POLITICAL ECONOMY

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Multiparty systems

Representative democracy – two views

- To choose a government with an agenda as close to the public's as possible (Downs), or
- to choose a legislators who will face the unforeseeable challenges of the world.
- This letter requires a set of people to be chosen.
- How can that be done?

Representative democracy: the right assembly

- To pick people who have the same preferences as the voters, in the same proportions as the voters.
- Are voters' preferences sufficiently alike?
- Why would they all want to be there?

- In principle, for a big assembly, random selection could also work.

You need a method

- To pick people who have the same preferences as the voters, in the same proportions as voters: proportional representation (PR)

Proportional representation in practice

- Electoral rules may matter.
- E.g. one district, 10 seats, 100 000 voters turning out to vote, six parties:

	Political Parties					
	Yellow	White	Red	Green	Blue	Pink
Votes	47000	16000	15900	12000	6000	3100

- How shall the 10 seats be distributed?
- A formula must be used!

Different formulae

- Division by the Hare votes-over-seats quotient (*d=v/s*) + largest remainders
- Same, but with *d=v/(s+1)* or *d=v/(s+1)+1* (the Droop quota)
- D'Hondt: divide the votes of each party by 1, 2, … *s*, tabulate the matrix and pick the s *highest average* values.
- This system guarantees that no party will get a full seat more than its proportional fraction of the electorate.

D'Hondt applied

	Political Parties					
Divided by	Yellow	White	Red	Green	Blue	Pink
1	47000	16000	15900	12000	6000	3100
2	23500	8000	7950	6000	3000	1550
3	15667	5333	5300	4000	2000	1033
4	11750	4000	3975	3000	1500	775
5	9400	3200	3180	2400	1200	620
6	7833	2666	2650	2000	1000	516
7	6714	2285	2271	1714	857	442

Source: http://en.wikipedia.org/wiki/Highest_averages_method

Different formulae

- Variations of D'Hondt: divide the votes of each party by a modified series of divisors, tabulate the matrix and pick the s highest values.
- E.g. Sainte-Lagué uses divisors 1,3,5,7,9… instead of 1,2,3,4,5…
- E.g. modified Sainte-Lagué: first divisor 1.4
  - Question: What will be the effect of that modification?

The single transferable vote

- Candidates, not parties
- Ranked (like Borda)
- First winners chosen with largest reminders, with the Droop quota $d=v/(s+1)+1$,

- Then first-place votes for a given candidate above those required for him to reach *d* are assigned to the voters' second choices.
- If voters' second choices stay within the party list, the same as pure largest remainders,
- but it allows for differentiation across parties by candidates.

Limited voting

- Each voter can cast *c votes*, $c \leq s$, where s is the number of seats to be filled in the district. The *s* candidates receiving the most votes in a district assume its seats in the parliament.
- The votes are cast for persons rather than parties.
- This can lead to strategic voting to help a party list, as well as
- to shorter lists.
- If *c* is one, closer to plurality-type.
- A special case: $c = s = 1$ Plurality (first-past-the-post)

Electoral rules and the number of parties

- What do different electoral rules do to the number of parties in legislation?
- ”Duverger's Law” (1954): The plurality rule produces two-party systems
- Two effects:
  - direct
  - also voters' presumed aversion to „waste” votes (the Duverger hypothesis)
- But first: how do we count parties? Should big and small parties count the same?
- Clearly not. We need a measure (like concentration in industrial organization).

Counting parties

- For both votes cast (ENV) and seats in the legislature (ENS), we can define the *effective number of parties*.
- If *vp* is the number of votes cast for party *p* and *v* is the total number of votes, and the same for seats in legislature *sp* and *s*.

$$\mathrm{ENV} = \frac{1}{\sum_{p=1}^{n}\left(\frac{v_p}{v}\right)^2} \qquad \mathrm{ENS} = \frac{1}{\sum_{p=1}^{n}\left(\frac{s_p}{s}\right)^2}.$$

Instead of effective numbers of parties, we could also be looking at changes in vote shares.

ENS: examples

- Three parties get 1/3 of the votes each.

ENS=1/[3(1/3)2] =3

- Two parties get 1/3 of the vote, a third gets 8/27, and a fourth gets 1/27.

ENS=1/[2(1/3)2+(8/27)2+(1/27)2] ≈ 3.21

  - One party gets half, the second and the third gets 25% each.

ENS=1/[(1/2)2+2(1/4)2] = 8/3 ≈ 2.66

So what do rules do to ENS vs. ENV?

Table 13.2a. *Median numbers of representatives per district (M), effective numbers of parties (ENV, ENS), deviations from proportionality (Dev), and relative reduction in the number of parties (RRP)*

Districts	Year	*M* (effective)	ENV	ENS	*Dev* (%)	RRP (%)
Australia	1984	1.0	2.79	2.38	11.5	18.7
Bahamas	1987	1.0	2.11	1.96	19.2	7.7
Barbados	1986	1.0	1.93	1.25	–	54.4
Belize	1984	1.0	2.06	1.60	22.0	28.8
Botswana	1984	1.0	1.96	1.35	17.2	45.2
Canada	1984	1.0	2.75	1.69	24.9	62.7
Dominica	1985	1.0	2.10	1.76	34.8	19.3
France	1981	1.0	4.13	2.68	20.6[a]	54.1
Grenada	1990	1.0	3.84	3.08	–	24.7
India	1984	1.0	3.98	1.69	31.8	135.5
Jamaica	1989	1.0	1.97	1.60	–	23.1
Korea (South)	1988	1.0	4.22	3.56	–	18.5
New Zealand	1984	1.0	2.99	1.98	19.0	51.0
St. Kitts and Nevis	1984	1.0	2.45	2.46	–	−0.4
St. Lucia	1987	1.0	2.32	1.99	26.0	16.6
St. Vincent and Grenadines	1984	1.0	2.28	1.74	17.8	31.0
Trinidad and Tobago	1986	1.0	1.84	1.18	–	55.9
United Kingdom	1983	1.0	3.12	2.09	23.4	49.3
United States	1984	1.0	2.03	1.95	6.7	4.1
Means		1.0	2.68	2.00	21.1	30.5

Table 13.2b. *Median numbers of representatives per district (M), effective numbers of parties (ENV, ENS), deviations from proportionality (Dev), and relative reduction in the number of parties (RRP)*

Multimember districts	Year	R/D (effective)	NEV	NES	*Dev* (%)	RRP (%)
Argentina	1985	9.0	3.37	2.37		42.2
Austria	1986	30.0 (20)	2.72	2.63	4.3	3.4
Belgium	1985	8.0 (12)	8.13	7.01	7.7	16.0
Bolivia	1985	17.5	4.58	4.32		5.6
Brazil	1990	30.0	9.68	8.69	5.9	11.4
Columbia	1986	8.0	2.68	2.45	3.4	9.4
Costa Rica	1986	10.0 (8)	2.49	2.21	1.2	12.7
Cyprus	1985	12.0	3.62	3.57		1.4
Denmark	1984	11.0 (25)	5.25	5.04	2.9	4.2
Dominican Republic	1986	5.0	3.19	2.53		26.1
Ecuador	1984	3.0	10.32	5.78	16.0	78.5
El Salvador	1985	4.0 (4)	2.68	2.10		27.6
Finland	1983	17.0 (13)	5.45	5.14	3.9	6.0
Germany	1983	1.0 (10)	3.21	3.16	0.8	1.6
Greece	1985	6.0 (3)	2.59	2.14	9.0	21.0
Honduras	1985	9.0	3.49	2.80	2.2	24.6
Iceland	1983	7.0 (60)	4.26	4.07	4.3	4.7
Ireland	1987	5.0 (4)	3.46	2.89	3.2	19.7
Israel	1984	120.0 (50)	4.28	3.86	5.8	10.9
Italy	1983	24.0 (20)	4.51	4.11	4.5	9.7
Japan	1986	4.0 (4)	3.35	2.57	6.9	30.4
Liechtenstein	1986	15.0	2.28	1.99		14.6
Luxembourg	1984	21.0 (16)	3.56	3.22	7.5	10.6
Malta	1987	5.0 (5)	2.01	2.00	2.6	0.5
Mauritius	1983	3.0	1.96	2.16		−9.3
Netherlands	1986	150.0 (75)	3.77	3.49		8.0
Norway	1985	10.0 (90)	3.63	3.09	8.7	17.5
Peru	1985	9.0	3.00	2.32		29.3
Portugal	1983	16.0 (12)	3.73	3.41	5.7	9.4
Spain	1986	7.0 (7)	3.59	2.81	17.5	27.8
Sweden	1985	12.0 (12)	3.52	3.39	2.0	3.8
Switzerland	1983	12.0 (8)	5.99	5.26	4.3	13.9
Uruguay	1989	11.0	3.38	3.35		0.9
Venezuela	1983	11.0 (27)	2.97	2.42	7.9	22.7
Means		19.2 (19.2)	4.10	3.48	5.8	14.9

[a] Based on first-round votes.

Sources: *Dev* figures are for 1985 and are from Taagepera and Shugart (1989, Table 10.1).
RRP (%) = (ENV/ENS-1)100. Effective *M* are for the early 1980s and are from Taagepera and Shugart (1989, Table 12.1).
All other figures are from Cox (1997, Appendix C).

So does a larger M make the reduction from ENV to ENS smaller?

Table 13.3. *Effective numbers of parties in legislature, number of representatives elected per district, and deviations from proportionality*

M	Mean ENS	Mean *Dev* (Taagepera and Shugart, 1989)	Mean *Dev* (Lijphart, 1990)
1.0	2.00 (19)	21.1 (13)	12.9 (6)
2.0 ≤ 5.0	2.12 (8)	7.5 (5)	7.5 (4)
6.0 ≤ 10.0	3.34 (7)	4.9 (6)	5.6 (9)
11.0 ≤ 15.0	3.98 (7)	4.8 (4)	
> 15.0	4.09 (11)	5.8 (9)	3.5 (12)[a]

[a] Weighted average of figures for *M*s of 1–25, and > 25.

Notes: Number of countries upon which calculations made are in parentheses.
Mean ENS and *Dev* for Taagepera and Shugart are taken from Table 13.2.

Yes.

Possible exceptions:

- big party size differences or
- geographically based parties

What do parties strive for?

- Maximum number of seats in legislature à la Downs?
- Or to represent an ideology?
- Or to represent a certain group?
- Or some combination of the above?
- There is a second stage: cabinet formation.

Coalition formation in one dimension

	Left	<		Center		>	Right
Parties	A	B	C	D	E	F	G
Seats	15	28	5	4	33	9	6

Which parties will form a coalition and why?

- *Winning*: contains more than half of the seats (i.e. not *minority*)
- *Def: A coalition is a minimal winning coalition if the removal of any one member results in its shifting from a majority to a minority coalition.*
- *Minimal winning*.
- *Smallest* (number of parties)?
- *Smallest* (number of seats)?
- *Connected* (in the single policy dimension)?
- *Closest* (in the single policy dimension space)?
- Contains the *central* (median) *party*?

Combinations: minimal-winning (MW), minimal-connected-winning (MCW), etc.

Coalition formation in one dimension (?) in practice

Table 13.5. *Frequency of coalition types, by country, 1945–1987*

Country	Majority situations	Minority situations: Surplus not MCW	MCW not MW	MCW and MW	MW not MCW	Minority	Total
Austria	6	–	–	5	1	1	13
Belgium	1	4	–	7	8	2	22
Denmark	–	–	–	2	–	18	20
Finland	–	17	–	4	1	10	32
Germany	2	–	–	9	1	–	12
Iceland	–	2	–	6	4	2	14
Ireland	4	–	–	–	3	5	12
Italy	4	8	6	–	3	14	35
Luxembourg	–	1	–	8	1	–	10
Netherlands	–	5	3	4	2	3	17
Norway	4	–	–	3	–	8	15
Sweden	1	–	–	5	–	10	16
Total	22	37	9	53	24	73	218

Coalition formation in more than one dimension

- Can issues (i.e. portfolios) be separated, and assigned to parties in the coalition or not?

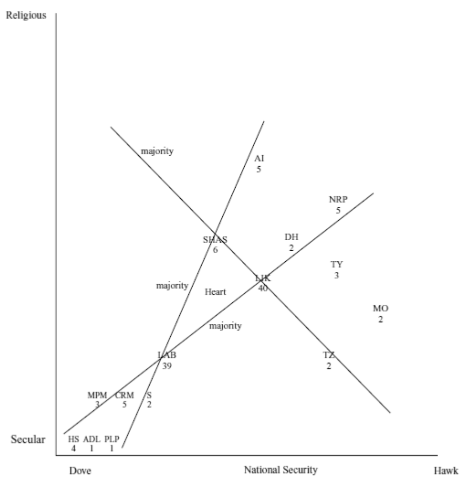

Figure 13.3. The Knesset in 1988. *Source*: Schofield (1997, p. 289)

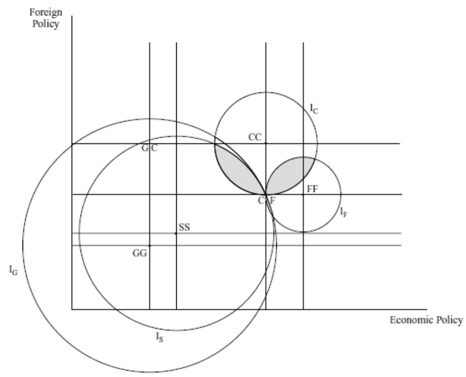

Figure 13.5. Cabinet formation in the German Bundestag in 1987.

How can we handle formally what coalitions form?

- This is again like game theory, but of a special kind.
- (Separate handout on cooperative game theory, the Core and stable sets, based on chapter 14 of Martin J. Osborne and Ariel Rubinstein: *A Course in Game Theory* (Cambridge, MIT Press, 1994)

Is cabinet stability good?

It is:

- Time horizon is longer.
- Less often is a lame-duck government in power.

But it comes at a price:

- Inflexibility of government (change is harder).
- In party systems conducive to stability (few parties, Westminster) large groups might be left without representation -> disloyalty!

Cabinet stability

- Received wisdom: proportional representation produces less stable cabinets than single-seat-districts-plurality (Westminster/first-past-the-post) systems do.
- Government stability, measured as the duration of the government in days, was negatively correlated with both the number of parties in the parliament ($r = -0.39$) and the number in the coalition forming a government ($r = -0.307$).

Duration of governments

Table 13.6a. *Average duration of European governments by type: 1945–1987 (months)*

	AUS	GER	BEL	ICE	LUX	NOR	IRE	SWE	DEN	NET	FIN	ITA	Total
Single-party majority	46		46			48	49	24					45
Surplus coalition with majority party	24	49										16	26
Unconnected non-MW coalition			10	40						47	15	11	17
Connected (but non-MW) coalition			18	40	5					38	16	22	23
MCW but not MW coalition										25		20	22
Surplus coalition	24	49	12	40	5					34	15	17	21
MW and MCW coaliton	40	33	27	36	45	31		24	43	35	15		35
MW but not MCW coalition	39	33	24	44	61		42			23	33	17	31
Minimal coalition	40	33	25	39	47	37	42	24	43	31	19	17	33
Minority coalition with support	67		5	10		24	36	44	30		24	12	26
Minority coalition without support			2	5		25	27	21	16	4	7	6	15
Minority coalition	67		7	8		24	30	30	22	4	10	9	19
Total	41	37	22	34	45	32	39	28	26	27	15	13	26

Source: Schofield (1993b).

Other determinants of government stability

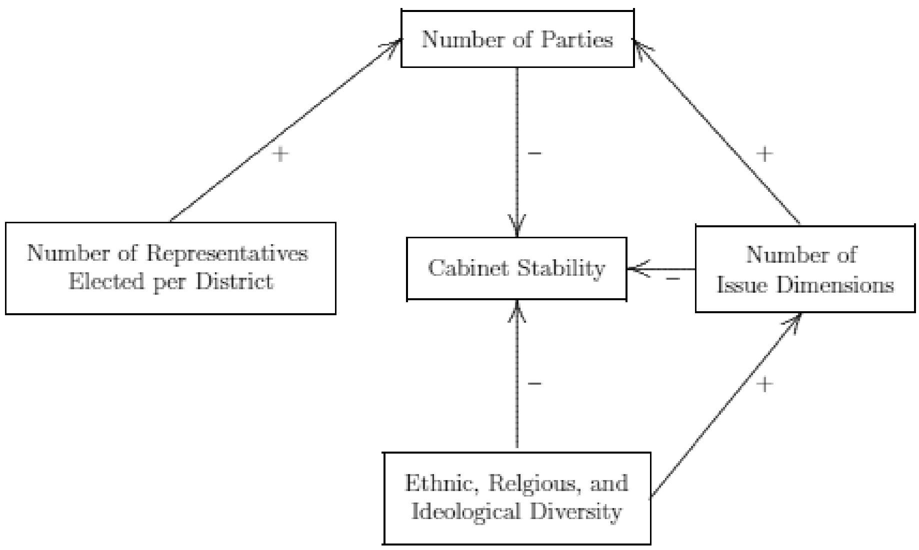

Figure 13.6. The determinants of cabinet stability.

Empirical results about strategic voting

How could you test the hypothesis that (esp. under plurality vote), voters might vote for another party than their most preferred one because they think this way they have a greater chance to affect results?

A clever way is to look at the distribution of the vote ratio for the third and the second party across district.

What is the prediction for this if there is strategic voting?

It will be bimodal!

Either it will be close to 1/1 (close contest, no evidently lost votes, no strategic voting), or close to 0/1 (lost votes will not be cast by strategic voters).

Of course this might not work if the first party is sure to win.

Cox (1997) Liberal democrats in the UK:

- unimodal in general,
- but bimodal in closely contested districts, as predicted.

Strategic voting is also possible in PR systems!