Credit Shocks and Populism

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Motivation

- Following the Great Financial Crisis (GFC), populist parties grew in many Western democracies
- Scholars focus on exploring whether financial crises fuel populism through different channels:
  - Globalisation and trade disruptions
  - Unemployment
  - Policy uncertainty and economic insecurity
  - Public finance and fiscal contractions
  - Debt and mortgages in foreign currency
- What about *bank credit*?
  - GFC $\rightarrow$ severe decline in bank lending (Ivashina and Scharfstein, 2010)
  - Credit swings *can* affect political preferences
  - To date, we have no clear evidence on whether drops in bank lending contribute to the rise of populists in modern democracies
  - Main challenge: disentangling the effect of banking crises $\rightarrow$ need for a suitable natural experiment

Contribution

Can a credit contraction fuel populism?

- We study the effect of a negative credit shock on individual voting preferences during the GFC in Germany
- We exploit the spatial variation in exposure to an exogenously-driven credit contraction by one of the largest German universal banks in 2008-09
- We look at the impact of the credit crunch on individual preferences using survey panel data
- We complement the results by looking at the supply side using text analysis, observing whether the voters shift in favour of parties
  - with a populist rhetoric
  - that discuss banking & crisis issues
  - that use a populist rhetoric and discuss banking & crisis issues

Main Findings

- We find a positive effect of the credit shock on revealed political preferences and the likelihood to support a populist party.
- The demand shift rewards parties that
  1. Adopt a more populist rhetoric, and
  2. focus more on banking-related topics.
- Voters are not "blinded" by the populist rhetoric as they are also sensitive to the topics populist discuss.

Background

Credit Shock and Populism in Germany

- Credit in Germany
  - no house prices boom or decline, no endogenous banking panic, relatively little uncertainty and no sovereign debt crisis before or during the GFC
  - sharp and rapid drop in bank lending starting in 2010
- Commerzbank generated an unexpected credit crunch unrelated to domestic economic condition (Huber, 2018):
  - anticipates the wider downturn of domestic credit
  - driven by significant losses in the international trading books in 2008–09 that led to a fall in equity capital
  - the lending cut was temporary but necessary to comply with Basel II's regulation
- Following the shock, we observed a rise of populism in Germany:
  - Germany has both left- and right-wing populist parties
  - Populist parties gained paramount relevance during the elections of 2013 and 2017

Data

Descriptives Full Sample | Descriptives Pre-Shock

- German Socio-Economic Panel (SOEP) survey data:
  - Individual preferences on voting and political participation
  - Individual and household characteristics
  - Waves: 2000 – 2016
  - County-level variables (together with DeStatis and RegionalStatistik)
- Amadeus (Bureau van Dijk) data on firms to compute Commerzbank exposure
  - Data on bank accounts held by each firm ($\sim$ 640, 000) established before 2006
  - $\sim$ 950, 000 bank relationships, 99, 000 of which are Commerzbank's
- Popu-List (Rooduijn et al., 2019), Norris and Inglehart (2019), and Chapel Hill Expert Survey (CHES) database on populist parties:
  - Alternative Für Deutschland (AfD)
  - Die LINKE
  - National Democratic Party (NPD)

Methodology (I)

Measuring Exposure to the Lending Cut

Distribution Map

Based on Huber (2018), we create a measure of Commerzbank exposure at county-level in 2006 as a proxy for exposure to the credit shock:

$$\text{Exposure}_k = \frac{1}{F_k}\left[\sum_{f \in F_k}\left(\frac{\#\text{ Commerzbank Branches}_f}{\#\text{ Total Relationship Banks}_f}\right)\right] \in [0,1]$$

- $\#$ Commerzbank Branches$_f$ is the number of relationship banks of firm $f \in F_k$ in county k that are Commerzbank Branches
- $\#$ Total Relationship Banks$_f$ is the total number of relationship banks of firm f
- We average firm-level exposure across firms within the county to construct an index of exposure at regional level

Methodology (II)

Identification Design

List of Controls

We propose the following two-way fixed effects identification with heterogeneous treatment effects (*e.g.* see Cutler et al., 2010; de Chaisemartin and D'Haultfœuille, 2020):

$$y_{ikt} = \alpha + \beta \left(\text{Exposure}_k \times \text{Post}\right) + \mathbf{X}'_{ik}\Gamma + \mathbf{K}'_k\Pi + \delta_k + \lambda_t + \varepsilon_{ikt}$$

- y_{ikt} denotes the outcomes of interest for individual i resident in county (*kreise*) k in 2006 at time t
- Exposure_k is the pre-shock county-level Commerzbank exposure
- Post equals to one for each period after the end of the credit shock (2009 onward)
- $\mathbf{X}_{ik}$ and $\mathbf{K}_k$ are respectively vectors of pre-shock individual- and household- and county-level characteristics (measured in 2006)
- δ_k and λ_t are respectively county and time fixed effects

Methodology (III)

Identification Design: Further Details

- β indicates the effect of having a higher exposure to Commerzbank at the time of the lending cut on individual outcomes compared to having a lower exposure beforehand.
- We keep individuals of the 2006 wave fixed for the pre-shock characteristics – excluding all individuals not in voting age to date – and we consider their data before and after the shock
- We use individual sampling weights to overcome survey stratification and non-response rate
- We cluster standard errors at county level (Bertrand et al., 2004)
- Main Outcome Variables: Support Map Populist Map
  1. Political Support: indicator variable from the question (translated from German) "*Many people in Germany lean towards one party in the long term, even if they occasionally vote for another party. Do you lean towards a particular party?*"
  2. Intention to Vote for a Populist Party: indicator variable from the pointed out preference $\rightarrow$ populist party using the previous source

Results

The Effect of the Credit Shock on Political Preferences

Robustness

	Political Support			Intention to Vote for Populist Party		
	(1)	(2)	(3)	(4)	(5)	(6)
$Exposure_k \times Post$	0.011**	0.013***	0.013***	0.007**	0.007***	0.007***
	(0.005)	(0.005)	(0.005)	(0.003)	(0.002)	(0.002)
Number of Observations	229,699	206,604	206,604	229,699	206,604	206,604
Adjusted R-Squared	0.129	0.139	0.139	0.078	0.076	0.076
Number of Counties	396	396	396	396	396	396
County-Level FE	Yes	Yes	Yes	Yes	Yes	Yes
Wave FE	Yes	Yes	Yes	Yes	Yes	Yes
Basic Controls	Yes	Yes	Yes	Yes	Yes	Yes
Household Controls	No	Yes	Yes	No	Yes	Yes
Regional Controls	No	No	Yes	No	No	Yes

Notes: $Exposure_k \times Post$ is expressed in standard deviation. Significance Levels: * 10% level, ** 5% level, *** 1% level. Robust standard errors adjusted for clustering at the county of residence in 2006 level in parentheses.

Measuring Populism: A Text-Based Indicator

More Details | Flowchart

- We found that exposure to the shock triggers demand for populism based on a binary classification of parties
- We now account for the dynamic in the supply of populism and compare it with the supply of policy discourse on the crisis
- We apply `seededLDA` to more than 370, 000 speeches of representatives of the German Bundestag from 1991 to 2018 to track a party's Top Terms
  - Focus on Banking and Finance: 4 sub-topics (Bank, Crisis, European Central Bank and Finance) with uninformative seeds
  - Populist Rhetoric (single topic with seeds from Rooduijn and Pauwels, 2011) Seeds
- We create a continuous year-party level index for both topics, we match those to individual political preferences and we estimate the baseline model using indices as the outcome variable BF Index | POP Index
- For robustness, we apply the same procedure to electoral manifestos and we apply a dictionary technique based on the same seeds

Results: Populism as a Continuous Outcome

The Effect of the Credit Shock on Topic Preferences

	Banking and Financial Crisis			Populism			Combined		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Panel A: Parliamentary Debates									
$\text{Exposure}_k \times \text{Post}$	0.058***	0.060***	0.060***	0.128***	0.120***	0.120***	0.066***	0.067***	0.067***
	(0.015)	(0.016)	(0.016)	(0.024)	(0.025)	(0.025)	(0.016)	(0.017)	(0.017)
Number of Observations	105,720	93,533	93,533	105,720	93,533	93,533	105,720	93,533	93,533
Adjusted R-Squared	0.590	0.584	0.584	0.556	0.560	0.560	0.570	0.566	0.566
Number of Counties	393	393	393	393	393	393	393	393	393
Panel B: Electoral Manifestos									
$\text{Exposure}_k \times \text{Post}$	0.081***	0.084***	0.083***	0.049***	0.049***	0.050***	0.084***	0.087***	0.086***
	(0.013)	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.015)	(0.014)
Number of Observations	25,842	22,816	22,816	25,842	22,816	22,816	25,842	22,816	22,816
Adjusted R-Squared	0.601	0.593	0.594	0.341	0.337	0.338	0.593	0.586	0.587
Number of Counties	387	387	387	387	387	387	387	387	387
County-Level FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Wave FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Basic Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household Controls	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Regional Controls	No	No	Yes	No	No	Yes	No	No	Yes

Conclusion

- Based on data on Germany, we find that credit shocks increase the support for populist parties
- The credit shock of 2008-09 increased the electoral support for parties that a) use a populist rhetoric, and b) focus more on banking
- These findings show that a populist rhetoric pays off when a credit shock hits
- However, they also suggest that voters are not "blinded" by populist rhetoric, as they are sensitive to the topics populist discuss
- Potential Mechanism: Sociotropic Reaction (Colantone and Stanig, 2018a)
  - No direct impact of credit shock on individuals
  - Voters react to general economic situation of the region

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Appendix

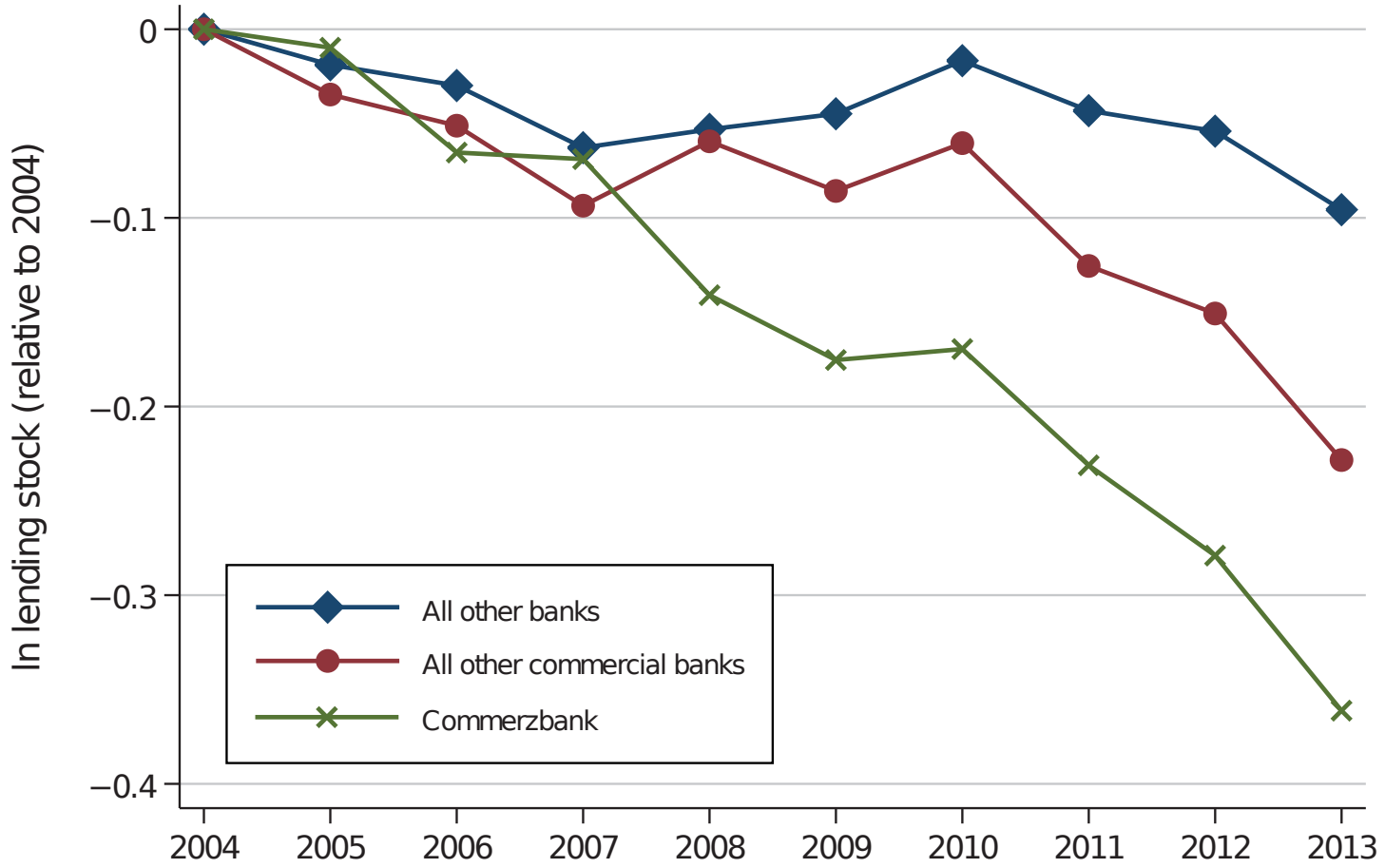
Literature on the Economic Causes of Populism

Back

- Scholars identified the economic causes of populism in:
  - Globalisation and trade disruptions (Autor et al., 2020; Rodrik, 2018; Colantone and Stanig, 2018*a*,*b*; Dippel et al., 2021);
  - Unemployment (Algan et al., 2017; Hobolt and de Vries, 2016; Dal Bó et al., 2020);
  - Policy uncertainty and economic insecurity (Funke et al., 2016; Guiso et al., 2017, 2019, 2020; Dehdari, 2021);
  - Public finance (Sartre et al., 2020)
  - Debt and mortgages in foreign currency (Gyöngyösi and Verner, 2020; Ahlquist et al., 2020)
- The literature shows that credit swings can affect political preferences
  - (–) increasing polarisation (Mian et al., 2014; Doerr et al., 2020), punishing the incumbent (Antoniades and Calomiris, 2018), and causing social unrest (Braggion et al., 2020)
  - (+) increasing the popularity of the incumbent (Herrera et al., 2020)

The Lending Stock of German Banks

Back



Notes: The picture describes the ln lending stock to German non-financial customers, relative to the year 2004 in 2010 billions of euros. Source: Huber (2018).

Data

Summary Statistics: Full Sample 2000–2016

Back

	Mean	SD	Median	Min	Max	N
Panel A: Demographic Variables						
Male	0.475	0.499	0.000	0.000	1.000	251,858
Age	50.335	17.681	51.000	16.000	105.000	251,858
Residence in GDR in 1989	0.273	0.446	0.000	0.000	1.000	250,820
Married	0.618	0.486	1.000	0.000	1.000	250,892
Direct/Indirect Migrant	0.131	0.338	0.000	0.000	1.000	251,858
Panel B: Education						
Years of Education	12.270	2.659	11.500	7.000	18.000	242,092
Panel C: Occupational Status						
Currently Unemployed	0.057	0.233	0.000	0.000	1.000	251,851
Officially Unemployed Prev. Yr. No. Months	0.806	2.705	0.000	0.000	12.000	190,061
Panel D: Household Variables						
Household Size	2.089	0.879	2.000	1.000	9.000	251,858
Number of Children in HH	0.451	0.847	0.000	0.000	9.000	251,858
Home-Ownership	0.561	0.496	1.000	0.000	1.000	251,854
Presence of Outstanding Loans	0.398	0.490	0.000	0.000	1.000	251,772
Annual Household Disposable Income (in 2016 EUR)	25123.126	22215.925	23361.701	-8.65e+04	6.91e+05	251,858
Panel E: County-Level Variables						
County GDP (in 2016 mln EUR)	7,163.390	10925.742	4,405.542	998.818	1.31e+05	6,673
Population Density	526.043	680.460	199.617	36.263	4,712.758	6,673
Unemployment Rate	8.149	4.303	7.100	1.200	25.400	6,673
Share of Foreigners	7.471	4.673	6.600	0.800	33.900	6,673
Average Household Income (in 2016 EUR)	1.911	15.244	1.713	1.254	1,246.867	6,673
Panel F: Outcome Variables						
Political Supporter	0.467	0.499	0.000	0.000	1.000	250,809
Intention to Vote for Populist Party	0.035	0.184	0.000	0.000	1.000	250,809
Banking and Financial Crisis Index (sLDA)	3.167	0.271	3.202	2.357	3.745	112,696
Populism Index (sLDA)	0.089	0.024	0.089	0.043	0.167	112,696

Data

Summary Statistics: Pre-Shock Sample (2006)

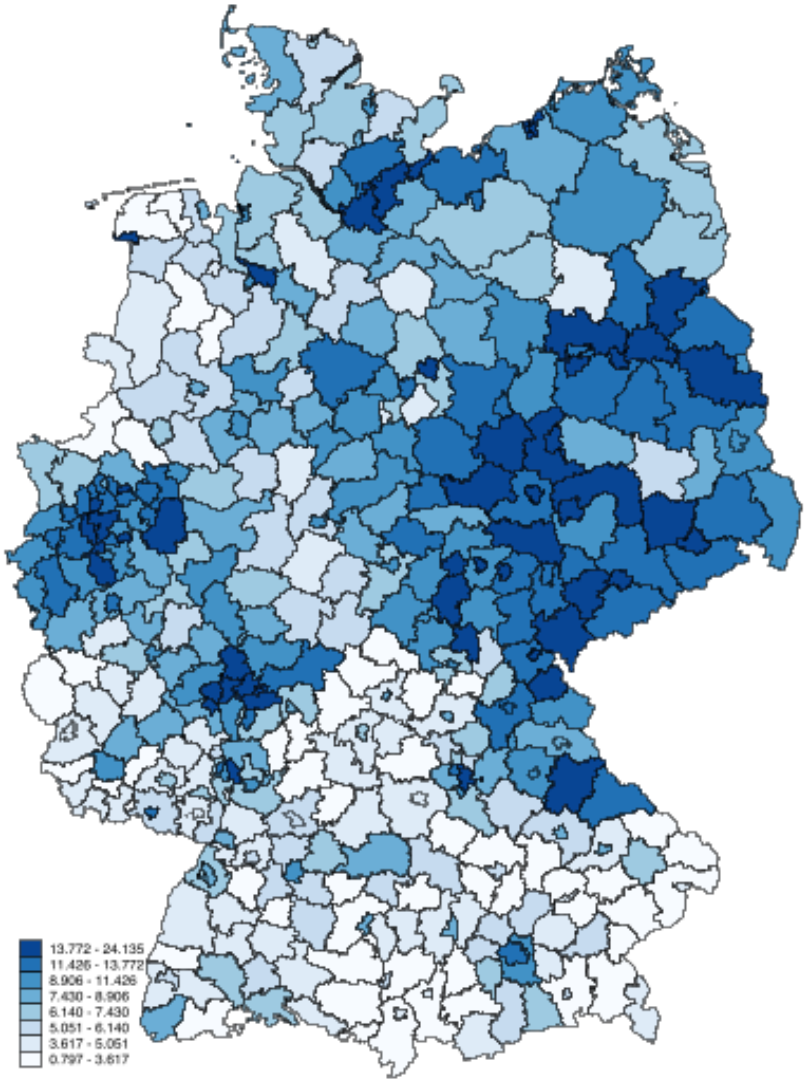
Back

	Mean	SD	Median	Min	Max	N
Panel A: Demographic Variables						
Male	0.477	0.499	0.000	0.000	1.000	20,836
Age	49.281	17.565	49.000	17.000	97.000	20,836
Residence in GDR in 1989	0.267	0.442	0.000	0.000	1.000	20,205
Married	0.610	0.488	1.000	0.000	1.000	20,751
Panel B: Education						
Years of Education	12.192	2.646	11.500	7.000	18.000	20,031
Panel C: Occupational Status						
Currently Unemployed	0.073	0.260	0.000	0.000	1.000	20,836
Officially Unemployed Prev. Yr. No. Months	1.001	3.007	0.000	0.000	12.000	15,957
Panel D: Household Variables						
Household Size	2.128	0.867	2.000	1.000	8.000	20,836
Number of Children in HH	0.471	0.863	0.000	0.000	7.000	20,836
Home-Ownership	0.554	0.497	1.000	0.000	1.000	20,835
Presence of Outstanding Loans	0.391	0.488	0.000	0.000	1.000	20,828
Annual Household Disposable Income (in 2016 EUR)	26606.992	23533.190	24453.598	-4.99e+04	6.28e+05	20,836
Panel E: County-Level Variables						
County GDP (in 2016 mln EUR)	7,000.992	10651.569	4,275.341	1,154.023	1.05e+05	395
Population Density	525.876	676.956	201.102	39.465	4,166.612	395
Unemployment Rate	10.353	4.493	9.200	3.400	23.700	395
Share of Foreigners	7.324	4.553	6.500	1.100	25.100	395
Panel F: Outcome Variables						
Political Supporter	0.489	0.500	0.000	0.000	1.000	20,732
Intention to Vote for Populist Party	0.035	0.184	0.000	0.000	1.000	20,732
Banking and Financial Crisis Index (sLDA)	3.150	0.146	3.220	2.989	3.402	9,788
Populism Index (sLDA)	0.058	0.012	0.056	0.049	0.089	9,788
Panel G: Variable of Interest						
County-Level Commerzbank Exposure	0.083	0.043	0.075	0.008	0.241	395

Methodology

Back

Measuring Exposure to the Lending Cut (Map)



Methodology

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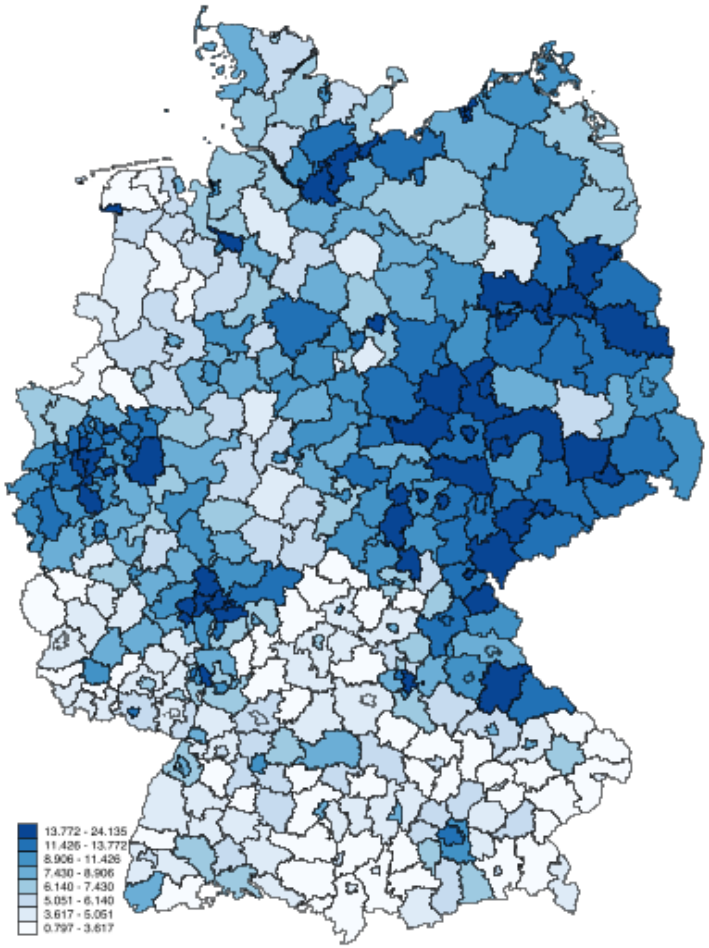
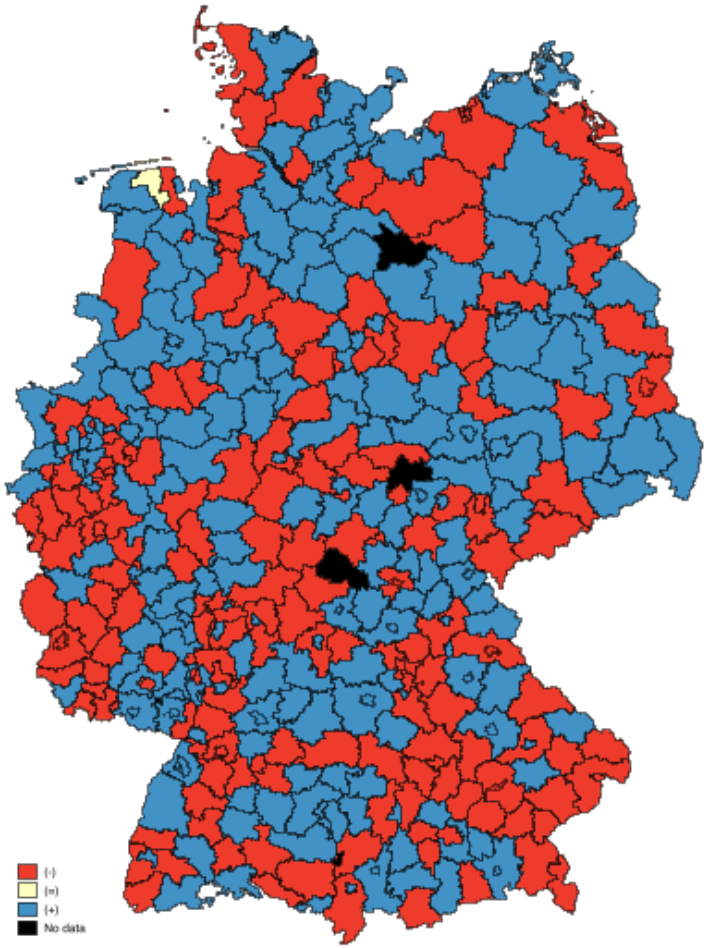
Political Support Question (Map)

Credit Shock Exposure



Pre-Post Change



Methodology

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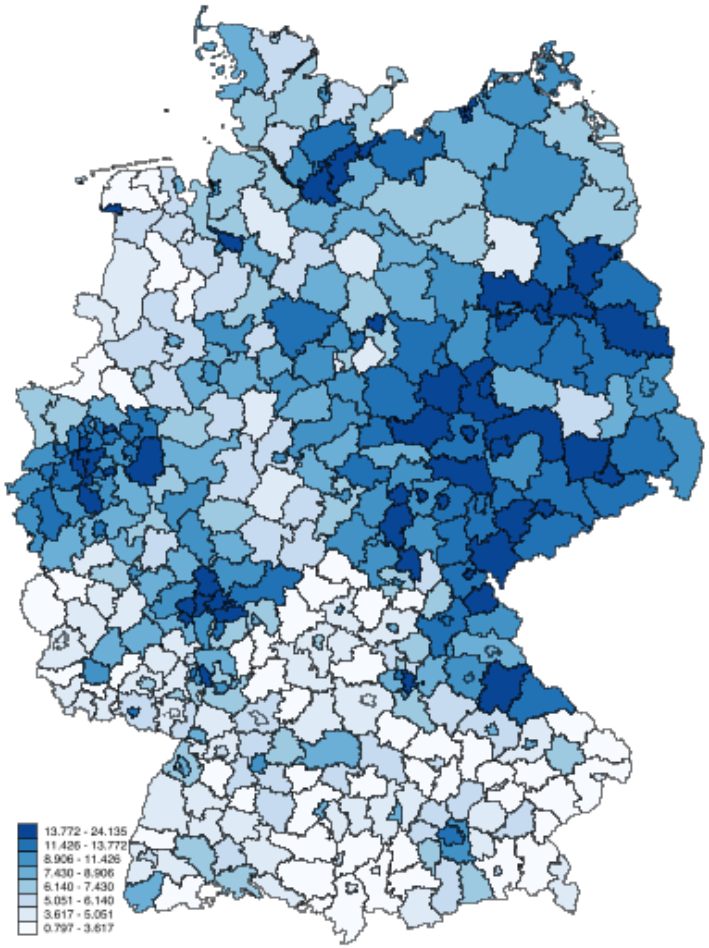
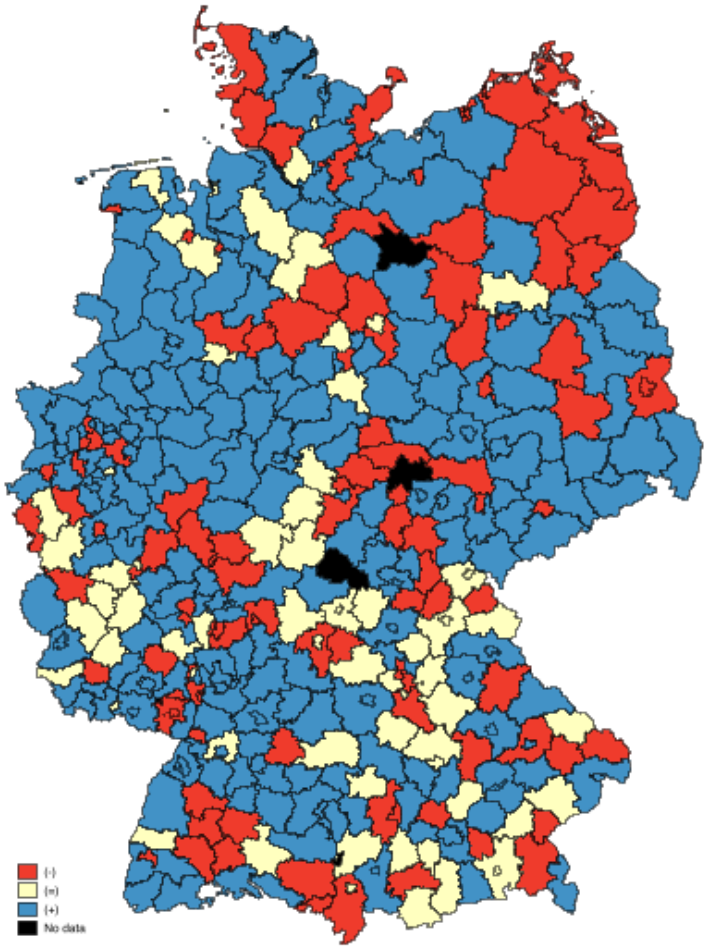
Intention to Vote for Populist Party (Map)

Credit Shock Exposure



Pre-Post Change



Main Results

Back

Robustness Checks

- Negligible differences in estimates between rural and urban areas

  Rural and Urban Areas

- No pre-trends before the shock allow parallel trends to hold

  Pre-Trends Model Pre-Trends Graph

- Results are ITT, thus they provide a conservative lower bound of the true effect as we are estimating a reduced form
- Results are unconditional on the indication of a political preference to preserve sample size: conditioning still provides robust estimates of higher magnitude
- Results are robust to placebo tests to determine the appropriate timing of the shock

Main Results: Sample Restrictions

Back

The Effect of the Credit Shock on Political Preferences: Rural and Urban Areas

	Political Support			Intention to Vote for Populist Party		
	Full Sample (1)	Urban Areas (2)	Rural Areas (3)	Full Sample (4)	Urban Areas (5)	Rural Areas (6)
$\text{Exposure}_k \times \text{Post}$	0.014***	0.013	0.011	0.008***	0.009*	0.009**
	(0.005)	(0.009)	(0.008)	(0.003)	(0.005)	(0.004)
Number of Observations	151,524	43,100	108,424	151,524	43,100	108,424
Adjusted R-Squared	0.143	0.139	0.144	0.086	0.087	0.089
Number of Counties	395	104	291	395	104	291
County-Level FE	Yes	Yes	Yes	Yes	Yes	Yes
Wave FE	Yes	Yes	Yes	Yes	Yes	Yes
Full Controls	Yes	Yes	Yes	Yes	Yes	Yes

Notes: $\text{Exposure}_k \times \text{Post}$ is expressed in standard deviation. Significance Levels: *** 1% level, *** 5% level, *** 1% level. Robust standard errors adjusted for clustering at the county of residence in 2006 level in parentheses.

Baseline Results: Robustness

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Pre-Trends Validation: Model

We propose a model to validate pre-trends similar to Autor (2003) estimating year-by-year point estimates using the first year of the shock as reference year:

$$
\begin{aligned}
y_{ikt} = \alpha &+ \sum_{\tau \in [2000,2009)} \left[\beta_\tau \times \text{Exposure}_k \times \mathbb{1}\left(t = \tau\right)\right] \\
&+ \sum_{\tau \in (2009,2016]} \left[\beta_\tau \times \text{Exposure}_k \times \mathbb{1}\left(t = \tau\right)\right] \\
&+ \mathbf{X}_{ik}\Gamma + \mathbf{K}_k\Pi + \delta_k + \lambda_t + \varepsilon_{ikt}
\end{aligned}
$$

Baseline Results: Robustness

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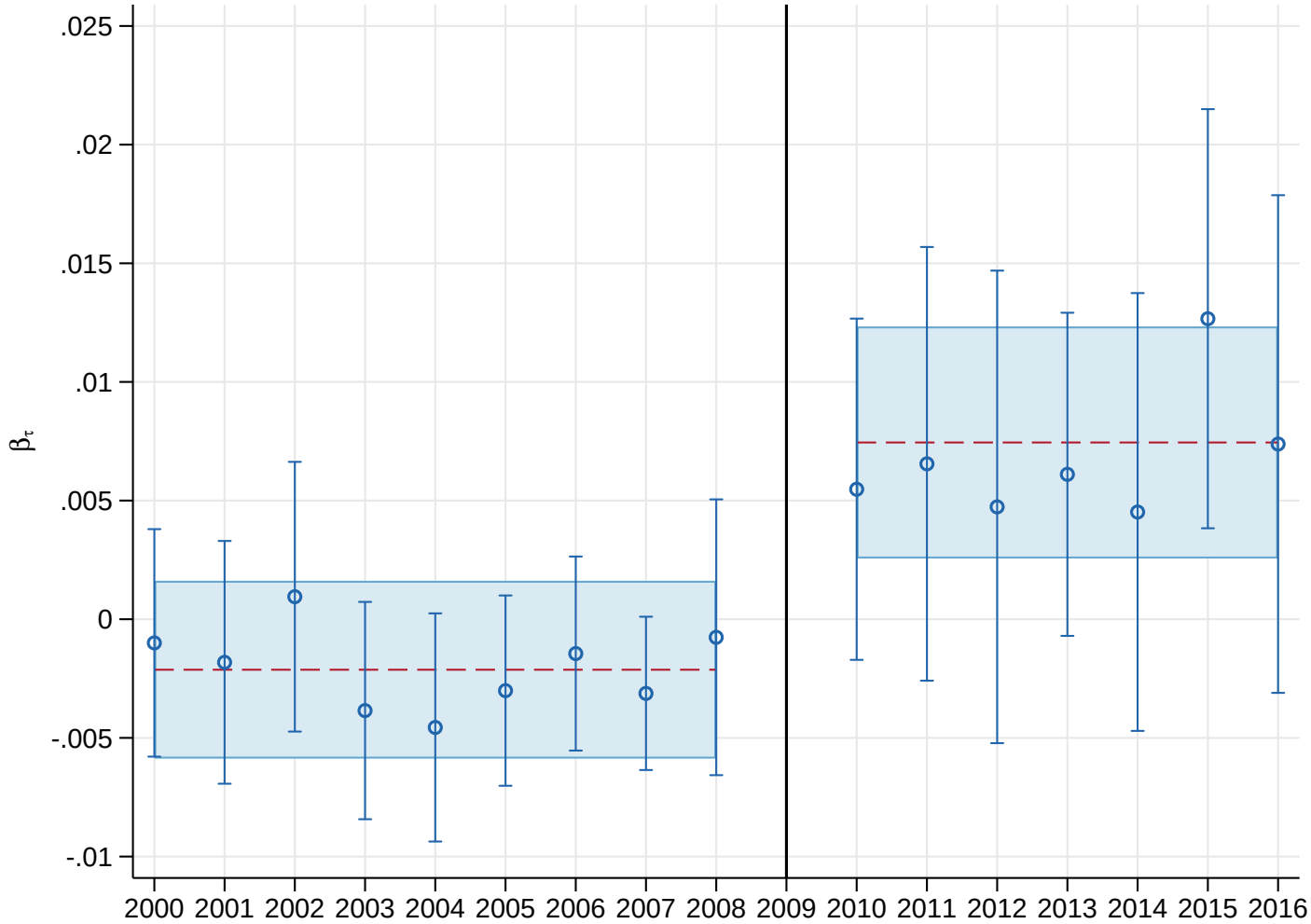
Pre-Trends Validation: Graph (Populist Party)



Measuring Populism: A Text-Based Indicator

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Text Analysis Pipeline Description

- We produce a text analysis pipeline incorporating topic modelling from which we extract a text-based index for populism rhetoric and banking-related topics Flowchart
- Data – ParlSpeech V2 (Rauh and Schwalbach, 2020)
  - Full-Text corpora of 6.3 million parliamentary speeches in the key legislature chambers of 9 representative democracies
  - German Bundestag: 1991 - 2018
- Topic Model: `seededLDA` (Lu et al., 2011, Watanabe and Zhou, 2020) Plate Diagram
  - Standard Dirichlet(x) priors (uninformative: $\alpha = 0.5$, $\beta = 0.1$)
  - Gibbs Sampling as MCMC Algorithm
  - Seeds selection:
    - Banking and Finance: 4 sub-topics (Bank, Crisis, European Central Bank and Finance) with uninformative seeds
    - Populism: single topic with seeds from Rooduijn and Pauwels (2011)

Measuring Populism: A Text-Based Indicator

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Party-Year Aggregation

BF Index POP Index

- From the per-topic posterior probabilities $\hat{\varphi}_k$ we create two bags-of-words B_L, $L = \{BF, POP\}$ extracting the tokens with the highest per-topic probability Top Terms
  - Banking and Finance (BF) : 5 tokens per sub-topic
  - Populism (POP) : 20 tokens
- Let us consider
  - $D_{pt} \subset \mathcal{C}$ the collection of speeches for party p in year t of a corpus $\mathcal{C}$
  - ω_{dn} the observed word $n \in N_d$ in document d
- the party-year index L_{pt} is calculated as the following frequency ratio

$$L_{pt} = \sum_{d \in D_{pt}} \left[\frac{\sum_{n \in N_d} \mathbb{1}\left(\omega_{dn} \in B_L\right)}{N_d} \right] \quad \forall\, L = \{BF, POP\}$$

- We match individual political preferences with the obtained indices and we estimate the baseline model using indices as the outcome variable in line with previous works (*e.g.*, Enke, 2020; Fraccaroli et al., 2020; Cantarella et al., 2020).

Measuring Populism: A Text-Based Indicator

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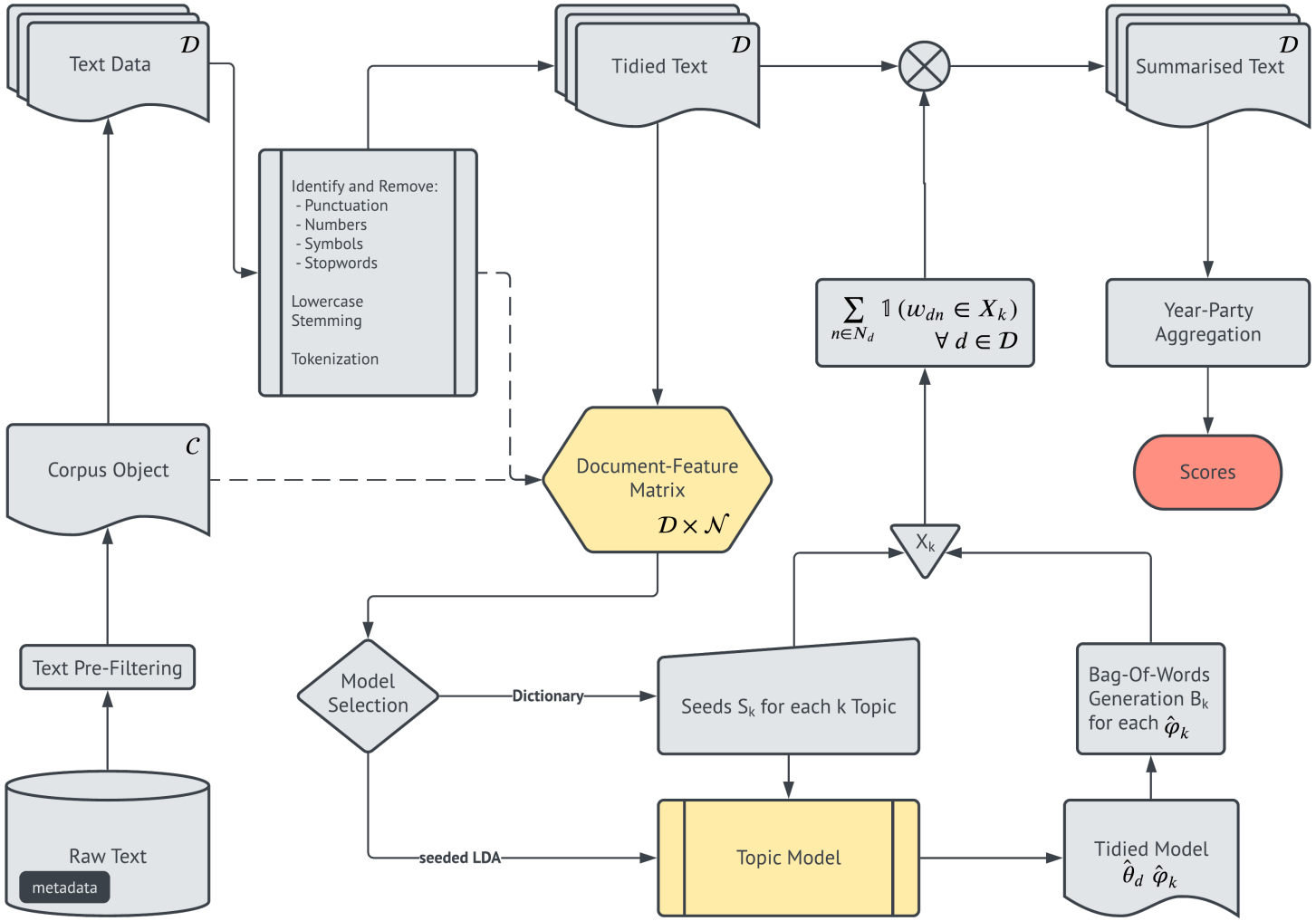
Text Analysis Pipeline Flowchart



Measuring Populism: A Text-Based Indicator

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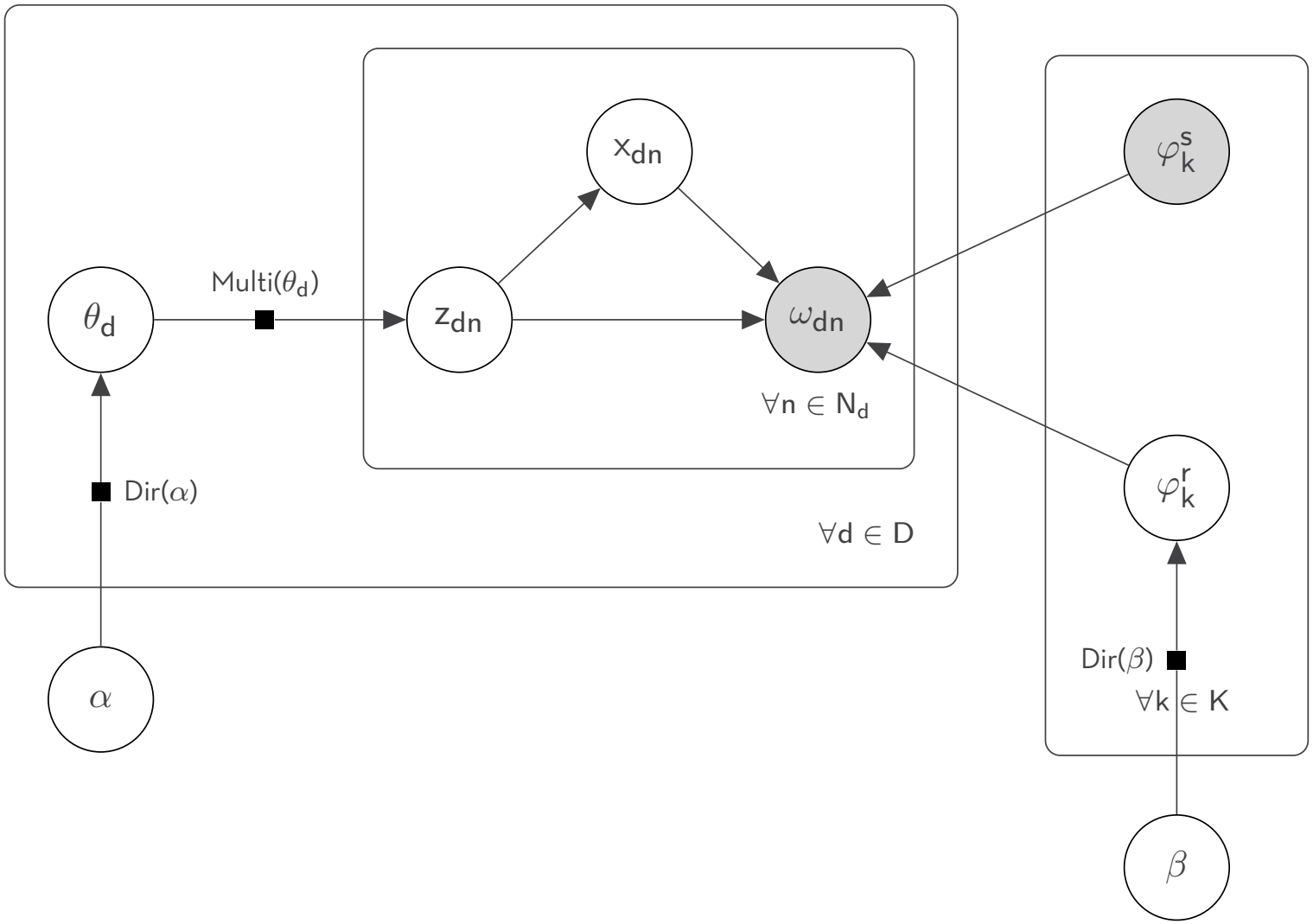
Plate Diagram: `seededLDA` Topic Model



seededLDA Topic Model

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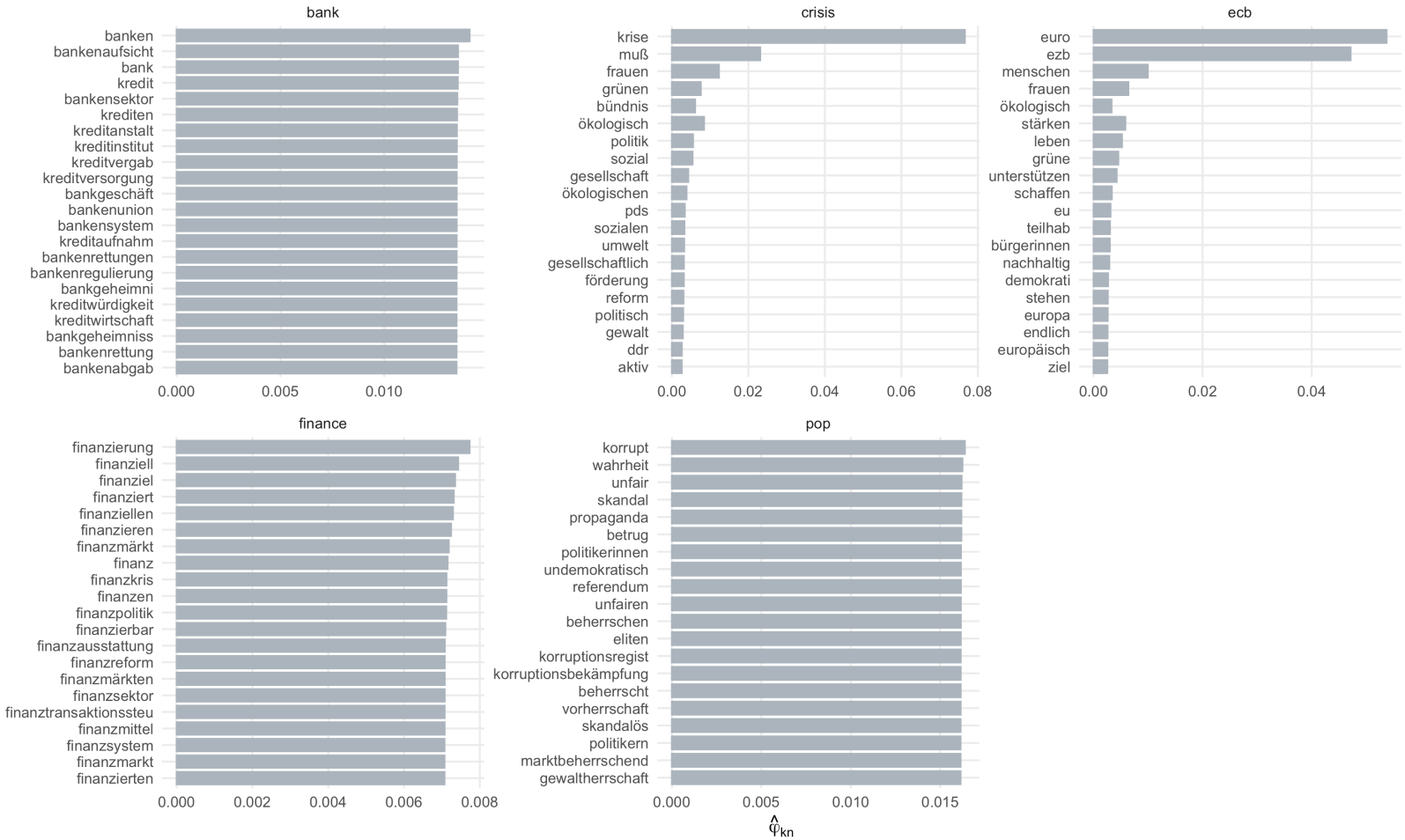
Per-Topic Top Terms



Banking and Finance Party-Year Index

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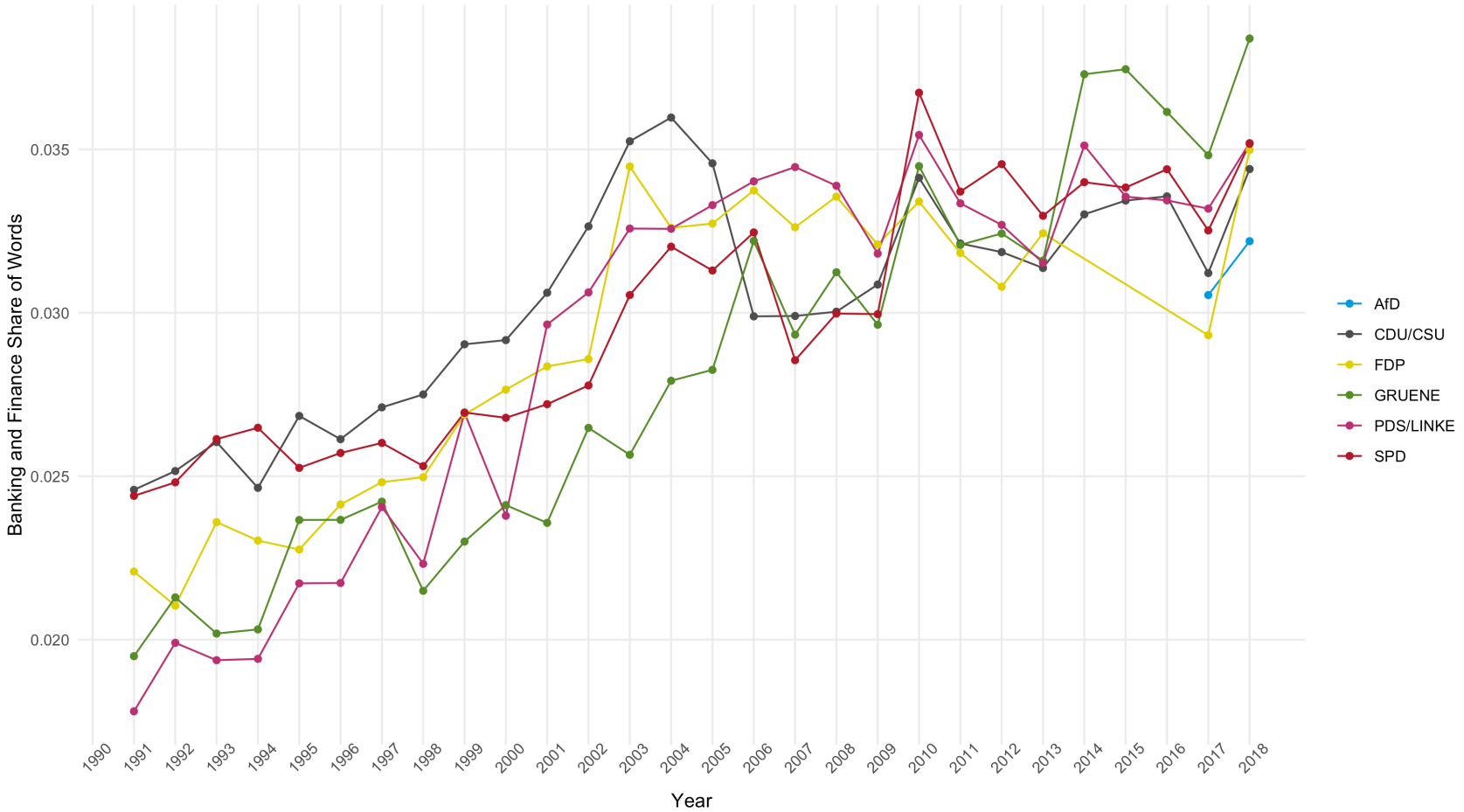
BF Time Series



Populism Party-Year Index

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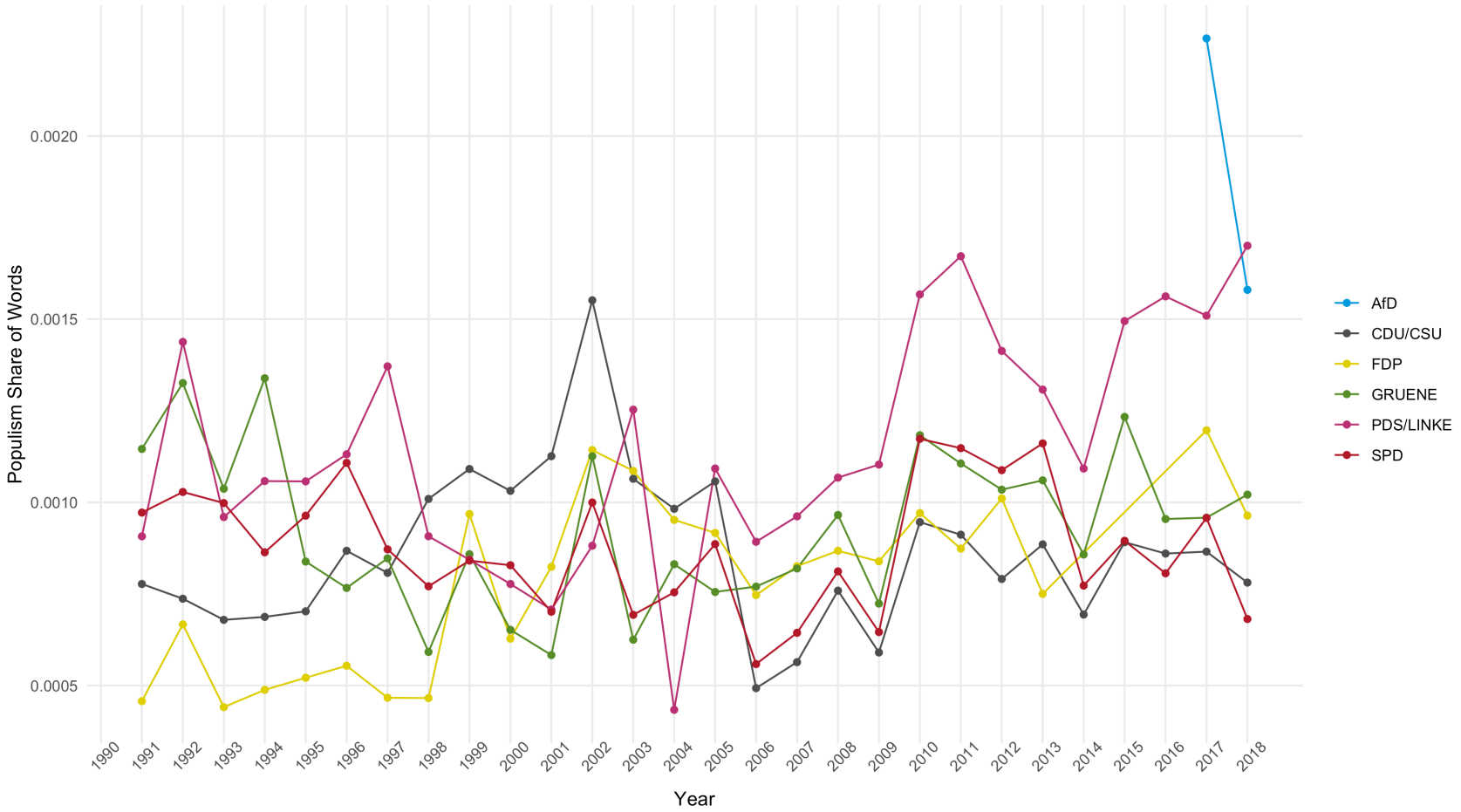
POP Time Series



Keywords for seeds

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We use the following keywords both as seeds for seeded LDA and as lexicon for the dictionary approach:

- Banking and Finance
  - "bank":["bank*","kredit*"],"finance":["finanz*"],"ecb":["ezb","europaeische zentralbank","euro"],"crisis":["krise","finanzkrise","bankenkrise"
- Populism (based on Rooduijn and Pauwels, 2011)
  - "elit*", "konsens*", "undemokratisch*", "referend*", "korrupt*", "propagand*", "politiker*", "taüsch*", "betrüg*", "betrug*", "*verrat*", "scham*", "schäm*", "skandal*", "wahrheit*", "unfair*", "unehrlich*", "establishm*", "*herrsch*", "lüge*"