

Predictors of AfD party success in the 2017 elections

A Bayesian modeling approach

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Menace to society

Right-wing populism then and now

Causes of 20th century world wars

- *nationalism*
- authoritarianism
- racism
- territorial disputes
- class conflicts
- crisis of capitalism

Source: Kershaw, I. (2016). To hell and back: Europe 1914-1949. New York City, NW: Penguin.

Right-wing populism varies greatly, but...

- shows *anti-establishment* attitude
- the *people* is thought as a *homogeneous body*
- *elites* are portrayed as *corrupt*, the *people* as *morally pure*
- favors *anti-pluralism*
- provides *low complexity solutions* to societal questions
- narrative of "*forgotton man Joe Plumber*"
- sees threat in *cultural outsiders*

Source: Decker, F. (2003). Der neue Rechtspopulismus. Wiesbaden: VS Verlag für Sozialwissenschaften. Nicole Berbuer, Marcel Lewandowsky & Jasmin Siri (2015) The AfD and its Sympathisers: Finally a Right-Wing Populist Movement in Germany?, German Politics, 24:2, 154-178, DOI: 10.1080/09644008.2014.982546

AfD as a nucleus of the German right-wing movement

The AfD ...

- engages in *close contacts to far-right*
- recruits (ex-)*nazis*
- Indirect *support of violence* towards minorities:

"Wenn der Staat die Bürger nicht mehr schützen kann, gehen die Menschen auf die Straße und schützen sich selber."

— Tweet by Markus Frohnmaier (@Frohnmaier_AfD) on August, 26th 2018 in reaction to Chemnitz riots

Source: Fuchs, C., & Middelhoff, P. (2018, May 12). Neue Rechte - Bis in den letzten, rechten Winkel. Retrieved from <https://www.zeit.de/politik/deutschland/2018-05/neue-rechte-verteilung-deutschlandkarte>

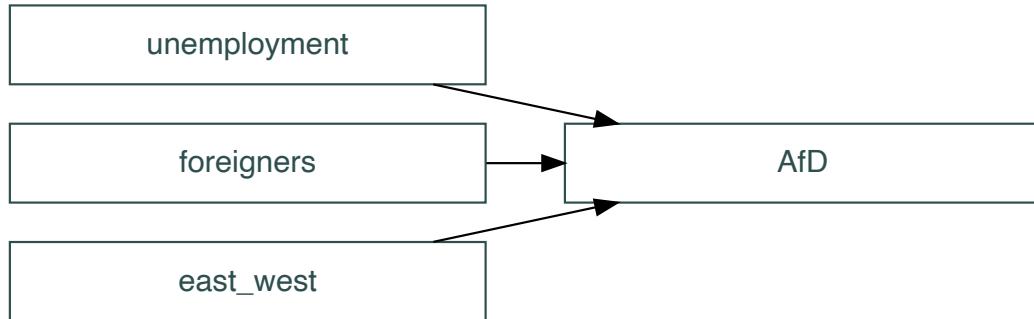
Popular theories on AfD success

Populist party support is fueled by ...

- weak economy ("rust belt hypothesis")
- high immigration ("flooding hypothesis")
- cultural patterns ("Saxonia hypothesis")

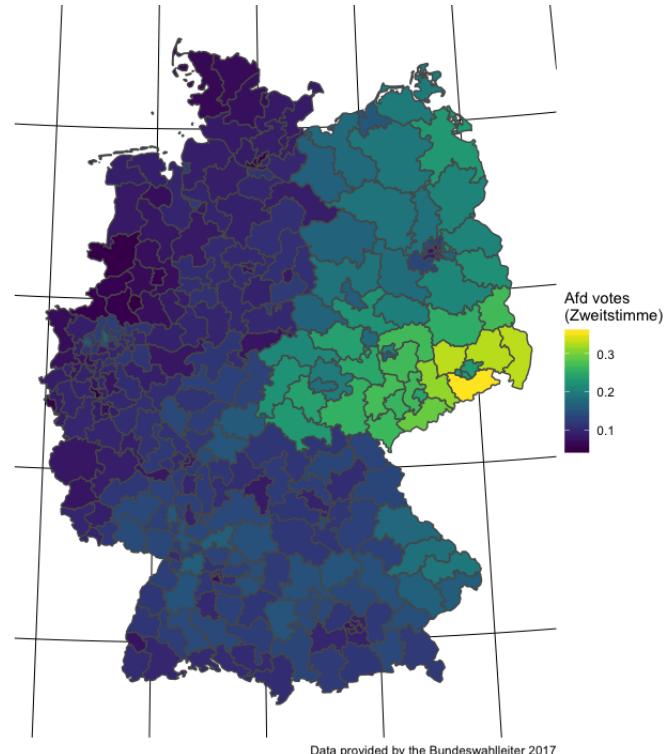
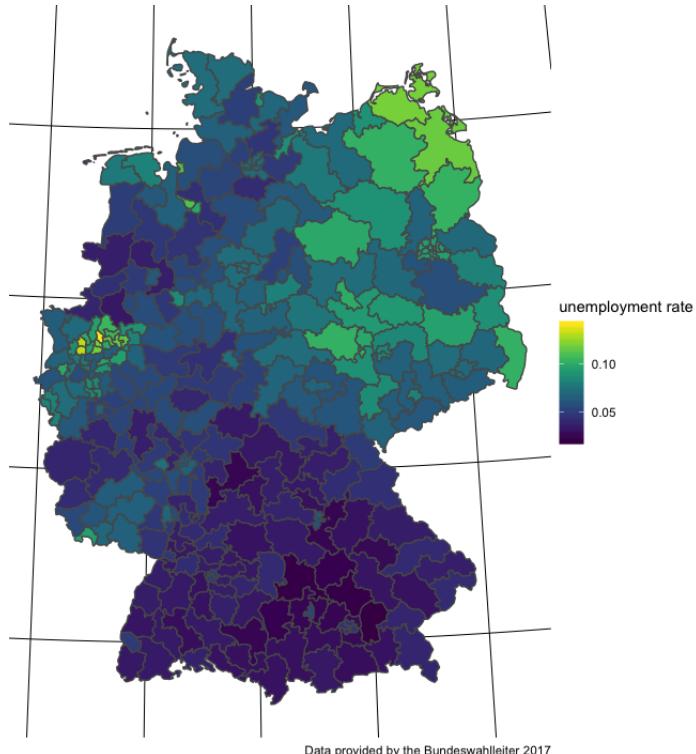
Source: Franz, Christian; Fratzscher, Marcel; Kritikos, Alexander S. (2018) : German right-wing party AfD finds more support in rural areas with aging populations, DIW Weekly Report, ISSN 2568-7697, Deutsches Institut für Wirtschaftsforschung (DIW), Berlin, Vol. 8, Iss. 7/8, pp. 69-79

Our research model

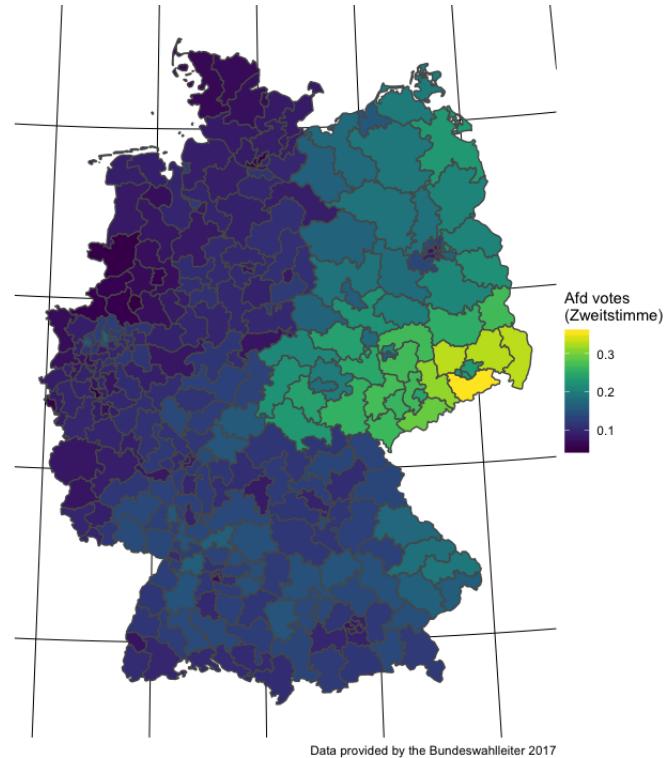
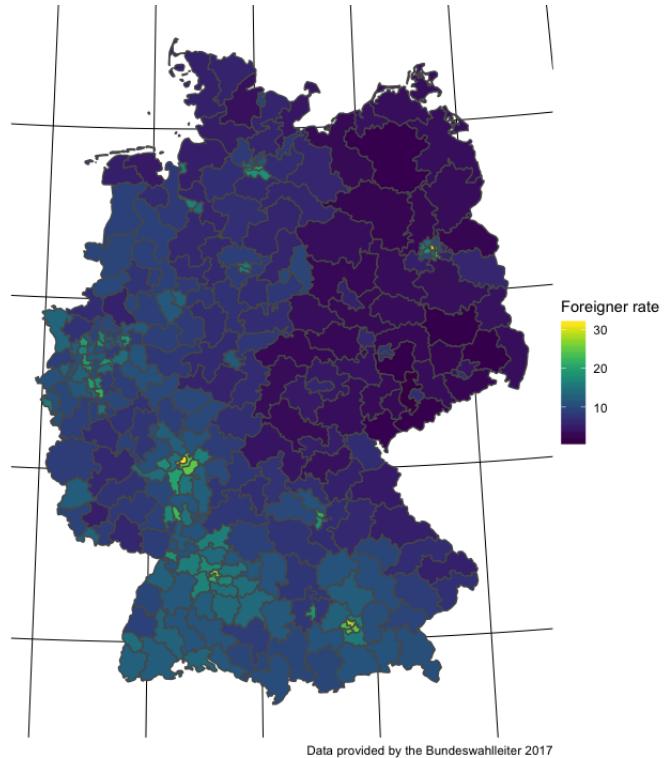


AfD votes, and socioeconomic factors at the Bundestagswahl 2017

Unemployment and AfD votes



Foreigners and AfD votes



data analysis

Data preparation

Data were...

- obtained from **Bundeswahlleiter 2017**
- had no missings
- were z-transformed

Bayes modeling

- Stan via the R packages `rstan` and `rethinking`
- Hamiltonian Markov Chain Monte Carlo (MCMC)
- 2000 iterations, 2 chains, 1/2 burn-in
- Information criteria (WAIC) used for model comparison

Guideline: McElreath, R. (2016). Statistical rethinking. New York City, NY: Apple Academic Press Inc.

Model specification

$$\text{AfD}_i \sim \mathcal{N}(\mu_i, \sigma)$$

$$\mu_i = \beta_0_{[east]} + \beta_1 \cdot \text{foreign_z} + \beta_2 \cdot \text{unemp_z}$$

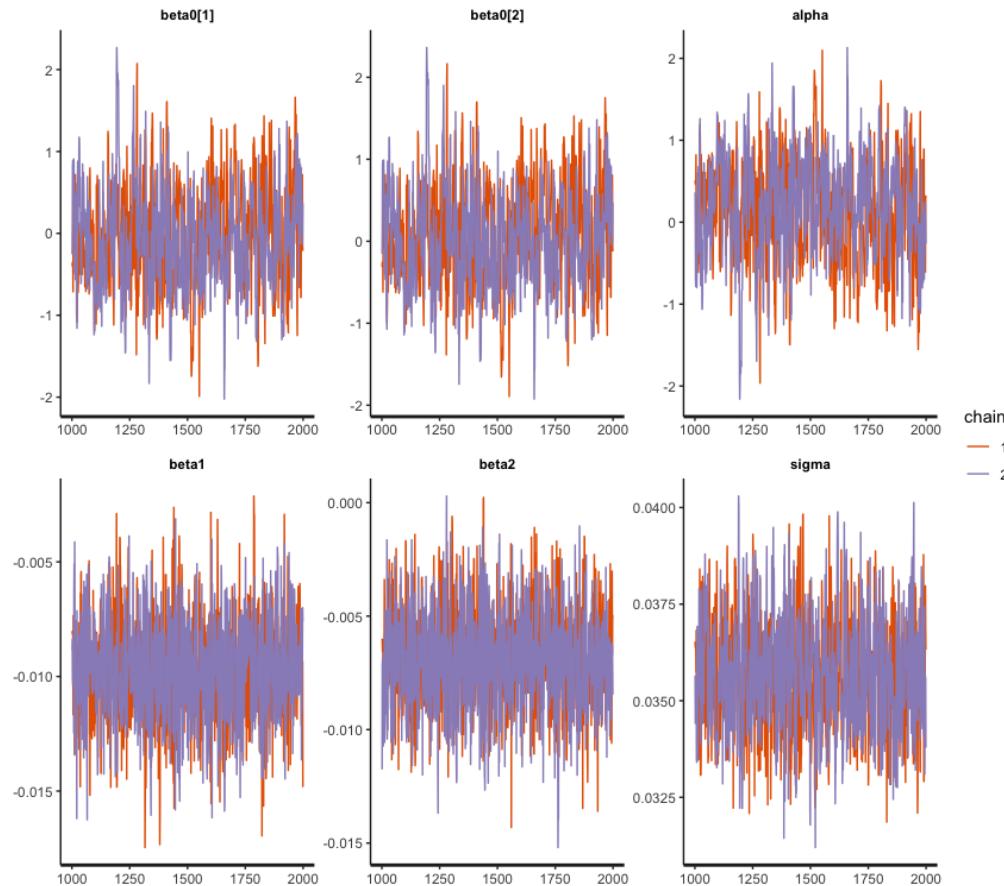
$$\beta_0_{[east]} \sim \mathcal{N}(0, 1)$$

$$\beta_1 \sim \mathcal{N}(0, 1)$$

$$\beta_2 \sim \mathcal{N}(0, 1)$$

$$\sigma \sim \mathcal{N}(0, 1)$$

Model diagnosis: traceplot



Results

Model diagnosis and coefficients

coefficient	Mean	StdDev	lower 0.89	upper 0.89	n_eff	Rhat
beta0[1]	-0.45	5.74	-9.26	9.16	260.42	1
beta0[2]	1.43	5.75	-7.35	11.05	259.13	1
alpha	0.07	5.74	-9.54	8.84	260.09	1
beta1	-0.06	0.04	-0.13	0.02	520.19	1
beta2	-0.21	0.05	-0.28	-0.13	556.18	1
sigma	0.68	0.03	0.64	0.72	623.57	1

Best model: multi-level states plus unemployment/foreigner rate

model	predictors	WAIC	pWAIC	dWAIC	weight	SE	dSE
m15_stan	state+for+unemp (ML)	-1356.32	21.73	0.00	1	34.91	NA
m13_stan	state (ML)	-1298.50	19.17	57.82	0	33.63	15.03
m14_stan	east+for+unemp (ML)	-1136.45	6.53	219.87	0	30.24	33.64
m12_stan	area (ML)	-951.15	111.74	405.16	0	31.27	37.11
m11c_stan	unemp	-894.09	4.02	462.23	0	37.03	39.86
m16_stan	null (intercept)	-885.56	3.35	470.76	0	38.15	40.53
m10_stan	for+unemp+east	-533.01	3.77	823.31	0	16.02	37.66
m11d_stan	east	-509.22	0.59	847.09	0	10.88	36.40
m9_stan	for+unemp+east[]	625.56	6.92	1981.88	0	33.87	38.82
m9a_stan	for+unemp	808.28	4.72	2164.60	0	34.09	39.30

Coefficients of the most favorable model

Show 8 entries

Search:

	coefficient	Mean	StdDev	lower 0.89	upper 0.89	n_eff	Rhat
1	beta0[1]	0.15	0.01	0.14	0.16	2000	1
2	beta0[2]	0.14	0	0.14	0.15	2000	1
3	beta0[3]	0.11	0.01	0.1	0.12	2000	1
4	beta0[4]	0.18	0.01	0.16	0.19	2000	1
5	beta0[5]	0.09	0.02	0.06	0.11	2000	1
6	beta0[6]	0.08	0.01	0.06	0.09	2000	1
7	beta0[7]	0.14	0.01	0.13	0.14	2000	1
8	beta0[8]	0.15	0.01	0.13	0.16	2000	1

Showing 1 to 8 of 20 entries

Previous

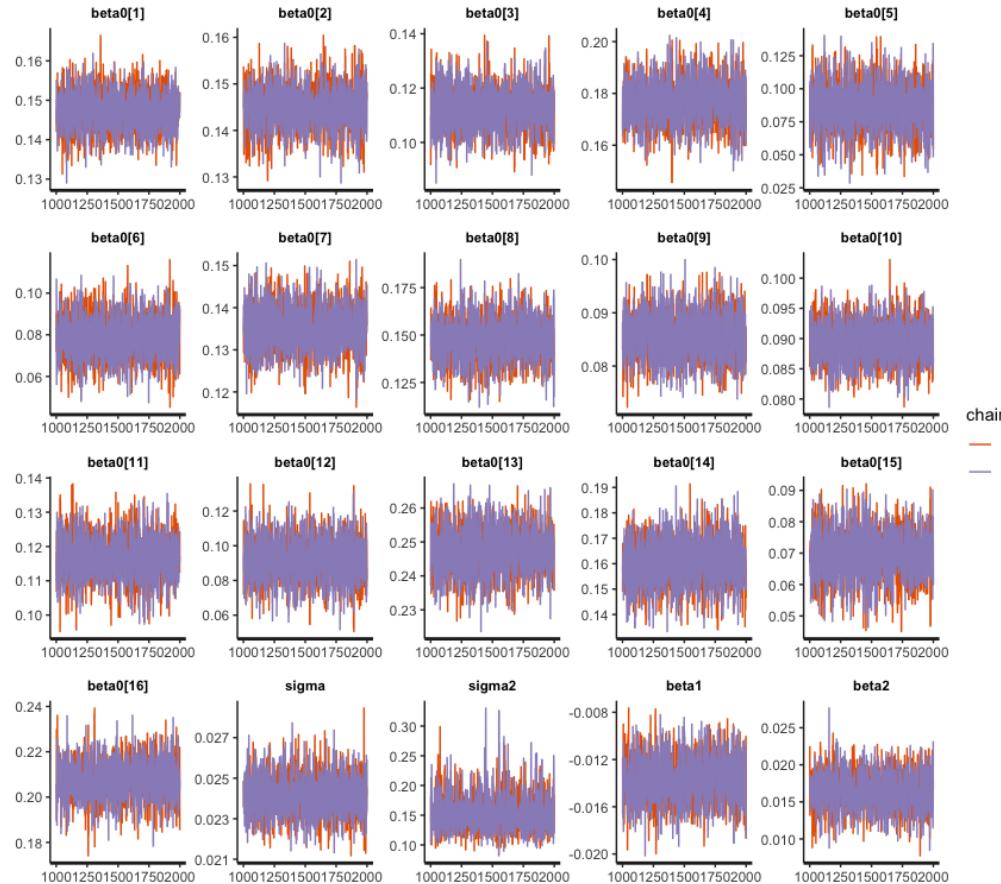
1

2

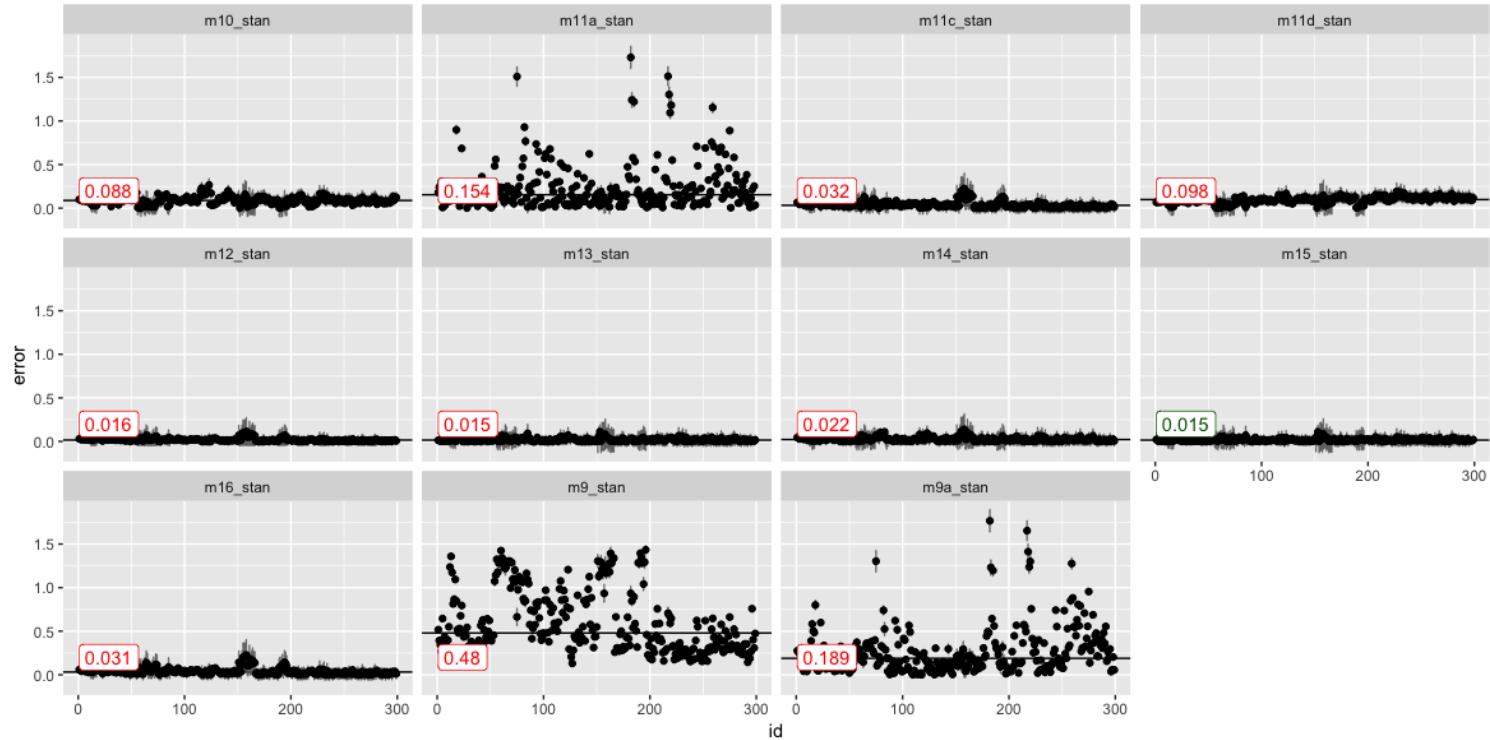
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Next

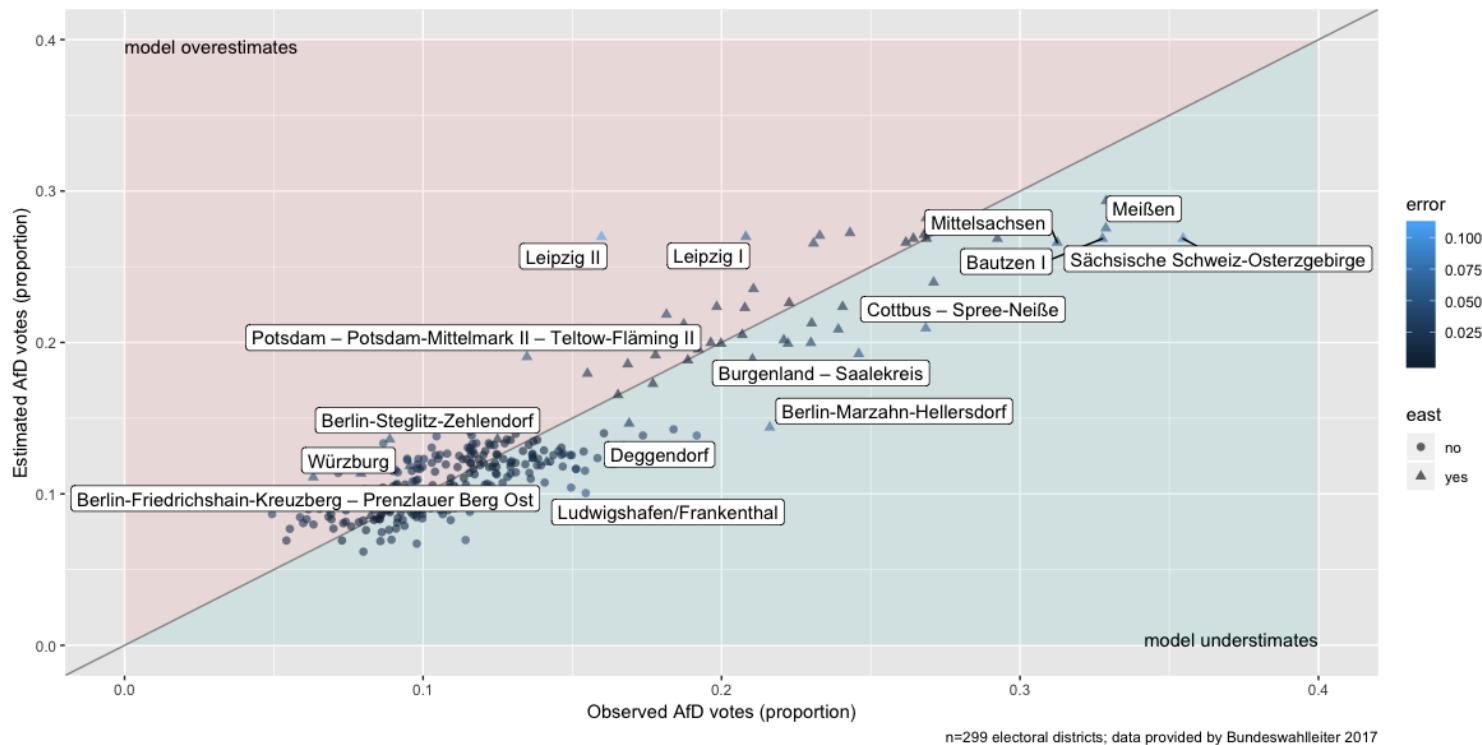
Traceplot of most favorable model



Comparing model predictions



Comparing observed and estimated AfD votes



Conclusions

Theoretical implications

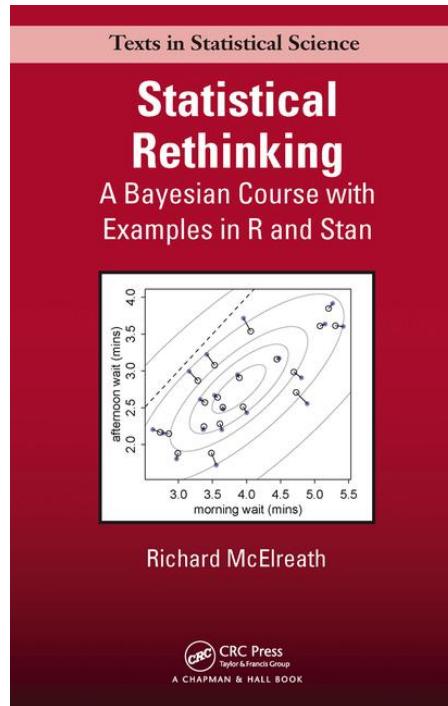
- *Region related patterns* appear to play an important role
 - more than unemployment rate and foreigner rate
 - not yet well understood
 - rural? aged society?
- The present model is *simplistic*
- *Future elections* will provide interesting opportunities for model improvements

Nicole Berbuer, Marcel Lewandowsky & Jasmin Siri (2015) The AfD and its Sympathisers: Finally a Right-Wing Populist Movement in Germany?, German Politics, 24:2, 154-178, DOI: 10.1080/09644008.2014.982546

Statistical implications

- *Observational research* is a very *limited* guide for *causal* interpretations
- *Fitting issues* with *count* models warrant more investigation
- *Overfitting* may be present (and underfitting)

Good textbook



Thank you

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