No. 14-232

IN THE

Supreme Court of the United States

WESLEY W. HARRIS, *et al.*,

Appellants,

v.

ARIZONA INDEPENDENT REDISTRICTING COMMISSION, *et al.*,

Appellees.

ON APPEAL FROM THE UNITED STATES DISTRICT COURT FOR THE DISTRICT OF ARIZONA

BRIEF FOR AMICI CURIAE PROFESSORS NICHOLAS STEPHANOPOULOS AND SIMON JACKMAN, ELECTION LAW SCHOLARS, IN SUPPORT OF APPELLEES

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INTEREST OF AMICI CURIAE[1]

Professor Nicholas Stephanopoulos and Professor Simon Jackman are election scholars who study partisan gerrymandering. They have a professional interest in the proper disposition of challenges to redistricting plans and believe that such challenges should be decided with the benefit of a reliable measure of a given plan's partisan symmetry.

Professor Stephanopoulos is Assistant Professor of Law at the University of Chicago Law School. His research and teaching include the fields of election law, constitutional law, legislation, administrative law, comparative law, and local government law. Together with Dr. Eric McGhee, he has developed a quantitative measure of partisan symmetry called the "efficiency gap" and has computed this gap for both congressional and state house plans over the entire modern redistricting era, from 1972 to 2012. *See* Stephanopoulos & McGhee, *Partisan Gerrymandering and the Efficiency Gap*, 82 U. Chi. L. Rev. 831 (2015).

Professor Jackman is Professor of Political Science and, by courtesy, Professor of Statistics at Stanford University. He is also a fellow of the Society for Political Methodology and a member of the American Academy of Arts and Sciences. He teaches courses on

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[1] By letters on file with the Clerk, all parties have consented to the filing of this brief. Pursuant to Supreme Court Rule 37.6, amici state that no counsel for a party authored this brief in whole or in part; no counsel or party made a monetary contribution intended to fund the preparation or submission of this brief; and no person other than amici, their members, or their counsel made such a monetary contribution.

American politics and statistical methods in the social sciences. His expert report on Wisconsin's redistricting plan, which includes efficiency gap calculations from 1972 to 2014, was recently filed in pending litigation. *See* Jackman Report, Pls.' Ex. 3, ECF No. 1-3, *Whitford* v. *Nichol*, 3:15-cv-421-bbc (W.D. Wis. July 8, 2015).

Amici write to show that: (1) Arizona's plan does not exhibit symmetry scores indicative of pro-Democratic partisan intent; and (2) small deviations in district population size do not reliably indicate a partisan gerrymander.

SUMMARY OF ARGUMENT

A partisan gerrymander is a redistricting scheme that helps one party translate its popular support into legislative power more efficiently than its rival. This greater efficiency in converting votes into seats is accomplished by creating districts in which that party does not "waste" as many votes—either by losing seats or by winning seats by unnecessarily high margins—as its adversary. By denying the other side a share of seats that fairly reflects its level of statewide backing, a gerrymander undermines the election's democratic legitimacy and distorts the policies eventually enacted by the legislature.

While many scholars support the use of partisan symmetry to assess district plans, the question has been how to measure symmetry empirically. The "efficiency gap," advanced by amici here, measures symmetry by comparing the parties' respective shares of wasted votes in actual elections. This newer metric overcomes the major criticisms of the primary alternative metric proposed in the past: "partisan bias."

Under either metric, the Arizona plan before the Court somewhat favors Republicans, exhibiting a pro-Republican efficiency gap of 5% and a pro-Republican partisan bias of 8.5% over the 2012 and 2014 elections. These partisan symmetry scores do not support the inference appellants would have the Court draw that the plan was designed with the aim of benefiting *Democratic* candidates.

Finally, although the Arizona plan features minor variations in district population size, a broad statistical comparison of state house plans reveals no meaningful correlation between population deviation and either the efficiency gap or partisan bias. Comprehensive electoral data and sophisticated computer modeling are the standard tools of most gerrymanders, and these tools readily permit states to minimize deviation while advancing partisan ends.

ARGUMENT

I. ARIZONA'S REDISTRICTING PLAN DOES NOT EXHIBIT SYMMETRY SCORES INDICATIVE OF PRO-DEMOCRATIC PARTISAN INTENT

In any election, there are two kinds of votes that do not help a party win additional seats: votes that are cast for a losing candidate and votes that are cast for a winning candidate beyond the threshold required for victory. In that sense, these are "wasted" votes. A partisan gerrymander favors a party in statewide elections by reducing the number of votes the party wastes compared to its adversary. Under a neutral plan, neither side wastes significantly more votes than the other, and consequently a given percentage of the statewide vote yields about the same share of seats, regardless of the party for whom the votes are cast. As this Court has acknowledged, severe partisan gerrymanders entrench a party in power and thereby violate "democratic principles." *Arizona State Legislature* v. *Arizona Indep. Redistricting Comm'n*, 135 S. Ct. 2652, 2658 (2015) (quoting *Vieth* v. *Jubelirer*, 541 U.S. 267, 292 (2004) (plurality opinion); *id.* at 316 (Kennedy, J., concurring in the judgment)).

Although the Court has held gerrymandering claims to be justiciable, it has yet to adopt a substantive standard to apply in these cases. *See League of United Latin Am. Citizens* v. *Perry*, 548 U.S. 399, 413-414 (2006) ("*LULAC*"). The concept of symmetry has garnered a strong consensus among scholars and is supported by decades of research. *See* Brief of Amici Curiae Professor King et al. in Support of Neither Party 6-7, *LULAC*, 548 U.S. 399 (No. 05-204) (citing sources). Members of the *LULAC* Court expressed an interest in symmetry as a promising theory. 548 U.S. at 466-468 (Stevens, J., concurring in part and dissenting in part), 483-484 (Souter, J., joined by Ginsburg, J., concurring in part and dissenting in part), 491-492 (Breyer, J., concurring in part and dissenting in part). The question remains how to measure symmetry.

Justice Kennedy, while not "altogether discounting [symmetry's] utility in redistricting planning and litigation," has identified a number of concerns about using the "partisan bias" metric proposed by amici in *LULAC*. 548 U.S. at 419-420 (plurality opinion). Partisan bias measures symmetry by reference to the results of a hypothetical election in which the parties evenly split the statewide vote. The major criticisms of this metric concern assumptions about shifting voter preferences that are made in order to generate this imaginary tie.

The "efficiency gap," a newer metric advanced by amici here, answers these criticisms by comparing the parties' respective shares of wasted votes in actual elections. By either metric, there is no indication that the Arizona plan before the Court favors Democratic candidates—and, hence, no support for the inference that the plan's motivation was Democratic partisan advantage.

A. The Efficiency Gap Provides A Reliable Metric Of Symmetry That Addresses Critics' Concerns About Partisan Bias

As noted, a partisan gerrymander unfairly enhances one party's ability to translate its votes into electoral victories. The typical gerrymander works by a combination of "packing," *i.e.*, clustering voters for the disfavored party into a few safe districts for that party, and "cracking," *i.e.*, dispersing the remainder of those voters throughout districts won by the favored party. In a two-candidate race, the losing candidate's votes—as well as the winning candidate's votes in excess of the 50% (plus one) threshold required to carry the seat—could be put to better use securing victories in other districts. For that reason, if a party's goal is to maximize the seats it wins in any given election, both lost and surplus votes are "wasted." At bottom, a partisan gerrymander is a redistricting plan that ensures that one party will exploit its popular support more efficiently than its rival, wasting fewer votes and thus securing more seats with the votes it receives.

1. By focusing on wasted votes, the efficiency gap goes to the essence of partisan gerrymandering

The value of analyzing partisan gerrymandering in terms of the "efficiency gap" lies in combining into a single figure a comparison of the parties' respective shares of wasted votes. This comparison reflects the series of packing and cracking decisions built into a state's redistricting plan. Because the core issue in gerrymandering cases is the difference between the two parties' abilities to convert their votes into seats, the efficiency gap provides a metric that reflects the actual mechanism that produces asymmetry.

The efficiency gap is computed in two steps—by first summing the votes each party wastes in an election and then dividing the difference between the two sums by the total number of votes cast. *See* Jackman Report 15-19. To take a simple example, suppose that in a state with 10 districts of 100 voters each, Party A receives 70 votes in districts 1-3, 54 votes in districts 4-8, and 35 votes in districts 9-10, with the remaining votes being won by Party B. Party A wins the election but, as in any single-member district system, still ends up wasting a substantial number of votes—150 votes in all (20 in districts 1-3, 4 in districts 4-8, and 35 in districts 9-10). Party B, however, wastes many more votes—350 votes in all (30 in districts 1-3, 46 in districts 4-8, and 15 in districts 9-10). The resulting efficiency gap, *i.e.*, the difference between the two parties' sums of wasted votes divided by the total number of votes cast, is 0.2, or 20% ((350-150)/1000). For a detailed chart, see Stephanopoulos & McGhee, 82 U. Chi. L. Rev. at 852.

A key property of the efficiency gap is that it reveals a party's excess share of seats relative to a neutral plan. *See* Jackman Report 19. In the above example, Party A receives 550 votes and wins 8 seats, capturing 80% of the districts with 55% of the statewide vote. An efficiency gap of 20% indicates that, out of the 10 races, Party A won 2 (0.2×10) it would otherwise have lost had there been an efficiency gap of zero. A neutral district plan would award 6 seats to Party A. In comparison, the state's plan confers a competitive advantage sufficient to account for 2 extra seats. Giving one party the discrepant power to amass additional seats relative to its share of votes is the crux of a partisan gerrymander.

2. The efficiency gap addresses the major criticisms of partisan bias

The longstanding precursor to the efficiency gap is the metric proposed by other amici in *LULAC*: partisan bias. In contrast to the efficiency gap, which focuses on the parties' wasted votes in actual elections, partisan bias measures asymmetry by looking at the divergence in the share of seats each party would win in a hypothetical election in which the two parties received the same share—normally half—of the statewide vote. *See* Jackman Report 11-13. For example, if Democrats would win 55% of the seats with 50% of the vote, then the district plan has a 5% pro-Democratic bias.

While partisan bias is unquestionably useful in identifying asymmetry, scholars and this Court have noted some of the metric's potential pitfalls. *LULAC*, 548 U.S. at 420 (plurality opinion). The efficiency gap avoids these pitfalls by comparing the parties' abilities to convert votes into seats in actual elections.

In the extraordinary circumstance where the two parties split the statewide vote down the middle, the efficiency gap and partisan bias are identical. Even in that special case, however, the two metrics measure different things. Partisan bias measures the skew in outcome by reference to the results of a hypothetical tie. It so happens that because the parties *did* tie, the election results make conjecture unnecessary. The efficiency gap, on the other hand, measures the manipulation of wasted votes that leads to the skewed outcome in the first place. In any election that is not tied, the two metrics diverge, and the further an election is from being tied, the more they diverge. *See* Stephanopoulos & McGhee, 82 U. Chi. L. Rev. at 856-857.

The shortcomings of partisan bias stem from the need to compute the results of a tied election, which in all but the rarest cases is *counterfactual*. *See* Jackman Report 14-15. To compute a plan's bias, the parties' vote shares must be shifted in some way to generate an imaginary 50-50 split. The classic way to accomplish this is to assume a uniform swing in votes to the losing party. *See id.* at 13-14. A major criticism of partisan bias is that this uniform swing assumption is unrealistic and depends on "conjecture about where possible vote-switchers will reside." *LULAC*, 548 U.S. at 420 (plurality opinion). Because the makeup of districts is not homogeneous, vote-shifters are unlikely to be spread evenly throughout the state; hence, any shift in the statewide vote is likely to be the product of uneven shifts among districts. *See* Stephanopoulos, *Spatial Diversity*, 125 Harv. L. Rev. 1903, 1940-1941 (2012). Although the assumption of uniformity can be relaxed and made more sophisticated, *see* Grofman & King, *The Future of Partisan Symmetry as a Judicial Test for Partisan Gerrymandering After* LULAC *v.* Perry, 6 Election L.J. 1, 4 (2007), the problem to some extent persists, *see* Stephanopoulos & McGhee, 82 U. Chi. L. Rev. at 859-860.

In competitive elections, in which the parties' statewide vote shares are within 10 points of each other, partisan bias works well. McGhee, *Measuring Partisan Bias in Single-Member District Electoral Systems*, 39 Legis. Stud. Q. 55, 67 (2014). In uncompetitive elections, however, the uniform swing assumption is sufficiently implausible to make the metric unreliable. Even proponents of partisan bias admit that the method is not useful below a certain threshold of competitiveness. *See* Grofman & King, 6 Election L.J. at 19. But gerrymandering remains an issue in states that strongly favor one party. Indeed, a gerrymander may permit the already dominant party to achieve the supermajority needed for extraordinary legislative measures.

The efficiency gap does not have these issues because it does not require any counterfactual analysis. The crucial input is the difference between the parties' wasted votes in the *actual* election. So long as election results are available at the district level, calculating the efficiency gap is straightforward. The process does not entail unrealistic assumptions about how vote-shifters are distributed throughout the state. And it can be meaningfully calculated even for uncompetitive elections in states dominated by a single party.

3. Historical data on state plans' efficiency gaps provides a way to assess an existing plan's partisan implications

The efficiency gap has been computed for congressional and state house results over the entire modern redistricting era, from 1972 to 2014.[2] *See* Stephanopoulos & McGhee, 82 U. Chi. L. Rev. at 867-873; *see also* Jackman Report 19-21. As a result, there is a large dataset from which to draw empirically based conclusions about both the history of gerrymandering and the partisanship of district plans currently in use.

By measuring the real source of competitive advantage—*i.e.*, disparities in the parties' respective shares of wasted votes—the efficiency gap can provide "clear, manageable, and politically neutral standards for measuring the particular burden a given partisan classification imposes on representational rights." *Vieth*, 541 U.S. at 307-308 (Kennedy, J., concurring in the judgment). Although devised only in the past few years, this metric is already being employed in gerrymandering litigation. *See* Jackman Report.

There are two related challenges in gerrymandering cases that this dataset allows election experts, litigants, and courts to overcome. First, since virtually any plan will create some imbalance in an election, there needs to be a way to set thresholds above which an efficiency gap is truly large and problematic. Second, and relatedly, voters' preferences change from one

[2] The primary dataset developed by Stephanopoulos and McGhee uses congressional plans with at least 8 seats and single-member state house races because the efficiency gap is more difficult to reliably calculate for smaller plans and multimember districts. *See* Stephanopoulos & McGhee, 82 U. Chi. L. Rev. at 868.

election to the next; hence, one has to take into account these swings to distinguish plans whose efficiency gap indicates a durable asymmetry from plans whose gap is likely to unravel over their own lifetimes. From the standpoint of partisan symmetry, only those plans whose efficiency gap is large and likely to persist over multiple elections merit judicial intervention.

The first challenge (*i.e.*, "determining when political gerrymandering has gone too far") has long been recognized as "[t]he central problem" in gerrymandering cases. *Vieth*, 541 U.S. at 296-297 (plurality opinion). For both congressional and state house races, however, the dataset includes the historical as well as current distribution of state plans' efficiency gaps and thus can greatly inform the choice of reasonable thresholds of presumptive unconstitutionality. *See* Stephanopoulos & McGhee, 82 U. Chi. L. Rev. at 885-891; Jackman Report 56-59, 63-69.

As to the second challenge, a plan's efficiency gap in one election is not necessarily a strong predictor of its gap in the next. Some plans nevertheless feature large and durable gaps over several elections. Stephanopoulos & McGhee, 82 U. Chi. L. Rev. at 864-865. Sensitivity testing can be used to ascertain the likely persistence of a large asymmetry. That testing uses the magnitude of historical swings in voter preferences to estimate the likelihood that a plan will remain skewed over its lifetime. *Id.* at 889-890. In addition, the durability of a plan's efficiency gap is linked to the gap's initial size. Given this initial size, the probability that a plan will feature a consistent tilt can be accurately estimated. *See* Jackman Report 56-69.

In sum, the efficiency gap offers a reliable metric of partisan symmetry that is empirical, easily calculable, and impervious to the major criticisms of partisan bias. The data already compiled on plans' gaps over the last four decades also helps to render tractable the challenges in operationalizing this metric in litigation.

B. Neither Metric Supports The Inference That Arizona's Redistricting Plan Was Designed To Benefit Democratic Candidates

The data on efficiency gaps in congressional and state house races from 1972 to 2014 supports three background conclusions pertinent to this case. First, as a historical matter, most district plans are reasonably balanced and reasonably likely to favor different parties at different points during their ten-year lifespans. Second, only in recent years has the average efficiency gap increased noticeably. And, finally, most of the litigation that has so far been brought has not targeted state plans with truly large and durable efficiency gaps. *See* Stephanopoulos & McGhee, 82 U. Chi. L. Rev. at 875-877; Jackman Report 44-47.

Where does the Arizona plan before the Court fit into this overall picture? Figures 1 and 2 show the distributions of state house plans' efficiency gaps and partisan biases over the entire 1972-2014 period as well as in the 2012 and 2014 elections. Despite the uptick in the level of partisan gerrymandering nationwide, Arizona belongs to a large group of 22 states whose current plans are only modestly asymmetrical, as measured by their average absolute efficiency gap. *See* App.[3] Specifically, as shown in Figure 1, the Arizona

[3] These 22 states have an absolute efficiency gap less than or equal to Arizona's. *See* App.

plan has a gap of -5%. *Id.*[4] Republicans waste 5% fewer votes than Democrats and, thus, win 3 seats (0.05 × 60 seats) in excess of their share under a neutral plan with an efficiency gap of zero.

As shown in Figure 2, the Arizona plan also tilts in Republicans' favor as measured by partisan bias. The plan's bias, when averaged over 2012 and 2014, is -8.5%. App. Thus, in a hypothetically tied election, where each side received exactly half of the statewide vote, Republicans would be expected to pick up 58.5% or 35 (0.585 x 60) of the state house seats.

Regardless of the metric used, there is no indication that the Arizona plan favors Democratic candidates, either taken on its own or in comparison with most other state house plans. Again, the plan's average efficiency gap is modestly pro-Republican, and its average partisan bias is noticeably (if not egregiously) so. Similarly, of the 40 state plans surveyed, at least 25 are more pro-Democratic by each metric. Republicans con-

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[4] In many states, including Arizona, there are a number of uncontested elections. These pose a problem for any measure of partisan symmetry because the parties' vote shares are unknown and must be estimated. Vote shares are typically imputed to districts with uncontested elections by using presidential races, the results of previous years when the seats were contested, or other variables shown to be good predictors. *See* Stephanopoulos & McGhee, 82 U. Chi. L. Rev. at 865-867; Jackman Report 24-32. Elections in multimember districts pose a similar problem when a party does not field enough candidates to fill the available seats.

Arizona, which has 30 two-member state house districts, had several such uncontested or "under-contested" races in 2012 and 2014. In these cases, vote shares have been estimated using a model based on the presidential vote in each state house district. *See* Jackman Report 26-28.

sequently fare better under Arizona's plan than under most states' plans. *See* App.

These partisan symmetry scores do not "speak for themselves" as signs of pro-Democratic intent. *Larios* v. *Cox*, 300 F. Supp. 2d 1320, 1330 (N.D. Ga.), *aff'd*, 542 U.S. 947 (2004). On the contrary, insofar as partisan effect is probative of partisan intent, the scores undermine appellants' claim that the Arizona plan was designed with the motive of assisting Democrats.

Fig. 1. State House Plans' Efficiency Gap Scores

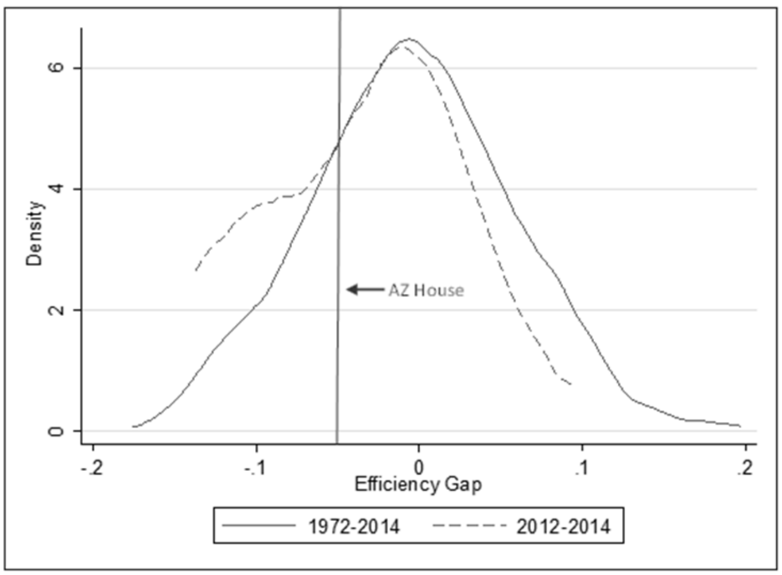
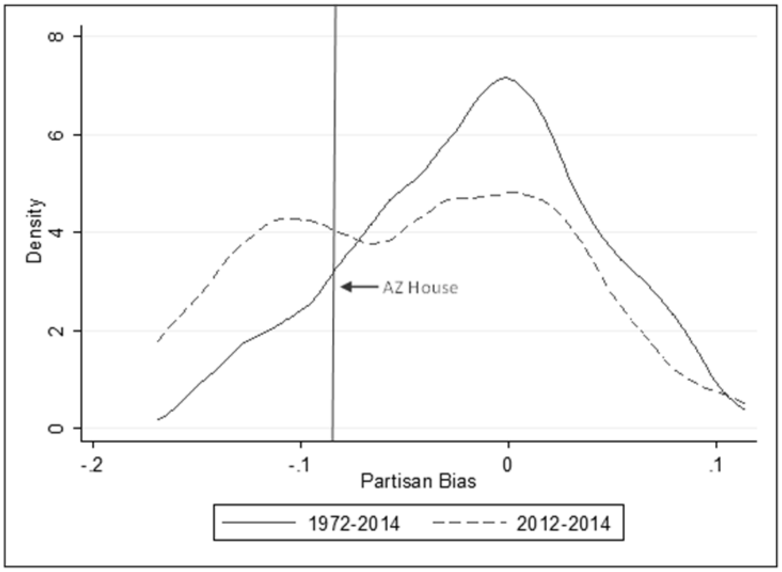


Fig. 2. State House Plans' Partisan Bias Scores



II. Population Deviation Does Not Reliably Indicate A Partisan Gerrymander

Members of this Court have long recognized that redistricting plans can harm political opponents even when those plans scrupulously adhere to the rule of "one person, one vote." *See Davis* v. *Bandemer*, 478 U.S. 109, 174 (1986) (Powell, J., concurring in part and dissenting in part); *Karcher* v. *Daggett*, 462 U.S. 725, 752 n.10 (1983) (Stevens, J., concurring); *id.* at 776 (White, J., dissenting); *id.* at 785 (Powell, J., dissenting). Analysis of state plans' efficiency gap and partisan bias scores supports a further conclusion: deviation in district population size is not at all statistically correlated with any increase in partisan asymmetry. Rather, in recent decades, block-by-block census data and more advanced computer software have provided the sophisticated, readily available tools by which modern district plans are able to accomplish partisan ends without substantially varying district population.

A. There Is No Correlation Between Population Deviation And Partisan Asymmetry

Departures from perfect equality among voters may be constitutionally suspect independent of a plan's partisan effects, at least if those departures are sufficiently large to implicate the requirement of "one person, one vote." *Reynolds* v. *Sims*, 377 U.S. 533, 579 (1964) ("[T]he overriding objective must be substantial equality of population among the various districts[.]"). But deviations from numerical equality in no way relate to partisan asymmetry under either metric. Figures 3 and 4 illustrate the point.

Fig. 3. Population Deviation vs. Efficiency Gap

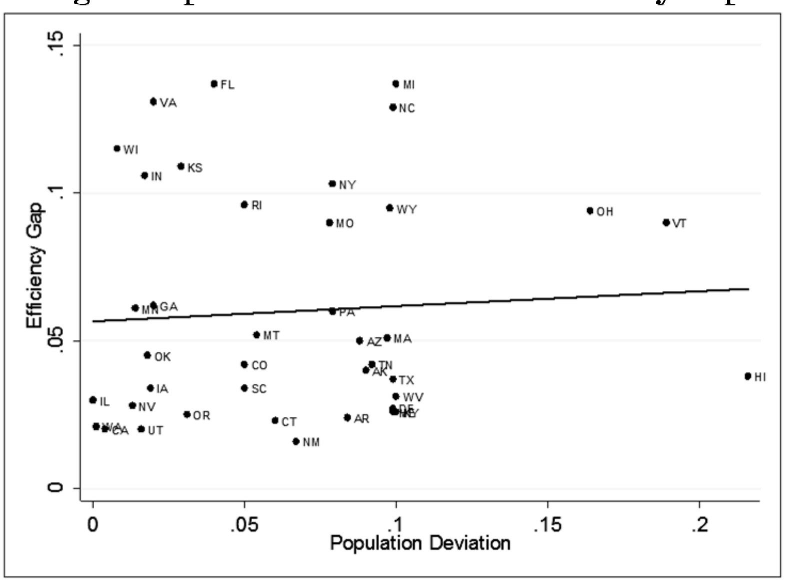
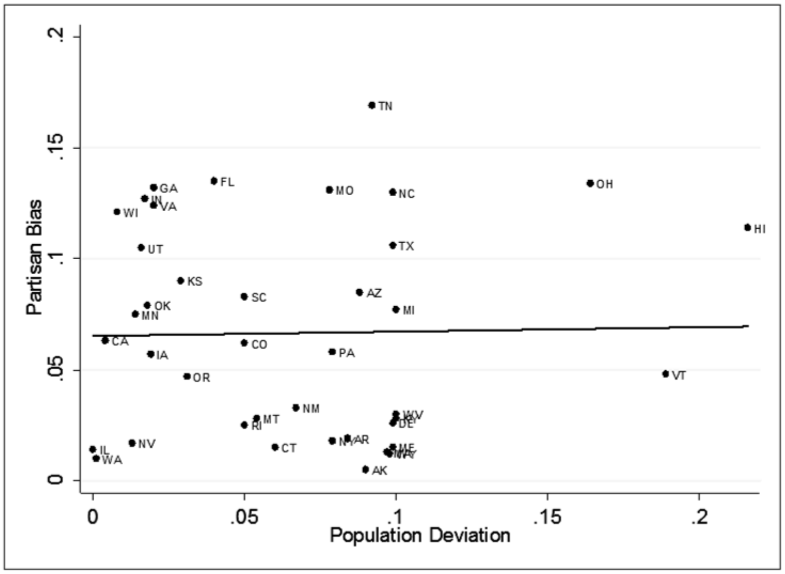


Fig. 4. Population Deviation vs. Partisan Bias



In each figure, population inequality is plotted horizontally, while partisan asymmetry is plotted vertically, with both variables being measured in absolute values.[5] The best fit line drawn through the middle of the respective scatterplots expresses the relationship between the two variables. How well the line fits the data indicates the strength of the correlation between population inequality and partisan asymmetry—from not correlated at all (0) to perfectly correlated (1 or -1). The more tightly the points are clustered along the line, the stronger the correlation; conversely, the more random the distribution, the weaker the correlation. In addition, the line's slope reveals how change in popula-

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[5] For purposes of identifying a correlation, the sign (-/+) of the deviation from the median population (under/over) and of the partisanship (Republican/Democrat) is immaterial.

tion inequality is linked to change in partisan asymmetry in general.

Here, the variables are, for all practical purposes, unrelated. In both cases, the correlations are virtually indistinguishable from zero: 0.07 for the efficiency gap and 0.02 for partisan bias. The slope of each best fit line is also essentially flat. In other words, statistically speaking, population deviation has no bearing on a plan's efficiency gap or partisan bias. With respect to the efficiency gap, some states with little variation in population have large efficiency gaps (*e.g.*, Florida, Indiana, Kansas, Virginia, and Wisconsin), while others with wide variance have small gaps (*e.g.*, Delaware, Kentucky, Maine, and West Virginia). Fig. 3. The same non-relation holds true for partisan bias. There are states with high bias scores that preserve almost uniform population (*e.g.*, Georgia, Indiana, Virginia, and Wisconsin) as well as states with low to moderate bias but large population deviation (*e.g.*, Kentucky, Maine, Massachusetts, Vermont, and Wyoming). Fig. 4.

Many state house plans have populations that deviate by about 10%—the threshold below which such plans are presumptively constitutional. *See Brown* v. *Thomson*, 462 U.S. 835, 842 (1983). States in that situation, however, run the entire gamut of symmetry scores. Figs. 3 & 4. For example, Delaware and North Carolina have the same population deviation (9.9%), but Delaware has a modest efficiency gap and partisan bias, while North Carolina scores very poorly on the efficiency gap and partisan bias alike. App. Virginia and Wisconsin are similar to North Carolina in having significant partisan asymmetry under both metrics, but, unlike North Carolina, Virginia has relatively little population deviation, and Wisconsin almost none. *Id.*

In sum, equality among district voters—however desirable in its own right—does not track partisan gerrymandering in any meaningful way.

B. Gerrymandering Typically Involves Little Or No Deviation In Population Size

The lack of correlation between population deviation and either the efficiency gap or partisan bias comes as no surprise. State plans designed to achieve partisan ends can do so without substantially varying district population. Instead, they shift district boundaries, bringing in and excluding selected voters in equal measure with a high degree of precision. As the Court explained just this past Term, equal population is not itself a conventional line-drawing criterion but, rather, "part of the redistricting background, taken as a given, when determining whether race, or other factors, predominate in a legislator's determination as to how equal population objectives will be met." *Alabama Legislative Black Caucus* v. *Alabama*, 135 S. Ct. 1257, 1270 (2015).

The Texas plan struck down in *LULAC* under Section 2 of the Voting Rights Act demonstrates the basic process by which voters may be packed and cracked to dilute a group's influence in a district without altering population size. 548 U.S. 399. In District 23, whose electorate comprised 57.5% Latinos, the incumbent was at risk of losing his state seat because he received only 8% of the Latino vote. To protect the seat, the legislature redrew the district—by first shifting 100,000 Latinos to nearby District 28, itself heavily Latino, and then offsetting the lost population in District 23 with additional voters from largely white Republican counties in central Texas. *Id.* at 423-425, 438-439. District 23 retained the same population, but had an entirely different racial and partisan composition.

Precise demographic shifts of this sort are possible because of the immense data and computing power that are now readily available. The political parties and other organizations keep detailed information on voters—including party registration and voting history—down to the census block.[6] *See* Toobin, *The Great Election Grab*, The New Yorker, Dec. 8, 2003, at 63, 75; *see also* Issacharoff, *Supreme Court Destabilization of Single-Member Districts*, 1995 U. Chi. Legal F. 205, 232 & n.132 (1995). With this information, the right software enables one to view block-by-block breakdowns and to redraw district boundaries while tracking changes in population and likely electoral outcome. Toobin, *The Great Election Grab*, at 75-76. Of course, these tools can also be used to further the goal of neutrality. The fact, however, remains that such tools—not population deviation—are the staple of modern gerrymandering and, indeed, make deviation much easier for the intentional gerrymanderer to avoid. *See* Issacharoff, 1995 U. Chi. Legal F. at 233; *see also* Karlan, *The Fire Next Time: Reapportionment After the 2000 Census*, 50 Stan. L. Rev. 731, 736 (1998); Pildes, *Principled Limitations on Racial and Partisan Redistricting*, 106 Yale L.J. 2505, 2553 (1997).

Population deviation, then, is no substitute for accurate measures of a plan's partisan asymmetry. Population disparities do not indicate partisan favoritism.

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[6] Census blocks, which are the smallest level of geography for which the Census Bureau provides demographic data, often consist of a single city block, with voter populations from less than a dozen to around a thousand. Toobin, *The Great Election Grab*, at 75.

Moreover, because states can carefully select voters with tools that monitor for population change, gerrymandering does not depend on such disparities in practice.

CONCLUSION

The judgment of the district court should be affirmed.

Respectfully submitted.

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NOVEMBER 2015

APPENDIX

APPENDIX

Symmetry Scores of Current State House Plans

State	Efficiency Gap[1]	Absolute Efficiency Gap	Partisan Bias	Absolute Partisan Bias	Total Population Deviation[2]
AK	4.0%	4.0%	0.5%	0.5%	9.0%
AZ	-5.0%	5.0%	-8.5%	8.5%	8.8%
AR	-0.2%	2.4%	-0.7%	1.9%	8.4%
CA	1.3%	2.0%	6.3%	6.3%	0.4%
CO	4.2%	4.2%	6.2%	6.2%	5.0%
CT	-1.1%	2.3%	-1.4%	1.5%	6.0%
DE	-2.3%	2.7%	2.6%	2.6%	9.9%
FL	-13.7%	13.7%	-13.5%	13.5%	4.0%

[1] Both the efficiency gap and partisan bias were first calculated as a raw average of the 2012 and 2014 figures. In a few cases where the sign flipped between elections, the raw value in columns 2 and 4 differs from the absolute value in columns 3 and 5. The former reflects how strongly partisan a state house plan is in a particular direction, while the latter measures the amount of partisanship that the plan has exhibited in either direction.

[2] The data for current state plans' total population deviations comes from the National Conference of State Legislatures (NCSL). *See* NCSL, *2010 NCSL Congressional and State Legislative Redistricting Deviation Table*, http://www.ncsl.org/research/redistricting/2010-ncsl-redistricting-deviation-table.aspx.

State	Efficiency Gap[1]	Absolute Efficiency Gap	Partisan Bias	Absolute Partisan Bias	Total Population Deviation[2]
GA	-6.2%	6.2%	-13.2%	13.2%	2.0%
HI	2.7%	3.8%	11.4%	11.4%	21.6%
IL	-0.6%	3.0%	1.4%	1.4%	0.0%
IN	-10.6%	10.6%	-12.7%	12.7%	1.7%
IA	-3.1%	3.4%	-5.7%	5.7%	1.9%
KS	-10.9%	10.9%	-9.0%	9.0%	2.9%
KY	2.6%	2.6%	2.8%	2.8%	10.0%
ME	2.6%	2.6%	-1.5%	1.5%	9.9%
MA	0.5%	5.1%	1.3%	1.3%	9.7%
MI	-13.7%	13.7%	-7.7%	7.7%	10.0%
MN	-6.1%	6.1%	-7.5%	7.5%	1.4%
MO	-9.0%	9.0%	-13.1%	13.1%	7.8%
MT	0.5%	5.2%	-1.8%	2.8%	5.4%
NV	-0.2%	2.8%	-0.6%	1.7%	1.3%
NM	-1.6%	1.6%	-3.3%	3.3%	6.7%
NY	-10.3%	10.3%	-1.8%	1.8%	7.9%
NC	-12.9%	12.9%	-13.0%	13.0%	9.9%
OH	-9.4%	9.4%	-13.4%	13.4%	16.4%

State	Efficiency Gap[1]	Absolute Efficiency Gap	Partisan Bias	Absolute Partisan Bias	Total Population Deviation[2]
OK	-4.5%	4.5%	-7.9%	7.9%	1.8%
OR	2.5%	2.5%	4.7%	4.7%	3.1%
PA	-6.0%	6.0%	-5.8%	5.8%	7.9%
RI	9.6%	9.6%	-2.5%	2.5%	5.0%
SC	-3.4%	3.4%	-8.3%	8.3%	5.0%
TN	-3.1%	4.2%	-16.9%	16.9%	9.2%
TX	-3.7%	3.7%	-10.6%	10.6%	9.9%
UT	0.3%	2.0%	-10.5%	10.5%	1.6%
VT	9.0%	9.0%	2.0%	4.8%	18.9%
VA	-13.1%	13.1%	-12.4%	12.4%	2.0%
WA	-0.9%	2.1%	1.0%	1.0%	0.1%
WV	-1.4%	3.1%	1.1%	3.0%	10.0%
WI	-11.5%	11.5%	-12.1%	12.1%	0.8%
WY	-9.5%	9.5%	-0.6%	1.2%	9.8%