Appendix for
'Acute Financial Hardship and Voter Turnout'

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A Data sources

For this study, the full universe of opinion and survey data in Germany was considered. A list of criteria was used to determine which datasets to include: 1) the dataset should contain data for a variety of months of the year so to provide variation in terms of the effective length of months. This rules out pre-electoral surveys, since these tend to be conducted during the course of only 2-3 months around the time of the national elections, which in Germany always take place in September. The dataset should include both measures of political engagement, and/or a measure of financial wellbeing, information on income, and the precise date of the interview. The first criterion excludes the German Socio-Economic Panel (SOEP), which only contains information on retrospective voting behavior, and the latter two criteria exclude the 'Politbarometer' which only—and inconsistently—indicates the week of the interview and contains no information on income. Furthermore, the dataset should have a rigorous sampling scheme that does not leave it to respondents when to answer the survey, and collects information on all dates of the months (shows a largely flat distribution with regard to what dates surveys are answered). This latter criterion rules out self-administered online surveys such as the GLES Online Tracking, since the timing of participation may be affected by the instrument.

Table 1A: Datasets considered for inclusion in study

	Multiple months	Turnout	Interview date	Financial wellbeing	Rigorous sampling	Income data
Standard electoral surveys (GLES)	no	yes	yes	yes	yes	yes
SOEP / SOEP SILC	yes	no	yes	yes	yes	yes
Politbarometer	yes	yes	no	yes	?	yes
FORSA	**yes**	**yes**	**yes**	**no**	**yes**	**yes**
Deutschland Trend	yes	yes	yes	no	yes	yes
ESS	**yes**	**yes**	**yes**	**yes**	**yes**	**yes**
GLES-Online-Tracking	yes	yes	yes	yes	no	yes
Elections dataset	**yes**	**yes**	**n.a.**	**n.a.**	**n.a.**	**yes (polity level)**
State-level-surveys 1960–2004	yes	yes	no	?	yes	yes

A.1 Measurement of the outcome variable

ALLBUS, FORSA and the Deutschland Trend ask respondents the so-called 'Sunday question' (*Sonntagsfrage*): respondents are asked to indicate which party they would vote for if elections were to take place the coming Sunday, the traditional voting day in Germany. I re-code the answers to this question into a binary variable that takes the value 1 if respondents name a party, and 0 if they answer 'don't know' or say they won't

vote. As shown in Section E below, the results are robust to alternative formulations of intended turnout. Where useful, I amend the analysis of turnout intentions with that of other forms of political participation. However, these are usually measured over longer time spans ('past month', 'past year') so that the measures are unlikely to be affected by short-term changes in the poverty status, even though the underlying behavior might well be. Ideally, we would measure short-term political engagement with broader range of items, including participation in political discussions during the last few days, sharing of political content, and participation in campaign and other political activities. Unfortunately, such measures are virtually never included in large-scale political opinion datasets.

B Summary statistics and detailed results

B.1 Summary statistics

Tables 2A to 6A with summary statistics can be found at the Dataverse at https://doi.org/10.7910/DVN/ZCEQPS.

B.2 Detailed results

Table 2A: Regression of turnout intentions on LMAS, full results for Figure 3

	ALLBUS			FORSA			Deutschland Trend		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	All	Poor	Poor EoM	All	Poor	Poor EoM	All	Poor	Poor EoM
LMAS	-0.006	-0.038*	-0.117**	-0.004***	-0.006***	-0.009**	-0.004	-0.012	-0.064**
	(0.006)	(0.021)	(0.055)	(0.001)	(0.002)	(0.004)	(0.003)	(0.008)	(0.031)
Age	0.002***	0.002***	0.004***	0.001***	0.001***	0.001***	0.001***	0.001***	0.001***
	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Female	-0.054***	-0.049***	-0.102***	-0.061***	-0.062***	-0.061***	-0.047***	-0.061***	-0.079***
	(0.004)	(0.013)	(0.035)	(0.001)	(0.001)	(0.003)	(0.002)	(0.006)	(0.013)
Education	0.029***	0.046***	0.047***	0.027***	0.031***	0.032***	0.057***	0.062***	0.063***
	(0.002)	(0.007)	(0.018)	(0.000)	(0.000)	(0.001)	(0.001)	(0.004)	(0.008)
Father's edu	0.009***	0.015*	0.087***						
	(0.002)	(0.009)	(0.023)						
Mother's edu	0.008**	0.019*	-0.007						
	(0.003)	(0.010)	(0.027)						
Constant	0.702***	0.578***	0.476**	0.553***	0.528***	0.498***	0.564***	0.507***	0.546***
	(0.029)	(0.097)	(0.207)	(0.002)	(0.006)	(0.015)	(0.010)	(0.028)	(0.069)
State FE	yes	yes	yes	yes	yes	yes	yes	yes	yes
Month FE	yes	yes	yes	yes	yes	yes	yes	yes	yes
Year FE	yes	yes	yes	yes	yes	yes	yes	yes	yes
N	44,476	4,564	676	2,555,462	446,008	77,902	130,008	22,132	4,854
R2	0.04	0.06	0.17	0.03	0.03	0.03	0.03	0.03	0.03

Standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 8A: Regression of turnout on LMAS, full results for Figure 5

	(1) All	(2) EoM	(3) Major EoM	(4) Unempl	(5) GDP/salary
Turnout					
LMAS	-1.938**	-5.311***	-3.696**	-5.988*	-11.917***
	(0.820)	(1.890)	(1.773)	(3.320)	(2.579)
Previous turnout	0.425***	0.416***	0.419***	0.244***	0.200***
	(0.026)	(0.054)	(0.091)	(0.057)	(0.066)
High unemployment				-6.674*	
				(3.511)	
LMAS × High unemployment				-2.814	
				(4.162)	
High salary/GDP ratio					9.901***
					(2.414)
LMAS × High salary/GDP ratio					5.514
					(3.922)
Constant	37.633***	39.057***	44.627***	52.064***	54.132***
	(3.588)	(6.849)	(8.148)	(8.470)	(7.534)
Var level of election	0.265	0.745	-18.091	1.011	0.463
	(0.478)	(0.610)	(.)	(0.625)	(0.934)
Var election date	1.425***	1.276***	1.103***	1.663***	-13.555
	(0.111)	(0.363)	(0.180)	(0.224)	(2051.586)
Var residual	1.937***	1.909***	0.738***	1.816***	1.849***
	(0.029)	(0.068)	(0.211)	(0.069)	(0.056)
Month FE	yes	yes	yes	yes	yes
Unit FE	yes	yes	yes	yes	yes
N	1,089	238	51	201	162

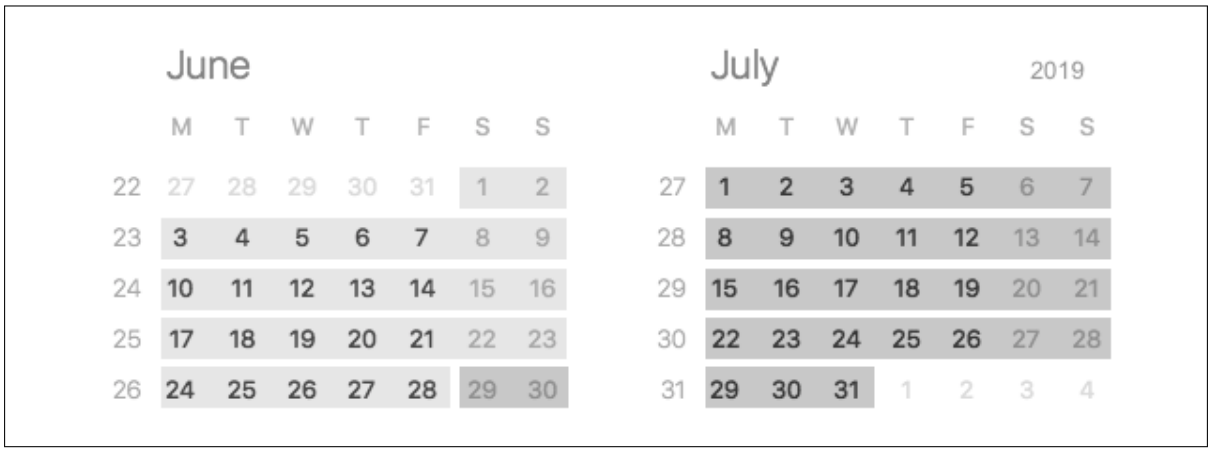
Standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

C Describing the instrument

C.1 LMAS calendar example

Figure 7A shows an example of a long-month-after-short (LMAS). The calendar sheet shows June and July 2019. The 30 June 2019 was a Sunday. All financial transfers for this month had therefore typically be concluded by the preceding Friday, 28 June. In our definition, June 2019 therefore was a short month. In contrast, in July 2019 the last day of the month fell on a Wednesday. Financial transactions could therefore be made up to the last day of the month. July 2019 therefore was a long month following a short month, i.e., a LMAS. LMAS can induce financial difficulties among the poor because of the two additional days that have to be covered with the same salary—the effective length of the 'financial month' July was 33 days rather than the 31 days of the calendar month.

Figure 7A: Example of a long-month after short



C.2 LMAS lengths

Table 9A: Length and shares of different types of months 1950-2019

Month	Effective length short months	Effective length Long months	Share long	Effective length non-LMAS	Effective length LMAS	Difference	Share LMAS
January	29.5	31.6	0.72	30.4	32.5	2.06	0.28
February	28.3	—	0	28.3	—	—	0
March	29.5	31.6	0.69	29.5	31.6	2.06	0.69
April	28.5	30.6	0.72	29.4	31.5	2.07	0.31
May	29.5	31.6	0.72	30.4	32.5	2.05	0.28
June	28.5	30.6	0.69	29.4	31.5	2.11	0.28
July	29.5	31.6	0.72	30.4	32.5	2.09	0.31
August	29.5	31.6	0.71	30.4	32.5	2.13	0.28
September	28.5	30.6	0.71	29.4	31.5	2.14	0.29
October	29.5	31.6	0.73	30.4	32.5	2.11	0.29
November	28.5	30.6	0.71	29.4	31.5	2.10	0.27
December	29.5	31.6	0.72	30.4	32.5	2.08	0.29
Average	29.1	31.0	0.66	29.8	32.1	2.09	0.30

C.3 Pattern of LMAS over time

This idea that it is hard for individuals to develop an intuition with regard to the sequence of LMAS (as shown in Figure 2a) can be formalized with the Wald-Wolfowitz runs test, a test of the statistical independence of sequences. It tests the hypothesis that in a given series of numbers, the sequence of 'runs'—appearances of the same number in a row—could have occurred by chance. In other words, it tests the null hypothesis that each element in the series is independently drawn from the same distribution. I constructed a test to check how likely it is that any series of months with length n drawn from the time period 1945 to 2020 differs significantly from chance in terms of the runs of LMAS it produces. The runs test only starts picking up non-randomness (at the 10% level) with regard to the LMAS from a series length of n=34 months upwards. In other words, when looking into the future, at any point in time, the occurrence of LMAS in the proceeding 2 years and 10 months appears to be no better than random.

C.4 Balance

Table 10A: Balance ALLBUS data

	Non-LMAS			LMAS			
	n	mean	sd	n	mean	sd	Diff
Female	45,358	0.516	0.500	16,174	0.522	0.500	0.005
Age/100	45,285	0.474	0.174	16,149	0.483	0.177	0.009**
Married, live together	45,328	0.591	0.492	16,164	0.589	0.492	-0.002
Married, live apart	45,328	0.015	0.123	16,164	0.016	0.125	0.000
Widowed	45,328	0.095	0.294	16,164	0.101	0.301	0.006*
Divorced	45,328	0.067	0.251	16,164	0.067	0.250	-0.000
Single	45,328	0.231	0.421	16,164	0.227	0.419	-0.004
Without degree	4,673	0.000	0.015	1,299	0.000	0.000	-0.000
Basic high school degree	4,673	0.003	0.053	1,299	0.002	0.039	-0.001
High school degree	4,673	0.004	0.064	1,299	0.005	0.073	0.001
Advanced technical college	4,673	0.016	0.124	1,299	0.014	0.117	-0.002
A-Levels	4,673	0.345	0.475	1,299	0.328	0.470	-0.017
Other school-leaving degree	4,673	0.122	0.327	1,299	0.153	0.360	0.031**
In education	4,673	0.241	0.428	1,299	0.184	0.388	-0.057**
Member of armed forces	45,358	0.004	0.064	16,174	0.004	0.061	-0.000
Legislator, senior official or manager	45,358	0.047	0.212	16,174	0.047	0.213	0.000
Professional	45,358	0.043	0.203	16,174	0.039	0.193	-0.004*
Technician or associate professional	45,358	0.100	0.300	16,174	0.093	0.291	-0.007*
Clerk	45,358	0.061	0.239	16,174	0.062	0.241	0.001
Service worker or shop and market sales worker	45,358	0.047	0.212	16,174	0.044	0.205	-0.003
Skilled agricultural or fishery worker	45,358	0.019	0.136	16,174	0.018	0.132	-0.001
Craft or related trades worker	45,358	0.049	0.216	16,174	0.045	0.208	-0.004*
Plant and machine operator or assembler	45,358	0.061	0.239	16,174	0.057	0.232	-0.004
Elementary occupation	45,358	0.051	0.220	16,174	0.046	0.209	-0.005*

* $p < 0.05$, ** $p < 0.01$.

Table 11A: Balance Elections data

	Non-LMAS			LMAS			
	n	mean	sd	n	mean	sd	Diff
Level at which election took place	637	3	1	455	4	1	0.160
N inhabitants in state (in 1,000)	463	5,439	10,388	371	4,107	7,205	-1,332.269
GDP in state (in mio EUR)	463	120,201	270,123	371	96,498	210,892	-23,703.295
Av salaries in state (in EUR)	463	35,223	107,392	371	28,657	78,957	-6,566.231
GDP/capita in state (in EUR)	463	22,546	9,530	371	21,838	7,040	-708.628
Vote share CDU (gen, stat, Eur elections)	178	38	10	90	39	9	0.949
Vote share SPD (gen, stat, Eur elections)	172	37	10	89	36	11	-1.438
Vote share FDP (gen, stat, Eur elections)	167	8	4	88	7	4	-0.185
Vote share Greens (gen, stat, Eur elections)	98	8	4	56	9	6	0.742
Vote share Linke (gen, stat, Eur elections)	57	12	8	27	11	8	-0.605
Vote share AfD (gen, stat, Eur elections)	7	11	6	12	11	6	-0.056

* $p < 0.05$, ** $p < 0.01$.

Table 12A: Balance FORSA data

	Non-LMAS			LMAS			
	n	mean	sd	n	mean	sd	Diff
Female	2,136,640	0.465	0.499	913,384	0.464	0.499	-0.001*
Age/100	2,130,743	0.466	0.176	910,923	0.466	0.176	-0.000
Single/lives alone	1,631,376	0.240	0.427	698,894	0.240	0.427	0.000
Lives with partner/spouse	1,631,376	0.593	0.491	698,894	0.592	0.491	-0.000
Divorced	1,631,376	0.081	0.273	698,894	0.081	0.274	0.001
Widowed	1,631,376	0.083	0.276	698,894	0.082	0.275	-0.000
Without degree	1,901,240	0.016	0.125	811,449	0.016	0.124	-0.000
Primary school	1,901,240	0.273	0.445	811,449	0.275	0.446	0.002**
High school degree (West)	1,901,240	0.277	0.448	811,449	0.277	0.447	-0.000
High school degree (East)	1,901,240	0.049	0.215	811,449	0.049	0.216	0.000
Advanced technical college	1,901,240	0.062	0.240	811,449	0.061	0.240	-0.000
A-Levels	1,901,240	0.317	0.465	811,449	0.316	0.465	-0.001*
Other school leaving degree	1,901,240	0.007	0.083	811,449	0.007	0.082	-0.000*
Farmer	1,057,469	0.015	0.122	450,758	0.015	0.120	-0.001**
Self-employed professional	1,057,469	0.021	0.143	450,758	0.021	0.143	-0.000
Self-employed in trade/industry	1,057,469	0.103	0.304	450,758	0.103	0.304	0.000
State servant, incl. military	1,057,469	0.086	0.281	450,758	0.087	0.281	0.000
Employee	1,057,469	0.596	0.491	450,758	0.596	0.491	0.000
Worker	1,057,469	0.148	0.355	450,758	0.149	0.356	0.000
In education	1,057,469	0.020	0.142	450,758	0.020	0.141	-0.000
Employed in family business	1,057,469	0.003	0.051	450,758	0.002	0.049	-0.000

* $p < 0.05$, ** $p < 0.01$.

Table 13A: Balance Deutschland Trend data

	Non-LMAS			LMAS			
	n	mean	sd	n	mean	sd	Diff
Female	84,993	0.514	0.500	58,550	0.513	0.500	-0.000
Age/100	84,834	0.520	0.166	58,418	0.520	0.166	0.000
No degree	84,407	0.005	0.070	58,095	0.004	0.066	-0.001
In education	84,407	0.006	0.078	58,095	0.006	0.076	-0.000
Basic school leaving certificate	84,407	0.206	0.404	58,095	0.228	0.420	0.023**
High school degree	84,407	0.337	0.473	58,095	0.344	0.475	0.007**
Advanced technical college, A-levels	84,407	0.446	0.497	58,095	0.417	0.493	-0.029**
Manual worker	48,454	0.136	0.343	33,151	0.133	0.339	-0.003
Employee	48,454	0.620	0.485	33,151	0.622	0.485	0.002
State servant, incl. military	48,454	0.097	0.295	33,151	0.095	0.293	-0.002
Farmer	48,454	0.004	0.061	33,151	0.004	0.062	0.000
Self-employed professional	48,454	0.048	0.213	33,151	0.047	0.213	-0.000
Other self-employed	48,454	0.092	0.289	33,151	0.095	0.294	0.003
Employed in family business	48,454	0.002	0.047	33,151	0.002	0.047	0.000
Occupation not indicated	48,454	0.002	0.044	33,151	0.002	0.046	0.000

* $p < 0.05$, ** $p < 0.01$.

Table 14A: Balance ESS data

	Non-LMAS			LMAS			
	n	mean	sd	n	mean	sd	Diff
Female	17,325	0.494	0.500	6,017	0.501	0.500	0.007
Age/100	17,185	0.481	0.182	5,972	0.486	0.180	0.004
Lives with husband/wife/partner at household	17,246	0.625	0.484	5,985	0.627	0.484	0.002
Does not live with partner	17,246	0.375	0.484	5,985	0.373	0.484	-0.002
Less than lower secondary	17,255	0.029	0.169	5,992	0.028	0.165	-0.001
Lower secondary	17,255	0.118	0.323	5,992	0.112	0.316	-0.006
Lower tier upper secondary	17,255	0.449	0.497	5,992	0.459	0.498	0.010
Upper tier upper secondary	17,255	0.039	0.194	5,992	0.039	0.194	0.000
Advanced vocational, sub-degree	17,255	0.163	0.369	5,992	0.164	0.371	0.001
Lower tertiary education, BA level	17,255	0.080	0.271	5,992	0.075	0.263	-0.005
Higher tertiary education, >= MA level	17,255	0.120	0.325	5,992	0.121	0.326	0.001
Member of armed forces	17,325	0.004	0.060	6,017	0.003	0.058	-0.000
Legislator, senior official or manager	17,325	0.058	0.234	6,017	0.056	0.229	-0.003
Professional	17,325	0.147	0.354	6,017	0.150	0.357	0.002
Technician or associate professional	17,325	0.182	0.386	6,017	0.183	0.387	0.001
Clerk	17,325	0.108	0.310	6,017	0.121	0.327	0.014**
Service worker or shop and market sales worker	17,325	0.123	0.328	6,017	0.120	0.325	-0.003
Skilled agricultural or fishery worker	17,325	0.023	0.149	6,017	0.024	0.153	0.001
Craft or related trades worker	17,325	0.129	0.335	6,017	0.127	0.333	-0.002
Plant and machine operator or assembler	17,325	0.065	0.247	6,017	0.061	0.240	-0.004
Elementary occupation	17,325	0.068	0.252	6,017	0.064	0.245	-0.004

* $p < 0.05$, ** $p < 0.01$.

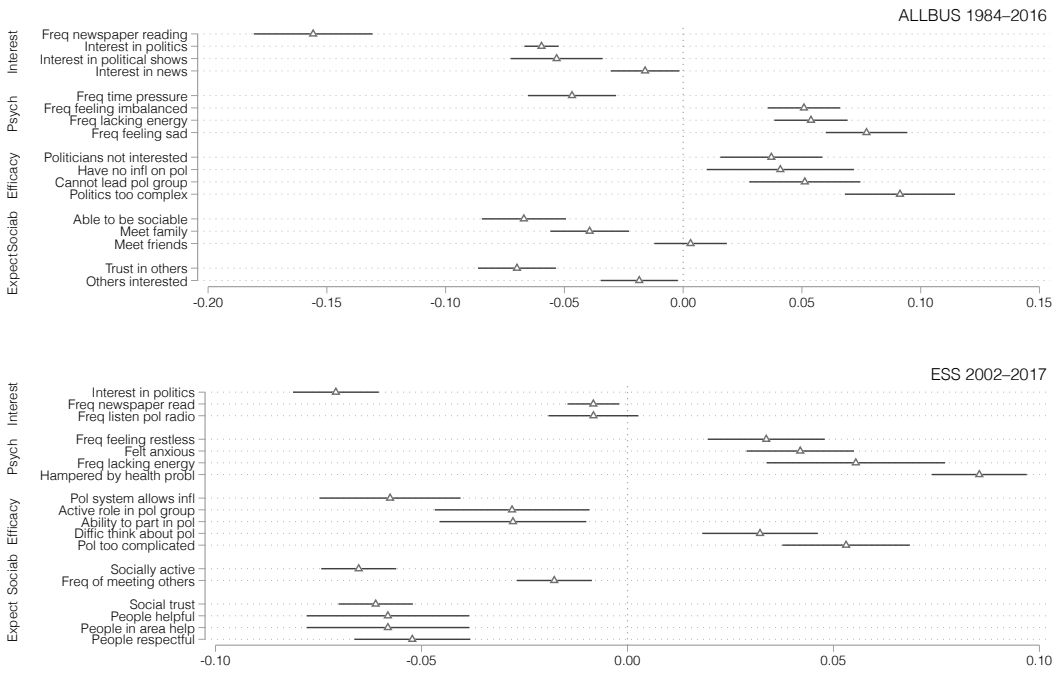
D Mechanisms

D.1 Measurement of mechanisms

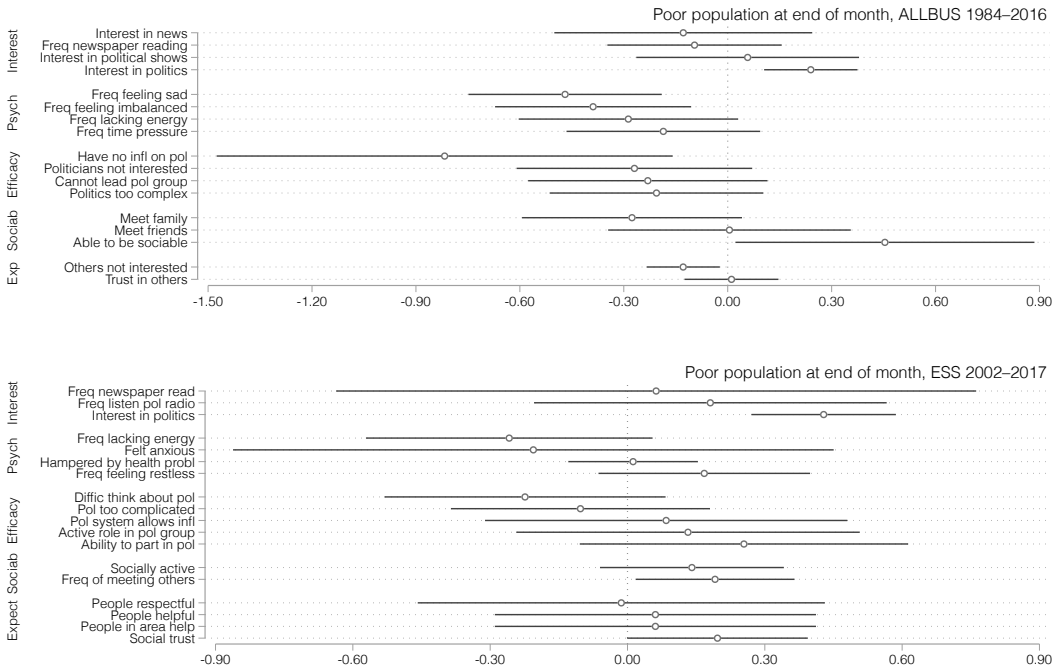
Tables 15A and 16A with information on the coding of the individual mechanisms can be found at the Dataverse at https://doi.org/10.7910/DVN/ZCEQPS.

D.2 Correlations with poverty of individual mechanisms

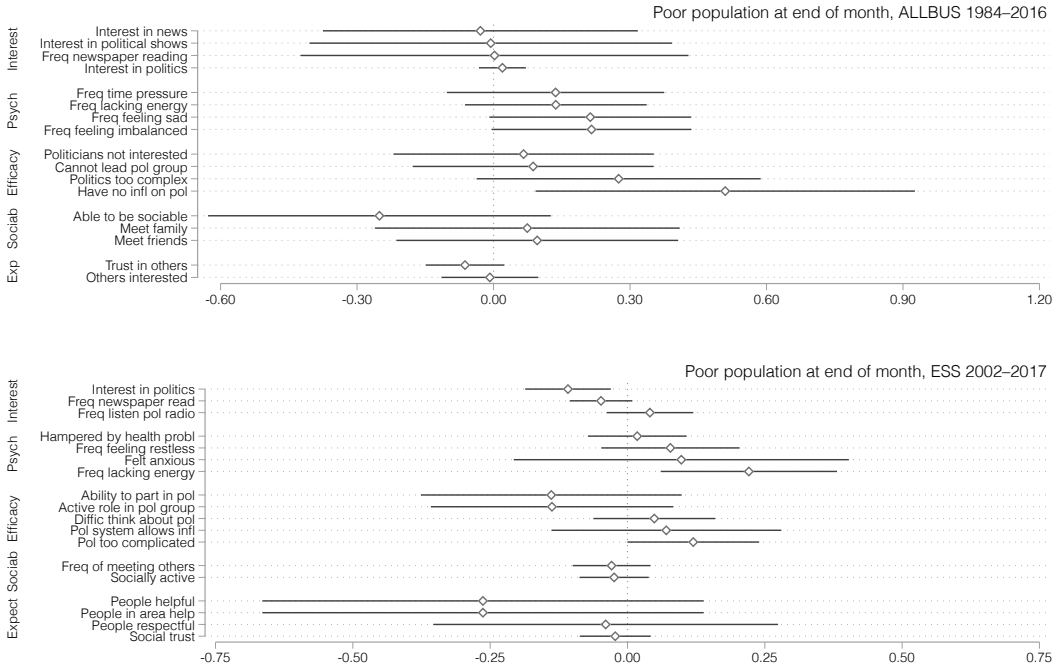
Figure 8A: Mechanisms theorized to cause lower levels of political participation, individual indicators



(a) Correlation of poverty with theorized mechanisms



(b) Correlation of mechanisms and turnout



(c) Causal effect (LMAS) on mechanisms

Note: Figure 8A plots the coefficients for regressions i) of the indicated outcome on the indicator for poverty, defined as earning less than 60% of the means-adjusted median income (Figure 8Aa), ii) of turnout on mechanisms (only available for the ALLBUS data, Figure 8Ab), and iii) of mechanisms on the indicator for long-month-after short (LMAS) months (Figure 8Ac). OLS regressions controlling for age, sex, education, and parents' education, and including month, year, and state fixed effects. Results for individual indicators forming the composite scales in Figure 6 in the main text. ALLBUS 1984–2016 and ESS 2002–2017 data. Markers are point estimates, horizontal lines 95% confidence intervals.

E Robustness checks

This section presents robustness checks. Section E.1 shows that all findings are robust to a different definition of turnout intentions, and Section E.2 demonstrate that they also hold when imputing missing income values. Section E.3 shows that no effect of LMAS is seen among the non-poor, and neither can we detect an effect on time-invariant outcomes (Section E.4). Finally, Section E.5 shows that results are largely robust to propensity score matching using a punishing caliper.

E.1 Different definition of turnout intentions

In the main specification, for those who did not indicate whom they intend to vote for, turnout intentions were coded as missing. Table 17A shows that similar results can be obtained when coding them as 0.

Table 17A: Regression of turnout intentions on LMAS, 'not indicated' as zero

	ALLBUS			FORSA			Deutschland Trend		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	All	Poor	Poor EoM	All	Poor	Poor EoM	All	Poor	Poor EoM
LMAS	-0.005	-0.037*	-0.116**	-0.005***	-0.007***	-0.010**	-0.007**	-0.016**	-0.064**
	(0.006)	(0.021)	(0.055)	(0.001)	(0.002)	(0.004)	(0.003)	(0.008)	(0.031)
Age	0.002***	0.002***	0.004***	0.001***	0.001***	0.001***	0.000***	0.001***	0.001***
	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Female	-0.054***	-0.047***	-0.103***	-0.065***	-0.063***	-0.062***	-0.048***	-0.062***	-0.080***
	(0.004)	(0.013)	(0.035)	(0.001)	(0.001)	(0.003)	(0.002)	(0.006)	(0.013)
Education	0.029***	0.046***	0.046**	0.027***	0.031***	0.032***	0.058***	0.061***	0.059***
	(0.002)	(0.007)	(0.018)	(0.000)	(0.000)	(0.001)	(0.001)	(0.004)	(0.008)
Father's edu	0.011***	0.016*	0.090***						
	(0.003)	(0.009)	(0.023)						
Mother's edu	0.007**	0.018*	-0.009						
	(0.003)	(0.010)	(0.027)						
Constant	0.701***	0.584***	0.485**	0.536***	0.514***	0.490***	0.558***	0.513***	0.548***
	(0.029)	(0.098)	(0.208)	(0.002)	(0.006)	(0.015)	(0.011)	(0.029)	(0.069)
State FE	yes	yes	yes	yes	yes	yes	yes	yes	yes
Month FE	yes	yes	yes	yes	yes	yes	yes	yes	yes
Year FE	yes	yes	yes	yes	yes	yes	yes	yes	yes
N	44,752	4,583	679	2,660,965	459,446	80,224	133,699	22,735	4,983
R2	0.04	0.06	0.17	0.04	0.03	0.03	0.02	0.02	0.03

Standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

E.2 Index for poverty based on imputed income values

Information on income was missing for some observations in all datasets, in particular the Allbus data (19% of observations) and the Forsa data (19% of observations), and in the Deutschland Trend data (15% of observations). I therefore imputed missing values using predictive mean matching for absolute income levels with sex, age, education, income and state as predictors. Re-estimating the results leaves outcomes largely unaffected in terms of effect sizes, but reduces statistical significance in the case of the Deutschland Trend data, and increases it in the case of the ALLBUS data (Table 18A).

Table 18A: Regression of turnout intentions on LMAS, poverty indicator calculated using imputed data

	ALLBUS			FORSA			Deutschland Trend		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	All	Poor	Poor EoM	All	Poor	Poor EoM	All	Poor	Poor EoM
LMAS	-0.005	-0.042**	-0.112**	-0.005***	-0.007***	-0.011***	-0.007**	-0.015**	-0.054**
	(0.006)	(0.020)	(0.053)	(0.001)	(0.002)	(0.004)	(0.003)	(0.008)	(0.027)
Age	0.002***	0.002***	0.004***	0.001***	0.001***	0.001***	0.000***	0.001***	0.001***
	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Female	-0.054***	-0.053***	-0.102***	-0.065***	-0.068***	-0.067***	-0.048***	-0.061***	-0.078***
	(0.004)	(0.013)	(0.033)	(0.001)	(0.001)	(0.003)	(0.002)	(0.006)	(0.013)
Education	0.029***	0.046***	0.048***	0.027***	0.032***	0.033***	0.058***	0.061***	0.059***
	(0.002)	(0.006)	(0.017)	(0.000)	(0.000)	(0.001)	(0.001)	(0.004)	(0.008)
Father's edu	0.011***	0.015*	0.085***						
	(0.003)	(0.009)	(0.022)						
Mother's edu	0.007**	0.020**	-0.011						
	(0.003)	(0.010)	(0.026)						
Constant	0.701***	0.566***	0.500**	0.536***	0.517***	0.497***	0.558***	0.511***	0.586***
	(0.029)	(0.093)	(0.195)	(0.002)	(0.006)	(0.015)	(0.011)	(0.028)	(0.065)
State FE	yes	yes	yes	yes	yes	yes	yes	yes	yes
Month FE	yes	yes	yes	yes	yes	yes	yes	yes	yes
Year FE	yes	yes	yes	yes	yes	yes	yes	yes	yes
N	44,752	5,132	775	2,660,965	516,482	90,075	133,699	24,144	5,522
R2	0.04	0.06	0.15	0.04	0.03	0.03	0.02	0.02	0.03

Standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

E.3 Effect among the non-poor

For individuals with disposable savings and an income flow that tends to exceed their monthly expenditures LMAS should not matter. Table 9A therefore replicates the analysis among the non-poor. The fact that all results are indistinguishable from zero confirms this intuition.

Figure 9A: Causal effect of LMAS-induced income shortages on turnout intentions and observed turnout, non-poor population

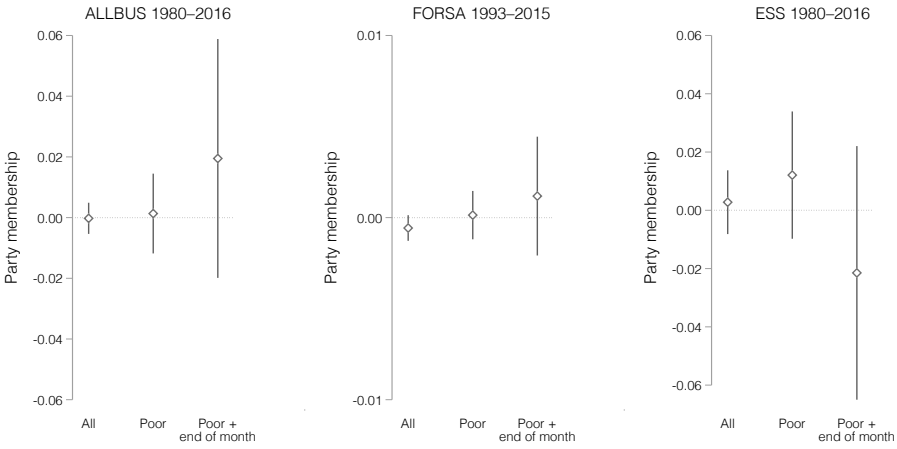
(a) ALLBUS (b) FORSA (c) Deutschland Trend (d) German elections

Note: Figures 9Aa, 9Ab, and 9Ac plot the coefficients for individual-level regressions of turnout intentions on the indicator for long-month-after short (LMAS) months. OLS regressions controlling for age, sex, education, and parents' education, and including month, year, and state fixed effects. ALLBUS 1984–2016, FORSA 1993–2015, and Deutschland Trend 2008-2018 data; Figure 9Ad plots the coefficients from a multi-level regression of turnout on the indicator for LMAS, with intercepts allowed to vary by the election date and the level at which the election was held, and controlling for monthly fixed effects, an indicator for the length of the month, and the turnout in the previous election. German electoral turnout dataset (compiled by author). Markers are point estimates, vertical lines 95% confidence intervals.

E.4 Falsification/placebo test

Figure 10A presents a placebo test. For the test, party membership is regressed on the indicator for LMAS. If the effect of LMAS on voting intentions runs through short-term income poverty at the time of the interview, we should not see an effect on a time-invariant traits such as party membership. Figure 10A shows that this is indeed the case.

Figure 10A: Effect of LMAS-induced income shortages on party membership



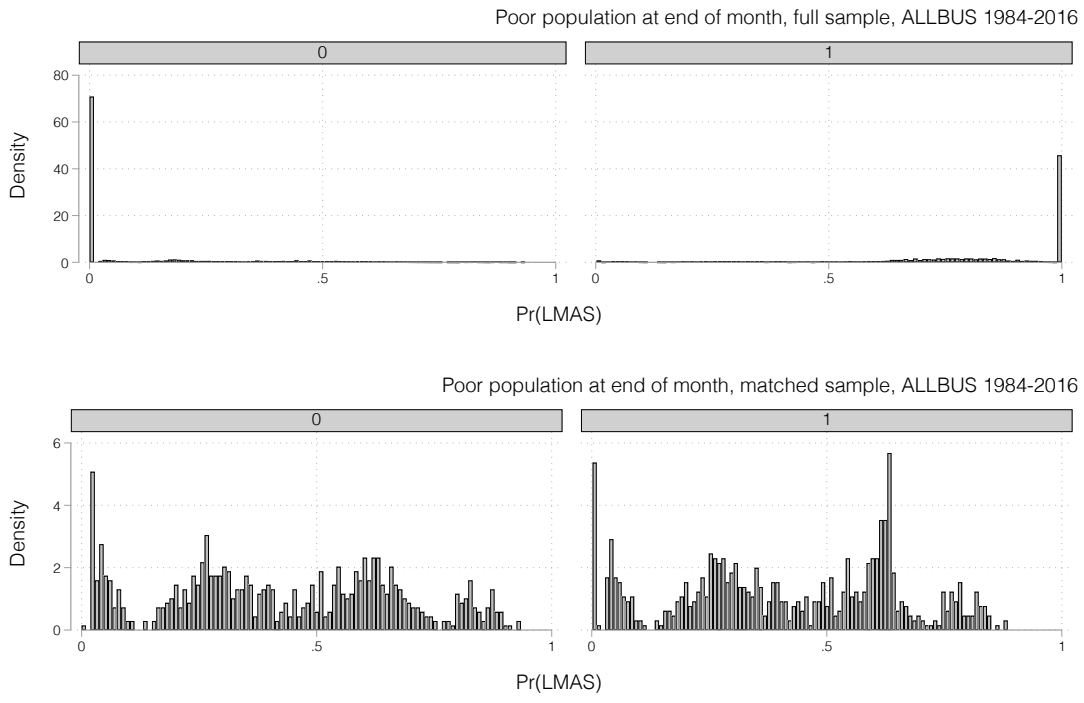
(a) ALLBUS (b) FORSA (c) ESS

Note: Figures 10Aa, 10Ab, and 10Ac plot the coefficients for individual-level regressions of party membership on the indicator for long-month-after short (LMAS) months. OLS regressions controlling for age, sex, education, and parents' education, and including month, year, and state fixed effects. ALLBUS 1984–2016, FORSA 1993–2015, and ESS 2007-2017 data. Markers are point estimates, vertical lines 95% confidence intervals.

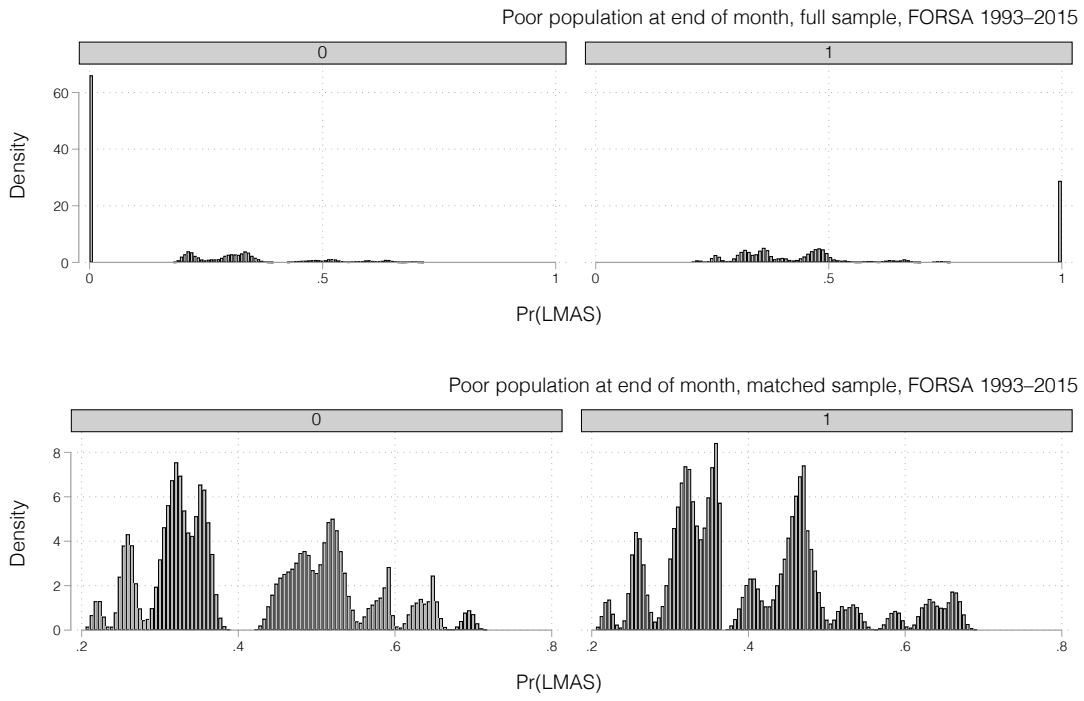
E.5 Propensity score matching

As an additional robustness check, I implement propensity score matching using a punishing caliper of 0.05. Figure 11A shows the distribution of propensity score for the full sample of the respective poor population and the matched sample. The figure demonstrates that matching is successful in enforcing common support. Figure 12A shows the estimated effect for the LMAS instrument in the full sample vs. the matched sample. In the case of the ALLBUS, the effect in the matched sample is no statistical significant visible. In the cases of FORSA and Deutschland Trend, effect sizes in the matched sample are somewhat reduced, but more precisely estimated.

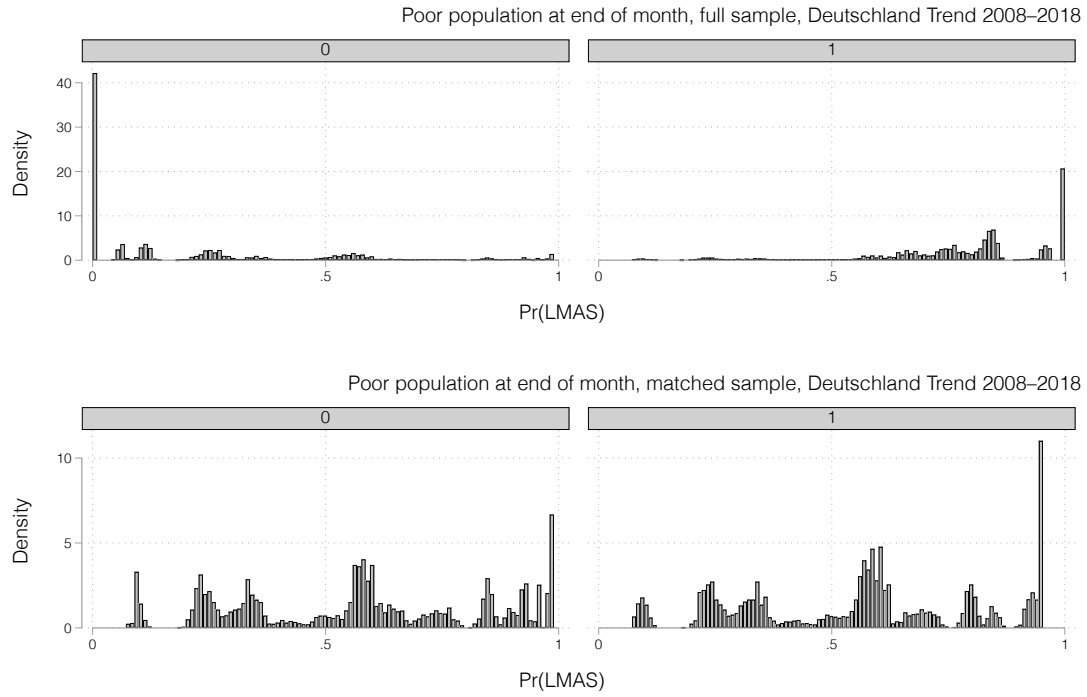
Figure 11A: Distribution of propensity scores for unmatched and matched samples



(a) ALLBUS



(b) FORSA



(c) Deutschland Trend

Figure 12A: Causal effect of LMAS-induced income shortages on turnout intentions and observed turnout, matching

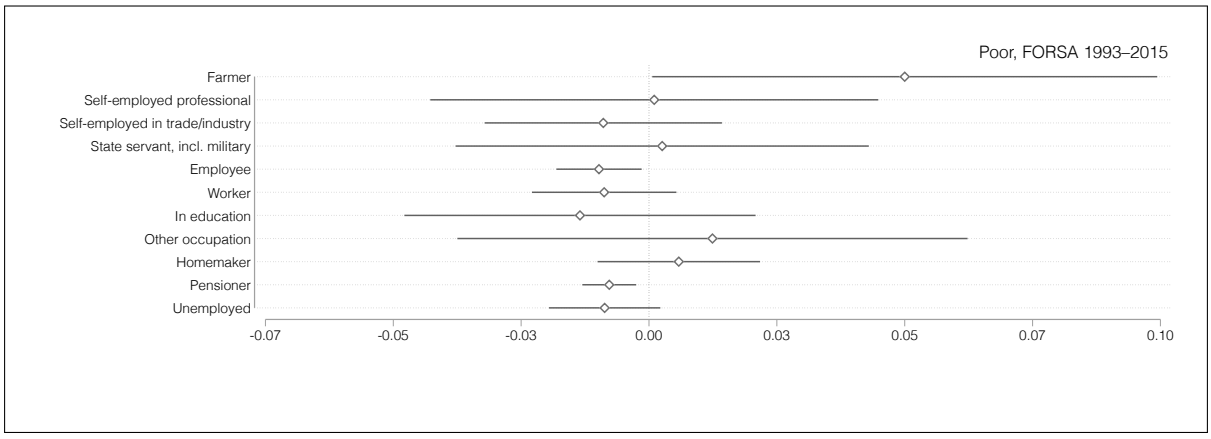
F Auxiliary analyses

F.1 Possible response bias

The main threat to inference comes from the instrument affecting other variables a) by making people less likely to respond in the first place, b) through its effects on cognition, time discounting etc., that might affect the recall of information. To address challenge a), I carefully check for signs that survey response is lower in LMAS than at other times, esp. among the poor; I find some evidence that this is indeed the case. While the bias introduced is unfortunate and hard to address, it should be noted that lower response rates almost certainly create biases our results upwards, i.e. making it harder for us to detect an effect. Those that do not participate in LMAS due to short-poverty are plausibly less politically engaged. The effects reported are therefore likely conservative estimates. Challenge b) is most likely to bias the analysis by way of control variables. For example, poverty might affect the recall of past turnout. Even though past turnout in theory is pre-treatment and hence could be safely included in the list of covariates, this potential for recall bias urges a more careful approach. In the standard models I hence only control for variables that are easily remembered—namely basic demographics.

F.2 Causal effect of LMAS for different occupational groups

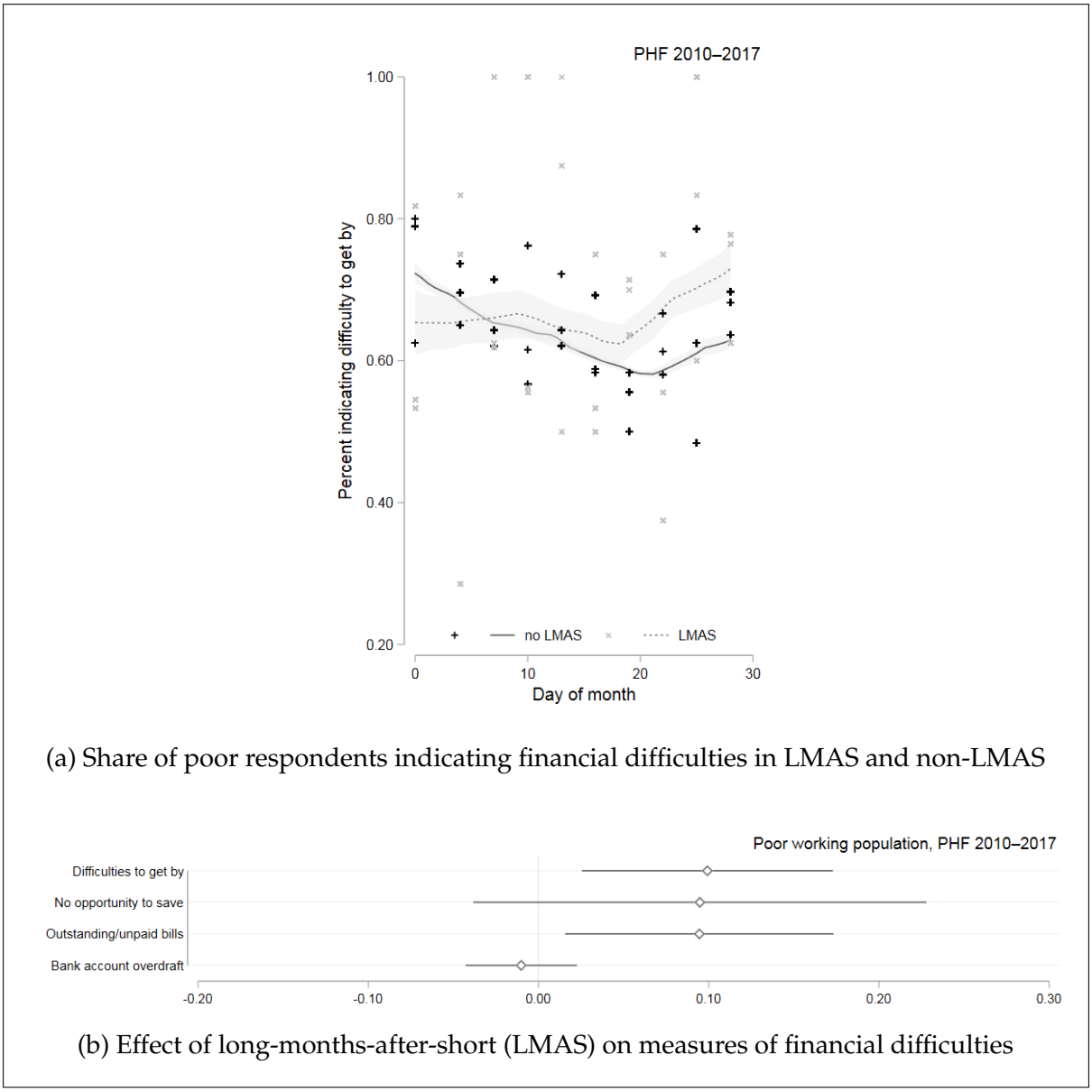
Figure 13A: Effect of LMAS-induced income shortages on turnout intentions, by occupation (FORSA data)



Note: Figure 13A plots the coefficients for regressions of turnout intentions on the indicator for long-month-after short (LMAS) months for different occupational groups. OLS regressions controlling for age, sex, education, and parents' education, and including month, year, and state fixed effects. Forsa 1993–2015 data. Markers are point estimates, horizontal lines 95% confidence intervals.

F.3 LMAS and financial difficulties in the PHF and PASS data

Figure 14A: Relationship between LMAS and financial difficulties in Panel on Household Finances (PHF)



(a) Share of poor respondents indicating financial difficulties in LMAS and non-LMAS

(b) Effect of long-months-after-short (LMAS) on measures of financial difficulties

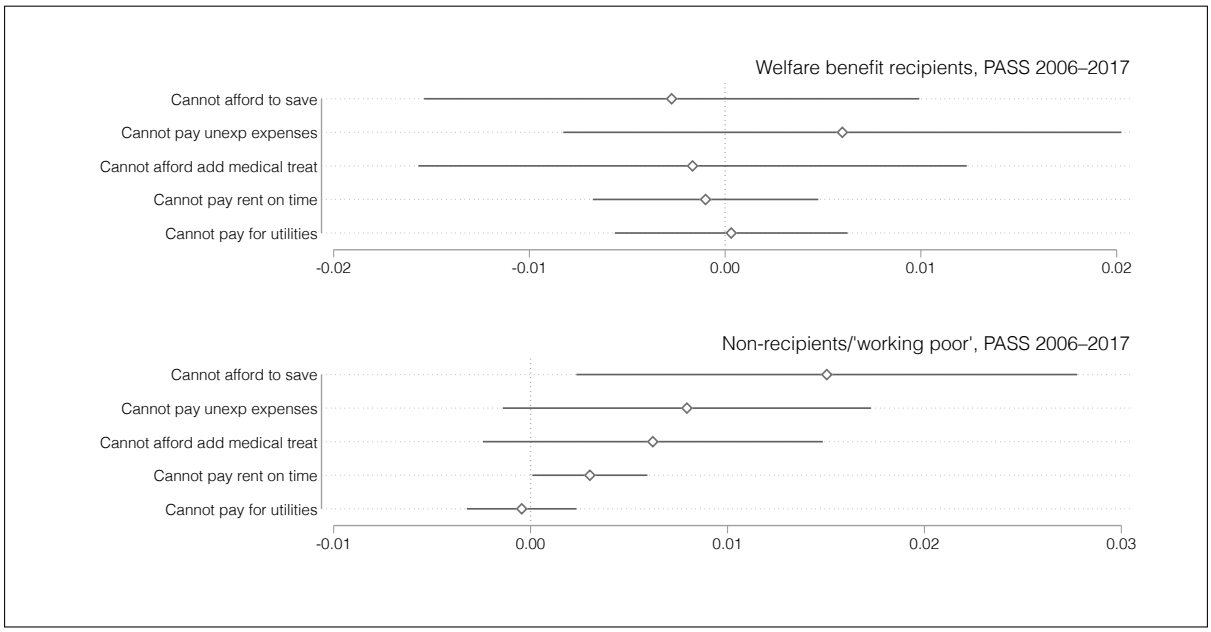
Note: Figure 14Aa plots the percentage share of respondents indicating difficulties to get by on their monthly income against the day of the week. The lines are kernel density plots (Epanechnikov kernel with optimal bandwidth) for respondents interviewed during a long-month-after short (LMAS, dashed line) or non-LMAS months (solid line). Markers are day-of-month averages of financial difficulties. The shaded areas are 95% confidence intervals. Figure 14Ab shows the coefficients for a regression of the indicated measures of financial difficulty on the LMAS instrument. OLS regression controlling for age, sex, and education, and including month, year, and state fixed effects. Markers are point estimates, horizontal lines 95% confidence intervals. PHF 2010-2017 data (Altmann et al., 2020), n=834.

F.4 Differential effects of LMAS for 'working poor' vs. welfare recipients

Figure 15A shows the effect of LMAS on measures of financial difficulties among welfare recipients and the 'working poor' using data from the Panel Study Labor Market and Social Security (PASS), hosted by Germany's Institute for Employment Research (IAB) of the Federal Employment Agency (Trappmann et al., 2019). The figure shows that the LMAS-induced short-term financial difficulties are common among the 'working poor', while no clear effect can be observed among the long-term unemployed living off welfare benefits—even though the latter tend to be even worse off in terms of absolute income levels. One possible explanation for this finding is that the long-term unemployed tend to be more 'practiced' at living in poverty, and show high degrees of financial prudence. Qualitative data from the in-person interviews supports this argument. For example, a female respondent, living off welfare payments, described how she started every month "by drawing up a list of things I will need, and plan how much money I will have to spend on these necessities. Only after I have bought these items do I allow myself to spend money on luxuries like having a coffee out." This higher level of financial prudence is also reflected in the panel data, where benefit recipients report both deeper financial worries but also state that they regularly compare all prices before buying anything (see Figure 16A).

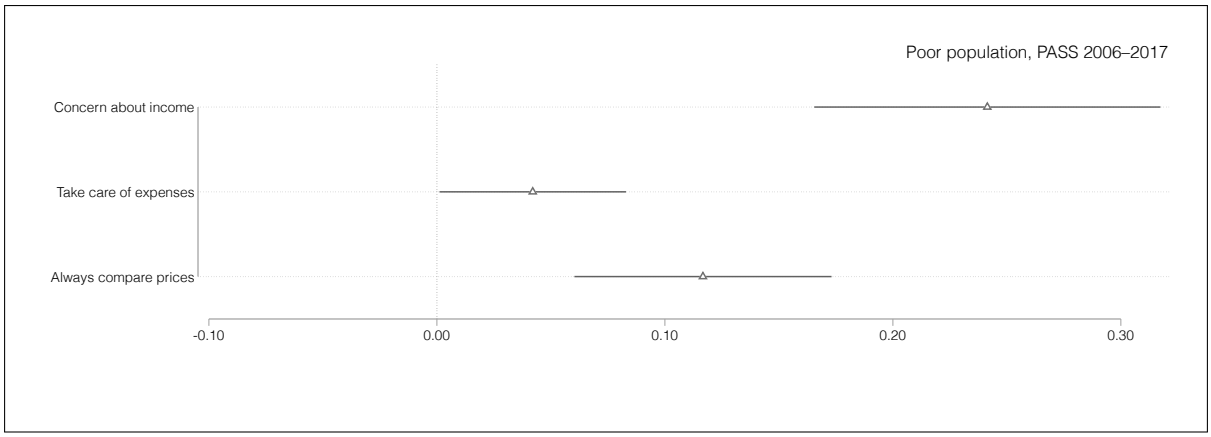
A second reason why LMAS-induced short-term financial difficulties should be stronger among the working poor than among those on benefits are differences in the structure and timing of expenses. For welfare beneficiaries, rent payments are usually covered by the state. In contrast, the working poor have to bear this major expense themselves. This is particularly important because rent payments in Germany are usually due at the end of the month. Unsurprisingly, concern about being able to pay the rent also was recurrent theme during the interviews, especially among those living of salaries. One interviewee, a divorced father of one, reported how paying rent for the flat occupied by his ex-wife and son put so much strain on his finances that he ended up homeless, having to live with varying friends and family members. The importance of rental payments in causing short-term poverty is also reflected in the quantitative analysis: the ability to pay rent remains negatively affected by LMAS among the working poor even when introducing individual-level fixed effects i.e. exploiting *within-household* variation in the timing of interviews, as shown in Figure 17A.

Figure 15A: Effect of LMAS on measures of financial difficulties among welfare recipients and the 'working poor'



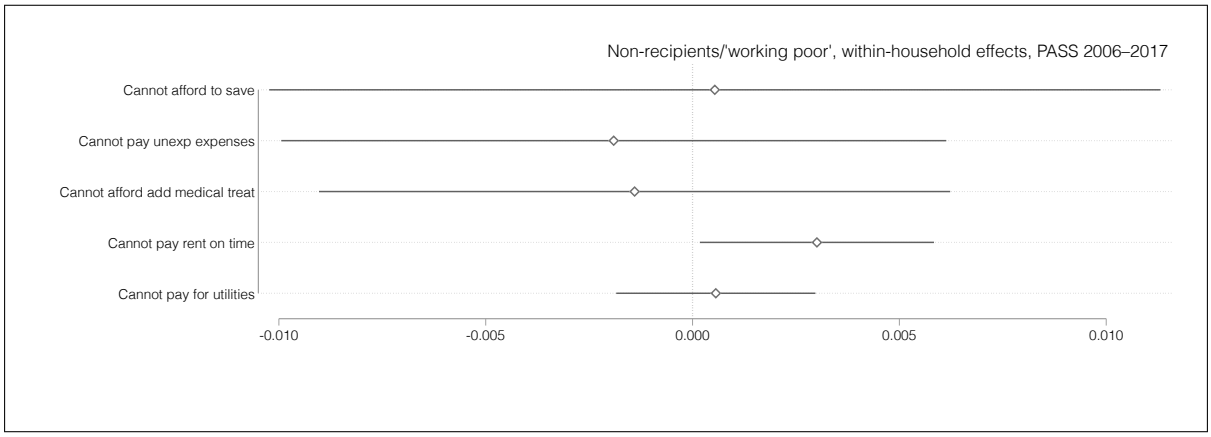
Note: Coefficient plot from regressions of indicated outcomes on the indicator for long-month-after short (LMAS) months. OLS regression controlling for age, sex, education, and including month, year, and state fixed effects. Markers are point estimates, horizontal lines 95% confidence intervals. Standard errors clustered at the level of the respondent.

Figure 16A: Financial concerns and financial prudence among welfare recipients and non-recipients



Note: Coefficient plot from regressions of indicated outcomes on indicator recording if individual is welfare recipient. OLS regression controlling for age, sex, education, parents' education and including month, year, and state fixed effects. Markers are point estimates, horizontal lines 95% confidence intervals.

Figure 17A: Effect of LMAS-induced income shortages on measures of financial difficulties, household-level fixed effects model



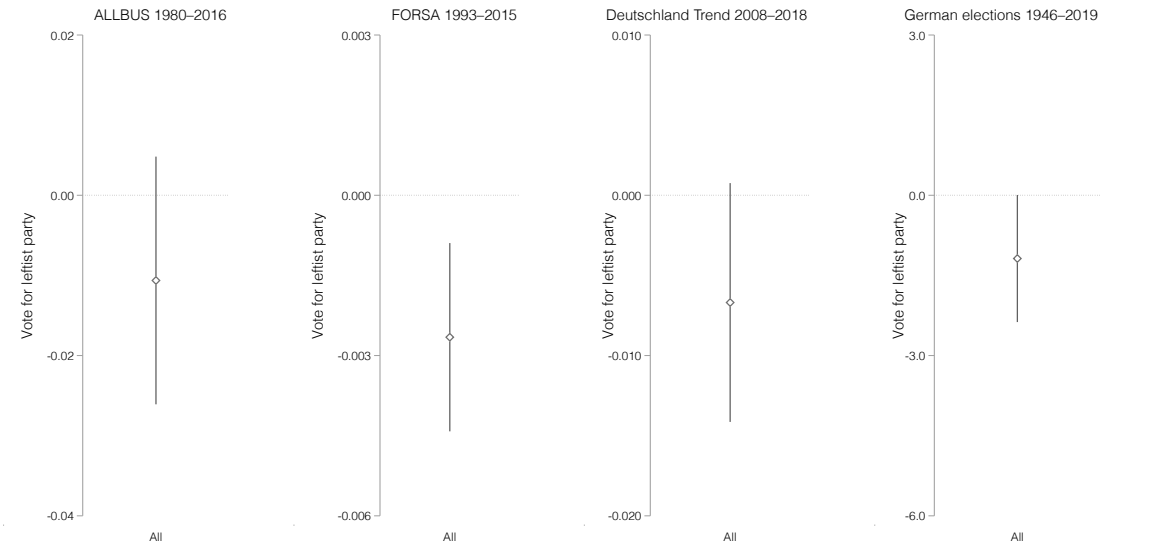
Note: Coefficient plot from regressions of indicated outcomes on the indicator for long-month-after short (LMAS). OLS regression including month, year, and household fixed effects. Markers are point estimates, horizontal lines 95% confidence intervals.

F.5 Effects on party vote

If income poverty depresses electoral participation among the poor, does this have consequences in terms of party votes? If the poor support certain parties more than others but go to the polls less, does this mean that their favored type of party suffers? Given the importance of these questions, they deserves being made the subject of a dedicated inquiry, and here are only briefly touched upon.

In general, we would expect lower turnout among the poor to harm left-leaning parties, as these tend to have their voter base in the lower-income segment of society (Pacek and Radcliff, 1995; Lijphart, 1997; Hansford and Gomez, 2010). For the analysis I coded indicators recording whether a person intended to vote for one of the left-leaning parties parliament (the Social Democrats (SPD) and the Left Party (PDS/Die Linke). As can be seen in Figure 18A, LMAS-induced income shortages cause a drop in voting intentions for the left in two of the three individual-level datasets (only statistically significant in the FORSA data). LMAS are also associated with a 1.2 percentage points lower support for the political left in the electoral outcomes dataset, a difference that is marginally statistical significant (p=0.051).

Figure 18A: Effect of LMAS-induced income shortages on voting for the left



(a) ALLBUS (b) FORSA (c) Deutschland Trend (d) German elections

Note: Figures 18Aa, 18Ab, and 18Ac plot the coefficients for individual-level regressions of intentions to vote for the leftist parties *SPD* and *Die Linke* on the indicator for long-month-after short (LMAS) months. OLS regressions controlling for age, sex, education, and parents' education, and including month, year, and state fixed effects. ALLBUS 1984–2016, FORSA 1993–2015, and Deutschland Trend 2008-2018 data; Figure 18Ad plots the coefficients from a multi-level regression of vote share for *SPD* and *Die Linke* on the indicator for LMAS, with intercepts allowed to vary by the election date and the level at which the election was held (European, national, state, local), and controlling for state and month fixed effects, an indicator for the length of the month, and the turnout in the previous election. German elections dataset (compiled by author). Markers are point estimates, vertical lines 95% confidence intervals.

G Payroll conventions in Germany and the OECD

G.1 Poll on payroll conventions in Germany

In order to ascertain payment conventions for salaries, with the help of a student assistant I conducted a poll among a random sample of firms representing the 20 most common professions in Germany. Firms were selected and contacted according to the following procedure:

1. Based on data from the European Social Survey for Germany, we identified the 20 most common professions in Germany
2. Concrete job descriptions were assigned to each professions to facilitate our search on 'Gelbe Seiten', a telephone directory listing virtually all firms in Germany
3. We randomly selected three different zip codes for each job position, which we used for calling a company in that region
4. Upon entering the zip code, the online version of the 'Gelbe Seiten' will display a number of hits for the searched category within the zip code area
5. Among the displayed results, one was chosen at random.
6. The company marked to that number was called, informed about the study, and asked to provide information on their payment schedule
7. If a company could not be reached, we tried to call again later. If nobody was reached after trying three times, a different company within the same zip code area was called.

In total, 29 firms volunteered to take part in the poll. Out of these, 28 (97%) stated that they pay their employees on a monthly basis, while one said that their employees are paid bimonthly. 19 firms (66%) indicated that they pay their salaries at the end of the month, 8 said they paid at the beginning or in the middle of a month, and 2 firms stated that payment conditions depend on how individual contracts are negotiated.

G.2 Payroll conventions in OECD and other selected countries

Table 19A: Payroll frequency and common pay dates

Country	Payroll frequency	Pay date (most common)
Australia	Weekly, bi-weekly, or monthly	
Austria	Monthly	
Belgium	Monthly	
Brazil	Monthly	
Canada	Bi-weekly, semi-monthly or monthly	
Chile	monthly	
China	monthly	
Colombia	Bi-weekly or monthly	
Czech Republic	Monthly	
Denmark	Monthly	last banking day of the month
Estonia	Monthly	
Finland	Monthly	the end of the month
France	Monthly	the end of the month
Germany	Monthly	
Greece	Monthly	
Hungary	Monthly	10th of the following month
Iceland	Monthly	first day after the month ends
India	Monthly	
Indonesia	Monthly	
Ireland	Monthly	
Israel	Monthly	
Italy	Monthly	27th of each month
Japan	Monthly	25th of each month
Korea	Monthly	
Latvia	Monthly	
Lithuania	Monthly	10th of the following month
Luxembourg	Monthly	
Mexico	Bi-weekly, weekly	
Netherlands	monthly	the end of the month
New Zealand	weekly	
Norway	Monthly	
Poland	Monthly	
Portugal	Monthly	
Russian Federation–	Bi-weekly (every half month)	
Slovak Republic	Monthly	the end of the month
Slovenia	Monthly	
South Africa	Monthly	25th of each month
Spain	Monthly	the end of the month
Sweden	Monthly	25th of each month
Switzerland	Monthly	
Turkey	Monthly	15th of each month
United Kingdom	Monthly	the end of the month
United States	Bi-weekly	

H Personal interviews

The interview guide and the sampling scheme for the qualitative interviews can be found at the Dataverse at https://doi.org/10.7910/DVN/ZCEQPS.

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