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ALTERNATIVE BASES OF POPULATION FOR APPORTIONMENT
A review of bases using rates of citizenship

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Executive Summary. This is a supplement to the press release of December 30, 2019. This summarizes the impact that using citizen-based population factors could have on the apportionment of the U.S. House. While there are four population bases reviewed here, the states affected by either of these form a core group of about a dozen states.

There are two main population breaks for this review: one based upon Citizen Population (CPOP) and one based upon Citizen Voting Age Population (CVAP). There are two alternative ways to determine these subsets of the population, both of which rely upon the American Community Survey (ACS) as results from this are the most reliable and recent information in this regard.

Regardless of which set of these four numbers is used for the analysis the states can be broken into several groups. First are three states which could lose at least one seat in all four sets: CA (with an average shift of -4.5 seats); NY (average -1.75 seats); and IL (average -1.0 seats). Second are six states which could gain at least a seat in all four sets: FL (with an average shift of +1.5 seats); and CO, MO, MT, NC, OR (each with an average shift of +1.0 seats).

The major factor is the proportion of a state that is non-citizen, which may well vary by whether population or voting age is used. The main states with seat shift gains have changed somewhat over reviews from earlier decades. Yet, for each set the number of states gaining is almost twice the number losing.

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The Alternative Population Bases. Each of the four alternative bases rely upon citizenship rates as the major factor which distinguishes this review from the one discussed in the previous December 30, 2019 analysis. A secondary factor is that these alternatives are not projected out to April 1, 2020.

Two sets of population numbers are generated: one for the citizens of all ages (CPOP) and another for citizens of voting age (CVAP).

Two methods of determining which numbers to use are considered. Method 1 (ACS Numbers) uses the most recent ACS release and runs those raw numbers through the apportionment formula. Method 2 (ACS Rates) uses the state-level rates of citizenship obtained from the ACS and applies them to the most recent numbers from the Bureau's Population Estimates Program (PEP). These PEP numbers are the core of the previous analysis from the earlier review.

ACS Releases. For Method 1 (ACS Numbers) there are two releases of the ACS that could be used for this exercise. The first is the 1-year ACS of 2018 released in September 2019. The second is the 5-year ACS of 2018 releases in December 2019.

The basic difference between the 1-year and the 5-year is that the 1-year is a high-level snapshot of the nation for which information is only released for the areas of the country with the largest populations. In other words, information is only released for about 800 counties but it is released for all states. The 5-year has greater coverage and information is released for all counties and other areas of geography.

The other main difference between these two releases is the timeframe. The 1-year release includes only responses from the previous year, i.e., 2018, and hence the release is denominated the 2018 ACS 1-year release. The 5-year release includes all responses from the previous five years and hence the release is denominated the 2014-2018 ACS 5-year release.

While the larger universe of responses allows for coverage for geography with smaller numbers of persons, it also means that the midpoint for all responses is midway between 2014 and 2018, i.e., July 1 of 2016. A few examples might point out the degree to which the universe matters due to the midpoint of all responses.

Reviewing data for the nation, the 1-year release produces 327.2 million persons, of whom 253.8 million were of voting age, or 77.7%; this compares with the 5-year release which produces 322.9 million persons, of whom 249.3 million were of voting age, or 77.2%.

Reviewing data for California, the 1-year release produces 4.7 million non-citizens of voting age, or 15.5% of persons of voting age; the 5-year release produces 4.8 million non-citizens of voting age, or 16.1% of persons of voting age.

For most purposes where such a characteristic dataset is used for state-level analysis the 5-year has distinct advantages for internal consistencies that covers all levels of geography. However, considering the sensitivity of the apportionment formula and the differing growth patterns of each state it seems that the more recent 1-year dataset should be the preferred information for apportionment review.

The choice of methods does not really need to be made for the purposes here and other methods could be considered. While Method 2 (ACS Rates) appears to make more sense as representing population numbers closer to the census date, including the most recent numbers alone, as in Method 1 (ACS Numbers) provides more information for review.

Discussion: Even with the two different methods to determine the numbers for each alternative apportionment base there is still some timeframe differential. The population numbers from the 1-year ACS release will likely lag behind the population estimates by a year. Additionally, there is also some difference due to the methodologies; a survey for the ACS and administrative records for population estimates.

Therefore, shifts among states are likely to involve different states and the question is thus whether there are generalizations or groups of states that share commonalities across these sets of alternative bases. While it appears that a main factor for states that could lose seats under a citizenship basis is the proportion of the population that is non-citizen, the states that could gain a seat may share no more in common than the spot where they land in the apportionment formula ranks.

There are six states in which the percentage of non-citizens of voting age is more than 10% of the voting age persons: California (16%); Texas (13%); Nevada (12%); New York and New Jersey (each 11%); and Florida (10%). Four of these lose at least one seat under one of the four sets of apportionment tests. Nevada is a state with a small number of seats and does not appear close to the cutoff on any test. Florida, the state with the lowest percentage in this subset, actually gains one or two seats under each of these tests. Illinois, which has 8% non-citizen VAP would also lose one seat under each test.

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The states that are more likely to gain under these tests include five that would gain one seat in all four tests: Colorado; Missouri; Montana; North Carolina; and Oregon.

Other states are hybrids, that is, gaining in some tests and losing or staying the same in others. Texas, with 36 seats currently and frequently with a priority near the cutoff gains under the CPOP tests and loses under the CVAP tests. Virginia stays the same under the CPOP tests and gains under the CPOP ones.

New Jersey loses under the Method 2 (ACS Rates) tests and stays the same under the Method 1 (ACS Numbers) tests. Arizona gains under the Method 2 (ACS Rates) tests and stays the same under the Method 1 (ACS Numbers) tests. Tennessee and Ohio gain one seat under only one of the four tests, albeit as seat 435.

Two states near the cutoff in the projections for 2020 (see December 30 release): Rhode Island and Montana, would see Rhode Island remain at two seats and Montana return to two seats. Alabama, seat 436 (i.e., one below the cutoff) under the recent projections, and short only about 10k persons based on projections extended out from the 2019 estimates, would be safe at their current seven seats under any of these citizen-based apportionment tests[2].

Regionally, the Northeast and Midwest generally see states losing seats in New York with an average loss of 1.75 over the four tests and Illinois losing one seat in each test. New Jersey would lose based upon the Method 2 (ACS Rates) at seat 437 in each. Ohio would gain one seat in one test but only as seat 435. Missouri would gain one seat in each test.

The South would mostly have states gaining a seat except for Texas which could lose under the CVAP tests while Virginia would gain one seat under the CVAP tests. North Carolina and Florida would gain at least one seat under all four tests.

The West, aside from California, which would lose four or five seats under each test, would have states gaining seats: Colorado, Montana, and Oregon for all four tests and Arizona for the Method 2 (ACS Rates) test.

Caveat. Bear in mind, none of these tests used numbers that were projected out to April 2020. While Method 2 (ACS Rates) was current as of July 1, 2019, Method 1 (ACS Numbers) was current as of the midpoint of July 1, 2018. The formula is very sensitive and while technically one person can flip a seat and several have flipped on the basis of hundreds of persons, this factor has not been considered here. Additionally, as mentioned in the December analysis, no estimation has been made for the overseas personnel who will be counted in the apportionment population but under a different means from the previous decades.

Summary. The above brief discussion will hopefully provide a review of the dynamics of using citizen-based apportionment. A few items follow:

1) the number of states gaining seats would be almost twice as many as those losing seats, with from 10 to 14 states overall being affected in each test;
2) the Northeast and Midwest would see more of a net loss of seats while the South and West would see a net gain of seats;
3) California could lose four or five seats under each of the four tests;
4) New York could lose one or two seats under each of the four tests;
5) Texas could experience either a gain or a loss under these four tests;
6) Florida could gain one or two seats under each of the four tests;
7) Five states could gain one seat under each of the four tests: Missouri; North Carolina; Colorado; Montana; and Oregon:
8) For most states there would be no difference in seats between CPOP compared to CVAP tests.

See more about the study at http://www.polidata.org/census/est019dl.htm .

[wprapa19supplement]

[2] Note that Alabama has filed a federal lawsuit seeking to void any apportionment "that does not use the best available methods to exclude illegal aliens from the population figures utilized to apportion congressional seats and electoral votes among the states…". See *Alabama v. Department of Commerce*; 2:18-cv-00772-RDP (May 21 2018). N.b., that illegal aliens does not equate to non-citizens; the only ACS question relates simply to citizenship, not legal status.

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