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# Immigration vs. Poverty: Causal Impact on Demand for Redistribution in a Survey Experiment

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## Abstract

In a survey experiment conducted in Germany, we investigate how preferences over both the financing and the provision of redistributive policies are affected by poverty and immigration. We find that while information about poverty has no detectable impact on the progressivity of the respondents' demanded income tax schedule, information about immigration has a sizeable and significant negative impact for middle income respondents. The opposite holds for low income earners, such that effects cancel out at the aggregate level. On the provision side, middle income respondents see public education as a viable response to both poverty and immigration, while low income respondents desire less public expenditure on education due to immigration. These heterogeneities suggest that understanding the relationship between immigration, poverty and demand for redistribution and addressing its pitfalls requires in-depth investigations by population segment.

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## 1 Introduction

Immigration has played a central role in the political debate and in nearly every electoral competition taking place in Europe and North America over the past decade, overtaking inequality, poverty and redistribution as a major topic in the political discussion.<sup>1</sup> Many political races have culminated in the rise of extremist and populist parties focusing their campaigns around immigration, while political actors promoting redistribution and social welfare expenditures have been pushed to the margins, often by those segments of the population whom they would benefit most (see, for instance, Lamble (2018) and Ember (2019) for the United Kingdom and United States respectively).<sup>2,3</sup>

On one hand, such outcomes might be explained by the salience, importance and emotional significance of immigration in comparison to the political agendas proposed by other parties (Coester, 2018). On the other, they might result from the erosion of popular support for the welfare state consequent to the salient increase in social diversity driven by the recent migration inflows (Gilens, 1995; Lee and Roemer, 2006; Roemer et al., 2007; Eger, 2010; Larsen, 2011; Cappelen and Midtbø, 2016).

Redistribution remains however central to contemporary social welfare support systems precisely in connection with the current migration phenomena insofar as the latter are perceived as threatening the economic situation of vulnerable (e.g. low-skilled) natives, and at the same time in need of welfare support themselves. This paper is aimed at investigating how poverty and immigration, two important themes of the public debate, interact in shaping demand for redistributive policies in the electorate by placing the nowadays well investigated yet poorly understood immigration-redistribution nexus in relation to the closely connected one linking poverty and redistribution.

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<sup>1</sup>See for instance <https://www.politico.eu/interactive/european-elections-most-important-issues-facing-the-eu/>

<sup>2</sup>Rydgren (2018) lists Austria, Australia, Brazil, Finland, Hungary, Israel, Italy, Japan, Philippines, Poland, Slovenia, Turkey, and the United States. See also Jenkins (2018).

<sup>3</sup>Also: The Economist, “The state of the opposition: Democrats have plenty of anger, but few good ideas.” 17/05/2018.

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Some political commentators have argued that in order to win (back) support for redistribution and the welfare state, parties traditionally promoting them should avoid campaigning on immigration, where they are likely to lose against populist rightwing parties (Arzheimer, 2013), but should rather bring poverty and redistribution back into the discussion to potentially counteract the negative impact of immigration (Hillebrand, 2014).<sup>4</sup> Critics of this approach, however, point out that immigration emerges in polls as an important issue for voters, and that not addressing it in electoral campaigns in favour of less salient agendas such as inequality and poverty will fail to increase support for redistributive policies and only cost votes.<sup>5,6</sup>

In light of this debate and of the socio-economic relevance immigration and poverty are expected to have in the foreseeable future, we can expect both to keep on playing a central role in upcoming political debates. It is thus important to examine how each affects voters' support for redistributive policies and to assess their relative power in steering the electorate's preferences.<sup>7</sup>

In our analysis, we look at 'demand for redistribution' in its two components: preferences over the financing and the provision of redistributive policies. The first relates to the question of how to collect tax revenue to finance redistributive policies in terms of progressivity of the desired tax schedule: How much should different quantiles of the income distribution be taxed in order to collect a given amount of budget? The second relates to preferred public spending allocations: On which policies should a public budget of a given size be spent? The separate analysis of these two components allows to better capture individuals' nuanced preferences over an inherently complex public intervention which would remain hidden in an investigation treating redistribution as a monolithic block.

We investigate how respondents' demand for redistribution is affected by information about the extent of immigration and/or poverty in a survey experiment on a representative sample of the German population. Concretely, we randomise whether survey participants receive no information (our baseline), information on the extent of poverty (Poverty condition), on the extent of immigration (Immigration condi-

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<sup>4</sup>See also Nikolaus Kowall, "Auf welche Themen die Sozialdemokratie setzen muss", <https://kontrast.at/krise-der-spd-auf-welche-themen-die-sozialdemokratie-setzen-muss>.

<sup>5</sup>See for instance <https://www.ipsos.com/en-us/news-polls/reuters-ipsos-data-core-political-2018-07-03>

<sup>6</sup>Also: The Economist, "The search for a winning centre-left strategy: Denmark's social democrats beat the migrant bashers at their game." 09/07/2019

<sup>7</sup>The impact of immigration on the native population's support for redistribution has been the focus of an expanding literature in economics, sociology and political science (references in Section 2). To the best of our knowledge, the only previous investigation of poverty (in isolation) as a determinant of support for redistribution is that of Kuziemko et al. (2015).

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tion), or on the extent of both (Both condition) prior to stating their preferences for redistribution. In order to gain a better insight into how poverty and immigration interact, we design a further intervention adding information about the extent to which the poor and the immigrant populations overlap (Overlap condition).

By adopting this approach we follow a burgeoning stream of literature using survey experiments to investigate the causal link between socio-economic phenomena of interest on self-reported preferences for redistributive interventions (Kuziemko et al., 2015; Karadja et al., 2017; Barrera Rodriguez et al., 2017; Alesina et al., 2018a). Different from traditional survey-based investigations (Senik et al., 2009; Alesina et al., 2018b), this approach allows us to rely on systematic differences in the responses to targeted survey questions induced by exogenous variation in the emphasis placed on specific elements of interest across the sample. That is, by randomly distributing information about poverty and immigration our survey experiment can be taken to randomise the salience given to poverty and immigration by electoral and media debates. Systematic relationships observed between the experimental conditions and the answers to target survey questions can therefore be interpreted as causal effects of the information provided on preferences for redistribution.<sup>8</sup>

Concerning the impact of immigration, two opposing hypotheses have been investigated in previous literature. According to the so-called *conflict hypothesis*, reduced social cohesion due to ethnically diverse immigration would cause natives to withdraw their support for redistribution and income support programmes benefiting groups perceived as socially distant (Luttmer, 2001; Alesina et al., 2004). The *protection hypothesis* instead posits that, as (low-skilled) immigration is expected to (or perceived to) depress wages and threaten job security in high-immigration sectors, unskilled low income earners are expected to increase their demand for redistribution in response to migration inflows perceived as threatening their job security. High-skilled individuals with high incomes - net contributors to the welfare system - are expected instead to withdraw their support, as they expect their share of the welfare burden to increase (e.g. Naumann and Stoetzer (2018)).

A reading of these hypotheses themselves reveals how poverty is indeed an important (and largely neglected) component of the mechanisms under investigation. Two main arguments can be made. First, precisely because the object of these investigations is the native population's support for redistribution and social welfare programmes aimed at poverty relief, we believe that a correct assessment of how it is impacted by immigration should account for the simultaneous and potentially countervailing effect of the debate on poverty relief and income support. Such programmes are in fact widely recognised as essential as ever in light of the current socio-economic

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<sup>8</sup>Section 4 offers a more detailed discussion of the methods.

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and demographic challenges faced by contemporary Western societies (e.g. Saez and Zucman (2016); Stiglitz (2019)). Second, mounting empirical evidence shows that the native population’s general perception of immigrants is systematically biased in terms of lower educational attainment and earnings potential, and higher reliance on the welfare state (Alesina et al., 2018a). From this perspective, while increasing redistribution translates into more public expenditure benefiting economically weak natives, it implies at the same time that financial support goes to an immigrant population viewed as directly competing with low income natives.

We find that, at the aggregate level, both immigration and poverty have no detectable impact on desired tax progressivity. Disaggregating with respect to income brackets, we find that immigration has a sizeable effect on desired tax progressivity, but it goes in opposite directions for middle income and low income individuals. In particular, middle income earners desire less tax progressivity due to immigration, but this is offset by poor individuals wanting more progressive taxation.

Concerning public spending, we detect a positive impact on support for public education expenditure in the Poverty condition. Again disaggregating by income, middle income individuals want increased spending on public education in all our conditions. This increase is however counteracted by poor individuals wanting less education spending whenever information about immigration is presented. We again observe no reaction in high income respondents.

We can conclude that the salience of immigration seems to outweigh that of poverty as far as tax progressivity is concerned, but it affects poor and middle income earners differently, and in opposite directions. In addition, middle income individuals want to employ education spending in response to both immigration and poverty.

The paper is organised as follows: Section 2 summarizes related literature. Section 3 describes the survey, followed by an account of the survey experimental method and of the experimental design in Section 4. Section 5 formulates our hypotheses, Section 6 presents the results and Section 7 concludes.

## 2 Related Literature

There are several recent studies examining the effect of immigration on voting behaviour of natives in a number of European countries. Halla et al. (2017) (Austria), Edo et al. (2019) (France), Dustmann et al. (2018) (Denmark), Becker and Fetzer (2016) (UK) and Bellucci et al. (2019) (Italy) all find a positive relationship between regional immigration shares (refugees in the case of Dustmann et al. (2018), perceived or expected refugee shares in Bellucci et al. (2019)) and voting for (extreme) right-wing parties with strong anti-immigration positions. On the other hand, Steinmayr

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(2016) shows that direct exposure to refugees (due to temporary refugee accommodations being located in one’s home village) lessens this effect.<sup>9</sup>

Another branch of the literature examines the effect of immigration shares on redistributive policies directly. Recent (panel) survey evidence from Dahlberg et al. (2012) (Denmark), Schmidt-Catran and Spies (2016) (Germany) and Alesina et al. (2018b) (16 Western European countries) points to a negative correlation between regional immigration shares and support for redistributive policies.<sup>10</sup> In closely connected research, ethnic diversity is linked to demand for redistribution and public goods provision (Alesina and La Ferrara (2005) offer an overview): Luttmer (2001) finds that ethnic diversity lowers desired welfare spending in US neighbourhoods, and Alesina et al. (2001) find that it lowers the size of public transfers. In a theoretical model, Dewan and Wolton (2019) show that, in combination with labour market discrimination against minorities, the majority population will vote for less redistribution.

Attitudes towards immigrants are investigated in connection with individuals’ economic concerns. Recent examples are Naumann et al. (2018), who find that in Europe rich natives prefer highly skilled over low-skilled migration more than low-income respondents do, but that highly skilled migrants are preferred over low-skilled migrants irrespective of natives’ skill levels. On the other hand, Hainmueller and Hiscox (2010) and Hainmueller and Hopkins (2015) find that in the US natives do not differ in their acceptance of immigrants depending on income or skill level.

Our paper is also related to the growing literature using survey and field experiments examining the determinants of demand for redistribution. Alesina et al. (2018a) find that priming respondents about immigration lowers support for redistribution. Naumann and Stoetzer (2018) find that it leads to reduced support for redistributive policies among the well-off and among people with low labour market competition. Kuziemko et al. (2015) examine how information about inequality and poverty affects redistributive preferences and find that it increases people’s concerns about justice and the economy, but does not translate into higher demand for (gov-

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<sup>9</sup>While these studies are very insightful, we cannot use them to directly assess the effect of immigration on natives’ demand for redistribution. First, the examined anti-immigration parties tend to differ in terms of their position on redistributive policies (and often even do not have a clear position on this issue). Second, as we mention in the introduction, parties offer a multi-dimensional policy platform of which redistribution is only one part. It might well be that voters simply value anti-immigration policies more than redistribution and thus vote for the far-right, even though they would oppose their policy proposals concerning redistribution.

<sup>10</sup>However, in the case of Schmidt-Catran and Spies (2016), Auspurg et al. (2019) show that, once taking into account different time trends for East and West Germany, the relationship no longer holds.

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ernment) redistribution. In a field experiment, Sands (2017) finds that exposure to poverty leads to a reduction of support for a millionaire tax among the rich. Fong (2001) examines data from the Gallup Poll Social Audit Survey and finds that people’s beliefs about the causes of poverty determines how they want to react to it: They demand more redistribution if they believe poverty originates from bad luck than if they believe it is due to lack of effort.

## 3 Our survey

### 3.1 Questionnaire

We closely followed and adapted the questionnaire designed by Alesina et al. (2018a) in redacting our own. The survey was conducted online and administered by the survey company Respondi<sup>11</sup> to a representative sample of the German population (N = 4000). It consisted of 32 questions in total.<sup>12</sup> These included (in order): 5 questions on the respondent’s demographics (gender, age, marital status, household composition and income bracket), 2 target questions eliciting the respondents’ preferred tax schedule and allocation of public expenditures, 9 questions eliciting attitudes towards redistribution, government intervention and poverty (preferred tax rate on income quantiles, preferred allocation of the public budget, attitude towards inequality, power of the government to tackle inequality, preferred degree of government intervention against inequality, attitudes towards increasing the public budget for i) schools in poor districts, ii) social housing, iii) social security benefits for the poor, trust in the government, luck versus effort as determinant of economic success, attitudes towards poverty in Germany), 10 further background questions (educational attainment, employment status, high immigration professional sector, country of birth, parents born in Germany, German state and region of residence, preferred media, positioning on the political spectrum, voting behaviour, political party preference), and 6 subjective beliefs questions (size of the immigrant population, its origins within or outside of the European Union, size of the poor population, size

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<sup>11</sup><https://www.respondi.com/EN/>

<sup>12</sup>The online questionnaire began with a paragraph summarising the funding sources, the general purpose of the survey, the affiliation of the researchers (who were kept anonymous) with the Max Planck Society, and the respondents’ rights in terms of data protection regulations. At the end of the paragraph, the respondent had to approve a declaration of consent in order to participate in the study. See Appendix D for the full questionnaire (translated to English). See [https://taxmpg.eu.qualtrics.com/jfe/form/SV\\_eKU8tuWb3OqHBVH](https://taxmpg.eu.qualtrics.com/jfe/form/SV_eKU8tuWb3OqHBVH) for the original German online survey.



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of the overlap between the poor and the immigrant population, its origins within or outside of the European Union, and perceived job security).<sup>13</sup>

The first set of 5 demographic questions were elicited early as they formed the basis upon which representativeness of the final sample was ensured. Immediately after these questions, the questionnaire randomised and displayed short infographic videos containing our treatment information (more detail to follow in Section 4.1). Next, the respondents answered our target questions. Our hypotheses rest on the assumption that immediate previous exposure to different information conditions will cause different responses to our target questions. We then elicited the respondents' attitudes, and further background questions allowing us to split the analysis across relevant socio-demographic groups and thus further delve into eventual treatment heterogeneities. Finally, the beliefs we elicited at the end of the questionnaire serve two main purposes. First, we gain an insight into how such beliefs are distributed in the general population by analysing those collected from the untreated subsample. Second, we are able to gauge the effectiveness of our information treatments by comparing the distribution collected from the untreated with those collected from the treated respondents. The latter is a priori expected to be more concentrated around the true value than the former.

### 3.2 Measuring outcomes

To investigate the effect of our conditions on support for redistribution, we target both the financing and the supply of redistribution policies. We elicit respondents' preferences over how to finance the collection of a public budget of a given size as in Alesina et al. (2018a). We ask the respondents to allocate the tax burden (average tax rates) to key quantiles of the income distribution: the bottom 50%, the next 40%, the following 9% and the top 1% via a series of sliders (see Figure D2 in Appendix D). A background programme multiplied the chosen tax rates by the total income earned by each quantile and returned the public revenue raised by the respondent in real-time. The goal for each respondent was to raise a public budget of a fixed size, roughly corresponding to the revenue collected by the German government via income taxes in 2017. The stated preferred tax rates were then used to construct an index of desired tax progressivity. This variable consists of the unweighted sum of the desired tax rates on the top 1% and top 10%, minus the desired tax rates on the next 40% and the bottom 50%.

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<sup>13</sup>The choice of eliciting perceived job security at the very end of the survey is consequent to our belief that an early elicitation would have strongly interacted with our information conditions and biased our results.

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Next, we elicit the respondents’ preferred allocation of a public budget of a fixed size to different public policies and public goods, again as in Alesina et al. (2018a). We asked each individual to state what proportion of the budget they wished to allocate to *public infrastructure development*, *domestic security*, *public education*, *public healthcare*, *public social insurance*, *public unemployment insurance* and *public housing*. We constrained the sum of all stated shares to sum up to 100 (see Figure D3 in Appendix D).

### 3.3 Sample

We surveyed 4000 individuals from a representative sample of the German adult population. Random assignment with equal probability to the five information conditions yields a target sample size per experimental condition of 800 individuals.<sup>14</sup> Effective sample sizes per condition and sample balance tests are reported in Table A1 in Appendix A.

## 4 Experimental method and design

Experimental survey studies (e.g. Alesina et al. (2018a); Naumann and Stoetzer (2018); Kuziemko et al. (2015)) have emerged as an important investigation strategy to overcome the endogeneities inherent in responses to traditional surveys (Cappelen and Midtbø, 2016). Survey experiments allow for the identification of causal relationships between information provision conditions and subjects’ responses to target questions within the survey. Specifically, our respondents are first randomly assigned to one of five groups of roughly equal size. Each group is then provided (if at all) with information about the extent of immigration, poverty, or both, in Germany. In other words, each group is randomly assigned to one of what we refer to as our *information conditions*. After having received the information, all respondents are asked about their preferences for specific redistributive policy interventions the state could enact, their attitudes towards government intervention and towards poverty. Because the information conditions were randomly administered over the whole sample, any systematic relationship uncovered between our information conditions and the respondents’ preferences for specific policy measures can thus be interpreted as the causal effect of the information provided on the respondents’ policy preferences.

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<sup>14</sup>With such sample size we are able to detect differences of size  $d=0.15$  at  $\alpha=0.05$  with a power  $p>0.8$  in pairwise experimental condition comparisons of the means of summary indices of desired tax progressivity using the Neutral condition as a baseline, scaled to unit standard deviations.

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## 4.1 The information conditions

Respondents were shown a short infographic video presenting the information prescribed by the information condition they were randomly assigned to.<sup>15</sup> Specifically, the information respondents received in each condition was as follows.<sup>16</sup>

**Neutral condition** Respondents in the Neutral condition were not provided any information about neither poverty nor immigration. Instead, the video only reminded them of the total size of the resident population in Germany (82 Millions).

**Poverty condition** Respondents in the Poverty Condition were reminded of the total size of the resident population in Germany, and in addition were informed about the size of the resident population *living on an income falling below the poverty line* (13.7 Millions). The poverty line was transparently defined as an income equalling 60% of median income.

**Immigration condition** Respondents in the Immigration Condition were reminded of the total size of the resident population in Germany, and in addition were informed about the size of the resident population that was *born abroad* (13.2 Millions).<sup>17</sup>

**Both condition** Respondents in the Both condition were reminded of the total size of the resident population in Germany. In addition, they were informed about both the size of the resident population living on an income falling below the poverty line, *and* about the size of the resident population that was born abroad. We control for order of presentation effects by randomising the placement (left or right on screen) in which the information about poverty and about immigration was presented.

**Overlap condition** Finally, respondents in the Overlap condition were reminded of the total size of the resident population in Germany, they were informed about

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<sup>15</sup>Screenshots of the information provided and links to the information videos can be found in Appendix C. Each respondent viewed only one of the videos.

<sup>16</sup>Sources: Statistisches Bundesamt (see [https://www.destatis.de/DE/Presse/Pressemitteilungen/2018/08/PD18\\_282\\_12511.html](https://www.destatis.de/DE/Presse/Pressemitteilungen/2018/08/PD18_282_12511.html)), and Poverty Report 2018 (Deutscher Paritätischer Wohlfahrtsverband, see [https://www.der-paritaetische.de/fileadmin/user\\_upload/Schwerpunkte/Armutsbericht/doc/2018\\_armutsbericht.pdf](https://www.der-paritaetische.de/fileadmin/user_upload/Schwerpunkte/Armutsbericht/doc/2018_armutsbericht.pdf))

<sup>17</sup>Notice that a strength of our information conditions is that we are able to provide virtually identical numbers for the Poverty and for the Immigration conditions, increasing their comparability and allowing us to rule out that any effects observed might be due to differences in the sizes of the poor and immigrant populations.

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both the size of the resident population living on an income falling below the poverty line, *and* about the size of the resident population that was born abroad. In addition, they received information about the size of the resident population which was both *born abroad and lives on an income below the poverty line* (3.2 Millions). We control for order of presentation effects by randomising the placement in which the information about poverty and about immigration was presented. Information about the overlap was presented at the centre of the screen.

## 5 Hypotheses

Our interventions operate via two channels: First, by mentioning poverty and/or immigration, we (temporarily) increase the salience/awareness of those issues and this might suffice to affect the way people think about redistribution later on, irrespective of the actual information (in terms of numbers) that is delivered via our intervention. Put simply, if poverty and immigration matter for people's demand for redistribution, then by making those issues salient right before asking our questions of interest, we emphasize the effect that these issues have on people's support for redistribution (compared to the neutral condition). Second, our interventions also deliver factual information about poverty and immigration, respectively. The effect of this information on people's demand for redistribution will depend on their prior beliefs. In theory, increasing awareness and providing factual information could have opposite effects.<sup>18</sup> Recent studies, such as Alesina et al. (2018a) and Naumann and Stoetzer (2018), have demonstrated that awareness and not information (resp. correcting biased beliefs) matters in driving individuals' responses. In formulating our hypotheses about how our treatments will affect support for redistributive policies, we take stock of these previous results and assume that awareness/salience outweighs the information effect.

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<sup>18</sup>For instance, somebody who is concerned about immigration and thus wants less redistribution might learn in our treatment that the extent of immigration is far less than what she believed. Then the treatment would have two opposing effects on her support for redistribution. On the one hand, our treatment increases the salience of the immigration issue in her considerations, which would lower her demand for redistribution. On the other hand, the information part of our treatment would correct her biased beliefs about the extent of immigration and thus lower her concerns and make her more in favour of redistribution. The observed reaction and resulting support for redistribution would then be a combination of those two effects and its direction would depend on the relative strength of those two effects.

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## 5.1 Poverty condition

Our first pair of hypotheses corresponds to our first condition, where we inform subjects about the number of people living below the poverty line. Depending on which factors enter people's utility, there are different effects that information about poverty is expected to have on people's utility:

**Hypothesis 1** (The effect of poverty).

- a. Support for redistribution is higher in the Poverty condition compared to the Neutral condition.*
- b. Support for redistribution is the same in the Poverty condition compared to the Neutral condition for people with low incomes, while it is lower in the Poverty condition compared to the Neutral condition for people with high incomes.*

According to Hypothesis 1a, in addition to their own income, people also care about poverty (e.g. if they have a Rawlsian social welfare function). Reminding them or making them aware of poverty makes them desire more redistribution to ameliorate poverty, even if this implies that they have to sacrifice a little bit of their own income in case they are net contributors to the welfare system. Hypothesis 1b corresponds to the case where people care mainly about their own income. In that case, reminding poor people about poverty wouldn't have an effect: Irrespective of the overall extent of poverty, they are in favour of redistribution, because they are net recipients of the welfare system. Note that our treatment doesn't inform them about the extent of inequality, which would mean they would also get information about how much they could gain from redistribution from rich to poor. Just informing them about poverty without telling them 'how rich the rich are' shouldn't change the poor's support for redistribution much if they only care about their own income. Conversely, rich people should desire less redistribution as the poverty condition makes them aware of the fact that they are net contributors to the welfare system.

## 5.2 Immigration condition

Immigration is generally accompanied by an increase in diversity and ethnic heterogeneity, which tends to reduce solidarity (Alesina and Glaeser (2004), Luttmer (2001)). We might thus expect that immigration lowers support for redistribution among natives. On the other hand, it makes poor people or people working in high-immigration sectors aware of the fact that they might be in greater need of the welfare state: The influx of cheap labour exerts downward pressure on their wages

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and threatens their jobs, and should thus increase their support for redistribution. In contrast, rich people realize that they will be net contributors to the welfare state due to (low-skilled) immigration and should want less redistribution as a result. The above reasoning leads us to the formation of the following two opposing hypotheses:

**Hypothesis 2** (The effect of immigration).

- a. Conflict Hypothesis: Support for redistribution is lower in the Immigration condition compared to the Neutral condition.*
- b. Protection/Economic Voting Hypothesis: Support for redistribution is higher in the Immigration condition compared to the Neutral condition for poor people or people in high-immigration sectors, and lower for rich people.*

### 5.3 Both and Overlap conditions

We do not formulate any specific hypotheses concerning the effect of the Both condition and the Overlap condition. The effect of these two treatments, in which we present information on both poverty and immigration, will be a combination of the individual effects, and will also show us which of these two individual effects dominates when the two bits of information are presented jointly. Given that the Both condition does not provide information about the intersection between poverty and immigration, the effects of conditions Both and Overlap are expected to differ if beliefs about the overlap are different in the two treatment groups.

## 6 Experimental evidence on poverty, immigration and demand for redistribution

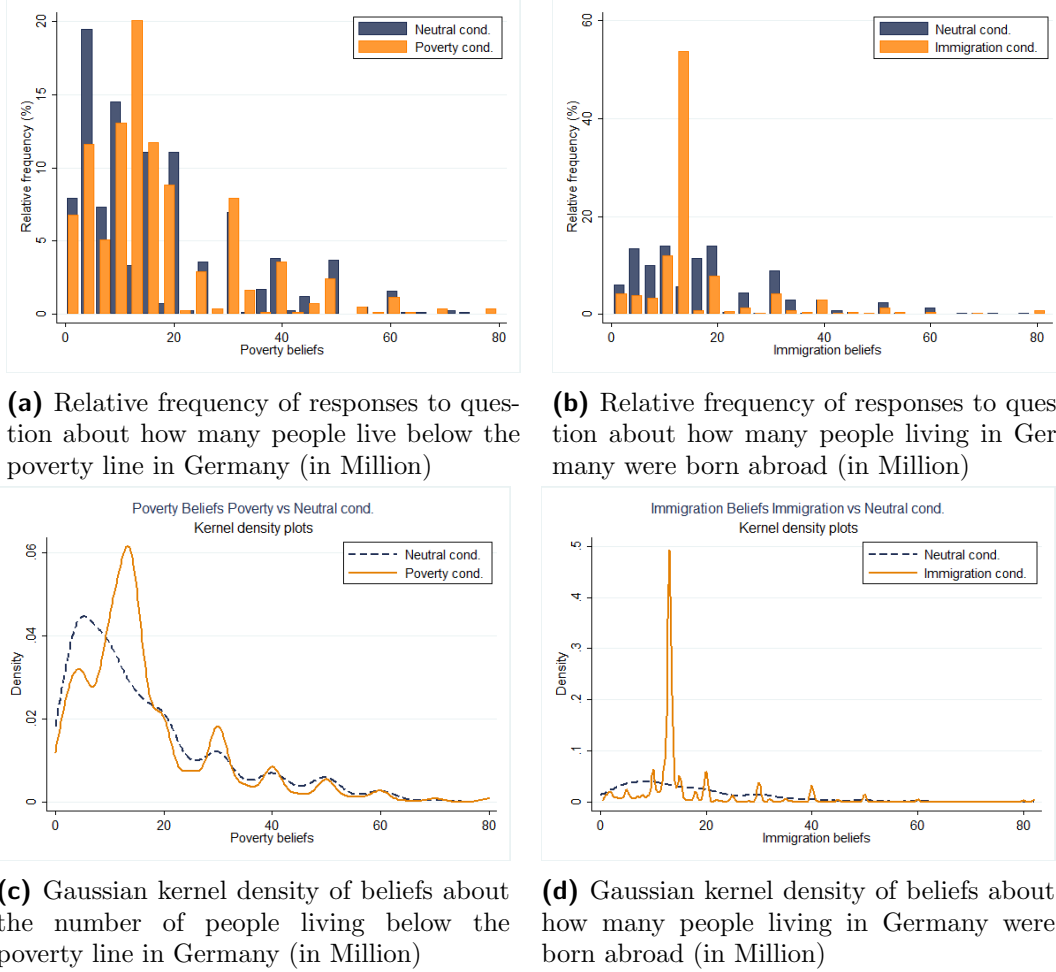
As mentioned in the previous section, our interventions operate via two channels: Increasing awareness/salience and providing factual information. In formulating our hypotheses we assume that awareness/salience outweighs the information effect. Before proceeding with our main results, it is necessary to check whether we successfully managed to expose our respondents to the information conveyed by our conditions (i.e. that respondents paid attention to the information provided), or whether they were simply “noise” that was ignored. That the information was indeed acquired by the respondents is the precondition for it to have had the expected effects. The next section presents evidence that the information conditions were successful by

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showing that post-experimental subjective beliefs about poverty and immigration in Germany are systematically shifted towards the correct values among the treated individuals compared to the untreated.

## 6.1 Manipulation success

Figures 1a and 1b compare the relative distributions of beliefs about poverty and immigration in the Poverty and Immigration conditions (respectively) with those of beliefs elicited in the Neutral condition. Figures 1c and 1d perform a similar exercise by applying a Gaussian kernel density smoothing function to the belief data. From Figures 1a and 1c, we immediately see that the in the Neutral condition, individuals systematically underestimate the number of individuals living below the poverty line. A majority in the control group believes that at most five million people live below the poverty line in Germany. The distribution of beliefs of those who received the poverty information treatment is instead shifted more to the right with a peak at roughly 14 million. This matches directly with our treatment information that 13.7 million people in Germany live below the poverty line.



**Figure 1:** Beliefs about the number of poor and immigrants in the Poverty and Immigration conditions compared to those in the Neutral condition

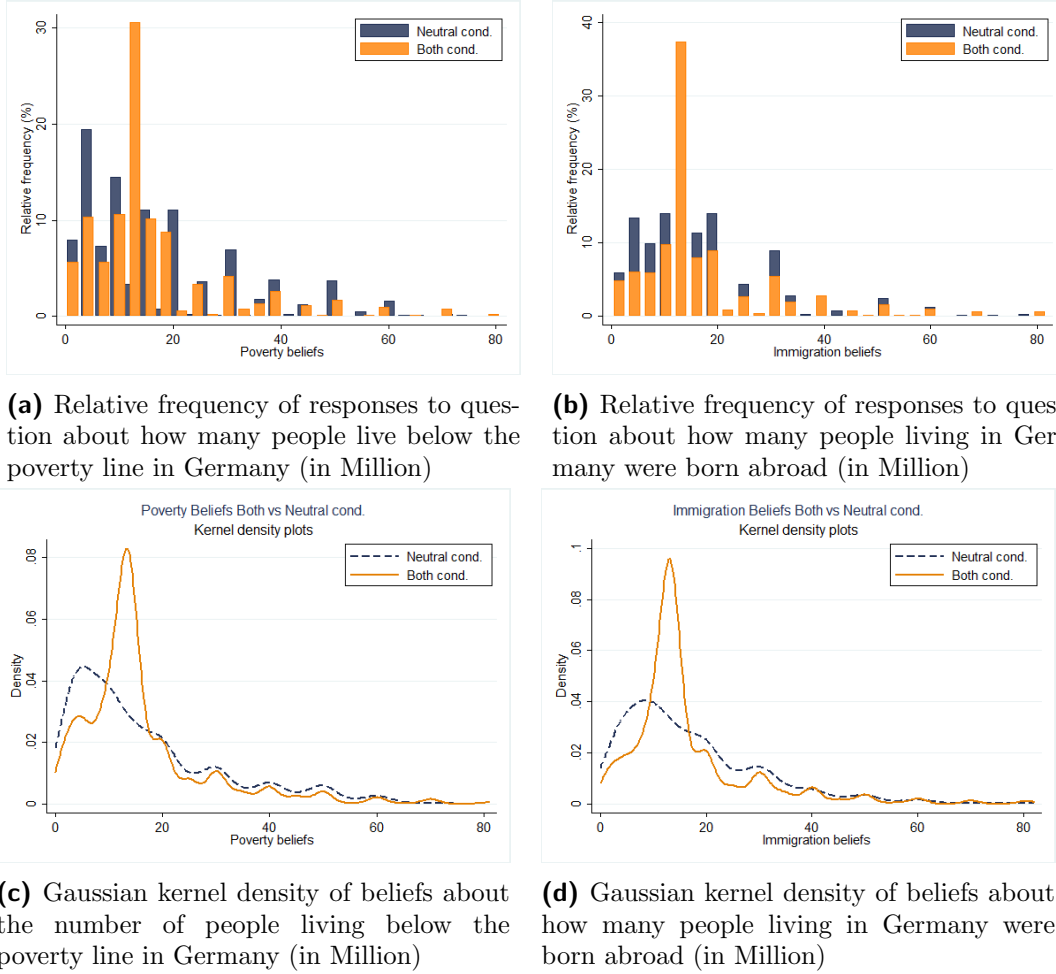
For the Immigration condition, the difference in the distribution of beliefs between treatment and control group is even starker. From Figures 1b and 1d, in the Immigration condition, an absolute majority of subjects believes that currently around 13 million immigrants (foreign-borns) are living in Germany. This directly matches the number provided in our information treatment (13.2 million). It is also worth noting that respondents in the control group do not systematically over- or underestimate the number of immigrants: the relative frequency of beliefs in the control group is higher both above and below 13 million than those in the Immigration condition. We can thus conjecture that, contrary to the Poverty condition, our immigration information treatment did not correct any systematic biases. Rather,



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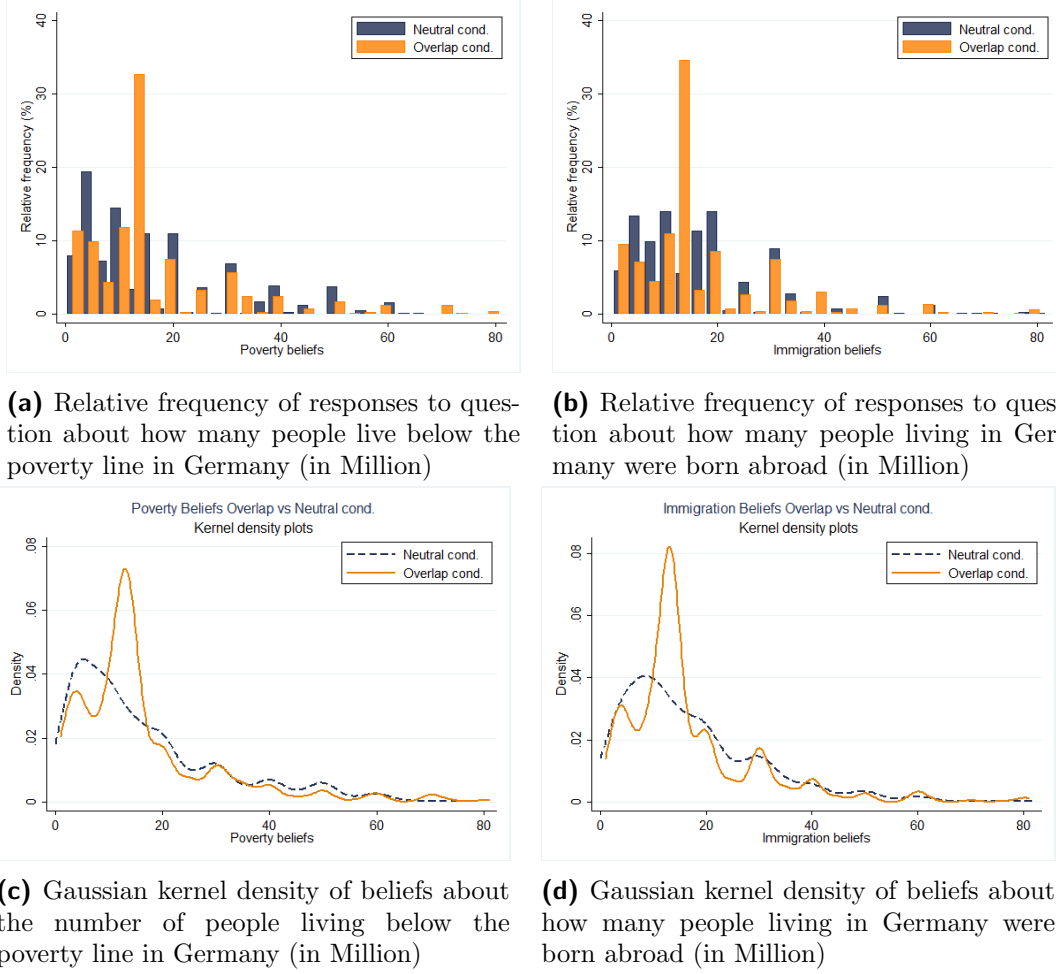
it served the purpose of giving respondents a more precise idea of the exact number of immigrants, and thereby correcting beliefs, upwards for some and downwards for others, resulting in the observed spike at the correct value. It is furthermore remarkable that the Immigration condition seems to have worked ‘better’ in correcting beliefs than the Poverty condition - people who received the relevant information get the number correct to a much larger extent, and there is a huge peak in the kernel density at the correct number. We cannot decisively say why this is the case, but perhaps this is a sign that immigration is a more salient topic than poverty, and thus people pay a lot of attention when it comes to immigration, whereas they don’t care that much about the number of poor living in the country.

Beliefs in the Both and in the Overlap conditions yield similar pictures. Respondents in these conditions updated their beliefs about both poverty and immigration. Figure 2 plots beliefs about the number of poor and the number of immigrants reported by the respondents in the Both condition in comparison with those reported in the Neutral condition. Figures 2a and 2c report respectively the relative frequencies and the kernel densities of beliefs about poverty. Figures 2b and 2d report analogously on beliefs about immigration. As can be observed in Figure 2, a majority of the respondents updated their beliefs about both the number of poor and the number of immigrants in the expected direction.



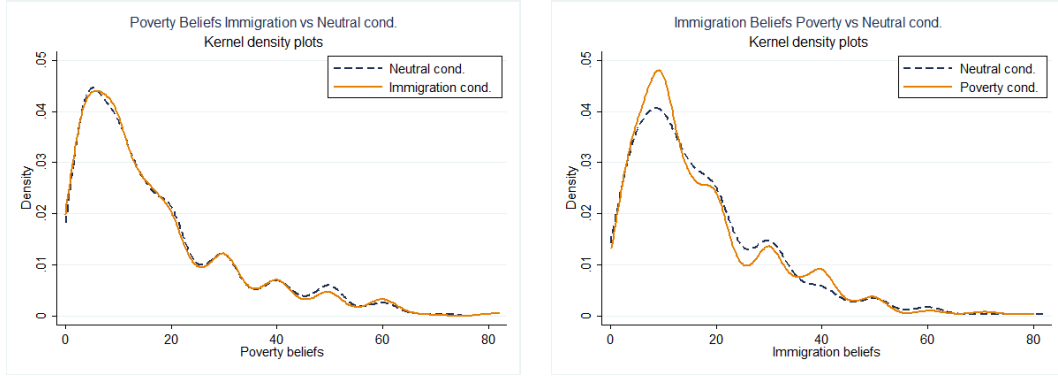
**Figure 2:** Beliefs about the number of poor and immigrants in the Both condition compared to those in the Neutral condition

Analogous conclusions can be drawn by observing Figure 3, which focuses on the beliefs about poverty and immigration reported in the Overlap condition.



**Figure 3:** Beliefs about the number of poor and immigrants in the Overlap condition compared to those in the Neutral condition

As a placebo test, we can check whether the poverty treatment had an effect on beliefs about immigration and vice versa. As expected, the kernel densities of beliefs that were not targeted by our information treatments and the beliefs reported by the control group almost perfectly overlap in Figure 4.



**(a)** Gaussian kernel density of beliefs about the number of people living below the poverty line (in Million) in the Immigration condition.

**(b)** Gaussian kernel density of beliefs about the number of immigrant people living in Germany (in Million) in the Poverty condition.

**Figure 4:** Placebo comparison of untargted beliefs in the Poverty and Immigration conditions with the untreated beliefs in the Neutral condition.

The graphical results so far reported are confirmed by Probit regressions of a binary variable indicating whether a respondent's belief lies within one, three or five millions (plus or minus) of the correct number. The results are reported in Table A2 in Appendix A. We can see clearly that beliefs about poverty are significantly more likely to be correct in all conditions except for the Immigration condition (which is the only one not allowing to update these beliefs), and vice versa for beliefs about immigration, which are affected (and corrected) in all conditions except for the Poverty condition. Together with the graphical results, we thus have very strong evidence that our information conditions were paid attention to and had a substantial effect on the respondents' beliefs.

## 6.2 Treatment effects on demand for redistribution

We will now present results from simple OLS regressions of our measures of demand for redistributive public revenue collection and redistributive public spending on the information conditions and a vector of individual and regional covariates. We will first review our main findings over the aggregate sample, and briefly discuss how they relate to the first part of the hypotheses formulated above (Hypotheses 1a and 2a). Then we will proceed to investigating income-heterogeneous treatment effects and how they relate to the second part of our hypotheses (Hypotheses 1b and 2b). In Appendix B.5 we investigate whether further heterogeneities can be

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uncovered over relevant population segments, namely educational attainment and political orientation.

We estimate the following OLS regression model:

$$y_i = \alpha_i + \beta c_i + \gamma'_1 X_i + \gamma'_2 W_i + \gamma_3 Land_i + \varepsilon_i \quad , \quad (1)$$

where  $y_i$  denotes the (standardised) outcome variable of interest,  $c$  a categorical variable uniquely identifying each of our conditions with the Neutral condition as a baseline,  $X_i$  and  $W_i$  are vectors respectively containing respondent  $i$ 's sociodemographic and the background characteristics of  $i$ 's region ("Landkreis") of residence.  $\varepsilon_i$  a random error component. Individual socio-demographic background variables include: the respondent's household income, whether the respondent holds a college degree, the respondent's (self-) placement in the political spectrum with 1 indicating extreme left and 10 indicating extreme right, an indicator taking value 1 if the respondent works or has ever worked in a sector employing a high number of unskilled immigrant labour.<sup>19</sup> Further, not included in the output but always controlled for are the respondent's age (6 classes: 18-25, 26-35, 36-45, 46-55, 56-65, 66+), gender, marital status (single/in couple), voting behaviour in previous election, social media consumption, and whether the respondent was born in Germany. Regional background variables include region GDP and the share of resident immigrants. The variable *Land* captures the fixed effects of respondent  $i$ 's German Bundesland of residence. Our coefficient of interest is  $\beta$ , capturing the fixed effects of having received each of our information conditions. Standard errors are clustered at the regional (Landkreis) level.

### 6.2.1 Progressivity of the desired tax schedule

Our first focus of interest is on the effect of poverty and of immigration on demand for redistribution as measured by the degree of progressivity of the tax schedule with which the respondents want to collect a pre-specified government budget. As detailed above, we elicit desired average tax rates on key quantiles of the income distribution to obtain a measure of respondents' desired tax progressivity. Specifically, we construct an index as the (unweighted) sum of the desired tax rates on the top 1% (denoted  $t_{(100)}$ ) and next 9% ( $t_{(91-99)}$ ), minus the desired tax rates on the next 40% ( $t_{(51-90)}$ ) and the bottom 50% ( $t_{(0-50)}$ ). Our index is therefore given by

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<sup>19</sup>We elicited this in the survey via asking for sectors in which respondents have worked, and then in the regressions classifying them as "low-skilled high immigration sectors" (1) or not (0).

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$\tau = t_{(100)} + t_{(91-99)} - t_{(51-90)} - t_{(0-50)}$ .<sup>20,21</sup> Table 1 displays the result of an OLS regression of desired tax progressivity on condition indicators (the Neutral condition serving as a baseline) and on individual and regional controls. Because the dependent variable has been standardised into z-scores, the results can be interpreted in terms of the unit standard deviation of the control group.

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<sup>20</sup>See Appendix B.3 for robustness checks of our results using different versions of this index. Our findings are confirmed by such analyses.

<sup>21</sup>We will for clarity avoid to overburden the reader by referring to the elicited tax rates and constructed indices in words, and confine the use of mathematical notation to tables and results.

VARIABLES	(1)	(2)	(3)	(4)
	Desired tax progressivity: $\tau$			
<u>Neutral condition: baseline</u>				
Poverty condition	-0.021 (0.050)	-0.012 (0.049)	-0.011 (0.049)	-0.014 (0.049)
Immigration condition	-0.057 (0.050)	-0.056 (0.049)	-0.057 (0.049)	-0.062 (0.048)
Both condition	-0.021 (0.045)	-0.015 (0.045)	-0.014 (0.045)	-0.020 (0.045)
Overlap condition	-0.102** (0.050)	-0.093* (0.049)	-0.094* (0.048)	-0.097** (0.049)
Household income	1.13e-05 (1.62e-05)	-6.20e-06 (1.71e-05)	-6.62e-07 (1.71e-05)	-8.08e-07 (1.72e-05)
College degree	0.012 (0.038)	0.045 (0.039)	0.048 (0.039)	0.054 (0.039)
Political placement	-0.056*** (0.011)	-0.055*** (0.011)	-0.055*** (0.011)	-0.054*** (0.011)
High immigration sector	-0.049 (0.032)	-0.070** (0.033)	-0.069** (0.033)	-0.074** (0.033)
Landkreis GDP			-2.21e-06** (9.54e-07)	-1.40e-06 (1.04e-06)
Landkreis immigrant share			-0.008 (0.380)	0.026 (0.374)
Constant	0.290*** (0.0749)	-0.054 (0.146)	0.035 (0.149)	0.011 (0.164)
Individual controls 1	✓	✓	✓	✓
Individual controls 2		✓	✓	✓
Regional controls			✓	✓
Land fixed eff.				✓
Observations	3,952	3,952	3,952	3,952
R-squared	0.011	0.030	0.031	0.035

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 1:** OLS regression of desired tax progressivity. The variable Political placement takes value 1 for extreme left wing and 10 for extreme right wing. Omitted individual controls include: age, gender, marital status, voting behaviour in previous election, social media consumption, and whether the respondent was born in Germany.

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From Table 1, we can see that information about poverty does not appear to have any detectable effect on respondents desired tax progressivity. All coefficients throughout columns 1 to 4 are small in magnitude and not significant at conventional levels. This result is robust to a variety of specifications and robustness tests, and offers evidence against Hypothesis 1a:

**Result 1.** *Information about poverty has no detectable impact on average demand for redistributive taxation.*

Similarly, we detect no effect of information about immigration on the average respondent’s desired tax progressivity at aggregate level. This finding offers evidence to discredit Hypothesis 2a as well:

**Result 2.** *Information about immigration does not affect respondents’ average demand for redistributive taxation.*

The Both condition, in which information about poverty and about immigration is presented simultaneously, also appears to induce no change in respondents’ desired tax progressivity. This observation is not surprising in the light of the absence of an effect of the two pieces of information when presented separately. More surprising is that we detect a systematic negative effect of the Overlap condition, in which we present both pieces of information simultaneously together with information about the size of the overlap between the immigrants and the poor. The estimated coefficient is large (roughly 10% of the baseline group’s standard deviation) and significant at the 5% and 10% levels in columns 1 and 4, and 2 and 3 respectively. Interpreting this finding is hard in light of the absence of an impact of any of the other information conditions. It is plausible on one hand that the additional information about the overlap might help respondents resolve the confusion generated by the simultaneous but de-contextualised presentation of the two pieces of information as in the Both condition. Conversely, by allowing them to place the two pieces of information in relation to each other by informing them of their size of their overlap, respondents might be able to better use the information they receive and hence react accordingly. On the other hand, it is plausible that while respondents do not systematically react to information about poverty and about immigration, they might negatively react to information about the size of the group of immigrant poor. It is not possible to discriminate between these two arguments or to further clarify on this result at this point, and we’ll postpone further discussion to a later stage following the presentation of the disaggregate analysis.

Turning to investigating how Results 1 and 2 vary across the population, we find



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considerable heterogeneity with respect to income.<sup>22</sup> To ease the interpretation, we will present our results as split sample estimations of model (1) over income segments (three levels: people below the poverty line (the bottom 16%), from the poverty line up to the top 16% percent, and the top 16%).<sup>23</sup> Another way to perform such analysis is that of estimating an alternative model over the whole sample interacting our information condition indicators with income segment indicators.<sup>24</sup> The results from these alternative analyses confirm the findings reported here and are presented in Table B1 in Appendix B.

Table 2 displays the result of OLS regressions of our measure of desired tax progressivity for sample splits along the income dimension as detailed above.

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<sup>22</sup>We explore further heterogeneities along the education and political orientation dimensions in Tables B21, B22 and B23 in Appendix B.5. Such analyses do not add any further insights to those reported here, and are hence relegated to the Appendix.

<sup>23</sup>We consider the poverty line a reasonable cutoff for poverty and thus use the top 16% as a cutoff for the rich, in order to get equally sized groups for high and low income. We explore different income splits in Appendix B.2.

<sup>24</sup>Note that this method is similar to the split-sample analysis, but not equivalent, because we do not interact the control variables.

	(1)	(2)	(3)
	Desired tax progressivity: $\tau$		
VARIABLES	Low income	Middle income	High income
<u>Neutral condition: baseline</u>			
Poverty condition	0.091 (0.128)	-0.020 (0.062)	-0.086 (0.102)
Immigration condition	0.224* (0.121)	-0.137** (0.064)	-0.0871 (0.095)
Both condition	0.034 (0.128)	-0.053 (0.058)	0.046 (0.106)
Overlap condition	-0.099 (0.137)	-0.073 (0.064)	-0.155 (0.121)
Constant	0.0381 (0.489)	-0.108 (0.228)	0.290 (0.359)
Individual controls	✓	✓	✓
Regional controls	✓	✓	✓
Land fixed eff.	✓	✓	✓
Observations	787	2,456	709
R-squared	0.066	0.039	0.084

Robust standard errors in parentheses

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

**Table 2:** OLS regression of desired tax progressivity. Individual controls include: college education, political placement, employment in high-immigration sectors, age, gender, marital status, voting behaviour in previous election, social media consumption, and whether the respondent was born in Germany. Regional controls include GDP and the share of immigrant population.

We observe that information about poverty still fails to exert any detectable effect on each of our sample splits: the estimated coefficients remain small and insignificant. On the other hand, we uncover non-linear effects of information about immigration. First of all, middle income earners' demand a less progressive tax schedule upon receiving information about immigration compared to the baseline group: the coefficient is large (roughly 14% of the baseline group's standard deviation) and significant at the 10% level.<sup>25</sup> Conversely, low income individuals increase their desired tax progressivity. The coefficient is large (roughly 22% of the baseline

<sup>25</sup>Notice that the significance of these result might suffer from the rather drastic reduction of the estimation sample due to the income split. The interacted model in Table B1 in Appendix B

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group’s standard deviation) and significant at the 5% level. High income individuals on the other hand do not exhibit any systematic reaction to information about immigration. This analysis reveals that low and middle income individuals are affected in opposite directions. In the light of these results, it is hence not surprising that we cannot detect any effect of immigration on desired tax progressivity at the aggregate level, as the two effects on middle and low income individuals cancel each other out.

**Result 3.** *Low income (Middle income) respondents increase (decrease) their demand for redistributive taxation, while high income respondents remain unaffected in response to the Immigration information condition.*

Poor individuals react to immigration by demanding higher taxes on the rich. On the other hand, middle class respondents react by decreasing their demand for redistributive taxation after receiving information on immigration. Both these findings can be regarded as evidence in support of Hypothesis 2b. However, rich respondents do not exhibit behaviour consistent with economic voting, as their support for redistributive taxation is on average not affected by our Immigration condition. Hypothesis 2b remains thus only partially supported by our data.

Looking at income-specific effects in the Both and Overlap conditions, we confirm what we observe in the corresponding analysis over the whole sample, with an important difference. Both the Overlap and the Both condition do not have a significant effect on any of our three income quantiles. This is a somewhat surprising result in light of the strong reaction to information about immigration of the low and middle income respondents, and points towards a potential interaction of the two pieces of information (i.e. immigration might become less salient due to the simultaneous presentation of information about poverty), which appear to cancel each other out.

The split sample analysis seems not to confirm the negative impact of the Overlap condition observed in the aggregate analysis. A more careful look however reveals that though not significant at conventional levels, the point estimate for the Overlap condition for the rich is large and similar in magnitude to that observed in Table 1. Looking at Table B1 in Appendix B we see that the interacted model estimates a negative effect significant at the 10% level in the Overlap condition for the rich subsample consistent with that observed in the aggregate analysis. It therefore seems that the result reported in Table 1 is driven by the rich respondents. Due to the lack of any reaction on their behalf to any other condition, we speculate that such finding is likely due to chance rather than any systematic reaction to the information conveyed by the Overlap condition. Worth stressing out is moreover that the findings

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confirms this suspicion.

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for the low and middle income subsamples reported in Table 1 and discussed so far are confirmed by the interacted analysis.

### 6.2.2 Allocation of the public budget

Next we analyse how our information conditions affect respondents' desired allocation of the public budget: given the size of the budget, how do they want to spend the money? We asked our subjects about their preferred spending split between defence, infrastructure, education, social insurance, unemployment insurance, health care and housing support. Aggregate and split sample analyses don't reveal any systematic and robust effect of our conditions on desired spending allocations (see Table B15 in Appendix B), with one notable exception. As shown in Table 3 respondents confronted with information about poverty increase their preferred level of public expenditure on education relative to their counterparts in the Neutral condition. Such increase amounts to roughly 12% of the baseline sample's standard deviation.

**Result 4.** *Information about poverty increases average desired public expenditure on education at the aggregate level.*

VARIABLES	(1)	(2)	(3)	(4)
	Preferred share of budget spent on education			
<u>Neutral condition: baseline</u>				
Poverty condition	0.115** (0.048)	0.112** (0.048)	0.113** (0.047)	0.120** (0.047)
Immigration condition	-0.004 (0.052)	-0.001 (0.052)	-0.002 (0.052)	0.003 (0.052)
Both condition	0.012 (0.052)	0.015 (0.052)	0.016 (0.052)	0.017 (0.050)
Overlap condition	0.037 (0.049)	0.035 (0.048)	0.033 (0.048)	0.035 (0.048)
Household income	3.91e-05** (1.78e-05)	4.60e-05** (1.81e-05)	5.11e-05*** (1.76e-05)	5.59e-05*** (1.72e-05)
College degree	0.188*** (0.036)	0.170*** (0.036)	0.174*** (0.036)	0.172*** (0.035)
Political placement	-0.041*** (0.009)	-0.040*** (0.010)	-0.040*** (0.010)	-0.040*** (0.010)
High immigration sector	-0.093*** (0.033)	-0.092*** (0.035)	-0.091*** (0.035)	-0.092*** (0.035)
Landkreis GDP			-2.04e-06* (1.06e-06)	-3.50e-07 (1.15e-06)
Landkreis immigrant share			0.012 (0.438)	0.001 (0.387)
Constant	0.141** (0.0662)	0.281** (0.138)	0.361** (0.142)	0.257* (0.151)
Individual controls 1	✓	✓	✓	✓
Individual controls 2		✓	✓	✓
Regional controls			✓	✓
Land fixed eff.				✓
Observations	3,955	3,955	3,955	3,955
R-squared	0.021	0.038	0.040	0.046

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 3:** OLS regression of standardised preferred share of public budget allocated to education. The variable Political placement takes value 1 for extreme left wing and 10 for extreme right wing. Omitted individual controls include: age, gender, marital status, voting behaviour in previous election, social media consumption, and whether the respondent was born in Germany.

VARIABLES	(1)	(2)	(3)
	Preferred education spending		
	Low income	Middle income	High income
<u>Neutral condition: baseline</u>			
Poverty condition	-0.150 (0.116)	0.245*** (0.071)	0.013 (0.108)
Immigration condition	-0.315*** (0.111)	0.134* (0.074)	-0.075 (0.102)
Both condition	-0.393*** (0.113)	0.148** (0.072)	-0.037 (0.106)
Overlap condition	-0.208* (0.119)	0.168** (0.065)	-0.101 (0.101)
Constant	0.844** (0.388)	-0.085 (0.199)	1.363*** (0.381)
Individual controls	✓	✓	✓
Regional controls	✓	✓	✓
Land fixed eff.	✓	✓	✓
Observations	787	2,458	710
R-squared	0.120	0.045	0.113

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 4:** OLS regression of standardised preferred share of public budget allocated to education. Individual controls include: college education, political placement, employment in high-immigration sectors, age, gender, marital status, voting behaviour in previous election, social media consumption, and whether the respondent was born in Germany.

Again, splitting the analysis across income quantiles is insightful. As Table 4 demonstrates, the effect of the Poverty condition on education expenditure is entirely driven by the response of middle income individuals. Neither the rich nor the poor exhibit significant reactions to the Poverty condition. Concerning all other conditions, instead we do observe significant and strong effects on both the low and middle income respondents. Importantly, these two effects again cancel each other out in the aggregate analysis. Middle income earners would like to increase spending on education in all conditions,<sup>26</sup> while the low income group exhibit a strong neg-

<sup>26</sup>Interestingly, this result doesn't seem to be driven by people who have children themselves

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ative response except, as said, in the Poverty condition. Noticeably, such negative response on behalf of the low income respondents is triggered in all conditions in which they are presented with information about immigration. The combined effect of these countervailing forces hence produces the results observed in Table 3, in which only the positive effect of poverty on the middle class survives at the aggregate level. Similar to what we observed for their tax preferences, the rich do not react to any of our conditions. Table B1 again confirms all of these findings in an interacted regression.

**Result 5.** *Middle income respondents increase their support for education spending in all conditions compared to the baseline. This increase is offset by a decline in preferred spending on education for low income earners in all conditions except the Poverty condition.*

## 7 Conclusions

Recent migration waves placing strains on social fabrics in many western societies were accompanied by the rise of new political movements making immigration the centrepiece of their agendas, whereas the debate around poverty and the welfare state was relegated to the margins. While pushed out of focus, however, inequality remains a vital issue precisely in connection with modern migration phenomena. How these important themes of the public debate interact in shaping demand for redistribution in the electorate has been unclear.

We contribute new evidence on the links between immigration, support for redistribution, and the welfare state by placing the immigration-redistribution nexus in relation to the closely connected poverty-redistribution nexus. We adopted an experimental approach and randomised whether the respondents to our survey received information about poverty, about immigration, or no information at all.

Our results indicate that the immigration topic is salient and affects people’s demand for progressive taxation, but the effects go in opposite directions for different income quantiles. Poor subjects react by demanding more tax progressivity, while middle income earners want less progressive taxation. High income individuals are not affected.

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- there is no difference in the reactions if we split the sample according to whether or not the respondents have children. It also doesn’t seem to be driven solely by people who are educated themselves (see Appendix B.5) - it is really the split across incomees that reveals where the reaction is coming from: middle income earners, irrespective of whether they have children or not and whether they are educated themselves.

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Poverty, on the other hand, does not affect desired tax progressivity, but appears to have a positive effect on demand for non-fiscal redistributive instruments, namely public expenditure on education. More careful and in-depth analyses reveal that this aggregate effect is driven by middle income respondents. In fact, it turns out that for all other information conditions the lack of an aggregate effect on demand for public education is the result of opposite and countervailing effects observed for low and middle income respondents. While middle income individuals increase their support for public schooling in all conditions relative to the Neutral baseline, the poor instead *reduce* their support relative to the baseline whenever they are presented with information about immigration (i.e. we observe no impact of the Poverty condition on the poor). Again we find that high income individuals are not affected.

The inclusion of an array of individual and regional background characteristics and further splits of the sample along the education and political spectrum dimensions leave these results largely unchanged.

Summing up, is popular support for redistribution fostered by bringing poverty to the forefront of the political discourse? Should those political actors supporting redistribution make salient topics such as immigration their own in order to win back popular support at the polls? The answer to these questions is not a straightforward one. Our study highlights how the interaction between immigration and welfare state support is a complex phenomenon deserving further scholarly attention. Redistribution is a manifold system of policies which do not necessarily form a cohesive body of public interventions in the electorate's mind. Support for one class of interventions does not necessarily translate into support for another one, such that support for redistribution might be eroded on one dimension (e.g. fiscal instruments) and not on others (e.g. education). Crucial is hence to clearly understand which classes of public interventions are impacted by the current socio-political debate. More importantly, we show that different segments of the electorate react in different, often opposite ways. When striving to understand how current phenomena (such as immigration) impact the social and political spheres, it is hence vital to understand to which degree and in which direction each relevant segment of the electorate is impacted, in order to predict what the resulting net effect is likely to be on aggregate.

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## Appendix

### A Tables

#### A.1 Sample balance and further manipulation checks

Table A1 reports the comparison of the subsamples which received each of our information conditions with that which received the Neutral condition (our baseline) along all the observables. “Delta” refers, for each observable, to the difference between its average in a given condition and the average in the Neutral condition.

Table A2 complements the manipulation analysis presented in Section 6.1. The response variable is an indicator taking value 1 if the respondent’s belief about the number of poor and of immigrants lies within a range  $r$  from the true value reported (or not) in the experimental conditions, and 0 otherwise. Such indicator is regressed on the condition indicators and on individual and regional controls. As can be seen from Table A2, having received information about poverty or immigration significantly increases the probability of the responses lying within a range  $r$  from the true value, with  $r$  taking values 1 Million, 3 Millions and 5 Millions.

	Neutral	Poor	Delta	Immigrant	Delta	Both	Delta	Overlap	Delta
Household income	1,914,786 (989,198)	1,942,515 (977,425)	27,729 (0.574)	1,891,536 (957,903)	-23,249 (0.632)	2,007,349 (969,141)	92,564* (0.058)	1,973,337 (1,052,283)	58,551 (0.251)
Job security	0.593 (0.492)	0.598 (0.491)	0.005 (0.850)	0.556 (0.497)	-0.037 (0.136)	0.586 (0.493)	-0.007 (0.764)	0.591 (0.492)	-0.002 (0.941)
Age	44.319 (14,024)	43.865 (14,295)	-0.454 (0.523)	44.776 (14,041)	0.457 (0.514)	44.238 (14,070)	-0.081 (0.908)	43.732 (14,005)	-0.586 (0.402)
Female	0.495 (0.500)	0.490 (0.500)	-0.005 (0.854)	0.475 (0.500)	-0.020 (0.422)	0.518 (0.500)	0.023 (0.359)	0.471 (0.499)	-0.024 (0.340)
Single	0.387 (0.487)	0.381 (0.486)	-0.007 (0.790)	0.344 (0.475)	-0.043* (0.071)	0.360 (0.480)	-0.027 (0.261)	0.380 (0.486)	-0.007 (0.770)
Rightwing	5.060 (1,742)	5.229 (1,695)	0.170** (0.050)	5.006 (1,709)	-0.053 (0.536)	5.046 (1,762)	-0.014 (0.874)	5.128 (1,784)	0.068 (0.438)
Voted	1.104 (0.306)	0.983 (3.591)	-0.121 (0.341)	0.969 (3.551)	-0.135 (0.281)	0.842 (4.975)	-0.262 (0.136)	0.983 (3.553)	-0.122 (0.333)
Social Media	0.450 (0.498)	0.464 (0.499)	0.014 (0.578)	0.459 (0.499)	0.009 (0.716)	0.451 (0.498)	0.002 (0.948)	0.451 (0.498)	0.002 (0.950)
Born in Germany	0.974 (0.159)	0.955 (0.207)	-0.019** (0.044)	0.965 (0.184)	-0.009 (0.298)	0.961 (0.195)	-0.013 (0.130)	0.964 (0.187)	-0.010 (0.240)
High immigr. sector	0.660 (0.474)	0.683 (0.465)	0.023 (0.325)	0.691 (0.462)	0.031 (0.182)	0.652 (0.477)	-0.008 (0.742)	0.649 (0.634)	-0.011 (0.634)
GDP at kreis level	39,721,621 (16,750,947)	40,297,973 (17,562,801)	576,349 (0.505)	39,227,848 (17,574,648)	-493,776 (0.567)	40,400,563 (17,622,289)	678,941 (0.430)	39,409,145 (16,585,020)	-312,476 (0.709)
German State	197,172 (119,256)	195,761 (115,631)	-1,411 (0.811)	192,375 (115,959)	-4,796 (0.414)	188,436 (115,286)	-8,736 (0.135)	193,130 (117,792)	-4,042 (0.495)
Has a college degree	0.285 (0.452)	0.307 (0.461)	0.021 (0.356)	0.306 (0.461)	0.021 (0.359)	0.317 (0.466)	0.032 (0.167)	0.299 (0.458)	0.013 (0.555)
Observations	806	783	1,589	800	1,606	811	1,617	800	1,606

**Table A1:** Balance table. Individual and geographical average characteristics in each of the conditions are compared pairwise with the average in the Neutral condition. "Delta" is, for each variable, the difference between a condition average and the average in the Neutral condition.

\*\*\*  $p < 0.01$ ; \*\*  $p < 0.05$ ; \*  $p < 0.1$

	(1)	(2)	(3)	(4)	(5)	(6)
	Immigration bias		Poverty bias			
	$<= 1ml$	$<= 3ml$	$<= 5ml$	$<= 1ml$	$<= 3ml$	$<= 5ml$
Neutral condition: baseline						
Poverty condition	0.091 (0.186)	-0.099 (0.074)	0.068 (0.063)	1.408*** (0.145)	0.588*** (0.071)	0.469*** (0.068)
Immigration condition	2.291*** (0.143)	1.268*** (0.067)	1.001*** (0.060)	0.153 (0.169)	-0.005 (0.079)	0.016 (0.071)
Both condition	1.848*** (0.138)	0.859*** (0.070)	0.637*** (0.067)	1.759*** (0.136)	0.830*** (0.068)	0.617*** (0.062)
Overlap condition	1.757*** (0.125)	0.662*** (0.067)	0.456*** (0.063)	1.752*** (0.137)	0.754*** (0.066)	0.481*** (0.063)
Constant	-2.575*** (0.255)	-1.339*** (0.207)	-0.811*** (0.191)	-2.120*** (0.282)	-1.281*** (0.187)	-0.871*** (0.181)
Individual controls	✓	✓	✓	✓	✓	✓
Regional controls	✓	✓	✓	✓	✓	✓
Land fixed eff.	✓	✓	✓	✓	✓	✓
Observations	3,955	3,955	3,955	3,955	3,955	3,955

Robust standard errors in parentheses

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

**Table A2:** Probit regression of an indicator taking value 1 if the respondent's belief about the extent of immigration and about the extent of poverty lies within 1 million (columns 1 and 4), 3 million (columns 2 and 5) and 5 million (columns 3 and 6) individuals from the correct value. Individual controls include: age, gender, marital status, voting behaviour in previous election, social media consumption, and whether the respondent was born in Germany. Regional controls include GDP and the share of immigrant population.

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## B Robustness and further analyses

### B.1 Interacted regressions

In Section 6, we presented regressions of our index of desired tax progressivity and desired public expenditure on education programmes on sample splits across income brackets (Tables 2 and 4). Here we present analogous OLS regressions in which the condition indicators are interacted with the same income brackets. To ease comparison with Tables 2 and 4, we present the results as the combination of the coefficients estimated on the interaction term and on the condition indicators. Table B1 reports such combinations for the respondents' preferred tax schedule (column 1) and preferred share of public budget allocated to education (column 2).

Specifically, the condition indicators  $c = \{\text{Neutral, Poverty, Immigration, Both, Overlap}\}$  are interacted with income bracket indicators  $x = \{\text{below the poverty line, middle income and high income}\}$ . We estimate  $y_i = \alpha + \beta_1 c + \beta_2 x + \beta_3(c \times x) + \gamma'_1 X_i + \gamma'_2 W_i + \gamma'_3 Land_i + \varepsilon_i$  (see equation 1). The combined coefficient  $\beta_{1|c} + \beta_{3|c,x}$ , reported in Table B1, yields the effect of condition  $c$  on individuals in income bracket  $x$ .

Individual controls include: household income, college education, political preferences, employment in high-immigration sectors, age, gender, marital status, voting behaviour in previous election, social media consumption, and whether the respondent was born in Germany. Regional controls include GDP and the share of immigrant population.

	(1)	(2)
Combination of estimated coefficients: $\beta_{1 c} + \beta_{3 c,x}$	Tax progressivity: $\tau$	Public exp. on educ.
<b>Condition <math>\times</math> Low income</b>		
Poverty condition	0.085 (0.129)	-0.161 (0.116)
Immigration condition	0.198* (0.119)	-0.317*** (0.111)
Both condition	0.043 (0.127)	-0.343*** (0.114)
Overlap condition	-0.102 (0.136)	-0.241* (0.123)
<b>Condition <math>\times</math> Middle income</b>		
Poverty condition	-0.024 (0.061)	0.242*** (0.070)
Immigration condition	-0.136** (0.061)	0.139* (0.073)
Both condition	-0.055 (0.058)	0.146** (0.071)
Overlap condition	-0.068 (0.062)	0.165** (0.065)
<b>Condition <math>\times</math> High income</b>		
Poverty condition	-0.118 (0.099)	0.030 (0.104)
Immigration condition	-0.132 (0.091)	-0.063 (0.101)
Both condition	0.014 (0.106)	-0.018 (0.106)
Overlap condition	-0.203* (0.120)	0.081 (0.097)
Observations	3,952	3,955
R-squared	0.0329	0.048

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table B1:** Combination of interaction coefficient estimates from an OLS regression of our standardised progressivity measure of the respondents' preferred tax schedule (column 1) and of preferred share of public budget allocated to education (column 2).



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## B.2 Different income splits

In the main part of the paper, we examine the effect of our information conditions on people with low, middle and high incomes. For this purpose, we split our sample into three groups. The low income group is defined as people earning (equivalized household) income below the poverty line (which is defined as 60% of median income, and amounts to 1096 Euros for 2018). People living below the poverty line make up roughly 16 percent of the population. For this reason, we define the high income earners as those who are the top 16% income earners (which amounts to earning more than 2800 Euros for a one-person household) in order to have roughly equally sized groups of rich and poor. The remainder, i.e. the people in between, make up the middle income group. We think that this is the most straightforward split, because we mention people living below the poverty line in our Poverty condition. The top 16% income earners are then just the mirror image of this group, at the other end of the income distribution.

In this section, we want to examine alternative splits of the sample along the income dimension. One obvious split would be to look at the “middle class” and the people below and above. The German government defines the middle class (“Mittelschicht”) very broadly as people earning between 60% and 200% of median income. For our analysis this would imply the same definition of low income, but a much higher cutoff for the rich (at roughly 3600 Euros). A more narrow definition of the middle class comes from the German Institute of Economic Research (DIW) and comprises people earning from 70% to 150% of median income. This would imply the same cutoff for high income earners as in our main analysis, but a slightly higher cutoff for the middle income bracket (1280 instead of 1098 Euros). How our main results (concerning tax progressivity and education spending) hold up for both alternative splits is displayed in tables B2 to B5. As can be seen, our results remain qualitatively the same: The middle class wants less tax progressivity due to immigration, while the poor want more.<sup>27</sup> Middle income people want more spending on education in all conditions, while the poor want less in any condition where immigration is mentioned.

Another income split that might be interesting to analyze is to just look at the bottom quartile as “low income”, the two middle quartiles as “middle income” and the top quartile as “high income”. The corresponding (equivalized household) income cutoffs would be 1200 and 2500 Euro. Tables B6 and B7 display our main results with these splits. As with the previous splits, the results remain qualitatively the

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<sup>27</sup>As can be seen, depending on the cutoff, sometimes significance is marginally lost or gained for some of the results.

same. One general regularity from all the different income splits is that if we use a broader definition for the low income group, the effect of immigration on desired tax progressivity is still positive, but the coefficient loses significance. The results concerning education spending are very robust (also in terms of significance) to the different splits.

VARIABLES	(1)	(2)	(3)
	Desired tax progressivity: $\tau$		
	Low income	Middle income	High income
<u>Neutral condition: baseline</u>			
Poverty condition	0.095 (0.129)	-0.066 (0.054)	0.284 (0.184)
Immigration condition	0.231* (0.122)	-0.139*** (0.051)	-0.114 (0.223)
Both condition	0.038 (0.129)	-0.066 (0.050)	0.321* (0.178)
Overlap condition	-0.088 (0.137)	-0.119** (0.058)	0.140 (0.181)
Constant	0.211 (0.473)	0.149 (0.192)	-0.512 (0.522)
Individual controls	✓	✓	✓
Regional controls	✓	✓	✓
Land fixed eff.	✓	✓	✓
Observations	787	2,934	231
R-squared	0.068	0.042	0.195
Robust standard errors in parentheses			
*** p<0.01, ** p<0.05, * p<0.1			

**Table B2:** OLS regression of desired tax progressivity with income splits using the German government definition of middle class. Individual controls include: college education, political placement, employment in high-immigration sectors, age, gender, marital status, voting behaviour in previous election, social media consumption, and whether the respondent was born in Germany. Regional controls include GDP and the share of immigrant population.

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	(1)	(2)	(3)
	Preferred education spending		
VARIABLES	Low income	Middle income	High income
<u>Neutral condition: baseline</u>			
Poverty condition	-0.150 (0.116)	0.204*** (0.059)	0.059 (0.248)
Immigration condition	-0.315*** (0.111)	0.112* (0.066)	-0.177 (0.231)
Both condition	-0.393*** (0.113)	0.132** (0.062)	-0.201 (0.202)
Overlap condition	-0.208* (0.119)	0.120** (0.0552)	-0.049 (0.210)
Constant	0.844** (0.388)	0.134 (0.178)	1.980** (0.980)
Individual controls	✓	✓	✓
Regional controls	✓	✓	✓
Land fixed eff.	✓	✓	✓
Observations	787	2,936	232
R-squared	0.120	0.042	0.197

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table B3:** OLS regression of desired public expenditure on education with income splits using the German government definition of middle class. Individual controls include: college education, political placement, employment in high-immigration sectors, age, gender, marital status, voting behaviour in previous election, social media consumption, and whether the respondent was born in Germany. Regional controls include GDP and the share of immigrant population.

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	(1)	(2)	(3)
	Desired tax progressivity: $\tau$		
VARIABLES	Low income	Middle income	High income
<u>Neutral condition: baseline</u>			
Poverty condition	0.062 (0.117)	-0.020 (0.065)	-0.094 (0.102)
Immigration condition	0.127 (0.113)	-0.114* (0.065)	-0.090 (0.094)
Both condition	0.010 (0.111)	-0.048 (0.061)	0.044 (0.106)
Overlap condition	-0.117 (0.116)	-0.060 (0.066)	-0.161 (0.120)
Constant	-0.210 (0.355)	0.014 (0.246)	0.390 (0.350)
Individual controls	✓	✓	✓
Regional controls	✓	✓	✓
Land fixed eff.	✓	✓	✓
Observations	964	2,279	709
R-squared	0.049	0.040	0.086

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table B4:** OLS regression of desired tax progressivity with income splits using the DIW definition of middle class. Individual controls include: college education, political placement, employment in high-immigration sectors, age, gender, marital status, voting behaviour in previous election, social media consumption, and whether the respondent was born in Germany. Regional controls include GDP and the share of immigrant population.

	(1)	(2)	(3)
	Preferred education spending		
VARIABLES	Low income	Middle income	High income
<u>Neutral condition: baseline</u>			
Poverty condition	-0.130 (0.097)	0.247*** (0.073)	0.013 (0.108)
Immigration condition	-0.266** (0.111)	0.133* (0.072)	-0.075 (0.102)
Both condition	-0.327*** (0.103)	0.158** (0.072)	-0.037 (0.106)
Overlap condition	-0.240** (0.111)	0.196*** (0.067)	-0.101 (0.101)
Constant	0.383 (0.351)	-0.262 (0.198)	1.363*** (0.381)
Individual controls	✓	✓	✓
Regional controls	✓	✓	✓
Land fixed eff.	✓	✓	✓
Observations	964	2,281	710
R-squared	0.103	0.047	0.113

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table B5:** OLS regression of desired public expenditure on education with income splits using the DIW definition of middle class. Individual controls include: college education, political placement, employment in high-immigration sectors, age, gender, marital status, voting behaviour in previous election, social media consumption, and whether the respondent was born in Germany. Regional controls include GDP and the share of immigrant population.

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	(1)	(2)	(3)
	Desired tax progressivity: $\tau$		
VARIABLES	Low income	Middle income	High income
<u>Neutral condition: baseline</u>			
Poverty condition	0.109 (0.119)	-0.031 (0.064)	-0.097 (0.099)
Immigration condition	0.183 (0.117)	-0.119* (0.063)	-0.103 (0.095)
Both condition	0.022 (0.121)	-0.049 (0.060)	0.047 (0.101)
Overlap condition	-0.104 (0.124)	-0.055 (0.065)	-0.179 (0.117)
Constant	0.204 (0.441)	0.072 (0.230)	0.487 (0.354)
Individual controls	✓	✓	✓
Regional controls	✓	✓	✓
Land fixed eff.	✓	✓	✓
Observations	885	2,343	724
R-squared	0.062	0.040	0.086

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table B6:** OLS regression of desired tax progressivity with income splits as bottom quartile, middle two quartiles and top quartile. Individual controls include: college education, political placement, employment in high-immigration sectors, age, gender, marital status, voting behaviour in previous election, social media consumption, and whether the respondent was born in Germany. Regional controls include GDP and the share of immigrant population.

	(1)	(2)	(3)
	Preferred education spending		
VARIABLES	Low income	Middle income	High income
<u>Neutral condition: baseline</u>			
Poverty condition	-0.124 (0.103)	0.251*** (0.073)	-0.0177 (0.107)
Immigration condition	-0.344*** (0.102)	0.170** (0.074)	-0.103 (0.103)
Both condition	-0.334*** (0.106)	0.160** (0.070)	-0.079 (0.107)
Overlap condition	-0.227** (0.114)	0.202*** (0.066)	-0.133 (0.101)
Constant	0.943** (0.371)	-0.154 (0.202)	1.444*** (0.368)
Individual controls	✓	✓	✓
Regional controls	✓	✓	✓
Land fixed eff.	✓	✓	✓
Observations	885	2,345	725
R-squared	0.123	0.047	0.115

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table B7:** OLS regression of desired public expenditure on education with income splits as bottom quartile, middle two quartiles and top quartile. Individual controls include: college education, political placement, employment in high-immigration sectors, age, gender, marital status, voting behaviour in previous election, social media consumption, and whether the respondent was born in Germany. Regional controls include GDP and the share of immigrant population.

### B.3 Different tax progressivity indices

In the main part of our paper, we analyze the effect of our information conditions on desired tax progressivity by constructing an index  $\tau$  capturing such desired progressivity as the (unweighted) sum of the desired tax rates on the top 1% and top 10%, minus the desired tax rates on the next 40% and the bottom 50%:  $\tau = t_{(100)} + t_{(91-99)} - t_{(51-90)} - t_{(0-50)}$  (see Section 6). This seems the most obvious measure of tax progressivity, given that the bottom 50% of income earners don't pay a lot of income taxes in Germany (in fact the bottom 30% don't pay any income

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taxes at all).<sup>28</sup> Hence, in order to increase taxes on the rich (i.e. the top 10%), the taxes on the next 40% and bottom 50% can be lowered (but the bottom 50% don't pay much income tax anyways, so it is primarily the next 40% who face a lower tax burden due to higher taxation of the very rich).<sup>29</sup> It thus makes sense that the taxes on the richest 10% enter positively, while taxes on the next 40% and the bottom 50% enter negatively into an index characterizing income tax progressivity.

In the following, we present the effect of our conditions on alternative indices of tax progressivity and on each desired tax rate separately. Table B8 shows the effect on a tax progressivity index  $\hat{\tau}$  defined as the sum of taxes on the top 1% and next 9% minus taxes on the next 40%:  $\hat{\tau} = t_{(100)} + t_{(91-99)} - t_{(51-90)}$ . This index completely ignores desired taxes on the bottom 50%, which makes sense, given that they are anyways not paying much in income taxes.

Table B9 further shows the effect of our conditions on a desired tax progressivity index  $\tilde{\tau}$  defined simply as the difference between taxes on the top 1% and the 51<sup>st</sup> to 90<sup>th</sup> percentiles ("the next 40%"), thus ignoring the 9% between the 90<sup>th</sup> and 99<sup>th</sup> percentiles:  $\tilde{\tau} = t_{(100)} - t_{(51-90)}$ . As can be seen, our results are robust to these different specifications of the progressivity index.

Table B10 displays the effect on desired tax rates on each income bracket separately, over the whole sample. Tables B11 to B14 display split sample analyses (in terms of income) for each desired tax rate.

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<sup>28</sup>See for instance <https://www.iwkoeln.de/studien/iw-kurzberichte/beitrag/martin-beznoska-wer-zahlt-wie-viel-einkommensteuer-in-deutschland-405957.html>

<sup>29</sup>Note that our respondents will supposedly have realized that to some extent when working with the sliders in our survey, because we programmed the slider task such that in the background it adds up all the collected taxes and respondents have to reach a certain target level.



	(1)	(2)	(3)
	Desired tax progressivity: $\hat{\tau}$		
VARIABLES	Low income	Middle income	High income
<u>Neutral condition: baseline</u>			
Poverty condition	2.573 (2.626)	-1.014 (1.383)	-2.961 (2.448)
Immigration condition	6.214** (2.572)	-3.879*** (1.403)	-1.704 (2.176)
Both condition	1.454 (2.724)	-1.679 (1.293)	0.489 (2.431)
Overlap condition	-0.854 (2.751)	-1.875 (1.405)	-3.014 (2.596)
Constant	45.79*** (9.973)	49.65*** (4.850)	52.34*** (8.451)
Individual controls	✓	✓	✓
Regional controls	✓	✓	✓
Land fixed eff.	✓	✓	✓
Observations	787	2,456	709
R-squared	0.063	0.037	0.071

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table B8:** Split sample OLS regression of desired tax progressivity defined as the sum of taxes on the top 1% and next 9% minus taxes on the next 40%. Individual controls include: college education, political placement, employment in high-immigration sectors, age, gender, marital status, voting behaviour in previous election, social media consumption, and whether the respondent was born in Germany. Regional controls include GDP and the share of immigrant population.

	(1)	(2)	(3)
	Desired tax progressivity: $\tilde{\tau}$		
VARIABLES	Low income	Middle income	High income
<u>Neutral condition: baseline</u>			
Poverty condition	1.966 (2.155)	-1.122 (1.213)	-2.795 (1.990)
Immigration condition	5.050** (2.160)	-3.506*** (1.134)	-1.401 (1.839)
Both condition	1.271 (2.258)	-1.715 (1.070)	0.858 (2.098)
Overlap condition	-0.311 (2.231)	-1.925* (1.148)	-1.279 (2.096)
Constant	23.00*** (7.867)	24.75*** (3.965)	30.04*** (6.911)
Individual controls	✓	✓	✓
Regional controls	✓	✓	✓
Land fixed eff.	✓	✓	✓
Observations	787	2,456	709
R-squared	0.062	0.034	0.069

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table B9:** Split sample OLS regression of desired tax progressivity defined taxes on the top 1% minus taxes on the 51-90 percentile (“the next 40%”). Individual controls include: college education, political placement, employment in high-immigration sectors, age, gender, marital status, voting behaviour in previous election, social media consumption, and whether the respondent was born in Germany. Regional controls include GDP and the share of immigrant population.

	(1)	(2)	(3)	(4)
	Individual tax rates			
VARIABLES	Top 1%	Next 9%	Next 40%	Bottom 50%
<u>Neutral condition: baseline</u>				
Poverty condition	-0.626 (0.726)	0.154 (0.350)	0.194 (0.269)	0.268 (0.447)
Immigration condition	-1.248* (0.670)	-0.101 (0.351)	0.272 (0.245)	-0.148 (0.465)
Both condition	-0.611 (0.655)	0.0154 (0.332)	0.135 (0.214)	0.167 (0.427)
Overlap condition	-1.363** (0.660)	-0.380 (0.332)	0.272 (0.243)	-0.749 (0.481)
Constant	34.94*** (2.302)	23.12*** (1.082)	12.70*** (0.777)	-7.299*** (1.482)
Individual controls	✓	✓	✓	✓
Regional controls	✓	✓	✓	✓
Land fixed eff.	✓	✓	✓	✓
Observations	3,952	3,952	3,952	3,952
R-squared	0.030	0.020	0.015	0.033

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table B10:** OLS regression of desired tax rates on different income brackets. Individual controls include: college education, political placement, employment in high-immigration sectors, age, gender, marital status, voting behaviour in previous election, social media consumption, and whether the respondent was born in Germany. Regional controls include GDP and the share of immigrant population.

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	(1)	(2)	(3)
	Desired tax rate on Top 1%: $t_{(100)}$		
VARIABLES	Low income	Middle income	High income
<u>Neutral condition: baseline</u>			
Poverty condition	1.295 (1.767)	-0.742 (0.995)	-2.184 (1.454)
Immigration condition	3.382* (1.745)	-2.534*** (0.877)	-1.463 (1.440)
Both condition	0.714 (1.815)	-1.363 (0.838)	0.947 (1.677)
Overlap condition	-0.440 (1.803)	-1.589* (0.896)	-0.845 (1.665)
Constant	36.49*** (6.206)	35.65*** (3.130)	42.83*** (5.083)
Individual controls	✓	✓	✓
Regional controls	✓	✓	✓
Land fixed eff.	✓	✓	✓
Observations	787	2,456	709
R-squared	0.063	0.035	0.077

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table B11:** Split sample OLS regression of desired tax rate on the Top 1%. Individual controls include: college education, political placement, employment in high-immigration sectors, age, gender, marital status, voting behaviour in previous election, social media consumption, and whether the respondent was born in Germany. Regional controls include GDP and the share of immigrant population.

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	(1)	(2)	(3)
	Desired tax rate on Next 9%: $t_{(91-99)}$		
VARIABLES	Low income	Middle income	High income
<u>Neutral condition: baseline</u>			
Poverty condition	0.608 (0.851)	0.109 (0.461)	-0.167 (0.753)
Immigration condition	1.163 (0.807)	-0.373 (0.456)	-0.303 (0.681)
Both condition	0.183 (0.892)	0.036 (0.430)	-0.369 (0.655)
Overlap condition	-0.543 (0.861)	0.051 (0.425)	-1.735** (0.759)
Constant	22.79*** (3.462)	24.90*** (1.467)	22.29*** (2.468)
Individual controls	✓	✓	✓
Regional controls	✓	✓	✓
Land fixed eff.	✓	✓	✓
Observations	787	2,456	709
R-squared	0.046	0.028	0.075

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table B12:** Split sample OLS regression of desired tax rate on the Next 9%. Individual controls include: college education, political placement, employment in high-immigration sectors, age, gender, marital status, voting behaviour in previous election, social media consumption, and whether the respondent was born in Germany. Regional controls include GDP and the share of immigrant population.

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	(1)	(2)	(3)
	Desired tax rate on Next 40%: $t_{(51-90)}$		
VARIABLES	Low income	Middle income	High income
<u>Neutral condition: baseline</u>			
Poverty condition	-0.670 (0.616)	0.380 (0.330)	0.611 (0.650)
Immigration condition	-1.668*** (0.575)	0.972*** (0.331)	-0.062 (0.539)
Both condition	-0.557 (0.602)	0.352 (0.300)	0.089 (0.557)
Overlap condition	-0.129 (0.582)	0.336 (0.325)	0.434 (0.548)
Constant	13.49*** (2.374)	10.90*** (1.067)	12.78*** (2.429)
Individual controls	✓	✓	✓
Regional controls	✓	✓	✓
Land fixed eff.	✓	✓	✓
Observations	787	2,456	709
R-squared	0.043	0.026	0.051

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table B13:** Split sample OLS regression of desired tax rate on the Next 40%. Individual controls include: college education, political placement, employment in high-immigration sectors, age, gender, marital status, voting behaviour in previous election, social media consumption, and whether the respondent was born in Germany. Regional controls include GDP and the share of immigrant population.

VARIABLES	(1)	(2)	(3)
	Desired tax rate on Bottom 50%: $t_{(0-50)}$ Low income	Middle income	High income
<u>Neutral condition: baseline</u>			
Poverty condition	0.181 (1.442)	0.445 (0.562)	0.279 (0.840)
Immigration condition	0.444 (1.220)	0.0494 (0.559)	-0.912 (0.855)
Both condition	-0.325 (1.281)	0.169 (0.514)	0.719 (0.807)
Overlap condition	-1.628 (1.484)	-0.131 (0.566)	-1.598 (1.093)
Constant	-3.221 (4.185)	-8.681*** (2.148)	-2.654 (3.248)
Individual controls	✓	✓	✓
Regional controls	✓	✓	✓
Land fixed eff.	✓	✓	✓
Observations	787	2,456	709
R-squared	0.060	0.038	0.106

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table B14:** Split sample OLS regression of desired tax rate on the Bottom 50%. Individual controls include: college education, political placement, employment in high-immigration sectors, age, gender, marital status, voting behaviour in previous election, social media consumption, and whether the respondent was born in Germany. Regional controls include GDP and the share of immigrant population.

## B.4 Other public expenditure items

We here report analyses analogous to those reported in Tables 3 and 4 for preferences for public education on the other public expenditure items available to the respondents. As done for public education, we report results from aggregate (Table B15) as well split sample regressions along the income dimension (Tables B16 to B20). These results reveal no systematic variations that can be attributed to the experimental intervention. We therefore can conclude that while the experimental intervention causes responses to systematically vary their preferred allocation of public money to education programmes, they do not seem to be systematically shifting to or away from other expenditure items.

VARIABLES	(1) Public infrastructure	(2) Domestic security	(3) Health insurance	(4) Social insurance	(5) Unempl. insurance	(6) Public housing
<u>Baseline: Neutral condition</u>						
Poverty condition	0.021 (0.052)	-0.026 (0.044)	-0.113** (0.044)	-0.012 (0.044)	0.083 (0.054)	-0.070 (0.049)
Immigration condition	-0.006 (0.050)	-0.016 (0.049)	0.017 (0.056)	-0.012 (0.050)	0.002 (0.051)	0.020 (0.051)
Both condition	0.030 (0.048)	-0.030 (0.050)	0.053 (0.046)	-0.047 (0.050)	0.013 (0.044)	-0.008 (0.046)
Overlap condition	-0.031 (0.045)	-0.058 (0.048)	0.070 (0.054)	-0.045 (0.054)	0.032 (0.047)	0.025 (0.059)
Individual controls	✓	✓	✓	✓	✓	✓
Regional controls	✓	✓	✓	✓	✓	✓
Land fixed eff.	✓	✓	✓	✓	✓	✓
Observations	3,955	3,955	3,955	3,955	3,955	3,955
R-squared	0.053	0.074	0.017	0.027	0.057	0.029
Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1						

**Table B15:** OLS regression of standardised preferred share of public budget allocated to public infrastructure development, domestic security, education, social insurance, unemployment insurance, public housing. Omitted individual controls include: college education, political placement, employment in high-immigration sectors, age, gender, marital status, voting behaviour in previous election, social media consumption, and whether the respondent was born in Germany.



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	(1)	(2)	(3)
	Domestic security		
VARIABLES	Low income	Middle income	High income
<u>Baseline: Neutral condition</u>			
Poverty condition	0.213 (0.142)	-0.099 (0.066)	-0.075 (0.085)
Immigration condition	0.079 (0.111)	-0.094 (0.066)	0.084 (0.101)
Both condition	0.091 (0.110)	-0.060 (0.067)	-0.060 (0.089)
Overlapcondition	0.062 (0.099)	-0.087 (0.064)	-0.125 (0.100)
Constant	0.194 (0.482)	0.085 (0.230)	-0.673** (0.300)
Individual controls	✓	✓	✓
Regional controls	✓	✓	✓
Land fixed eff.	✓	✓	✓
Observations	787	2,458	710
R-squared	0.075	0.078	0.249

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table B16:** OLS regression of standardised preferred share of public budget allocated to domestic security. Omitted individual controls include: college education, political placement, employment in high-immigration sectors, age, gender, marital status, voting behaviour in previous election, social media consumption, and whether the respondent was born in Germany.

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	(1)	(2)	(3)
	Public infrastructure development		
VARIABLES	Low income	Middle income	High income
<u>Baseline: Neutral condition</u>			
Poverty condition	-0.010 (0.119)	0.016 (0.065)	0.067 (0.126)
Immigration condition	-0.158 (0.110)	0.016 (0.065)	0.101 (0.142)
Both condition	0.015 (0.133)	0.055 (0.063)	-0.044 (0.137)
Overlap condition	-0.065 (0.109)	0.013 (0.065)	-0.115 (0.098)
Constant	0.149 (0.439)	0.069 (0.235)	0.193 (0.374)
Individual controls	✓	✓	✓
Regional controls	✓	✓	✓
Land fixed eff.	✓	✓	✓
Observations	787	2,458	710
R-squared	0.081	0.052	0.054

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table B17:** OLS regression of standardised preferred share of public budget allocated to public infrastructure development. Omitted individual controls include: college education, political placement, employment in high-immigration sectors, age, gender, marital status, voting behaviour in previous election, social media consumption, and whether the respondent was born in Germany.

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	(1)	(2)	(3)
	Public health insurance		
VARIABLES	Low income	Middle income	High income
<u>Baseline: Neutral condition</u>			
Poverty condition	-0.132 (0.105)	-0.128* (0.068)	0.0283 (0.097)
Immigration condition	0.124 (0.114)	0.023 (0.074)	-0.063 (0.111)
Both condition	0.131 (0.107)	-0.003 (0.064)	0.143 (0.108)
Overlap condition	0.113 (0.115)	-0.014 (0.065)	0.308** (0.146)
Constant	0.291 (0.435)	0.194 (0.221)	0.217 (0.316)
Individual controls	✓	✓	✓
Regional controls	✓	✓	✓
Land fixed eff.	✓	✓	✓
Observations	787	2,458	710
R-squared	0.060	0.017	0.120

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table B18:** OLS regression of standardised preferred share of public budget allocated to public health insurance. Omitted individual controls include: college education, political placement, employment in high-immigration sectors, age, gender, marital status, voting behaviour in previous election, social media consumption, and whether the respondent was born in Germany.

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	(1)	(2)	(3)
		Social insurance	
VARIABLES	Low income	Middle income	High income
<u>Baseline: Neutral condition</u>			
Poverty condition	0.024 (0.106)	-0.037 (0.054)	0.040 (0.114)
Immigration condition	0.051 (0.091)	-0.049 (0.064)	0.066 (0.124)
Both condition	0.069 (0.106)	-0.111* (0.061)	0.012 (0.110)
Overlap condition	0.034 (0.099)	-0.079 (0.070)	-0.018 (0.127)
Constant	-0.556 (0.342)	-0.002 (0.184)	-0.392 (0.306)
Individual controls	✓	✓	✓
Regional controls	✓	✓	✓
Land fixed eff.	✓	✓	✓
Observations	787	2,458	710
R-squared	0.074	0.034	0.077

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table B19:** OLS regression of standardised preferred share of public budget allocated to public social insurance. Omitted individual controls include: college education, political placement, employment in high-immigration sectors, age, gender, marital status, voting behaviour in previous election, social media consumption, and whether the respondent was born in Germany.

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	(1)	(2)	(3)
	Unemployment insurance		
VARIABLES	Low income	Middle income	High income
<u>Baseline: Neutral condition</u>			
Poverty condition	0.207 (0.161)	0.050 (0.057)	0.123 (0.098)
Immigration condition	0.168 (0.141)	-0.072 (0.064)	0.083 (0.082)
Both condition	0.205 (0.131)	-0.042 (0.061)	0.108 (0.088)
Overlap condition	0.057 (0.144)	-0.015 (0.058)	0.161* (0.095)
Constant	-0.215 (0.480)	0.009 (0.237)	0.242 (0.379)
Individual controls	✓	✓	✓
Regional controls	✓	✓	✓
Land fixed eff.	✓	✓	✓
Observations	787	2,458	710
R-squared	0.075	0.054	0.112

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table B20:** OLS regression of standardised preferred share of public budget allocated to public unemployment insurance. Omitted individual controls include: college education, political placement, employment in high-immigration sectors, age, gender, marital status, voting behaviour in previous election, social media consumption, and whether the respondent was born in Germany.

## B.5 Further heterogeneities

We here examine whether further heterogeneities exist with respect to other relevant individual characteristics, namely education (Table B21) and political orientation (Tables B22 and B23). We find no surprising heterogeneities in such analyses.

VARIABLES	(1)	(2)	(3)	(4)
	Desired tax progressivity: $\tau$ No college	College	Public exp. on educ. No college	College
<u>Neutral condition: baseline</u>				
Poverty condition	-0.027 (0.058)	0.007 (0.088)	0.082 (0.060)	0.197** (0.098)
Immigration condition	-0.084 (0.063)	-0.007 (0.072)	-0.000 (0.065)	0.029 (0.089)
Both condition	-0.061 (0.060)	0.081 (0.076)	0.000 (0.067)	0.032 (0.089)
Overlap condition	-0.104* (0.062)	-0.085 (0.101)	0.023 (0.061)	0.057 (0.080)
Constant	-0.068 (0.218)	0.059 (0.236)	0.296 (0.183)	0.218 (0.233)
Individual controls	✓	✓	✓	✓
Regional controls	✓	✓	✓	✓
Land fixed eff.	✓	✓	✓	✓
Observations	2,757	1,195	2,760	1,195
R-squared	0.023	0.097	0.031	0.060

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table B21:** OLS regression of standardised desired tax progressivity and public spending on education, for people with no college degree resp. college degree. Individual controls include: household income, political placement, employment in high-immigration sectors, age, gender, marital status, voting behaviour in previous election, social media consumption, and whether the respondent was born in Germany. Regional controls include GDP and the share of immigrant population.

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	(1)	(2)	(3)
	Desired tax progressivity: $\tau$		
VARIABLES	Left	Centre	Right
<u>Baseline: Neutral</u>			
Poverty condition	0.243** (0.120)	-0.080 (0.059)	-0.001 (0.162)
Immigration condition	0.175 (0.120)	-0.136** (0.057)	0.093 (0.168)
Both condition	0.134 (0.125)	-0.060 (0.055)	-0.118 (0.125)
Overlap condition	0.159 (0.121)	-0.149** (0.058)	-0.254 (0.156)
Constant	0.581 (0.425)	-0.295 (0.215)	0.239 (0.840)
Individual controls	✓	✓	✓
Regional controls	✓	✓	✓
Land fixed eff.	✓	✓	✓
Observations	726	2,846	380
R-squared	0.096	0.024	0.158

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Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table B22:** OLS regression of standardised desired tax progressivity along the political orientation split. Individual controls include: household income, college education, employment in high-immigration sectors, age, gender, marital status, voting behaviour in previous election, social media consumption, and whether the respondent was born in Germany. Regional controls include GDP and the share of immigrant population.

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	(1)	(2)	(3)
	Public exp. on educ.		
VARIABLES	Left	Centre	Right
<u>Baseline: Neutral</u>			
Poverty condition	0.116 (0.104)	0.121** (0.053)	0.126 (0.184)
Immigration condition	0.037 (0.122)	-0.014 (0.059)	-0.029 (0.172)
Both condition	-0.012 (0.103)	0.029 (0.056)	-0.066 (0.182)
Overlap condition	0.078 (0.107)	0.011 (0.059)	0.158 (0.175)
Constant	0.576 (0.449)	0.386** (0.191)	2.171*** (0.809)
Individual controls	✓	✓	✓
Regional controls	✓	✓	✓
Land fixed eff.	✓	✓	✓
Observations	726	2,849	380
R-squared	0.098	0.042	0.114

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Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table B23:** OLS regression of standardised desired allocation of the public budget to public education along the political orientation split. Individual controls include: household income, college education, employment in high-immigration sectors, age, gender, marital status, voting behaviour in previous election, social media consumption, and whether the respondent was born in Germany. Regional controls include GDP and the share of immigrant population.

## B.6 Correction for multiplicity

The results in Tables B24 to B29 show that our results survive multiplicity correction. We follow the approach in List et al. (2016) using the STATA programme developed by Andreas Steinmayr<sup>30</sup>.

In Tables B24 and B25 we correct for multiplicity in the analysis of our desired

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<sup>30</sup>See <https://sites.google.com/site/andreassteinmayr/home>



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tax progressivity index by allowing for multiple treatment conditions and groups simultaneously. Because the programme handles up to 14 hypotheses simultaneously, we were forced to exclude either one group or one condition in carrying out the tests. We thus opted for keeping all conditions, as they stand at the core of our investigation, and exclude the high income respondents on which our conditions had no impact. We report  $p$ -values corrected with the method in List et al. (2016) (labelled “List”) and with the Bonferroni and Holm corrections (“Bonf” and “Holm” respectively).

The results in Table B24 indicate that our results on the respondents’ desired tax schedule are largely robust to such demanding multiplicity tests. While we lose significance at conventional levels, the corrected  $p$ -values for the Immigration condition in comparison with the baseline remain very low relative to those for the other conditions (all approaching 1) for both poor and middle income respondents.

Significance survives in Table B25, for the same comparisons, at conventional levels for our index excluding preferred tax rates on the bottom 50% (described in Section B.3) when using the List correction, and are either significant or close to significance when corrected with the Bonferroni and Holm corrections.

Similarly, in Tables B26 to B29 we correct for multiplicity in the analysis of preferred expenditure allocations of the public budget. We opted for conducting the tests within each condition simultaneously correcting for multiplicity in outcomes (the seven expenditure items) and groups (again excluding the rich whom were not responsive to our conditions).

The results show that our main findings survive the corrections. In Table B26 the strong effect of the Poverty condition observed for the middle income group remains strongly significant, and in Tables B27 and B28 significance survives (10% and 1%) for the negative impact of immigration on the poor. The  $p$ -values for the middle income respondents remain low though missing significance in the Both and Overlap conditions (Tables B28 and B29).

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Desired tax progressivity: $\tau$						
Condition comparison	Group	Difference	Uncorrected	List	Bonf	Holm
Poverty vs Neutral	Poor	0.095	0.449	0.894	1	1
Poverty vs Neutral	Middle	0.020	0.750	0.935	1	1
Immigration vs Neutral	Poor	0.231	0.063*	0.322	0.504	0.441
Immigration vs Neutral	Middle	0.134	0.028**	0.175	0.227	0.226
Both vs Neutral	Poor	0.038	0.759	0.759	1	0.758
Both vs Neutral	Middle	0.053	0.361	0.867	1	1
Overlap vs Neutral	Poor	0.088	0.511	0.875	1	1
Overlap vs Neutral	Middle	0.070	0.263	0.802	1	1

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**Table B24:** Multiplicity test: Multiple conditions and income groups on desired tax progressivity index.

“Poor” refers to respondents below the poverty line, while “Middle” refers to respondents in the middle income bracket.

“Difference” reports the difference in means between conditions; “Uncorrected” reports the OLS  $p$ -value without correction for multiplicity; “List” reports  $p$ -values corrected as in List et al. 2016; “Bonf” and “Holm” report respectively  $p$ -values corrected using the Bonferroni and Holm corrections.

\*, \*\*, \*\*\* indicate that the corresponding  $p$ -values are smaller than 10%, 5% and 1% respectively.

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Desired tax progressivity: $\hat{\tau}$						
Condition comparison	Group	Difference	Uncorrected	List	Bonf	Holm
Poverty vs Neutral	Poor	0.113	0.337	0.782	1	1
Poverty vs Neutral	Middle	0.046	0.456	0.827	1	1
Immigration vs Neutral	Poor	0.273	0.015**	0.089*	0.120	0.105
Immigration vs Neutral	Middle	0.174	0.006***	0.043**	0.051*	0.051*
Both vs Neutral	Poor	0.063	0.620	0.831	1	1
Both vs Neutral	Middle	0.075	0.195	0.677	1	1
Overlap vs Neutral	Poor	0.041	0.735	0.735	1	0.735
Overlap vs Neutral	Middle	0.084	0.205	0.648	1	1

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**Table B25:** Multiplicity test: Multiple conditions and income groups on desired tax progressivity index excluding the preferred tax rate on bottom 50%. “Poor” refers to respondents below the poverty line, while “Middle” refers to respondents in the middle income bracket.

“Difference” reports the difference in means between conditions; “Uncorrected” reports the OLS  $p$ -value without correction for multiplicity; “List” reports  $p$ -values corrected as in List et al. 2016; “Bonf” and “Holm” report respectively  $p$ -values corrected using the Bonferroni and Holm corrections.

\*, \*\*, \*\*\* indicate that the corresponding  $p$ -values are smaller than 10%, 5% and 1% respectively.

---

Poverty condition						
Outcome	Group	Difference	Uncorrected	List	Bonf	Holm
Education	Poor	0.150	0.197	0.847	1	1
Education	Middle	0.240	0.002***	0.019**	0.023**	0.023**
Health ins.	Poor	0.136	0.203	0.824	1	1
Health ins.	Middle	0.132	0.063**	0.547	0.891	0.827
Social ins.	Poor	0.024	0.810	0.999	1	1
Social ins.	Middle	0.042	0.434	0.936	1	1
Unemployment ins.	Poor	0.206	0.209	0.791	1	1
Unemployment ins.	Middle	0.047	0.417	0.957	1	1
Housing	Poor	0.197	0.074	0.576	1	0.896
Housing	Middle	0.001	0.986	0.987	1	0.986
Domestic security	Poor	0.207	0.142	0.753	1	1
Domestic security	Middle	0.103	0.117	0.705	1	1
Infrastructure	Poor	0.013	0.917	0.994	1	1
Infrastructure	Middle	0.013	0.856	0.998	1	1

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**Table B26:** Multiplicity test: Multiple outcomes and income groups in the Poverty condition.

“Poor” refers to respondents below the poverty line, while “Middle” refers to respondents in the middle income bracket.

“Difference” reports the difference in means between conditions; “Uncorrected” reports the OLS  $p$ -value without correction for multiplicity; “List” reports  $p$ -values corrected as in List et al. 2016; “Bonf” and “Holm” report respectively  $p$ -values corrected using the Bonferroni and Holm corrections.

\*, \*\*, \*\*\* indicate that the corresponding  $p$ -values are smaller than 10%, 5% and 1% respectively.

---

Immigration condition						
Outcome	Group	Difference	Uncorrected	List	Bonf	Holm
Education	Poor	0.315	0.003***	0.036**	0.042**	0.042**
Education	Middle	0.126	0.094*	0.687	1	1
Health ins.	Poor	0.115	0.306	0.914	1	1
Health ins.	Middle	0.013	0.861	0.861	1	0.861
Social ins.	Poor	0.051	0.578	0.966	1	1
Social ins.	Middle	0.051	0.439	0.965	1	1
Unemployment ins.	Poor	0.166	0.242	0.901	1	1
Unemployment ins.	Middle	0.071	0.274	0.911	1	1
Housing	Poor	0.047	0.672	0.963	1	1
Housing	Middle	0.097	0.105	0.702	1	1
Domestic security	Poor	0.082	0.484	0.963	1	1
Domestic security	Middle	0.097	0.132	0.755	1	1
Infrastructure	Poor	0.162	0.143	0.756	1	1
Infrastructure	Middle	0.012	0.855	0.981	1	1

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**Table B27:** Multiplicity test: Multiple conditions and income groups in the Immigration condition.

“Poor” refers to respondents below the poverty line, while “Middle” refers to respondents in the middle income bracket.

“Difference” reports the difference in means between conditions; “Uncorrected” reports the OLS  $p$ -value without correction for multiplicity; “List” reports  $p$ -values corrected as in List et al. 2016; “Bonf” and “Holm” report respectively  $p$ -values corrected using the Bonferroni and Holm corrections.

\*, \*\*, \*\*\* indicate that the corresponding  $p$ -values are smaller than 10%, 5% and 1% respectively.

---

Both condition						
Outcome	Group	Difference	Uncorrected	List	Bonf	Holm
Education	Poor	0.393	<0.001***	0.005***	0.009***	0.005***
Education	Middle	0.144	0.054*	0.485	0.761	0.706
Health ins.	Poor	0.126	0.243	0.925	1	1
Health ins.	Middle	0.008	0.908	0.908	1	0.908
Social ins.	Poor	0.069	0.503	0.864	1	1
Social ins.	Middle	0.115	0.060*	0.498	0.8455	0.724
Unemployment ins.	Poor	0.204	0.125	0.739	1	1
Unemployment ins.	Middle	0.045	0.460	0.901	1	1
Housing	Poor	0.108	0.310	0.942	1	1
Housing	Middle	0.070	0.249	0.915	1	1
Domestic security	Poor	0.086	0.415	0.920	1	1
Domestic security	Middle	0.064	0.348	0.942	1	1
Infrastructure	Poor	0.018	0.895	0.987	1	1
Infrastructure	Middle	0.052	0.414	0.950	1	1

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**Table B28:** Multiplicity test: Multiple conditions and income groups in the Both condition.

“Poor” refers to respondents below the poverty line, while “Middle” refers to respondents in the middle income bracket.

“Difference” reports the difference in means between conditions; “Uncorrected” reports the OLS  $p$ -value without correction for multiplicity; “List” reports  $p$ -values corrected as in List et al. 2016; “Bonf” and “Holm” report respectively  $p$ -values corrected using the Bonferroni and Holm corrections.

\*, \*\*, \*\*\* indicate that the corresponding  $p$ -values are smaller than 10%, 5% and 1% respectively.

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Overlap condition						
Outcome	Group	Difference	Uncorrected	List	Bonf	Holm
Education	Poor	0.208	0.081*	0.631	1	1
Education	Middle	0.163	0.011**	0.14	0.159	0.159
Health ins.	Poor	0.109	0.359	0.985	1	1
Health ins.	Middle	0.019	0.772	0.989	1	1
Social ins.	Poor	0.034	0.716	0.999	1	1
Social ins.	Middle	0.083	0.234	0.932	1	1
Unemployment ins.	Poor	0.056	0.697	1	1	1
Unemployment ins.	Middle	0.018	0.752	0.997	1	1
Housing	Poor	0.013	0.916	0.916	1	0.916
Housing	Middle	0.068	0.382	0.985	1	1
Domestic security	Poor	0.052	0.606	0.999	1	1
Domestic security	Middle	0.088	0.176	0.875	1	1
Infrastructure	Poor	0.061	0.585	1	1	1
Infrastructure	Middle	0.008	0.907	0.993	1	1

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**Table B29:** Multiplicity test: Multiple conditions and income groups in the Overlap condition.

“Poor” refers to respondents below the poverty line, while “Middle” refers to respondents in the middle income bracket.

“Difference” reports the difference in means between conditions; “Uncorrected” reports the OLS  $p$ -value without correction for multiplicity; “List” reports  $p$ -values corrected as in List et al. 2016; “Bonf” and “Holm” report respectively  $p$ -values corrected using the Bonferroni and Holm corrections.

\*, \*\*, \*\*\* indicate that the corresponding  $p$ -values are smaller than 10%, 5% and 1% respectively.

## C Information conditions

We here present screenshots of the information condition content. The videos are available from the authors upon request.

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## Neutral condition (Baseline)



Derzeit leben in Deutschland 82 Millionen Menschen



*“82 Million people are currently living in Germany”.*

## Poverty condition



Derzeit leben in Deutschland 82 Millionen Menschen

**13,7 Millionen**  
Menschen leben  
**unterhalb der Armutsgrenze\***  
\*60% des Medianeinkommens



*“82 Million people are currently living in Germany.  
13.7 Million people live below the poverty line\*.  
\*60% of the median income.”*



---

## Immigration condition



**13,2 Millionen**  
Menschen sind  
**im Ausland geboren**



*“82 Million people are currently living in Germany.  
13.2 Million people were born abroad.”*

---

## Both condition



*“82 Million people are currently living in Germany.*

*13.7 Million people live below the poverty line\*.*

*\*60% of the median income.*

*13.2 Million people were born abroad.”*

The order in which the two poverty and immigration components of this information condition were presented was randomised across individuals to control for order effects.

---

## Overlap condition



*“82 Million people are currently living in Germany.  
13.7 Million people live below the poverty line\*.  
\*60% of the median income.  
13.2 Million people were born abroad.  
3.2 Million were born abroad and live below the poverty line”.*

The order in which the two poverty and immigration components of this information condition were presented was randomised across individuals to control for order effects.

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## D Full questionnaire in English

1. See Figure D1.
2. What is your gender?  
*Female; Male*
3. Please indicate your age:
4. What is your marital status?  
*Single (Never Married/Widowed/Separated/Divorced); Married /Civil partnership/Cohabiting*
5. Please indicate how many people live in your household (including yourself):  
Adults:-- Children:--
6. What was your total monthly household income after tax in 2018? (in Euros)  
[Please include all your household income sources: salaries, scholarships, pension and Social Security benefits, dividends from shares, income from rental properties, child support and alimony etc. We are not interested in the type of income source, only in the total annual income earned by all the members of your household together.]  
*<1000; 1000-1999; 2000-2999; 3000-3999; 4000-4999; 5000-7500; >7500*
7. We will now ask your opinion on some important policy questions. Please watch the following video before continuing: *See description of our conditions in Section C.*
8. See Figure D2.
9. See Figure D3.
10. Before proceeding to the next set of questions, we want to ask for your feedback about the responses you provided so far. It is vital to our study that we only include responses from people who devoted their full attention this study. This will not affect in any way the payment you will receive for taking this survey. In your honest opinion, should we use your responses, or should we discard your responses since you did not devote your full attention to the questions so far?  
*Yes, I have devoted my full attention to these questions and I think you should use my answers for your research.; No, I have not devoted my full attention to these questions and I think you should not use my answers for your research.*

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11. Do you think income differences between rich and poor are:  
*Not a problem at all; A small problem; A serious problem; A very serious problem*

12. To reduce income differences between rich and poor people, the government (at the local, state, or federal level) has the ability and the tools to do:  
*Nothing at all; Not much; Some; A lot*

13. Some people think that the government (at the local, state, or federal level) 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.

Please rate on a scale of 1 to 7 on how you feel about this issue, with 1 being the government should not concern itself with income inequality and 7 being the government should do everything in its power to reduce income inequality.

14. Here are several things that the local, state, or federal government might do to reduce income differences between rich and poor people. Please indicate if you favour or oppose them. Keep in mind that, naturally, to finance an expansion of any of these policies, other types of spending (like spending on infrastructure and defense, for example) would have to be scaled down or taxes would have to be raised.

(a) Would you say that you strongly favour, favour, neither favour nor oppose, oppose or strongly oppose spending more money on schools in poor neighborhoods?

*Strongly favour; Favour; Neither favour nor oppose; Oppose; Strongly oppose*

(b) Would you say that you strongly favour, favour, neither favour nor oppose, oppose or strongly oppose spending more money to provide decent housing for those who can't afford it?

*Strongly favour; Favour; Neither favour nor oppose; Oppose; Strongly oppose*

(c) Would you say that you strongly favour, favour, neither favour nor oppose, oppose or strongly oppose increasing income support programs for the poor?

*Strongly favour; Favour; Neither favour nor oppose; Oppose; Strongly oppose*

- 
15. How much of the time do you think you can trust our government to do what is right?  
*Almost always; A lot of the time; Not very often; Almost never*
16. Some people say that people get ahead by their own hard work, others say that lucky breaks or help from other people are more important. Which do you think is most important?  
*Mostly luck; Both equally; Mostly hard work*
17. Do you think poverty in today's Germany is:  
*Not a problem at all; A small problem; A serious problem; A very serious problem*
18. What is the highest level of education you have completed?  
*Less than high school; High school; Realschule ("Mittlere Reife"); Degree from polytechnische Oberschule; Fachhochschulreife; A-levels; Apprenticeship; Specialized school degree ("Fachschulabschluss"); degree from "Fachhochschule"; Bachelor; Master; Diploma / Magister or comparable degree; Doctoral degree*
19. What is your current employment status?  
*Full-time employee, Part-time employee, Self-employed or small business owner, Unemployed and looking for work, Student/apprentice, Retired, Not in labour force*
20. *(If respondent is working)* Do you work in one of the following sectors?  
*Transport, logistics, protection and security; Commodity production and manufacturing; Commercial services, trade, sales, hotels and tourism; Construction, architecture, surveying and mapping, facility technology; None of these*
21. Where were you born? *(Select from list of countries.)*
22. *(If respondent was born in Germany)* Were both of your parents born in Germany? *Yes; No*
23. Please choose your state and region (Landkreis):
24. Which media do you most frequently get information on world happenings from? Check each that apply.  
*TV News; Social media (social networks, blogs); Radio/podcasts; Online newspaper/ Newspaper App; Print newspaper; I don't follow the news.*

- 
25. Where do you see yourself on the political spectrum, where 1 represents the left and 10 represents the right? (*Select 1-10*)
26. Did you vote in the previous (*Bundestag*) elections? *Yes; No*
27. Which party would you vote for if there were elections on Sunday?  
*CDU/CSU; SPD; FDP; Bündnis 90/Die Grünen; Die Linke; AfD; Andere*
28. According to your best estimate, how many of the 82 Million people living in Germany at the moment were born abroad? -- *million people*
29. Of those people living in Germany and born abroad, do you think the majority were born inside or outside of the EU? *Inside the EU; Outside of the EU*
30. According to your best estimate, how many of the 82 Million people in Germany live below the poverty line? -- *million people*
31. According to your best estimate, how many of the people living below the poverty line\* in Germany at the moment were born abroad? (\*The poverty line is a measure of relative poverty and is computed as 60% of median income.)  
-- *million people*
32. Do you think the majority of the people living below the poverty line in Germany at the moment and born abroad were born inside or outside of the EU?  
*Inside the EU; Outside of the EU*
33. (*If respondent is working*) How secure do you think your current job is?  
*Very secure; Relatively secure; Not very secure; Not secure at all*

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**We are a non-partisan group of academic researchers from the Max Planck Society.** We would like to know your personal views on some policy matters.

Please note that it is very important for the success of our research that you **answer honestly**, providing your true opinion or the true answer, and **read all the questions very carefully** before answering. Any time you don't know an answer, just give your best guess. However, please be sure to spend enough time reading and understanding the question. To ensure the quality of survey data, your responses will be subject to statistical control methods, which can detect incoherent or rushed answers. **Responding without adequate effort or skipping many questions may result in your responses being flagged for low quality and you may not receive your payment.**

It is also very important for the success of our research project that you **complete the entire survey**, once you have started. This survey should take (on average) about 15 minutes to complete.

*Notes: Your participation in this study is purely voluntary. Your name will never be recorded by researchers. Results may include summary data, but you will never be identified. The data will be stored on our servers and will be kept confidential. The collected anonymous data may be made available to other researchers for replication purposes.*

Yes, I would like to take part in this study.

No, I would not like to participate.

**Figure D1:** First page of the survey (translated to English)



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**The government currently raises a certain amount of revenue through the income tax in order to sustain the current level of public spending. In your view, what would be a fair split of the tax burden to sustain public spending?**

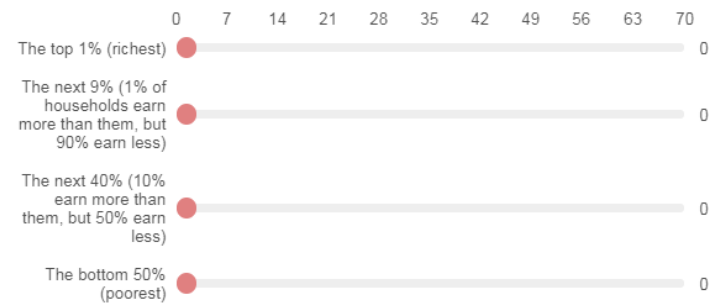
The average income tax rate\* is the percentage of your income that you pay in income tax. For example, if your monthly gross income is €3000 and you pay €300 in income taxes, your average income tax rate is 10%.

Please use the sliders below to tell us how much you think each of the following groups should pay as a percentage of their total income.

While you adjust the four sliders for each group, you will see below the sliders how much of the current revenue you have been able to raise so far. You will receive a warning message as long as you have not raised enough revenue, or if you have raised more money than necessary.

You will only be able to move to the next question when you meet the revenue target exactly.

\*If you receive a regular paycheck, the income tax is part of the amount that is automatically taken out. It is different from other amounts that are also automatically taken out, such as the health insurance contribution.



Percent of total collected 0  
**You haven't raised enough revenue yet.**

**Figure D2:** Question on preferred tax rates (translated to English)

We now ask you how you would like to spend the total government budget, which comprises the local, state and federal government budgets. Suppose that you are the person deciding on the German budget for the next year. You can choose how you want to divide the budget (in percent) between the following 7 categories:

1) **Defense and Internal Security**, which refers to the costs of the Defense department and the costs of supporting security operations in Germany and in foreign countries, and also includes the costs of the police.

2) **Public Infrastructure**, which includes, among others, transport infrastructure like roads, bridges and airports, and water infrastructure.

3) **Spending on Schooling, Higher Education and research**, including help for children from low income families to attend school and university (e.g. via BAfÖG).

4) **Social Security, Disability Insurance and pensions.**

5) **Arbeitslosengeld II and social benefits (Hartz IV).** This covers help to the unemployed (through unemployment insurance) and help for low income families.

6) **Public Spending on Health**, including health insurance and research funding.

7) **Affordable Housing.** This includes subsidies to make housing more affordable for low income families and funds to build and manage public housing.

Defense and National Security	<input type="text" value="0"/>
Public Infrastructure	<input type="text" value="0"/>
Schooling	<input type="text" value="0"/>
Social security	<input type="text" value="0"/>
Arbeitslosengeld II and social benefits (Hartz IV)	<input type="text" value="0"/>
Health	<input type="text" value="0"/>
Affordable Housing	<input type="text" value="0"/>
Total	<input type="text" value="0"/>

**Figure D3:** Question on preferred government spending (translated to English)