After the votes have been counted in a proportional electoral system, mandates must be allocated. In global practice, there are two main types of seat allocation methods: quota methods and divisor methods.

Quota Methods:
Hare
Droop
Imperiali

Divisor Methods:
D’Hondt
Saint-Lague
Modified Saint-Lague

In quota methods, the total number of votes is divided by the number of seats (Hare method), the number of seats plus one (Droop method), or the number of seats plus two (Imperiali method) to determine a quota. Parties receive seats according to the integer part of the result of dividing their vote total by this quota. The remaining seats are distributed in descending order of the remainders (the fractional parts).

# Example (Droop quota):

Total votes (V): 100,000
Seats to allocate (S): 5
Parties:
Party A: 45,000 votes
Party B: 25,000 votes
Party C: 18,000 votes
Party D: 12,000 votes

$$\text{Droop Quota} = \left(\frac{100{,}000}{5+1}\right) + 1 = \left(\frac{100{,}000}{6}\right) + 1 = 16{,}666.66\ldots + 1 = 16{,}667$$

| Party | Votes | Quotient (Votes ÷ 16,667) | Initial Seats (Integer Part) | Fractional Part |
|---|---|---|---|---|
| A | 45,000 | 2.7 | 2 | 0.7 |
| B | 25,000 | 1.5 | 1 | 0.5 |
| C | 18,000 | 1.08 | 1 | 0.08 |
| D | 12,000 | 0.72 | 0 | 0.72 |

First step: assign initial seats according to the integer part

| | |
|---|---|
| A | 2 |
| B | 1 |
| C | 1 |
| D | 0 |

Second step:assign the remaining seats according to the fractional part

| | |
|---|---|
| A | 2 |
| B | 1 |
| C | 1 |
| D | 1 |

In divisor methods, the number of votes received by each party is divided by a sequence of divisors (1, 2, 3, 4, 5, … in the D’Hondt method, and 0.5, 1.5, 2.5, … in the Sainte-Laguë method), generating a list of quotients. Seats are then assigned to the parties in descending order of these quotients.

# Example (D’Hondt method):

Total votes (V): 100,000
Seats to allocate (S): 5
Parties:
Party A: 45,000 votes
Party B: 25,000 votes
Party C: 18,000 votes
Party D: 12,000 votes

| Party | ÷1 | ÷2 | ÷3 | ÷4 | ÷5 |
|---|---|---|---|---|---|
| A | 45,000 | 22,500 | 15,000 | 11,250 | 9,000 |
| B | 25,000 | 12,500 | 8,333 | 6,250 | 5,000 |
| C | 18,000 | 9,000 | 6,000 | 4,500 | 3,600 |
| D | 12,000 | 6,000 | 4,000 | 3,000 | 2,400 |

Step 1: first seat goes to Party A

Step 2: second seat goes to Party B

Step 3: third seat goes to Party A

Step 4: fourth seat goes to Party C

Step 5: fifth seat goes to Party A

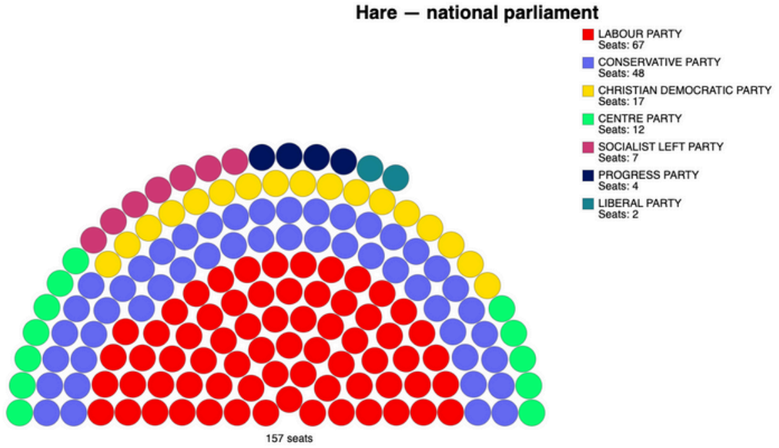
| | |
|---|---|
| A | 3 |
| B | 1 |
| C | 1 |
| D | 0 |

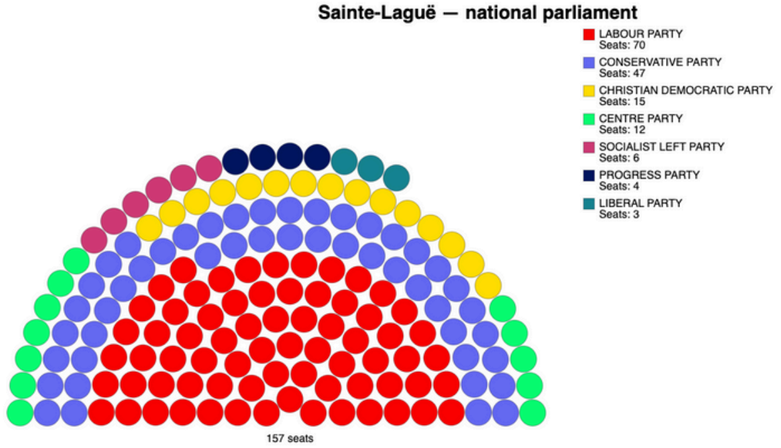
The choice of method affects the composition of the representative body. Some methods are more favorable to large parties, while others benefit smaller ones. Consequently, certain methods result in fewer parties in parliament, while others lead to greater party diversity. The difference between methods becomes negligible when a large number of seats is distributed within a single district. The impact is strongest in parliaments elected from districts with only a few seats.

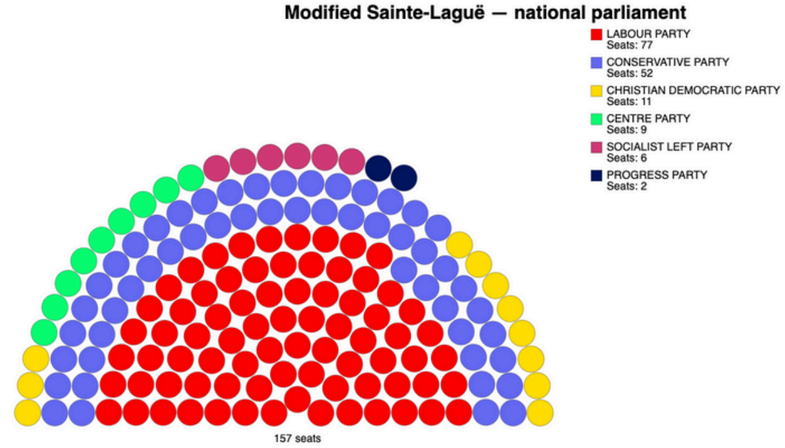
Denmark switched from the D’Hondt method to a modified Sainte-Laguë method (with an altered denominator formula) in 1953 to improve the chances for small parties to enter parliament. In 2007, it returned to the D’Hondt method to make it harder for small parties to win seats.

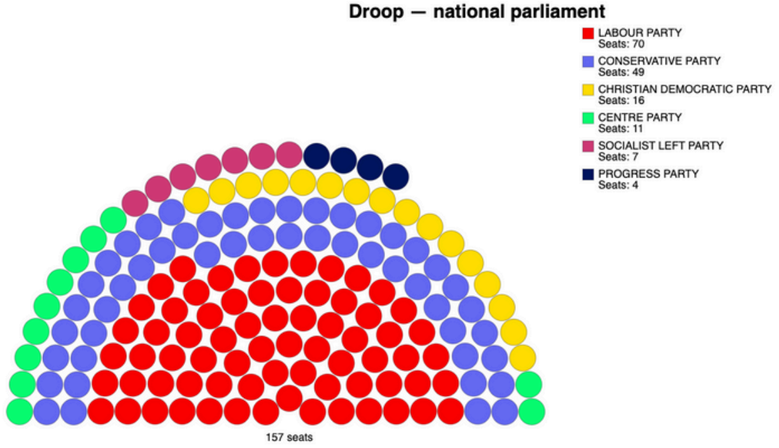
The seat allocation calculator illustrates the differences between these methods. It allows users to allocate seats among parties across one or more districts.

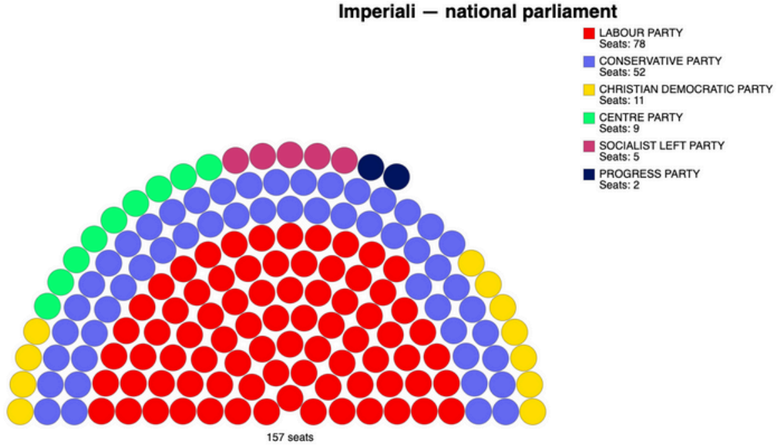
To demonstrate the political significance of choosing an allocation method, we use data from the 1985 Norwegian parliamentary elections.

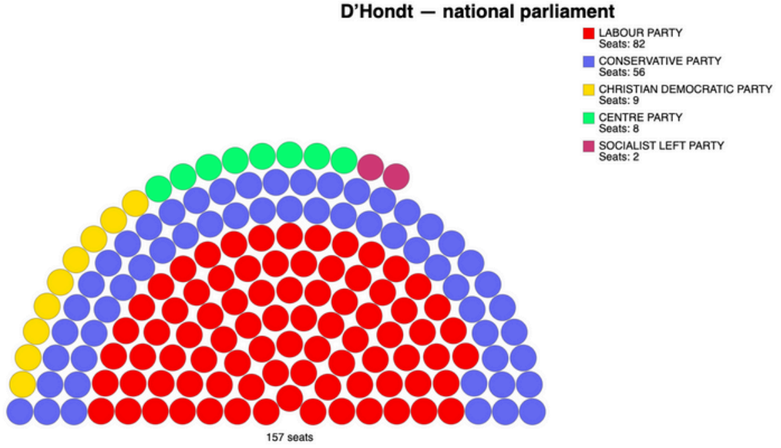


| Party | Votes (%) | Hare | Sainte-Laguë | Modified Sainte-Laguë | Droop | Imperiali | D'Hondt |
|---|---|---|---|---|---|---|---|
| LABOUR PARTY | 40.8% | 67 (42.7%) | 70 (44.6%) | 77 (49.0%) | 70 (44.6%) | 78 (49.7%) | 82 (52.2%) |
| CONSERVATIVE PARTY | 30.4% | 48 (30.6%) | 47 (29.9%) | 52 (33.1%) | 49 (31.2%) | 52 (33.1%) | 56 (35.7%) |
| CHRISTIAN DEMOCRATIC PARTY | 8.3% | 17 (10.8%) | 15 (9.6%) | 11 (7.0%) | 16 (10.2%) | 11 (7.0%) | 9 (5.7%) |
| CENTRE PARTY | 6.6% | 12 (7.6%) | 12 (7.6%) | 9 (5.7%) | 11 (7.0%) | 9 (5.7%) | 8 (5.1%) |
| SOCIALIST LEFT PARTY | 5.5% | 7 (4.5%) | 6 (3.8%) | 6 (3.8%) | 7 (4.5%) | 5 (3.2%) | 2 (1.3%) |
| PROGRESS PARTY | 3.7% | 4 (2.5%) | 4 (2.5%) | 2 (1.3%) | 4 (2.5%) | 2 (1.3%) | 0 (0.0%) |
| LIBERAL PARTY | 3.1% | 2 (1.3%) | 3 (1.9%) | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) |
| RED ELECTORAL ALLIANCE | 0.6% | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) |
| LIBERAL PEOPLE'S PARTY | 0.5% | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) |
| PENSIONERS' PARTY | 0.3% | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) |
| COMMUNIST PARTY | 0.2% | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) |
| OTHER LISTS | 0.1% | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) |

Depending on the method used, the largest party receives between 67 seats (42.3%) and 82 seats (52.2%)—a difference that determines whether a single-party government is possible. The number of parties in parliament also varies between 5 and 7, meaning two parties either gain or lose representation.

This example highlights how politically consequential the choice of seat allocation method can be.