

Electoral Voting Systems

Introduction

This article describes six election systems commonly in use, and assesses their effect.

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Section 2	Description of each system
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1 Which is best?

A judgement of this sort depends on which of the following conditions are thought to be the most important.

- 1 Seats awarded to be directly proportional to party votes
- 2 Single member constituencies
- 3 Overall majority of a single party in a government
- 4 Elected members to attain a mandate greater than 50%

It is not possible under any voting system for all four conditions to be satisfied at the same time. If constituency Condition 2 applies then proportionality Condition 1 cannot be attained. If proportionality Condition 1 applies then the majority Condition 3 can only be obtained for a limited range of voting returns.

For the Westminster elections, from the point of view of the political parties, the constituency Condition 2 is the priority, and Conditions 1 and 4 are relaxed. Condition 3 is regarded as a normal outcome, leading to anxiety on the few occasions when it does not happen.

For the voter the decisions are more complex: a choice of candidate to represent local territorial interests may not coincide with the choice of a political party which would fully represent the voter's wider economic and national interests. For this reason the voter may regard the proportionality Condition 1 as the priority, but may not realise that one or more of the other Conditions must then be relaxed.

2 System Description

2.1 First past the post (FP)

Voter indicates a preference for only one candidate out of all those standing for election. The candidate with the greatest number of votes is elected. When there are more than two candidates the winner is often elected with a mandate of less than 50% of the total votes cast.

Used in single member constituencies, usually. (UK)

2.2 Supplementary vote (SV)

The voter has two votes, and is allowed to express a second choice of another candidate or party. A count of first choice votes is made, and the candidate with more than 50% of total votes cast is elected. Failing that, all candidates with fewer votes than the two greatest are eliminated; if their second choice votes are for one of the top two candidates, those votes are transferred to these top two. A second count is made of the votes now accumulated for these two remaining candidates; the winner is the one with the greater number of votes.

Used in single member constituencies. (In France the two votes are balloted separately with a week between them.)

2.3 Alternative vote (AV)

The voter has in effect several votes, which are used to rate the candidates from one, the first choice, upwards in order of preference. On the first count the candidate with more than 50% of first choice votes would be selected. If there is none, then the candidate with the least number of first choice votes is discarded, and their lower choice votes ranked up and transferred to the remaining candidates if possible. This process is repeated until a candidate acquires more than 50% of the first count.

Used in single member constituencies, usually. (Australia Lower House)

2.4 Single transferable vote (STV)

This method applies to multi-member constituencies where two or more seats are to be filled. If there is only a single seat the system reduces to AV. Candidates are rated by the voter in order of preference from one upwards. A Quota of votes is calculated, typically as:

$(\text{Votes}) \div (\text{Seats} + 1) \text{ plus } 1.$

There are different evaluations for the Quota: this Droop formula, is the one commonly used.

A candidate with more first preference votes than the Quota is awarded a seat; if a successful candidate has an excess of first preference votes then an appropriate fraction of their associated second preference votes are transferred to the other candidates, so that the total redistributed votes equals the candidate's surplus. If no more seats can be allocated in this way then the candidate with least support is eliminated and their second preferences transferred as above. At any stage a candidate with more accumulated votes than the Quota is awarded a seat;

Used in multi-member constituencies (Eire, Malta)

2.5 Additional member system (AMS)

A voter has two votes: one for a Local candidate and one for a political Party.

Constituencies are grouped into Regions each containing a number of Local seats, and each Region is allocated a number of Regional seats. Candidates are elected on the FP system to the Local seats; then the Regional seats are allocated from party top-up lists, according to a Quota similar to the STV system, applied only to the Party votes, so as to make the proportion of seats to be taken by each party equal to the proportion of its Party votes in each Region. The ratio of Local to Regional seats can vary from 50:50 to 99:1 with diminishing proportional effect.

The Regional divisions give the top-up members a locality link. At the same time the Regions limit the range of small parties – if they cannot obtain a Local seat within a Region they may not qualify for any top-up seats.

Used in single member constituencies, plus Regional seats (Germany, New Zealand, Scotland, Wales) In New Zealand the system is termed Mixed Member Proportional system (MMP).

2.6 List proportional representation (LPR)

This is the system used to elect MEPs to the EU Parliament. A single vote is cast for the preferred party; votes are totalled for a given Region. The total number of available seats for that Region are divided between parties according to a Quota, similar to the STV system, applied to the Party votes. A party can then allocate its seats to any of its members on a preferred list. The list can be open, as in the UK, and the electorate can make a judgement of individual candidates, or it may be closed and the electorate must trust the party.

The Quota formula is all important here, and is not a simple matter: there are several variations as to how fractions of the Quota are to be considered.

Multi-member constituencies. (Most West Europe countries, Israel, and UK for MEPs)

3 Outcomes in practice

In 1997, under the aegis of Democratic Audit at the University of Essex, a comparative study was made of these electoral systems using data gained from the 1997 General Election. The study was based on surveys carried out in 1997 by ICM Research of 8,447 respondents who were asked to vote again on the basis of each of these PR systems. They were given a different ballot paper for each type of election system, showing the same parties but with similar candidates. Weightings were applied to balance the demographic profile of the respondents.

The following table shows the results for the parliamentary seats that would be gained under the different systems. SNP is the Scottish Nationalist Party, PC is Plaid Cymru. The AMS results are given for a 50:50 percent split between Local and Regional seats.

The FP (First past the post) row shows the actual results of the 1997 Election. The Proportional row shows how the then 641 parliamentary seats would be apportioned according to the first preference votes.

<i>Vote system</i>	<i>Conservative</i>	<i>Labour</i>	<i>Lib Dem</i>	<i>SNP/PC</i>	<i>Other</i>
<i>FP</i>	165	419	46	10	1
<i>SV</i>	110	436	84	10	1
<i>AV</i>	110	436	84	10	1
<i>STV</i>	144	342	131	24	0
<i>AMS</i>	203	303	115	20	0
<i>Proportional</i>	202	285	110	16	28

4 Comment

The 1997 election produced an extreme example of disproportional FP votes, because the Conservatives were very unpopular then, and so probably did not gain many second preference votes. Consequently the SV, AV, and STV systems, which need to use the second and later preferences, would not have been able to show the full amount of Conservative support.

For the STV evaluation five Westminster constituencies were grouped together to make up 5-member constituencies. Even within this size of constituency a number of small parties could not get enough votes qualify for a seat, although collectively over the country they had enough votes for 28 seats, which were necessarily absorbed by the larger parties.

AMS was easier to test because it was possible to use a 50:50 ratio of Local to Regional seats, requiring no more than a pairing of Westminster constituencies to allow both a Local and a Regional seat to be defined. The results would be exactly proportional, (Condition 1), were it not for the presence of a number of small parties, as in the STV result, which were not large enough to gain a local seat, but were jointly worth 28 seats dispersed among the larger parties.

The AMS system is used for German elections with a 50:50 percent split between Local and Regional seats, for the Scottish Parliament with a 57:43 split, for the Welsh Assembly with a 66:33 split; New Zealand changed from FP to AMS (aka MMP), with a nominal 50:50 split, in 1996, after a long campaign by reformers over a period of 20 years or more.

5 Summary

FP amplifies differences in party support, this makes it the system most likely to produce a majority government. (Condition 3)

SV and AV enable the elected candidate to attain a mandate of more than 50%, in a single-member constituency. (Conditions 2 and 4)

STV is designed to be fully proportional, (Condition 1), although it does not achieve that with these 1997 election results. It requires multi-member constituencies for its operation, and a coalition government is a likely outcome.

AMS comes closest to making the total number of seats awarded proportional to the number of party votes cast, (Condition 1), because the top-up list is used to that effect. A coalition government is a likely outcome.

LPR uses only party lists, so that the system is inherently proportional, (Condition 1), although subject to deviations due to size of Regions, and method of Quota calculation. A coalition government is a likely outcome.

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