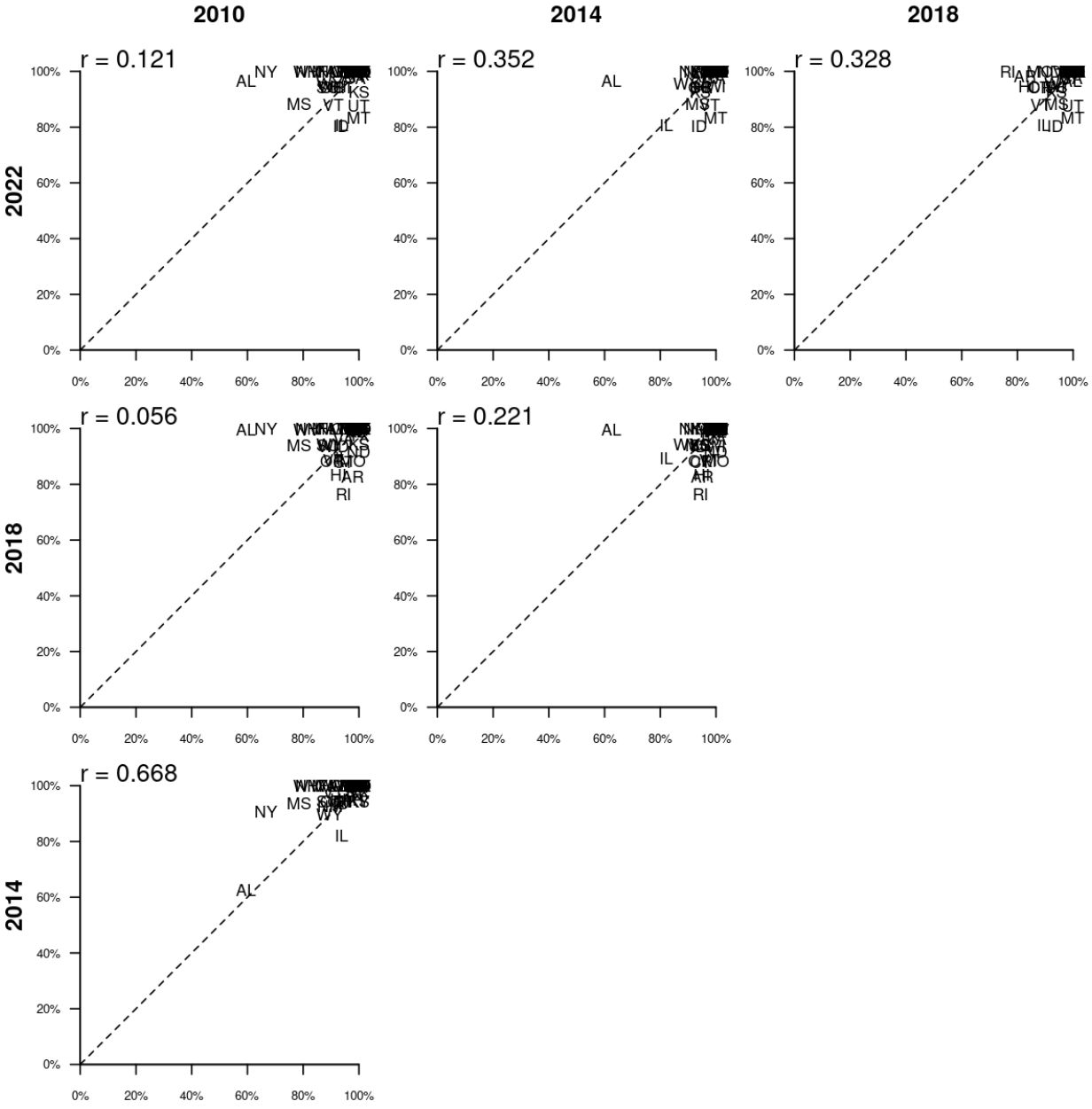
Figure 1: EAVS Data Completeness



For every state, Figure 1 plots the completeness rate of their jurisdictions' responses to the relevant EAVS items from 2008 to 2022. The smaller vertical lines in Figure 1 indicate the completeness rate of a particular state. The larger, red lines indicate the average for the year. Figure 1 shows that the completeness of the relevant EAVS data rose substantially from 2008 until 2016, at which point it stabilized, and has since remained well over 95 percent on average. In 2008 the average EAVS completeness was only 86 percent, and it has risen to 97 percent in 2022. This represents a very small slip since 2020, when the average completeness was 98 percent.

Figure 2 shows how EAVS completeness rates have changed state-by-state, comparing each of the last four midterm elections. The dashed lines in the figure indicate where observations for the two years are equal.

Figure 2: Percent Completeness on Key EAVS Questions



3.2 Disability Access (2020 –)

This indicator is based on responses to the Voting and Registration Supplement of the Current Population Survey, which is conducted by the U.S. Census Bureau. Specifically, it is based on the difference in turnout rates between people who reported having one of six disabilities and those who reported having none of these disabilities. This relies on a battery of questions from the CPS that were introduced in 2008.

Note that, until 2020, the EPI measured disability related problems using a different strategy. Previously, this indicator was based on answers to the question put to all non-voters, "What was the main reason you did not vote?" See Section 4.2 of the 2020 EPI methodology document for a discussion of the previous indicator. We switched to using the difference in turnout rates in the 2020 EPI, and in that document we examine the stability of the underlying variables and the trends they have exhibited over the last several election cycles.

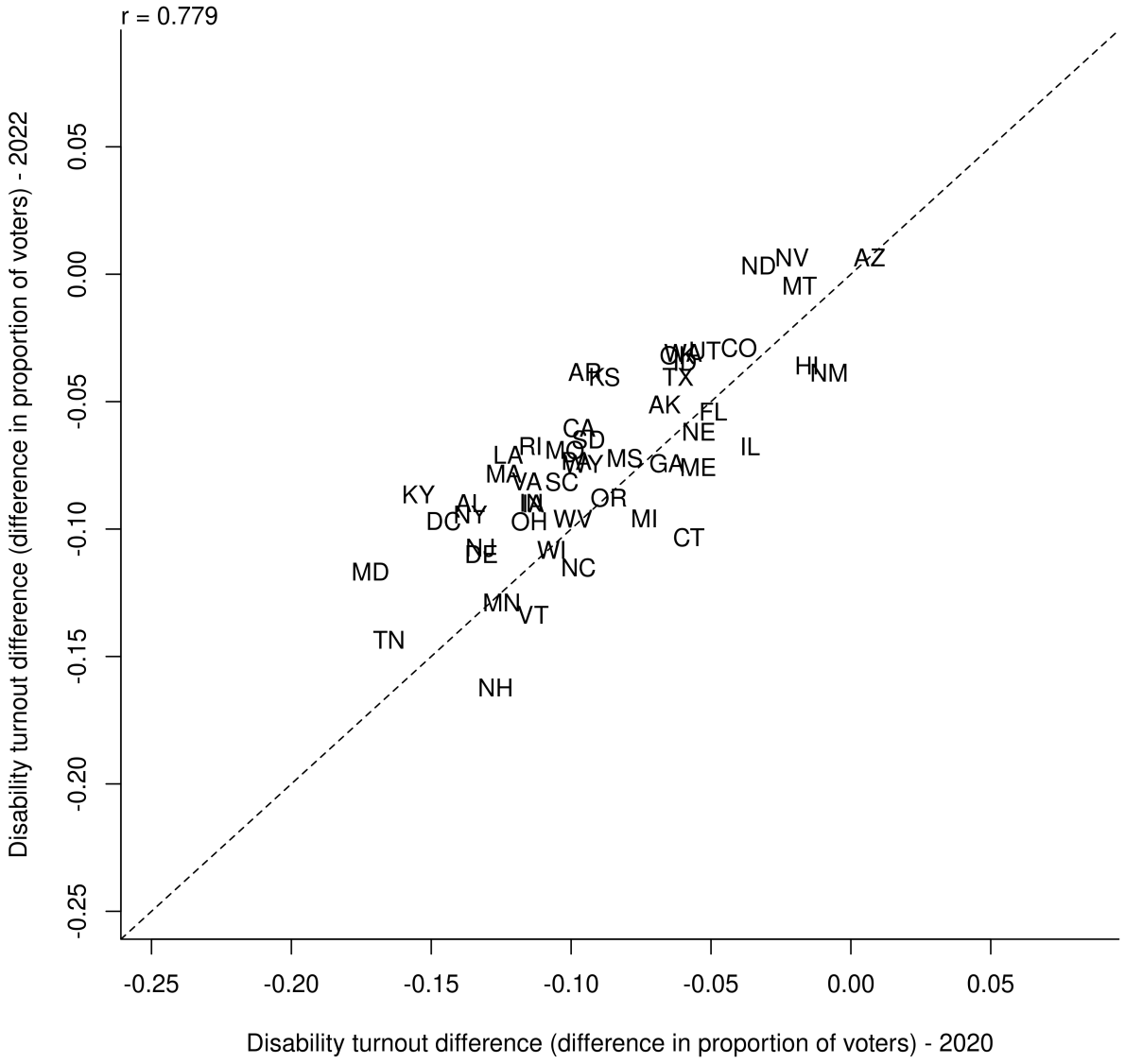
3.2.1 Comparisons over time

Because this indicator was first introduced in 2020, the indicator cannot be compared to previous values in a midterm election. However, we can offer two points of comparison.

First, in the 2020 EPI methodology document, we demonstrated that the underlying variables in the Voting and Registration Supplement to the Current Population Survey have substantial stability within each state across election years, by examining intercorrelation of this measure at the state level across seven federal elections (2008, 2010, 2012, 2014, 2016, 2018, and 2020). This means that if we had begun calculating this indicator years earlier, it too would have had stable values over time.

Our second means of examining changes in this indicator over time is to compare the value of this indicator in each state in 2022 to that state's indicator value in 2020. We offer this comparison with the caveat that some differences might be expected due to systematic differences between midterm and presidential election years. However, in the 2020 EPI methodology document we also showed that there is not substantial variation in the underlying variables between these two types of elections.

Figure 3: Difference in Turnout Rates Comparing People with and without Disabilities



3.3 ERIC Membership (2020 –)

3.3.1 Data source

Electronic Registration Information Center (ERIC)

This indicator is a binary coding of whether or not a state was a member of the Electronic Registration Information Center when the 2022 election was held.

As of the 2022 Election, 33 of the 51 states or Washington, D.C. were members of ERIC. While the measure is based simply on a binary coding of whether a state is a member of ERIC, this is one of the two indicators introduced in the 2020 EPI that is intended to increase states' scores, and never reduce them. If a state is a member of ERIC, they receive full points for this indicator, but if the state is not a member of ERIC, their EPI score is calculated without including this indicator.

The specific timing of a state's membership is a subtle question for this variable. On the one hand, if a state is officially approved as an ERIC member before the election in question, the state is coded as an ERIC member. On the other hand, several states left ERIC in the months or years after the 2022 election. For those states, we code their status at the time of the election. So, if a state was a member of ERIC during the 2022 election but left shortly after, it receives credit for ERIC membership in this indicator for 2022.

3.3.2 Comparisons over time

Similar to the disability access indicator, because this indicator was first introduced in the 2020 EPI, there is only one election to compare it to. This comparison shows every state that joined or left ERIC between 2020 and 2022. However, because it is a simple binary coding, it is easy to construct the full history of this indicator. That history was shown up to 2020 in the 2020 EPI methodology document.

There were only four changes in 2022. Of the 33 states in ERIC during the 2020 election, 1 left before the 2022 election (LA), while 4 joined after the 2020 election but before the 2022 election (IL, MA, ME, NJ). More states have subsequently left, but for the purposes of the 2022 EPI, they were considered ERIC members.

Table 1: ERIC membership by election year

year	states
2020	AK, AL, AZ, CO, CT, DC, DE, FL, GA, IA, KY, LA, MD, MI, MN, MO, NM, NV, OH, OR, PA, RI, SC, TX, UT, VA, VT, WA, WI, WV
2022	AK, AL, AZ, CO, CT, DC, DE, FL, GA, IA, IL, KY, MA, MD, ME, MI, MN, MO, NJ, NM, NV, OH, OR, PA, RI, SC, TX, UT, VA, VT, WA, WI, WV

3.4 Mail ballots rejected

3.4.1 Data source

Election Administration and Voting Survey

The use of mail ballots has grown significantly over the past two decades as states have expanded the conditions under which absentee voting is allowed, a trend that was substantially accelerated during the COVID-19 pandemic and the 2020 election. Not all mail ballots returned for counting are accepted for counting, and this indicator measures that rejection rate.

Figure 4: Domestic Mail Ballot Rejection Rates by County

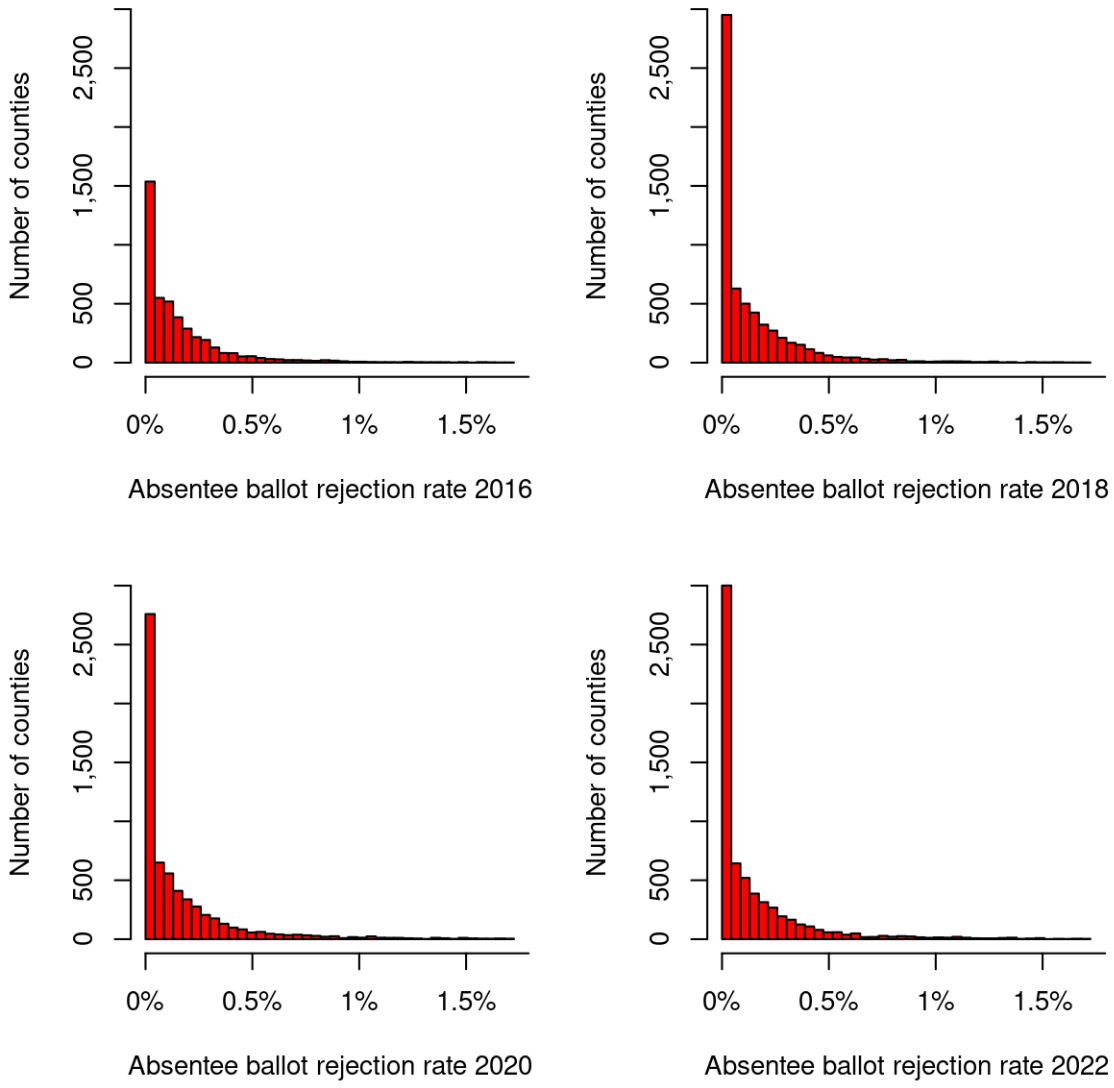


Figure 4 shows that, just as in other recent elections, the share of mail-in ballots rejected was extremely low in 2022. In most localities, only a fraction of a percent of mail-in ballots, if any, were rejected. Note that the difference between the total number of counties in 2016 and the other years is due to how jurisdictions were counted in the EAVS datasets in those years.

Figure 5: Logged Domestic Mail Ballot Rejection Rates by County

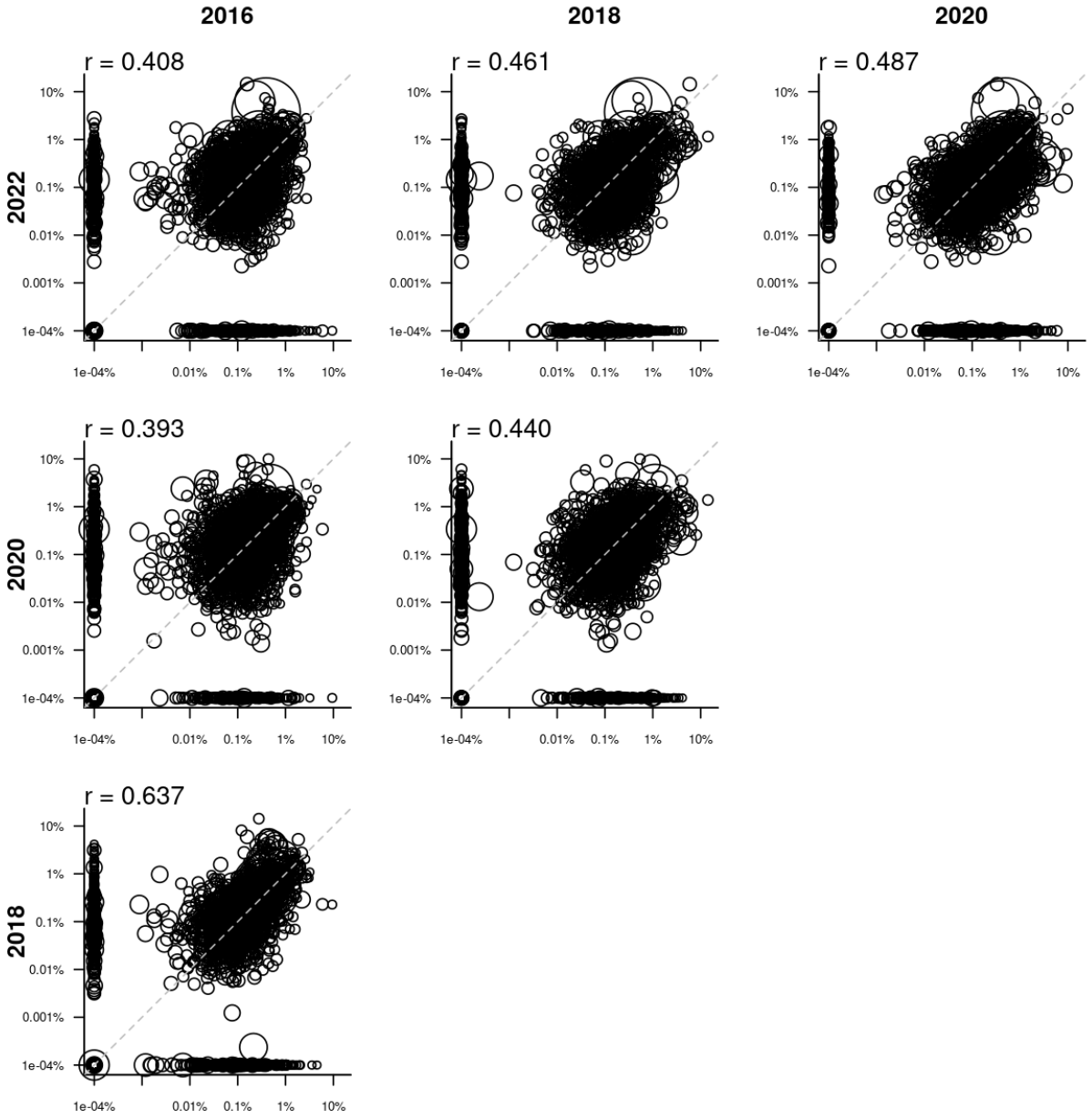
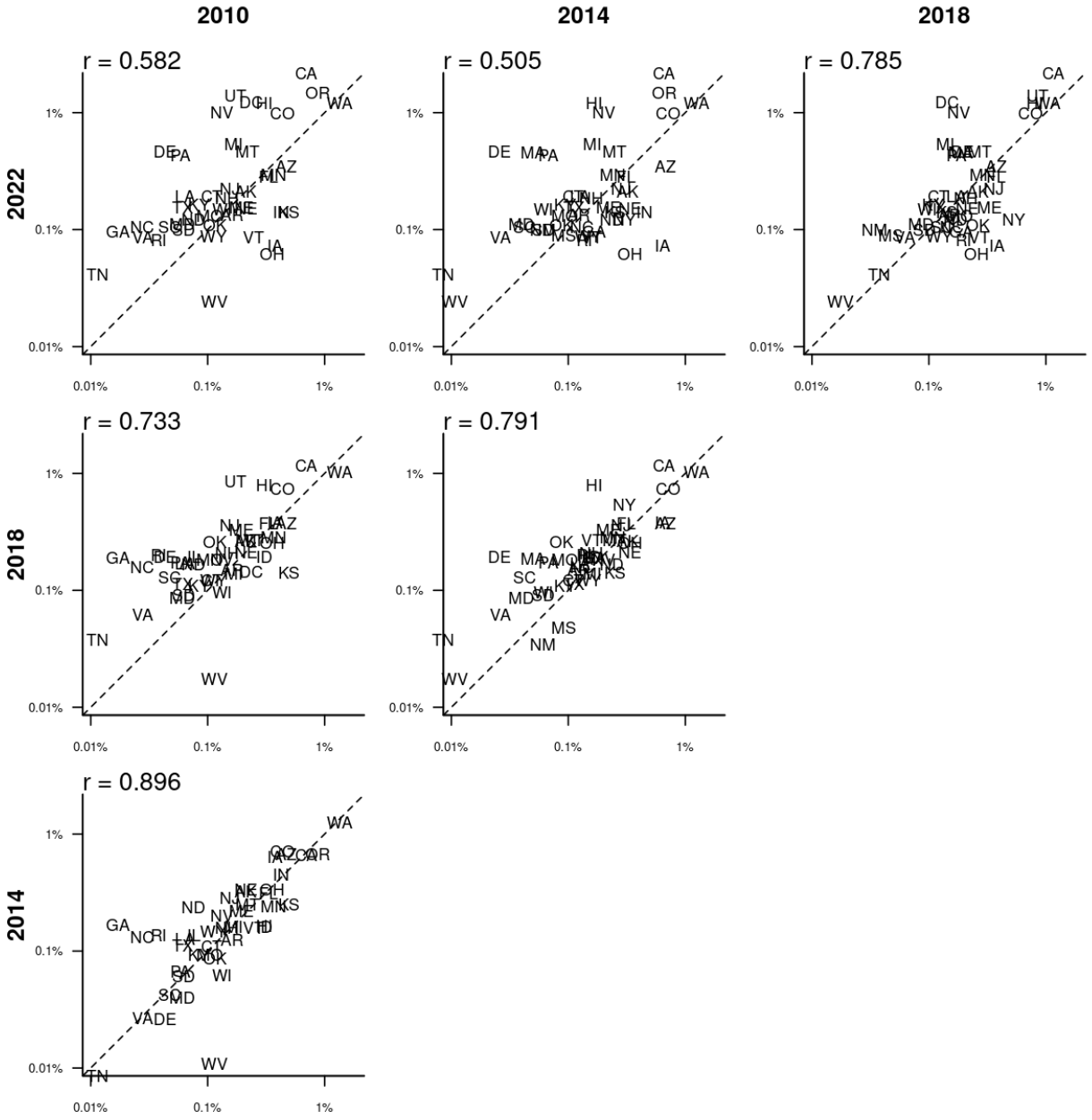


Figure 5 shows that, at the county level, there were few major changes in mail-in ballot rejection rates between the most recent three elections and 2022. The following figure, Figure 6, shows that these rates have actually very slightly improved overall, when comparing 2022 to the previous three midterm elections at the state level. Even as many more ballots were mailed in, most states slightly improved their mail-in ballot rejection rates between 2018 and 2022.

Figure 6: Logged Domestic Mail Ballot Rejection Rates by State



3.5 Mail ballots unreturned

This indicator measures the percent of ballots not returned of all ballots transmitted in a given election. Since the 2018 EPI, all-mail states or those with over 50% by-mail voting have been excluded from this indicator, to avoid imposing an inaccurate penalty on them.

Figure 7 shows that the number of counties with a given absentee ballot nonreturn rate was well in line with the previous three elections. Note that while the histogram for 2022 has a spike around 25% of absentee ballots nonreturned or more, most of these observations are not exactly on the mark of 25%, and are spread around states. While it is a reasonable worry that ths spike is mainly due to some kind of rounding process occurring in the background, there is no one source of clearly unusual data contributing to that jump. It may actually be a real artifact of the granularity induced by the fact that some small towns or counties may have only single-digit numbers of ballots sent out, so fractions with small denominators like 1/4 are possible in more counties than many of the other bars in the plot. Indeed, more than half of the counties which reported a nonreturn of 0.25 sent out just 4 mail-in ballots and had only 3 returned. Also, as typical nonreturn rates fall, these cases may cause percentages like 25% to stand out more from the rest of the histogram. The presence of such a spike in one election and not another could be induced by differences in which counties responded to this EAVS question, but in this case it may also be an artifact of the increasing use of vote by mail after the start of the 2020 pandemic: as absentee ballots have become more commonly used across the country, more very small jurisdictions may be transmitting small numbers of ballots, and the granularity of which fractions are possible may matter more in structuring the shape of these plots.

Figure 8 compares absentee ballot non-return rates to the previous three elections at the county level, and Figure 9 compares the indicator in 2022 to the previous three midterm elections at the state level. As with absentee ballot rejection rates, there is a tight correlation between a county or a state's past performance in this indicator, with very few large swings within a state over time. Since the last midterm election in 2018, nonreturn rates have become very slightly better on average.

Figure 7: Domestic Mail Ballot Nonreturn Rates by County

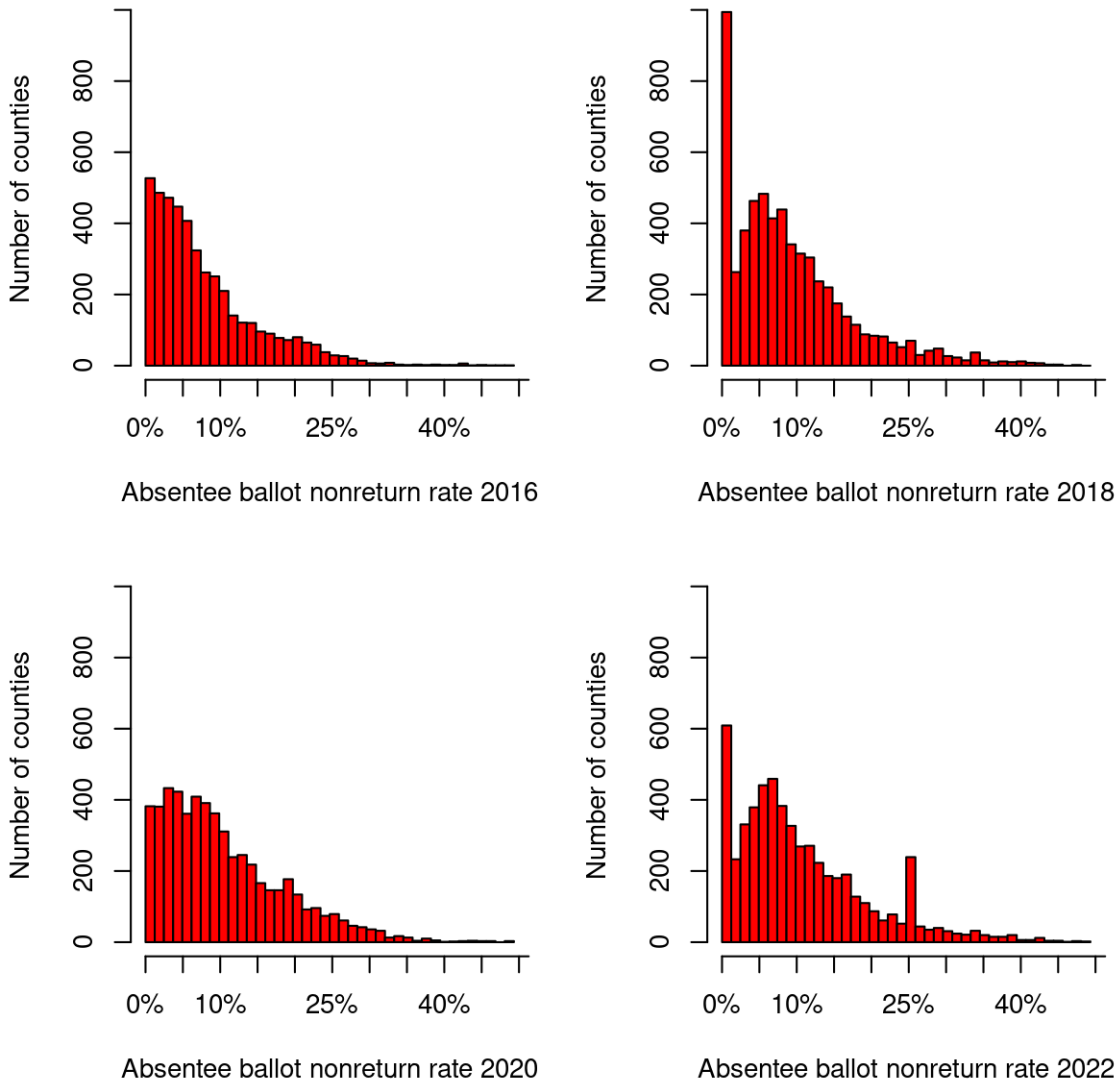


Figure 8: Logged Domestic Mail Ballot Nonreturn Rates by County

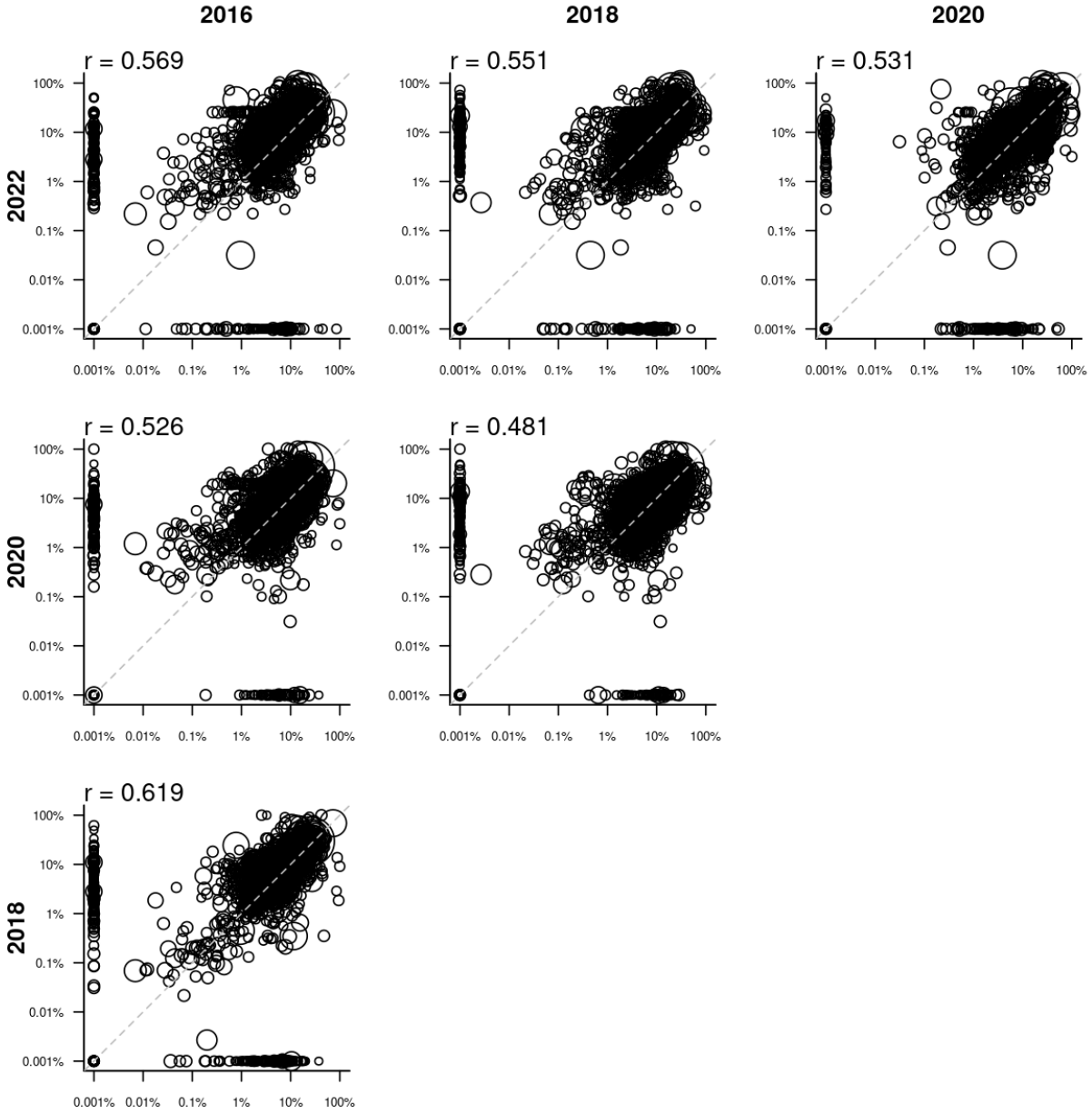
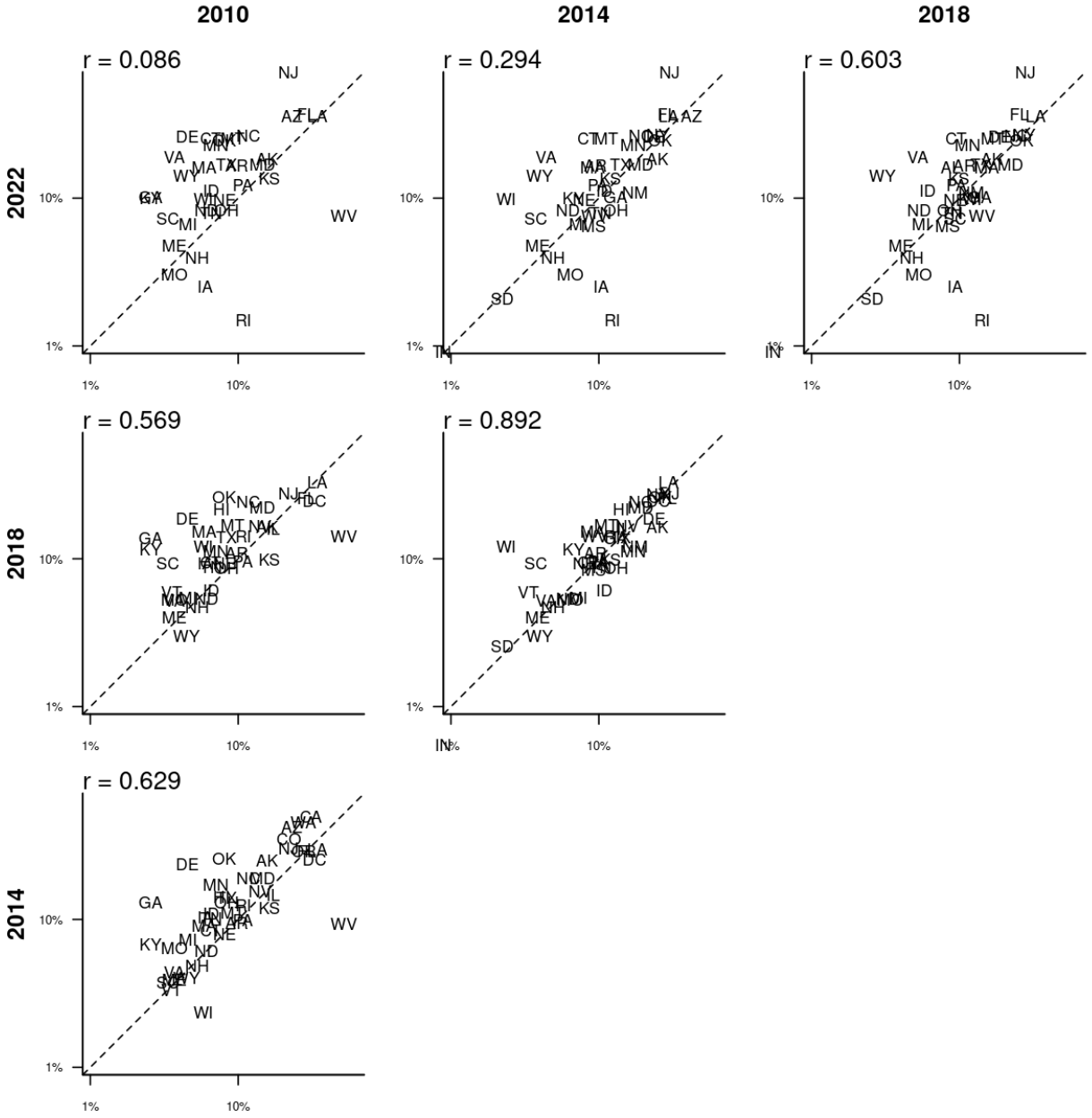


Figure 9: Logged Domestic Mail Ballot Nonreturn Rates by State



3.6 Military and overseas ballots rejected

In recent years, increasing attention has been paid to the ability of overseas voters, especially those serving in the U.S. military, to vote in federal elections. Military and overseas voters face a number of obstacles to voting. A measure of these obstacles is the fraction of ballots returned by military and overseas voters that are then rejected.

By far, the principal reason ballots sent to UOCAVA voters are rejected is that the ballots are received by election officials after the deadline for counting. The share of these ballots rejected for this reason has varied since 2010, but has been in the range of 30 to 40 percent. Despite the passage of the MOVE Act, the percentage of UOCAVA ballots rejected because they missed the deadline has not obviously declined. However, reporting about why UOCAVA ballots are rejected is lacking.

Figure 10: UOCAVA Ballot Rejection Rates by County

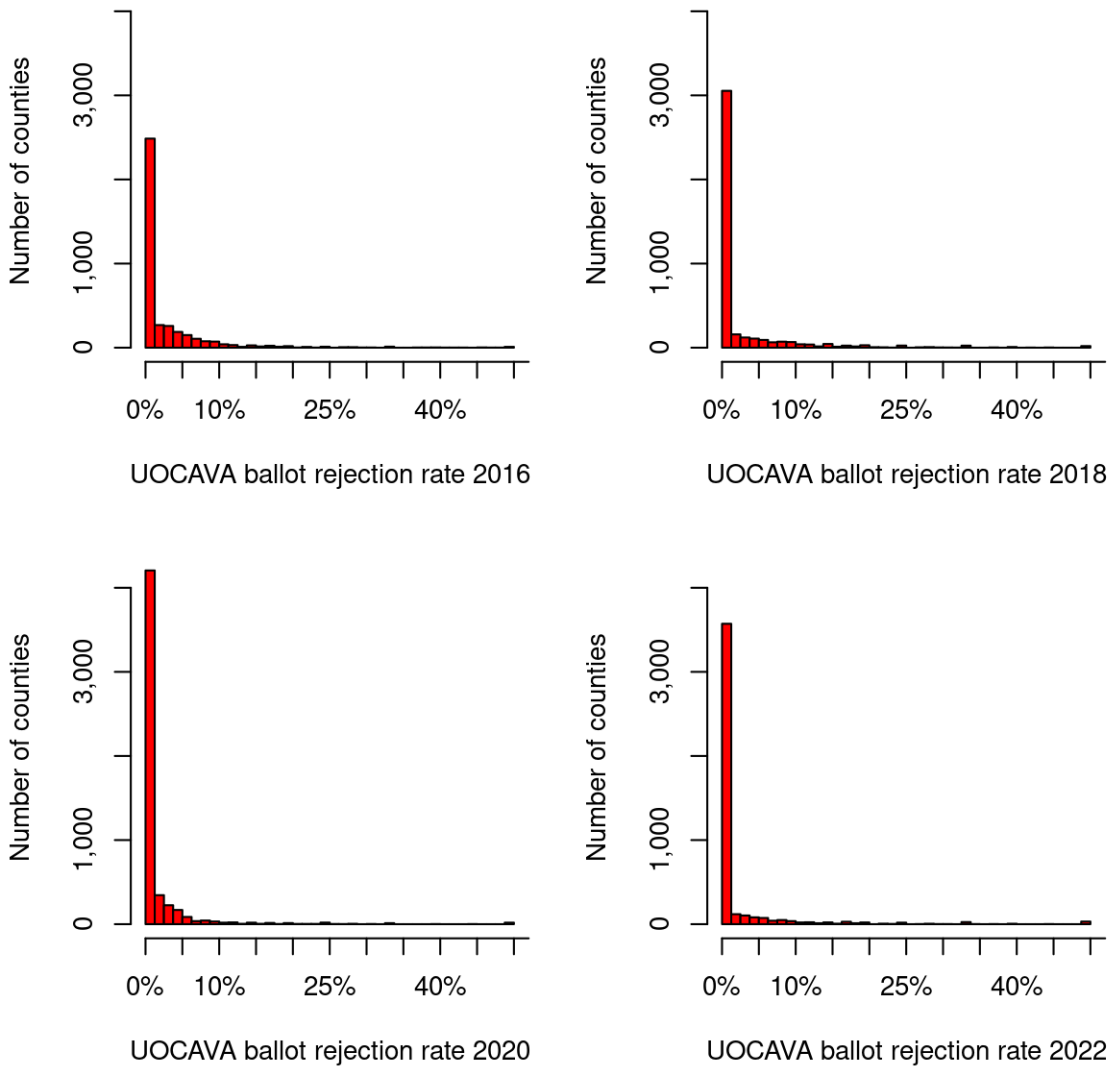


Figure 11: Logged UOCAVA Ballot Rejection Rates by County

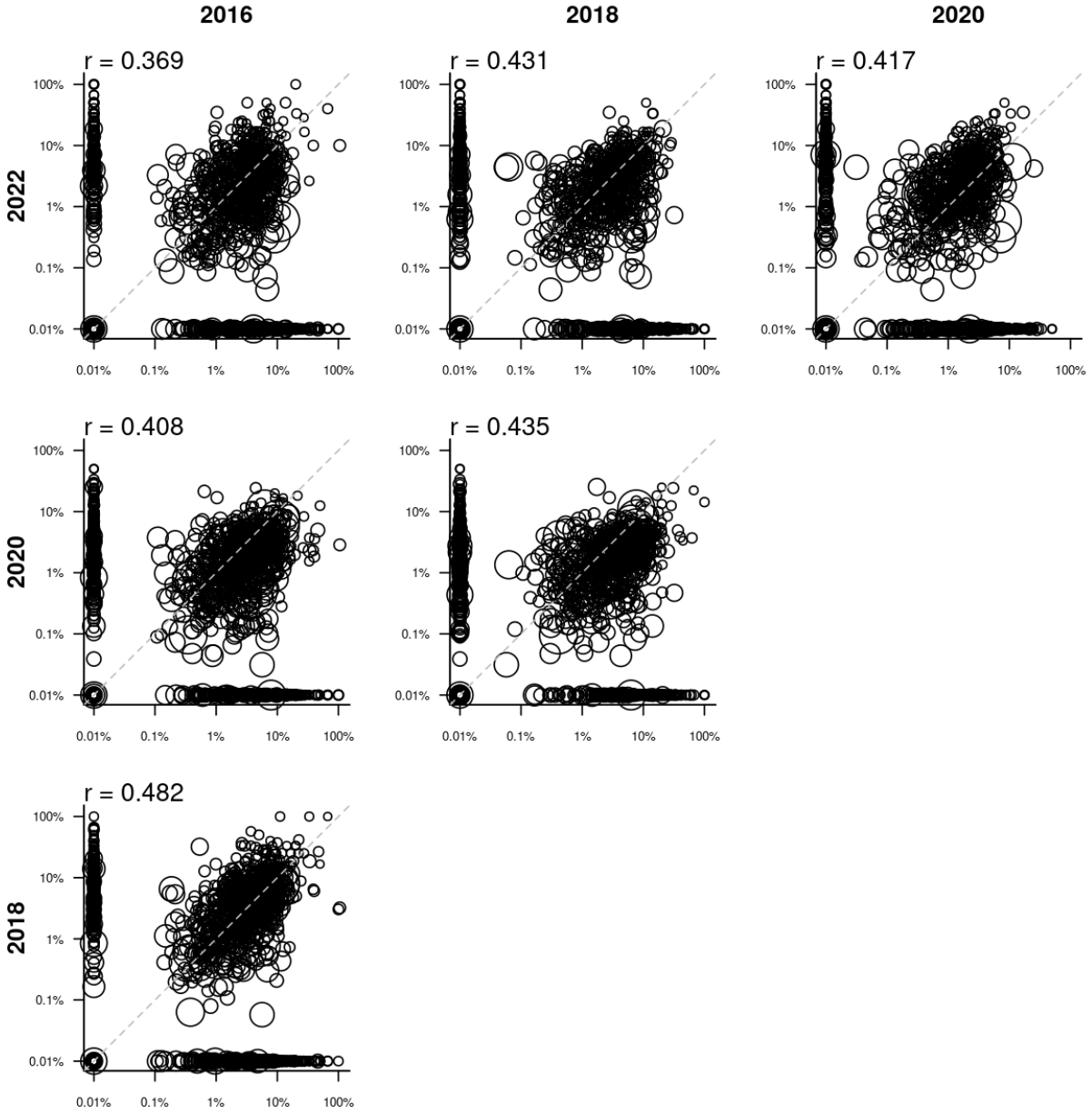
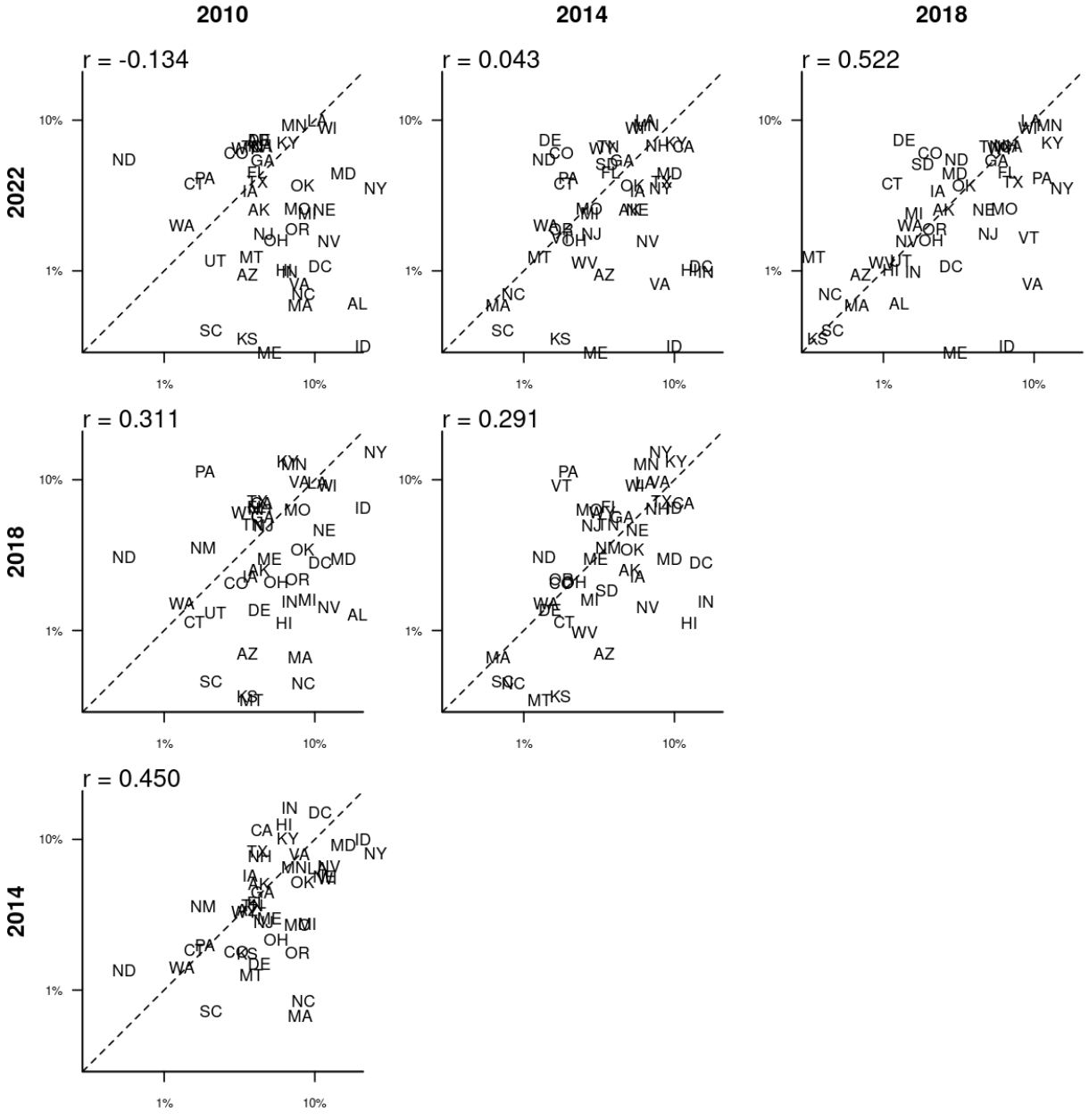


Figure 11 compares UOCAVA rejection rates by county in the last three elections at the county level. Note that what is visible on this plot is the small slice of counties which reported UOCAVA rejections; there are many dots on the axes that overlap with one another visually.

Figure 12 compares UOCAVA rejections at the state level over the last three midterm elections. Both this figure and Figure 11 above show a notably weak correlation, especially when compared with the corresponding plots for other indicators. Indeed, the lack of correlation is typical of this indicator. There is a less tight connection between a state's UOCAVA rejection rates in one election and the next election than there is for many other indicators within a state over time. However, UOCAVA rejection rates have on average very slightly improved since 2018.

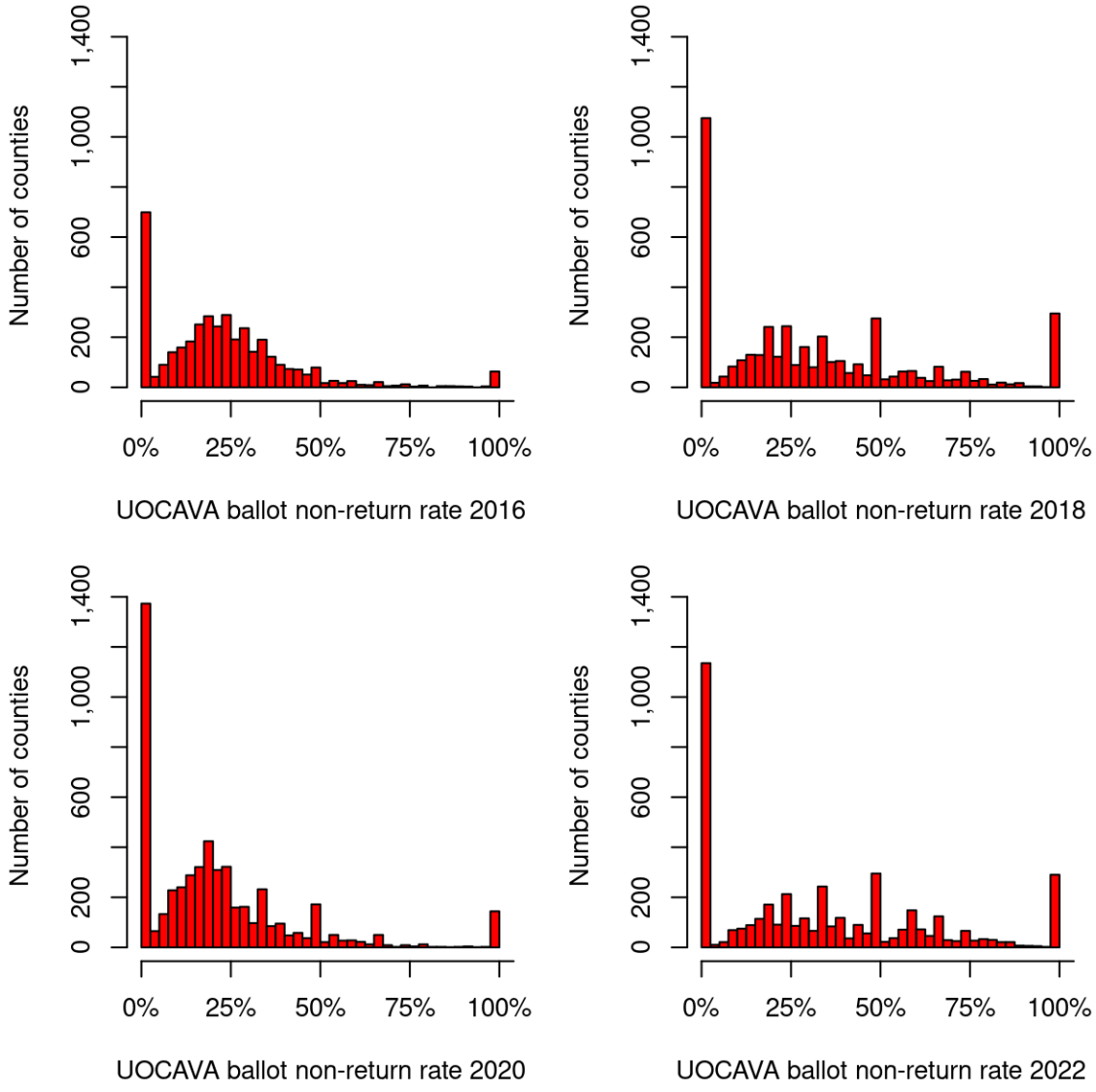
Figure 12: Logged UOCAVA Ballot Rejection Rates by State



3.7 Military and overseas ballots unreturned

This indicator measures the percent of UOCAVA ballots transmitted to voters that were not returned for counting. Figure 13 shows the number of counties with each nonreturn rate for UOCAVA ballots over the last three elections. Notably, this indicator appears has two very different patterns in presidential election years compared to midterm election years. The number of counties with each UOCAVA nonreturn rate in 2022 is similar to the 2018 proportions.

Figure 13: UOCAVA Ballot Nonreturn Rates by County



Turning to the county-by-county comparisons in Figure 14 and the state-level comparisons within midterm years in Figure 15, the most notable pattern is the lack of correlation over time. Just as the EPI has found in previous years, reported UOCAVA nonreturn rates can be quite volatile from one election to the next within a state or even within a county. UOCAVA nonreturn rates have also grown slightly higher than in 2018, with states falling slightly in this indicator on average, though overall improving dramatically since 2010.

Figure 14: UOCAVA Ballot Nonreturn Rates by County

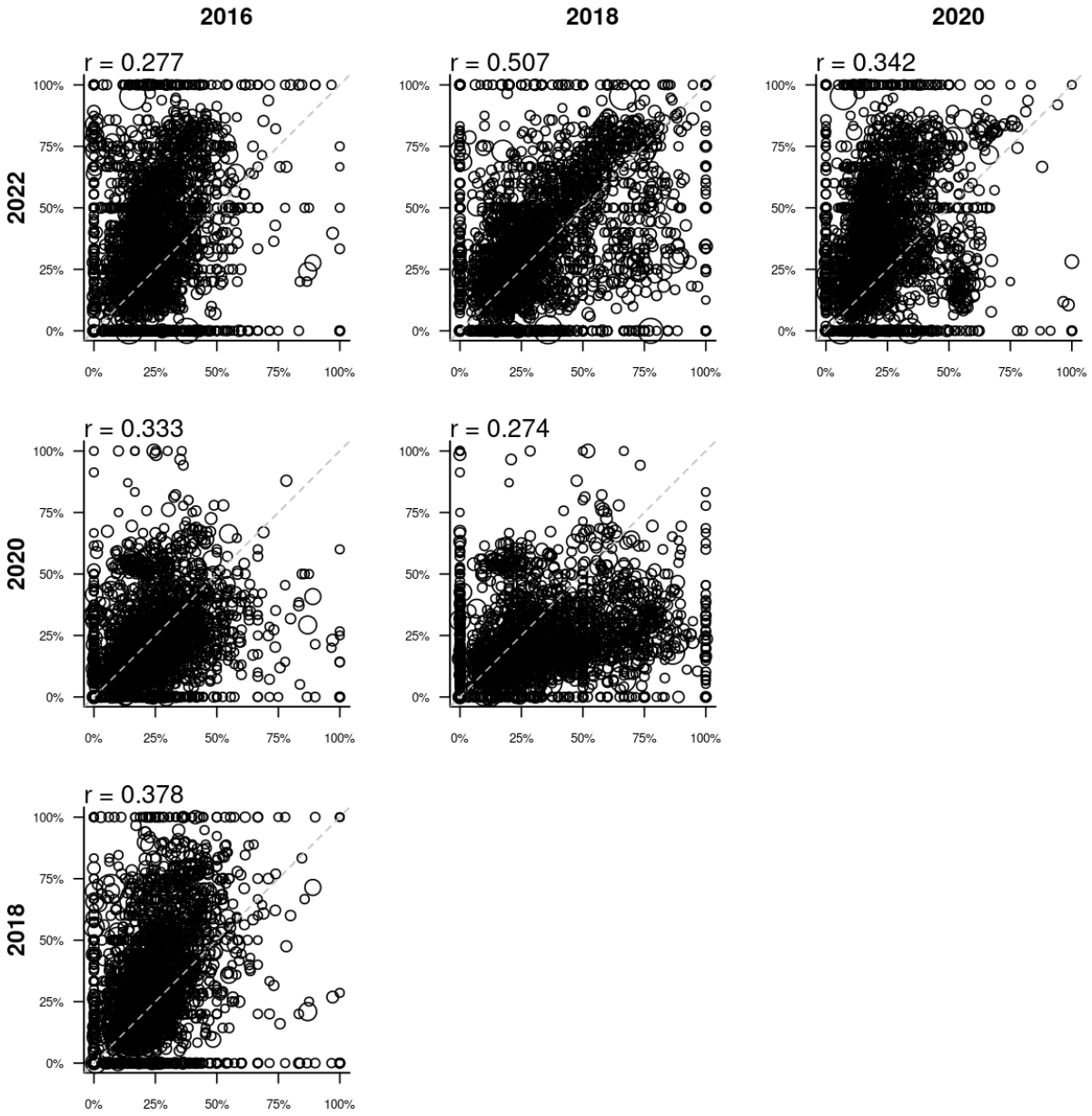
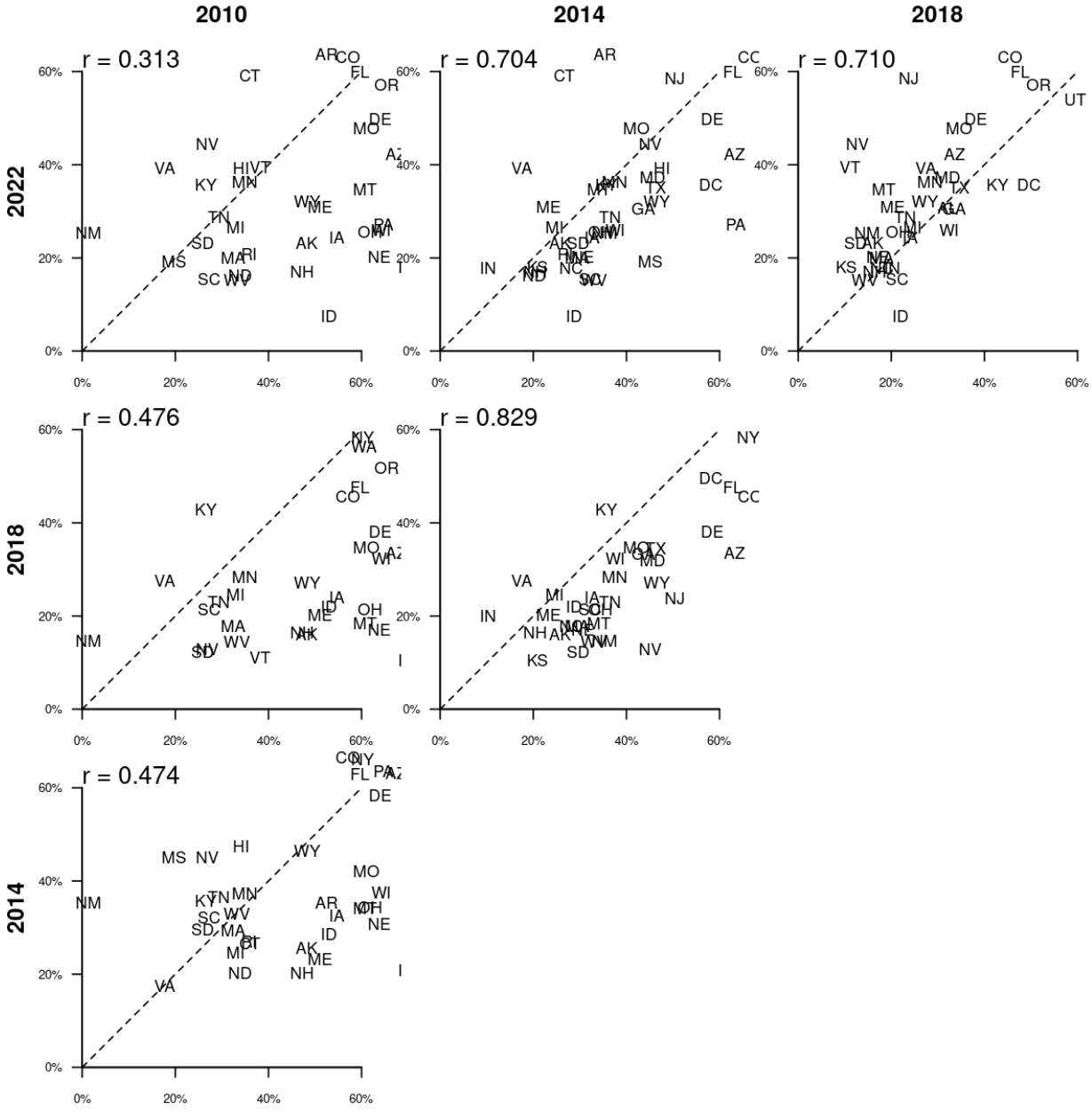


Figure 15: UOCAVA Ballot Nonreturn Rates by State



3.8 Online registration available

We consider a state as having online voter registration if it offers the option of an entirely paperless registration process that is instituted in time for eligible voters to register online for the corresponding election. If the state has a tool that helps a voter fill out the form online but he or she still has to print it (and possibly physically sign it) before returning it to a local election office, this does not constitute online voter registration. States that have an e-signature program that electronically populates the voter registration record from information on file with a different state agency (for example, Department of Motor Vehicles) also are not included.

Beginning with the 2014 release of the index, we give states that allow voter registrations to be updated online "half credit" for having online registration. North Dakota, the only state without voter registration, is not given a score for this indicator.

3.9 Postelection audit required

This measure is based simply on the binary coding of whether a state requires a postelection audit of vote totals. The requirement may come from statute, administrative rule, or administrative directive. The primary data source is the Statutory Overview portion of the EAC's Election Administration and Voting Survey, supplemented by reading laws or summaries of laws, news reports, and direct communication with state election offices. It is not based on a coding of the specific provisions in state law beyond whether or not an audit exists, nor is it based on the findings of the audits themselves.

3.10 Provisional ballots cast

This indicator represents the share of all ballots cast that were provisional ballots. The provisional ballot mechanism allows voters whose registration status is in dispute to cast ballots, while leaving the registration status question to be resolved after Election Day. A large number of provisional ballots may indicate problems with voter registration records. The meaning of a small number of provisional ballots is more open to question. On the one hand, it may indicate that registration records are up to date; on the other hand, it may be the result of poll workers not offering voters with registration problems the provisional ballot option when appropriate.

Figure 16 shows that provisional ballot usage continues to be fairly rare, with the overwhelming majority of counties reporting that either no provisional ballots were cast, or that provisional ballots made up a small fraction of a percent of ballots cast.

Figure 16: Provisional Ballot Participation Rates by County

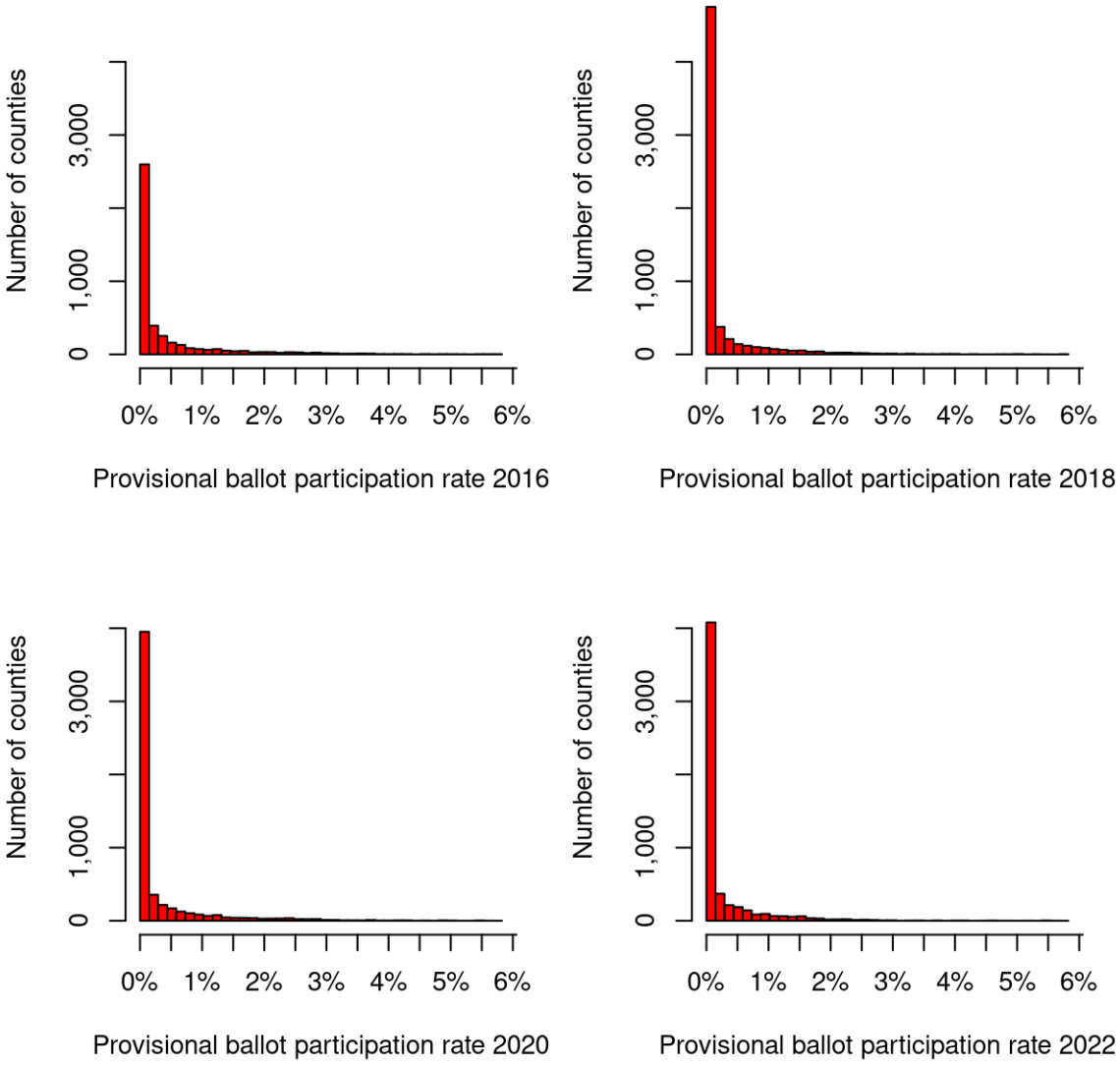


Figure 17: Logged Provisional Ballot Participation Rates by County

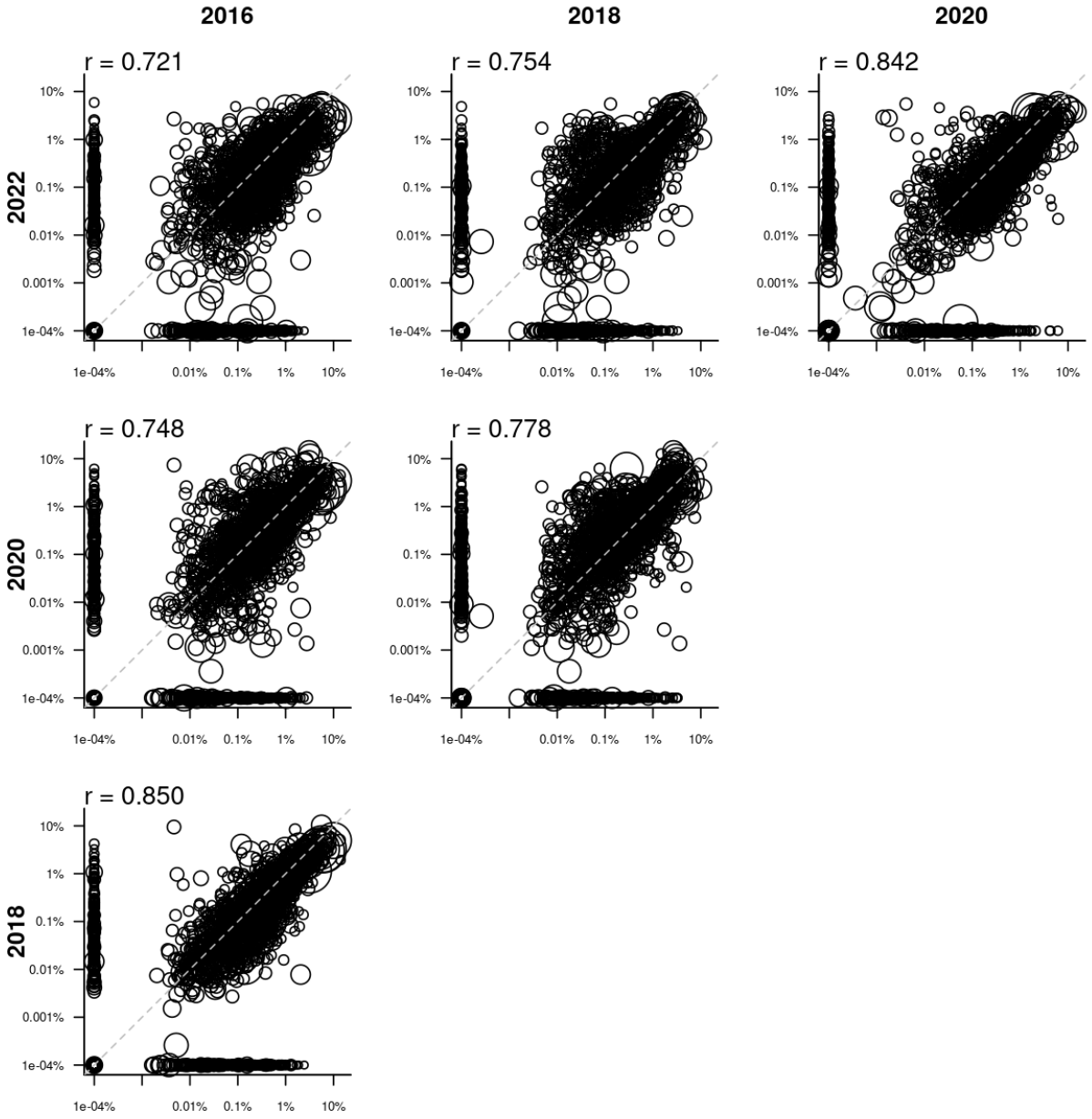
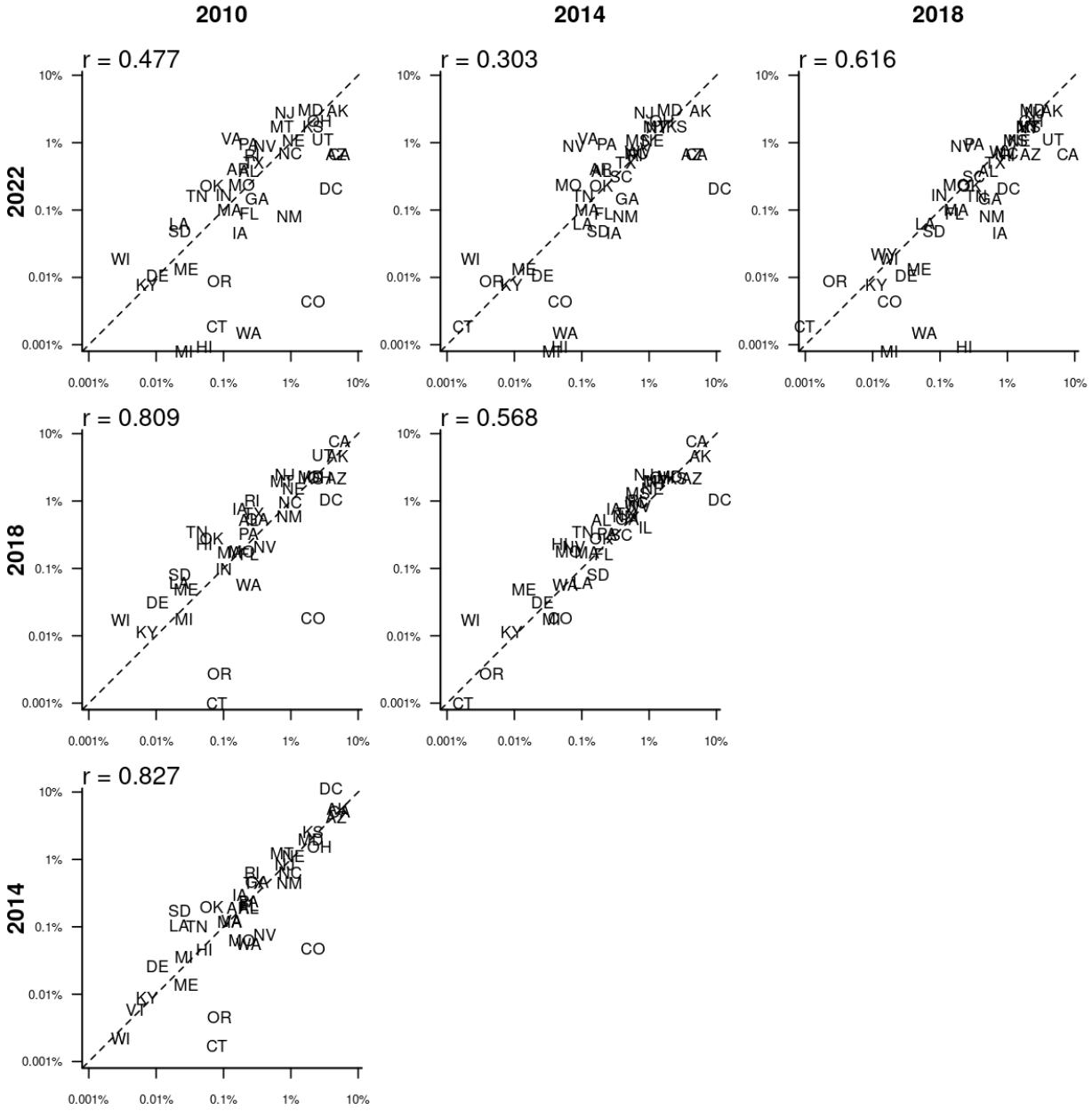


Figure 17 shows that provisional ballot usage is tightly correlated within counties over time, and Figure 18 shows the same thing for states within midterm elections. The share of provisional ballots cast in 2022 was lower than in 2018, which represents a small improvement in this indicator on average, and indeed Figure 18 shows that most states have slightly improved in this indicator since 2018.

Figure 18: Logged Provisional Ballot Participation Rates by State



3.11 Provisional ballots rejected

This indicator measures the share of provisional ballots that are rejected. Figure 19 shows that nearly all provisional ballots were counted in 2022, with nearly all counties rejecting less than half of one percent of the provisional ballots cast there, and the vast majority reporting no provisional ballot rejections. Figure 20 shows that provisional ballot rejection rates have remained fairly tightly correlated at the county level over the last several elections.

Notably, this indicator is one of the biggest areas of improvement since the 2018 election. As shown in Figure 21, nearly every state rejected a smaller share of provisional ballots in 2022 than they had in 2018, with some improving by an order of magnitude or more.

Figure 19: Provisional Ballot Rejection Rates by County

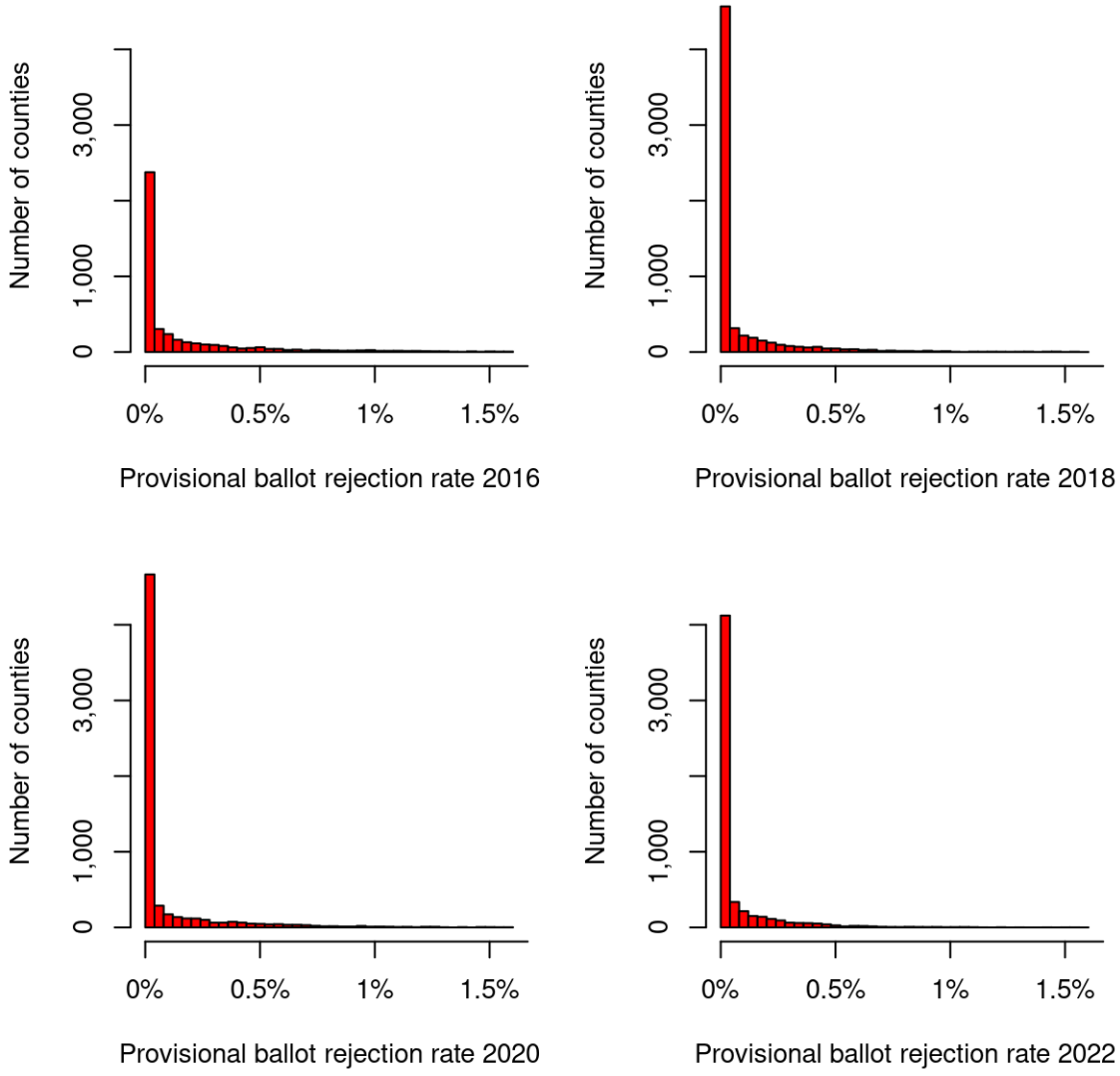


Figure 20: Logged Provisional Ballot Rejection Rates by County

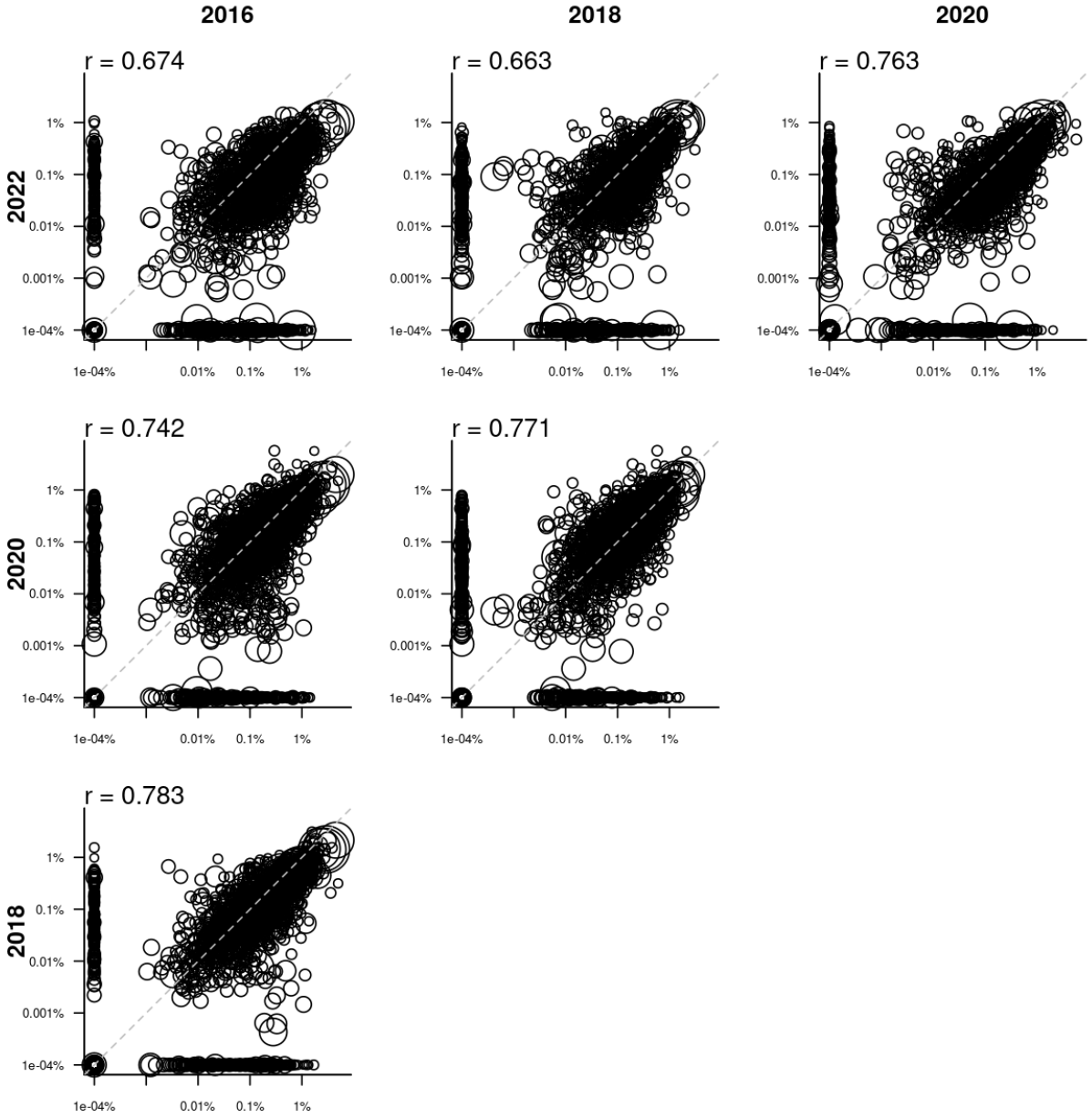
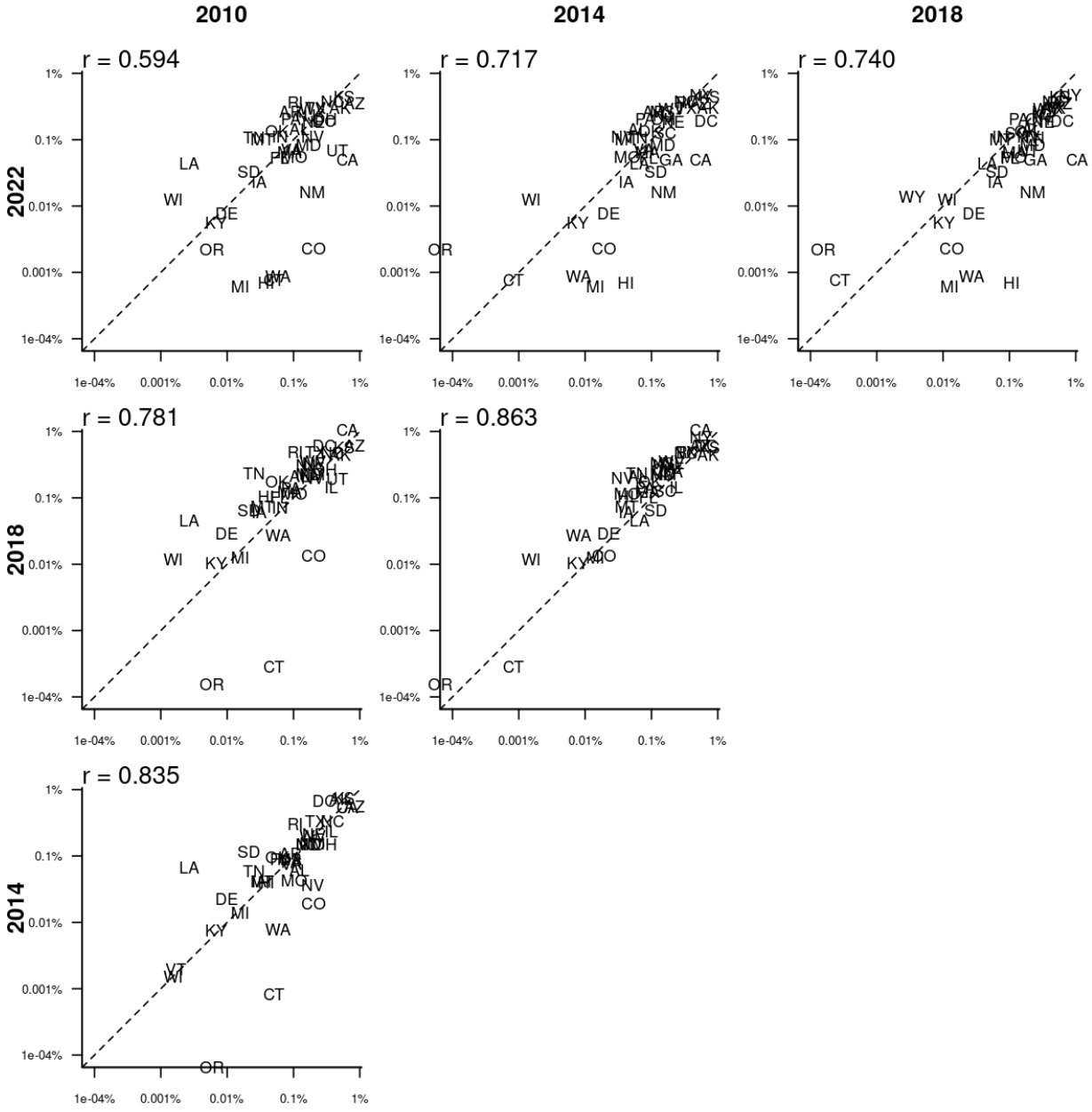


Figure 21: Logged Provisional Ballot Rejection Rates by State



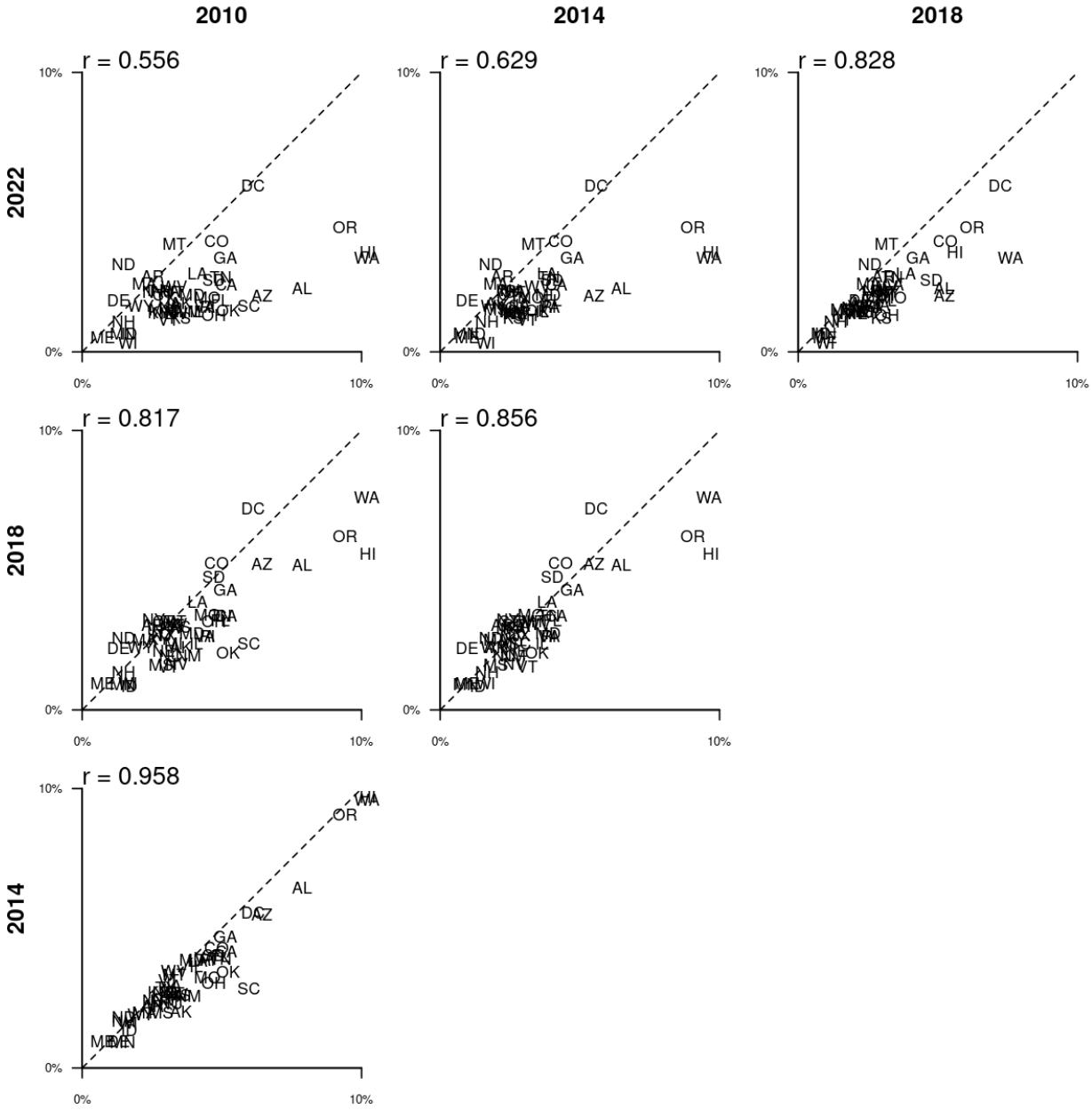
3.12 Registration or absentee ballot problems

3.12.1 Data source

Previous research has indicated that problems with voter registration present one of the greatest frustrations for voters trying to cast a ballot in an election. This indicator is based on responses to the Voting and Registration Supplement of the CPS. Specifically, it is based on responses to item PES4, which asks of those who reported not voting: "What was the main reason you did not vote?" For more information on this indicator, the stability of rates across time, and how it is calculated, see the 2020 Methodology Document.

Figure 22 shows how the percentage has changed state-by-state over the last three midterm elections. The percentage has continued to improve, and in 2022 registration problems were a less common reason that people reported not voting than they were in 2018.

Figure 22: Percent of Nonvoters Due to Registration Problems



3.13 Registrations rejected

3.13.1 Data source

The registration rejection rate is the share of all registrations that were rejected, that is, the number of rejected registrations divided by the sum of rejected registrations and successful registrations. Figure 23 shows that there continue to be counties that reject a large share of all registration attempts, with the number of counties that reject around 10% of registrations numbering in the low hundreds, while some counties actually report rejecting a majority of registrations. These very high reported registration rejection rates may in part be due to how states or counties count registration attempts, especially in cases where one county adopts a looser definition of what constitutes an attempted registration than some other county (for example, one county could consider opening a browser session on a registration website to constitute an attempted registration, while another county only considers it an attempted registration if the prospective voter actually completes a registration form).

The numbers for 2022 are in keeping with previous elections. Figure 24 shows fairly tight correlations at the county level in the share of registrations rejected over time. Figure 25 shows that states have, on average, very slightly improved in this indicator since 2018, rejecting a smaller share of registration attempts. This is a very small improvement, but one that is consistent across states.

Figure 23: Registration Rejection Rates by County

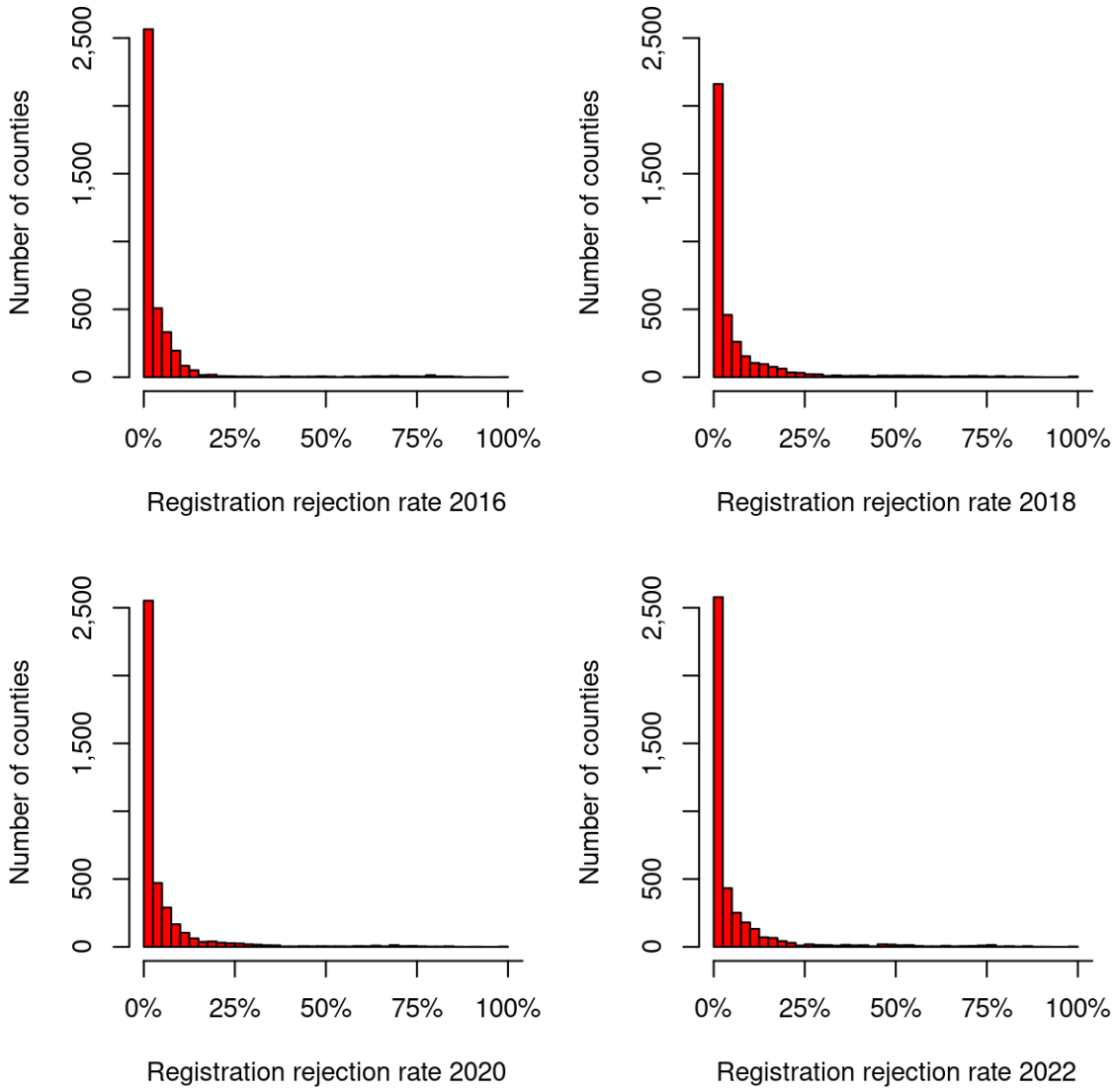


Figure 24: Logged Registration Rejection Rates by County

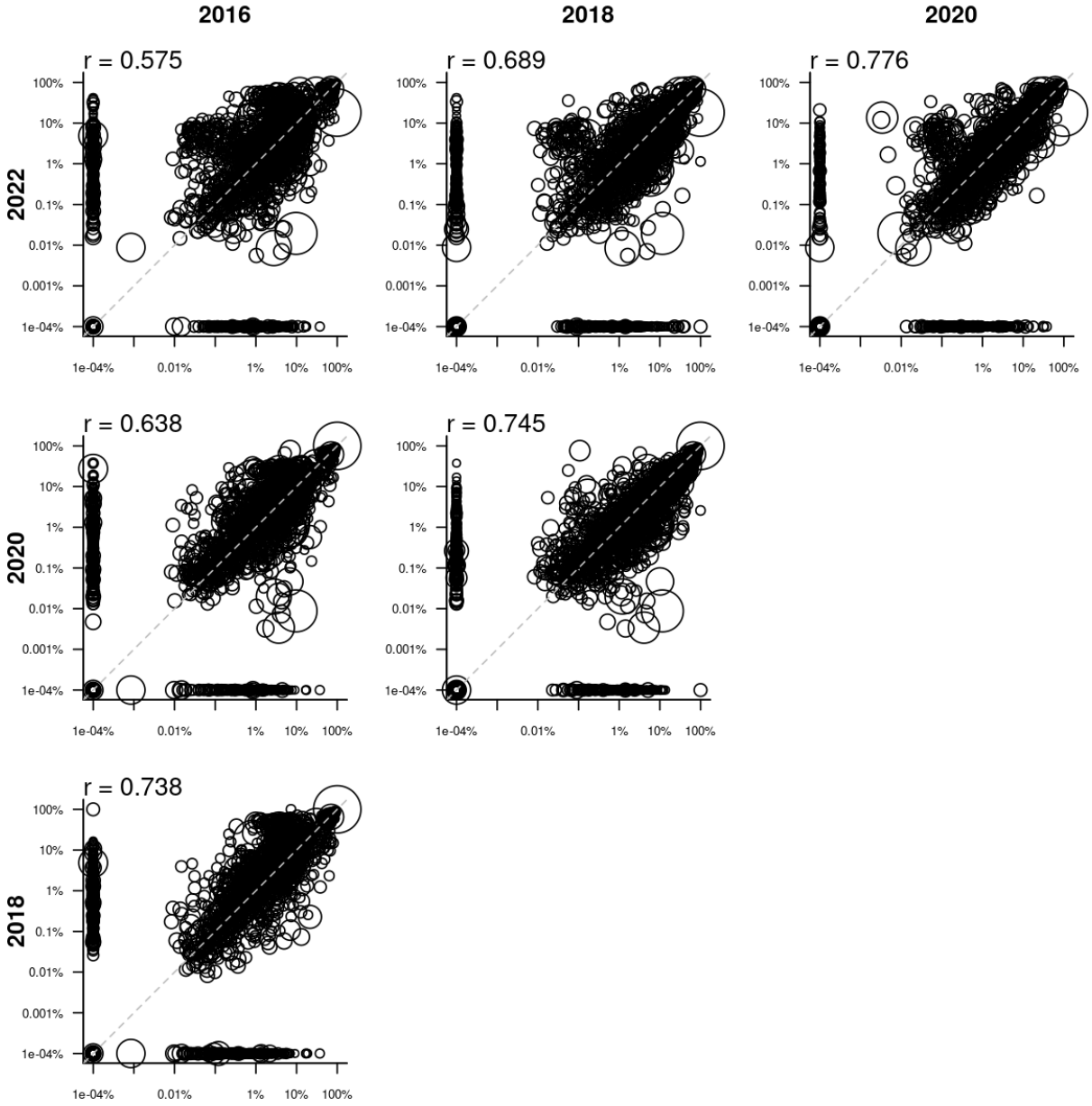
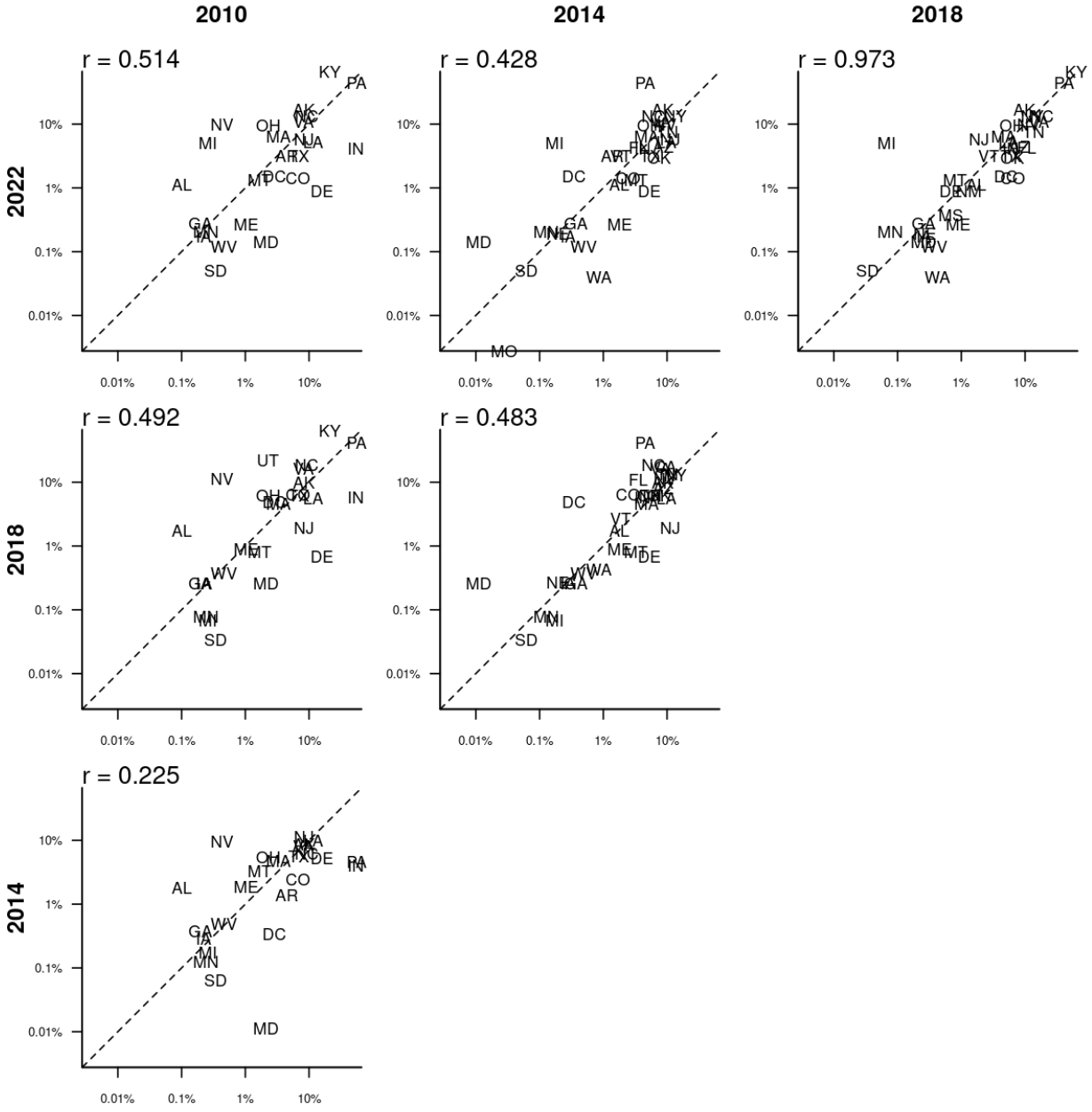


Figure 25: Logged Registration Rejection Rates by State



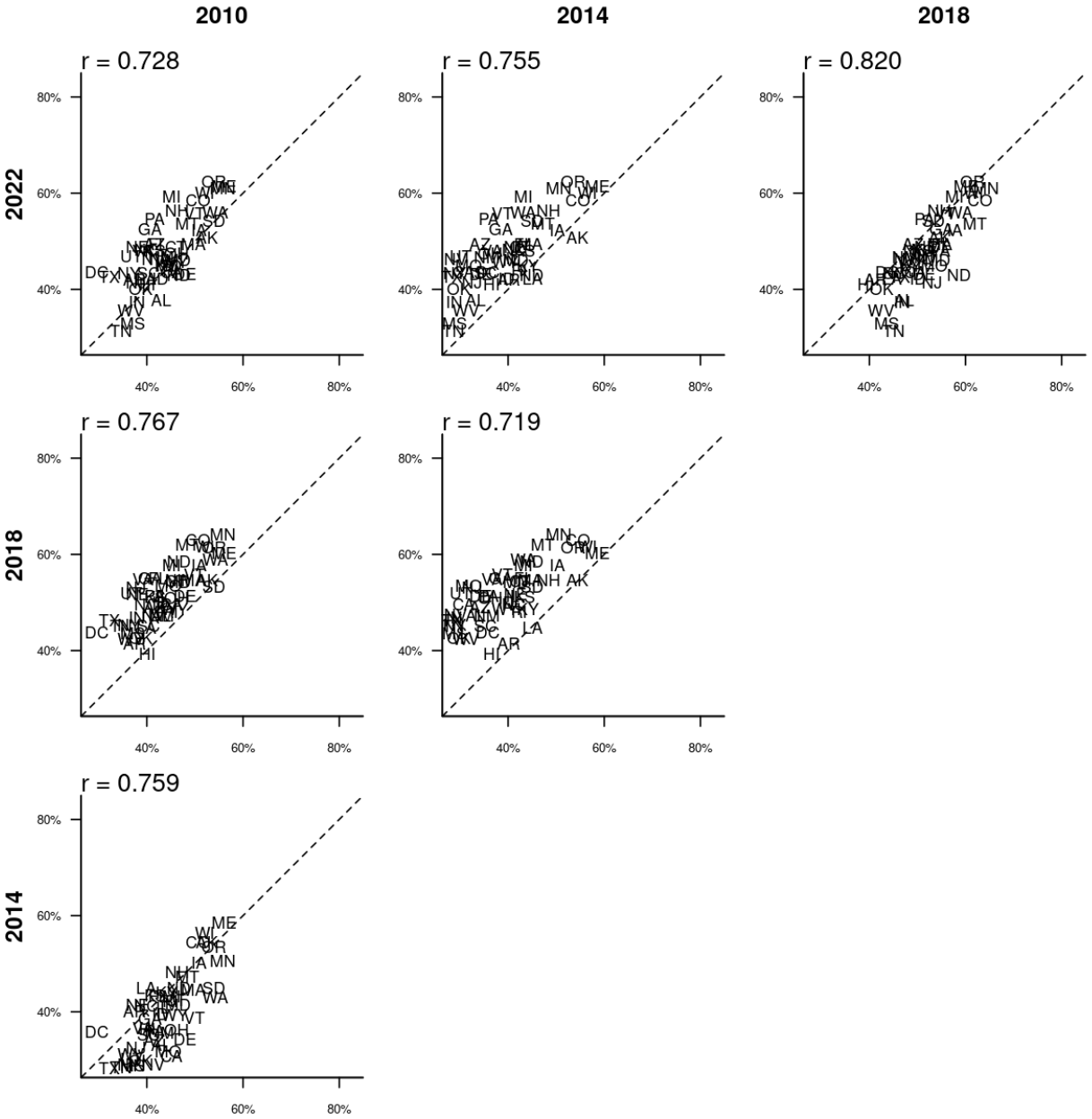
3.14 Risk-limiting audits (2020 –)

In recent years, increased scrutiny has been given to the quality of postelection audits, including, among other things, their methodology for ballot selection and sample size. Risk-limiting audits are a ballot-level audit that tests the outcome at a given precinct based on a sample of ballots and includes methods for escalation of the sample up to a full manual recount. The escalation test is determined by the likelihood that a selection of more ballots would overturn the election results. Ever since risk-limiting audits were introduced, numerous states have piloted risk-limiting audits, allowed counties to conduct them as an alternative to traditional audits, and a few have mandated them statewide. For this indicator, states that mandate risk-limiting audits statewide in statutes are coded at the highest value, while states that do not conduct risk-limiting audits are coded as missing. Just as for the ERIC indicator, this coding was introduced in the 2020 EPI, and it is only counted in the EPI index of those states which do have a risk-limiting audit. The effect of this coding is to reward states in score and rank for having risk-limiting audits, but not penalize states for not adopting the auditing method.

3.15 Turnout

Perhaps the most highly visible measure of the health of elections is the turnout rate—that is, the percentage of eligible voters who vote. This indicator uses the state-level turnout proportion from the United States Elections Project. As Figure 26 shows, turnout was lower in nearly every state in 2022 than it had been in 2018, which was an especially high turnout election across the board. However, turnout in 2022 was up in most states compared to 2010, and up in nearly every state compared to 2014.

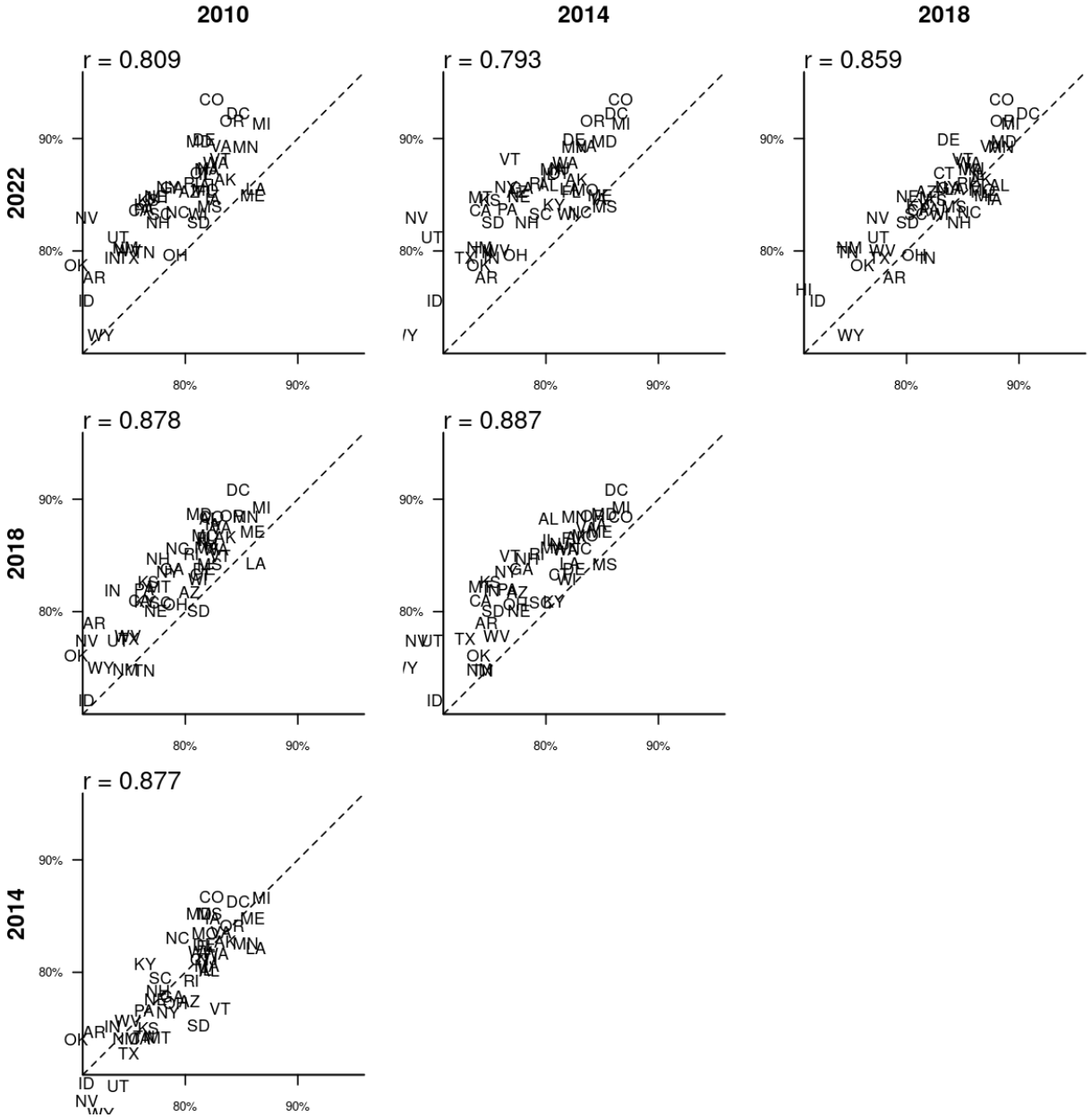
Figure 26: Turnout Rate by State



3.16 Voter registration rate

This indicator is based on responses to the Voting and Registration Supplement of the Census Bureau's Current Population Survey. It relies on a combination of three variables (PES1, PES2, and PES3) that report the numbers of registered and eligible voters. For more information on these questions or how the indicator is constructed, please see the 2020 Methodology Document. Figure 28 shows very little change in voter registration rates since 2018.

Figure 27: Registration Rate by State



3.17 Voting information lookup tool availability

The examination of online tools for the EPI extends five measures that measures the availability of internet resources on elections. These measures are then aggregated to an indicator that is meant to measure the availability of online tools in a given state. For more information on these measures or their measurement please see the 2020 methodology document.

When updating this measure for 2022, we found that nearly all states have implemented all five of the recommended web tools. Among those that have not, there was some slight adjustment upwards on average, with a few states implementing new web tools.

3.18 Voting wait time

The time voters wait to cast ballots is a highly visible measure of voting convenience. The 2020 methodology document includes an extensive discussion of the history of this measure, and an analysis of the trends in its values over time. Updating the measure for 2022, we find that wait times decreased between 2018 and 2022 in almost every state. The rise of vote by mail, which is associated with lower wait times, may contribute to this decrease (the 2020 EPI methodology document describes how precisely this is handled in the indicator's calculation).

Figure 28: Wait Times by State