APPENDIX

PS: Political Science & Politics

February 2025

A Political-Economy Forecast of the 2025 German Federal Elections: Merz wins but the Grand Coalition is back

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A – Estimated SUR (Seemingly Unrelated Regression) model and variables

A1 - VOTE FUNCTION (SUR MODEL) : VARIABLES DESCRIPTION

Equation (1)

INC^{MAIN}: vote share (%) obtained by the party of the incumbent Chancellor.

1961-1969: CDU/CSU
1972-1983: SPD (Helmut Kohl becomes Chancellor on October 1982 following the FDP's reversal of alliance. However, in 1983 we consider the SPD to be the real incumbent.)
1997-1998: CDU/CSU
2002-2005: SPD
2009-2021: CDU/CSU
2025: SPD

CDU/CSU : the Union, is a centre-right Christian democratic and conservative political alliance of two political parties in Germany: the Christian Democratic Union of Germany (CDU) and the Christian Social Union in Bavaria (CSU).
SPD: The Social Democratic Party of Germany (Sozialdemokratische Partei Deutschlands,) is a social democratic political party in Germany.

POP^{INC}: average voting intentions (one quarter before the election) for the party of the incumbent chancellor (Source: IFD Allensbach; 1961-2025)
Question: If there were a federal election next Sunday, people would vote... (1000 respondents on average)

ΔU_{Q-2} : variation of the unemployment rate (U) measured two quarters before the election, over the duration of the elapsed mandate. (Source : Arbeitsmarktstatistik der Bundesagentur für Arbeit, Nürnberg).
$GCOAL^{09/21}$: dummy variable coded 1 (0 otherwise) for each "Grand Coalition" CDU/CSU-SPD in 2009, 2017 and 2021.
$KANZ_{Q-1}{}^{INC}$: preference for the incumbent chancellor, or the representative of his camp, measured one quarter before the election. (Source : Forschungsgruppe Wahlen e.V.,Mannheim, Zentralarchiv für empirische Sozialforschung (1961-2002). ZDF Politbarometer (for Koalitionspräferenz) (2005-2024).
Question : "Which of these two candidates would you like to have as Chancellor?

Incumbents : Konrad Adenauer, CDU/CSU (1961); Ludwig Erhard, CDU/CSU (1965); Kurt Georg Kiesinger (1969) CDU/CSU; Willy Brandt, SPD (1972); Helmut Schmidt (1976; 1980), SPD; Hans-Jochen Vogel , SPD (1983)(*); Helmut Kohl, CDU/CSU (1987, 1990, 1994), 1998), Gerhard Schröder, SPD (2002, 2005), Angela Merkel, CDU/CSU (2009, 2013, 2017); Armin Laschet, CDU/CSU (2021), Olaf Scholz, SPD (2025).
(*) In our model Hans-Jochen Vogel (SPD) is considered as the "true" incumbent insofar as Helmut Schmidt ruled from 1980 to October 1982.

AFD1321: dummy variable coded 1 (0 otherwise) whenever AFD has competed (2013-2021)

DUM72: dummy variable coded 1 (0 otherwise) for the early elections of 1972 (DUM72), following Willy Brandt's defeat in the Bundestag.

STRAUSS80: dummy variable coded 1 (0 otherwise) to mention that in 1980, the incumbent Chancellor Helmut Schmidt, has been beaten by the Franz Josef Strauss, the leader of the CSU. However, the Liberal Democratic Party (FDP), led by Federal Foreign Minister Hans-Dietrich Genscher renewed its alliance with the Social Democrats to continue the Social Liberal coalition, thus ensuring Schmidt's re-election to the Chancellery.

Equation (2)

OPP^{MAIN} : vote share (%) obtained by the main party opposing the outgoing chancellor

1961-1969: SPD
1972-1983: CDU/CSU (Helmut Kohl (CDU/CSU) becomes Chancellor on October 1982 following the FDP's reversal of alliance. However, in 1983 we consider the CDU/CSU to be the real opponent to the incumbent since it only ruled for one year)
1997-1998: SPD
2002-2005: CDU/CSU
2009-2021: SPD
2025: CDU/CSU

POP^{opp} : average voting intentions (one quarter before the election) for the main opponent party to the incumbent chancellor (Source: IFD Allensbach; 1961-2025)

U_{Q-2} : variation of the unemployment rate (U) measured two quarters before the election, over the duration of the elapsed mandate. (Source : Arbeitsmarktstatistik der Bundesagentur für Arbeit, Nürnberg).

DISSOL05: dummy variable coded 1 (0 otherwise) fot G. Schroeder's strategic" dissolution before the end of the term.

AFD1321: dummy variable coded 1 (0 otherwise) whenever AFD has competed (2013-2021)

$GRUNE^{OPP}$: dummy variable coded 1 (0 otherwise) when Greens are opponents from 1980 to 1998 and from 2009 to 2021.

Equation (3)

FDP: vote share (%) obtained by the Liberal Democrats of the FDP, often the pivotal party if the German political life. (Source: IFD Allensbach; 1961-2025)

FDP: The Free Democratic Party (Freie Demokratische Partei, is a liberal political party in Germany.

$CO_{INC}^{FDP/CDU}$: percentage of voters expressing their wish to see the FDP (when it is incumbent).included in a new coalition with the CDU/CSU. This variable takes a "0" from 1972 to 1983; from 2002 to 2009 and then in 2017 and 2021.

$CO_{INC}^{FDP/SPD}$: percentage of voters expressing their wish to see the FDP (when it is incumbent) included in a new coalition with the SPD. This variable takes a "0" except from 1972 to 1983.

$CO_{OPP}^{FDP/CDU}$: percentage of voters expressing their wish to see the FDP (when it is in opposition with the CDU/CSU) included in a new coalition with the CDU/CSU. This variable takes a "0" except from 2002 to 2009 and then in 2017 and 2021. Source : Forschungsgruppe Wahlen e.V.,Mannheim, Zentralarchiv für empirische Sozialforschung (1961-2002). ZDF Politbarometer (for Koalitionspräferenz) (2005-2024).

FDPINF5: dummy variable coded 1 (0 otherwise) when the FDP did not exceed the threshold of 5% of the votes and could not obtain seats like in 2013.

DUM21: dummy variable coded 1 (0 otherwise) in 2021 when the prospect of becoming a supporting party in 2021 brought the FDP an average electoral boost to the detriment of the CDU.

FDP02: dummy variable coded 1 (0 otherwise) indicating that in 2002, for the first time since 1961, the FDP is not part of a coalition. This variable is measuring the average FDP's electoral cost of no longer being part of a coalition.

Equation (4)

GRUNE: vote share (%) obtained by the Greens (Grünen). This variable takes a zero value from 1961 to 1976.

GREENS : Alliance 90/The Greens (Bündnis 90/Die Grünen), often simply referred to as Greens is a green political party in Germany. It was formed in 1993 by the merger of the Greens (formed in West Germany in 1980) and Alliance 90 (formed in East Germany in 1990). The Greens had itself merged with the East German Green Party after German reunification in 1990

NOGRUNE: dummy variable coded 1 (0 otherwise) when the Greens did not participate in elections from 1961 to 1976.

POPGRUNE: average voting intentions (one quarter before the election) for the Greens (Source: IFD Allensbach; 1980-2024)

REUNIF: dummy variable coded 1 (0 otherwise) pointing out that the first reunification elections in 1990 were unfavorable to the Greens

$CO_{INC}^{SPD/GRUNE}$: percentage of voters expressing their wish to see the Greens (when it is incumbent) included in a new coalition with the SPD. This variable takes a "0" except in 2002 and 2005. Source : Forschungsgruppe Wahlen e.V.,Mannheim, Zentralarchiv für empirische Sozialforschung (1961-2002). ZDF Politbarometer (for Koalitionspräferenz) (2005-2024).

Equation (5)

FARLEFT: vote share (%) obtained by the Far left parties. This variable takes a zero value from 1961 to 1976. This bloc includes the parties born with German reunification in 1990. They are the PDS (Social Democratic Party; 1990-2005) and Die Linke (The Left; 2009-2025).

PDS: the Party of Democratic Socialism (Partei des Demokratischen Sozialismus) was a left-wing populist political party in Germany active between 1989 and 2007.
Die Linke: the Left (Die Linke or the Left Party (Die Linkspartei is a democratic socialist political party in Germany. The party was founded in 2007 as the result of the merger of the Party of Democratic Socialism (PDS) and Labour and Social Justice

NOLINKE: dummy variable coded 1 (0 otherwise) when the Far left did not participate in elections from 1961 to 1987.

POPFARLEFT: average voting intentions (one quarter before the election) for the Far left (Source: IFD Allensbach; (1990-2025)

NEWLEFT0521: variable coded 1 (0 otherwise) pointing out the period (2005 to 2021) from which the PDS was transformed into a new party (Die Linke), under the impulse of Oskar Lafontaine

Equation (6)

FARIGHT: vote share (%) obtained by the Far right parties. This bloc includes the following parties:

1961 (DRP , GDP); 1965 (NPD); 1969 (GDP, NPD); 1972 (DVU, NPD); 1976 (DVU, NPD); 1980 (DVU, NPD); 1983 (DVU, NPD); 1987 (DVU, NPD); 1990 (DVU, NPD, REP), 1994 (DVU, NPD, REP); 1998 (DVU, NPD, REP), 2002 (DVU, NPD, REP), 2005 (DVU, NPD, REP), 2009 (DVU, NPD, REP), 2013 (NPD, REP, AFD), 2017 (NPD, AFD), 2021 (NPD, AFD).

DRP : Deutche Reichpartei
GDP : Nationaldemokratische Partei Deutschlands,
DVU : Deutsche Volksunion
REP : Die Republikaner
AFD : Alternative für Deutschland

POPFARIGHT : average voting intentions (one quarter before the election) for the Far right (Source: IFD Allensbach; (1961-2025)

AFD1321: dummy variable coded 1 (0 otherwise) since the AFD has competed (2013-2021)

Equation (7)

OTHERS: vote share (%) obtained by the other parties. Aggregate sum of parties other than those listed in the preceding blocks

POPOTHERS: aggregated average voting intentions for the other parties (Source: IFD Allensbach; (1961-2025)

FW1321 : dummy variable coded 1 (0 otherwise) since the Free Voters party (Freie Wälher parteï) party competed (2013-2021).

A2 - VOTE FUNCTIONS AND SUR ESTIMATES : DETAILED RESULTS

System: SYS01SUR
Estimation Method: Seemingly Unrelated Regression
Date: 12/18/24 Time: 14:22
Sample: 1961 2021
Included observations: 17
Total system (balanced) observations 119
Linear estimation after one-step weighting matrix

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	12.20888	1.178964	10.35560	0.0000
C(2)	0.613084	0.024782	24.73939	0.0000
C(3)	-0.274692	0.077467	-3.545911	0.0006
C(4)	-8.786308	0.449567	-19.54393	0.0000
C(5)	0.127844	0.012811	9.979165	0.0000
C(6)	-2.462213	0.412081	-5.975066	0.0000
C(7)	-3.221337	0.536874	-6.000175	0.0000
C(8)	-5.158058	0.573862	-8.988322	0.0000
C(9)	26.80113	4.212294	6.362597	0.0000
C(10)	0.341265	0.093061	3.667121	0.0004
C(11)	1.449607	0.248896	5.824136	0.0000
C(12)	-10.12713	1.677474	-6.037132	0.0000
C(13)	-4.979815	1.669446	-2.982914	0.0037
C(14)	-4.535964	1.227494	-3.695305	0.0004
C(15)	4.989469	0.541510	9.213994	0.0000
C(16)	0.128658	0.016931	7.599193	0.0000
C(17)	0.094460	0.015840	5.963538	0.0000
C(18)	0.206318	0.021308	9.682486	0.0000
C(19)	-2.393525	0.898213	-2.664765	0.0093
C(20)	4.165488	0.924499	4.505670	0.0000
C(21)	-3.613051	0.928091	-3.892994	0.0002
C(22)	2.655744	0.486747	5.456107	0.0000
C(23)	0.554065	0.042688	12.97939	0.0000
C(24)	0.053291	0.027096	1.966700	0.0526
C(25)	-2.578663	0.523787	-4.923118	0.0000
C(26)	-3.416420	0.679884	-5.025001	0.0000
C(27)	2.109135	0.698941	3.017614	0.0034
C(28)	0.474687	0.143881	3.299158	0.0014
C(29)	-2.121319	0.753987	-2.813470	0.0061
C(30)	3.061107	0.872434	3.508696	0.0007
C(31)	0.592237	0.267830	2.211242	0.0298
C(32)	1.104488	0.126088	8.759658	0.0000
C(33)	2.626878	0.839910	3.127570	0.0024
C(34)	0.989792	0.507551	1.950135	0.0545
C(35)	0.435560	0.155691	2.797584	0.0064
C(36)	2.734627	0.896289	3.051056	0.0031

Determinant residual covariance	0.123839

Equation: INCMAIN = C(1) + C(2)*POPINC + C(3)*DU + C(4)*GCOAL0921
C(5)*KANZINC + C(6)*AFD1321 + C(7)*DUM72 + C(8)*STRAUSS80
Observations: 17

R-squared	0.990914	Mean dependent var	39.87177
Adjusted R-squared	0.983848	S.D. dependent var	6.177092
S.E. of regression	0.785058	Sum squared resid	5.546840
Durbin-Watson stat	1.972038		

Equation: OPPMAIN = C(9) + C(10)*POPOPP + C(11)*DU + C(12)
*DISSOL05 + C(13)*AFD 1321+ C(14)*GRUNEOPP
Observations: 17

R-squared	0.948777	Mean dependent var	36.55588
Adjusted R-squared	0.925493	S.D. dependent var	8.599545
S.E. of regression	2.347321	Sum squared resid	60.60909
Durbin-Watson stat	2.222803		

Equation: FDP = C(15) + C(16)*COINCFDPCSU + C(17)*COINCFDPSPD
C(18)*COOPPFDPCSU + C(19)*FDPINF5 + C(20)*DUM21
+ C(21)*DUM2002

Observations: 17

R-squared	0.878233	Mean dependent var	9.058824
Adjusted R-squared	0.805173	S.D. dependent var	2.628286
S.E. of regression	1.160105	Sum squared resid	13.45844
Durbin-Watson stat	2.290714		

Equation: GRUNE = C(22) + C(23)*POPGRUNE + C(24)*COGRUSPDINC
C(25)*NOGRUNE + C(26)*REUNIF
Observations: 17

R-squared	0.948654	Mean dependent var	5.522941
Adjusted R-squared	0.931538	S.D. dependent var	4.536223
S.E. of regression	1.186912	Sum squared resid	16.90512
Durbin-Watson stat	3.011518		

Equation: FARLEFT = C(27) + C(28)*POPFARLEFT + C(29)*NOLINKE
C(30)*NEWLEFT0521
Observations: 17

R-squared	0.919134	Mean dependent var	3.484118
Adjusted R-squared	0.900473	S.D. dependent var	4.041313
S.E. of regression	1.274949	Sum squared resid	21.13144
Durbin-Watson stat	1.497339		

Equation: FARIGHT = C(31) + C(32)*POPFARIGHT + C(33)*AFD1321			
Observations: 17			
R-squared	0.920085	Mean dependent var	2.841177
Adjusted R-squared	0.908669	S.D. dependent var	3.632685
S.E. of regression	1.097836	Sum squared resid	16.87342
Durbin-Watson stat	2.263880		
Equation: OTHER = C(34) + C(35)*POPOTHERS + C(36)*FW1321			
Observations: 17			
R-squared	0.618051	Mean dependent var	2.665294
Adjusted R-squared	0.563486	S.D. dependent var	2.305336
S.E. of regression	1.523117	Sum squared resid	32.47838
Durbin-Watson stat	1.481781		

A3 - SWING RATIO (SUR MODEL) : VARIABLES DESCRIPTION

Equation (1)

SEATINC: seat share (%) obtained by the party of the incumbent Chancellor.

INCMAIN: vote share (%) obtained by the party of the incumbent Chancellor.

FDPELIM: dummy variable coded 1 (0 otherwise) in 2013 when the FDP did not obtain seats

REUNIF: dummy variable coded 1 (0 otherwise) pointing out boost in seats obtained by CDU/CSU in 1990

Equation (2)

SEATOPP: seat share (%) obtained by the main party opposing the outgoing chancellor

OPPMAIN: vote share (%) obtained by the main party opposing the outgoing chancellor

Equation (3)

SEATFDP: seat share (%) obtained by the Liberal Democrats of the FDP.

FDP: vote share (%) obtained by the Liberal Democrats of the FDP

FDPELIM: dummy variable coded 1 (0 otherwise) in 2013 when the FDP did not obtain seats

Equation (4)

SEATGRUNE: seat share (%) obtained by the Greens (Grünen). This variable takes a zero value from 1961 to 1976.

GRUNE: vote share (%) obtained by the Greens (Grünen). This variable takes a zero value from 1961 to 1976.

REUNIF: dummy variable coded 1 (0 otherwise) pointing out that the first reunification elections in 1990 were unfavorable to the Greens in terms of seats

NOGRUNE: dummy variable coded 1 (0 otherwise) when the Greens did not participate in elections from 1961 to 1976.

Equation (5)

SEATFARLEFT: seat share (%) obtained by the Far left parties. This variable takes a zero value from 1961 to 1976.

FARLEFT: vote share (%) obtained by the Far left parties. This variable takes a zero value from 1961 to 1976.

FARLEFTINF5: dummy variable coded 1 (0 otherwise) when the Far left did not exceed the threshold of 5% of the votes and could not obtain seats like in 2002.

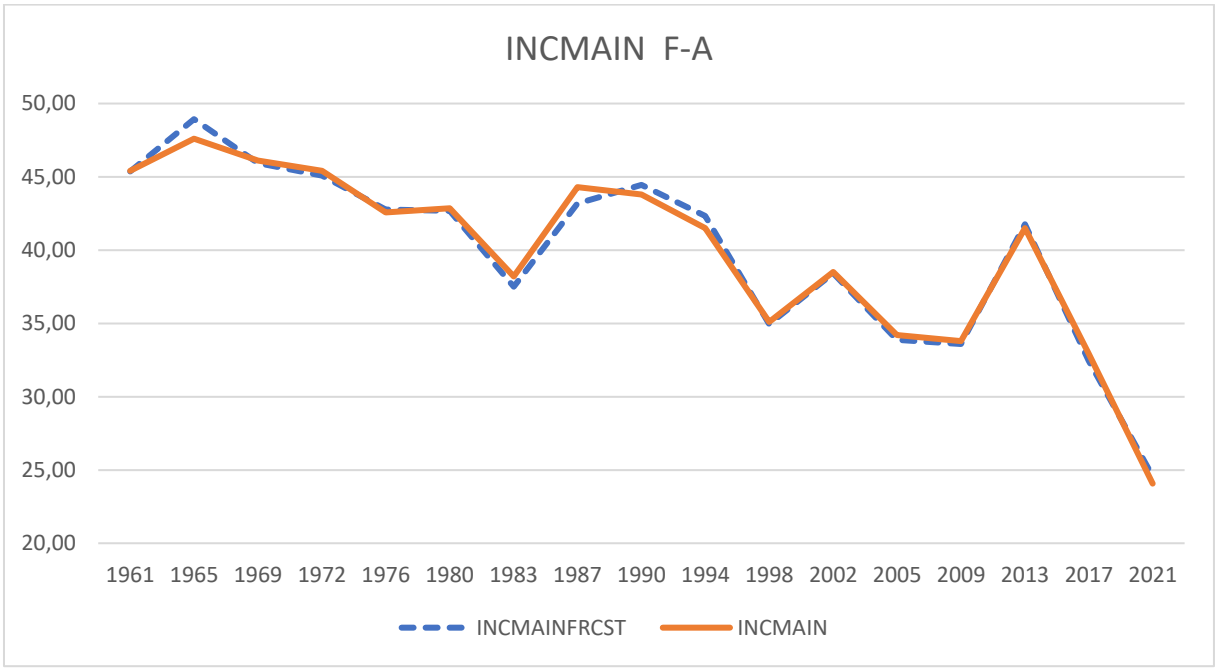
Equation (6)

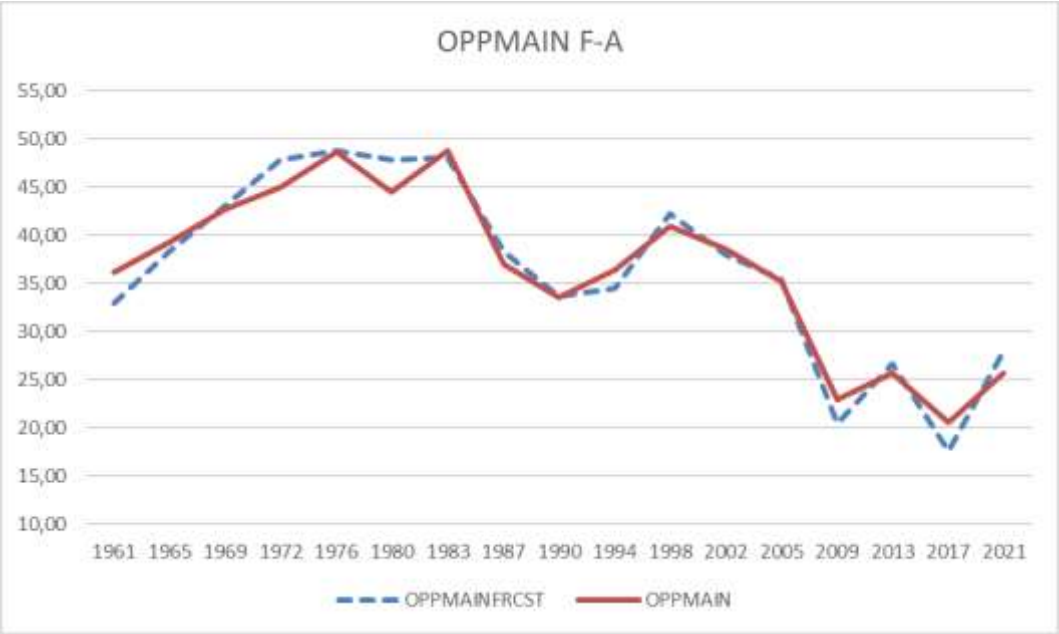
SEATFARIGHT: seat share (%) obtained by the Far right parties.

FARIGHT: vote share (%) obtained by the Far right parties.

FARIGHTNOSEAT: dummy variable coded 1 (0 otherwise) when the Far right did not exceed the threshold of 5% of the votes and could not obtain seats like in 2013.

A4 – GOODNESS OF FIT (SYST SUR - INDIVIDUAL EQUATIONS)

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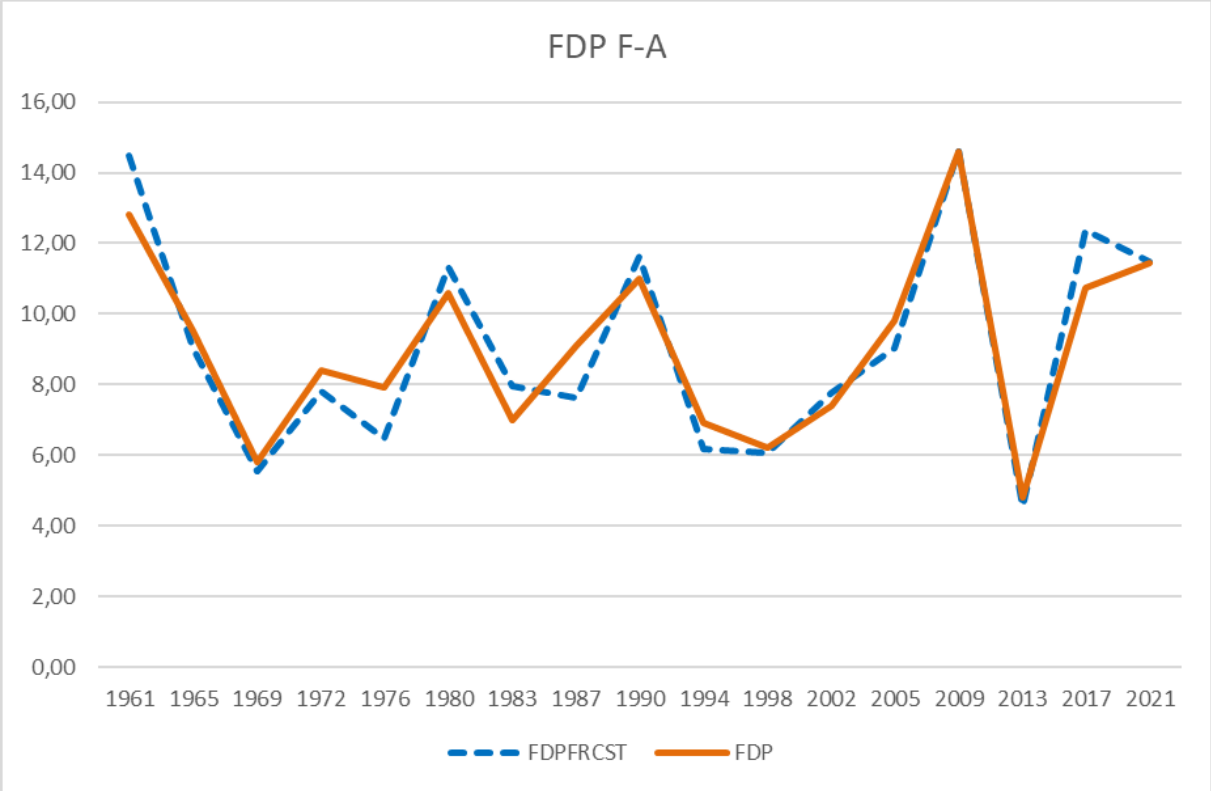
OPPMAINFRCST
OPPMAIN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FDPFRCST
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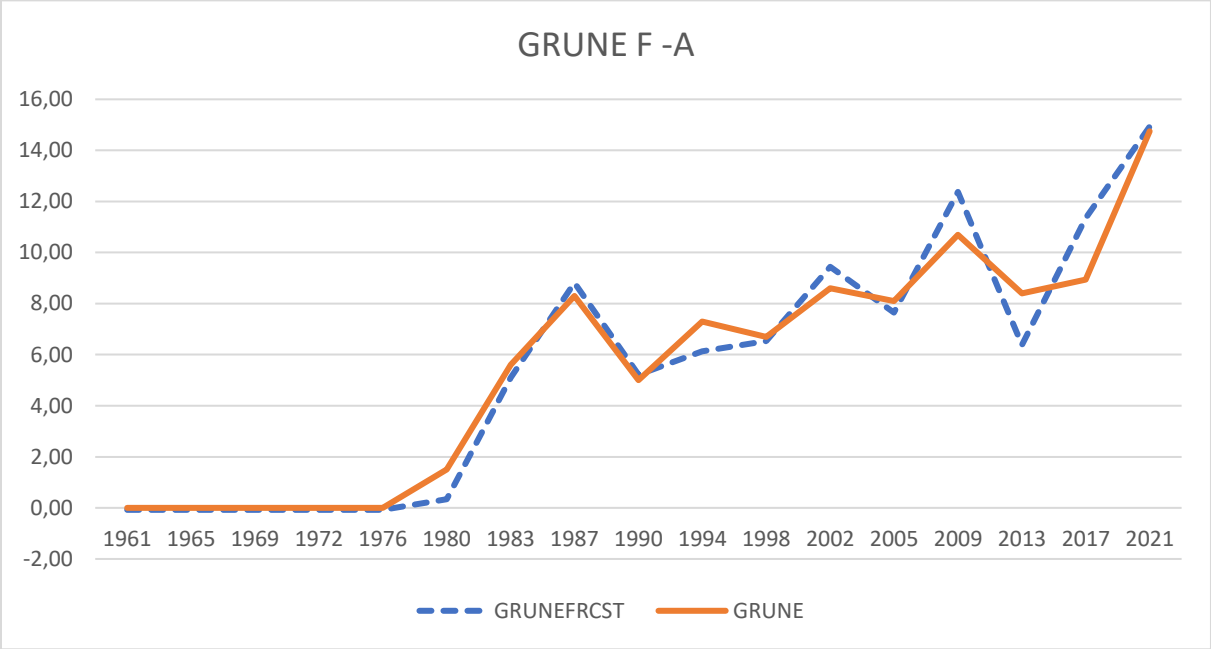
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GRUNEFRCST
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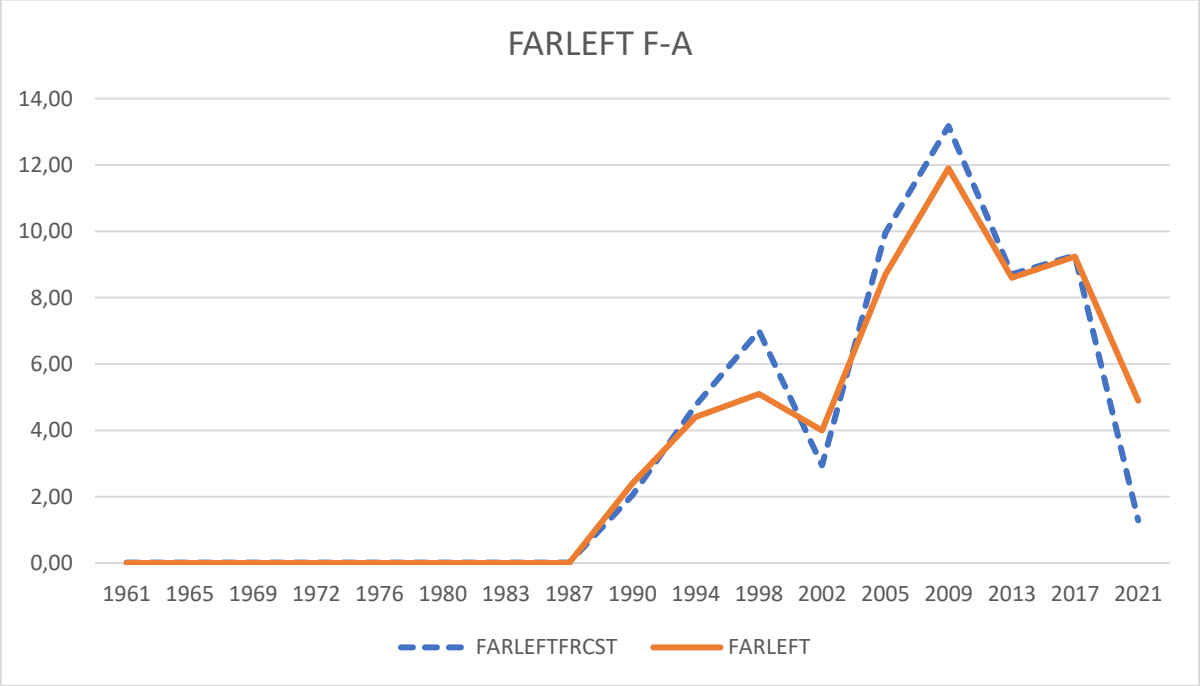
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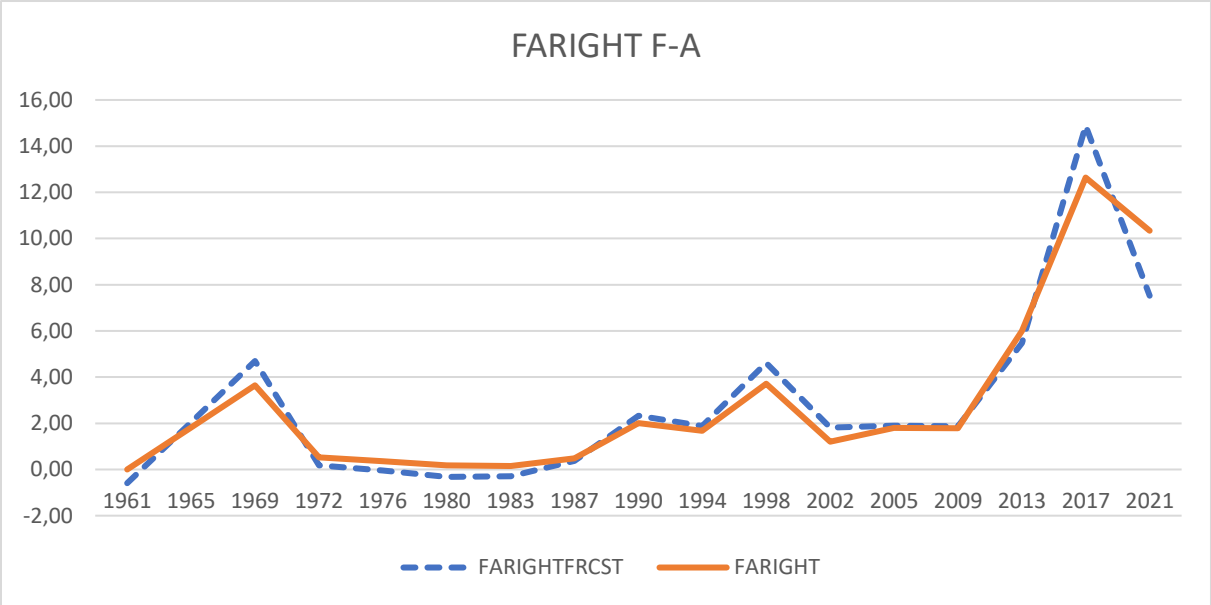

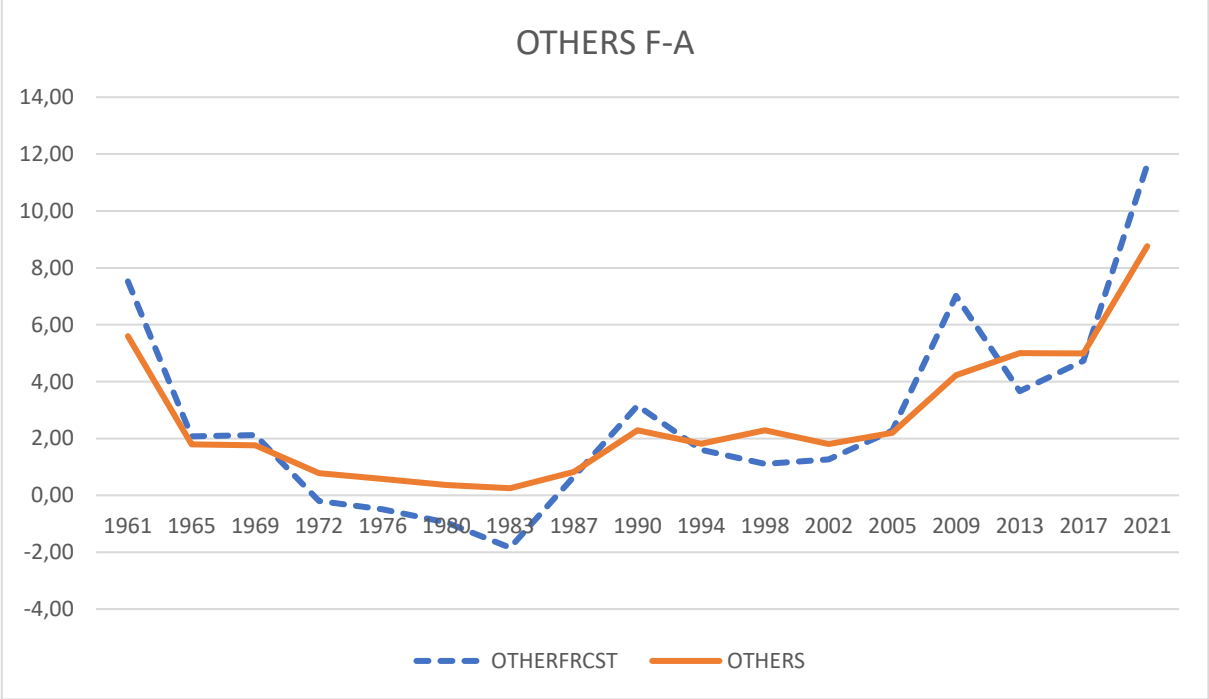

INDIVIDUAL EQUATIONS (SUR VOTING EQUATION)
Mean Squared Error and Root Mean Squared Error CRITERIA

	INCMAINFRCST	OPPMAINFRCST	FDPFRCST	GRUNEFRCST	FARLEFTFRCST	FARIGHTFRCST	OTHERFRCST
MSE	0.33	3.57	0.79	0.99	1.24	0.99	1.91
RMSE	0.57	1.89	0.89	1.00	1.11	1.00	1.38

A5 – SWING RATIO AND SUR ESTIMATES : DETAILED RESULTS

SWING RATIOS - SUR ESTIMATES

System: SYSSEATSUR
Estimation Method: Seemingly Unrelated Regression
Date: 12/18/24 Time: 15:31
Sample: 1961 2021
Included observations: 17
Total system (balanced) observations 102
Linear estimation after one-step weighting matrix

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	4.437273	1.446366	3.067877	0.0029
C(2)	0.934665	0.036154	25.85257	0.0000
C(3)	6.642202	0.898421	7.393198	0.0000
C(4)	2.610733	0.913962	2.856501	0.0054
C(5)	1.724753	1.053379	1.637353	0.1053
C(6)	1.002382	0.027527	36.41475	0.0000
C(7)	-0.281841	0.325582	-0.865652	0.3892
C(8)	1.053581	0.033685	31.27771	0.0000
C(9)	-4.933137	0.363501	-13.57117	0.0000
C(10)	-1.417115	0.165007	-8.588215	0.0000
C(11)	1.210178	0.017747	68.19092	0.0000
C(12)	-3.494025	0.172836	-20.21586	0.0000
C(13)	1.432332	0.152131	9.415149	0.0000
C(14)	0.034479	0.079752	0.432322	0.6666
C(15)	1.052945	0.010272	102.5101	0.0000
C(16)	-4.024626	0.131497	-30.60614	0.0000
C(17)	-0.975307	0.362338	-2.691708	0.0086
C(18)	0.852825	0.070197	12.14899	0.0000
C(19)	-4.307263	0.967250	-4.453104	0.0000

Determinant residual covariance	0.000111

Equation: SEATINC = C(1) + C(2)*INCMAIN + C(3)*FDPELIM + C(4)*REUNIF
Observations: 17

R-squared	0.976465	Mean dependent var	42.24830
Adjusted R-squared	0.971034	S.D. dependent var	6.229207
S.E. of regression	1.060179	Sum squared resid	14.61175
Durbin-Watson stat	2.111705		

Equation: SEATOPP = C(5) + C(6)*OPPMAIN
Observations: 17

R-squared	0.973490	Mean dependent var	38.36771
Adjusted R-squared	0.971723	S.D. dependent var	8.389014
S.E. of regression	1.410687	Sum squared resid	29.85056
Durbin-Watson stat	2.074570		

Equation: SEATFDP = C(7) + C(8)*FDP + C(9)*FDPELIM
Observations: 17

R-squared	0.989653	Mean dependent var	8.972180
Adjusted R-squared	0.988175	S.D. dependent var	3.441146
S.E. of regression	0.374199	Sum squared resid	1.960348
Durbin-Watson stat	1.037515		

Equation: SEATGRUNE = C(10) + C(11)*GRUNE + C(12)*REUNIF + C(13)*NOGRUNE
Observations: 17

R-squared	0.994224	Mean dependent var	5.482372
Adjusted R-squared	0.992891	S.D. dependent var	5.070493
S.E. of regression	0.427522	Sum squared resid	2.376072
Durbin-Watson stat	2.515821		

Equation: SEATFARLEFT = C(14) +C(15)*FARLEFT +C(16)*FARLEFTINF5
Observations: 17

R-squared	0.995188	Mean dependent var	3.466321
Adjusted R-squared	0.994500	S.D. dependent var	4.355632
S.E. of regression	0.323015	Sum squared resid	1.460745
Durbin-Watson stat	2.399618		

Equation:SEATFARIGHT=C(17)+C(18)*FARIGHT+C(19)*FARIGHTNOSEAT
Observations: 17

R-squared	0.854497	Mean dependent var	1.194351
Adjusted R-squared	0.833711	S.D. dependent var	3.394920
S.E. of regression	1.384400	Sum squared resid	26.83190
Durbin-Watson stat	1.519643		

A6 – FORECASTS CALCULATIONS

FORECASTING 2025 EARLY GERMAN ELECTIONS

	FINAL FORECAST Vote (%) Normalized	*FORECAST (SUR) Vote (%) Raw*	FINAL FORECAST Seats number	FINAL FORECAST Seats (%) Normalized	*FORECAST (SUR) Seats (%) Raw*
SPD	**22.4**	*26.44*	**204**	**27.8**	*25.25*
CDU/CSU	**33.49**	*39.52*	**285**	**38.7**	*35.19*
FAR RIGHT	**18.56**	*21.91*	**121**	**16.5**	*14.79*
GRUNE	**7.37**	*8.7*	**62**	**8.3**	*7.49*
FAR LEFT	**7.35**	*8.68*	**64**	**8.6**	*7.74*
FDP	**4.22**	*4.98*	**0**	**0**	*0*
OTHERS	**6.6**	*7.79*	**0**	**0**	*0*
TOTAL	**100**	*118.02*	**736**	**100**	*90.46*

Note: since the total raw forecasts calculated for the parties from the SUR model coefficients do not equal 100, they have been adjusted (normalized to 100).

Example: calculation for SPD

(1) Calculation for the raw forecast of the SPD's vote share (%) (based on the estimated SUR model coefficients): 12.20 + 0.61 x **15** -0.27 x **0.10** + 0.12 x **43** = 26.44
With : POP^{INC} = 15% (SPD) ; ΔU_{Q-2}= 0.1% (Change June (t) – June (t-4)); $KANZ_{Q-1}{}^{INC}$ = 43% (O. Scholz).

(2) When the total of raw forecasts is greater or less than 100, it is necessary to normalize the data by relating them to 100. After normalization, Final SPD's vote share (%) = 22.4

(3) Calculation for the forecast of the SPD's seats percentage (based on the estimated SUR model coefficients): 4.43 + 0.93 x **22.4** = 25.25 With: SPD vote share (normalized) = 22.4

(4) After seats normalization, final SPD's vote share (%) = 27.8 e.g. 204 seats out of 736 (based on 2021 total seats)

B – Main comparisons and changes with 2021 Political-Economy SUR model

Methodology

One of the main methodological changes from the 2021 model (see table 1 below) is the return (as in 2017) to a system of voting equations (treated in SUR) and a system of swing ratios (treated in SUR) to transform votes into seat percentages. The aim is to better anticipate the consequences in seats of situations where a party fails to cross the 5% vote threshold.

The other important change is the addition of an autonomous far-right voting function. Previously, far-right parties were included in other parties (OTHERS).

Equation INCMAIN

Were replaced in 2025 version:

The change in unemployment has replaced the level of unemployment

Have been removed in 2025 version:

The dummy variable SDPINC specifying when SPD was an incumbent

Have been added in 2025 version :

The variable POPINC (average voting intentions (one quarter before the election) for the party of the incumbent chancellor). See p. 2.

The Dummies AFD1321, DUM72 and STRAUSS80. See p.2.

Equation OPPMAIN

Have been removed in 2025 version:

The variable GCOAL. See p. 2.
The variable KANZ q-1 See. p. 2
The dummies DUM 61/80 (political situation before FDP's alliance change); DUM83 (Schmidt replaced by Kohl during mandate)

Have been added in 2025 version :

The variable POPOPP (average voting intentions (one quarter before the election) for the party of the main opponent to the chancellor). See p. 3
.
The dummy variables DISSOL05, AFD1321, GRUNEOPP. See p.3

Equation FDP

Has been added in 2025 version :

The dummy variables DUM21 and FDP02. See p.4.

Equation GRUNE

Has been removed in 2025 version:

The variable COOPP $^{SPD/GRUNE}$ (percentage of voters expressing their wish to see the Greens (when it is opponent) included in a new coalition with the SPD.

Equation FARLEFT

Has been removed in 2025 version:

The dummy variable LINKIN5 (coded 1 (0 otherwise) when the FARLEFT did not exceed the threshold of 5% of the votes and could not obtain seats).

Has been added in 2025 version :

The variable NEWLEFT0521. See p. 4-5

Equation FARIGHT

New equation. See p.5

Equation OTHERS

Note: this equation has not the same meaning since Far right parties have been removed from OTHERS

Has been removed in 2025 version:

The dummy variables GCOAL 09/17 (see p.2) and AFDINF5 (coded 1 (0 otherwise) when the AFD did not exceed the threshold of 5% of the votes and could not obtain seats).

Has been added in 2025 version :

The dummy variable FW1321. See p.5.

Forecasting The 2021 German Election: A Win for Armin Laschet?

Table 1

(1) INC^{MAIN} = 43.79 – 0.88.U_{Q-2} – 5.06. SPD^{INC} – 5.06. $GCOAL^{09/17}$ + 0.16.$KANZ_{Q-1}$ ^{INC}

(20.81) (-7.48) (-5.47) (-3.33) (3.83)

Adj R² = 0.73; SER = 2.37; N = 16 (1961-2017)

(2) OPP^{MAIN} = 15.93 + 1.25.U_{Q-2} – 8.26. $GCOAL^{09/17}$ + 0.24.$KANZ_{Q-1}$ ^{OPP} + 20.47. DUM^{6180}

(5.55) (5.18) (--5.45) (4.63) (10.31)

+ 13.06. DUM^{83}

(8.30)

Adj R² = 0.92; SER = 2.17; N = 16 (1961-2017)

(3) FDP = 4.93 + 0.13. $CO_{INC}^{FDP/CDU}$ + 0.08. $CO_{INC}^{FDP/SPD}$ + 0.21. $CO_{OPP}^{FDP/CDU}$ -7.09.FDPINF5

(6.88) (6.01) (3.91) (7.37) (-5.94)

Adj R² = 0.81; SER = 1.47; N = 16 (1961-2017)

(4) GRUNE = 6.54 – 6.56. NOGRUNE + 0.53. $PGRUNE^{OPP}$ -7.80.REUNIF -0.17. $CO_{OPP}^{SPD/GRUNE}$ + 0.11. $CO_{INC}^{SPD/GRUNE}$

(7.43) (-7.21) (6.83) (-13.68) (-5.70) (2.18)

-5.60. GRUINF5

(-5.77)

Adj R² = 0.97; SER = 0.71; N = 16 (1961-2017)

(5) LINKE = 1.44 +1.09. PLINKE -1.54. NOLINKE -8.25. LINKINF5

(1.92) (9.12) (-1.92) (-9.60)

Adj R² = 0.94; SER = 1.09; N = 16 (1961-2017)

(6) OTHERS = -1.49 +0.65. POTHERS + 3.66.$GCOAL^{09/17}$ -4.66.AFDINF5

(-2.71) (4.48) (2.61) (-2.62)

Adj R² = 0.69; SER = 1.86; N = 16 (1961-2017)

C – Data Base

YEAR	INCUMBENTS	EARLY	OPPMAIN	INCMAIN	FDP	GRUNE	FARLEFT	OTHERS	FARIGHT
1961	CDU-CSU-FDP	0	36.2	45.4	12.8	0	0	5.60	0,00
1965	CDU-CSU-FDP	0	39.3	47.6	9.5	0	0	1.79	1.81
1969	CDU-CSU-FDP-SPD	0	42.7	46.1	5.8	0	0	1.76	3.64
1972	SPD-FDP	1	44.9	45.4	8.4	0	0	0.78	0.52
1976	SPD-FDP	0	48.6	42.56	7.9	0	0	0.58	0.36
1980	SPD-FDP	0	44.5	42.86	10.6	1.5	0	0.36	0.18
1983	SPD-FDP	1	48.8	38.2	7	5.6	0	0.25	0.15
1987	CDU-CSU-FDP	0	37	44.3	9.1	8.3	0	0.82	0.48
1990	CDU-CSU-FDP	1	33.5	43.8	11	5	2.4	2.29	2.01
1994	CDU-CSU-FDP	0	36.4	41.5	6.9	7.3	4.4	1.82	1.68
1998	CDU-CSU-FDP	0	40.9	35.1	6.2	6.7	5.1	2.29	3.71
2002	SPD-GRUNE	0	38.5	38.5	7.4	8.6	4	1.8	1.2
2005	SPD-GRUNE	1	35.2	34.2	9.8	8.1	8.7	2.2	1.8
2009	CDU-CSU-SPD	0	23	33.8	14.6	10.7	11.9	4.22	1.78
2013	CDU-CSU-FDP	0	*25.7*	*41.5*	4.8	8.4	8.6	5,00	6,00
2017	CDU-CSU-SPD	0	20.51	32.93	10.75	8.94	9.24	4.99	12.64
2021	CDU-CSU-SPD	0	25.74	24.07	11.45	14.75	4.89	8.76	10.34

YEAR	INCUMBENTS	EARLY	U	DU	KANZOPP	KANZINC	POPINC	POPOPP	GCOAL0921
1961	CDU-CSU-FDP	0	0.66	-2.74	20.2	22.3	48.33	48.66	0
1965	CDU-CSU-FDP	0	0.56	-0.099	21.76	44.01	46.33	40	0
1969	CDU-CSU-FDP-SPD	0	0.76	0.2	28	53	44.6	44.66	0
1972	SPD-FDP	1	0.88	0.12	25.15	54.15	48.66	44	0
1976	SPD-FDP	0	3.99	3.11	35.45	50.67	40	50.16	0
1980	SPD-FDP	0	3.33	-0.66	23.8	66	44.66	44.83	0
1983	SPD-FDP	1	6.9	3.57	46	36.6	37.5	51.5	0
1987	CDU-CSU-FDP	0	7.6	0,69	50.9	49.1	44.25	36.25	0
1990	CDU-CSU-FDP	1	6.4	-1.19	48.3	51.7	39.16	37.66	0
1994	CDU-CSU-FDP	0	9	2.6	44.66	46	38	36	0
1998	CDU-CSU-FDP	0	10.5	1.5	57	34.33	31.1	44.4	0
2002	SPD-GRUNE	0	9.8	-0.69	35.6	50.4	32.2	39	0
2005	SPD-GRUNE	1	11.4	1.6	38.12	46.5	27.4	46.9	0
2009	CDU-CSU-SPD	0	7.9	-3.5	25.5	59	36	24.5	1
2013	CDU-CSU-FDP	0	6.9	-1	28.5	62	38	26	0
2017	CDU-CSU-SPD	0	5.5	-1.4	31	59	40	24	1
2021	CDU-CSU-SPD	0	5.8	0.29	26	36	29.5	17	1

YEAR	INCUMBENTS	EARLY	DUM72	STRAUSS80	AFD1321	DISSOL05	GRUNEOPP	COINCFDPCD	COINCFDPSP
1961	CDU-CSU-FDP	0	0	0	0	0	0	47.5	0
1965	CDU-CSU-FDP	0	0	0	0	0	0	38.7	0
1969	CDU-CSU-FDP-SPD	0	0	0	0	0	0	8.23	0
1972	SPD-FDP	1	1	0	0	0	0	0	42.22
1976	SPD-FDP	0	0	0	0	0	0	0	45.84
1980	SPD-FDP	0	0	1	0	0	0	0	51.6
1983	SPD-FDP	1	0	0	0	0	0	0	11.32
1987	CDU-CSU-FDP	0	0	0	0	0	1	43.31	0
1990	CDU-CSU-FDP	1	0	0	0	0	1	41.9	0
1994	CDU-CSU-FDP	0	0	0	0	0	1	20.5	0
1998	CDU-CSU-FDP	0	0	0	0	0	1	10.5	0
2002	SPD-GRUNE	0	0	0	0	0	0	0	0
2005	SPD-GRUNE	1	0	0	0	1	0	0	0
2009	CDU-CSU-SPD	0	0	0	0	0	1	0	0
2013	CDU-CSU-FDP	0	0	0	1	0	1	19	0
2017	CDU-CSU-SPD	0	0	0	1	0	1	0	0
2021	CDU-CSU-SPD	0	0	0	1	0	1	0	0

YEAR	INCUMBENTS	EARLY	COOPPFDPCDU	FDPINF5	DUM21	COGRUSPD	COINCSPDGR	COGRUCDU	NOGRUNE
1961	CDU-CSU-FDP	0	0	0	0	0	0	0	1
1965	CDU-CSU-FDP	0	0	0	0	0	0	0	1
1969	CDU-CSU-FDP-SPD	0	0	0	0	0	0	0	1
1972	SPD-FDP	1	0	0	0	0	0	0	1
1976	SPD-FDP	0	0	0	0	0	0	0	1
1980	SPD-FDP	0	0	0	0	5	0	0	0
1983	SPD-FDP	1	0	0	0	21.56	0	0	0
1987	CDU-CSU-FDP	0	0	0	0	25.76	0	0	0
1990	CDU-CSU-FDP	1	0	0	0	15.71	0	0	0
1994	CDU-CSU-FDP	0	0	0	0	24.5	0	0	0
1998	CDU-CSU-FDP	0	0	0	0	23	0	0	0
2002	SPD-GRUNE	0	27.4	0	0	0	22	0	0
2005	SPD-GRUNE	1	27	0	0	0	15	0	0
2009	CDU-CSU-SPD	0	46.5	0	0	11	0	0	0
2013	CDU-CSU-FDP	0	0	1	0	25	0	0	0
2017	CDU-CSU-SPD	0	20	0	0	9	0	5	0
2021	CDU-CSU-SPD	0	11	0	1	11	0	14	0

YEAR	INCUMBENTS	EARLY	POPFARLEFT	POPOTHERS	POPGRUNE	NOLINKE	NEWLEFT052	POPFARIGHT	REUNIF
1961	CDU-CSU-FDP	0	0	6.17	0	1	0	0	0
1965	CDU-CSU-FDP	0	0	2.18	0	1	0	0.9	0
1969	CDU-CSU-FDP-SPD	0	0	2.74	0	1	0	1.8	0
1972	SPD-FDP	1	0	2.01	0	1	0	0.25	0
1976	SPD-FDP	0	0	1.68	0	1	0	0.15	0
1980	SPD-FDP	0	0	0.08	0	1	0	0.08	0
1983	SPD-FDP	1	0	0	6.2	1	0	0	0
1987	CDU-CSU-FDP	0	0	0	9.25	1	0	0	0
1990	CDU-CSU-FDP	1	1.35	2	10	0	0	1	1
1994	CDU-CSU-FDP	0	3.66	3.41	11.6	0	0	0.8	0
1998	CDU-CSU-FDP	0	5.5	4.47	7.8	0	0	2	0
2002	SPD-GRUNE	0	6.6	1.6	6.5	0	0	0	0
2005	SPD-GRUNE	1	5.1	3.87	9.4	0	1	1	0
2009	CDU-CSU-SPD	0	10.75	2.25	11	0	1	1	0
2013	CDU-CSU-FDP	0	6	9	14	0	1	3	0
2017	CDU-CSU-SPD	0	8	12	9	0	1	6.5	0
2021	CDU-CSU-SPD	0	7	18	22	0	1	9	0

YEAR	INCUMBENTS	EARLY	FW1321	SEATINC	SEATOPP	SEATFDP	DUM7283	SEATGRUNE	SEATFARLEFT
1961	CDU-CSU-FDP	0	0	48.17658	38.96353	12.85988	0,00	0,00	0,00
1965	CDU-CSU-FDP	0	0	48.4556	41.89189	9.65251	0,00	0,00	0,00
1969	CDU-CSU-FDP-SPD	0	0	48.26255	45.7529	5.984556	0,00	0,00	0,00
1972	SPD-FDP	1	0	46.71815	45.17375	8.108108	1,00	0,00	0,00
1976	SPD-FDP	0	0	43.24324	49.03475	7.722008	1,00	0,00	0,00
1980	SPD-FDP	0	0	43.93064	45.66474	10.40462	1,00	0,00	0,00
1983	SPD-FDP	1	0	38.84615	49.03846	6.730769	1,00	5.384615	0,00
1987	CDU-CSU-FDP	0	0	45.08671	37.1869	9.248555	0,00	8.477842	0,00
1990	CDU-CSU-FDP	1	0	48.18731	36.10272	11.93353	0,00	1.208459	2.567976
1994	CDU-CSU-FDP	0	0	43.75	37.5	6.994048	0,00	7.291667	4.464286
1998	CDU-CSU-FDP	0	0	36.62182	44.5441	6.427504	0,00	7.025411	5.381166
2002	SPD-GRUNE	0	0	41.62521	41.12769	7.794362	0,00	9.121061	0.331675
2005	SPD-GRUNE	1	0	36.15635	36.80782	9.934853	0,00	8.306189	8.794788
2009	CDU-CSU-SPD	0	0	38.42444	23.47267	14.95177	0,00	10.93248	12.21865
2013	CDU-CSU-FDP	0	1	49.28	30.5	0,00	0,00	9.98	10.14
2017	CDU-CSU-SPD	0	1	34.69	21.5	11.28	0	9.44	9.73
2021	CDU-CSU-SPD	0	1	26.76	27.99	12.5	0	16.03	5.29

YEAR	INCUMBENTS	EARLY	SEATFARIGHT	FDPELIM	FARLEFTINF5	FARIGHTNOSEAT
1961	CDU-CSU-FDP	0	0,00	0	0	0
1965	CDU-CSU-FDP	0	0,00	0	0	0
1969	CDU-CSU-FDP-SPD	0	0,00	0	0	0
1972	SPD-FDP	1	0,00	0	0	0
1976	SPD-FDP	0	0,00	0	0	0
1980	SPD-FDP	0	0,00	0	0	0
1983	SPD-FDP	1	0,00	0	0	0
1987	CDU-CSU-FDP	0	0,00	0	0	0
1990	CDU-CSU-FDP	1	0,00	0	0	0
1994	CDU-CSU-FDP	0	0,00	0	0	0
1998	CDU-CSU-FDP	0	0,00	0	0	0
2002	SPD-GRUNE	0	0,00	0	1	0
2005	SPD-GRUNE	1	0,00	0	0	0
2009	CDU-CSU-SPD	0	0,00	0	0	0
2013	CDU-CSU-FDP	0	0,00	1	0	1
2017	CDU-CSU-SPD	0	9.026	0	0	0
2021	CDU-CSU-SPD	0	11.27	0	0	0