What Explains the Electoral Success of the AfD?

An Analysis of the March 2016 State Elections in Germany

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May 16, 2016
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Introduction

Within less than three years of being founded by discontented members of the incumbent Christian Democratic Union (CDU), the newly-formed party "Alternative for Germany" (AfD) has already achieved extraordinary vote share in the General election of 2013, the European Parliament election of 2014, (Arzheimer 2015) and lately in the three state elections in Baden-Württemberg, Rhineland-Palatinate, and Saxony-Anhalt held on March 2016. The rise of a party that stands against European Integration, argues for a re-arrangement of Germany's liberal foreign and economic policies, and vows for taking strong measure against immigrants, has presented a novel scenario into understanding factors that drive electorate to vote for a party that seemingly stands against the 'norm of the land'. Thus this research project endeavors to understand the factors that explain the success and rise of AfD in Germany's political landscape. In the following, we present current literature, the selected datasets, our applied methodology, and our findings. All work is done using the software R (R Core Team 2015).

The Research Question

On March 13, 2016, Germany's political landscape experienced "a landslide"(Pausch 2016). At the three state elections in Bade-Württemberg, Rhineland-Palatinate, and Saxony-Anhalt, the AfD received double digit results from scratch, meaning that it has not been present in the state parliaments before. In Baden-Württemberg (BW), the party received 15.1%, in Rhineland-Palatinate (RP) 12.6%, and in Saxony-Anhalt (SA) even 24.3% (Baden-Wuerttemberg 2016; Rheinland-Pfalz 2016; Sachsen-Anhalt 2016), becoming the third strongest party in BW and RP, and the second strongest in SA. Not only does the tremendous success of this new political player harden the setup of the future governments in the respective states, it is also a clear sign that the party has arrived in German mainstream politics (Gathmann and Wittrock 2016).

Our research question is:

"What explains the recent electoral success of the AfD in the different administrative districts of Baden-Württemberg, Rhineland-Palatinate, and Saxony-Anhalt?"

We want to understand which structural factors affect the electoral success of the AfD and whether the characteristics of its voters identified in post-election analyses are reflected in the district level data. Also, we want to find out whether it follows the same patterns as the electoral success of radical right populist parties in the rest of Western Europe.

About the AfD

Having been founded in February 2013 initially as a eurosceptic party, the AfD just missed the entry into the German national parliament at the federal elections in September 2013 by only 125,000 votes (Schmitt-Beck 2014). Not a single party in the post-war era was that successful in national elections being only established seven months before (Niedermayer 2015). This emergence is attributed to the Euro crisis and chancellor Merkels strong state interventionist austerity politics that opened political potential to the right of the

established right wing parties CDU/CSU and FDP. The AfD recognized that potential and positioned itself initially as an expert knowledge based eurosceptic party. But over the last years, it became a new host for now unrepresented national conservatives as well as right wing populists. The unifying factors for these different groups are the anti-establishment attitude of the AfD and the image of being the political underdog who is "honest" in face of political and medial lies. In this regard, the AfD shares similarities to other European right wing populist parties (Haeusler and Roeser 2015).

The recent refugee crisis that has hit Europe and especially Germany is seen as a major factor that led to new and increased support for the AfD. Chancellor Angela Merkels slogan "Wir schaffen das", expressing optimism with regards to the capability of government and society to handle the refugee crisis, was mostly criticized by members of the AfD and to some extend from the CDU itself. As long as the refugee crisis persists, it is assumed that the AfD is going to continue to gain more support (Gathmann and Wittrock 2016).After the March elections, a large debate arose within the CDU/CSU whether the refugee crisis response by chancellor Merkel was responsible for the loss in votes for the CDU. Interestingly, leaders of other parties who supported Merkels "Wir schaffen das" experienced less loss of votes. However, left parties such as "Die Linke" seemed to be especially vulnerable to the emergence of the AfD (Gathmann and Wittrock 2016). Also, the social democrats (SPD) seem to have lost many voters to the AfD (Pausch 2016).

Literature review

Early analysis of the elections has shown that the AfD was especially successful in mobilizing former non-voters (Gathmann and Wittrock 2016). It was also very successful amongst laborers and unemployed people. In Saxony-Anhalt, almost one third of this group voted for the AfD. But the analysis also showed that more people with medium education and income voted for the AfD. It is suggested that they are increasingly afraid of change, see the refugee crisis as a culmination of external threat, and are skeptical in the governments capacity to solve it (Pausch 2016).

In a mixed-methods study focusing on the AfD's history, self-description, positioning in the public discourse, and its supporters, Berbuir, Lewandowsky, and Siri (2015) found that the party can be described as a "functional equivalent for a right-wing populist party in a country where right-wing politics are strongly stigmatized" (Berbuir, Lewandowsky, and Siri 2015). For our research this means that the AfD can be located in the tradition of new radical right wing populist (RRWP) parties in Western Europe.

When it comes to the understanding of the rise of RRWP parties, Ivarsflaten (2008) and Swank and Betz (2003) offer important insights. In her large scale study comparing the electoral success of RRWP parties, Ivarsflaten (2008) found that successful RRWP parties almost always used anti-immigration rhethorics in their electoral campaigns. The other two focus areas of RRWP parties - opposing political elitism and complains about the economic development - were not always instrumentalized by successful RRWP parties and seem to be more context specific. Swank and Betz (2003) analyzed the impact of globalization on the electoral success of RRWP parties in national elections in 16 Western European nations between 1981 and 1998. Their core finding was that the generosity of the welfare state was an important factor that mitigated the impact of economic globalizations on the rise of RRWP parties. Besides that, they found that the volume of refugees and asylum seekers, the level of international immigration, the height of domestic tax burden, previous electoral success of left libertarian parties, and the past vote share of the RRWP parties all systematically and positively influenced their electoral success. In some occasions, previously declining strength of established right-wing parties was another factor that explained RRWP party success. Interestingly, slow economic growth and the rate of people employed in manufacturing jobs did not have a significant impact (Swank and Betz 2003, 230).

Hypotheses

Based on the insights from previous research on the success of RRWP parties in Western Europe and the findings from post-election analysis for the AfD, we aim to test the following hypotheses for the three state

elections.

Demographic hypotheses

> *H1a*: The average level of education in a district has a negative impact on the electoral success of the AfD.

> *H1b*: The unemployment rate in a district has a positive impact on the electoral success of the AfD.

Foreign exposure hypothesis

> *H2*: The volume of asylum seekers in a district has a positive impact on the electoral success of the AfD.

Economic hypothesis

> *H3*: Local GDP per capita has a negative impact on the electoral success of the AfD.

Political hypotheses

> *H4a*: The rate of non-voters in previous state elections in a district has a positive impact on the electoral success of the AfD.

> *H4b*: The success of left wing parties in previous state elections in a district has a positive impact on the electoral success of the AfD.

Data Sources and Methodology

In order to test these hypotheses, we combined two main data types in order to generate our variables.

The first data type is the electoral data provided by the State Offices for Statistics on the last state elections in Baden-Württemberg (Baden-Wuerttemberg 2016), Rhineland-Palatinate (Rheinland-Pfalz 2016), and Saxony-Anhalt (Sachsen-Anhalt 2016). The variables retrieved from these datasets are:

Variable	Name in dataset	Description
Dependent Variable (DV)	**vote.AfD**	The vote share of the Alternative for Germany in the current state election
Independent Variable 1 (IV1)	**lag.turnout**	Overall voter turnout of the previous state election
IV2, IV3, IV4, IV5, IV6	**lag.CDU**, **lag.Greens**, **lag.SPD**, **lag.FDP**, **lag.Linke**	The vote share of political parties in the previous state election (CDU, SPD, Greens, FDP, and Linke)

The second data type is on the structural characteristics on the administrative districts. We retrieve this data from the regional data base of the Federal Statistical Office DESTATIS (Bundesamt 2015). As this data is available on district level, we chose the districts as our level of analysis. The variables retrieved from these datasets are:

Variable	Name in dataset	Description
IV7	**abitur.ratio**	Ratio of school leavers per district with general qualification for university entrance (Abitur)
IV8	**nodegree.ratio**	Ratio of school leavers per district with no school degree
IV9	**GDP.cap**	Gross domestic product (GDP) per capita (by 1000)
IV10	**unemp.rate**	Unemployment rate in the district
IV11	**n.refugees**	Number of asylum seekers per district
IV12	**public.debt**	Aggregated debt of the municipalities in a district (by 1000)
IV13	**district.type**	Categorical variable, 1 for urban districts, 0 for country districts

Dataset preparation

Election Data - Gathering the election data was complicated due to the independence of the Statistical State Offices. Every German state office chooses its own format to provide data online. While we thought about collecting data on all state elections in Germany where the AfD has won seats, we had to limit our efforts to the three states Baden-Württemberg (BW), Rhineland-Palatinate (RP), and Saxony Anhalt (SA) in order to provide a working dataset in the given time frame. We retrieved district level data on the 2016 and 2011 state elections from the respective websites. While the data was available in separate files for RP and SA, district level data was only available for BW in a combined table that had to be divided in following steps. In total, we gathered five different datasets on the elections.

Structural Data - The website of the DESTATIS online database "Genesis-Online" was the source of the structural data files. As DESTATIS does not offer an API, the data had to be manually downloaded from the database. We saved four datasets as csv files that were subsequently loaded into our project.

The biggest challenge during the data cleaning was the generation of a common identifier for the different dataset. Except for the SA data, the election datasets is not provided with the district key which is the main identifier for the DESTATIS data. In order to add the identifier to the election data, we converted the district names that were available in both the election and the structural DESTATIS data into the same format and structure. Then, we sorted the data frames in the same way to add the identifier to the election data.

Finally, we merged all datasets into a single one which contains the variables mentioned above, the election year, and a state indicator on 94 observations.

Analysis Methods

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Empirical Findings

With the generated dataset we were able to conduct our analysis. Since our dependent variable is a [0, 1] bounded variable (meaning, the vote share can take values between 0% and 100%), we used beta regression for our analysis. In the beginning we used OLS to get a basic idea of the relationships of the selected variables.

Descriptive Statistics

Table 3 shows general descriptive statistics of our variables. Except for the variables "GDP per capita" and "Public Debt" (both divided by 1000) and "number of refugees" (absolute numbers), they are all in percent.

The standard deviations for "GDP per capita" and "vote share of Linke" are particularly large in comparison to the respective means. GDP per capita differs substantially between rural districts and heavily urbanized ones and while the Linke is very strong in Saxony Anhalt, it is barely present in BW and RP.

Table 3: Summary statistics of the covariates

Statistic	N	Mean	St. Dev.	Min	Max
Vote share of AfD in 2016	94	15.825	4.856	8.200	29.440
Vote turnout in 2011	94	61.587	6.176	47.060	73.400
Vote share of CDU in 2011	94	36.675	6.350	21.500	51.200
Vote share of Greens in 2011	94	17.303	8.288	2.830	43.000
Vote share of SPD in 2011	94	27.731	7.606	16.600	46.300
Vote share of FDP in 2011	94	4.107	1.987	0.090	8.400
Vote share of Linke in 2011	94	5.986	7.283	2.000	25.180
Abitur ratio	94	29.379	8.755	12.830	56.610
No degree ratio	94	5.884	2.465	1.290	14.450
GDP per capita / 1000	94	32.900	11.747	14.473	72.554
Unemployment rate	94	5.644	2.793	2.600	13.800
Number of refugees	94	423.266	283.213	97	1,487
Public debt / 1000	94	145.256	80.996	9.740	449.370

Correlations among variables

Table 4 provides a correlation matrix of a selection of our variables.

It is important to note that the AfD vote share is negatively correlated with the SPD vote share, but only slightly with the CDU vote share. GDP per capita and high school degree ratio are negatively correlated with AfD vote share, while the unemployment rate and the number of refugees are positively correlated with it.

When it comes to IV/IV correlations, the large positive correlation between GDP per capita and the high school degree ratio is not surprising. However, it is interesting to see that the high school degree ratio is negatively correlated with the previous vote share of the CDU, and positively with the unemployment rate.

Table 4: Correlation matrix of some variables

	vote.AfD	lag.CDU	lag.SPD	GDP.capita	unempl.rate	abitur.ratio
vote.AfD	1	-0.08	-0.34	-0.24	0.62	-0.29
lag.CDU	-0.08	1	-0.41	-0.07	-0.53	-0.48
lag.SPD	-0.34	-0.41	1	-0.11	0.03	0.17
GDP.capita	-0.24	-0.07	-0.11	1	-0.11	0.49
unempl.rate	0.62	-0.53	0.03	-0.11	1	0.24
abitur.ratio	-0.29	-0.48	0.17	0.49	0.24	1

Distribution of AfD Vote Share

When lining up the districts according to the vote share of the AfD, it becomes clear that the party achieved an overall stable and even vote share. The only real outliers are a couple of districts in Saxony Anhalt where the AfD achieved it's by far greatest successes.
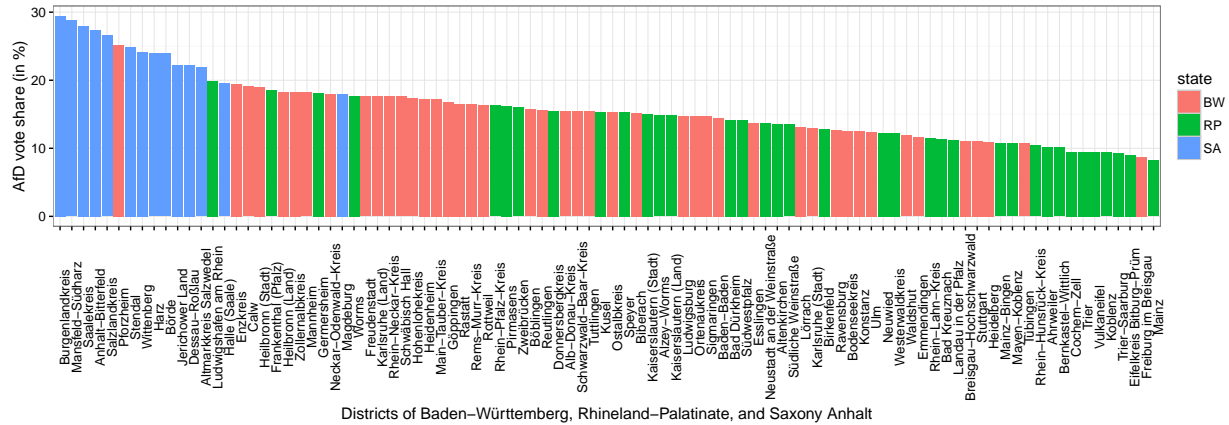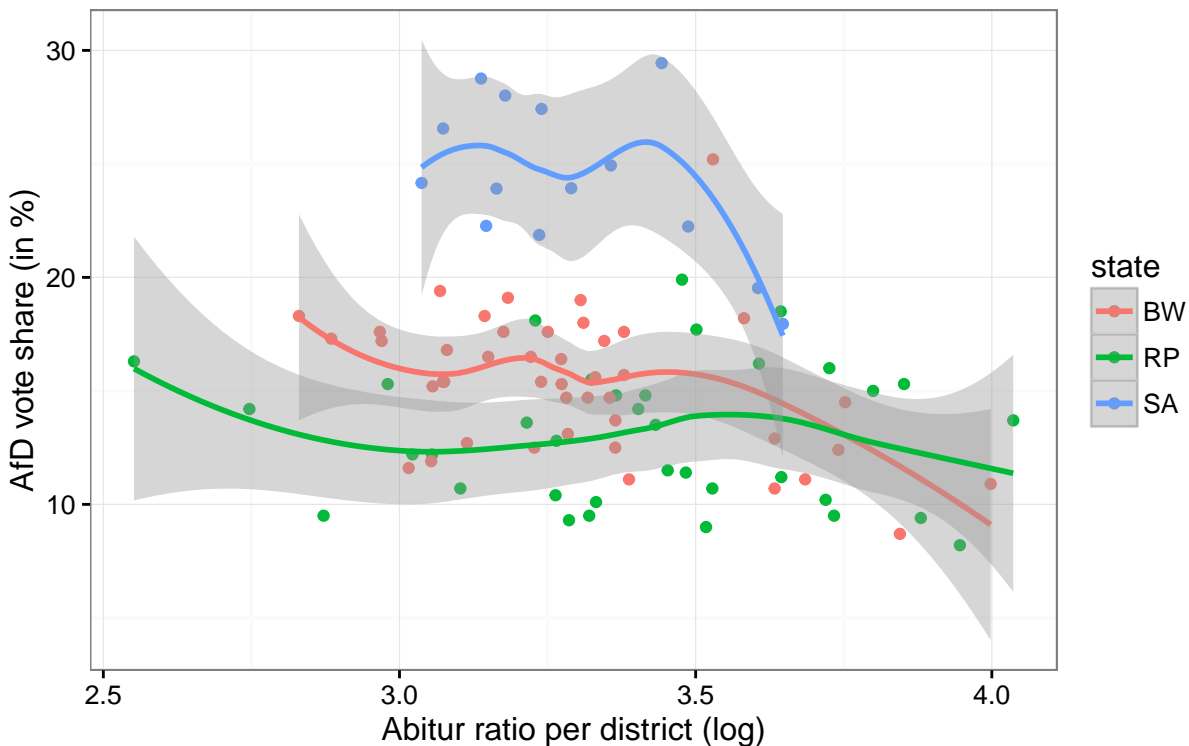
Correlations

In the following, we test our hypotheses with simple correlations.

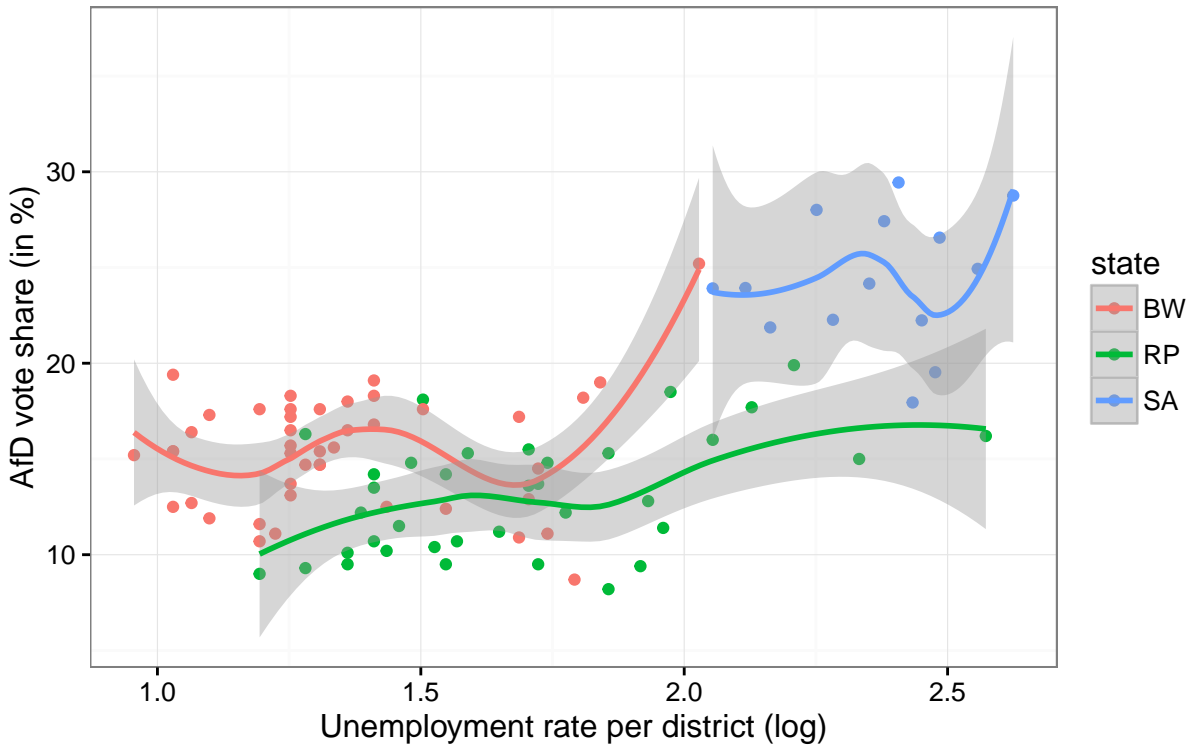### Correlation of AfD vote share and abitur ratio (H1a)

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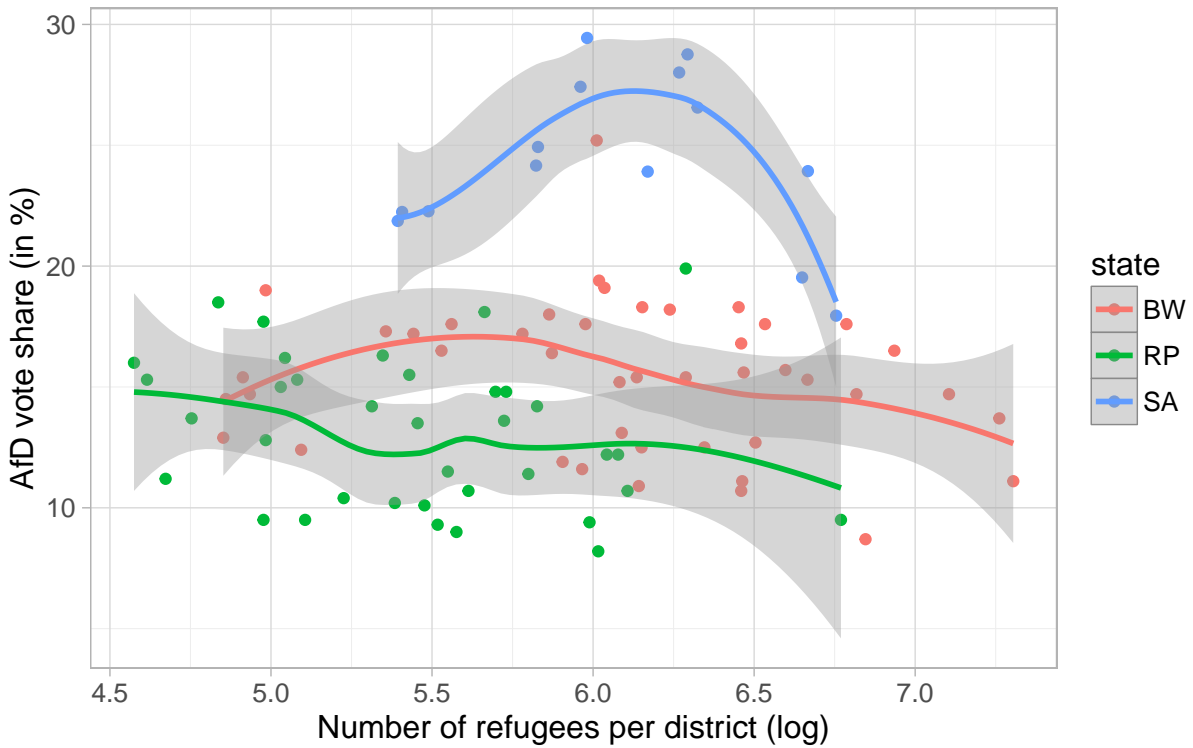### Correlation of AfD vote share and unemployment rate (H1b)

The following graph shows a statistically significant (the t value from the Pearson's product-moment correlation test is 6.27) positive correlation of the logged unemployment rate in a district with the AfD vote share.

However, the correlation seems to be negative for districts with lower unemployment rates but becomes strongly positive for districts with high unemployment. The positive correlation of the abitur ratio with the unemployment rate and its negative correlation with the AfD vote share visible in the correlation matrix could offer a possible explanation for this. We will test this later by controlling for urbanization.
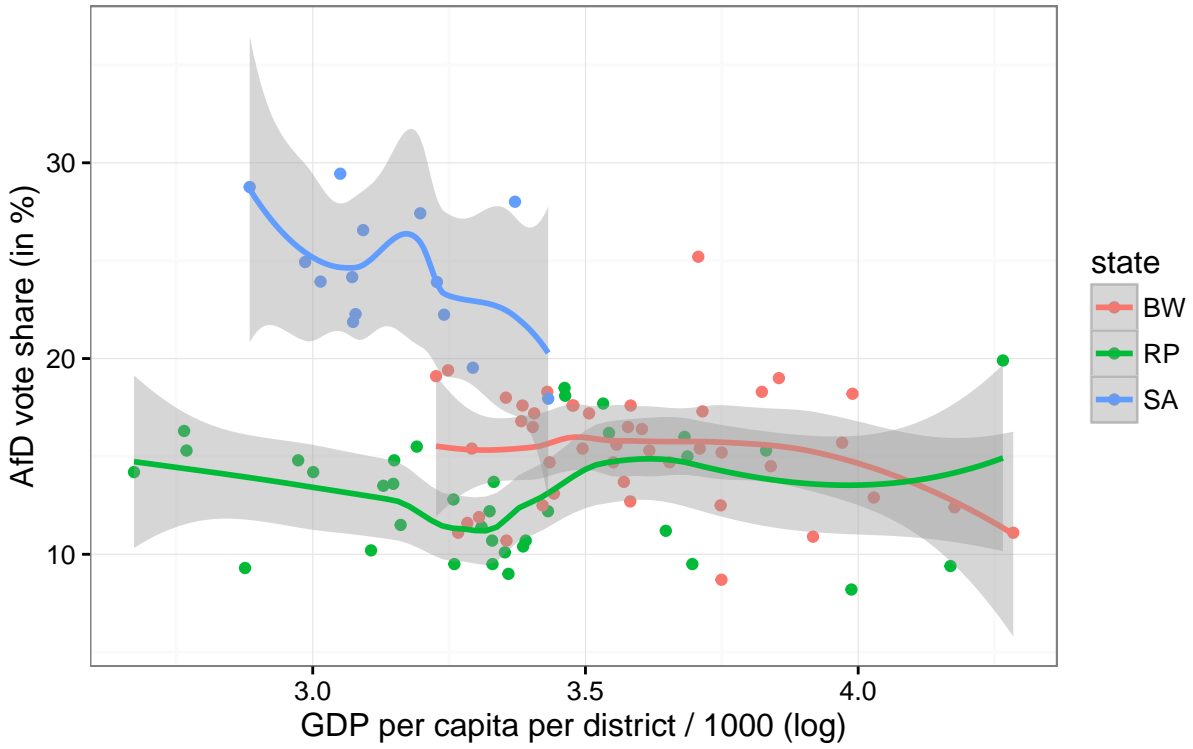

Correlation of AfD vote share and number of refugees (H2)

The result shows a positive correlation of the number of refugees per district with the AfD vote share. But it is not statistically significant since the t value is 0.13 (from the Pearson's product-moment correlation test). Since the data on the refugees per district is from 2013, it is highly outdated. We were not able to acquire more recent data (for 2014 or even for 2015) in order to conduct a meaningful analysis here.
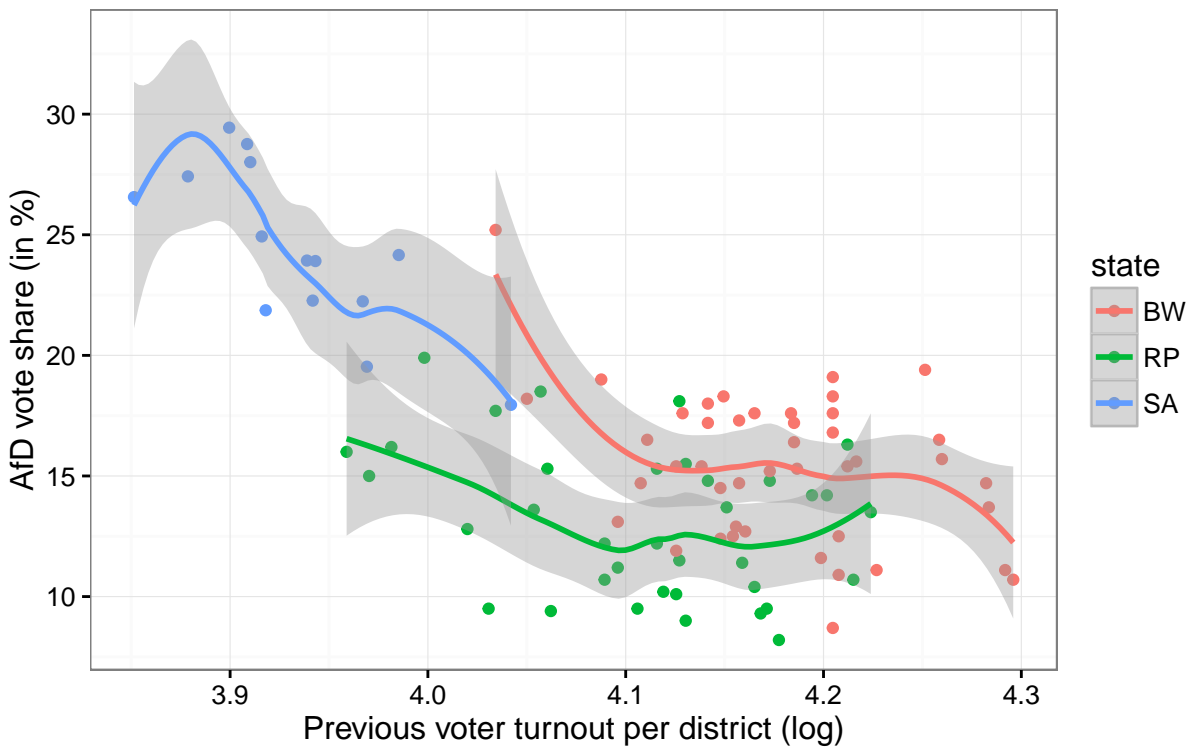
Correlation of AfD vote share and GDP per capita (H3)

The following graph shows a slightly statistically significant (t value is -2.04) negative correlation of GDP per capita with AfD vote share. The effect seems to be mostly influenced by a small group of outliers (high vote share, low GDP per capita) and the variance is not equal across the independent variable (posing a problem with heteroscedasticity).
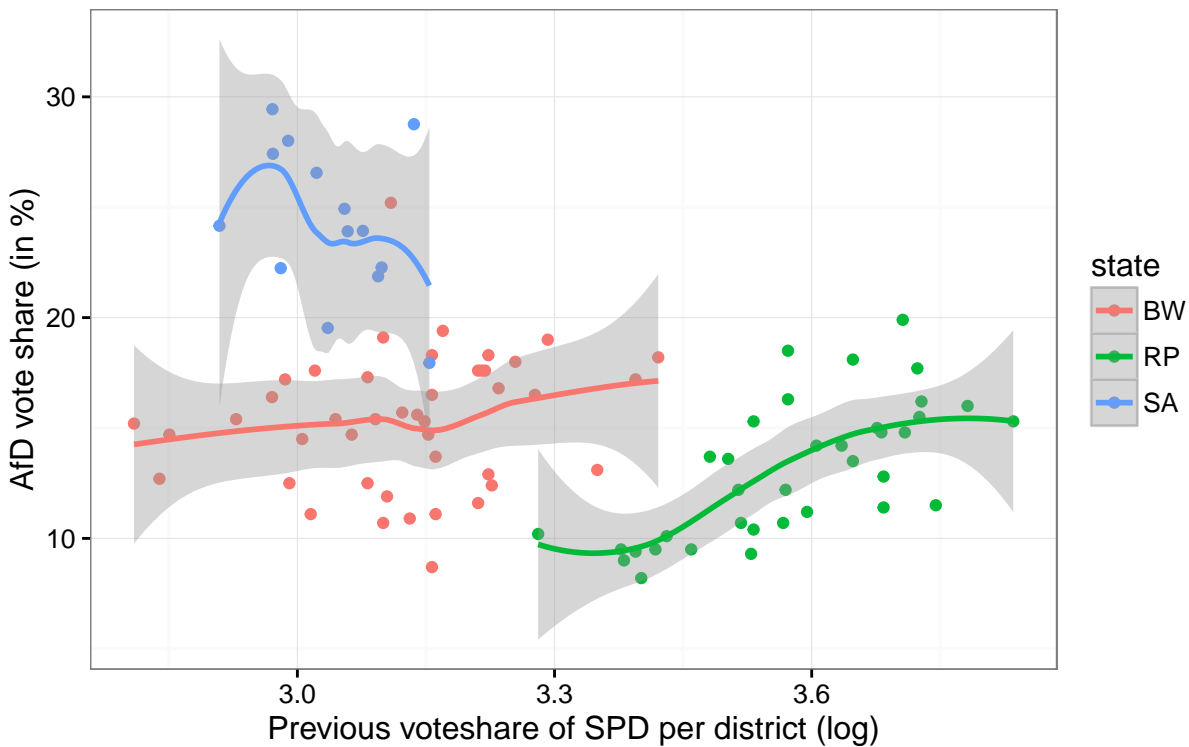
Correlation of AfD vote share and voter turnout in previous elections (H4a)

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Correlation of AfD vote share and strength of left wing parties (H4b)

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Inferential Statistics

Since the initial descriptive statistics and graphs indicate certain relations and interactions, we built several regression models which we ran as OLS regression analysis first and then as beta regression.

Normal multivariate OLS regression analysis

Testing some initial regression models, we see that the unemployment rate, the vote share of the SPD in previous elections, and the ratio of people leaving school without a formal degree are statistically significant across all models. In almost each model a one percentage point increase of the unemployment rate leads to a one percentage point increase of the AfD vote share. On the other hand, the number of refugees per district and the vote share of the CDU are insignificant in every model.

	Dependent variable:				
	Vote share of AfD				
	(1)	(2)	(3)	(4)	(5)
GDP per capita / 1000	−0.08**	−0.07**	0.03	0.005	0.02
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Unemployment rate	1.05***	0.73***	1.29***	1.06***	0.61**
	(0.14)	(0.25)	(0.19)	(0.25)	(0.24)
Number of refugees	0.002	0.001	0.001	−0.0002	−0.0005
	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)
Vote share of CDU in 2011 election		0.08		−0.04	0.22***
		(0.08)		(0.07)	(0.08)
Vote share of SPD in 2011 election		−0.20***		−0.21***	0.40***
		(0.06)		(0.05)	(0.11)
Voter turnout in 2011 election		−0.24**		−0.15	−0.12
		(0.11)		(0.10)	(0.09)
Abitur ratio			−0.28***	−0.24***	−0.09*
			(0.05)	(0.05)	(0.05)
No degree ratio			0.02	−0.17	−0.17
			(0.21)	(0.19)	(0.17)
State					−7.54***
					(1.30)
stateSA					6.84***
					(2.28)
Constant	11.80***	31.03***	15.13***	34.01***	5.59
	(1.52)	(8.85)	(1.68)	(8.35)	(9.29)
District FE	NO	NO	NO	NO	NO
Observations	94	94	94	94	94
R^2	0.42	0.59	0.59	0.68	0.77
Adjusted R^2	0.40	0.56	0.57	0.65	0.75

Note: *p<0.1; **p<0.05; ***p<0.01

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Call: lm(formula = vote.AfD.prcnt ~ GDP.capita + state * unempl.rate + state + unempl.rate + n.refugees + lag.CDU + lag.SPD + lag.turnout + abitur.ratio + nodegree.ratio, data = Data)

Residuals: Min 1Q Median 3Q Max -0.056408 -0.014325 -0.001673 0.013237 0.058906

Coefficients: Estimate Std. Error t value Pr(>|t|)
(Intercept) 4.152e-02 9.481e-02 0.438 0.662617
GDP.capita 2.094e-04 3.326e-04 0.630 0.530729
stateRP -5.736e-02 2.215e-02 -2.590 0.011373 *
stateSA 7.343e-02 4.898e-02 1.499 0.137742
unempl.rate 9.072e-03 4.219e-03 2.150 0.034521 *
n.refugees -3.915e-06 1.177e-05 -0.333 0.740317
lag.CDU 2.371e-03 8.097e-04 2.928 0.004430 ** lag.SPD 4.115e-03 1.198e-03 3.434 0.000939 *** lag.turnout -1.275e-03 9.276e-04 -1.374 0.173123
abitur.ratio -9.400e-04 4.955e-04 -1.897 0.061375 .
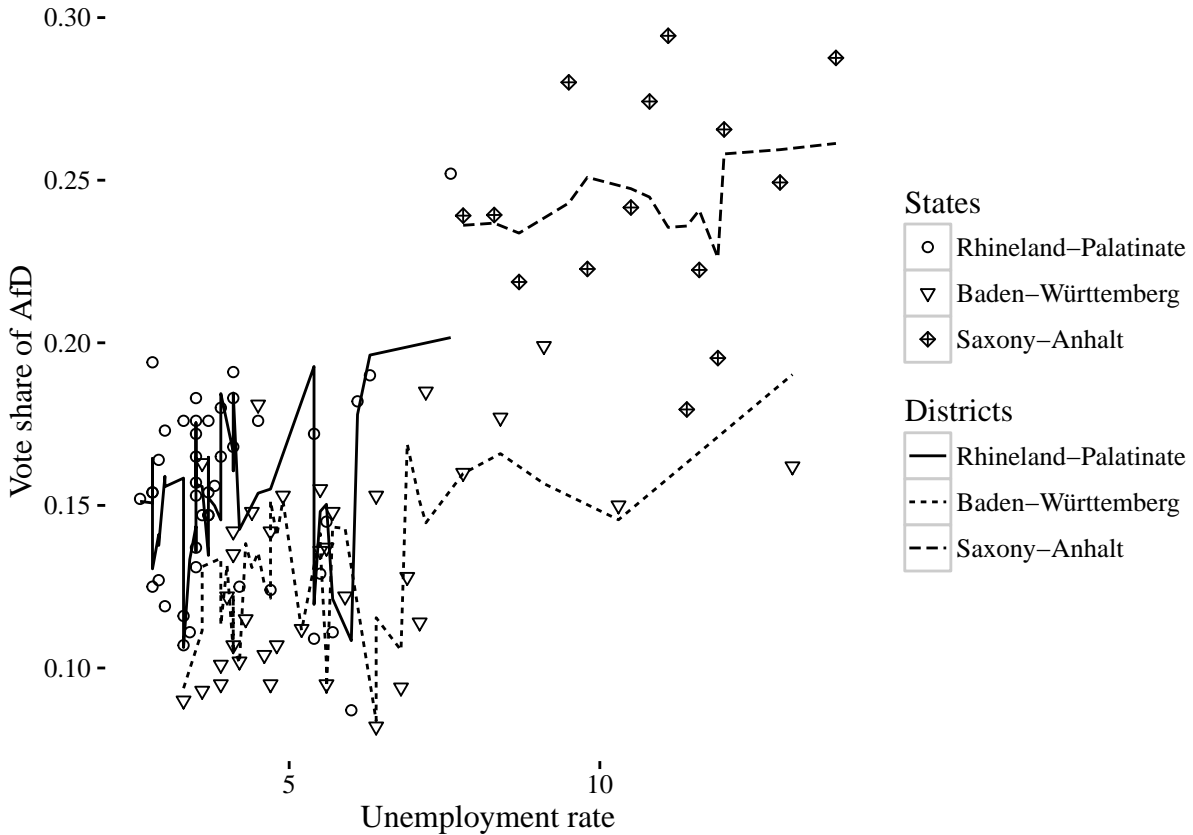nodegree.ratio -1.879e-03 1.771e-03 -1.061 0.291960
stateRP:unempl.rate -4.143e-03 4.015e-03 -1.032 0.305247
stateSA:unempl.rate -2.217e-03 5.842e-03 -0.379 0.705389
— Signif. codes: 0 '*** *0.001* **' 0.01 '*' 0.05 '.' 0.1 '' 1

Residual standard error: 0.02455 on 81 degrees of freedom Multiple R-squared: 0.7773, Adjusted R-squared:

0.7444 F-statistic: 23.57 on 12 and 81 DF, p-value: $< 2.2e-16$

With just a small selection of variables, the models have surprisingly high adjusted R^2. Between 40% and 64% of the variation of AfD vote share could be explained. However, this type of analysis (OLS) is not as suited for the analysis of a [0, 1] bounded dependent variable as the following beta regression.

Beta regression analysis

... Description of beta regression here ...

	Dependent variable:				
	Vote share of AfD				
	(1)	(2)	(3)	(4)	(5)
GDP per capita / 1000	−0.01**	−0.005**	0.003	0.002	0.002
	(0.003)	(0.002)	(0.003)	(0.002)	(0.002)
Unemployment rate	0.07***	0.05***	0.09***	0.08***	0.05***
	(0.01)	(0.02)	(0.01)	(0.02)	(0.02)
Number of refugees	0.0001	0.0001	0.0001	−0.0000	−0.0000
	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)
Vote share of CDU in 2011 election		0.01		−0.003	0.02***
		(0.01)		(0.01)	(0.01)
Vote share of SPD in 2011 election		−0.01***		−0.01***	0.03***
		(0.004)		(0.004)	(0.01)
Voter turnout in 2011 election		−0.02**		−0.01	−0.01
		(0.01)		(0.01)	(0.01)
Abitur ratio			−0.02***	−0.02***	−0.01**
			(0.004)	(0.004)	(0.004)
No degree ratio			−0.003	−0.02	−0.02
			(0.01)	(0.01)	(0.01)
state					−0.63***
					(0.09)
stateSA					0.45***
					(0.15)
Constant	−1.94***	−0.67	−1.67***	−0.29	−2.47***
	(0.11)	(0.63)	(0.12)	(0.59)	(0.65)
District FE	NO	NO	NO	NO	NO
Observations	94	94	94	94	94
R^2	0.35	0.51	0.55	0.61	0.76
Log Likelihood	179.34	193.78	195.98	205.45	225.17

Note:	*p<0.1; **p<0.05; ***p<0.01

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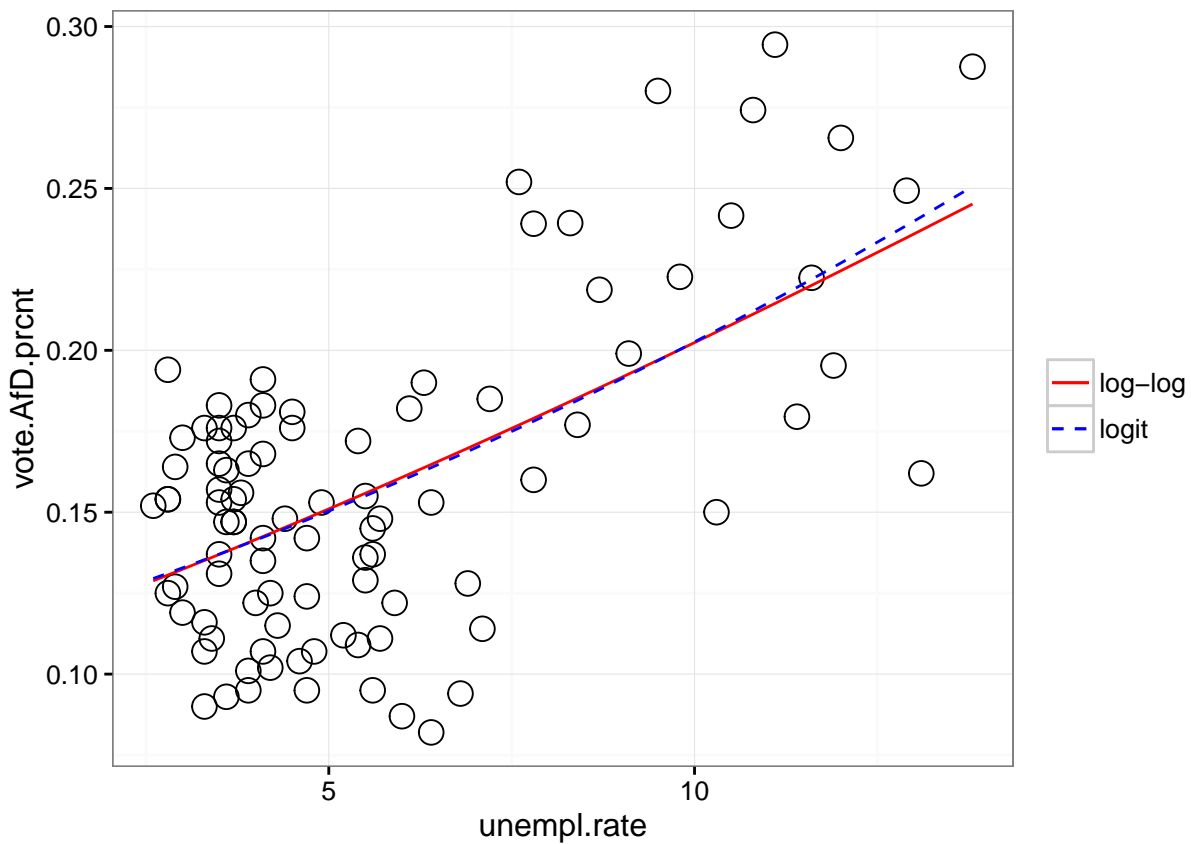
Limitations and Future Research

- Extend analysis on all state elections in Germany where the AfD has participated in order to increase observations

- Access more recent data on refugee numbers

- Include additional variables, like "immigration"

- Create interaction models

- Use beta regression as dependent variable is [0, 1] bounded

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