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Local Policy Misperceptions and Investment: Experimental Evidence From Firm Decision Makers

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Local Policy Misperceptions and Investment:*
Experimental Evidence from Firm Decision Makers

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Abstract

We study firm responses to local policies through a survey experiment, providing randomized information on the competitiveness of business tax rates and highway access in their headquarters' municipality. Firms often misperceive local policy competitiveness, especially for tax rates. Investment decisions respond asymmetrically to tax competitiveness. Positive tax rank information reduces investment intentions in neighboring municipalities. Compared to this, negative tax news increase relocation plans. However, most firms receiving bad news plan to continue investing in their headquarters' municipality, indicating home bias. These effects are strongest for mobile firms and corporations. Negative infrastructure news lower location satisfaction but do not influence investment.

JEL Classification: H25, H32, H71, H72, H73, L21, R38

Keywords: tax competition, infrastructure, firm location, survey experiment

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1 Introduction

How do firms make location decisions? Answers to this question are vital to understand disparities in economic growth across regions and are thus crucial for public policy. Policy makers frequently set policies hoping to attract firm capital. Since governments can generally offer several policy instruments to attract businesses, including tax policy (for instance, local business taxes) and infrastructure amenities such as inter-regional highway access, localities can compete over firm capital using different levers and may thus be differently attractive in the respective policy domain.[1] However, it is largely unknown how firms actually undertake their location decisions and how competition between local governments for capital influences location decisions of firms. This lack of understanding persists despite the substantial research in public economics and economic geography in recent decades (see the review of Agrawal et al. (2022)).

Our paper fills this gap and exploits an original survey experiment among a large sample of firm managers in Germany to study how beliefs of firm decision makers regarding the competitiveness of firm headquarters municipalities over different and relevant policy instruments affect location decisions. Specifically, we use more than 3,000 firm survey responses from the German Business Panel (GBP) to address this issue, including the information about the firms' headquarters municipality. Germany is a particularly suitable setting to study firm responses to local policy competition due to its institutional feature of autonomy of municipalities over relevant local tax rates, such as the local business tax[2] as well as significant responsibilities on the spending side of the budget which contributes substantially to aggregate public spending and public goods provision, including streets and public transport (Riedel et al., 2020). In the survey we first measure prior beliefs of firm managers on the relative rank of a firm's headquarters municipality—where its headquarters is placed—in the distribution of business tax rates as well as access to inter-regional highways (i.e., the share of municipalities that have a lower tax rate or driving time to the next highway access point, respectively). The relative municipality-level ranks serve as measures for municipal competitiveness of a firm's headquarters municipality to attract business investments with respect to specific policy domains.[3]

Then, we create exogenous variation in firm managers' beliefs about the competitiveness of their home municipality by providing them with factual information on the relative standing of their home municipality in either tax rates (TAX condition), infrastructure access (HIGHWAY condition) or both policy instruments (TRADEOFF condition) as compared to other German municipalities. This experimental design aims to contribute to overcome the challenges in studying the causal effects on how local policy competition affects economic outcomes (Agrawal et al., 2022). While recent progress was made using quasi-exogenous policy variation from individual policy parameters (see, for instance, Suárez Serrato and Zidar (2016) and Suárez Serrato and Zidar (2023) who focus on the effects of corporate taxes), credible evidence on fundamental elasticities is hard to come by. We then investigate the responses to the randomly induced changes in manager beliefs in their views on the attractiveness of their home municipality as well as their investment intentions across different destinations (home municipality, neighboring/other domestic municipalities or abroad). Our setup allows to simultaneously study the causal effect of beliefs on tax and infrastructure competitiveness of a firm's home municipality on their interjurisdictional

[1] Other policy instruments may include firm subsidies (Slattery, 2024), enterprise zones (e.g. Neumark and Kolko (2010)) or cultural amenities to attract high-skilled workers (Arntz et al., 2023). The interested reader can find the perceived importance of location factors among our representative firm sample in Figure C.1. A low tax burden and a functioning transport infrastructure (as well as digital infrastructure and commercial space) are indeed among the top location factors in the eyes of firm managers. Also the availability of qualified workers is critical. More details are given in Section 6.2.

[2] Every single one of Germany's over 10,000 municipalities can decide about the tax multiplier, which constitutes the local business tax rate as a product with the tax base rate (which is set at the federal level).

[3] Similarly, misperceptions about the rank in the national or global income distribution of households have been used to study the demand for redistribution in recent studies (Fehr et al., 2022; Hvidberg et al., 2023; Bublitz, 2020; Karadja et al., 2017).

investment plans. We can also estimate the elasticity of investment to the perceived (implied) local business net-of-tax rate shock and highway access. In an information acquisition experiment, we show that firms are indeed highly interested in the relative information about competitiveness. They demand this kind of information significantly more often than just the pure level of the local business tax rate and distance to highway.

Our survey also studies further channels such as firms' support for regional subsidies as well as the justified tax rate in the eyes of the firm as well as their general views on what makes an attractive headquarters municipality. The survey concludes with a debriefing where firms can choose relevant information about the policy instruments in question. We also exploit the information acquisition behavior among firm managers to assess whether information frictions of firms rather concern the policy instruments' *levels* or the *relative standing* as compared to other municipalities. The latter is our relevant measure for a locality's competitiveness for firms against the background of local governments competing for firm capital. Firms should know their current headquarters' competitiveness over relevant location factors like the relative business tax burden or infrastructure access as compared to other localities in order to optimize location choices and profits across locations. Firms should also have an interest in knowing the policy competitiveness of their headquarters municipality since it arguably represents the relevant opportunity costs of not investing elsewhere and "staying put".

On a descriptive level, we find that firms—despite being well aware of the actual values of the local business tax rate and the duration to the next highway—have a distorted view on the respective competitiveness of their headquarters municipality. This is especially true for business tax competitiveness but also to a lesser extent for the local attractiveness of productive amenities like highway infrastructure access. Specifically, firms overestimate the local business tax competitiveness of their respective home municipality and are, therefore, too optimistic about the relative tax burden at their home municipality as compared to other potential locations in Germany.

Our experiment has four main results. First, we find that firms respond to information about the actual competitiveness of their headquarters municipality, which we provide randomly in our survey experiment. The type of information on local policy competitiveness matters for the satisfaction of incumbent firms at their headquarters municipality and their respective investment plans. Firms that overestimate their headquarters municipalitys competitiveness in terms of tax rates or highway access report lower location satisfaction after receiving information about municipal policy competitiveness. For competitiveness information about local business tax rates, we find significant effects on investment plans based on prior beliefs. This does not appear to be the case for relative infrastructure access information. Providing information about the joint distribution of taxes and highway access leads to strongly attenuated and insignificant responses (in the TRADEOFF condition). This is consistent with low taxes and better infrastructure being substitutes for firms in the context of intermunicipal policy competition (e.g. firms view local taxes as a price for local amenities).

Second, investment responses to the information about local tax policy competitiveness are asymmetric. Positive news regarding a firm's headquarters municipality deters investments in other municipalities (i.e., domestic municipalities which are not the headquarters municipality). Compared to good news, negative news improves the likelihood to invest in other municipalities significantly. However, the overall effect of providing negative local tax competitiveness information across groups is zero for investment intentions in other municipalities. We also find that investment intentions at the home municipality of the firm are not responsive to local tax competitiveness information altogether, a finding which we interpret as a form of sub-national home bias in firms' investment intentions (Van Nieuwerburgh and Veldkamp, 2009; Wolf, 2000). Moreover, investment plans of firms are overall not responsive to information about local highway access competitiveness of the home municipality.

Third, responses to information on local policy competitiveness are heterogeneous. The negative

tax information effects (vs. good news) in other municipalities are driven by respondents from mobile firms for whom the treatment may be more relevant. Effects are also somewhat stronger for those firms that believe in relatively efficient spending of local tax revenues by their respective headquarters municipalities. Non-incorporated firms do not react to the treatment, as would be expected since they are primarily subject to personal income taxation and can get part of their local business tax credited against their personal income tax liability (compensating local business tax multipliers of up to 400 percent).

Fourth, we show that firms do not change views on other outcomes. Their demand for public support (e.g., for more regional subsidies), their views on appropriate tax levels or their general views on relevant location factors in response to local policy competitiveness information about their respective headquarters municipality are not significantly changed. Our survey also provides evidence that the information provided in the experiment finds strong demand among firms. They decide to acquire information about the relative competitiveness of their municipality in terms of tax rates and highway access, but do less so for the level of these location factors.[4]

We add to several important strands of the literature. First and more generally, we add to a vivid and growing literature on interjurisdictional competition and firm location choices (as reviewed in Agrawal et al. (2022)).[5] Several papers show the causal effects of individual policy shocks on firm outcomes, including tax reforms using quasi-experimental variation (e.g. Link et al., 2024; Becker and Riedel, 2012; Mast, 2020; Riedel et al., 2020; Giroud and Rauh, 2019; Suárez Serrato and Zidar, 2016; Xu, 2021). Notably, Moretti and Wilson (2017) use tax rate differentials between US states to identify star scientists' firms' location choices. Another set of papers shows firm outcomes of highway expansion (e.g. Fretz et al., 2022; Audretsch et al., 2020; Gibbons et al., 2019; Holl, 2016; Dörr and Gäbler, 2022), related infrastructure access shocks (e.g. Hayakawa et al., 2021) or more generally changes in local public goods (e.g. Riedel et al., 2020). We complement these papers by (simultaneously) estimating how firm beliefs on local competitiveness of one's home municipality regarding business tax rates and highway access affects firm location choice.[6]

Second, we specifically relate to an evolving literature of tax shocks on firm investments. Link et al. (2024) show that tax hikes lead to a decrease in firm investment plans using a large number of business tax reforms among German municipalities. Langenmayr and Simmler (2024) show that also the expectations of future increases in the local business tax rate deter new firms from entering. Although local business tax cuts lead to more firms in the respective municipality, they at the same time lead to a smaller number of new firms in neighboring municipalities, implying spillover effects of local tax policies (Riedel et al., 2020). Additionally to our main specification using the variation in misperceptions as our exogenous measure, we can also calculate a net-of-tax-rate shock, which measures the tax differential between the actual tax rate and the (perceived) implied tax rate. Similar to these papers, we find strong and negative effects of the net-of-tax-rate implied in our information provision on tax competitiveness regarding investment plans of firm managers. In fact, we find that negative investments from higher net-of-tax-rates may be driven by fewer investments in other municipalities. We also estimate semi-

[4] This lines up with our finding that firms are well informed about the policy instruments of their headquarters municipality like the local business tax rate or the travel time to the nearest highway.

[5] Recent models in the spatial equilibrium tradition (e.g., Fajgelbaum et al. (2019)) emphasize the potential for tax-induced misallocation of firm activity across space and the role of this for financing public services. Aside from structural models, however, it is very hard to receive clean estimates of interjurisdictional competitiveness of policy instruments on firm outcomes. This is where our firm survey experiment comes in to identify competitiveness of headquarters municipalities for firms regarding the local business tax burden as well as interregional highway access.

[6] We do not find evidence that (experimental changes in) beliefs about tax competitiveness of firms' headquarters municipality are consequential for satisfaction levels or firm investment in the presence of additional information on highway access competitiveness (representing productive amenities available at the local level or agglomeration forces). There is an extensive literature on taxing agglomeration rents and how productive amenities are taxed at the local level (e.g. Brülhart et al., 2012; Luthi and Schmidheiny, 2014; Koh et al., 2013; Nover, 2023).

elasticities of 5.2% and can complement other papers using quasi-experimental variation from local business tax rate shocks in various settings, including the German one, to estimate related investment and firm location elasticities (Becker and Riedel, 2012; Beer and Loeprick, 2015; Blouin et al., 2018; Giroud and Rauh, 2019). Notably, different from other papers in this literature we exploit a *relative* tax rate shock (i.e., we compare the perceived differences of municipality i versus other municipalities $i \neq j$ to the actual differences, holding the actual and perceived tax *level* constant), while previous contributions use variation (typically, in an event-study setting) that relies on various tax rate changes of individual municipalities i. The latter changes both the tax rate of municipality i, as well as its relative position in the overall tax rate distribution. Moreover, distilling exogenous variation from changes over time in tax rates or tax differentials is very difficult, since tax policy is often directly motivated by attracting economic activity from locations that may or may not have changed taxes (Merlo et al., 2023). Moreover, tax changes may coincide with other local events such as better infrastructure access, making it difficult to disentangle their individual effects.

Third, we contribute to a growing literature that uses survey data to study firm decision-making. While many papers examine the macroeconomic beliefs and expectations of firm managers (e.g., Coibion et al., 2018; Link et al., 2023; Candia et al., 2023), as well as their decisions and outcomes (e.g., Coibion et al., 2020; Mikosch et al., 2024), our experiment focuses on how firms adjust their investment behavior in response to local information shocks. Although there is evidence that firms respond more strongly to local than to aggregate shocks in their expectations (Born et al., 2023), we are the first to investigate changes in firm behavior and preferences in the context of interjurisdictional policy competition. Altogether, we are not aware of other studies on how firm managers respond to corrections of their local policy perceptions by adjusting investment plans. We fill this gap in the literature by providing the first firm survey experiment to study beliefs over interjurisdictional policy competition and subsequent changes in firm choice. Interestingly, our findings show in contrast to several studies on tax rate misperceptions among households (e.g. Gideon, 2017; Stantcheva, 2021) that firm managers are well informed about their local tax rate and infrastructure access (which is in line with other firm and household comparisons showing sophistication of firm managers as in Link et al. (2023)), but are too optimistic about the relative tax rate in their home municipality. Once these tax misperceptions are corrected, firms only react in their investment intentions in other municipalities, not in their headquarter municipality. This is consistent with a home bias in investment (Van Nieuwerburgh and Veldkamp, 2009) that may be due to idiosyncratic attachment to the location or adjustment costs.

In the following, Sections 2 and 3 describe the firm survey and the experimental design. Section 4 discusses misperceptions of firms on the competitiveness of their respective home municipalities. Section 5 outlines the main results of the experiment, robustness of results and heterogeneous treatment effects. Section 6 shows further results on firm managers' views on benefit taxation, firm subsidies as well as priorities regarding location factors. It also shows substantial information demand of firm managers for competitiveness measures across policy domains. Section 7 concludes.

2 Data

The data collection was conducted by the GBP from June 30, 2021 to October 28, 2022. Bischof et al. (2024) provide a detailed description of the GBP. The GBP contact database draws from Bureau van Dijk Orbis databases and other sources, e.g., the Schmalenbach Society, web scraping, etc. The sample of firms that participated in our survey was drawn randomly from the address pool and invited to participate in our online survey via e-mail. A total of 3,143 respondents completed the questionnaire.

Firm characteristics include annual revenues, the number of employees subject to social security

contributions, the main industrial sector the firm operates in, and the legal form of the firm. Further, the GBP collected respondent characteristics like gender, education and position in the company. Table B in the Online Appendix provides detailed summary statistics for firm and decision-maker characteristics. The majority of firms in the target population of all firms active in Germany had in 2021 less than 10 employees (87%) and not more than 2 million € in revenues (93%).[7] In our sample 68% of respondents indicate less than 10 employees and 79% not more than 2 million € in revenues.[8] Compared to the target population, the GBP sample includes a higher share of larger firms. This is due to oversampling of corporations. 72% of firms in the survey are incorporated and 9% are sole proprietorships. With regard to industry composition, firms are active mainly in the manufacturing (14%), trade sector (14%) and professional, scientific and technical services (14%). Our main results are robust to using survey weights which allow to make inferences about the target population. In this sense, our experimental firm data allows us to make conclusions representative for the target population of all active firms in Germany.

Moreover, 64% of survey respondents indicated a position as owner or CEO of the corresponding firm. Participants are mostly male (79%). 49% of respondents have either obtained a university degree or are master craftsmen. For a validation of the survey data of the GBP, see Bischof et al. (2024). To ensure the quality of answers, there are cross-checks with the target population, cross-checks with survey answers and Orbis records (>90% agreement on revenues). We ask for name and position (high correspondence to official Handelsregister entry names) and cross-validate with the names of managing directors which match well. For a geographical representation of our respondents across German municipalities, please refer to Figure A.2 in the Online Appendix. Essentially, firm survey respondents provide information on where their headquarters resides. We combine this information with administrative data on local business tax rates and highway access statistics (more on these data in the Section below) in order to provide firms with municipality-level information in our survey experiment about how each headquarters municipality ranks in the overall distribution for these two measures. Figure A.1 in the Online Appendix shows that there is indeed large variation with respect to both measures across German municipalities, which enables firms to optimize (differently) across municipalities. Moreover, we add further local government statistics from the INKAR database to explain misperceptions of firms on the competitiveness of their headquarters municipalities across policy domains (see the Subsection on the anatomy of misperceptions).

3 Experimental Setup

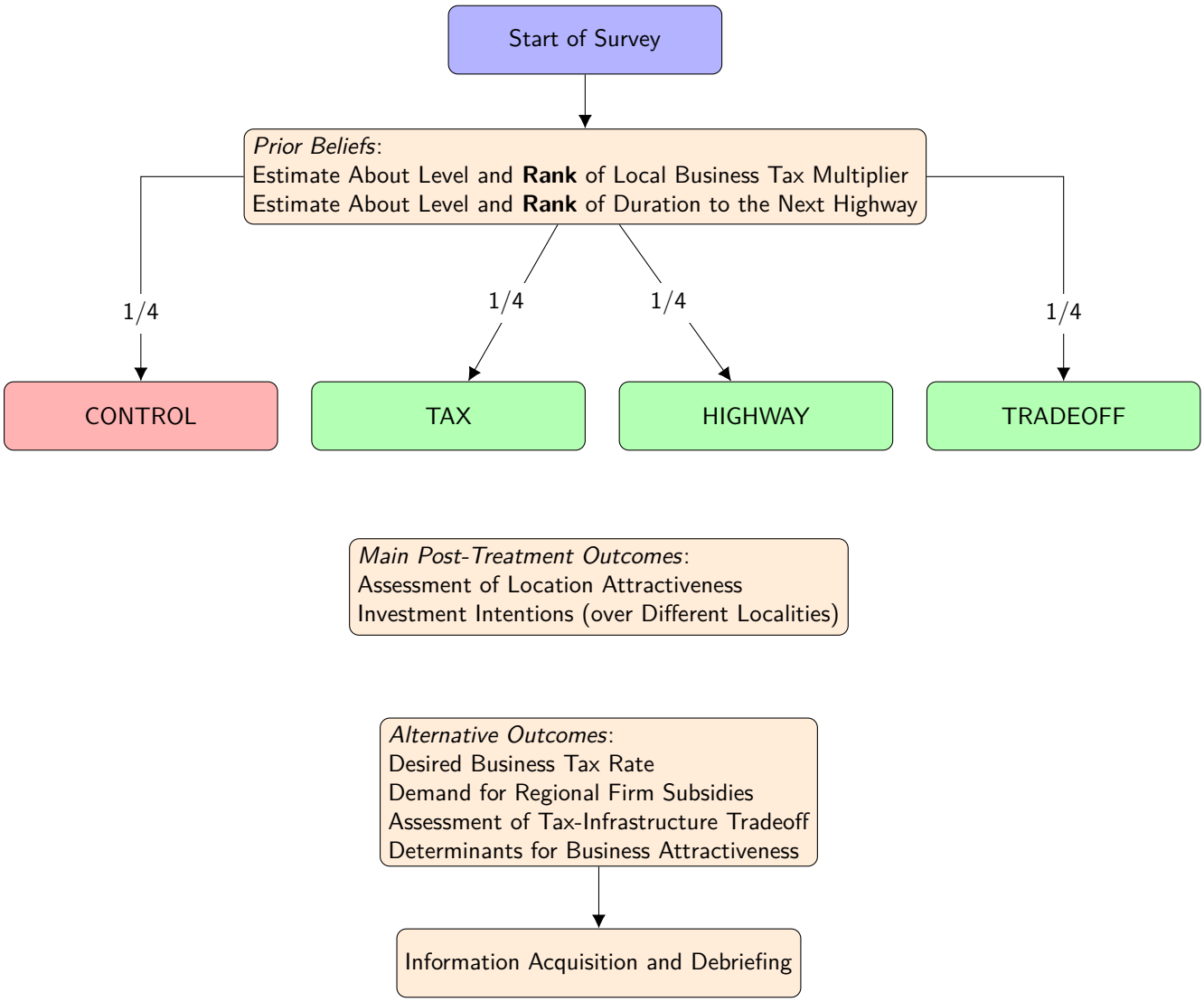
The survey instrument is designed to measure firm beliefs about the rank of their headquarters municipality in terms of tax-related production costs and infrastructure amenities and to induce exogenous variation in these respective individual beliefs. Misperceptions about the rank in the national or global income distribution of households have been used to study demand for redistribution in a similar way in recent studies (Fehr et al., 2022; Hvidberg et al., 2023; Bublitz, 2020; Karadja et al., 2017). We adapt this methodology to generate such exogenous variation in an information-provision experiment with firms regarding two (perceived) policy instruments of central importance in the local policy choice literature, i.e., business taxes and public infrastructure (Agrawal et al., 2022).

Figure 1 shows an overview of the survey design. The survey flow is as follows. We start with a brief introduction of the potential role of taxes and infrastructure for local interjurisdictional competition for firms and the implied trade-off between providing productive amenities and choosing local tax rates from the viewpoint of municipalities seeking to attract firm capital (see Online Appendix E). Specifically, we

[7] The target population is the universe of firms subject to VAT and/or subject to social security insurance for employees as covered in the Statistical Company Register of the German Federal Statistical Office.

[8] In Table B we report firm size following the EU Definition 2003/361 instead of individual employee and revenue classes.

Figure 1 Experimental Design



Notes: The figure shows the survey flow.

state that municipalities have to provide public service provision (for instance, by providing transport infrastructure) but must also finance these services (e.g. by taxing local taxes on firm profits).[9] All survey participants read this statement, irrespective of their experimental group affiliation later on. We then ask firms to state the name of their municipality where their headquarters resides using a detailed drop-down menu including all German municipalities. Only respondents who fill out this information proceed with the survey and are allocated to individualized information according to their group status in our experiment (see below).[10]

[9] While this poses a clear trade-off from the viewpoint of local politicians given real-world budget constraints, firms may perceive this trade-off less strongly. Online Appendix Section C discusses a potential trade-off between taxes (as a cost to firm profits) and highway accessibility (as a productive amenity) in the eyes of firm managers.

[10] 2.3% of respondents did not indicate a headquarters municipality for their firm.

Prior Beliefs We first elicited the individual assessment of the public finance efficiency of the local government in the firm's headquarters municipality.[11] Moreover, we asked for an estimate about the level of the local business tax multiplier. The local business tax is the most important source of revenue for municipalities (16.5% of municipal revenues, Deutscher Städte- und Gemeindebund (2022)). We obtained local business tax multipliers from the German Federal Statistical Office. Its multiplier ranges from a statutory minimum of 200% to 600% (with a single municipality, Dierfeld, at 900%). Its multiplier determines the effective tax rate (since the statutory tax base is the same across all municipalities) and can be set by each municipality independently. All firms except liberal professions are subject to this tax.[12] Next and most importantly for our experiment, we also asked for the rank in the distribution of local business tax multipliers of all municipalities in Germany, i.e., what share of all German municipalities have a business tax rate *lower* than the firm's current headquarters municipality. A higher rank thus translates into a higher tax rate and lower competitiveness of the firm's headquarters municipality, i.e., the municipality where the headquarters resides. We deliberately chose a nationwide ranking for several reasons. First, there is no consensus in the literature on what the correct reference group (neighborhood) is for competition over tax rates or productive amenities (the choice set may be defined by, e.g., distance or population). Fehr et al. (2022) for instance, show that Germans are as (in)accurate about their national income rank as they are about their global income rank. Second, in real-world applications, rankings of best places for businesses such as the Wall Street Journal, Forbes, etc. usually also present nationwide rankings. According to Slattery (2024), firms typically conduct research about all potential sites and only in a second step narrow down their choices to relocate or expand. Thus, firms should have at least superficial knowledge about the nationwide distributions of relevant policy instruments. Finally, our empirical results, which we discuss below, show that the average deviation in the nationwide ranking is close to zero for the estimated infrastructure rank. For the local business tax, this deviation is, however, systematic and firms are altogether too optimistic about the competitiveness of their headquarters municipality.[13]

After these two questions on the local business tax, we asked the same questions but with respect to the average duration to the next highway in minutes from the firm's municipality. Access to inter-regional highways measures a salient productive amenity for firms (Fretz et al., 2022; Gibbons et al., 2019; Holl, 2016) provided by headquarters municipalities.[14] While the federal government builds and finances inter-regional highways in Germany and the states administer them, municipalities can directly reduce the duration to the next highway by building connecting roads. Investments in roads amount

[11] We choose the headquarters municipality for the comparison, since this is arguably the location with the most employees. Local business taxes in German municipalities are determined by an apportionment rule based on the local share of the firms total wage sum.

[12] Examples for liberal professions are health professionals like medical doctors and pharmacists, providers of legal and consulting services like lawyers, tax advisors, as well as architects, journalists, artists, scientists, and teachers. Our sample includes 336 businesses that may be exempt from local business taxes. Non-incorporated firms can credit local business taxes against their personal income tax liability up to a threshold (Buettner et al., 2014). These are firms with legal forms such as Einzelunternehmen, oHG, GbR PartG, KG. Incorporated firms with legal forms such as GmbH, UG, AG, SE, or Genossenschaft are subject to the federal corporate tax and have no possibility to get the local business tax credited. Our results show that non-incorporated firms react significantly less to the information treatments and the effect is almost entirely driven by the incorporated firms in the sample.

[13] We can also calculate an implicit tax difference from the misperceptions regarding the rank: for respondents who misperceive their rank, we can look up which municipality is actually at the perceived rank and which local business tax rate this municipality has. For instance, consider a respondent from the municipality of Zossen who thinks Zossen ranks third lowest in the relative tax distribution but Zossen actually ranks at rank 0, i.e., it is the municipality with the lowest tax rate of 200%. The respondent, however, believes that Zossen has a tax rate corresponding to rank 3. Looking up the municipality that ranks third in the actual relative tax distribution, we find the municipality Herrsching am Ammersee. The local business tax rate there is 300% compared to the 200% in Zossen. Thus, the misperception of the tax rank implies a tax shock of 100 percentage points.

[14] Indeed, at least 82% of firms in our survey find that transport infrastructure makes a headquarters municipality a desirable destination making it the third most important factor (see Figure C.1). Alternatively, we could have measured the access to inter-regional transportation also by access to high-speed railway stations, to the next airport, or to the next bus station. These alternative infrastructure access are, however, highly correlated with one another as well as with highway access (see Appendix Section D).

to about 10.8 out of 45 billion Euros (or 24%) of planned overall municipal investments in Germany (KfW, 2024). Accessibility of highways as an example of public infrastructure has the advantage that it is common across all regions in Germany, a large share of respondents have experience using this type of public good (unlike, e.g., firefighter services), and that comparable administrative data are available for all municipalities.[15] The duration to the next highway ranges from 0 minutes to more than 70 for more than 99% of municipalities and even up to almost 150 minutes for some islands in the North Sea. For all our German municipalities, it takes on average 9.2 minutes to the next highway, at minimum 0.4 and at maximum 135.1 minutes.

Eliciting estimates about these quantities allows us to measure heterogeneous beliefs prior to providing participants with additional information. Importantly, we again measure a firm's prior belief about the rank of the firm's headquarters municipality in the overall distribution of municipal highway access distances in all German municipalities. We obtain the actual average travel time to the nearest highway from the respective population-weighted municipality center at the municipal level from the Federal Institute for Research on Building, Urban Affairs and Spatial Development.

Experimental Variation Before asking for outcome variables (see below for details), we randomly assign 3/4 of respondents in equal proportion to three treatment groups that receive different feedback and the remaining 1/4 to a control group, labeled CONTROL, which did not receive feedback information. The three treatment groups received feedback about their true position in the distributions. The information includes both the guess and the actual rank as well as visual feedback on their difference on the range from rank 0 to rank 100% of the cumulative distribution.[16]

The respondents assigned to treatment group TAX received feedback about their true rank but only with respect to the local business tax multiplier, not regarding infrastructure. The second treatment group HIGHWAY included information about the true rank with respect to the duration to the next highway but not about the local business tax multiplier. Respondents in the third treatment group, which we label TRADEOFF, received information on the true ranks in both distributions. This allows us to capture interactions between costs and benefits of public finance configurations and firms in the experiment are informed on how their municipalities perform in terms of (a specific) productive amenity as well as the respective local tax price. For example, by comparing the treatments with feedback on costs or benefits individually, we can study which factor (i.e., tax or infrastructures) is more relevant and whether respondent firms perceive a trade-off between the lower taxes and better infrastructure.[17]

The provision of information creates exogenous variation that we can leverage to measure the causal effect of perceived tax and infrastructure ranks on headquarters municipality attractiveness and investment plans across various destinations as well as other outcomes (see below). For example, consider a firm representative who overestimates the competitiveness of her headquarters municipality regarding the local business tax multiplier rank by 90 percentage points, i.e., even though its headquarters municipality has the 95th rank of all places, she thinks it ranks on position 5 (i.e., 95% instead of 5% of all municipalities have actually a lower tax rate than her own headquarters municipality). Thus, she thinks her firm's headquarters municipality is performing better and is more competitive than it actually is in reality. Firms assigned to the CONTROL condition without feedback are not informed and should, thus, not update their rank beliefs. We expect that respondents over-estimate their tax competitiveness, such that the TAX treatment adjusts their beliefs towards less competitive ranks. The information provision thus creates a negative shock to the individual firm's perceived relative net-of-tax

[15] Please note that municipalities are entirely responsible for highway access but they can build roads and bypasses to connect to highway accesses, effectively reducing the minutes to the next highway.

[16] We provide screenshots (Section E) in the original survey language and layout.

[17] It could be that respondents underestimated one domain, say taxes, and overestimated the other, say infrastructure. Then the direction of treatment would differ between the treatments.

profits in their own headquarters municipality as compared to other German municipalities. Therefore, firms who over-estimate the competitiveness of their municipality regarding the local business tax should become less satisfied with their current headquarters municipality and may decrease their investment plans regarding their current headquarters municipality (and vice versa for firms who underestimate how well their municipality fares compared to others regarding the local business tax burden). A similar logic and similar empirical expectations apply for the HIGHWAY treatment where firms that previously over-estimated the infrastructure access competitiveness of their headquarters municipality should in turn also be less satisfied, respectively.

Our treatment conditions are well-balanced across firm size, legal forms, industries as well as manager background like age, gender and position (see Appendix Table B.1).

Outcomes Our first outcome question elicits individual firm's satisfaction with their respective headquarters municipality on a scale from 0-10 (see Table A in the Appendix for definitions of key variables). Experimental shocks to headquarters municipality satisfaction levels should then translate into our other survey measures. Importantly, we elicit respondents' intentions to invest in their own municipality, in neighboring municipalities as well as other German municipalities or abroad using probabilistic beliefs over investments of their firm in the coming years. This question is key when measuring changes in firm location choices in our experiment conditional on firm beliefs on the competitiveness of their headquarters municipality over policy competitiveness. Investments intentions in the survey therefore correspond to the *extensive margin* of investment. Please note that we do not force firms to make a decision between different investment destinations but allow them instead to rate the likelihood of investing in these places in the future. Due to the location-specific nature of investment intentions it is not possible to compare it to realized investment behavior of firms. Firm responses about general investment in firm surveys such as the ifo Business Survey have been shown to be predictive of actual investment behavior (Bachmann and Zorn, 2020; Menkhoff, 2024).
We further ask firms about their desired local business tax multipliers, their demand for regional firm subsidies, their assessment of the trade-off between lower taxes and better infrastructure and their rating on various determinants of business attractiveness. Finally, we included a question to shed light on the demand for information about the true ranks (as compared to level information) in both policy domains, i.e., for business tax rates and highway access. All question wordings are displayed in Online Appendix F.

4 Beliefs on Relative Tax Burden and Accessibility

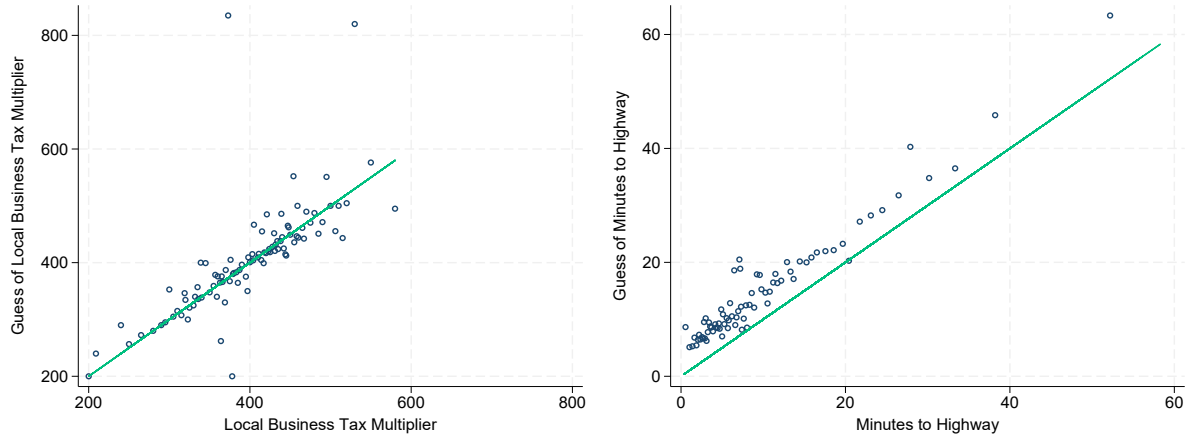
4.1 Priors Beliefs and True Ranks

What do firm respondents know about their absolute and relative net-of-tax rates or the absolute and relative highway accessibility? First, we show that firms are very well informed about the actual level of the local business tax multiplier. Figure 2a documents that the quantile scatter of the actual and estimated local business tax multiplier are very close to the 45-degree line even though the regression slope is statistically different from 1 (p-value of 0.07). This is not surprising, since firms need to submit an annual local business tax declaration and are, thus, likely well informed about this policy instrument.[18] As Figure 2b shows, the estimates for the actual and estimated duration to the next highway in minutes are similarly accurate (with a regression slope being different from 1 at a p-value of 0.20), although the duration is slightly overestimated. This could be due to the fact that the administrative data report the average duration, while respondents might calculate with a buffer for longer waiting times.

[18] Note that 715 respondents reported a local business tax multiplier below the statutory minimum of 200, likely having the effective tax rate in mind. We excluded these observations from Figure 2a but not from the rest of the analysis. 28

Figure 2 Firms' Misperception Prior to Treatment

(a) Local Business Tax Multipliers **(b)** Minutes to Highway



Notes: Binscatters with 100 quantiles and 45-degree lines for estimated and actual local business tax multipliers as well as for estimated and actual minutes to highway. Refers to headquarters municipality. The regression slope is statistically different from 1 (p-value: 0.07) for local business tax multipliers at the 10% level (after 715 observations reporting a value below the statutory minimum are excluded). The regression slope is not statistically different from 1 (p-value: 0.20) for highway access.

Intuitively, firms may have lower misperceptions about levels of policy instruments (such as their tax burden or the actual drive to the nearest highway access) than for the respective rank and, thus, the respective level of competitiveness of their headquarters municipality in these policy domains. While they (have to) know their local tax rate for their annual tax declaration and experience the (daily) drive duration to the nearest highway, the rank of their headquarters municipality with respect to these policy instruments may be harder to grasp and may be of lower salience. Regarding comparative tax rate information, neither the Federal Statistical Office nor the Chamber of Industry and Commerce (IHK) provide detailed rankings of municipal data but only in the form of maps, lists or mean tax rates at the state level. That is, even though administrative data for the individual municipality level is available for all of Germany, ready-to-use rankings of how (all) possible headquarters municipalities fare are hardly available. The same holds for highway access information. For our experiment, we generated the rankings from the administrative data. As such, even though knowing about rank information and, thus by extension, local policy competitiveness of headquarters municipalities is essential to optimize investment decisions between jurisdictions, firms may hold substantial misperceptions in this regard.

Definition of Misperceptions The misperception regarding the rank of a location factor $s \in \{\text{TAX, HIGHWAY}\}$ of a respondent i is measured as the difference between the true value $TRUTH_i^s$, in this case, the rank, and his or her prior belief $BELIEF_i^s$ about the rank of the firm's headquarters municipality:

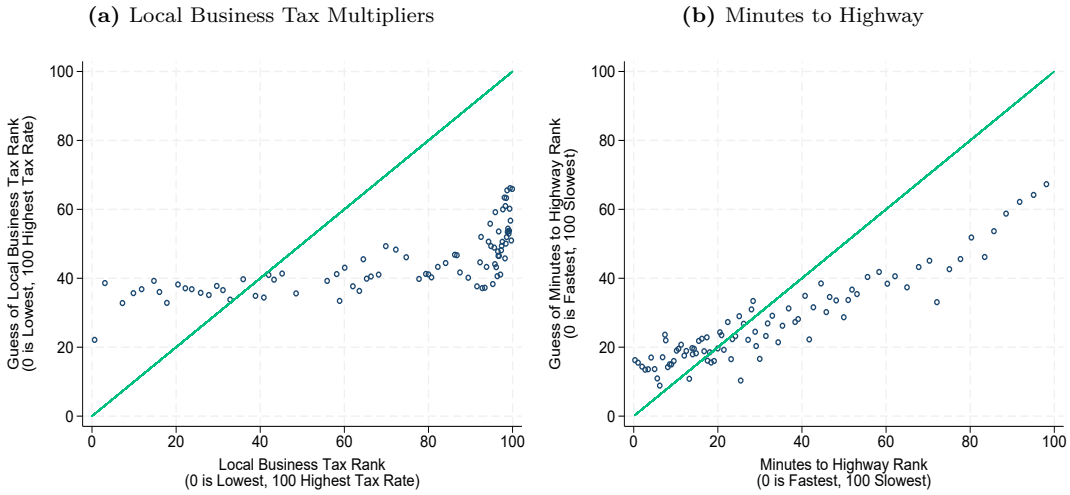
$$BIAS_i^s = TRUTH_i^s - BELIEF_i^s. \tag{1}$$

Positive values of $BIAS_i^s$ therefore represent an overestimation of the competitiveness of a firm's headquarters municipality (i.e., an underestimation of the share of municipalities that have more favorable conditions), while negative values represent an underestimation of the competitiveness of the own municipality, respectively.

Figure 3 shows the perceptions for local business tax rank (Figure 3a) and the highway accessibility rank (Figure 3b). The results show substantial misperceptions (denoted as *BIAS*) for both the relative local business tax and highway access. The median and average responses for the perceived local business

firms reported one higher than 900%.

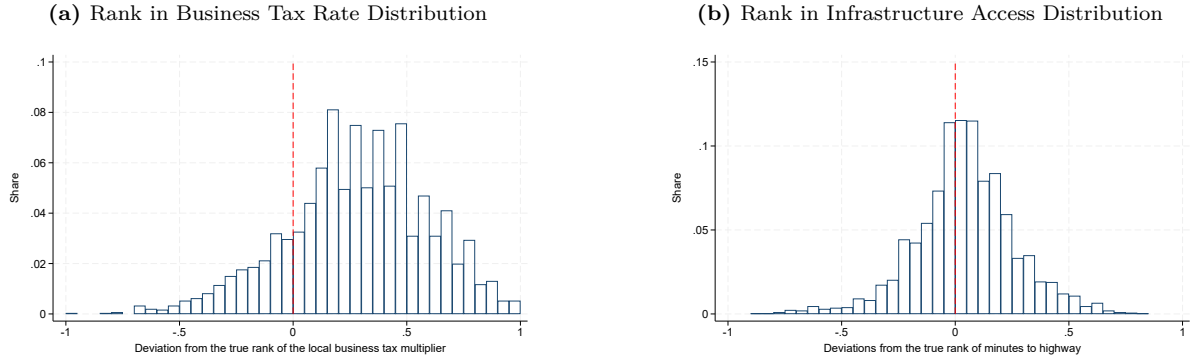
Figure 3 Firms Rank Misperception Prior to Treatment



Notes: Refers to headquarters municipality. Binscatters with 100 quantiles and 45-degree line. On the 45-degree line $TRUTH_i^s = BELIEF_i^s$, such that $BIAS_i^s = TRUTH_i^s = BELIEF_i^s = 0$. The distance of scatter points above the 45-degree line to the 45-degree line measures the negative bias for underestimators, i.e., $BIAS_i^s < 0$. The distance of scatter points below the 45-degree line to the 45-degree line measures the positive bias for overestimators, i.e., $BIAS_i^s > 0$.

tax ranks indicate that their municipalities rank at 50% and 47%. The scatter plot for the perceived vs. actual local business tax ranks is approximately horizontal at about 40%, that is, the guesses are virtually independent of the true ranks. Thus, we do not find evidence for a middle-class bias (Fehr et al., 2022) but we find some clustering for the top 5% of highest tax municipalities. This could be due to media reporting about the tails of the distribution. However, also these observations are far from the 45-degree line. In Section 5.3 we show that excluding these observations does not change our experimental results. The respective scatter plot for highway access shows a positive slope and quite some probability mass at close to the 45-degree line, suggesting a more accurate perception of the highway access rank among municipalities. Due to larger rank misperceptions, we expect stronger effects from the TAX treatment than from the HIGHWAY treatment on our post-treatment outcome measures. In both figures, the share of overestimators of the local competitiveness of firms' headquarters municipalities is larger than the share of underestimators, respectively. Thus, the effects of downward correction or equivalently a negative shock for the perceived attractiveness of the respondent's headquarters municipality will be more precisely measured than upward corrections, i.e., positive shocks for the perceived competitiveness of the respective headquarters municipality of the firm.

Figure 4 Misperception of Firms Regarding Local Competitiveness of Home Municipality



Notes: Misperceptions in local competitiveness are defined as actual minus perceived percentile of the municipality in which the headquarters is located ($BIAS_i^s = TRUTH_i^s - BELIEF_i^s$) in the distribution of: local business tax rates (a) and highway access times (b).

Figure 4a shows the histograms of misperceptions for each policy: that is, the difference between

true rank and the respective prior belief. A positive (negative) number indicates that the respondent overestimates (underestimates) the competitiveness of her headquarters municipality. For example, a *BIAS* of 0.5 means that a firm respondent's municipality is actually 50 percentage points worse in the relative tax or minutes ranking than he or she thinks it is (and vice versa for the value of -0.5). At first glance, the highway access distribution seems to have a much smaller average bias than the local business tax distribution. In fact, the average bias for highway access is close to zero (Mean=-0.04, SD=0.22). Eyeballing the distribution, there are roughly the same number of people overestimating their highway access rank as there are people underestimating or correctly guessing it. Table C.1 shows that somewhat fewer than 50% of respondents overestimate their competitiveness regarding highway access, i.e., underestimate their rank in the highway access distribution.

This is different for the misperception of the tax rank. Respondents systematically overestimate the competitiveness of their headquarters municipality regarding the local business tax by an average of 28 percentage points (Mean=-0.28, SD=0.31, p-value < 0.001 for a paired t-test of differences in means). Table C.1 shows that the large majority of almost 80% of respondents overestimate the relative tax competitiveness in their headquarters municipality compared to other places. Overall, these misperceptions reflect quite pronounced and relevant individual biases among many firm managers for both the tax rank and the highway access rank, and thus, about the competitiveness of their headquarters municipality across these respective policy domains of their headquarters municipalities.[19]

The Anatomy of Misperceiving Local Government Competitiveness Figure C.3 shows the determinants of the respective misperception (*BIAS*) of firms regarding the position of their headquarters municipality in the nationwide tax rate (right panel) or highway access distribution (left panel). Recall that positive values of *BIAS* indicate that firms think their municipalities have a lower tax burden or better highway accessibility than their peers in the rest of Germany than what is actually true, i.e., overestimating local policy competitiveness in these policy domains. By contrast, negative values indicate underestimation of policy competitiveness of firms' headquarters municipalities.

The Figure shows the respective multivariate regression results of the form for firm i: $BIAS_i^s = \alpha + \beta \times Covariate_i + \epsilon_i$, where $Covariate_i$ measure both respondent-level (gender, CEO position), firm-level (sole proprietorship, corporation, sector classification, firm size), as well as municipal-level characteristics.[20] A positive coefficient $\beta > 0$ implies a lower perceived rank compared to the actual rank for a specific $Covariate_i$. That is, positive coefficients mean a stronger overestimation of competitiveness. The left panel of the figure shows that tax rank misperceptions of firms are systematically driven by the position of the respondent in the company as CEOs tend to overestimate the competitiveness of their municipality less than others. Responses of firms based in larger cities are also showing less overestimation of tax competitiveness of the headquarters municipality. Given that larger municipalities have on average also higher business tax rates than more rural and smaller places (e.g. Janeba and Osterloh, 2013), our findings indicate that firms in these municipalities are relatively aware and realistic of the lower tax competitiveness of their headquarters municipality and their higher tax rates as compared to other localities. Other factors are less important or insignificant.[21] Looking at firm misperceptions regarding

[19] Please note that according to Figure C.2 of the Appendix, there is no significant statistical relationship between misperceptions of tax and infrastructure competitiveness at the respondent level. This shows that the induced variation is orthogonal along the tax rank and infrastructure distributions. Thus, higher misperception about the tax rank does not imply higher misperception about highway access.

[20] These include a dummy for a firm residing in East Germany, an indicator variable for classification as functional center according to regional planning criteria, city size classifications (large, medium, medium-small and small towns), and indicator for thick labor markets, above-average net-in-commuters as well as the actual rank of the headquarters municipality in the cumulative distribution of the local business tax rate or minutes to the nearest highway across all German municipalities.

[21] In an alternative specification we also additionally include the average tax rate and highway access in the same county or state as well as the relative position in the local distribution of the respective county or federal state as covariates.

the competitiveness over infrastructure accessibility, there do not seem to be systematic drivers of these misperceptions. Exceptions are firms active in the public sector, which are rather underestimating the competitiveness of their headquarters municipality.

5 Experimental Results

5.1 Empirical Approach

Overestimators vs. Underestimators Intuitively, firms should respond to the correction of the misperception about competitiveness in a non-linear fashion. That is, it matters, of course, if firms receive a positive or a negative shock on the competitiveness of their headquarters municipality for a given policy instrument for those who previously under- or overestimated their headquarters municipality's attractiveness. This also resembles the estimation procedure in information experiments on one's position in personal income distribution and redistributive preferences (e.g. Fehr et al. (2022)). Based on the continuous definition of the misperception labeled $BIAS$ in equation (1) for firm i, we also calculate a binary variable $OVER_i^s$, which takes value 1 if $BIAS_i^s$ is larger than 5 percentage points, and 0 otherwise for each policy instrument $s \in \{\text{TAX, HIGHWAY}\}$:[22]

$$OVER_i^s = \begin{cases} 1, & \text{if } BIAS_i^s > 5 \\ 0, & \text{otherwise.} \end{cases} \tag{2}$$

Our baseline model thus considers non-linear updating by studying the (ex-ante arguably) different effects of over- and underestimating the relative competitiveness of firm headquarters municipalities using the following specification:

$$y_i = \alpha + \beta OVER_i^s + \gamma Treat_i^s + \delta Treat_i^s \times OVER_i^s + \epsilon_i, \tag{3}$$

with outcome variables y_i, which include (i) satisfaction with the location, investment (ii) in the home municipality, (iii) in other municipalities and (iv) outside Germany.[23] The dummy variable $OVER_i^s$ takes the value 1 if the respondent overestimates the competitiveness of his headquarters municipality regarding dimension s by more than 5 percentage points. $Treat_i^s$ indicates the treatment group assignment of respondents into groups TAX, HIGHWAY.[24] All effects are measured against members of the CONTROL group, the omitted category. ϵ_i captures the error term.

The coefficient α measures the average outcome variable for the underestimators (including those that guess correctly) in the CONTROL group. γ measures the causal effect on the outcome for underestimators who receive the treatment. $\alpha+\beta$ is the average outcome for overestimators in the CONTROL group. $\gamma + \delta$ is a causal measure of how firms respond when they receive the treatment if they overestimate. δ alone measures the difference between over and underestimators who both have received the treatment. This can be compared to the difference between over and underestimators in the CONTROL group, β.

5.2 Baseline Results

Perceptions about the Location How do firms change the assessment of their headquarters municipality, when they receive information about its competitiveness? Figure 5 gives a preliminary illustration

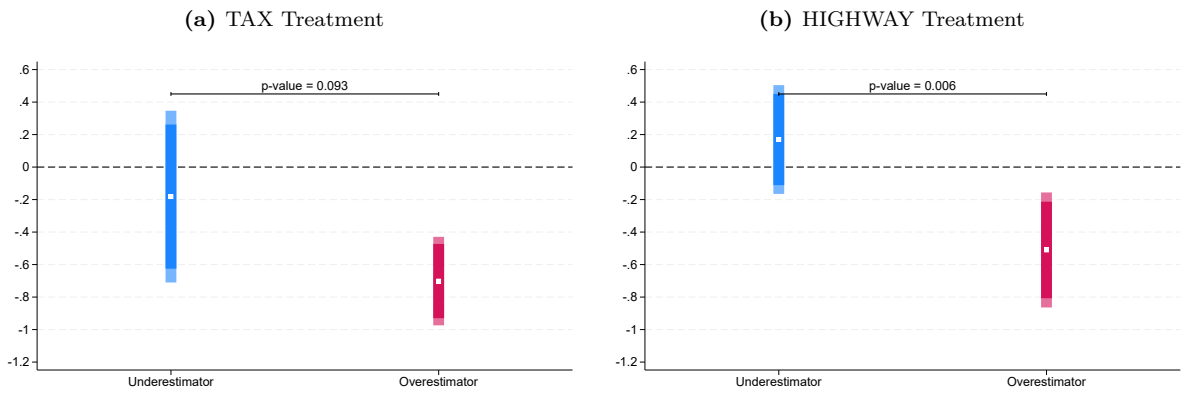
However, these measures do not correlate with respondents' misperceptions.

[22] We get similar results for different buffer definitions (Figure B.4a and Figure B.4b).

[23] For the ease of interpretation the categories for investment intentions in neighboring municipalities and other domestic municipalities are averaged and combined into one category *other municipalities*. Results are qualitatively similar if we look at these two outcomes separately.

[24] We discuss results from the TRADEOFF treatment separately below in the context of Table 1.

Figure 5 Information Effects on Satisfaction with Location



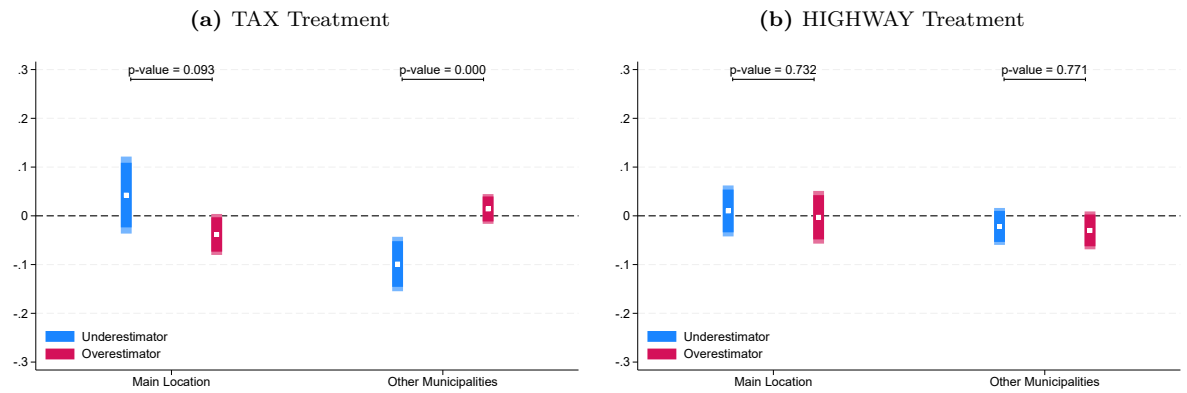
Notes: Figures a) and b) show the coefficient plots of the effects of correction of misperceptions β' through information treatments on location satisfaction of firms. Corresponding regressions are $y_i = \alpha + \beta' Treat_i^s + \epsilon_i$, and estimated for underestimators (positive shock about own municipalities competitiveness, $BIAS <= 5$) and overestimators (negative shock about own municipalities competitiveness, $BIAS > 5$) separately. Bands around the coefficients indicate 90% (light color) and 95% (darker color) confidence intervals.

on the experimental effects and shows how differently firm managers respond in their satisfaction with the location, if they receive good news (underestimator) or bad news (overestimator) about their headquarters municipality's competitiveness for a given policy domain. The coefficient plots in Figure 5a show that while a positive shock about the own location in terms of tax competitiveness does not affect the location satisfaction of respondents, it does in a negative manner for respondents receiving bad news. The difference between these two is significant at the 10% level. In comparison to this, Figure 5b shows the effect of correcting misperceptions for over- and underestimators regarding highway competitiveness. The results reveal a similar pattern, with overestimators reporting lower location satisfaction after information provision, while the satisfaction of those who received good news about their location, remains relatively unchanged compared to the control group. The group difference is significant at the 5% level. As a plausibility check, we also do the same exercise for overall satisfaction with economic policy in Germany, which is regularly elicited in the GBP and was asked after the relevant questions for this survey experiment. Information about local competitiveness should not influence those perceptions, and the results in Figure B.1 in the Online Appendix confirm that.

Investment Intentions Figure 6 shows the coefficients of our baseline results for investment intentions, estimated separately for underestimators (those that receive either good news about their location or see their priors confirmed) and overestimators (which receive bad news about the competitiveness of their location). The figures include the coefficients of the two treatment indicators TAX and HIGHWAY. We discuss the TRADEOFF condition in addition in the regression analysis of Table D.1 below.

Figure 7a shows that for both investment intentions at the headquarters as well as in other municipalities it matters whether the provided tax competitiveness information was good or bad news. For good news (and thus, for underestimators), respondents state a higher likelihood to invest at home and a lower likelihood to invest in other municipalities. If subjects instead received bad news, the results are in the opposite direction (while the overall effect compared across treatment groups does not turn out to be significant at conventional levels). The differences between over- and underestimators are both significant for investment intentions at home (p=0.093) as well as in other municipalities (p=0.000). For the other treatment effects regarding highway competitiveness information in Figure 7b the effects on investment intentions are economically small and statistically not significant. Differences between respondents receiving good and bad news are also not statistically significant.

Figure 6 Information Effects on Investment Intentions



Notes: Figures a) and b) show the coefficient plots of the effects of correction of misperceptions β' through information treatments on investment intentions of firms. Corresponding regressions are $y_i = \alpha + \beta' Treat_i^s + \epsilon_i$, and estimated for underestimators (positive shock about own municipalities competitiveness, $BIAS <= 5$) and overestimators (negative shock about own municipalities competitiveness, $BIAS > 5$) separately. Bands around the coefficients indicate 90% (light color) and 95% (darker color) confidence intervals.

Estimating Main Outcomes using Interactions Table D.1 reports the regression results of a fully interacted version of equation (3). Since respondents may have misperceptions about either their tax rank and/or their highway access rank, we specify our definition of overestimators and denote indicator variables with respect to the policy domain given in the superscript. That is, for respondents who think their municipality's competitiveness with respect to the tax rank is higher than it actually is denoted as $\mathbb{I}_{over}^{Tax}$ and for highways as $\mathbb{I}_{over}^{Highway}$. In this model, the coefficients of the interaction terms of the respective treatment conditions TAX, HIGHWAY, and TRADEOFF with their respective misperception describe the effect of correcting misperceptions about a firm's headquarters municipality's competitiveness on their satisfaction and investment intentions. The indicator for the TRADEOFF condition is interacted with both misperceptions individually and is also included in a triple-interaction with over-estimator dummies from both policy domains. The estimation model is therefore:

$$\begin{aligned} y_i = \alpha_0 + \beta_1 \mathbb{I}_{over}^{Tax} + \beta_2 \mathbb{I}_{over}^{Highway} + \gamma_1 \text{TAX} + \gamma_2 \text{HIGHWAY} + \gamma_3 \text{TRADEOFF} + \\ \delta_1 \text{TAX} \times \mathbb{I}_{over}^{Tax} + \delta_2 \text{HIGHWAY} \times \mathbb{I}_{over}^{Highway} + \delta_3 \text{TRADEOFF} \times \mathbb{I}_{over}^{Tax} + \\ \delta_4 \text{TRADEOFF} \times \mathbb{I}_{over}^{Highway} + \delta_5 \text{TRADEOFF} \times \mathbb{I}_{over}^{Tax} \times \mathbb{I}_{over}^{Highway} + \epsilon_i. \end{aligned}$$

As before for the tax treatment, γ_1 measures the causal effect on the outcome for underestimators who receive the treatment. $\gamma_1 + \delta_1$ is a causal measure of how firms respond when they receive the tax competitiveness treatment if they overestimate.[25] δ_1 alone measures the difference between over and underestimators who both have received the same TAX treatment and can thus not be interpreted causally. Table 1 reports the main effects γ and $\gamma + \delta$ for the respective treatment conditions.

Receiving bad news about one's headquarters municipality's competitiveness regarding local business tax rates decreases satisfaction with the location. Investment intentions also respond: Firms that receive positive information about the tax attractiveness of their headquarters municipality, are less likely to invest in other municipalities than their home municipality. The effects are sizable, corresponding to a decrease in investment intentions in other municipalities of 0.31 of a standard deviation (SD).

Moreover, investment intentions react asymmetrically based on prior beliefs: While investments become less likely in other municipalities in response to good news, bad news about the firm's headquarters municipality's tax competitiveness *relatively* increase investment intentions in other municipalities by 0.34 SD at a statistical significance of 1% (δ_1). The *overall* effect of receiving bad news ($\gamma_1 + \delta_1$) is however

[25] Likewise, $\gamma_2 + \delta_2$ measures the causal response when receiving the HIGHWAY treatment for overestimators.

Table 1 Effects by Treatment for Over- and Underestimators

	Satisfaction	Investment by destination		
	Main location	Main location	Neighboring + Other	Outside Germany
Panel A: TAX				
γ_1: TAX	-0.327	0.008	-0.077***	-0.036
	(0.244)	(0.038)	(0.025)	(0.031)
$\gamma_1 + \delta_1$: TAX+TAX*$\mathbb{I}_{over}^{Tax}$	-0.660***	-0.029	0.008	0.003
	(0.139)	(0.021)	(0.016)	(0.018)
Panel B: HIGHWAY				
γ_2: HIGHWAY	0.123	0.011	-0.027	-0.016
	(0.159)	(0.025)	(0.018)	(0.022)
$\gamma_2 + \delta_2$: HIGHWAY+HIGHWAY*$\mathbb{I}_{over}^{Highway}$	-0.459***	-0.004	-0.024	0.006
	(0.163)	(0.025)	(0.019)	(0.022)
Panel C: TRADEOFF				
γ_3: TRADEOFF	-0.058	0.002	-0.021	-0.037
	(0.361)	(0.051)	(0.039)	(0.046)
$\gamma_3 + \delta_3$: TRADEOFF+TRADEOFF*$\mathbb{I}_{over}^{Tax}$	-0.365	-0.006	-0.015	-0.031
	(0.362)	(0.051)	(0.041)	(0.046)
$\gamma_3 + \delta_4$: TRADEOFF+TRADEOFF*$\mathbb{I}_{over}^{Highway}$	-0.497	0.044	-0.057	-0.007
	(0.472)	(0.065)	(0.052)	(0.059)
Observations (# of firms)	3,066	2,678	2,371	2,440
Mean D.V. control	6.788	0.715	0.249	0.150
SD D.V. control	2.424	0.352	0.248	0.303
R^2	0.016	0.004	0.007	0.003

Notes: This table reports OLS regression results, following the empirical specification of equation (3). Treatment indicators (Treat) for all s treatment groups, i.e., TAX, HIGHWAY as well as TRADEOFF are interacted with a dummy variable (over) which is 1 for overestimation ($BIAS > 5$) of local business tax or highway access rank of the headquarters municipality of firm i and is zero otherwise. The TRADEOFF indicator is interacted with both over variables, respectively.The coefficients represent the direct effect (γ) and the interaction with overestimation ($\gamma + \delta$). Robust standard errors are in parentheses. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

not statistically different from zero. Moreover, asymmetric updating of investment intentions at home from receiving tax competitiveness information turns out statistically insignificant (while qualitatively similar as in Figure 6(a) when using regression-based interaction models). The fact that firms appear to respond to positive information about their home municipality's competitiveness by decreasing investment intentions in other municipalities, while they do not respond to negative information in their investment intentions at home, can be interpreted as a sub-national form of home bias in firm investment (Van Nieuwerburgh and Veldkamp, 2009; Wolf, 2000). This is mirrored in the observation that for firms in the untreated CONTROL group, the average investment intentions in the home municipality are with 71.5% much higher than in other municipalities in Germany (24.9%) or abroad (15%).Exposing firms to bad news about their headquarters municipality's competitiveness regarding highway access has a strong negative effect on satisfaction with the location. Firms that overestimate their municipality's relative highway accessibility report a sizable decline in satisfaction with their headquarters municipality when this misperception is corrected, equivalent to a decrease of 0.19 SD of the dependent variable. However, the corrections do not lead to significant changes in firms stated investment intentions across locations, suggesting that while perceptions of infrastructure impact satisfaction of incumbent firms, they might not directly influence their immediate investment plans, as is the case for tax rate perceptions.[26]

For firms being exposed to information on the competitiveness regarding both policy domains (TRADE-

[26]Please note that the different updating behavior of firms upon news on competitiveness regarding taxes and highway access likely reflects differences in how firms interpret tax burdens versus public goods. As noted by Agrawal et al. (2022), corporate taxes only partially fund business-relevant services and also contribute to broader public expenditures. Firms may thus view taxes primarily as a cost, while the return in terms of public services remains uncertain. Consequently, correcting beliefs about local tax competitiveness has stronger effects than equivalent updates about infrastructure quality.

OFF), the results show no statistically significant effects on satisfaction or investment intentions across locations. For instance, the significant negative effect of HIGHWAY for location satisfaction among overestimators disappears when being augmented with additional information on competitiveness in another policy domain. Overall, the evidence shows the importance of isolated corrections for specific dimensions of competitiveness in order to have an effect on our outcome measures, with highway and tax corrections having distinct and more pronounced effects compared to combined signals.

Throughout specifications there is no significant effect of corrected misperceptions on investment intentions outside of Germany. This applies to both positive and negative shocks about the competitiveness of the home municipality regarding local business tax rate and highway access. This result appears intuitive as we provide individuals with information about the relative competitiveness of their municipality *within Germany*, but do *not* shift their views regarding the *international competitiveness* of German municipalities.

Estimating Investment Elasticities Given firms' misperceptions about their municipality's competitiveness regarding the tax rate or highway access, it is also possible to calculate implied tax rates or highway access differentials. The implied tax rate is identified through the actual tax rate in place in the municipality at the guessed rank of the tax rate distribution. Then the tax rate differential is calculated as the difference between the implied and the actual net-of-tax rate $\Delta\tau_i = (1-\tau_{i,implied}) - (1-\tau_{i,actual})$. This term takes positive values for respondents that overestimate the competitiveness of their home municipality and thus the net-of-tax rate at the guessed rank is higher than at the actual rank of the municipality. This corresponds to receiving bad news in our experimental survey setting. Estimating the baseline specification in equation (3) (with a continuous instead of a binary indicator interaction with our treatment variables) with this measure produces qualitatively similar results (see Table D.3 in the Appendix). A 1 SD higher net-of-tax rate differential (1.86 percentage points) combined with an estimand of $\Delta\tau_i \times \text{TAX} = 1.3$ percentage points results in a 2.42 percentage points higher likelihood to invest in neighboring or other domestic municipalities. This also corresponds to a semi-elasticity of 5.2% increase in the investment intention in other municipalities after an increase in the tax differential by 1 percentage point.[27] There is no significant effect on investment intentions in the home municipality. Altogether, these results qualitatively confirm our baseline results when we use continuous misperceptions of policy competitiveness as a measure for treatment intensity (Table D.2). For highway access differentials, the related effects are in the same direction as our main estimates but are again statistically insignificant.

5.3 Robustness

To test the robustness of our main experimental results, we employ several strategies. First, we use a different specification of the outcome measure of investment intentions, using a dummy variable that takes the value of 1 if investment intentions are stated to be above 50% in a given category, and 0 otherwise. Results in Table B.1 in the Online Appendix show that results remain qualitatively similar.

Second, we exclude certain groups of firms, which are located in high-tax municipalities, to test whether our results are driven by this group. As the cutoff, we choose the 95th percentile, which corresponds to the high-tax-cluster visible in the distribution of firms' headquarters tax rank (see Figure 3a). This approach addresses the concern that firms in high-tax municipalities are different from other firms and also respond differently to information about competitiveness. As Table B.2 in the Online Appendix shows, our main results remain almost unchanged when excluding this high-tax cluster.

[27] The semi-elasticity is calculated as 0.013/0.249=0.052.

Third, we examine whether our results are driven by a specific industry. Figure B.4 in the Online Appendix shows leave-one-out estimations results, where the coefficients for investment intentions at the headquarters municipality and in other municipalities are plotted if we leave out firms in a specific industry in the estimation. This exercise confirms that our results remain robust and are not driven by a specific industry.

Fourth, to account for differences between the firm composition in our survey sample and the actual German economy, we use survey weights to re-estimate our main results. In other words, these constructed survey weights[28] allow us to estimate effects which are representative of the whole firm population in Germany. Table B.3 in the Online Appendix shows that results also remain qualitatively robust to this.

Lastly, our main results are also robust when controlling for municipality characteristics and as well as firm characteristics (see Tables B.4 and B.5 of the Online Appendix). Municipality characteristics include a dummy indicating whether the municipality of the firm has a high local business tax rate (low highway access) or not, and whether the respondents perceive that the municipality uses its revenues efficiently. Firm characteristics include manager characteristics such as gender, education and position of the respondents, and firm characteristics such as number of employees, legal form and economic sector.

5.4 Heterogeneous Treatment Effects

Firm Mobility To better understand the responses of firms to information on interjurisdictional competitiveness of their headquarters municipality, we first re-run our analysis and focus on the mobility of firms. We expect that more mobile firms should respond stronger regarding their investment plans to a change in beliefs on local policy competitiveness of their respective headquarters municipality.

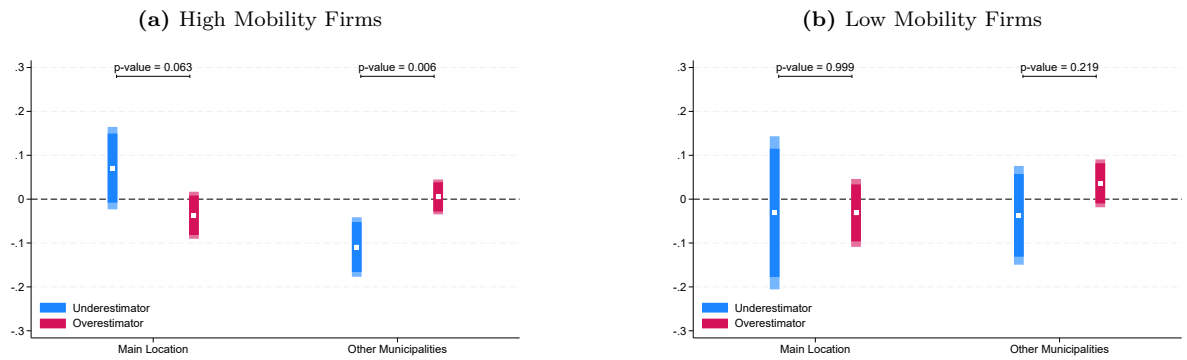
The measure of mobility we use here is the self-reported share of investment intentions in neighboring and other municipalities in Germany over the total sum of investment intentions. We first calculate these mobility measures for the untreated CONTROL group and then classify industries as more mobile if they are above the median in this measure (Table B.2 in the Online Appendix contains the underlying shares by industry).[29] We then estimate equation (3) for firms in high- and low-mobility industries separately. Figure 7 shows the heterogeneous investment effects of being exposed to the TAX treatment information for mobile and immobile firms, respectively.

The sample split by mobile and immobile industries reveals that our baseline results of the TAX condition are driven by firms, which are in (relatively) mobile industries. Underestimators strongly respond to corrected misperceptions about the relative rank of their headquarters municipality by significantly reducing their intentions to invest in other municipalities in Germany and increasing—somewhat less strongly—investment intentions in the home municipality.

[28] The survey weights are calculated using the raking method of iterative proportional fitting, taking into account the following 4 dimensions in the process: industry sector (1-digit WZ08), employees (subject to social insurance contributions), revenues and firm location.

[29] (Domestically) mobile industries include, for instance, manufacturing, energy supply, construction, trade, transport and storage, information and communication, real estate, public sector activities, education, health, arts/entertainment and recreation as well as other services.

Figure 7 Information Effects of TAX Treatment on Investment Intentions by Firm Mobility



Notes: Figures a) and b) show the coefficient plots of the effects of correction of misperceptions β' through information treatments on investment intentions of firms, separately for high and low mobility firms. Corresponding regressions are $y_i = \alpha + \beta' Treat_i^s + \epsilon_i$, and estimated for underestimators (positive shock about own municipalities competitiveness, $BIAS <= 5$) and overestimators (negative shock about own municipalities competitiveness, $BIAS > 5$) separately. The bands around the coefficients indicate 90% (light color) and 95% (darker color) confidence intervals.

For firms from more immobile industries both of the effects are much smaller and also not statistically significant. The detailed results for all our main outcomes as well as the HIGHWAY and TRADEOFF conditions are shown in Table D.4 of the Appendix. In this table, the significant, negative effect of bad highway competitiveness information on satisfaction for over-estimators is driven by immobile firms.However, this information effect is not observed for investment plans across different municipal destinations.

Perceived Efficiency of Public Spending Besides mobility, another potential factor driving our results could be how firms perceive the efficiency of the use of the municipality tax revenue. Firms that are satisfied with how the municipality uses its tax revenue (e.g. for infrastructure) might respond differently to shocks about the competitiveness of their municipality. One expectation would be that firms who agree more with public spending efficiency in their headquarters municipality ex-ante, respond stronger to bad news on local policy competitiveness in their investment plans as for them the information shock may be amplified. Alternatively, firms with a prior belief on efficient public finances in their headquarters municipality may be less affected by bad information about local policy competitiveness since they may still think that public finances are well managed.

Further Heterogeneities Beyond firm mobility and perceived public spending efficiency, we also examine treatment effect heterogeneity along several other dimensions. As already alluded to in Section 3, incorporated firms might be differently affected by local business taxes than non-incorporated firms. The sample split based on that characteristic confirms that the treatment effects in investment intentions are mostly driven by corporations, while other firms do not show reaction in their investment intentions to corrected misperception about local competitiveness. Sample split analyses based on urbanity of municipality, share of commuters in municipality, prior investment plans, firm age, firm leverage and firm being in a tradable sector, do not reveal meaningful differences in the treatment effects.

6 Extension

6.1 Further Outcomes

This subsection shows experimental results on further survey outcomes. Table 2 shows the main treatment effects of our treatment indicators on the elicited demand for regional subsidies, the justified local

business tax rate as well as a dummy variable on whether their headquarters municipality should (based on the status quo) rather reduce local business tax rates than improving access of transport infrastructure. This would imply a reflection of managers on the potential trade-off between productive amenities and their tax costs. Again, we use a fully interacted version of equation (3) to show non-linear updating of firm manager preferences based on the perceived competitiveness of their respective business sites. The complete regression results can be found in Table D.6 in the Appendix.

Table 2 Alternative Outcomes: Effects by Treatment for Over- and Underestimators

	Subsidy	Appropriate Tax Rate	Trade-Off Tax-Infrastr.	Low Taxes	Transport Infrastr.
Panel A: TAX					
γ_1: TAX	0.005	0.051	-0.070	-0.010	-0.007
	(0.240)	(0.134)	(0.049)	(0.012)	(0.013)
$\gamma_1 + \delta_1$: TAX+TAX*$\mathbb{I}_{over}^{Tax}$	-0.095	0.046	0.055	0.019	0.003
	(0.136)	(0.090)	(0.028)	(0.008)	(0.007)
Panel B: HIGHWAY					
γ_2: HIGHWAY	0.004	0.048	0.032	0.018*	0.004
	(0.153)	(0.106)	(0.033)	(0.009)	(0.008)
$\gamma_2 + \delta_2$: HIGHWAY+HIGHWAY*$\mathbb{I}_{over}^{Highway}$	-0.152	0.049	0.004	0.003	0.009
	(0.167)	(0.110)	(0.034)	(0.009)	(0.009)
Panel C: TRADEOFF					
γ_3: TRADEOFF	0.274	0.132	0.001	-0.024	-0.020
	(0.329)	(0.225)	(0.072)	(0.016)	(0.018)
$\gamma_3 + \delta_3$: TRADEOFF+TRADEOFF*$\mathbb{I}_{over}^{Tax}$	0.139	0.131	0.018	0.013	0.008
	(0.460)	(0.313)	(0.083)	(0.019)	(0.019)
$\gamma_3 + \delta_4$: TRADEOFF+TRADEOFF*$\mathbb{I}_{over}^{Highway}$	0.124	-0.134	0.137	-0.049	-0.047
	(0.580)	(0.377)	(0.120)	(0.029)	(0.027)
Observations (# of firms)	3,041	2,834	3,070	3,070	3,070
Mean D.V. control	6.714	2.449	0.462	0.100	0.133
SD D.V. control	2.387	1.504	0.499	0.127	0.118
R^2	0.002	0.010	0.009	0.005	0.003

Notes: This table reports OLS regression results, following the empirical specification of equation (3). Treatment indicators (Treat) for all s treatment groups, i.e., TAX, HIGHWAY as well as TRADEOFF are interacted with a dummy variable (over) which is 1 for overestimation ($BIAS > 5$) of local business tax or highway access rank of the headquarters municipality of firm i and is zero otherwise. The TRADEOFF indicator is interacted with both over variables, respectively.The coefficients represent the direct effect (γ) and the interaction with overestimation ($\gamma + \delta$). Robust standard errors are in parentheses. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

First, we do not see that exogenously changed beliefs over competitiveness of one's headquarters municipality lead to different demand of firm managers for further regional subsidies in their headquarters municipality. The respective demand for more subsidies is already quite high at a mean of 6.7 on a 10-point Likert scale in the control group. Second, also views on taxation, i.e., the justified tax rate, are not systematically affected by information on policy competitiveness of one's headquarters municipality. It could have been that, for instance, firms may have justified a local business tax increase if they became aware of a positive signal about the infrastructure access of their headquarters municipality. We do not find evidence for this.[30] It is also interesting that the mean of the appropriate local business tax multiplier in the eyes of the responding firms in our survey is only at 250 while the mean rate of all German municipalities in 2018 was actually much higher at about 363.5 points. Third, firms see more reason to reduce (increase) taxes in the status quo as compared to infrastructure improvements when receiving a negative (positive) information shock on tax competitiveness of their town (i.e., TAX*$\mathbb{I}_{over}^{Tax}$ or TAX, respectively). The overall effect $\gamma_1 + \delta_1$, however, is statistically not different from zero. Fourth and fifth, we do not see that firms systematically change their views on the importance of low taxes or good transport infrastructure altogether when receiving information about the competitiveness of their

[30] Although the estimates are insignificant, the point estimates indicate that firms receiving a positive signal on the joint distribution of taxes and highway access, i.e., the estimand of TRADEOFF γ_3, find a (about 0.132/2.449=5.390%) higher local tax multiplier appropriate.

respective home municipality for either policy domain (or both). However, firm managers who underestimate relative highway access conditions of their respective headquarters municipality and are being informed about it, appreciate low taxes in a municipality somewhat more as a determinant for an attractive headquarters municipality. Also firm managers who receive bad news about the tax competitiveness of their headquarters municipality find that low taxes are somewhat more important. We do not see such updating for the valuation of managers regarding transport infrastructure.

6.2 Do Firms Change their Demand for Local Policies?

In our baseline results firms change their investment decisions based on their beliefs of local policy competitiveness of their headquarters municipality (see Section 5.2 above).

By contrast and related to the last two columns of Table 2, one may also wonder whether firms adjust their views on what makes a headquarters municipality attractive. We can study this question using a post-treatment question on which local production factors are relevant for an attractive (potential) firm location. Respondents could allocate 100 points to a set of 10 local production factors. The exact question and related answers can be taken from Appendix F. Figure C.1 plots the respective assigned weights for the different location factors for the untreated control group.

First, it is reassuring to see that our experiment communicated indeed relevant policy conditions from the perspective of firm decision-makers as low taxes and transport infrastructure have one of the highest mean values of importance in the control group with 10 and 13.3 points, respectively. They are outranked only by the factors of digital infrastructure (18.2), a qualified workforce (15.9) and the availability of commercial space (10.9). Second, these priorities of what makes a location attractive to set up business, however, seem relatively fixed and do not undergo a systematic shift when firms receive information about the competitiveness of their headquarters municipality regarding business tax rates or infrastructure access. As Table D.7 shows, the relative importance as measured by the rank of each location factor is barely affected by the information provision on local competitiveness over policy instruments. A noteworthy exception may be that preferences for a qualified workforce asymmetrically update based on tax competitiveness information but the overall effect of receiving the TAX treatment is not different from zero for overestimators $\gamma_1 + \delta_1$.

Therefore, it seems that firms may update their views on location attractiveness, their short-run investment plans as well as their policy views on the urgency of tax versus infrastructure reforms (as shown above) but information provision on the competitiveness of their headquarters municipalities does, however, not alter what firms fundamentally view as important factors for investment. Information on local competitiveness of firms' headquarters municipalities may rather give firms a means to optimize within a given set of preferences that they think determines their production function properly (i.e., their business model).

6.3 Demand for Information

Another finding of our survey is that firm managers have a substantial information demand for the competitiveness of their headquarters municipality in terms of different policy instruments. This is despite their knowledge about absolute levels like local business tax rates or driving distance to the nearest highway as shown above in Section 4. We derive evidence for this from an information-acquisition task at the debriefing stage at the end of the survey where we offer different pieces of information about their headquarters municipality to our respondents. We offer them the following pieces of information, irrespective of their experimental group affiliation: true local business tax multiplier and the true average duration to the nearest highway (as level information about policy outcomes of their individual headquarters municipality) as well as the actual respective ranks in the business tax as well as highway access

distribution among all German municipalities (i.e., the relative competitiveness of their municipality). They could also opt to ask for a combination or none of this information at all.

Table 3 shows the respective acquisition rates among firms. While it becomes clear that respondents demand information that they were already provided within the survey (depending on the experimental group) significantly less, the control group shows the baseline demand for tailor-made information on the attractiveness of firms' respective headquarters municipality over individual policy domains.

Table 3 Experimental Groups and Demand for Information

Treatment group:	CONTROL	TAX	HIGHWAY	TRADEOFF
Type of Information				
True Local Business Tax Multiplier	0.074	0.086	0.101	0.121
True Avg. Duration to Highway	0.051	0.113	0.055	0.091
True Rank of Local Business Tax Multiplier	0.256	0.145	0.313	0.192
True Rank of Avg. Duration to Highway	0.342	0.379	0.224	0.187
No Information	0.277	0.277	0.306	0.408
Total	761	752	741	759

Notes: We offered respondents at the end of the survey information on the level of the local business tax multiplier and the average duration to access a highway for their headquarters municipality. We also offered the respective ranks in the tax and accessibility distributions. Firms could also choose no information. The table reports the shares of respondents demanding different information.

In line with our finding that firms are relatively sophisticated about knowing policy instruments of their headquarters municipality such as the local business tax rate or the driving distance to the nearest highway (coupled with the observation that these facts are rather easy to find), we observe that firms want to acquire substantially more relative competitiveness information about the respective ranks of their headquarters municipality (0.256+0.342=0.598) than the mere values for their home municipality alone (0.074+0.051=0.125). A majority wants to be informed about the respective position of their headquarters municipality compared to all German municipalities. Altogether, our findings indicate that firms may have misperceptions about the local competitiveness (especially, regarding the local tax burden; see Section 4), even though this information is critical to assess the costs and benefits of staying put or investing elsewhere. The high information demand may be an indication that firms find it hard to receive tailor-made information on local policy competitiveness.

7 Conclusion

Policy makers set policies in order to compete for firm capital. Using an original experiment embedded in a representative firm survey among more than 3,000 German firms, we find that firms may, however, have a distorted view on the competitiveness of their headquarters municipality as compared to other German municipalities. This is especially true for the business tax but also to a lesser extent for the competition of municipalities over productive amenities like highway infrastructure access. Specifically, firms overestimate the local business tax competitiveness of their respective home municipality and are, therefore, too optimistic about the relative tax burden at their home municipality as compared to other potential locations in Germany.

Using tailor-made and randomized information provision to firms, our experiment shows that these misperceptions on local policy competitiveness matter for the satisfaction of incumbent firms at their headquarters municipality and their investment plans. For instance, firms who overestimate the competitiveness of their headquarters municipality regarding local tax rates or highway access and are being informed about actual competitiveness, tend to have more negative satisfaction levels with their headquarters municipality. For competitiveness information about local business tax rates, we find asymmetric effects on investment decisions. Positive signals about tax rank decrease investment intentions in

neighboring or other municipalities. Compared to good news, negative tax news improve the likelihood to invest in other municipalities significantly. Overall, the majority of firms invests at home and is not responsive to competitiveness shocks. We interpret this as home bias for firms' headquarters municipalities. This may not necessarily reflect biased preferences for headquarters municipalities of firms but could also result from adjustment costs, such as the challenges of relocating skilled workers or hiring new ones, maintaining established networks, avoiding operational disruption, or strategic inertia. Moreover, there is uncertainty about policy in the new location (Dlugosch et al., 2023). While the current municipality might not be optimal (anymore), there is no guarantee that another location will remain favorable in the long term. These factors make relocation difficult, even when other locations seem more attractive. We do not find significant investment responses to relative highway access information.

Effects of the relative competitiveness of firms' localities exposed to augmented information on the competitiveness regarding both policy domains are not statistically significant, although we find reduced satisfaction with the headquarters municipality in response to individual pieces of information. This could be driven by countervailing effects. For example, firms may perceive taxes as a price for the provision of public infrastructure in accordance with benefit-based taxation. We also show that information on local policy competitiveness of firms' headquarters municipality is driven by respondents from relatively mobile firms for whom the information may prove more relevant. Firms, however, do not change their demand for public support (such as for more regional subsidies), their views on appropriate levels of taxation or their general views on relevant location factors for their business at large in response to the policy competitiveness information of firms headquarters municipalities.

Since most theoretical work on (local) policy competition builds on perfectly informed firms which optimize investment decisions over specific (and various) policy instruments by comparing different jurisdictions with one another, future work should account for potential information frictions among firm decision-makers. Our experiment shows that these information frictions in fact matter for satisfaction of firms at their headquarters municipality, firm investment plans and their views on policy trade-offs. Future work should also account for how well firm agents may be informed about their competitiveness across different types of neighborhood definitions of local governments (i.e., the relevant peers to their headquarters municipality). Further firm surveys may be a fruitful avenue for this. Also policy makers should take account of the fact that perceptions of local policy competitiveness matter, but that there are substantial misperceptions on how well one's local tax burden compares to other municipalities. Information acquisition shows that a majority of firms is interested and demands comparative information on policy instruments across municipalities.

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Appendix

A Key Variables and Definitions

Table A.1 Key Variables and Definitions

Label	Definition	Question
Bias	Difference between a firms perception of their municipality's rank and the actual rank for taxes or highway access: $BIAS = TRUTH - BELIEF$.	Q3, Q5
Overestimator	Binary variable indicating whether a firm overestimates the competitiveness of their municipality (BIAS>5).	Q3, Q5
Satisfaction	Firms' self-reported satisfaction with their headquarters municipality on a scale from 0-10.	Q6
Investment Intentions	Likelihood of firms to invest in their home municipality, neighboring municipalities, other German municipalities, or abroad.	Q7
Firm mobility	Share of investment intentions in neighboring and other municipalities in Germany relative to the total investment intentions. Industries are classified as more mobile if their mobility measure is above the median, based on the untreated control group.	Q7
Appropriate tax rate	Firms perception of a justified local business tax multiplier, reflecting their views on benefit taxation.	Q8
Subsidy	Firms stated demand for additional regional subsidies, measured on a Likert scale.	Q9
Trade-off Tax-Infrastr.	Binary indicator that equals 1 if the respondent's preference on the Likert scale for lowering the business tax rate is greater than 5 (values 6-10), and 0 otherwise.	Q10

Notes: The question numbers refer to those indicated in the translation of the exact question wording in Appendix F.

B Descriptive Characteristics and Balancing Tests

Table B.1 Descriptive Statistics and Balancing Tests: Firm and Respondent Characteristics

	Target (20/21)	Total	CONTROL	TAX	HIGHWAY	TRADEOFF	P-value for equality across groups
Sizegroups: Revenues/Employees							
Very Small	0.83	0.64	0.60	0.65	0.65	0.64	0.22
Small	0.14	0.27	0.28	0.27	0.26	0.28	0.75
Medium	0.03	0.07	0.09	0.06	0.07	0.06	0.11
Large	0.01	0.02	0.03	0.02	0.02	0.02	0.54
Missing		0.00	0.00	0.00	0.00	0.00	
Legal Forms							
Sole Proprietorship	0.59	0.09	0.08	0.10	0.09	0.11	0.32
Partnerships	0.12	0.12	0.11	0.12	0.13	0.12	0.77
Corporations	0.23	0.72	0.73	0.72	0.72	0.70	0.42
Other	0.05	0.07	0.08	0.06	0.06	0.08	0.47
Missing		0.00	0.00	0.00	0.00	0.00	
Economic Sector (1-digit WZ08)							
A Agriculture, forestry, and fishing		0.01	0.01	0.01	0.02	0.01	0.11
B Mining and quarrying	0.00	0.00	0.00	0.00	0.00	0.00	
C Manufacturing	0.06	0.14	0.17	0.14	0.12	0.15	0.09*
D Energy Supply	0.02	0.01	0.01	0.01	0.01	0.01	0.83
E Water supply/Sanitation/Waste/Pollution abatement	0.00	0.01	0.01	0.01	0.01	0.01	0.65
F Construction	0.11	0.09	0.09	0.09	0.09	0.09	0.99
G Trade	0.17	0.14	0.12	0.14	0.15	0.15	0.32
H Transport and Storage	0.03	0.03	0.03	0.02	0.03	0.02	0.38
I Accommodation and food service activities	0.07	0.03	0.03	0.03	0.02	0.03	0.23
J Information and communication	0.04	0.10	0.09	0.10	0.10	0.09	0.70
K Financial and insurance activities	0.02	0.03	0.02	0.02	0.03	0.04	0.32
L Real estate activities	0.06	0.03	0.03	0.04	0.03	0.03	0.42
M Professional, scientific, and technical activities	0.15	0.14	0.14	0.14	0.15	0.15	0.97
N Other economic service activities	0.07	0.05	0.04	0.05	0.05	0.05	0.69
O Public administration and defense/Social security		0.00	0.00	0.00	0.00	0.00	
P Education	0.02	0.02	0.02	0.01	0.01	0.01	0.57
Q Health/Social Services	0.08	0.03	0.03	0.02	0.03	0.03	0.28
R Arts/Entertainment/Recreation	0.03	0.02	0.02	0.02	0.02	0.02	0.94
S Other services	0.06	0.02	0.03	0.02	0.03	0.02	0.48
Missing		0.10	0.09	0.11	0.10	0.08	0.29
Gender							
Male		0.79	0.79	0.79	0.77	0.81	0.45
Missing		0.01	0.02	0.01	0.02	0.01	0.61
Education							
Apprenticeship (vocational)		0.16	0.14	0.17	0.18	0.14	0.07*
Bachelor Degree		0.00	0.01	0.00	0.01	0.00	0.31
Master (vocational)		0.12	0.11	0.12	0.11	0.12	0.76
Master Degree or higher		0.37	0.38	0.36	0.36	0.37	0.86
Missing/Other/No degree		0.36	0.37	0.36	0.33	0.37	0.35
Position							
Clerk		0.01	0.01	0.02	0.01	0.01	0.05*
Department Head		0.03	0.03	0.02	0.03	0.03	0.66
Owner/CEO		0.64	0.63	0.65	0.65	0.62	0.55
Missing/Other		0.32	0.34	0.30	0.30	0.34	0.25
N	3,390,704	3,143	792	785	775	791	

Notes: Descriptive statistics. *P*-values in the last column from a Wald chi-square test for equality of means across all four experimental groups. Sizegroups based on Revenues/Employees classes (SME- EU Definition 2003/361): Very small ($\leq$ 9 employees & $\leq$ 2 mio. revenues), Small ($\leq$ 49 employees & $\leq$ 10 mio. revenues), Medium ($\leq$ 249 employees & $\leq$ 50 mio. revenues), Large ($>$ 249 employees or $>$ 50 mio. revenues). The economic sector classification follows the classification of economic activities from the German statistical office (2008 edition; WZ 2008). ***, **, * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table B.2 Relative Mobility by Industry

	Investment by destination						
Industry	Main Location	Neighboring Mun.	Other Mun.	Outside GER	Total Sum	Rel. Mobility Share	High Mobility
A Agriculture, forestry, and fishing	0.70	0.36	0.00	0.00	1.06	0.3406	0
B Mining and quarrying	0.90	0.10	0.35	0.30	1.65	0.2727	0
C Manufacturing	0.72	0.30	0.20	0.14	1.36	0.3676	1
D Energy supply	0.97	0.66	0.33	0.00	1.96	0.5051	1
E Water supply/Sanitation/Waste management	0.38	0.25	0.01	0.27	0.91	0.2857	0
F Construction	0.78	0.32	0.14	0.07	1.31	0.3511	1
G Trade	0.66	0.26	0.21	0.15	1.28	0.3672	1
H Transport and storage	0.71	0.51	0.20	0.11	1.53	0.4595	1
I Accommodation and food service activities	0.68	0.24	0.23	0.25	1.40	0.3357	0
J Information and communication	0.75	0.27	0.28	0.23	1.53	0.3595	1
K Financial and insurance activities	0.66	0.13	0.19	0.07	1.05	0.3048	0
L Real estate activities	0.66	0.43	0.17	0.06	1.32	0.4545	1
M Professional, scientific, and technical activities	0.79	0.25	0.19	0.09	1.32	0.3333	0
N Other economic service activities	0.70	0.28	0.12	0.17	1.27	0.3142	0
O Public administration and defense/Social security	0.71	0.37	0.22	0.18	1.48	0.3986	1
P Education	0.59	0.41	0.28	0.11	1.39	0.4986	1
Q Health and social services	0.78	0.39	0.21	0.12	1.50	0.4000	1
R Arts, entertainment, and recreation	0.62	0.05	0.10	0.13	0.90	0.1667	0
S Other services	0.58	0.29	0.19	0.14	1.20	0.3667	1

Notes: This table reports average investment intentions across locations by firms in the CONTROL Group. The measure for relative mobility calculates the share of the sum of investment intentions in neighboring and other municipalities, relative to the sum of investment intentions across all options. The last column indicates industries which have relatively higher investment intentions in other municipalities, assumed to be more mobile industries.

C Additional Tables and Figures

Table C.1 Shares of Overestimators across Experimental Groups

Treatment group:	CONTROL	TAX	HIGHWAY	TRADEOFF	p-Value for equality
Local Business Tax Multiplier					
Overestimation (>5%)	0.395	0.399	0.382	0.431	0.24
Good guess or underestimation (<=5%)	0.605	0.601	0.618	0.569	0.24
Minutes to Highway					
Overestimation (>5%)	0.031	0.033	0.028	0.022	0.55
Good guess or underestimation (<=5%)	0.969	0.967	0.972	0.978	0.55
Local Business Tax Multiplier Rank					
Overestimation (>5%)	0.780	0.779	0.803	0.803	0.45
Good guess or underestimation (<=5%)	0.220	0.221	0.197	0.197	0.45
Minutes to Highway Rank					
Overestimation (>5%)	0.467	0.488	0.476	0.485	0.84
Good guess or underestimation (<=5%)	0.533	0.512	0.524	0.515	0.84
Total	785	775	791	792	

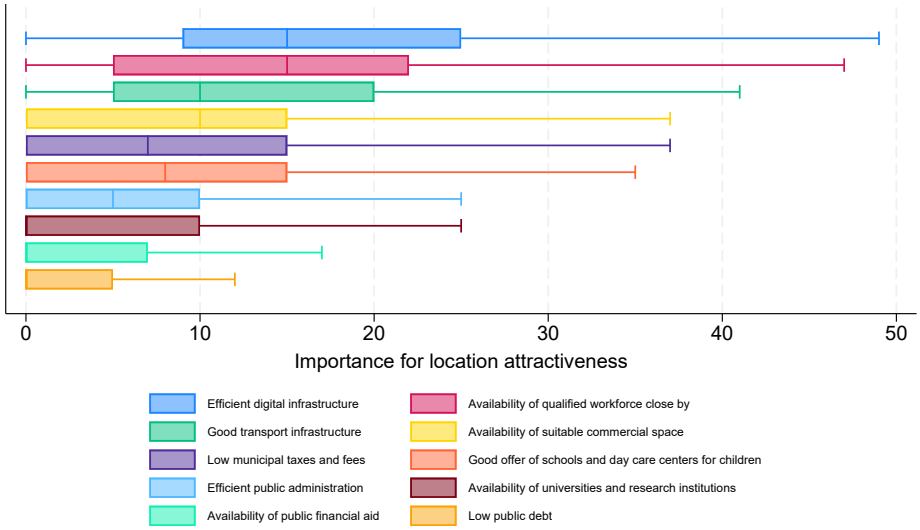
Notes: Shares of overestimators across treatments. Overestimation means that the actual value is larger (for tax rates and highway access) or the actual rank worse (for ranks) than the respondent's estimate. Feedback corrects upwards and is a negative shock to the location attractiveness for business. Underestimation means that the actual value is smaller (for tax rate and highway access) or better (for the respective ranks) than the respondent's estimate. Feedback corrects downwards and is a positive shock to the location attractiveness for business. Good guess is a 5% or 5 percentage points margin of error with minor deviations. *p*-values in the last column from a Wald chi-square test for equality of means across all four experimental groups. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table C.2 Average Bias across Experimental Groups

Treatment group:	CONTROL	TAX	HIGHWAY	TRADEOFF	p-Value for equality
Local Business Tax Multiplier Rank					
Overestimation (>5%)	40.74	39.72	40.53	39.41	0.66
	(21.86)	(22.45)	(21.73)	(21.00)	
Good guess or underestimation (<=5%)	-19.93	-16.16	-13.76	-17.17	0.01**
	(19.21)	(16.98)	(15.26)	(18.1)	
Minutes to Highway Rank					
Overestimation (>5%)	20.68	20.65	22.31	21.40	0.37
	(13.17)	(12.92)	(15.32)	(14.62)	
Good guess or underestimation (<=5%)	-11.91	-12.12	-11.04	-11.25	0.71
	(15.21)	(16.49)	(14.36)	(14.77)	
Total	785	775	791	792	

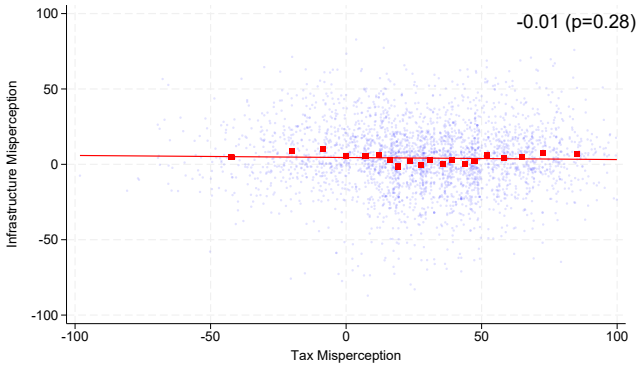
Notes: Average bias across treatments. Overestimation means that the actual value is larger (for tax rates and highway access) or the actual rank worse (for ranks) than the respondent's estimate. Feedback corrects upwards and is a negative shock to the location attractiveness for business. Underestimation means that the actual value is smaller (for tax rate and highway access) or better (for the respective ranks) than the respondent's estimate. Feedback corrects downwards and is a positive shock to the location attractiveness for business. Good guess is a 5% or 5 percentage points margin of error with minor deviations. Standard deviations are in parentheses. *p*-values in the last column from a Wald chi-square test for equality of means across all four experimental groups. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Figure C.1 Perceived Importance of Policy Instruments for Location Attractiveness



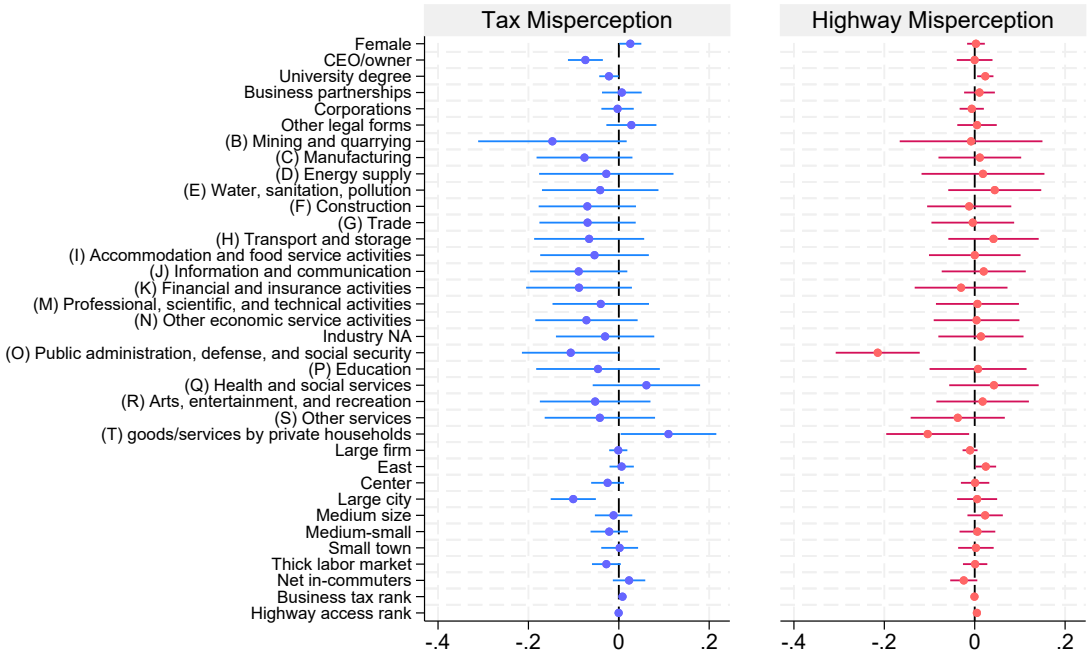
Notes: The figure plots the relative importance of the different factors of location attractiveness, as stated by the respondents in the untreated CONTROL group. Respondents could trade-off different factors, such that the total sum of these added up to 100 percent.

Figure C.2 Relationship between Tax and Infrastructure Competitiveness Misperceptions



Notes: The figure shows the relationship between misperceptions about taxes and about local infrastructure (highways). Both scatter plots of the raw data (light blue) and binned scatterplots (red squares) are shown.

Figure C.3 Anatomy of Tax and Infrastructure Competitiveness Misperceptions



Notes: The figures plot coefficients along with 95% confidence intervals of a multivariate regression of firms' misperceptions on a range of covariates. Variables are defined as follows. Female, CEO/owner, University degree are indicators for based on respondents characteristics. Firm characteristics include indicators for legal forms (corporations, partnerships, other, baseline: sole proprietors), industry (codes A though T, baseline: A), large firms (one if number of employees above median). Municipality characteristics include indicators for Eastern Germany, central places as defined by BBSR (baseline: peripheral), the BBSR definition for large and medium cities, medium-small and small towns (baseline: rural municipalities), labor market density (number of employees per 1,000 inhabitants in the municipality) above median (baseline: otherwise), commuting density (net commuter balance per 100 employees in the municipality) positive (baseline: otherwise), the cumulative rank of the local business tax rate and the minutes to the nearest highway in the municipality.
Source: own calculations based on the German Business Panel and data from the Federal Institute for Research on Building, Urban Affairs and Spatial Development (BBSR).

D Additional Results

Table D.1 Baseline: Effect of Corrected Misperceptions on Investment Intentions

	Satisfaction	Investment by destination		
	Main location	Main location	Neighboring + Other	Outside Germany
$\mathbb{I}_{over}^{Tax}$	-0.036	0.001	-0.029	-0.023
	(0.206)	(0.032)	(0.022)	(0.027)
$\mathbb{I}_{over}^{Highway}$	0.083	0.012	-0.014	-0.030
	(0.237)	(0.037)	(0.025)	(0.031)
$\mathbb{I}_{over}^{Tax} \times \mathbb{I}_{over}^{Highway}$	0.042	0.029	0.004	-0.008
	(0.253)	(0.039)	(0.027)	(0.034)
TAX	-0.327	0.008	-0.077***	-0.036
	(0.244)	(0.038)	(0.025)	(0.031)
HIGHWAY	0.123	0.011	-0.027	-0.016
	(0.159)	(0.025)	(0.018)	(0.022)
TRADEOFF	-0.058	0.002	-0.021	-0.037
	(0.361)	(0.051)	(0.039)	(0.046)
TAX*$\mathbb{I}_{over}^{Tax}$	-0.334	-0.037	0.085***	0.039
	(0.267)	(0.041)	(0.027)	(0.034)
HIGHWAY*$\mathbb{I}_{over}^{Highway}$	-0.582***	-0.015	0.003	0.022
	(0.212)	(0.033)	(0.024)	(0.029)
TRADEOFF*$\mathbb{I}_{over}^{Tax}$	-0.307	-0.008	0.006	0.006
	(0.386)	(0.056)	(0.043)	(0.049)
TRADEOFF*$\mathbb{I}_{over}^{Highway}$	-0.439	0.042	-0.036	0.030
	(0.459)	(0.064)	(0.049)	(0.059)
TRADEOFF*$\mathbb{I}_{over}^{Tax}$*$\mathbb{I}_{over}^{Highway}$	-0.060	-0.091	0.026	0.023
	(0.506)	(0.072)	(0.055)	(0.065)
Constant	6.781***	0.699***	0.278***	0.185***
	(0.199)	(0.031)	(0.021)	(0.026)
Observations (# of firms)	3,066	2,678	2,371	2,440
Mean D.V. control	6.788	0.715	0.249	0.150
SD D.V. control	2.424	0.352	0.248	0.303
R^2	0.016	0.004	0.007	0.003

Notes: This table reports OLS regression results, following the empirical specification of equation (3). Treatment indicators ($Treat$) for *all* s treatment groups, i.e., TAX, HIGHWAY as well as TRADEOFF are interacted with a dummy variable ($over$) which is 1 for overestimation (BIAS>5) of local business tax or highway access rank of the headquarters municipality of firm i and is zero otherwise. The TRADEOFF indicator is interacted with both $over$ variables, respectively. The estimated model is $y_i = \alpha_0 + \beta_1 \mathbb{I}_{over}^{Tax} + \beta_2 \mathbb{I}_{over}^{Highway} + \gamma_1 \text{TAX} + \gamma_2 \text{HIGHWAY} + \gamma_3 \text{TRADEOFF} + \delta_1 \text{TAX} \times \mathbb{I}_{over}^{Tax} + \delta_2 \text{HIGHWAY} \times \mathbb{I}_{over}^{Highway} + \delta_3 \text{TRADEOFF} \times \mathbb{I}_{over}^{Tax} + \delta_4 \text{TRADEOFF} \times \mathbb{I}_{over}^{Highway} + \delta_5 \text{TRADEOFF} \times \mathbb{I}_{over}^{Tax} \times \mathbb{I}_{over}^{Highway} + \epsilon_i$. Robust standard errors are in parentheses. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table D.2 Effect of Corrected Misperceptions on Investment Intentions: Continuous Specification

	Satisfaction	Investment by destination		
	Main location	Main location	Neighboring + Other	Outside Germany
TAX	-0.502***	0.004	-0.039**	-0.017
	(0.158)	(0.024)	(0.017)	(0.020)
HIGHWAY	-0.077	0.004	-0.027*	-0.008
	(0.124)	(0.019)	(0.014)	(0.017)
TRADEOFF	-0.371**	-0.010	-0.021	-0.015
	(0.166)	(0.025)	(0.018)	(0.021)
BIAS^{TAX} × TAX	-0.003	-0.001*	0.001***	0.000
	(0.004)	(0.001)	(0.000)	(0.000)
$\text{BIAS}^{\text{HIGHWAY}}$ × HIGHWAY	-0.016***	-0.000	0.001	0.001
	(0.005)	(0.001)	(0.001)	(0.001)
BIAS^{TAX} × TRADEOFF	-0.004	-0.000	-0.000	-0.000
	(0.004)	(0.001)	(0.000)	(0.000)
$\text{BIAS}^{\text{HIGHWAY}}$ × TRADEOFF	-0.012*	-0.000	-0.001	0.002**
	(0.007)	(0.001)	(0.001)	(0.001)
BIAS^{TAX} × $\text{BIAS}^{\text{HIGHWAY}}$ × TRADEOFF	-0.000	-0.000	0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Constant	6.820***	0.717***	0.260***	0.157***
	(0.108)	(0.017)	(0.012)	(0.015)
Observations (# of firms)	3,066	2,678	2,371	2,440
Mean D.V. control	6.788	0.715	0.249	0.150
SD D.V. control	2.424	0.352	0.248	0.303
p-value (BIAS^{TAX} × TAX=$\text{BIAS}^{\text{HIGHWAY}}$ × HIGHWAY)	0.044	0.531	0.533	0.743
R^2	0.018	0.006	0.009	0.006

Notes: This table reports OLS regression results, following the continuous specification of equation (3). Treatment indicators ($Treat$) for *all* s treatment groups, i.e., TAX, HIGHWAY as well as TRADEOFF are interacted with a continuous variable ($BIAS$) which is calculated as $BIAS = TRUTH - BELIEF$ for local business tax or highway access rank of the headquarters municipality of firm i. The TRADEOFF indicator is interacted with both $BIAS$ variables, respectively. Robust standard errors are in parentheses. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table D.3 Effect of Corrected Misperceptions on Investment Intentions: Net-of-Tax rate and Highway Access Differentials

	Satisfaction	Investment by destination		
	Main Location	Main Location	Neighboring+ Other Places	Outside Germany
TAX	-0.423***	-0.013	-0.031*	-0.016
	(0.158)	(0.025)	(0.017)	(0.021)
HIGHWAY	-0.079	0.007	-0.029**	-0.005
	(0.126)	(0.019)	(0.014)	(0.017)
TRADEOFF	-0.333**	-0.005	-0.031*	-0.014
	(0.166)	(0.025)	(0.018)	(0.022)
$\Delta\tau_i$ × TAX	-0.095	-0.005	0.013**	0.007
	(0.061)	(0.010)	(0.006)	(0.008)
$\Delta ACCESS_i$ × HIGHWAY	-0.040***	-0.002	0.002	0.001
	(0.015)	(0.002)	(0.001)	(0.002)
$\Delta\tau_i$ × TRADEOFF	-0.067	-0.006	0.005	-0.000
	(0.059)	(0.009)	(0.007)	(0.007)
$\Delta ACCESS_i$ × TRADEOFF	-0.053***	-0.002	-0.000	0.003
	(0.019)	(0.003)	(0.002)	(0.002)
$\Delta\tau_i$ × $\Delta ACCESS_i$ × TRADEOFF	0.004	0.000	0.000	0.001
	(0.008)	(0.001)	(0.001)	(0.001)
Constant	6.761***	0.717***	0.260***	0.152***
	(0.107)	(0.017)	(0.012)	(0.015)
Observations (# of firms)	3,066	2,678	2,371	2,440
Mean D.V. control	6.788	0.715	0.249	0.150
SD D.V. control	2.424	0.352	0.248	0.303
p-value ($\Delta\tau_i$ × TAX=$\Delta ACCESS_i$ × HIGHWAY)	0.378	0.743	0.093	0.459
R^2	0.020	0.008	0.008	0.008

Notes: This table reports OLS regression results, following the empirical specification of equation (3). Treatment indicators ($Treat$) for *all* s treatment groups, i.e., TAX, HIGHWAY as well as TRADEOFF are interacted with a continuous variable ($BIAS$) which is defined as the difference between the implied tax rate (highway distance) and the actual tax rate (highway distance) in the municipality of the respondent. The TRADEOFF indicator is interacted with both $BIAS$ variables, respectively. Robust standard errors are in parentheses. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table D.4 Baseline Results Sample Split: Mobility of Firms

	Satisfaction		Investment by destination					
	Main Location	Main Location	Main Location	Main Location	Neighboring+ Other Places	Neighboring+ Other Places	Outside Germany	Outside Germany
TAX	-0.145	-0.553	0.030	-0.026	-0.089***	-0.022	-0.005	-0.056
	(0.292)	(0.513)	(0.045)	(0.083)	(0.030)	(0.049)	(0.038)	(0.059)
HIGHWAY	0.113	0.266	-0.010	0.033	-0.025	0.009	-0.006	-0.013
	(0.211)	(0.280)	(0.032)	(0.046)	(0.024)	(0.031)	(0.028)	(0.039)
TRADEOFF	0.689*	-0.717	0.033	-0.021	-0.029	-0.006	-0.093**	0.091
	(0.354)	(0.727)	(0.063)	(0.099)	(0.048)	(0.074)	(0.044)	(0.107)
TAX*$\mathbb{I}_{over}^{Tax}$	-0.579*	0.032	-0.055	-0.006	0.089***	0.055	0.021	0.042
	(0.326)	(0.544)	(0.049)	(0.089)	(0.033)	(0.054)	(0.042)	(0.061)
HIGHWAY*$\mathbb{I}_{over}^{Highway}$	-0.446	-0.871**	0.015	-0.023	-0.003	-0.031	0.036	-0.034
	(0.274)	(0.386)	(0.042)	(0.060)	(0.031)	(0.043)	(0.037)	(0.045)
TRADEOFF*$\mathbb{I}_{over}^{Tax}$	-1.089***	0.532	-0.023	-0.006	-0.010	0.033	0.054	-0.093
	(0.401)	(0.755)	(0.069)	(0.106)	(0.053)	(0.080)	(0.050)	(0.111)
TRADEOFF*$\mathbb{I}_{over}^{Highway}$	-0.748	-0.315	0.027	0.093	-0.018	-0.054	0.057	-0.048
	(0.482)	(0.945)	(0.076)	(0.125)	(0.060)	(0.094)	(0.056)	(0.146)
TRADEOFF*$\mathbb{I}_{over}^{Tax}$*$\mathbb{I}_{over}^{Highway}$	0.412	-0.576	-0.086	-0.109	0.018	0.030	-0.009	0.093
	(0.557)	(1.014)	(0.087)	(0.139)	(0.068)	(0.104)	(0.066)	(0.153)
Constant	6.732***	6.944***	0.707***	0.681***	0.273***	0.253***	0.163***	0.203***
	(0.249)	(0.390)	(0.037)	(0.066)	(0.026)	(0.039)	(0.031)	(0.052)
Observations (# of firms)	1,873	904	1,656	797	1,484	701	1,525	722
Sample	High Mobility	Low Mobility	High Mobility	Low Mobility	High Mobility	Low Mobility	High Mobility	Low Mobility
Mean D.V. control	6.788	6.788	0.715	0.715	0.249	0.249	0.150	0.150
SD D.V. control	2.424	2.424	0.352	0.352	0.248	0.248	0.303	0.303
Mean D.V. control (for group)	6.679	6.968	0.709	0.729	0.261	0.207	0.144	0.143
SD D.V. control (for group)	2.408	2.441	0.352	0.351	0.255	0.223	0.303	0.288
p-value (TAX*$\mathbb{I}_{over}^{Tax}$=HIGHWAY*$\mathbb{I}_{over}^{Highway}$)	0.757	0.180	0.283	0.876	0.047	0.210	0.792	0.324
R^2	0.019	0.023	0.005	0.011	0.009	0.012	0.006	0.023

Notes: This table reports OLS regression results, following the empirical specification of equation (3). Treatment indicators ($Treat$) for *all s* treatment groups, i.e., TAX, HIGHWAY as well as TRADEOFF are interacted with a dummy variable ($over$) which is 1 for overestimation (BIAS>5) of local business tax or highway access rank of the headquarters municipality of firm i and is zero otherwise. The TRADEOFF indicator is interacted with both $over$ variables, respectively. High (Low) Mobility firms are those firms which are in industries, whose investment intention in neighboring or other municipalities is above (below) the median for the industries in the CONTROL group. The estimated model is $y_i = \alpha_0 + \beta_1 \mathbb{I}_{over}^{Tax} + \beta_2 \mathbb{I}_{over}^{Highway} + \gamma_1 \text{TAX} + \gamma_2 \text{HIGHWAY} + \gamma_3 \text{TRADEOFF} + \delta_1 \text{TAX} \times \mathbb{I}_{over}^{Tax} + \delta_2 \text{HIGHWAY} \times \mathbb{I}_{over}^{Highway} + \delta_3 \text{TRADEOFF} \times \mathbb{I}_{over}^{Tax} + \delta_4 \text{TRADEOFF} \times \mathbb{I}_{over}^{Highway} + \delta_5 \text{TRADEOFF} \times \mathbb{I}_{over}^{Tax} \times \mathbb{I}_{over}^{Highway} + \epsilon_i$. Robust standard errors are in parentheses. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table D.5 Baseline Results Sample Split: Perceived Spending Efficiency

	Satisfaction		Investment by destination					
	Main Location	Main Location	Main Location	Main Location	Neighboring+ Other Places	Neighboring+ Other Places	Outside Germany	Outside Germany
TAX	-0.267	-0.290	0.022	0.000	-0.095***	-0.056	-0.058	-0.019
	(0.285)	(0.376)	(0.045)	(0.060)	(0.032)	(0.038)	(0.038)	(0.051)
HIGHWAY	0.082	0.081	0.026	-0.001	-0.018	-0.029	-0.063**	0.015
	(0.199)	(0.220)	(0.031)	(0.035)	(0.028)	(0.023)	(0.029)	(0.031)
TRADEOFF	0.275	-0.283	0.044	-0.034	-0.022	-0.016	-0.077	-0.011
	(0.409)	(0.519)	(0.056)	(0.082)	(0.053)	(0.058)	(0.052)	(0.074)
TAX*$\mathbb{I}_{over}^{Tax}$	-0.210	-0.549	-0.067	-0.019	0.099***	0.073*	0.048	0.033
	(0.323)	(0.404)	(0.050)	(0.064)	(0.036)	(0.041)	(0.042)	(0.054)
HIGHWAY*$\mathbb{I}_{over}^{Highway}$	-0.538**	-0.535*	-0.082*	0.042	-0.015	0.017	0.063*	-0.006
	(0.272)	(0.300)	(0.042)	(0.047)	(0.035)	(0.032)	(0.037)	(0.042)
TRADEOFF*$\mathbb{I}_{over}^{Tax}$	-0.588	-0.150	-0.037	0.016	0.018	-0.003	0.017	-0.000
	(0.444)	(0.554)	(0.062)	(0.087)	(0.060)	(0.061)	(0.057)	(0.079)
TRADEOFF*$\mathbb{I}_{over}^{Highway}$	-0.499	-0.285	-0.008	0.095	0.001	-0.081	0.008	0.063
	(0.561)	(0.636)	(0.074)	(0.100)	(0.068)	(0.069)	(0.065)	(0.097)
TRADEOFF*$\mathbb{I}_{over}^{Tax}$*$\mathbb{I}_{over}^{Highway}$	0.004	-0.186	-0.048	-0.136	-0.051	0.107	0.075	-0.032
	(0.626)	(0.702)	(0.086)	(0.110)	(0.078)	(0.076)	(0.074)	(0.105)
Constant	7.532***	6.018***	0.762***	0.622***	0.254***	0.300***	0.172***	0.209***
	(0.217)	(0.313)	(0.037)	(0.049)	(0.029)	(0.030)	(0.033)	(0.042)
Observations (# of firms)	1,307	1,747	1,168	1,500	1,036	1,325	1,056	1,375
Sample	Good Usage	Bad Usage	Good Usage	Bad Usage	Good Usage	Bad Usage	Good Usage	Bad Usage
Mean D.V. control	6.788	6.788	0.715	0.715	0.249	0.249	0.150	0.150
SD D.V. control	2.424	2.424	0.352	0.352	0.248	0.248	0.303	0.303
p-value (TAX*$\mathbb{I}_{over}^{Tax}$=HIGHWAY*$\mathbb{I}_{over}^{Highway}$)	0.437	0.977	0.823	0.450	0.024	0.294	0.791	0.588
R^2	0.027	0.019	0.008	0.006	0.013	0.010	0.012	0.003

Notes: This table reports OLS regression results, following the empirical specification of equation (3). Treatment indicators ($Treat$) for *all s* treatment groups, i.e., TAX, HIGHWAY as well as TRADEOFF are interacted with a dummy variable ($over$) which is 1 for overestimation (BIAS>5) of local business tax or highway access rank of the headquarters municipality of firm i and is zero otherwise. The TRADEOFF indicator is interacted with both $over$ variables, respectively. Firms in the Good (Bad) Usage Sample state a perceived public spending efficiency of 6 or higher (5 or lower) on a 10-point likert scale. The estimated model is $y_i = \alpha_0 + \beta_1 \mathbb{I}_{over}^{Tax} + \beta_2 \mathbb{I}_{over}^{Highway} + \gamma_1 \text{TAX} + \gamma_2 \text{HIGHWAY} + \gamma_3 \text{TRADEOFF} + \delta_1 \text{TAX} \times \mathbb{I}_{over}^{Tax} + \delta_2 \text{HIGHWAY} \times \mathbb{I}_{over}^{Highway} + \delta_3 \text{TRADEOFF} \times \mathbb{I}_{over}^{Tax} + \delta_4 \text{TRADEOFF} \times \mathbb{I}_{over}^{Highway} + \delta_5 \text{TRADEOFF} \times \mathbb{I}_{over}^{Tax} \times \mathbb{I}_{over}^{Highway} + \epsilon_i$. Robust standard errors are in parentheses. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

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Online Appendix

Table D.6 Information Effects on Alternative Outcomes

	Subsidy	Appropriate Tax Rate	Trade-Off Tax-Infrastr.	Low Taxes	Transport Infrastr.
$\mathbb{I}_{over}^{Tax}$	0.234	0.148	-0.106***	-0.019	-0.017
	(0.189)	(0.117)	(0.040)	(0.012)	(0.011)
$\mathbb{I}_{over}^{Highway}$	0.309	0.108	-0.084*	-0.016	-0.007
	(0.235)	(0.133)	(0.047)	(0.012)	(0.013)
$\mathbb{I}_{over}^{Tax} \times \mathbb{I}_{over}^{Highway}$	-0.263	-0.006	0.044	0.012	0.004
	(0.249)	(0.150)	(0.051)	(0.014)	(0.013)
TAX	0.005	0.051	-0.070	-0.010	-0.007
	(0.240)	(0.134)	(0.049)	(0.012)	(0.013)
HIGHWAY	0.004	0.048	0.032	0.018*	0.004
	(0.153)	(0.106)	(0.033)	(0.009)	(0.008)
TRADEOFF	0.274	0.132	0.001	-0.024	-0.020
	(0.329)	(0.225)	(0.072)	(0.016)	(0.018)
TAX*$\mathbb{I}_{over}^{Tax}$	-0.099	-0.005	0.124**	0.030**	0.011
	(0.261)	(0.153)	(0.053)	(0.014)	(0.014)
HIGHWAY*$\mathbb{I}_{over}^{Highway}$	-0.156	0.000	-0.028	-0.015	0.005
	(0.210)	(0.141)	(0.044)	(0.012)	(0.012)
TRADEOFF*$\mathbb{I}_{over}^{Tax}$	-0.135	-0.001	0.017	0.037*	0.028
	(0.349)	(0.244)	(0.078)	(0.019)	(0.019)
TRADEOFF*$\mathbb{I}_{over}^{Highway}$	-0.123	-0.324	-0.020	0.022	0.014
	(0.451)	(0.277)	(0.094)	(0.023)	(0.023)
TRADEOFF*$\mathbb{I}_{over}^{Tax}$ *$\mathbb{I}_{over}^{Highway}$	-0.150	-0.266	0.136	-0.025	-0.027
	(0.494)	(0.312)	(0.104)	(0.026)	(0.025)
Constant	6.495***	2.274***	0.568***	0.118***	0.149***
	(0.187)	(0.108)	(0.038)	(0.011)	(0.011)
Observations (# of firms)	3,041	2,834	3,070	3,070	3,070
Mean D.V. control	6.714	2.449	0.462	0.100	0.133
SD D.V. control	2.387	1.504	0.499	0.127	0.118
R^2	0.002	0.010	0.009	0.005	0.003

Notes: This table reports OLS regression results, following the empirical specification of equation (3). Treatment indicators ($Treat$) for *all s* treatment groups, i.e., TAX, HIGHWAY as well as TRADEOFF are interacted with a dummy variable ($over$) which is 1 for overestimation (BIAS>5) of local business tax or highway access rank of the headquarters municipality of firm i and is zero otherwise. The TRADEOFF indicator is interacted with both $over$ variables, respectively. The estimated model is $y_i = \alpha_0 + \beta_1 \mathbb{I}_{over}^{Tax} + \beta_2 \mathbb{I}_{over}^{Highway} + \gamma_1 \text{TAX} + \gamma_2 \text{HIGHWAY} + \gamma_3 \text{TRADEOFF} + \delta_1 \text{TAX} \times \mathbb{I}_{over}^{Tax} + \delta_2 \text{HIGHWAY} \times \mathbb{I}_{over}^{Highway} + \delta_3 \text{TRADEOFF} \times \mathbb{I}_{over}^{Tax} + \delta_4 \text{TRADEOFF} \times \mathbb{I}_{over}^{Highway} + \delta_5 \text{TRADEOFF} \times \mathbb{I}_{over}^{Tax} \times \mathbb{I}_{over}^{Highway} + \epsilon_i$. Robust standard errors are in parentheses. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

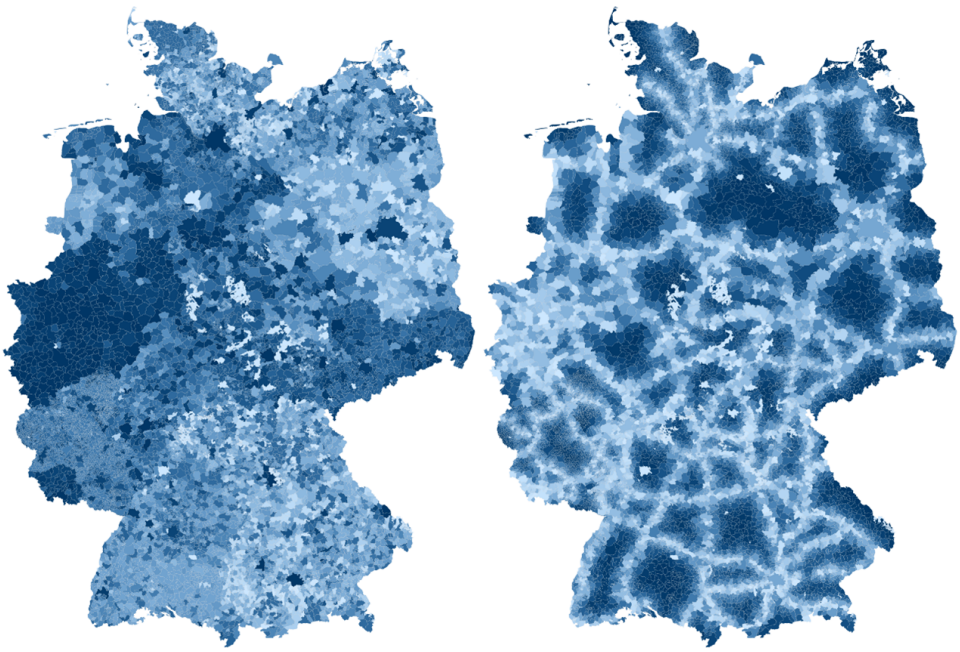
Table D.7 Information Effects on Views on Relevant Location Factors: Effects in Rank

	Low Pub. Debt	Schools	Dig. Infrastr.	Public Finan. aid	Low Taxes	Comm. Space	Pub. Admin.	Qual. Workforce	Universities	Transp. Infrastr.
TAX	0.336	-0.243	-0.018	0.173	0.298	-0.018	0.128	-0.483**	0.203	0.204
	(0.212)	(0.201)	(0.184)	(0.222)	(0.218)	(0.217)	(0.212)	(0.197)	(0.231)	(0.189)
HIGHWAY	-0.074	0.225	-0.007	0.116	-0.042	0.142	-0.165	0.094	0.143	0.074
	(0.159)	(0.145)	(0.133)	(0.157)	(0.160)	(0.149)	(0.150)	(0.142)	(0.156)	(0.131)
TRADEOFF	0.297	0.239	0.403	0.406	0.295	-0.274	-0.023	-0.302	-0.146	0.385
	(0.332)	(0.307)	(0.330)	(0.361)	(0.342)	(0.286)	(0.341)	(0.333)	(0.309)	(0.281)
TAX*$\mathbb{I}_{over}^{Tax}$	-0.333	0.203	0.100	0.067	-0.434*	0.150	-0.353	0.629***	-0.256	-0.208
	(0.236)	(0.223)	(0.205)	(0.245)	(0.244)	(0.241)	(0.233)	(0.219)	(0.254)	(0.211)
HIGHWAY*$\mathbb{I}_{over}^{Highway}$	0.202	-0.262	0.078	0.001	0.129	-0.243	0.251	-0.322*	-0.156	0.011
	(0.207)	(0.193)	(0.178)	(0.210)	(0.213)	(0.198)	(0.199)	(0.183)	(0.211)	(0.179)
TRADEOFF*$\mathbb{I}_{over}^{Tax}$	-0.046	-0.032	-0.431	-0.346	-0.336	0.255	-0.017	0.328	0.262	-0.449
	(0.359)	(0.336)	(0.352)	(0.385)	(0.369)	(0.319)	(0.367)	(0.360)	(0.338)	(0.303)
TRADEOFF*$\mathbb{I}_{over}^{Highway}$	0.247	-0.373	-0.279	-0.271	-0.096	0.460	0.292	0.173	0.354	-0.056
	(0.416)	(0.392)	(0.406)	(0.446)	(0.413)	(0.404)	(0.417)	(0.408)	(0.403)	(0.365)
TRADEOFF*$\mathbb{I}_{over}^{Tax}$ *$\mathbb{I}_{over}^{Highway}$	-0.935**	0.246	0.526	-0.122	-0.152	-0.370	-0.299	-0.073	-0.618	0.242
	(0.464)	(0.439)	(0.447)	(0.493)	(0.463)	(0.455)	(0.460)	(0.452)	(0.455)	(0.405)
Constant	5.703***	4.223***	2.874***	5.502***	4.028***	3.843***	4.715***	3.348***	5.838***	3.153***
	(0.175)	(0.155)	(0.145)	(0.176)	(0.176)	(0.162)	(0.162)	(0.167)	(0.174)	(0.143)
Observations (# of firms)	3,070	3,070	3,070	3,070	3,070	3,070	3,070	3,070	3,070	3,070
Mean D.V. control	5.923	4.182	2.876	5.641	4.304	4.117	4.614	3.111	5.375	3.346
SD D.V. control	2.398	2.132	1.965	2.372	2.286	2.291	2.152	2.122	2.359	1.907
R^2	0.008	0.008	0.004	0.005	0.003	0.009	0.003	0.007	0.012	0.003

Notes: This table reports OLS regression results, following the empirical specification of equation (3). The relevant outcomes are the rank (from 1-highest to 10-lowest) a respondents implicitly assigns to a location factor in its importance. Treatment indicators ($Treat$) for *all s* treatment groups, i.e., TAX, HIGHWAY as well as TRADEOFF are interacted with a dummy variable ($over$) which is 1 for overestimation (BIAS>5) of local business tax or highway access rank of the headquarters municipality of firm i and is zero otherwise. The TRADEOFF indicator is interacted with both $over$ variables, respectively. The estimated model is $y_i = \alpha_0 + \beta_1 \mathbb{I}_{over}^{Tax} + \beta_2 \mathbb{I}_{over}^{Highway} + \gamma_1 \text{TAX} + \gamma_2 \text{HIGHWAY} + \gamma_3 \text{TRADEOFF} + \delta_1 \text{TAX} \times \mathbb{I}_{over}^{Tax} + \delta_2 \text{HIGHWAY} \times \mathbb{I}_{over}^{Highway} + \delta_3 \text{TRADEOFF} \times \mathbb{I}_{over}^{Tax} + \delta_4 \text{TRADEOFF} \times \mathbb{I}_{over}^{Highway} + \delta_5 \text{TRADEOFF} \times \mathbb{I}_{over}^{Tax} \times \mathbb{I}_{over}^{Highway} + \epsilon_i$. Robust standard errors are in parentheses. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Figure A.1 Spatial Variation of Business Tax Rates and Access to Highway Infrastructure

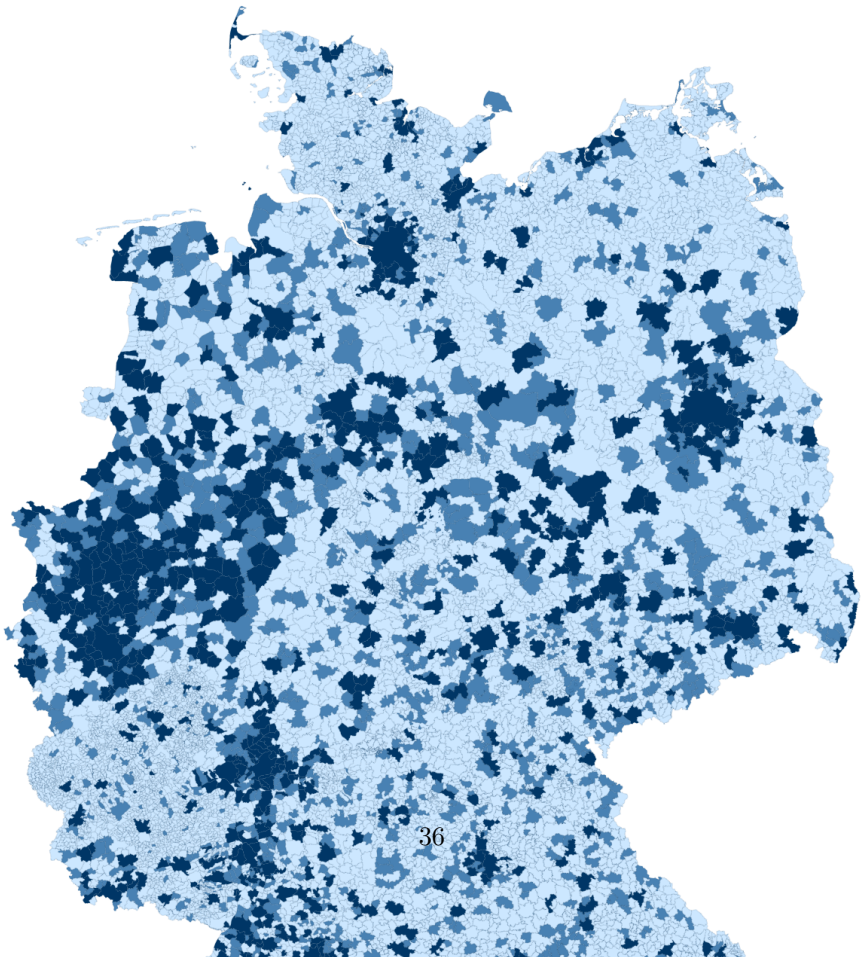
(a) Local Business Tax Rate Multiplier **(b)** Average Minutes to Next Highway



Notes: The figures show the variation across German municipalities of a) the Local Business Tax Rate Multiplier of 2018, and b) the average travel time by car in minutes to the next Highway based on the accessibility model of the BBSR as of 2017. Lighter blue corresponds to lower tax rate multipliers and fewer minutes to the next highway on average. The average local business tax rate is 14.3% and ranges from 7% to 20.3%. The local business tax rate is calculated as profits times tax base of 3.5% times the local business tax multiplier. The local business tax multiplier varies from 200% to 900% with an average of 363.5%. The average travel time to the next highway is estimated to be 9.2 minutes and ranges from 0.4 to 135.1 minutes.

A Additional Tables and Figures

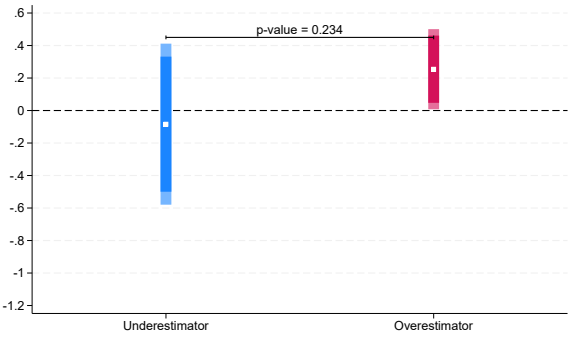
Figure A.2 Mapping Survey Respondents



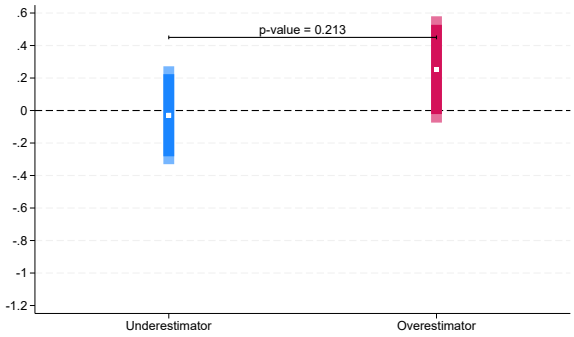
B Additional Results

Figure B.1 Information Effects on Satisfaction with Economic Policy

(a) TAX Treatment



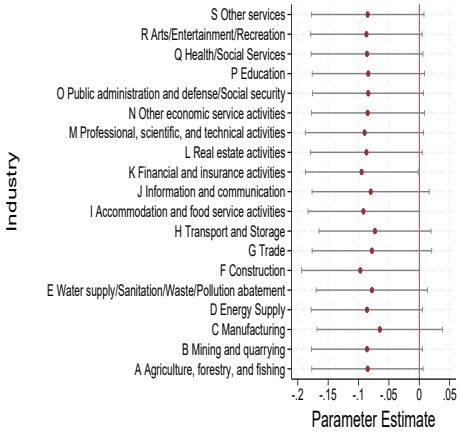
(b) HIGHWAY Treatment



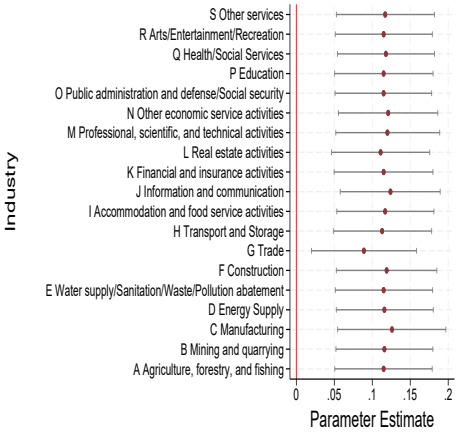
Notes: Figures a) and b) show the coefficient plots of the effects of correction of misperceptions β' through information treatments on satisfaction with overall economic policy. Respondents had to answer the question *How satisfied are you with the economic policy in Germany?* on an 11-point Likert scale (0 = Very unsatisfied to 10 = Very satisfied). Corresponding regressions are $y_i = \alpha + \beta' Treat_i^s + \epsilon_i$, and estimated for underestimators (positive shock about own municipalities competitiveness) and overestimators (negative shock about own municipalities competitiveness) separately. The bands around the coefficients indicate 90% (light color) and 95% (darker color) confidence intervals.

Figure B.2 Leave-One-Out Estimation Results

(a) Invest in Headquarters Municipalities



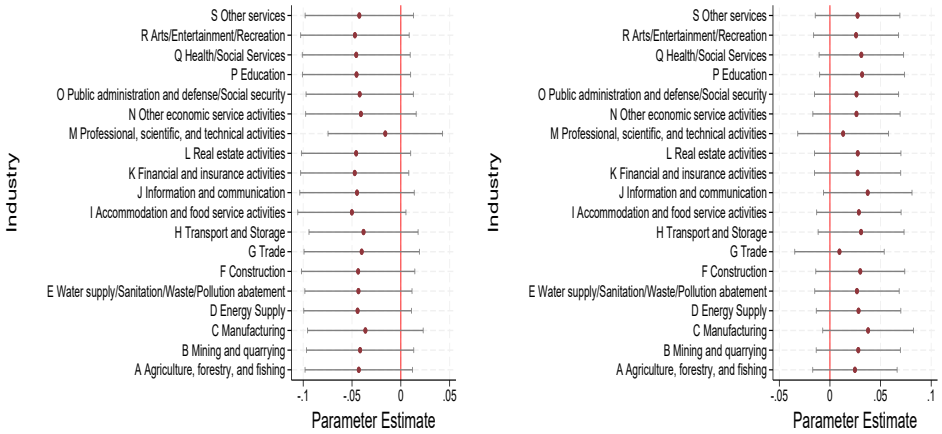
(b) Invest in other Municipalities



Notes: Figures a) and b) plot the coefficient of the interaction term TAX*$\mathbb{I}_{over}^{Tax}$ and respective 95% confidence intervals of the baseline results, following the empirical specification of equation (3), leaving out firms in the respective industries.

Figure B.3 Leave-One-Out Estimation Results: Overall Effect

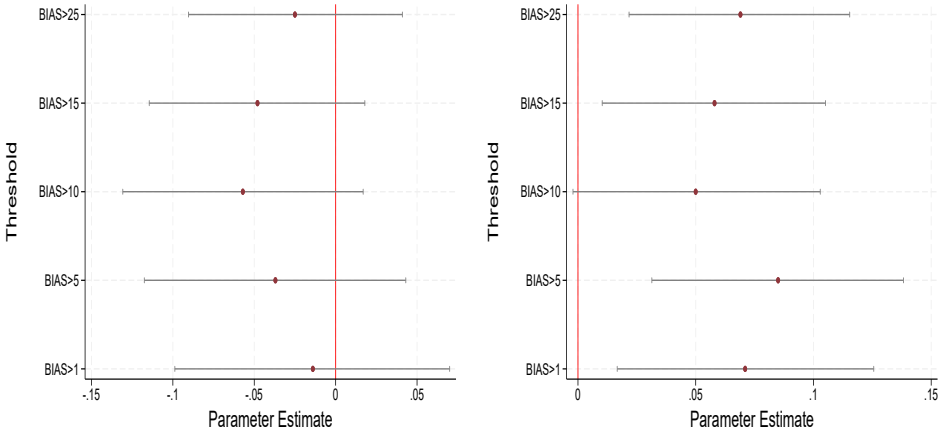
(a) Invest in Headquarters Municipalities **(b)** Invest in other Municipalities



Notes: Figures a) and b) plot the coefficient of the overall effect TAX+TAX*$\mathbb{I}_{over}^{Tax}$ and respective 95% confidence intervals of the baseline results, following the empirical specification of equation (3), leaving out firms in the respective industries.

Figure B.4 Sensitivity to Buffer Specification

(a) Invest in Headquarters Municipalities **(b)** Invest in other Municipalities



Notes: Figures a) and b) plot the coefficient of the interaction term TAX*$\mathbb{I}_{over}^{Tax}$ and respective 95% confidence intervals of the baseline results, following the empirical specification of equation (3)), varying the specification of the discrete misperception measure (Baseline: BIAS>5).

Table B.1 Effect of Corrected Misperceptions on Investment Intentions: Binary Outcome Measures

	Satisfaction	Investment by destination		
	Main Location	Main Location	Neighboring+ Other Places	Outside Germany
TAX	-0.327	0.022	-0.168***	-0.041
	(0.244)	(0.045)	(0.038)	(0.040)
HIGHWAY	0.123	0.017	-0.020	-0.024
	(0.159)	(0.030)	(0.030)	(0.027)
TRADEOFF	-0.058	0.031	-0.039	-0.045
	(0.361)	(0.067)	(0.067)	(0.057)
TAX*$\mathbb{I}_{over}^{Tax}$	-0.334	-0.055	0.197***	0.054
	(0.267)	(0.049)	(0.043)	(0.043)
HIGHWAY*$\mathbb{I}_{over}^{Highway}$	-0.582***	-0.003	-0.011	0.030
	(0.212)	(0.040)	(0.039)	(0.036)
TRADEOFF*$\mathbb{I}_{over}^{Tax}$	-0.307	-0.006	0.019	0.025
	(0.386)	(0.072)	(0.073)	(0.062)
TRADEOFF*$\mathbb{I}_{over}^{Highway}$	-0.439	0.062	-0.038	0.062
	(0.459)	(0.082)	(0.082)	(0.077)
TRADEOFF*$\mathbb{I}_{over}^{Tax}$ *$\mathbb{I}_{over}^{Highway}$	-0.060	-0.150	0.044	-0.024
	(0.506)	(0.092)	(0.091)	(0.084)
Constant	6.781***	0.728***	0.262***	0.190***
	(0.199)	(0.037)	(0.036)	(0.032)
Observations (# of firms)	3,066	2,678	2,371	2,440
Mean D.V. control	6.788	0.767	0.204	0.152
SD D.V. control	2.424	0.423	0.404	0.360
p-value (TAX*$\mathbb{I}_{over}^{Tax}$=HIGHWAY*$\mathbb{I}_{over}^{Highway}$)	0.473	0.413	0.001	0.676
R^2	0.016	0.005	0.009	0.002

Notes: This table reports OLS regression results, following the empirical specification of equation (3). Treatment indicators ($Treat$) for *all s* treatment groups, i.e., TAX, HIGHWAY as well as TRADEOFF are interacted with a dummy variable (*over*) which is 1 for overestimation (BIAS>5) of local business tax or highway access rank of the headquarters municipality of firm i and is zero otherwise. The TRADEOFF indicator is interacted with both *over* variables, respectively. The estimated model is $y_i = \alpha_0 + \beta_1 \mathbb{I}_{over}^{Tax} + \beta_2 \mathbb{I}_{over}^{Highway} + \gamma_1 \text{TAX} + \gamma_2 \text{HIGHWAY} + \gamma_3 \text{TRADEOFF} + \delta_1 \text{TAX} \times \mathbb{I}_{over}^{Tax} + \delta_2 \text{HIGHWAY} \times \mathbb{I}_{over}^{Highway} + \delta_3 \text{TRADEOFF} \times \mathbb{I}_{over}^{Tax} + \delta_4 \text{TRADEOFF} \times \mathbb{I}_{over}^{Highway} + \delta_5 \text{TRADEOFF} \times \mathbb{I}_{over}^{Tax} \times \mathbb{I}_{over}^{Highway} + \epsilon_i$. Robust standard errors are in parentheses. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table B.2 Effect of Corrected Misperceptions on Investment Intentions: No High-Tax Municipalities

	Satisfaction	Investment by destination		
	Main location	Main location	Neighboring+ Other Places	Outside Germany
TAX	-0.401	0.015	-0.088***	-0.044
	(0.251)	(0.039)	(0.025)	(0.032)
HIGHWAY	0.179	0.033	-0.039	-0.043
	(0.214)	(0.034)	(0.025)	(0.029)
TRADEOFF	-0.342	0.000	-0.031	-0.028
	(0.382)	(0.054)	(0.039)	(0.050)
TAX*$\mathbb{I}_{over}^{Tax}$	-0.081	-0.022	0.083***	0.020
	(0.291)	(0.045)	(0.030)	(0.037)
HIGHWAY*$\mathbb{I}_{over}^{Highway}$	-0.914***	-0.038	-0.002	0.051
	(0.273)	(0.042)	(0.031)	(0.036)
TRADEOFF*$\mathbb{I}_{over}^{Tax}$	-0.013	0.008	-0.010	0.021
	(0.435)	(0.064)	(0.047)	(0.058)
TRADEOFF*$\mathbb{I}_{over}^{Highway}$	-0.242	0.049	-0.033	0.028
	(0.480)	(0.066)	(0.049)	(0.063)
TRADEOFF*$\mathbb{I}_{over}^{Tax}$ *$\mathbb{I}_{over}^{Highway}$	-0.341	-0.102	0.025	-0.039
	(0.565)	(0.081)	(0.060)	(0.074)
Constant	6.902***	0.693***	0.280***	0.189***
	(0.207)	(0.033)	(0.022)	(0.028)
Observations (# of firms)	1,838	1,619	1,442	1,485
Excluding High-Tax Cluster	YES	YES	YES	YES
Mean D.V. control	6.788	0.715	0.249	0.150
SD D.V. control	2.424	0.352	0.248	0.303
p-value (TAX*$\mathbb{I}_{over}^{Tax}$=HIGHWAY*$\mathbb{I}_{over}^{Highway}$)	0.039	0.806	0.056	0.578
R^2	0.022	0.005	0.013	0.005

Notes: This table reports OLS regression results, following the empirical specification of equation (3). Treatment indicators ($Treat$) for *all s* treatment groups, i.e., TAX, HIGHWAY as well as TRADEOFF are interacted with a dummy variable ($over$) which is 1 for overestimation (BIAS>5) of local business tax or highway access rank of the headquarters municipality of firm i and is zero otherwise. The TRADEOFF indicator is interacted with both *over* variables. The estimated model is $y_i = \alpha_0 + \beta_1 \mathbb{I}_{over}^{Tax} + \beta_2 \mathbb{I}_{over}^{Highway} + \gamma_1 \text{TAX} + \gamma_2 \text{HIGHWAY} + \gamma_3 \text{TRADEOFF} + \delta_1 \text{TAX} \times \mathbb{I}_{over}^{Tax} + \delta_2 \text{HIGHWAY} \times \mathbb{I}_{over}^{Highway} + \delta_3 \text{TRADEOFF} \times \mathbb{I}_{over}^{Tax} + \delta_4 \text{TRADEOFF} \times \mathbb{I}_{over}^{Highway} + \delta_5 \text{TRADEOFF} \times \mathbb{I}_{over}^{Tax} \times \mathbb{I}_{over}^{Highway} + \epsilon_i$. Robust standard errors are in parentheses. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table B.3 Effect of Corrected Misperceptions on Investment Intentions with Weights

	Satisfaction	Investment by destination		
	Main Location	Main Location	Neighboring+ Other Places	Outside Germany
TAX	-0.299	-0.015	-0.065**	-0.045
	(0.282)	(0.048)	(0.029)	(0.034)
HIGHWAY	0.061	-0.015	-0.015	-0.015
	(0.195)	(0.032)	(0.023)	(0.028)
TRADEOFF	-0.350	0.021	-0.035	-0.048
	(0.442)	(0.059)	(0.044)	(0.054)
TAX*$\mathbb{I}_{over}^{Tax}$	-0.237	0.008	0.071**	0.036
	(0.313)	(0.052)	(0.033)	(0.037)
HIGHWAY*$\mathbb{I}_{over}^{Highway}$	-0.534**	0.012	-0.005	0.008
	(0.258)	(0.042)	(0.030)	(0.034)
TRADEOFF*$\mathbb{I}_{over}^{Tax}$	-0.071	-0.071	0.025	-0.003
	(0.479)	(0.066)	(0.049)	(0.058)
TRADEOFF*$\mathbb{I}_{over}^{Highway}$	-0.132	0.022	-0.039	0.082
	(0.545)	(0.075)	(0.054)	(0.065)
TRADEOFF*$\mathbb{I}_{over}^{Tax}$ *$\mathbb{I}_{over}^{Highway}$	-0.201	-0.010	0.030	-0.014
	(0.609)	(0.086)	(0.061)	(0.072)
Constant	6.939***	0.724***	0.260***	0.189***
	(0.235)	(0.038)	(0.026)	(0.035)
Observations (# of firms)	2,958	2,590	2,292	2,356
Survey Weights	YES	YES	YES	YES
Mean D.V. control	6.788	0.715	0.249	0.150
SD D.V. control	2.424	0.352	0.248	0.303
p-value (TAX*$\mathbb{I}_{over}^{Tax}$=HIGHWAY*$\mathbb{I}_{over}^{Highway}$)	0.473	0.949	0.086	0.590
R^2	0.013	0.005	0.006	0.007

Notes: This table reports OLS regression results, following the empirical specification of equation (3). Treatment indicators ($Treat$) for *all s* treatment groups, i.e., TAX, HIGHWAY as well as TRADEOFF are interacted with a dummy variable ($over$) which is 1 for overestimation (BIAS>5) of local business tax or highway access rank of the headquarters municipality of firm i and is zero otherwise. The TRADEOFF indicator is interacted with both *over* variables. The estimated model is $y_i = \alpha_0 + \beta_1 \mathbb{I}_{over}^{Tax} + \beta_2 \mathbb{I}_{over}^{Highway} + \gamma_1 \text{TAX} + \gamma_2 \text{HIGHWAY} + \gamma_3 \text{TRADEOFF} + \delta_1 \text{TAX} \times \mathbb{I}_{over}^{Tax} + \delta_2 \text{HIGHWAY} \times \mathbb{I}_{over}^{Highway} + \delta_3 \text{TRADEOFF} \times \mathbb{I}_{over}^{Tax} + \delta_4 \text{TRADEOFF} \times \mathbb{I}_{over}^{Highway} + \delta_5 \text{TRADEOFF} \times \mathbb{I}_{over}^{Tax} \times \mathbb{I}_{over}^{Highway} + \epsilon_i$. Robust standard errors are in parentheses. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table B.4 Effect of Corrected Misperceptions on Investment Intentions: Municipality Controls

	Satisfaction	Investment by destination		
	Main location	Main location	Neighboring + Other	Outside Germany
TAX	-0.319	0.014	-0.078***	-0.038
	(0.228)	(0.037)	(0.025)	(0.031)
HIGHWAY	0.065	0.010	-0.026	-0.017
	(0.151)	(0.024)	(0.018)	(0.022)
TRADEOFF	-0.025	0.003	-0.021	-0.039
	(0.325)	(0.048)	(0.039)	(0.045)
TAX*$\mathbb{I}_{over}^{Tax}$	-0.358	-0.043	0.089***	0.041
	(0.250)	(0.040)	(0.027)	(0.034)
HIGHWAY*$\mathbb{I}_{over}^{Highway}$	-0.464**	-0.014	0.004	0.023
	(0.201)	(0.032)	(0.024)	(0.029)
TRADEOFF*$\mathbb{I}_{over}^{Tax}$	-0.363	-0.011	0.007	0.008
	(0.351)	(0.053)	(0.042)	(0.049)
TRADEOFF*$\mathbb{I}_{over}^{Highway}$	-0.455	0.050	-0.040	0.024
	(0.416)	(0.061)	(0.049)	(0.058)
TRADEOFF*$\mathbb{I}_{over}^{Tax}$*$\mathbb{I}_{over}^{Highway}$	0.073	-0.096	0.034	0.029
	(0.462)	(0.069)	(0.055)	(0.064)
Constant	6.216***	0.623***	0.297***	0.215***
	(0.196)	(0.032)	(0.022)	(0.027)
Observations (# of firms)	3,054	2,668	2,361	2,431
Controls	Municipality	Municipality	Municipality	Municipality
Mean D.V. control	6.788	0.715	0.249	0.150
SD D.V. control	2.424	0.352	0.248	0.303
p-value (TAX*$\mathbb{I}_{over}^{Tax}$=HIGHWAY*$\mathbb{I}_{over}^{Highway}$)	0.745	0.567	0.020	0.685
R^2	0.130	0.061	0.016	0.017

Notes: This table reports OLS regression results, following the empirical specification of equation (3). Treatment indicators ($Treat$) for *all s* treatment groups, i.e., TAX, HIGHWAY as well as TRADEOFF are interacted with a dummy variable ($over$) which is 1 for overestimation (BIAS>5) of local business tax or highway access rank of the headquarters municipality of firm i and is zero otherwise. The TRADEOFF indicator is interacted with both $over$ variables. The estimated model is $y_i = \alpha_0 + \beta_1 \mathbb{I}_{over}^{Tax} + \beta_2 \mathbb{I}_{over}^{Highway} + \gamma_1 \text{TAX} + \gamma_2 \text{HIGHWAY} + \gamma_3 \text{TRADEOFF} + \delta_1 \text{TAX} \times \mathbb{I}_{over}^{Tax} + \delta_2 \text{HIGHWAY} \times \mathbb{I}_{over}^{Highway} + \delta_3 \text{TRADEOFF} \times \mathbb{I}_{over}^{Tax} + \delta_4 \text{TRADEOFF} \times \mathbb{I}_{over}^{Highway} + \delta_5 \text{TRADEOFF} \times \mathbb{I}_{over}^{Tax} \times \mathbb{I}_{over}^{Highway} + \epsilon_i$. Municipality controls include a dummy indicating whether the municipality of the firm has a high local business tax rate (low highway access) or not, and whether the respondents perceive that the municipality uses its revenues efficiently. Robust standard errors are in parentheses. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table B.5 Effect of Corrected Misperceptions on Investment Intentions: Full Controls (Municipality+Firm)

	Satisfaction	Investment by destination		
	Main location	Main location	Neighboring + Other	Outside Germany
TAX	-0.579**	0.017	-0.082***	-0.079**
	(0.268)	(0.044)	(0.028)	(0.035)
HIGHWAY	-0.058	0.014	-0.038*	-0.030
	(0.176)	(0.029)	(0.021)	(0.025)
TRADEOFF	-0.228	0.004	-0.031	-0.068
	(0.410)	(0.060)	(0.051)	(0.054)
TAX*$\mathbb{I}_{over}^{Tax}$	-0.137	-0.040	0.096***	0.086**
	(0.297)	(0.048)	(0.032)	(0.039)
HIGHWAY*$\mathbb{I}_{over}^{Highway}$	-0.461**	-0.027	0.026	0.026
	(0.235)	(0.038)	(0.028)	(0.032)
TRADEOFF*$\mathbb{I}_{over}^{Tax}$	-0.309	-0.029	-0.000	0.038
	(0.443)	(0.066)	(0.055)	(0.059)
TRADEOFF*$\mathbb{I}_{over}^{Highway}$	-0.200	0.055	-0.036	-0.014
	(0.509)	(0.076)	(0.062)	(0.065)
TRADEOFF*$\mathbb{I}_{over}^{Tax}$*$\mathbb{I}_{over}^{Highway}$	-0.191	-0.107	0.050	0.103
	(0.569)	(0.086)	(0.068)	(0.074)
Constant	5.653***	0.537***	0.259***	0.214***
	(0.422)	(0.066)	(0.048)	(0.054)
Observations (# of firms)	2,036	1,805	1,621	1,661
Controls	Municipality +Firm	Municipality +Firm	Municipality +Firm	Municipality +Firm
Mean D.V. control	6.788	0.715	0.249	0.150
SD D.V. control	2.424	0.352	0.248	0.303
R^2	0.171	0.079	0.048	0.060

Notes: This table reports OLS regression results, following the empirical specification of equation (3). Treatment indicators ($Treat$) for *all s* treatment groups, i.e., TAX, HIGHWAY as well as TRADEOFF are interacted with a dummy variable ($over$) which is 1 for overestimation (BIAS>5) of local business tax or highway access rank of the headquarters municipality of firm i and is zero otherwise. The TRADEOFF indicator is interacted with both *over* variables. The estimated model is $y_i = \alpha_0 + \beta_1 \mathbb{I}_{over}^{Tax} + \beta_2 \mathbb{I}_{over}^{Highway} + \gamma_1 \text{TAX} + \gamma_2 \text{HIGHWAY} + \gamma_3 \text{TRADEOFF} + \delta_1 \text{TAX} \times \mathbb{I}_{over}^{Tax} + \delta_2 \text{HIGHWAY} \times \mathbb{I}_{over}^{Highway} + \delta_3 \text{TRADEOFF} \times \mathbb{I}_{over}^{Tax} + \delta_4 \text{TRADEOFF} \times \mathbb{I}_{over}^{Highway} + \delta_5 \text{TRADEOFF} \times \mathbb{I}_{over}^{Tax} \times \mathbb{I}_{over}^{Highway} + \epsilon_i$. Municipality controls include a dummy indicating whether the municipality of the firm has a high local business tax rate (low highway access) or not, and whether the respondents perceive that the municipality uses its revenues efficiently. Firm controls include manager characteristics such as gender, education and position of the respondents, and firm characteristics such as number of employees, legal form and economic sector. Robust standard errors are in parentheses. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

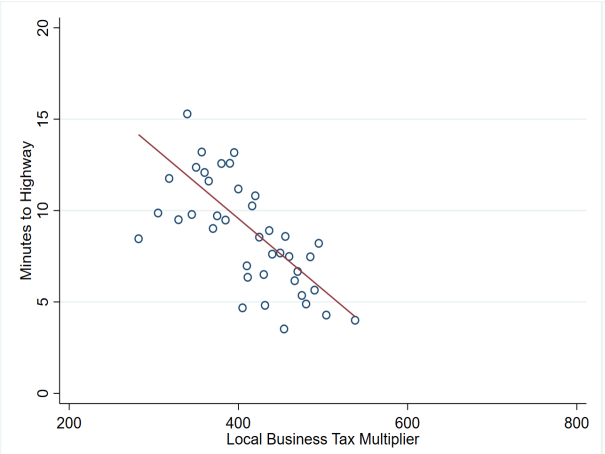
C Trade-Off Between Lower Taxes and Higher Accessibility

Our experimental design considers two different dimensions of public finance policies that are of immediate relevance for firms: taxes (as a cost to firm profits) and highway accessibility (as a productive amenity). Figure C.1a shows that the budget constraint of the municipalities introduces a negative correlation between the local business tax multipliers and the minutes to highway in the administrative data. This implies a trade-off between lower taxes and higher accessibility. A municipality that is hard to reach, must reduce its local business tax multiplier to attract businesses. A linear regression implies that a municipality that is about 8 minutes closer to the next highway can afford to reduce its local business tax multiplier by 200 percentage points.

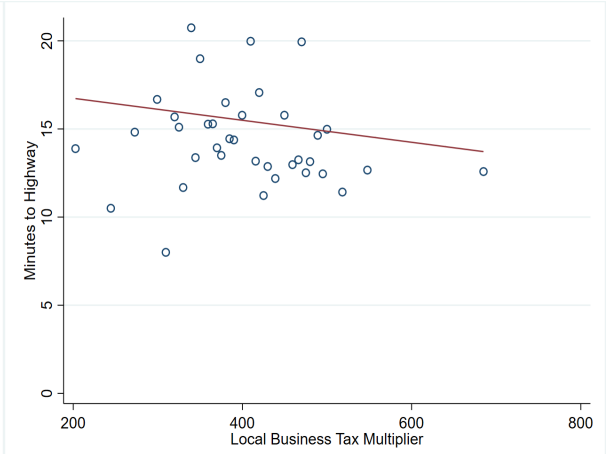
Figure C.1b shows the same relationship between the perceived accessibility and the taxes. The slope of the corresponding regression is statistically and economically indistinguishable from zero. This suggests that even though there is a significant correlation in the administrative data, firm decision makers do not perceive a significant trade-off between local taxes and highway accessibility. Please recall, that all our respondents were even informed about a potential trade-off of providing public services like highways and the need to finance these services via local taxes at the beginning of our survey (see Section 3 for a discussion and Appendix Section F for the wording).

Figure C.1 Trade-Off between Taxes and Infrastructure

(a) Actual Trade-Off



(b) Perceived Trade-Off

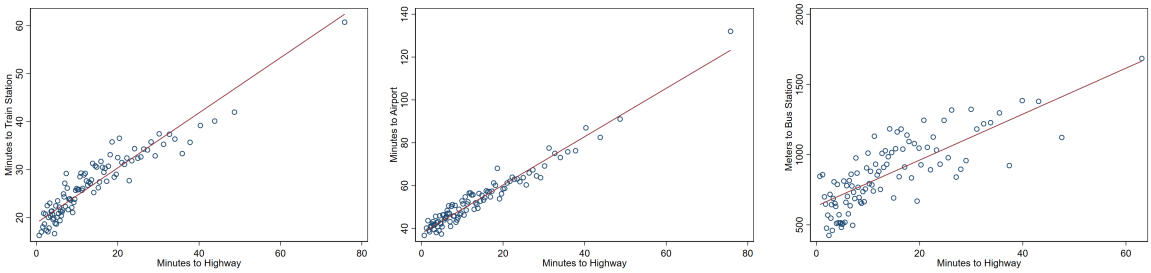


Notes: Observations refer to the respective headquarters municipality of firms. Binscatters with 40 quantiles. The red solid line show linear regressions. For Figure C.1a the slope of −0.04 (0.003) is significantly different from zero. In Figure C.1b, the slope −0.006 (0.004) is insignificant. This implies that firm decision makers misperceive the trade-off between local taxes and accessibility.

D Highway Access vs. Access to Other Transport Modes

Figure D.1 Correlation of Highway Access with other Modes of Transport

(a) Train Station **(b)** Airport **(c)** Bus Station



Notes: The figures plot the correlation of highway access (measured as minutes to next highway) and other modes of transport: Train, airplane and bus.

E Screenshots of Survey Sequence

Figure E.1 Survey Opener

Die folgenden Fragen beschäftigen sich mit dem kommunalen Standortwettbewerb um Unternehmen. Einerseits müssen deutsche Gemeinden öffentliche Aufgaben erfüllen (wie z.B. die Bereitstellung von Verkehrsinfrastruktur). Andererseits müssen sich deutsche Gemeinden für die Bereitstellung dieser Leistungen auch finanzieren (etwa durch kommunale Steuern auf Unternehmensgewinne).

Hinweis: Auf der folgenden Seite wird Ihnen ein Auswahlfeld angezeigt. Bitte haben Sie einen Moment Geduld bis das Auswahlfeld erscheint.

→

Figure E.2 Selection of headquarters ("Home") Municipality

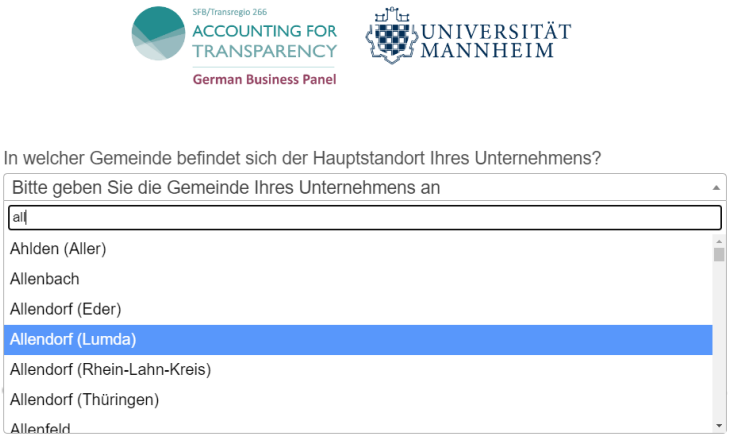


Figure E.3 Perceived Spending Efficiency in Home Municipality

Figure E.4 Tax Opener

Figure E.5 Prior Beliefs Local Business Tax

Figure E.6 Infrastructure Opener

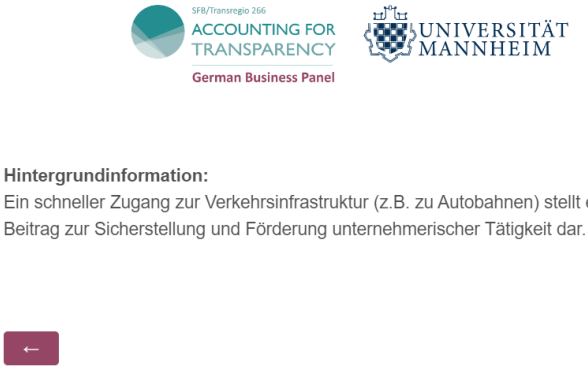


Figure E.7 Prior Beliefs Infrastructure

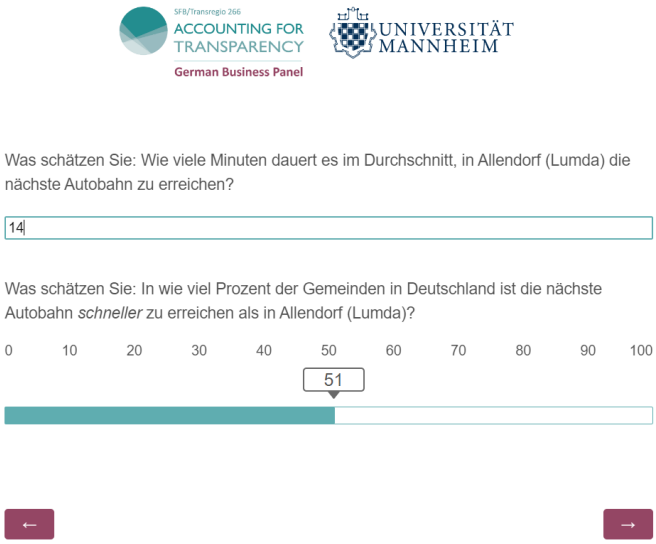


Figure E.8 Treatment Tax Rank

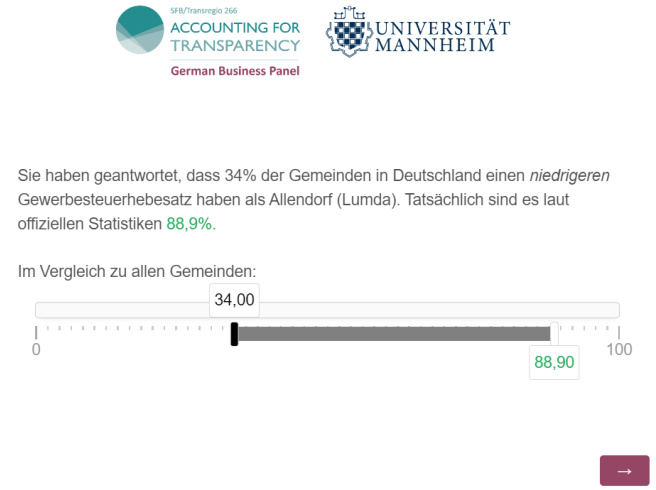


Figure E.9 Treatment Infrastructure Rank

Figure E.10 Treatment Tax and Infrastructure Ranks Combined

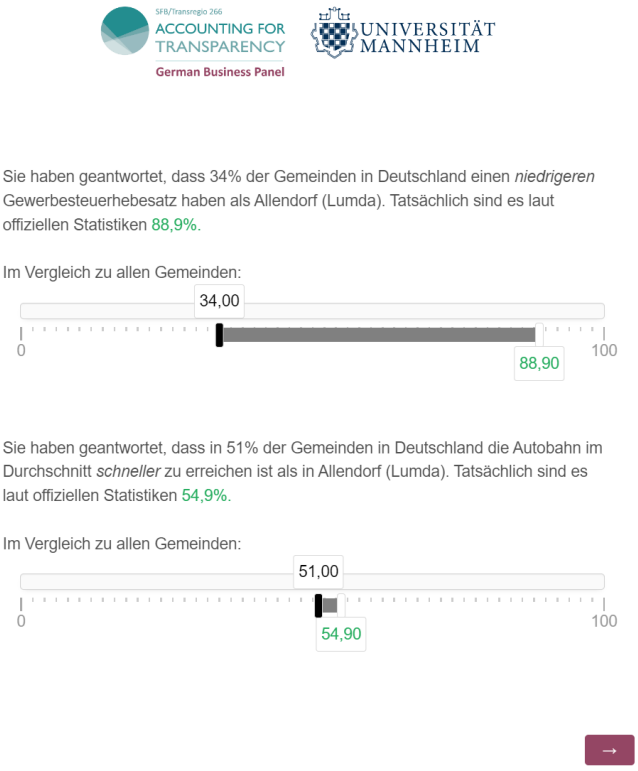


Figure E.11 Location Attractiveness of Home Municipality

Figure E.12 Investment Intentions by Regional Destination

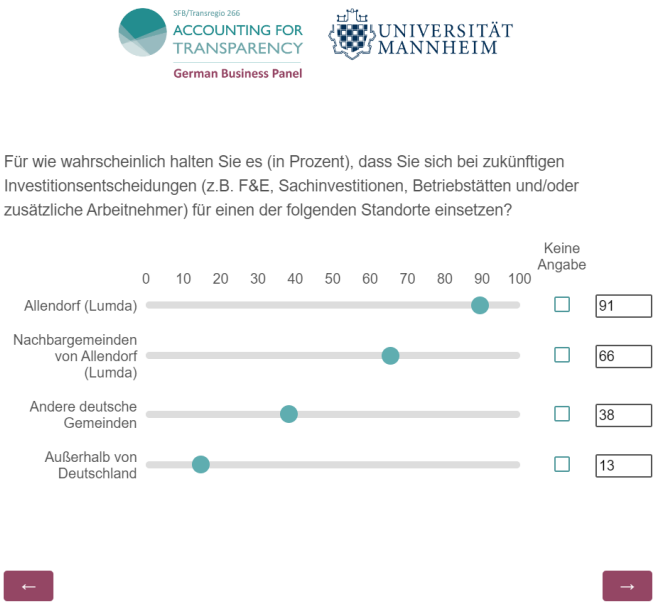


Figure E.13 Justified Business Tax Rate

Figure E.14 Preference for more Regional Firm Subsidies

Figure E.15 Tax–Infrastructure Trade-Off Question

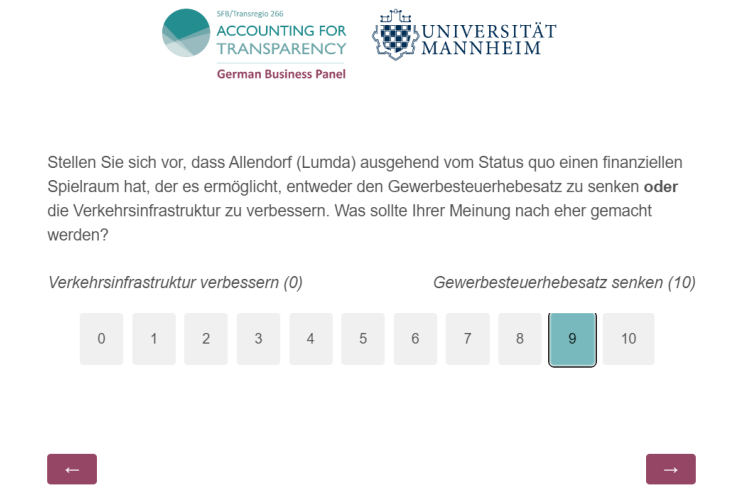


Figure E.16 Importance of Determinants for Business Attractiveness

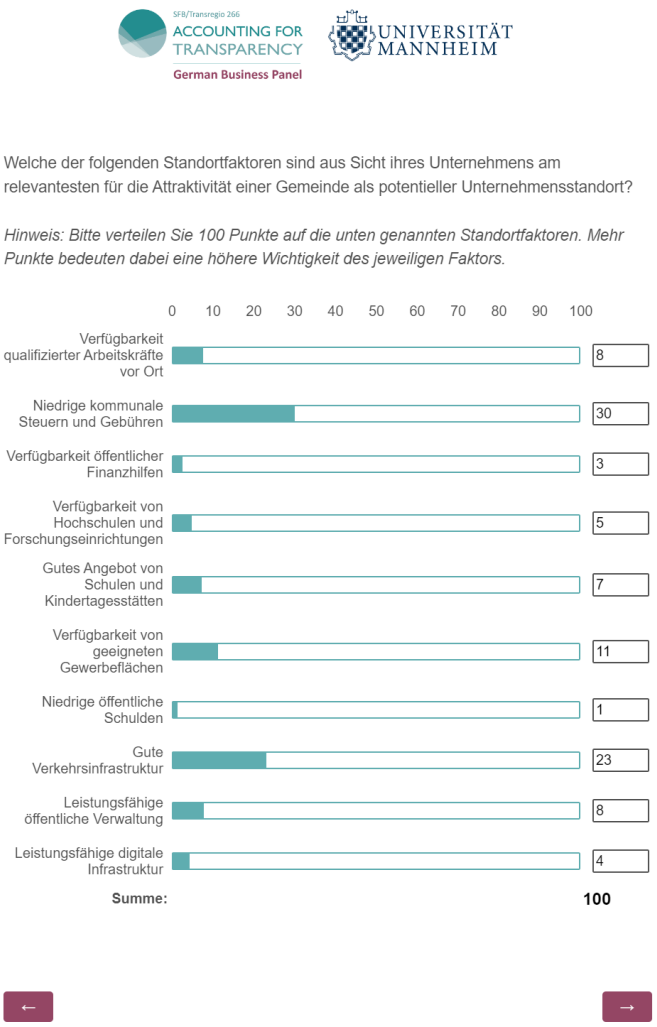


Figure E.17 Information Acquisition and Debriefing

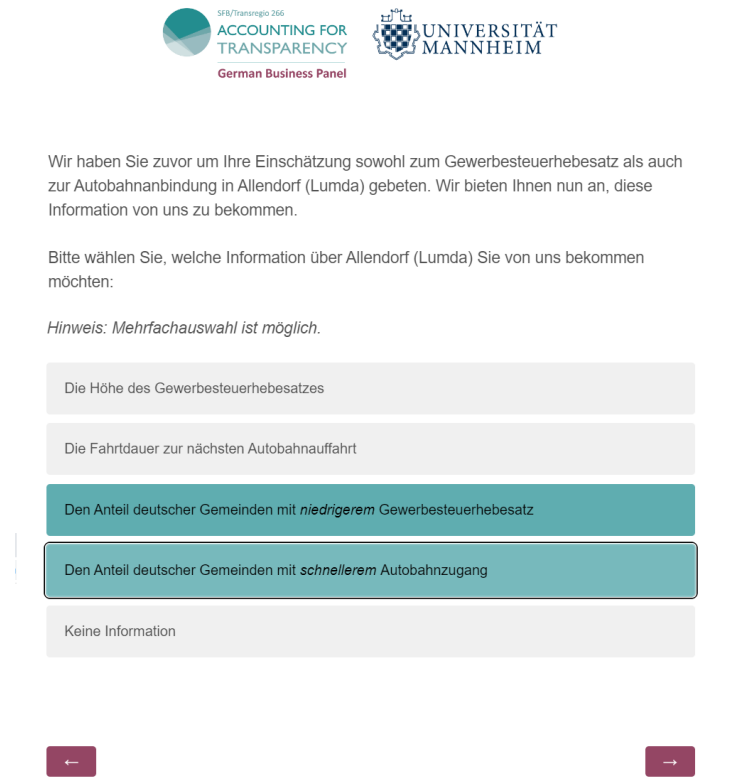


Figure E.18 Information Acquisition and Debriefing

F Translation of the Question Wording

- **Survey opener**

  The following questions deal with municipal competition for firms. On the one hand, German municipalities have to fulfill public tasks (such as providing transport infrastructure). On the other hand, German municipalities must also finance the provision of these services (for example, through municipal taxes on corporate profits).

- **Q1:** What do you think: The municipality of your company headquarter/in the selected municipality regularly uses tax revenues appropriately for meaningful purposes.

  - **Likert Scale:** [Does not apply at all (0), Fully applies (10)]

- **Background information:**

  The basis of taxation for the local business tax are adjusted business earnings Gewerbeertrag of a company. Differences in the amount of trade tax between municipalities are determined by the tax multiplier, which is set by the municipalities themselves.

- **Prior Tax**

  Q2: What do you estimate: What is the business tax rate (in percent) at your company headquarter/in the selected municipality?

  - **Entry Box:** [0%, 2000%]

  Q3: What do you estimate: In what percentage of municipalities in Germany is the business tax rate lower than in your company headquarter/in the selected municipality?

  - **Entry Box:** [0%, 100%]

- **Background information:**

  Rapid access to transportation infrastructure (e.g., to highways) represents an important contribution to securing and promoting entrepreneurial activity.

- **Prior Infrastructure**

  Q4: How many minutes do you think it takes on average to reach the nearest highway at your company's headquarters municipality/in the selected municipality?

  - **Entry Box:** [0 Minutes, 250 Minutes]

  Q5: In your opinion, in what percentage of municipalities in Germany is the nearest highway faster to reach than at your company's headquarters municipality/in the selected community?

  - **Entry Box:** [0%, 100%]

- **Control condition:** No information

- **Treatment Group 1: Tax rank**
  Receives information about the respective overall rank of the headquarters municipality with regards to the local business tax rate.
  You answered that ...% of municipalities in Germany have a lower local business tax rate than your headquarters municipality. In fact, according to official statistics, it is ...%.

- **Treatment Group 2: Infrastructure rank**
  Receives information about the respective overall rank of the headquarters municipality with regards to the minutes to the nearest highway.
  You answered that in ...% of German communities, the highway is on average faster to reach than in your headquarters municipality. In fact, according to official statistics, it is ...%.

- **Treatment Group 3: Tax and infrastructure ranks**
  Receives information about the respective overall rank of the headquarters municipality regarding the local business tax rate and minutes to the nearest highway.
  You answered that ...% of municipalities in Germany have a lower local business tax rate than your headquarters municipality. In fact, according to official statistics, it is ...%.
  You also answered that in ...% of German communities, the highway is on average faster to reach than in your headquarters municipality. In fact, according to official statistics, it is ...%.

- **Outcome: Location attractiveness of home municipality**

  Q6: How would you rate the attractiveness of your location from the point of view of your company/in the selected municipality?

  - **Likert Scale:** [Very bad (0), Very good (10)]

- **Outcome: Investment intentions by regional destination**

  Q7: How likely do you think it is (in percentage) that you will choose one of the following locations for future investment decisions (e.g., R&D, capital expenditures, operating facilities, and/or additional employees)?

  - headquarters municipality of my company [0%, 100%]
  - Neighboring municipalities of the main site [0%, 100%]
  - Other German municipalities [0%, 100%]
  - Outside of Germany [0%, 100%]

- **Outcome: Appropriate business tax rate**

  Q8: What do you think: What business tax rate at your headquarters municipality/in the selected municipality would be appropriate from your company's point of view?

  - **Entry Box:** [0% - 2000%]

- **Outcome: Preference for more regional firm subsidies**

  Q9: What do you think: Should the headquarters municipality of your company/in the selected municipality benefit more from regional economic development (state, federal, EU)?

  - **Likert Scale:** [Not at all (0), Very strongly (10)]

- **Outcome: Tax–infrastructure trade-off question**

  Q10: Imagine that your headquarters municipality, based on the status quo, has financial leeway to either lower the business tax rate or improve the transportation infrastructure. What do you think should be done?

– **Likert Scale:**
[Improve transport infrastructure (0), Reduce business tax rate (10)]

- **Outcome: Importance of determinants for business attractiveness**

Q11: From your company's perspective, which of the following location factors are the most relevant to the attractiveness of a community as a potential headquarters municipality?
Note: Please distribute 100 points among the location factors listed below. More points suggest a higher importance of the respective factor.

– Low public debt	$w_1 = [0\% - 100\%]$
– Availability of public financial aid	$w_2 = [0\% - 100\%]$
– Low municipal taxes and fees	$w_3 = [0\% - 100\%]$
– Availability of suitable commercial space	$w_4 = [0\% - 100\%]$
– Efficient public administration	$w_5 = [0\% - 100\%]$
– Availability of qualified workforce on site	$w_6 = [0\% - 100\%]$
– Good offer of schools and day care centers for children	$w_7 = [0\% - 100\%]$
– Availability of universities and research institutions	$w_8 = [0\% - 100\%]$
– Good transport infrastructure	$w_9 = [0\% - 100\%]$
– Efficient digital infrastructure	$w_{10} = [0\% - 100\%]$
	$\sum_{i=1}^{10} w_i = 100\%$

- **Outcome: Information acquisition and debriefing**

Q12: We have previously asked you for your assessment of both the business tax rate and the highway access at your headquarters municipality. We now offer you to get this information from us.
Please select which information you would like to receive from us.

– Real business tax rate level	[selected (1), not selected (0)]
– Real minutes to highway	[selected (1), not selected (0)]
– Real cumulative business tax rate level	[selected (1), not selected (0)]
– Real cumulative minutes to highway	[selected (1), not selected (0)]
– No information	[selected (1), not selected (0)]

(If selected, displayed:)

– *According to your estimate, the trade tax rate is ...*
The actual value is ...
– *According to your estimate, it takes ... minutes to a highway.*
The actual value is ... minutes.
– *You answered that ...% of municipalities in Germany have a lower local business tax rate than your headquarters municipality. In fact, according to official statistics, it is ...%.*
– *You also answered that in ...% of German communities, the highway is on average faster to reach than in your headquarters municipality. In fact, according to official statistics, it is ...%.*

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