Biased Beliefs about Immigration and Economic Concerns*

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Motivation: Integration of Migrants and Public Support

Labor market integration of migrants is of key relevance for policy agendas across developed economies.

However: protectionism and public opposition towards immigration have increased during the recent decade:

- Stronger support for populism and economic nationalism (Colantone and Stanig 2019)
- Links between immigration and increases in right-wing vote shares (Barone et al. 2016; Halla et al. 2017)

$\rightarrow$ Overall: Tension between the goals of immigration and integration policies and (negative) attitudes towards immigration in parts of the host country's population.

Motivation: Economic Concerns and Beliefs about Immigrants

From an economic perspective, native individuals may be concerned about immigration because of:

- potential adverse effects of immigration on the welfare state and public goods provision (Dahlberg et al. 2012; Facchini and Mayda 2009)
- potential increases in competition on the labor market (Haaland and Roth 2020; Ortega and Polavieja 2012)

From a voter's perspective, forming preferences over immigration thus requires accurate beliefs about:

- the size of the immigrant population (i.e. the share of immigrants)
- its economic characteristics (e.g. the unemployment rate of immigrants) and/or its non-economic characteristics (e.g. the share of immigrants from a specific region)

$\rightarrow$ However: natives often exert biased beliefs about the immigrant population (Barrera et al. 2020; Grigorieff et al. 2020).

Motivation: This Paper

We investigate the link between biased beliefs about immigrants and economic concerns about immigration as well as policy preferences in Germany.

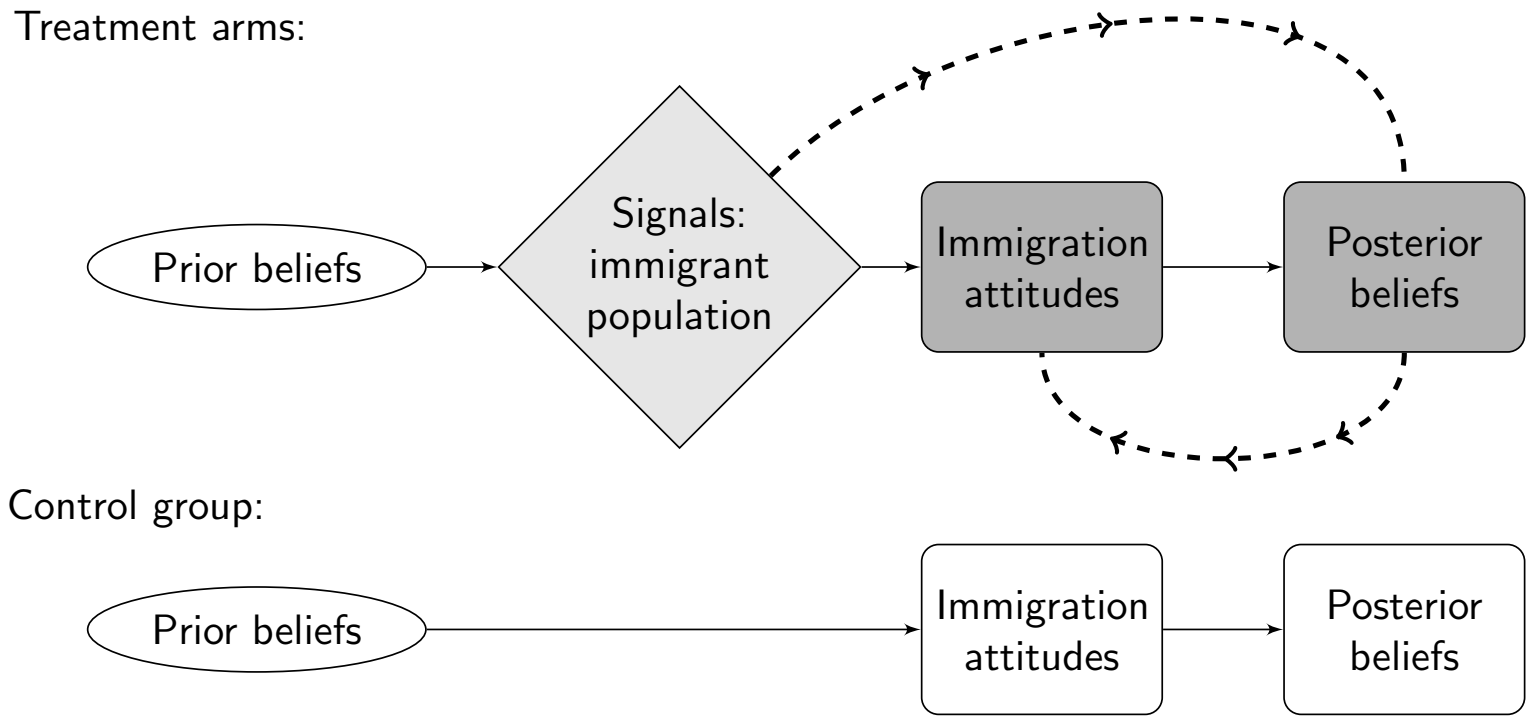
RQ: Do statistical facts about the immigrant population affect economic concerns and policy preferences?

Our contributions:

- We exogenously vary the number and types of signals about the immigrant population which are available to individuals:
  - Size of the immigrant population
  - Economic characteristics of immigrants
  - Non-economic (cultural) characteristics
- We further study
  - cross-learning between different types of signals
  - systematic heterogeneity in treatment effects
  - persistence via a follow-up

Experimental Design: General Setup of the Experiment

We conduct representative survey experiments to examine the effect of statistical information on attitudes towards immigration.



Experimental Design: Size and Characteristics of the Immigrant Population

We exogenously shift beliefs about Wording

- the share of immigrants in the population (13%) and/or
- the unemployment rate of immigrants (15%) and/or
- the share of immigrants from Europe among all immigrants (66%)†.

Random assignment of respondents to one of our experimental groups:

(I) Treatment *A*: Share	(I) Treatment *B*: Unemployment rate
(I) Treatment *C*: Share and unemployment rate	(I) Control group 1: No information
(II) Treatment *D*: Share and European share	(II) Control group 2: No information

†European countries comprise EU and European third-countries including Turkey and Russia.

Experimental Design: Outcome Variables

Attitudes towards immigration (Card et al. 2012; Facchini and Mayda 2009):

- Welfare state concerns: concerns about adverse effects of immigration on taxation, the welfare state, and public good provision
- Labor market concerns: concerns about increasing labor market competition as a consequence of immigration
- Policy preferences whether to increase/decrease immigration

The wording of our outcome variables is based on the European Social Survey (ESS) and the International Social Survey Program (ISSP).

Preferences for redistribution (Alesina et al. 2018):

- Redistributive preferences whether government should reduce income inequality

Wording

Experimental Design: Hypotheses about Economic Concerns and Policy Preferences

(formulated for "immigration-averse biases")

I: Information provision translates into lower welfare state concerns.

II: Information provision about the share and the characteristics balance one another in terms of effects on labor market concerns.

III: Information provision translates into more positive immigration policy preferences.

IV: Information provision translates into more supportive preferences for redistribution.

Data: Population Surveys

Two online surveys in Germany:

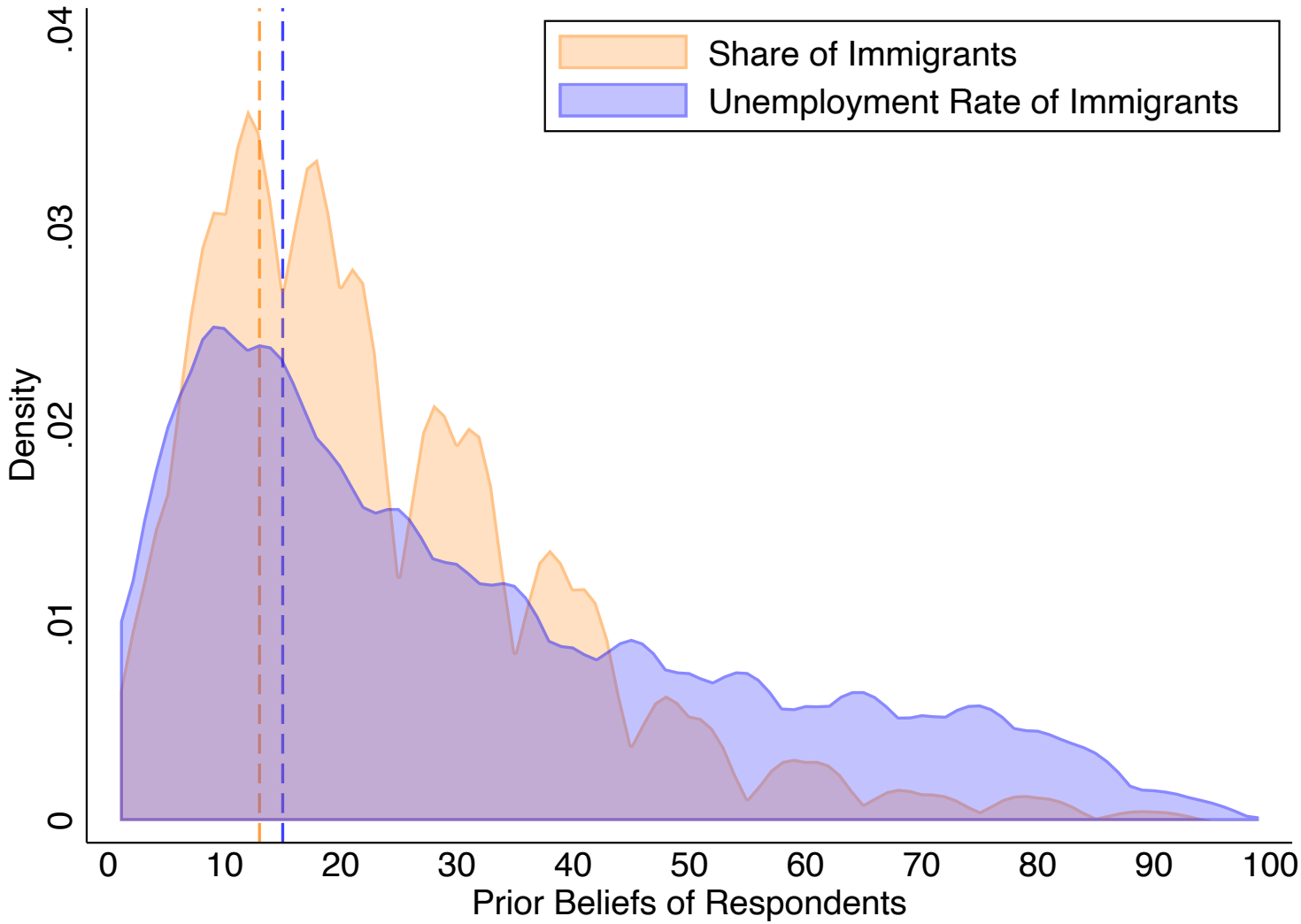
- Representative w.r.t.
  age, gender, education, and residence in East/West Germany
- Respondents recruited and incentivized (flat payment, see Grewenig et al. 2020) by Respondi
- Field phases: November/December 2020 and September 2021
- Experiments and PAP pre-registered under IDs:
  AEARCTR-0006819; AEARCTR-8166

Pooled sample size:
8265 respondents (Experiment I: 6309; Experiment II: 1947).

Samples are well balanced.

Balance Tree

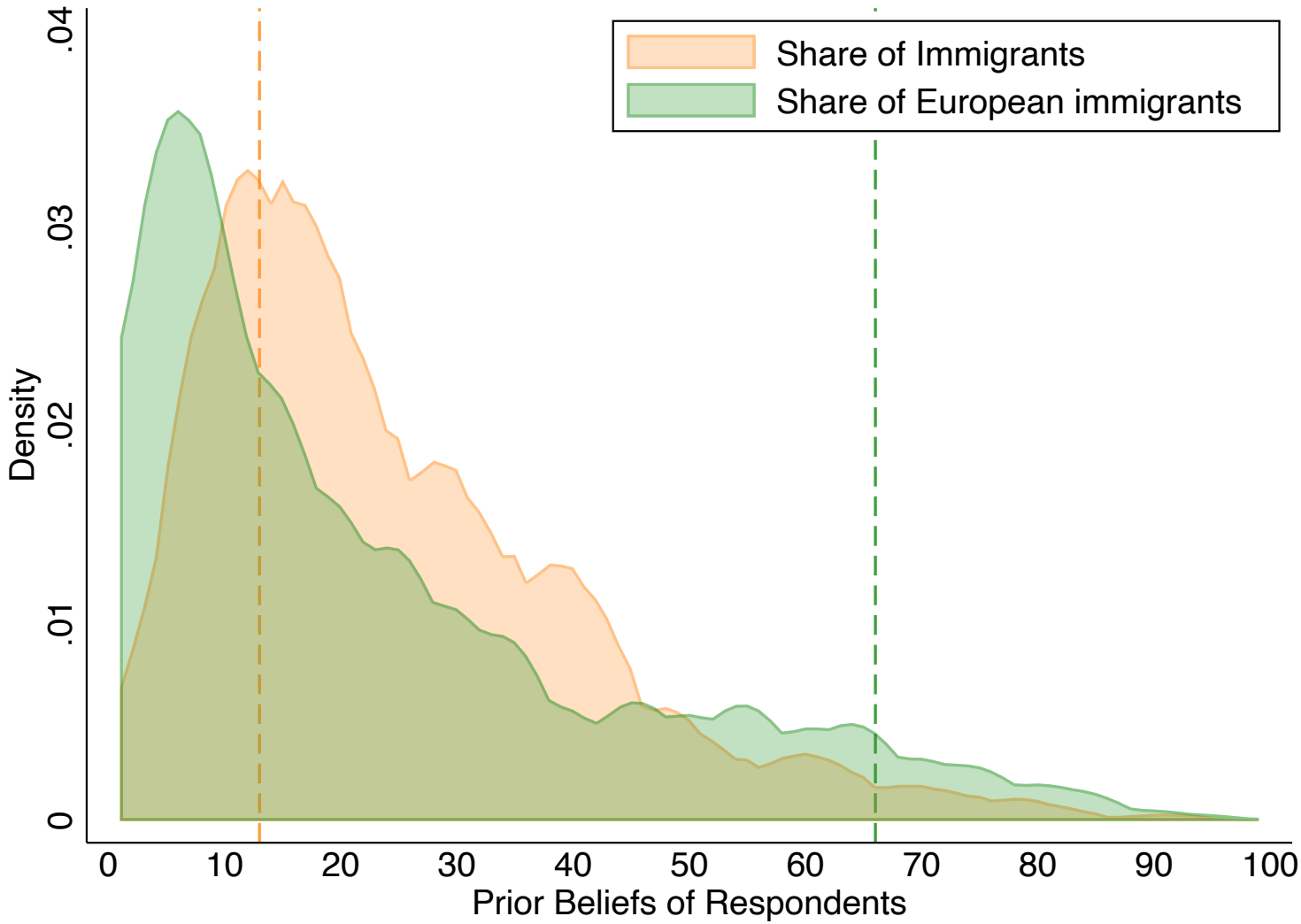
Data: Distribution of Prior Beliefs about the Immigrant Population



⇒ Most people overestimate the share and the unemployment rate.

Wording | Determinants

Data: Distribution of Prior Beliefs (cont.)

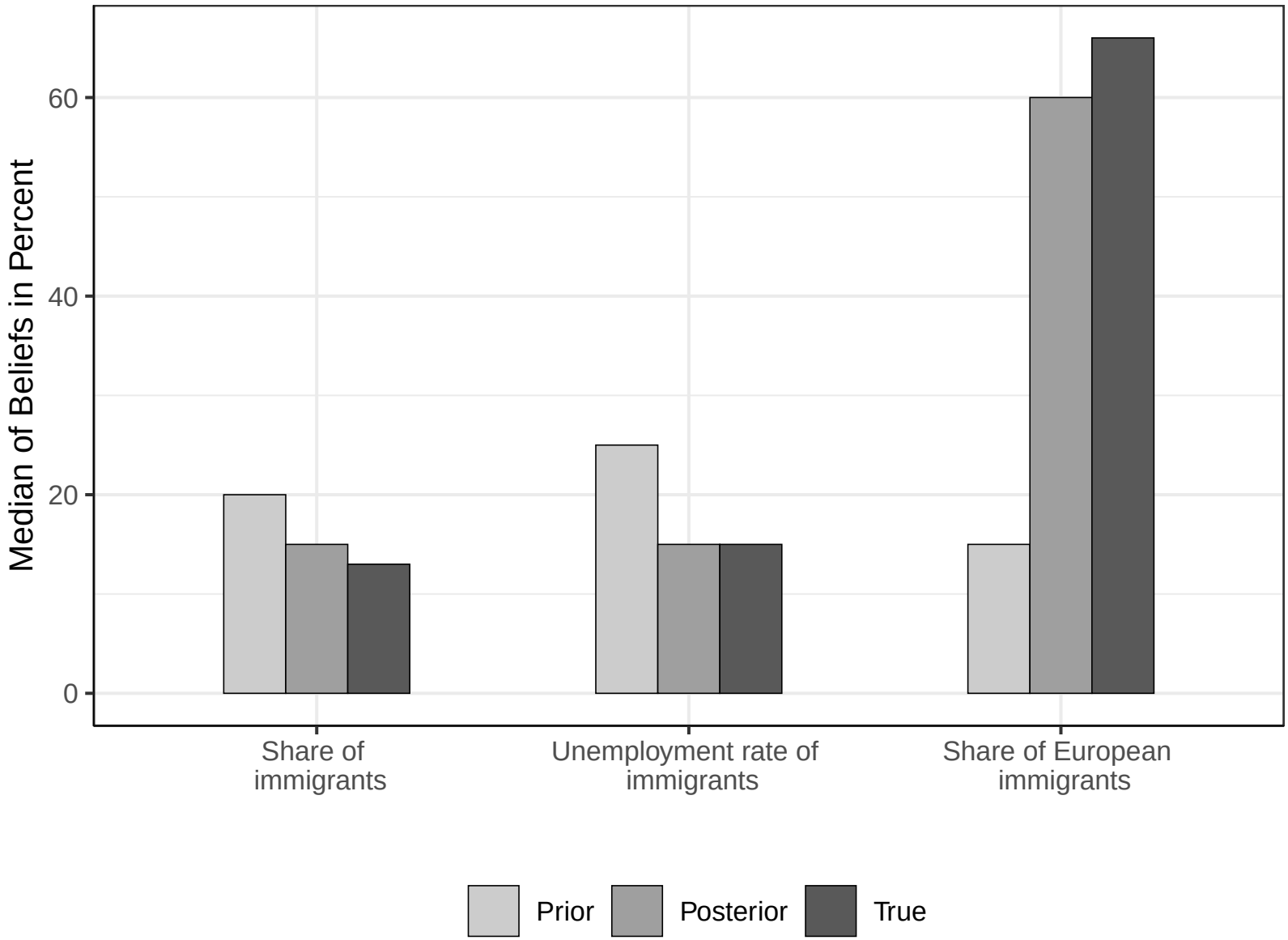


⇒ Most people overestimate the share and largely underestimate the European share of immigrants.

Wording Determinants

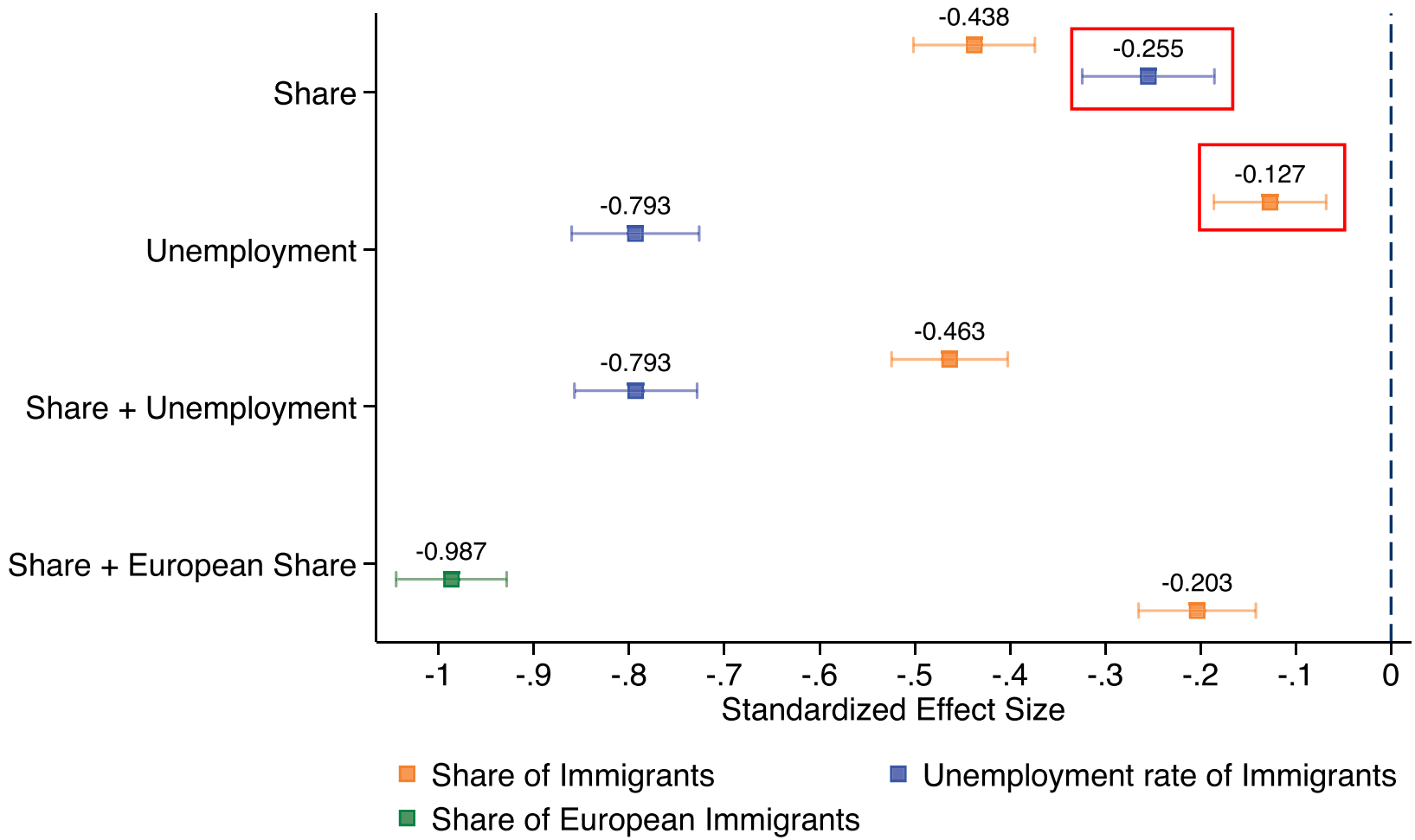
Data: Updating of Treated Respondents

(median, within-subject)



Data: Updating and Cross-Learning of Treated Respondents

(between-subject; standardized, absolute bias)



Non-standardized results

Assessing Average Treatment Effects

We first estimate average treatment effects (ATE) in a standard regression framework:

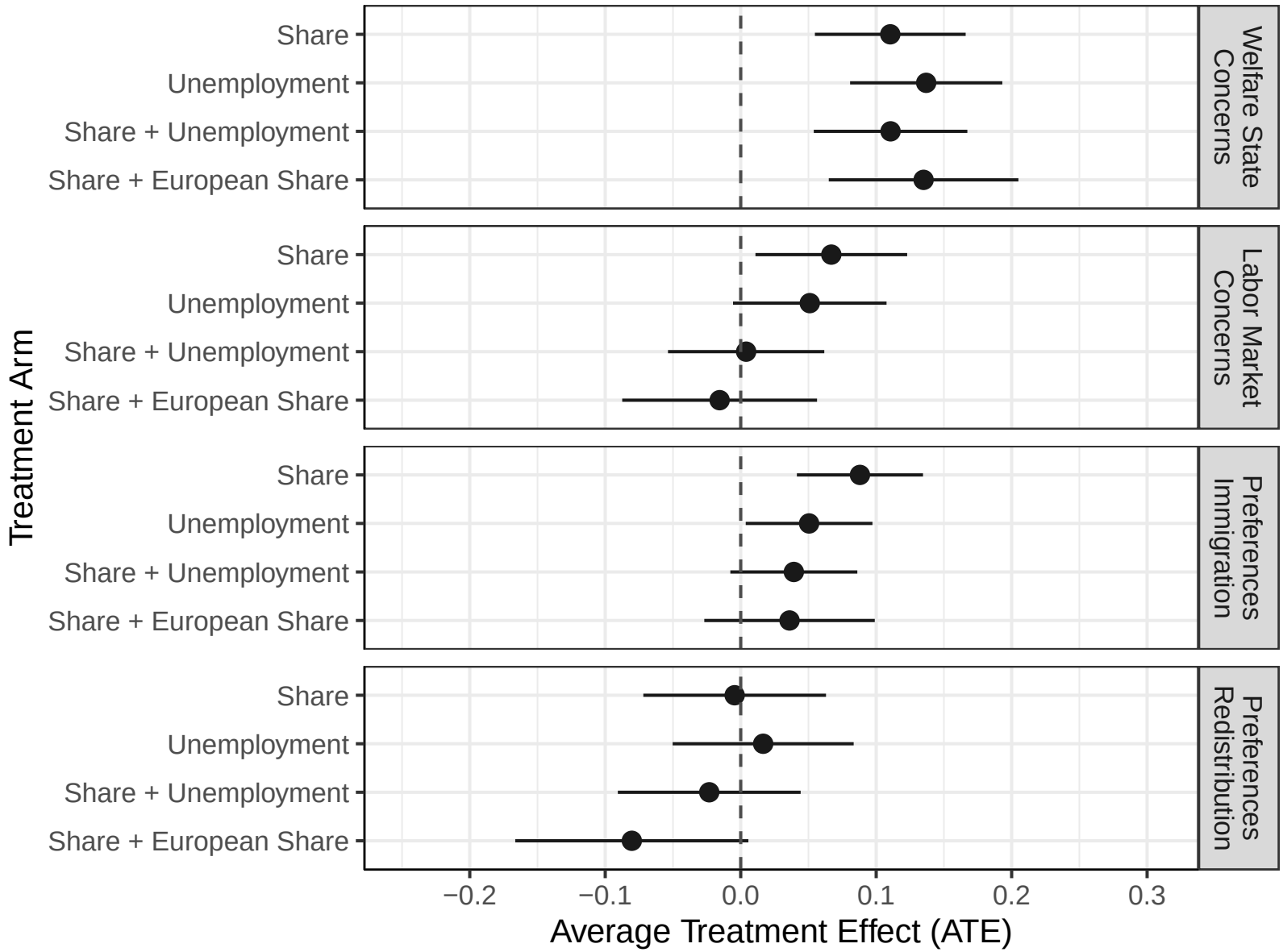
$$y_i = \delta_0 + \delta_1 Share_i + \delta_2 Unemployment_i + \delta_3 Bundle_i + \theta^T X_i + \varepsilon_i, \quad (1)$$

where X is a matrix of pre-registered covariates, including:

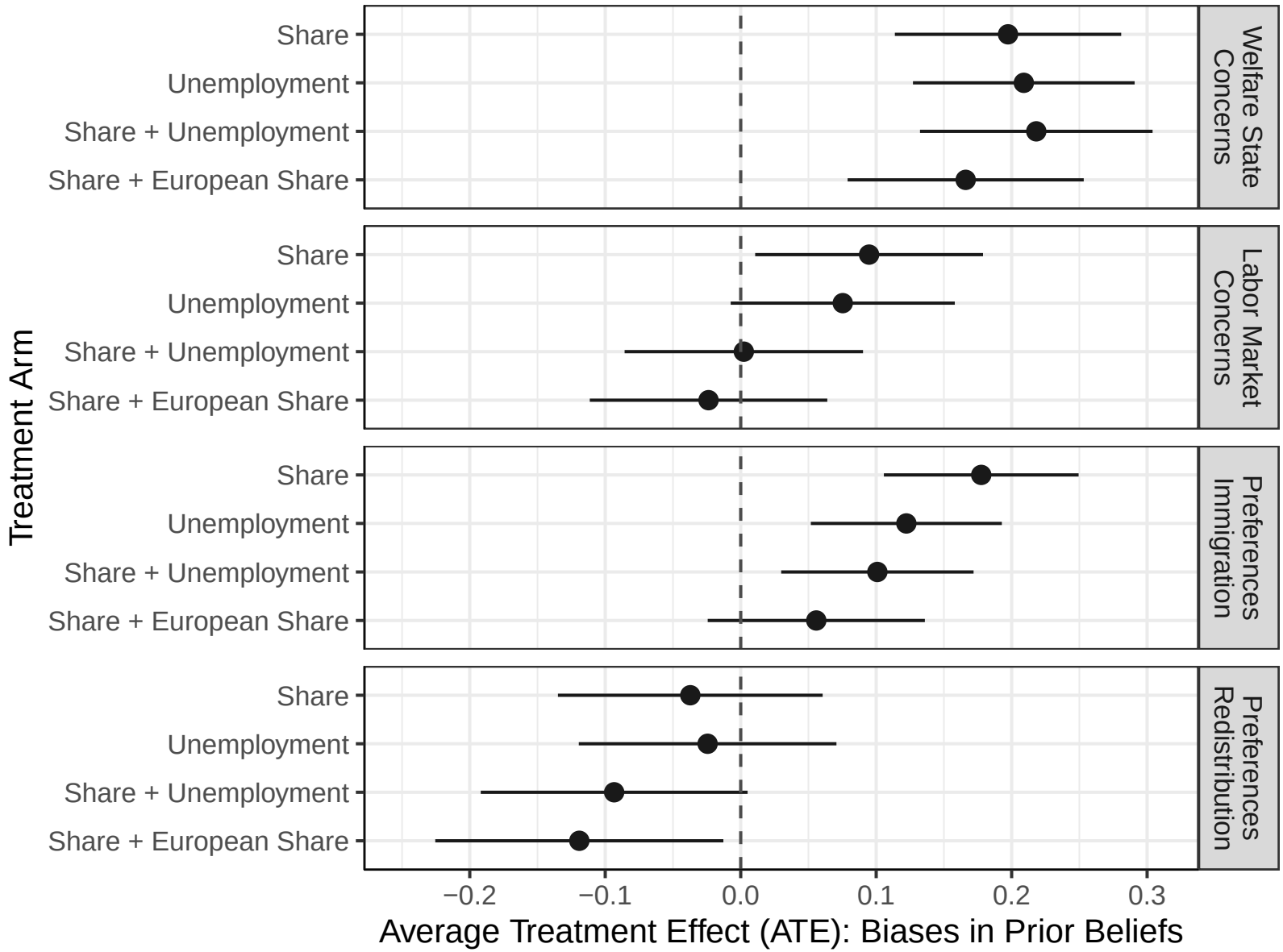
- confidence about beliefs
- risk and trust attitudes
- general concerns about immigration (pre-treatment baseline)
- news consumption
- political attitude
- standard demographics

Analogously for experiment II.

Results: ATE of Information on Economic Concerns and Policy Preferences – Full Sample, 95%



Results: ATE of Information on Economic Concerns and Policy Preferences – Sample with Biases in Prior Beliefs, 95%



Further Parts

Further parts of the analysis:

- heterogeneity in treatment effects Heterog.
- persistence via a follow-up Persist.

Heterogeneity: Assessing Treatment Effect Heterogeneity

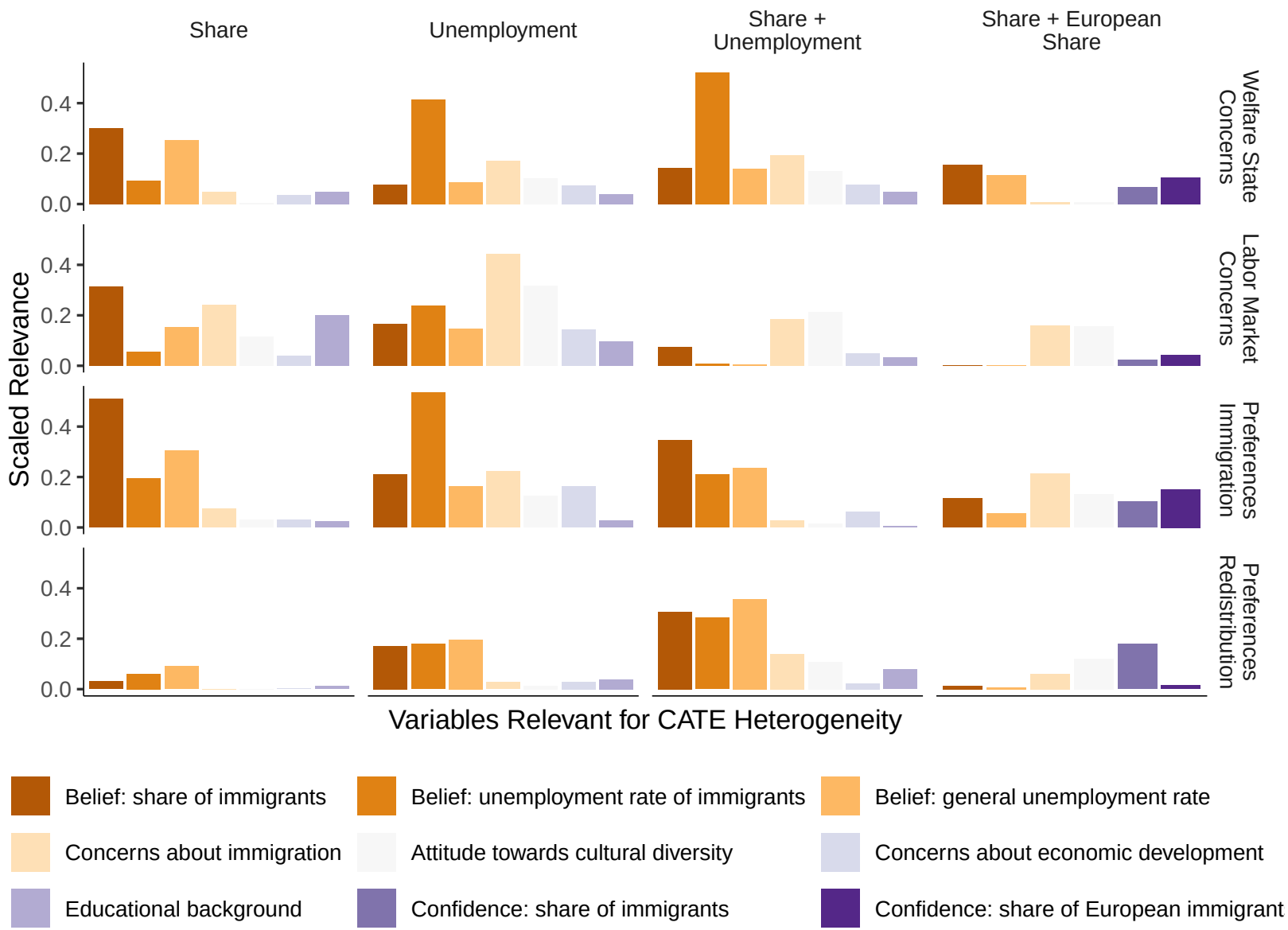
We employ generalized causal forests to uncover systematic heterogeneity in treatment effects (Athey et al. 2019; Nie and Wager 2021).

$\rightarrow$ Allows us to obtain a non-linear estimate of the conditional average treatment effect (CATE) for each individual and treatment arm.

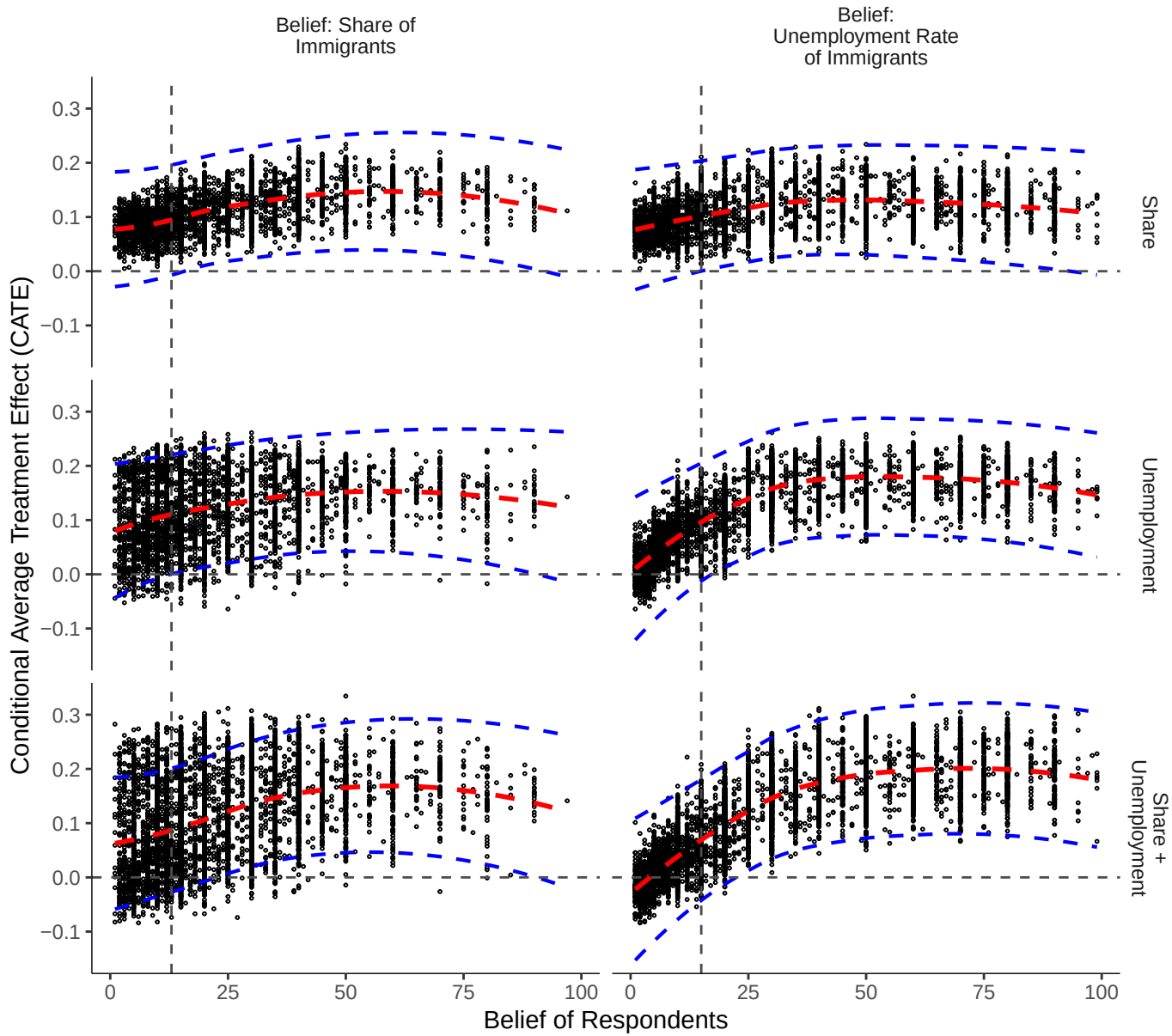
We can then decompose the distributions of CATE into the most relevant covariates in X.

Distributions

Heterogeneity: Main Drivers of Heterogeneity in CATE



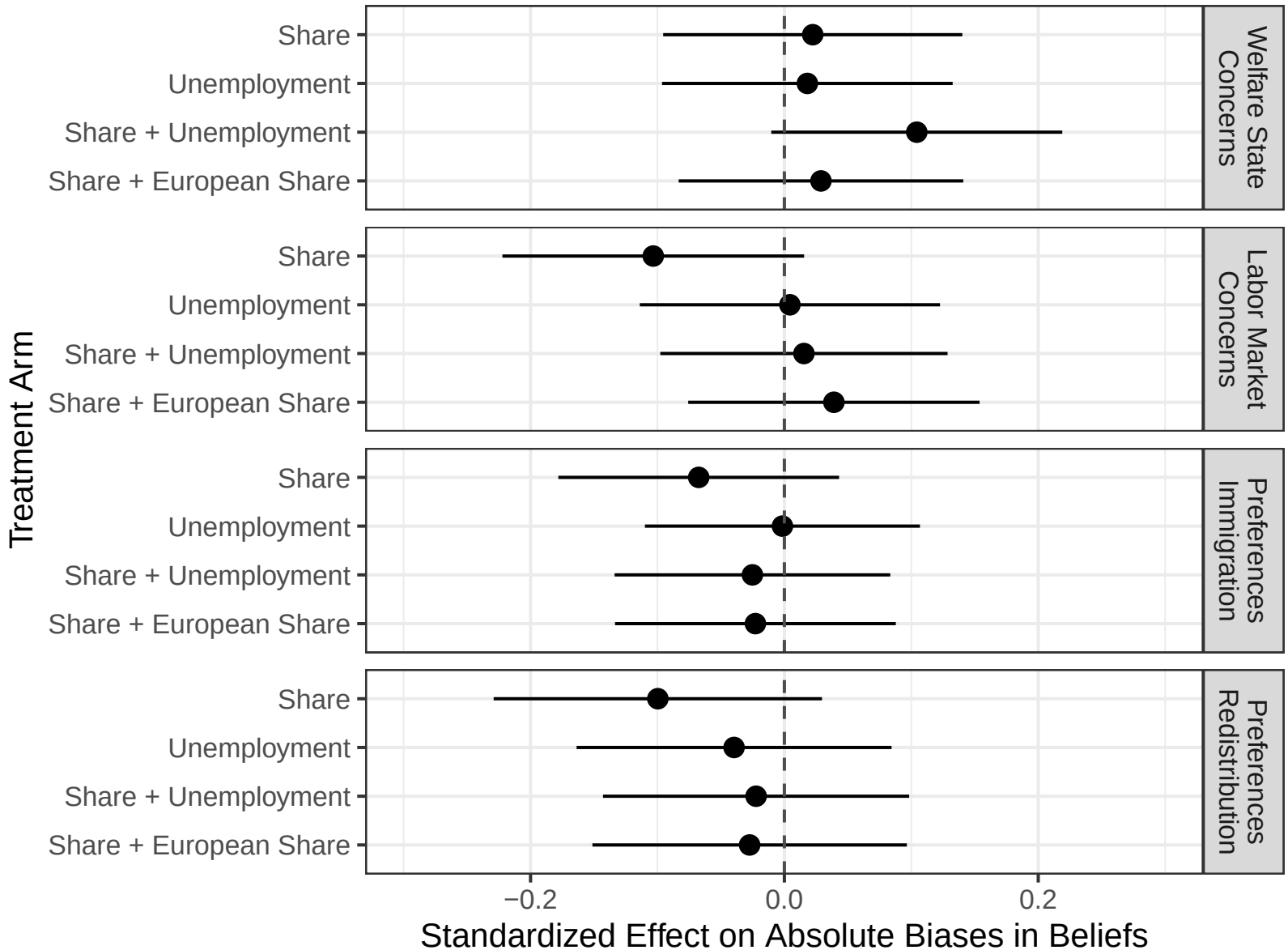
Heterogeneity: CATE on Welfare State Concerns and Prior Beliefs



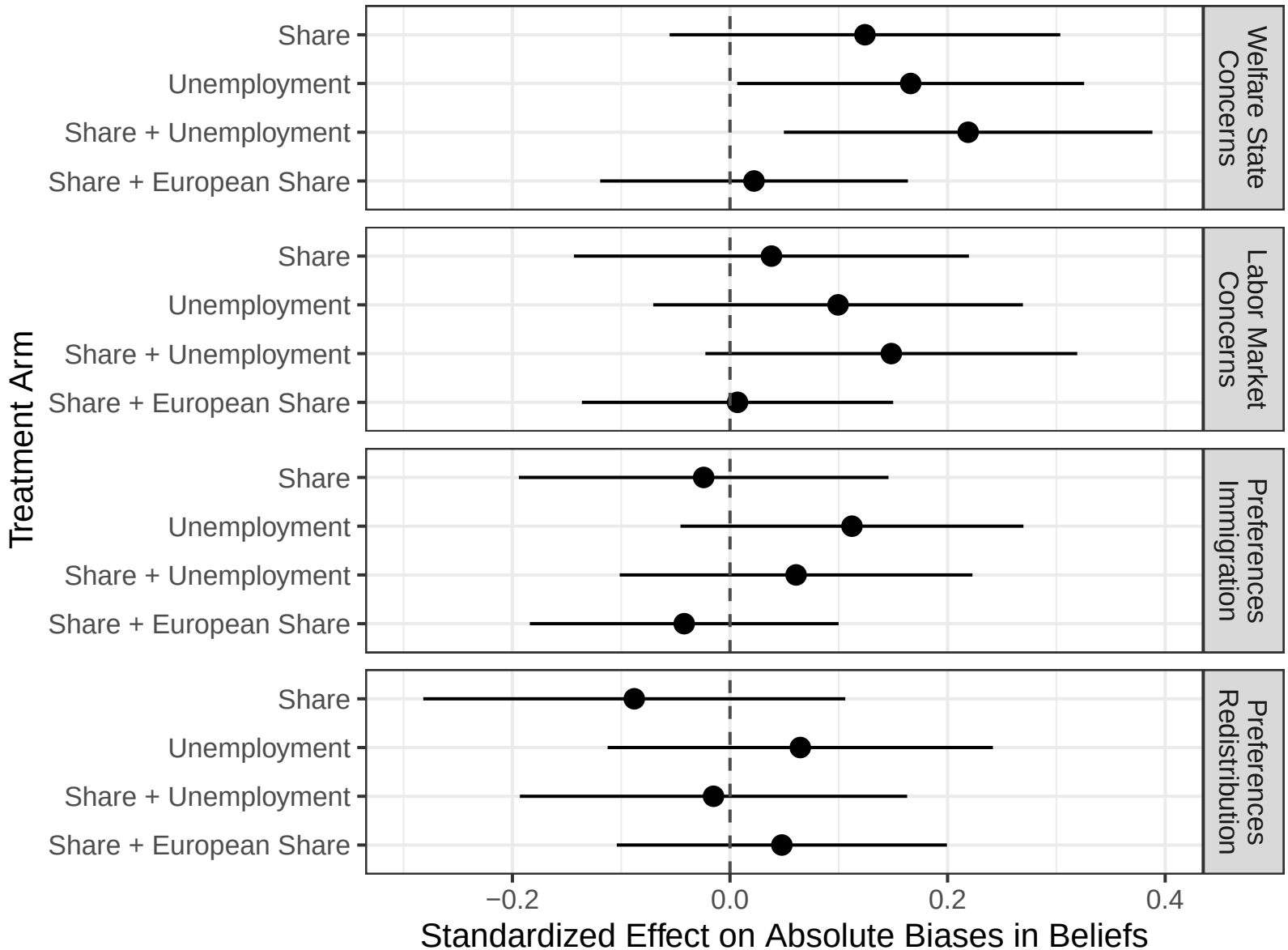
⇒ U-shaped relationships between CATE and beliefs: noisy and small below the true value cutoffs and then increase, but only up to a point.

Persistence: ATE of Information on Economic Concerns and Policy Preferences – Follow-up

Updating | ATE (follow-up sample)



Persistence: ATE – Follow-up with Biases in Prior Beliefs



Conclusion

We conduct representative survey experiments to examine the effect of information on economic concerns about immigration policy preferences:

- Substantial biases in individuals' beliefs about characteristics of the immigrant population
- Exposure to information reduces concerns about negative effects of immigration on the welfare state
- Different types of signals about immigrants can offset their effects on concerns about labor market competition
- There exist links between beliefs about immigration and preferences for immigration policy

We find

- evidence of cross-learning
- heterogeneity in treatment effects
- persistence of treatment effects on welfare state concerns for 5-8 weeks

$\Rightarrow$ The quantity and type of the signal can moderate the effectiveness of information interventions, such as governmental information campaigns.

Thank you!

Experimental Balance: Normalized Differences

Table A2: Experimental balance in covariates: normalized differences.

	Control vs. Treatment Share	Control vs. Treatment Unemp. Rate	Control vs. Treatment Bundle	Control vs. Treatment Europe
Belief: share of immigrants	−0.022	0.013	0.001	0.012
Confidence: share of immigrants	−0.032	0.013	0.023	0.029
Belief: unemployment rate of immig.	−0.039	0.045	−0.045	−0.008
Confidence: unemp. rate of immig.	−0.005	0.028	0.033	0.062
Belief: general unemployment rate	0.024	0.050	0.048	−0.042
Confidence: general unemployment rate	0.038	0.008	0.037	−0.047
Concerns about immigration	0.096	0.131	0.080	−0.076
Attitude towards cultural diversity	0.063	0.040	0.052	−0.007
Concerns about economic development	0.061	0.046	0.072	0.017
Concerns COVID-19 crisis	0.023	−0.076	0.036	0.044
News consumption	0.055	0.005	0.002	−0.009
Risk attitude	0.007	−0.039	0.032	−0.007
Generalized trust	−0.009	−0.048	−0.015	−0.013
Political attitude	0.018	0.018	−0.011	0.006
Age group	−0.020	−0.055	−0.029	−0.028
Female	0.014	0.024	0.048	−0.029
East Germany	0.070	0.040	0.016	0.046
Education	−0.024	−0.037	−0.052	0.013
Employed	0.056	0.089	0.011	0.003
Household size	0.014	0.056	0.037	0.001
Income	0.015	0.016	−0.017	−0.019
Partner	0.011	0.006	−0.008	−0.106
Migration background	−0.007	0.010	−0.032	−0.045
Contact with immigrants	−0.019	−0.030	−0.012	−0.004
Local population size	0.043	−0.001	−0.001	−0.004

Notes: Comparison of treatments and control groups in terms of normalized differences following Imbens (2015).

Normalized differences:

Rule of Thumb $\rightarrow$ value below $|0.25|$ indicating a "good" balance

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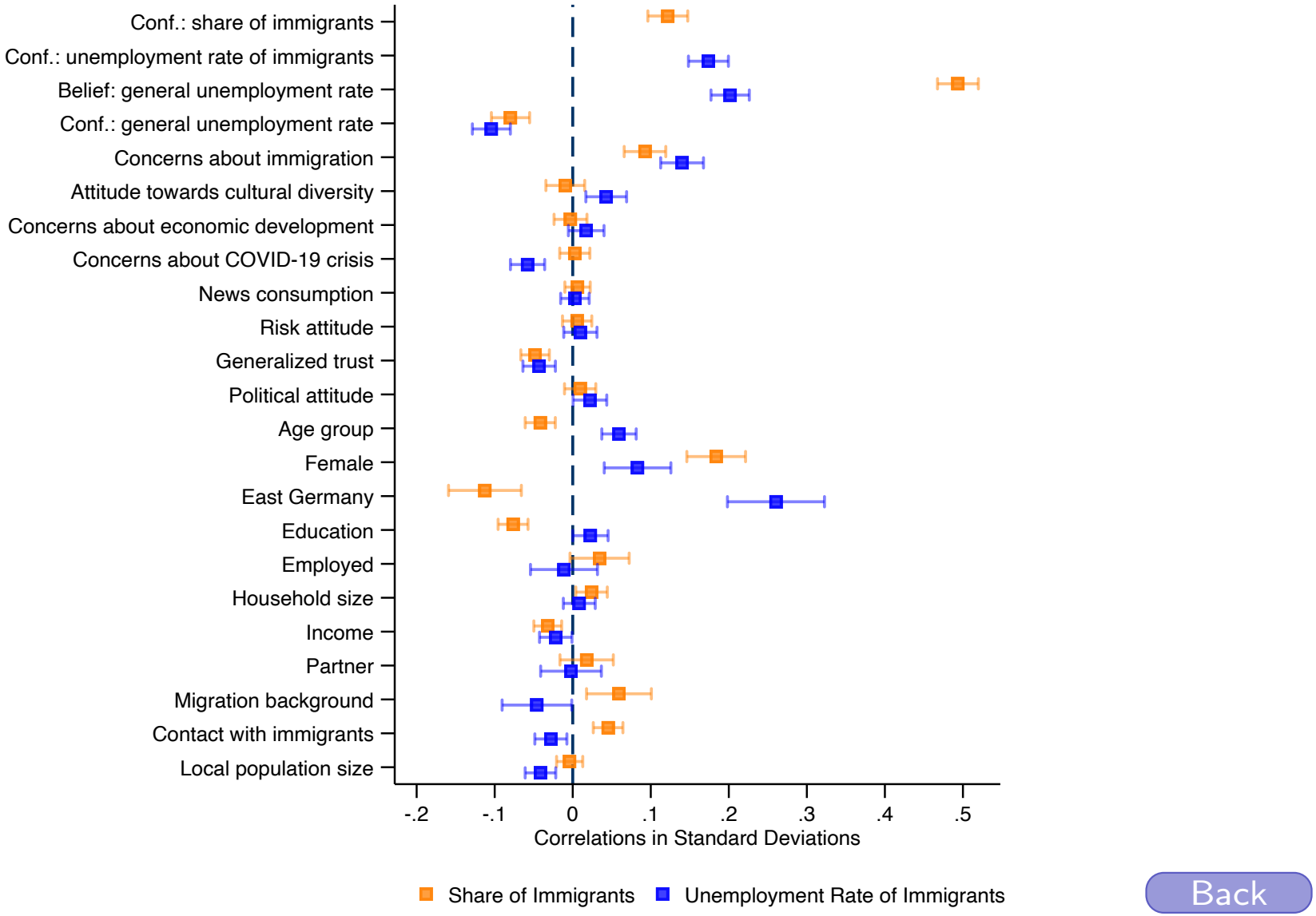
Determinants of (Absolute) Biased Beliefs about Immigrants



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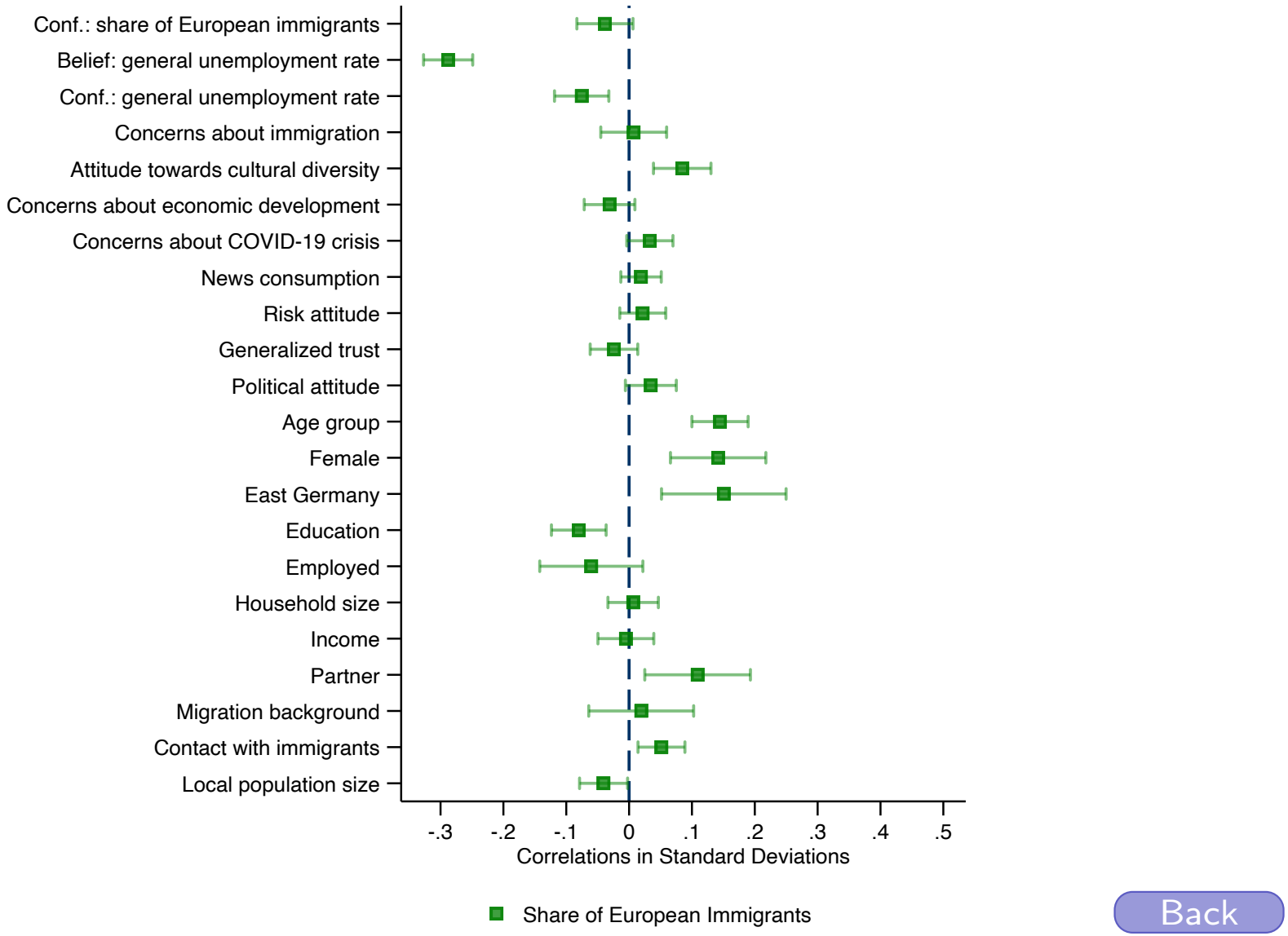
Determinants of (Absolute) Biased Beliefs about Immigrants (cont.)



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Data: Updating and Cross-Learning of Treated Respondents

(non-standardized, non-absolute bias)

	Experiment I		Experiment I	
	Share	Unemp. Rate	Share	European Share
Treat Share	-5.00	-4.47		
Treat Unemp.	-1.32	-9.62		
Treat Bundle	-5.34	-11.05		
Treat Europe			-2.24	22.64

In red: Cross-Learning!

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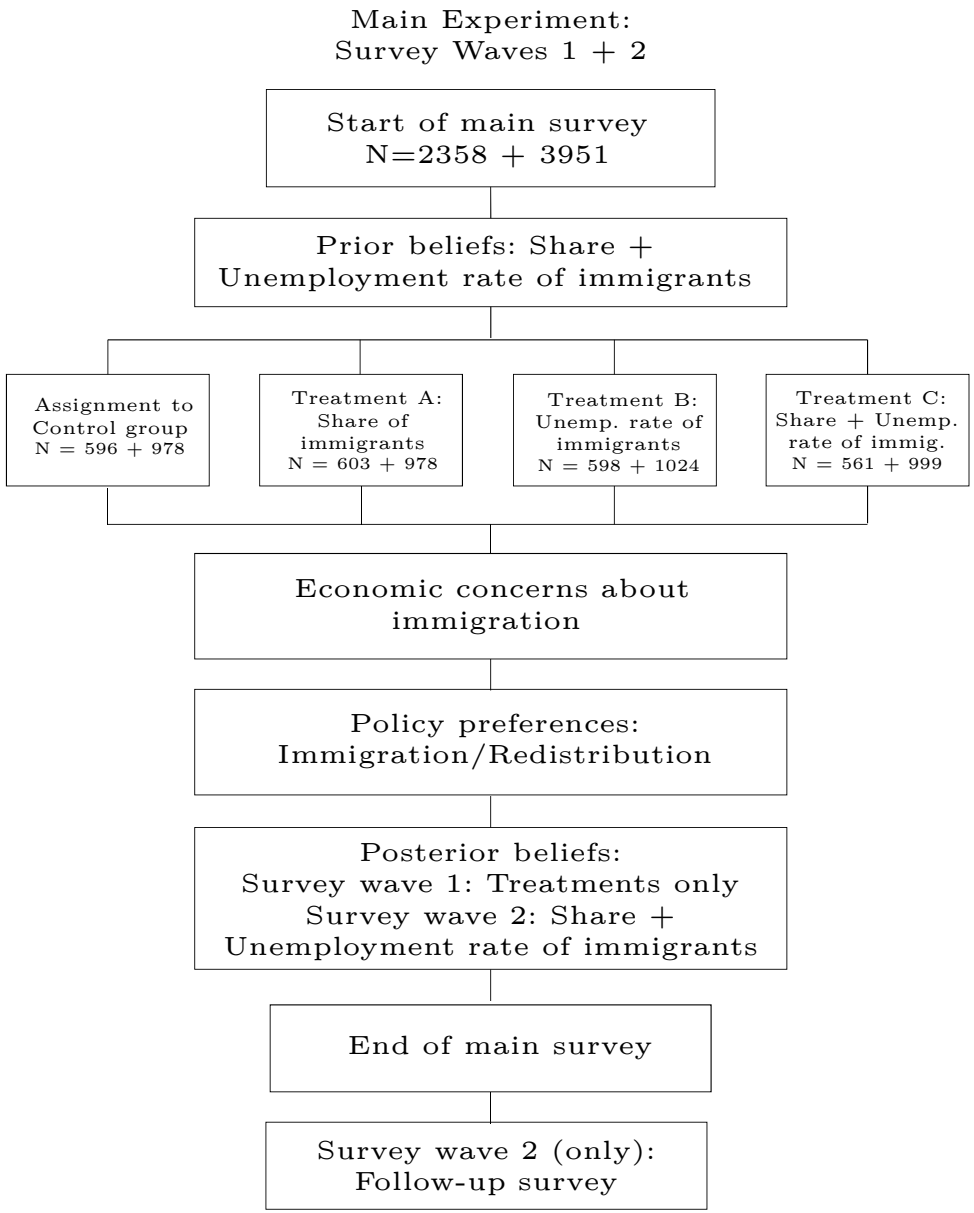
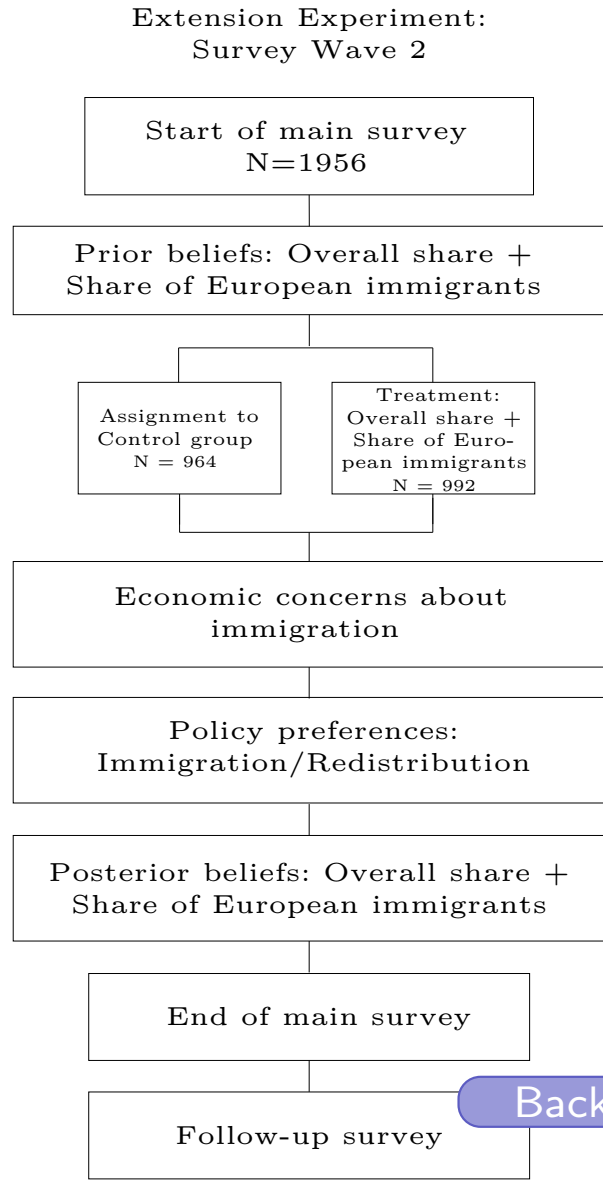
Experimental Design





Data: Wording – Prior Beliefs (I)

- Share of Immigrants: Now it is about the share of immigrants in Germany.

  What do you estimate, please answer spontaneously:
  What percentage of people living in Germany do not have German citizenship?

  Hint text (clickable via question mark icon):
  The percentage is understood here as the number of immigrants per 100 inhabitants in Germany.

- Unemployment Rate of Immigrants: Now it is about the unemployment rate of working-age immigrants in Germany.

  What do you estimate, please answer spontaneously:
  What percentage of these people are unemployed?

  Hint text (clickable via question mark icon):
  The percentage is understood here as the number of unemployed persons per 100 immigrants of working age in Germany. Immigrants are considered unemployed if they are registered as unemployed with the Federal Employment Agency. Asylum seekers and tolerated persons are included in the unemployment rate if they have a work permit but no job and are registered as unemployed.

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Data: Wording – Prior Beliefs (II)

- Share of European Immigrants: Now it is about all immigrants who have come to Germany in 2019.

  What do you estimate, please answer spontaneously:
  What percentage of these immigrants come from a European country?

  Hint text (always visible):
  European countries include the countries of the European Union and European third countries including Turkey and the Russian Federation.

  Hint text (clickable via question mark icon): The percentage is understood here as the number of European persons per 100 immigrants to Germany.

- Definition of immigrant / foreigner
  $\rightarrow$ for all at the beginning of the migration part in the questionnaire:

  Definition Immigrants:
  Now we will deal with a currently frequently discussed topic: immigration to Germany from abroad.

  In the following, the terms "immigrants" and "foreigners" refer to all persons living in Germany who do not have German citizenship.

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Wording: Economic Concerns

- Welfare state concerns (ESS):
  "Immigrants pay taxes and receive social benefits from the health care and social insurance systems. On balance, do you think that immigrants in Germany receive more social benefits than they pay taxes, or that they pay more taxes than they receive social benefits?"

  Answers range from 0 for "Receive more social benefits" to 10 for "Pay more taxes".

- Labor market concerns (ESS):
  "Do you think that immigrants rather take away jobs from workers in Germany, or that they rather help to create new jobs?"

  Answers range from 0 for "Take jobs away" to 10 for "Create new jobs".

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Wording: Policy Preferences

- Immigration policy preferences:
  "Do you think that the number of immigrants coming to Germany each year should be:
  decreased a lot / decreased slightly / stay the same / increased slightly / increased a lot?"

- Preferences for redistribution (Alesina et al. 2018):
  "Some people think that the government should not care about income differences between rich and poor people. Others think that the government should do everything in its power to reduce income inequality. What do you think?"

  Answers range from 0 for "Government should not care about income inequality" to 10 for "Government should do everything against income inequality".

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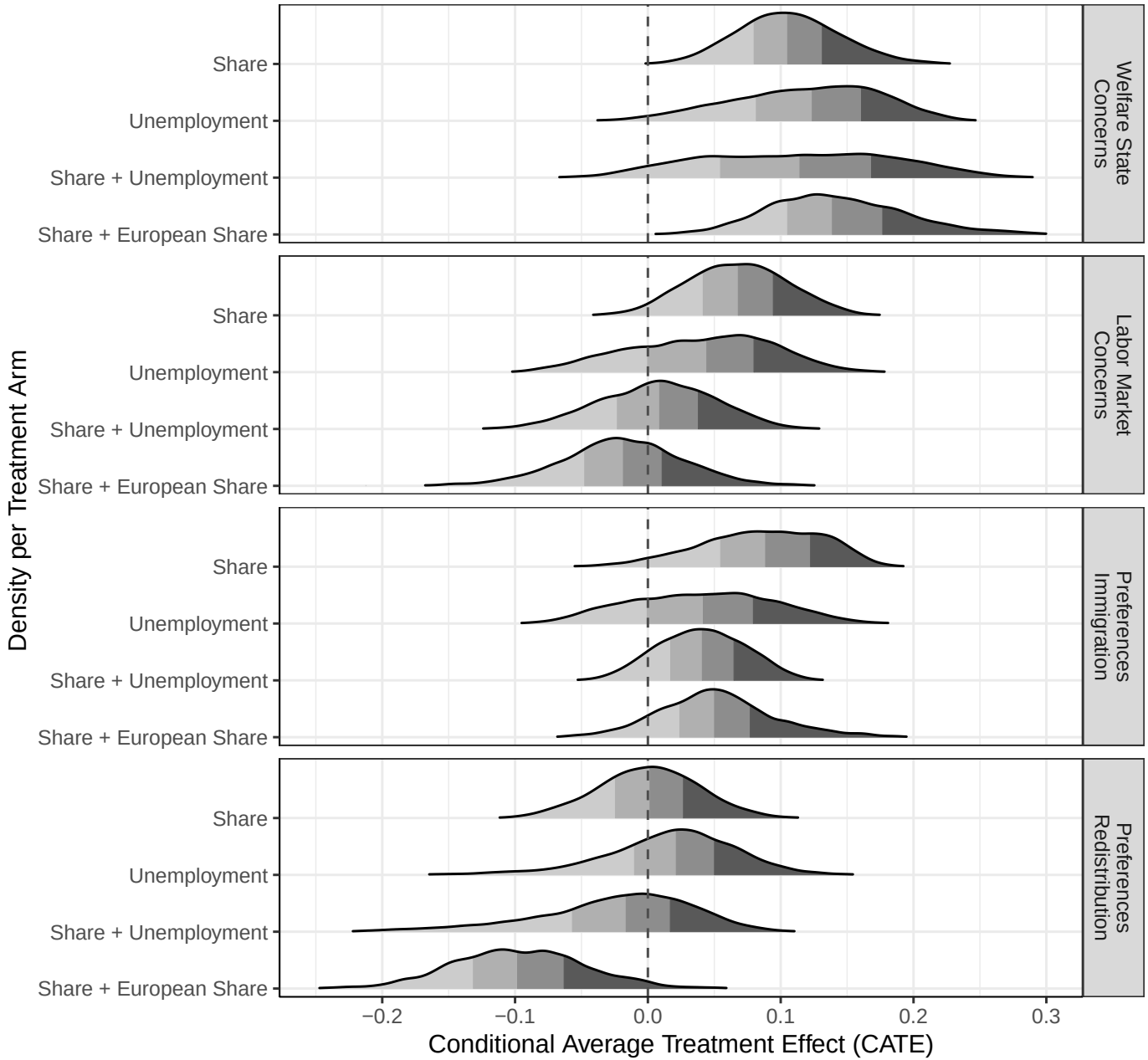
Heterogeneity: Distribution of Cond. Av. Treatment Effects (CATE)



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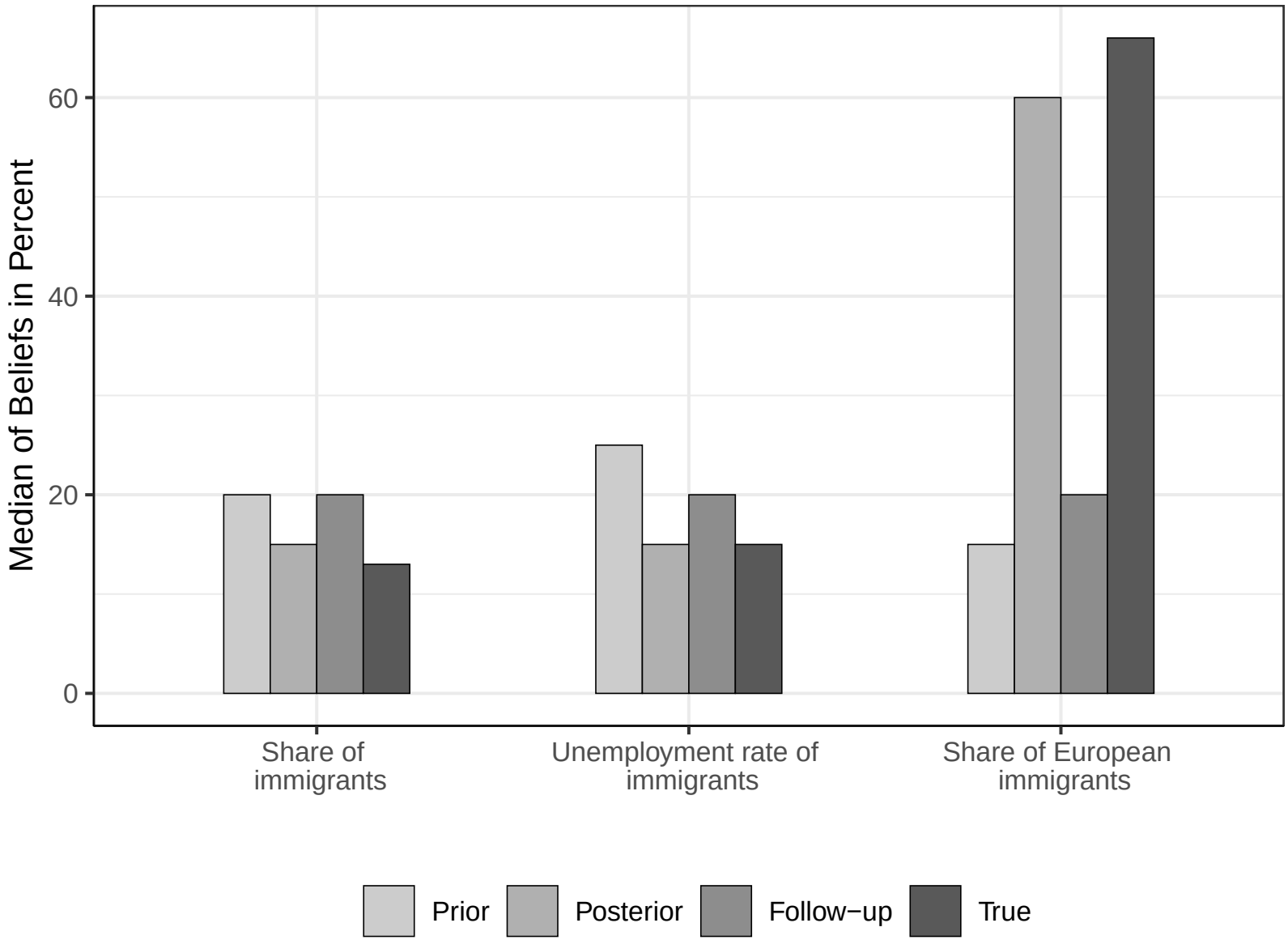
Persistence: Updating of Treated Respondents (5-8 weeks later)

Comparison | Balance



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Comparison: Representativity – Follow-up

Sample composition and representativity.

	Main Survey		Follow-up		Target
	Absolute	Share	Absolute	Share	Share
Age: 18–29 years	1318	0.161	385	0.131	0.163
Age: 30–39 years	1297	0.158	427	0.145	0.155
Age: 40–64 years	1213	0.148	409	0.139	0.147
Age: 50–64 years	2278	0.278	823	0.280	0.275
Age: 65 years and above	2093	0.255	898	0.305	0.260
Gender: female	4151	0.506	1369	0.465	0.507
Gender*: male	4038	0.493	1568	0.533	0.493
Residence: East Germany	1209	0.147	442	0.150	0.151
Residence: West Germany	6990	0.853	2500	0.850	0.849
Education: low	2957	0.361	1028	0.349	0.373
Education: middle	2543	0.310	936	0.318	0.300
Education: high	2699	0.329	978	0.332	0.327

Notes: The sources for target shares are provided by the German Federal Statistical Office. * In addition, there are 10 respondents who do neither identify as female nor male.

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Comparison: Normalized Differences – Follow-up

Differences between follow-up and non-follow-up respondents.

	Mean: Follow-up	Mean: Non-follow-up	Normalized Difference
Belief: share of immigrants	23.105	24.370	−0.079
Conf.: share of immigrants	4.097	3.977	0.048
Belief: unemployment rate of immigrants	30.962	30.950	0.001
Conf.: unemployment rate of immigrants	3.803	3.740	0.025
Belief: share of European immigrants	21.774	22.995	−0.057
Conf.: share of European immigrants	3.821	3.574	0.100
Belief: general unemployment rate	15.124	17.261	−0.132
Conf.: general unemployment rate	4.767	4.634	0.052
Concerns about immigration	6.050	5.922	0.040
Attitude towards cultural diversity	5.310	5.267	0.015
Concerns about economic development	5.842	6.207	−0.142
Concerns about COVID-19 crisis	5.121	5.612	−0.169
News consumption	63.609	65.313	−0.025
Risk attitude	3.809	3.883	−0.030
Generalized trust	4.069	4.089	−0.008
Political attitude	4.779	4.729	0.026
Age group	3.483	3.211	0.194
Female	0.465	0.529	−0.128
East Germany	0.150	0.146	0.012
Education	1.983	1.960	0.027
Employed	0.499	0.539	−0.079
Household size	2.118	2.247	−0.059
Income	2.500	2.523	−0.019
Partner	0.631	0.526	0.213
Migration Background	0.224	0.231	−0.016
Contact with immigrants	2.691	2.735	−0.036
Local population size	3.241	3.218	0.016

Notes: Comparison of respondents in the follow-up and non-follow-up samples in terms of mean values and normalized differences (Imbens and Rubin 2015).

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Experimental Balance: Normalized Differences – Follow-up

Experimental balance in covariates in follow-up sample: normalized differences.

	Control vs. Share	Control vs. Unemp.	Control vs. Share + Unemp.	Control vs. Share + Europ. Share
Belief: share of immigrants	0.020	0.019	0.014	0.017
Conf.: share of immigrants	0.017	0.036	0.130	0.021
Belief: unemployment rate of immigrants	−0.011	0.113	−0.028	
Conf.: unemployment rate of immigrants	−0.003	−0.019	0.062	
Belief: share of European immigrants				−0.053
Conf.: share of European immigrants				0.090
Belief: general unemployment rate	0.035	−0.034	−0.007	−0.066
Conf.: general unemployment rate	0.029	0.006	0.063	−0.064
Concerns about immigration	0.016	0.022	−0.030	−0.047
Attitude towards cultural diversity	0.024	−0.015	0.021	0.009
Concerns about economic development	0.058	−0.003	0.002	0.008
Concerns about COVID-19 crisis	0.015	−0.112	−0.030	0.060
News consumption	0.062	−0.053	−0.030	−0.053
Risk attitude	0.050	−0.115	−0.029	−0.027
Generalized trust	−0.027	−0.085	−0.060	0.010
Political attitude	−0.018	−0.065	−0.056	−0.034
Age group	−0.166	−0.201	−0.164	0.026
Female	0.056	0.074	0.052	−0.018
East Germany	0.068	0.034	0.014	0.052
Education	0.037	−0.020	−0.058	−0.064
Employed	0.080	0.114	0.081	−0.072
Household size	−0.083	−0.033	−0.053	−0.040
Income	−0.048	−0.046	−0.090	−0.091
Partner	0.065	0.073	0.036	−0.160
Migration Background	0.020	−0.047	0.040	−0.037
Contact with immigrants	0.022	−0.098	−0.055	0.033
Local population size	0.142	−0.042	−0.011	−0.017

Notes: Comparison of treatments and control groups in terms of normalized differences (Imbens and Rubin 2015). As a rule of thumb, normalized differences smaller than 0.25 in absolute terms indicate sufficient balance in a standard regression framework (Imbens and Wooldridge 2009).

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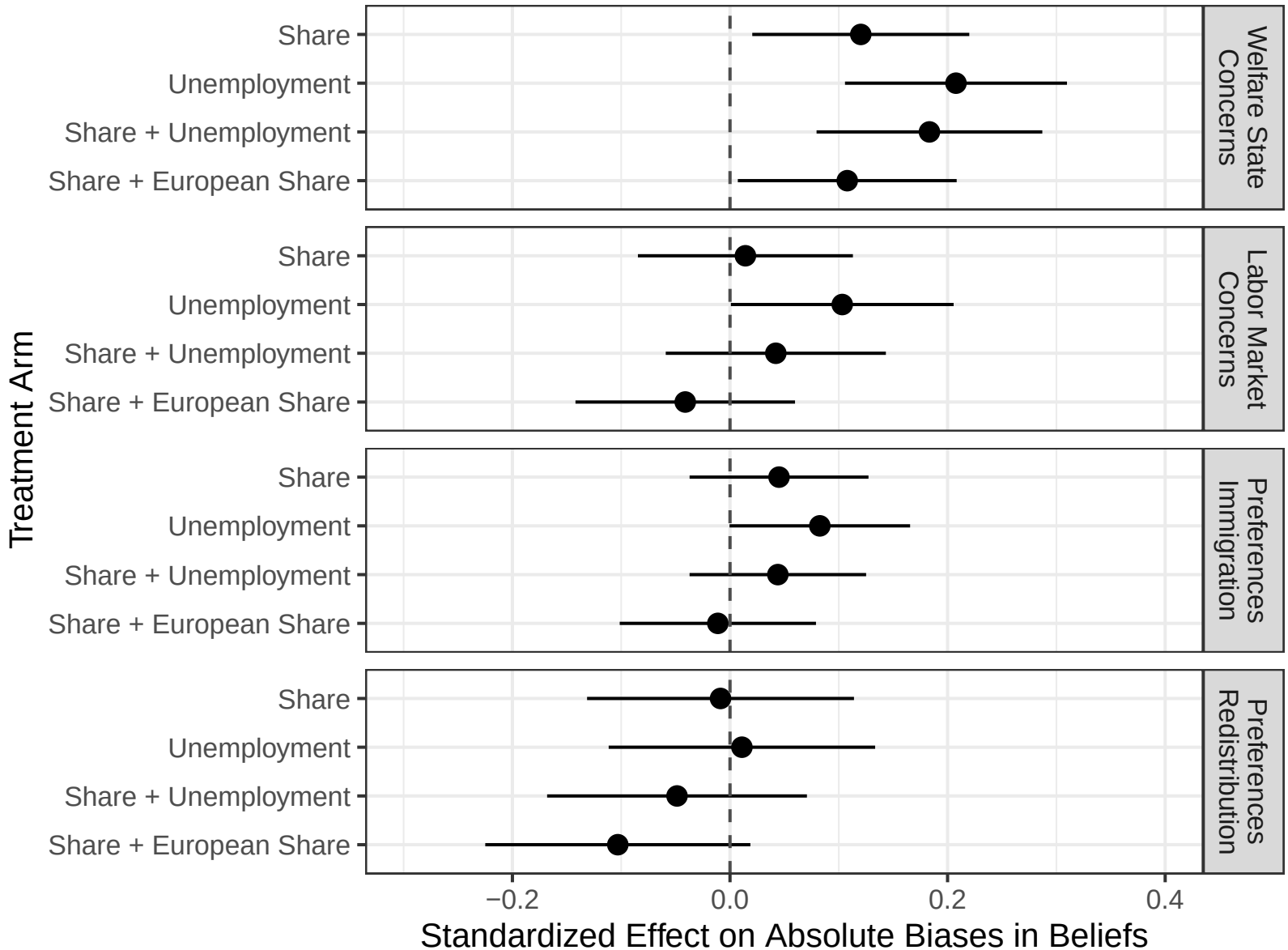
Persistence: ATE - Follow-up sample for main survey



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