

Apportionment Acts

Apportionment Act of 1792

An Act apportioning Representatives among the several States, according to the first enumeration. Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That from and after the third day of March one thousand seven hundred and ninety-three, the House of Representatives shall be composed of members elected agreeably to a ratio of one member for every thirty-three thousand persons in each state, computed according to the rule prescribed by the constitution; that is to say:

Within the state of New Hampshire, four; within the state of Massachusetts, fourteen; within the state of Vermont, two; within the state of Rhode Island, two; within the state of Connecticut, seven; within the state of New York, ten; within the state of New Jersey, five; within the state of Pennsylvania, thirteen; within the state of Delaware, one; within the state of Maryland, eight; within the state of Virginia, nineteen; within the state of Kentucky, two; within the state of North Carolina, ten; within the state of South Carolina, six; and within the state of Georgia, two members. APPROVED, April 14, 1792.^[4]

Apportionment Act of 1911

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

Section 1. That after the third day of March, nineteen hundred and thirteen, the House of Representatives shall be composed of four hundred and thirty-three Members, to be apportioned among the [46] States as follows:

Alabama, ten	Maryland, six	Oklahoma, eight
Arkansas, seven	Massachusetts, sixteen	Oregon, three
California, eleven	Michigan, thirteen	Pennsylvania, thirty-six
Colorado, four	Minnesota, ten	Rhode Island, three
Connecticut, five	Mississippi, eight	South Carolina, seven
Delaware, one	Missouri, sixteen	South Dakota, three
Florida, four	Montana, two	Tennessee, ten
Georgia, twelve	Nebraska, six	Texas, eighteen
Idaho, two	Nevada, one	Utah, two
Illinois, twenty-seven	New Hampshire, two	Vermont, two
Indiana, thirteen	New Jersey, twelve	Virginia, ten
Iowa, eleven	New York, forty-three	Washington, five
Kansas, eight	North Carolina, ten	West Virginia, six
Kentucky, eleven	North Dakota, three	Wisconsin, eleven
Louisiana, eight	Ohio, twenty-two	Wyoming, one
Maine, four		

Section 2. That if the Territories of Arizona and New Mexico shall become States in the Union before the apportionment of Representatives under the next decennial census they shall have one Representative each, and if one of such Territories shall so become a State, such State shall have one Representative, which Representative or Representatives shall be in addition to the number four hundred and thirty-three, as provided in section one of this Act, and all laws and parts of laws in conflict with this section are to that extent hereby repealed.

Section 3. That in each State entitled under this apportionment to more than one Representative, the Representatives to the Sixty-third and each subsequent Congress shall be elected by districts composed of a contiguous and compact territory, and containing as nearly as practicable an equal number of inhabitants. The said districts shall be equal to the number of Representatives to which such State may be entitled in Congress, no district electing more than one Representative.

Section 4. That in case of an increase in the number of Representatives in any State under this apportionment such additional Representative or Representatives shall be elected by the State at large and the other Representatives by the districts now prescribed by law until such State shall be redistricted in the manner provided by the laws thereof and in accordance with the rules enumerated in section three of this Act; and if there be no change in the number of Representatives from a State, the Representatives thereof shall be elected from the districts now prescribed by law until such State shall be redistricted as herein prescribed.

Section 5. That candidates for Representative or Representatives to be elected at large in any State shall be nominated in the same manner as candidates for governor, unless otherwise provided by the laws of such State.

Methods of Apportionment

While it seems easy enough to say “one representative per 30,000 people,” coming up with the right formula is actually a little tricky.

Part of the trick, believe it or not, was figuring out how to deal with remainders. How did a remainder affect the number of seats a state had a right to?

There are four different methods of calculating the number of representatives a state should have. All four have been used since the first apportionment act. Legislation in 1940 determined that Congress would begin to use the Huntington-Hill Method to determine seats.

The Hamilton/Vinton Method

The Hamilton/Vinton Method sets the divisor as the proportion of the total population per house seat. After each state's population is divided by the divisor, the whole number of the quotient is kept and the fraction dropped. This will result in surplus house seats. The first surplus seat is assigned to the state with the largest fraction after the original division. The next is assigned to the state with the second-largest fraction and so on. For example:

If a country had 4 states, and a 20-seat House of Representatives...

$$2560 + 3315 + 995 + 5012 = 11882$$

$$11882/20 = 594.1$$

State	Population	Quotient	First Allocation of Seats	Left Over Decimal	Seats Apportioned
A	2560	$2560/594.1 = 4.31$	4	.31	4
B	3315	$3315/594.1 = 5.58$	5	.58	6
C	995	$995/594.1 = 1.67$	1	.67	2
D	5012	$5012/594.1 = 8.44$	8	.44	8
Total = 20 Seats					

The Jefferson Method

The Jefferson Method avoids the problem of an apportionment resulting in a surplus or a deficit of House seats by using a divisor that will result in the correct number of seats being apportioned. For example:

If a country had 4 states, and a 20-seat House of Representatives...

$$2560 + 3315 + 995 + 5012 = 11882$$

$$11882/20 = 594.1$$

State	Population	Quotient	Seats Apportioned		
A	2560	$2560/594.1 = 4.31$	4		
B	3315	$3315/594.1 = 5.58$	5		
C	995	$995/594.1 = 1.67$	1		
D	5012	$5012/594.1 = 8.44$	8		
Total = 18 Seats (2 Surplus)					

But if the divisor were 550 instead of 594.1:

State	Population	Quotient	Seats Apportioned		
A	2560	$2560/550 = 4.65$	4		
B	3315	$3315/550 = 6.03$	6		
C	995	$995/550 = 1.81$	1		
D	5012	$5012/550 = 9.11$	9		
Total = 20 Seats					

The Webster Method

The Webster Method is a modified version of the Hamilton/Vinton method. After the state populations are divided by the divisor, those with quotients that have fractions of 0.5 or above are awarded an extra seat. States with a quotient with a fraction below 0.5 have the fraction dropped. The size of the house of representatives is set in order to calculate the divisor, but can be increased in the final apportionment if a large number of states have fractions above 0.5.

If a country had 4 states, and a planned 20-seat House of Representatives...

$$2560 + 3315 + 995 + 5012 = 11882$$

$$11882/20 = 594.1$$

State	Population	Quotient	First Allocation of Seats	Left Over Decimal	Seats Apportioned
A	2560	$2560/594.1 = 4.31$	4	.31	4
B	3315	$3315/594.1 = 5.58$	5	.58	6
C	995	$995/594.1 = 1.67$	1	.67	2
D	5012	$5012/594.1 = 8.44$	8	.44	8
Total = 20 Seats					

The Huntington-Hill Method

The Huntington-Hill Method is a modified version of the Webster method, but it uses a slightly different rounding method. While Webster's method rounds at 0.5, the Huntington-Hill method rounds at the geometric mean, which is described below. If a state's quotient is higher than its geometric mean, it will be allocated an additional seat. This method will almost always result in the desired number of seats.

The geometric mean of two numbers is the square root of their product.

For example, the arithmetic mean of 4 and 5 is 4.5:

$$(4 + 5)/2 = 4.5$$

The geometric mean is 4.47:

$$(4 \times 5) = 20$$

$$\sqrt{(20)} = 4.47$$

If a country had 4 states, and a planned 20-seat House of Representatives...

$$2560 + 3315 + 995 + 5012 = 11882$$

$$11882/20 = 594.1$$

State	Population	Quotient	Lower Quotient	Upper Quotient	Geometric Mean	Seats Apportioned
A	2560	$2560/594.1 = 4.31$	4	5	4.47	4
B	3315	$3315/594.1 = 5.58$	5	6	5.48	6
C	995	$995/594.1 = 1.67$	1	2	1.41	2
D	5012	$5012/594.1 = 8.44$	8	9	8.49	8
Total = 20 Seats						