

Pre-Analysis Plan: Perceptions and Preferences towards Chinese Investments: A Randomized Survey Experiment in Germany*

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August 1, 2024

*The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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1 Introduction

1.1 Abstract

In this study, we propose to conduct a randomized survey experiment, in which we will survey the German public’s opinions towards Chinese Foreign Direct Investments (FDI) in Germany, and analyze the contrasting causal effects of FDI fact-checking versus FDI narratives on the formation of such attitudes towards Chinese investments.

1.2 Motivation

China’s rapid development and its central role as a driver of globalization have resulted in the expansion of economic ties with the European Union (EU) over the past few decades. In 2021 China has become the EU’s biggest trading partner in the world. However, the rapid expansion of China’s global economic and political influence as well as the institutional differences between the two has been gradually leading the two partners to a crossroads. Concerns about how to maintain economic cooperation with China are mounting inside the EU.¹ Such concerns are further triggered and aggravated by the recently evolving public debate over similar topics, such as the US-China trade/technology war, human rights issues in China, as well as China’s role in the Russia-Ukraine War, etc.

Given the backdrop of such potential economic and political tensions, it’s of utmost importance to understand how future policies on economic collaborations with China should be guided. We believe one very important element in drafting economic policies with China (from the side of European countries) is to understand the public’s opinions and (mis-)conceptions on economic ties with China, as well as how these attitudes evolve or change with varying kinds of information and narrative provisions.

We propose to survey the public’s opinions towards Chinese Foreign Direct Investments (FDI) in Germany to begin with, not only because FDI is one of the most important and controversial vehicles of economic cooperation, but also that Germany is the largest economy inside the EU and has close trade and investment collaborations with China. For instance, the total stock of Chinese FDI to Germany has reached \$14.5 billion by the end of 2020, which puts Germany at the 11th place

¹Recently the very important Comprehensive Investment Agreement between China and the EU has come to a standstill and shelved for future approval, due to mutual sanctions between the two parts with regards to current human rights issues in China.

among all destination countries of Chinese overseas investments, 3rd in the European Union (after the Netherlands and Luxembourg).² However, at the same time, Chinese investment activities in Germany have often been portrayed with a lot of worries.³ There is a lot of anxiety over whether Chinese companies are snatching off core German technologies, especially in critical high-technology sectors with a few takeovers being overly publicised by the German media.⁴ Such concerns are potentially shared by the German government, as we have witnessed an increasing trend of tightening FDI scrutiny, with Chinese investment projects taking up the lion's share of FDI deals being reviewed by the German Ministry of Economy in the most recent years.⁵ These worries can be contrasted to objective economic indicators. According to OECD statistics on FDI positions, the total stock of Chinese FDI (\$14.5 billion) only accounts for around 1.3 % of the total stock of inward FDI in Germany. More than 50% of very large-scale Chinese investment projects⁶ in Germany are concentrated in the transportation sector, much more so than the potentially more controversial sectors such as high-tech manufacturing, real-estate or finance (Xia & Liu, 2021).

Such descriptive evidence above begs the question on how the German population perceives Chinese FDI in Germany; furthermore, whether (mis-)perceptions are at the roots of the potential mistrust towards Chinese investments, or if such mistrust is more due to the narrative of Chinese foreign investments portrayed in the media.

Furthermore, given the close bilateral economic relationships between China and Germany, it would be equally interesting to understand what the Chinese public conceive of German investments, and especially given the relatively more benign portrayal of German investments in China, whether there is a large discrepancy in terms of mutual perceptions of the economic benefits or threats posed by one another?

²All main figures are taken from the Annual Statistical Bulletin of China's Outward Foreign Direct Investment compiled by the Chinese Ministry of Commerce.

³See reports such as: <https://www.dw.com/en/chinas-unsatisfied-hunger-for-german-companies/a-39658363>

⁴Such as the take-over of the German robotics company KUKA by Chinese electronic appliance manufacturer Midea in 2016, which created a huge stir in the German media.

⁵See the recent report on Foreign Direct Investment Review in Germany 2021, where it's described that "From January 2016 to December 2018, 185 transactions have been subject to BMWi investment reviews, of which 75 acquisitions were attributed directly or indirectly to a Chinese acquirer".

⁶Investment projects that surpass \$100 million in value.

1.3 Research Questions and Research Design

As such, in this proposed randomized survey experiment, we intend to ask the following questions:

1. Are there major misperceptions from the German public when it comes to inward Chinese FDI in Germany? And if so, what are they?
2. Are attitudes towards Chinese investments in Germany susceptible to either misperception-correcting **fact-checking** treatment or provocative media **narrative** treatment?
3. If so, are these attitudes more susceptible to **fact-checking** treatment or media **narrative** treatment?
4. Are there significant differences in how the German and Chinese public perceive each other's economic presence (strength or threat) through foreign direct investments?

This study will take the form of a randomized survey experiment. Specifically, we will randomly assign our German respondents into four treatment groups (including the control group).

Before our randomized information treatment (i.e. at the baseline), we will survey our respondents on their general perceptions with regard to Sino-German investment relations by asking them their knowledge on a few factual questions (detailed in the instrument sub-section).

Hypothesis 1: At baseline, the German public may hold large misperceptions with regards to Sino-German investment relations. Specifically, they may significantly over-estimate the share of Chinese FDI out of total inward FDI in Germany.

Subsequently, our respondents will be randomly assigned to four groups of equal sizes. We will then provide different types of information treatments to each treatment group.

1. **Treatment Group One (T1) - Control Group** T1 will be the control group, where no additional information will be provided.
2. **Treatment Group Two (T2) - Facts: The Size of Chinese FDI in**

Germany

In this group we will provide our respondents a table, which includes the actual share as well as respondents' estimates of the share of Chinese FDI stock, EU-country FDI stock as well as American FDI stock out of total inward FDI stock in Germany in 2019.

The purpose of this treatment group is to update the German public's misperceptions on the shares of Chinese (EU, US) FDI stock out of total inward FDI stock in Germany. We conjecture that the German public could be holding much larger misperceptions with regards to Chinese FDI in Germany, than EU or US FDI, which corresponds to our **Hypothesis 1**, where we conjecture the German public could significantly over-estimate the share of Chinese FDI stock in Germany, but not as much so for FDI from the US and other EU countries.

Accordingly, we arrive at the following hypothesis:

Hypothesis 2: Compared to the control group, correcting downward misperceptions on the share of Chinese FDI in Germany will increase respondents' support for Chinese-FDI-related policies in this group.

3. Treatment Group Three (T3) - A Negative Narrative of Chinese FDI in Germany

In this group, we intend to give our respondents a **negative narrative** of Chinese FDI in Germany, which is meant to provoke more negative sentiments from our respondents.

Specifically, the treatment will take the form of a few narrative paragraphs (similar to those the respondents could read in the media), in the form of some news report. It will take the respondents one minute to finish reading this paragraph on average.

Hypothesis 3: Compared to the control group, increasing the salience of a negative narrative of Chinese FDI in Germany will decrease respondents' support for Chinese-FDI-related policies in this group.

4. Treatment Group Four (T4) - A Positive Narrative of Chinese FDI in Germany

In this group, we intend to give our respondents a **positive narrative** of

Chinese FDI activities in Germany, which is meant to provoke a more positive image of Chinese foreign direct investments.

Specifically, the treatment will take the form of a few narrative paragraphs (similar to those the respondents could read in the media), in the form of some news report. It will take the respondents one minute to finish reading this paragraph on average.

Hypothesis 4: Compared to the control group, increasing the salience of a positive narrative of Chinese FDI in Germany will increase respondents' support for Chinese-FDI-related policies in this group.

Ultimately, as an auxiliary check, in order to answer the final research question, we also survey a nationally representative Chinese sample - which is embedded in another survey experiment conducted by another research team⁷ - their attitudes towards German foreign direct investments in China. Given the differential media portrayal of German and Chinese foreign investments in each country, we expect to observe a large difference in terms of the respective ratings of each other's foreign investment involvement in each host country.

Hypothesis 5: Compared to their German counterparts' views on Chinese FDI in Germany, Chinese respondents view German FDI in China from a more favorable point of view.

2 Research Strategy

2.1 Sampling

2.1.1 Sampling and Sample Size

Our randomized survey is embedded in the Innovation Sample (IS) structure of the German Socio-Economic Panel (SOEP). The ultimate total sample size of this study will be **2,365 adult German individuals (18-65 years old)** (from **1,738** households) , who will then be equally and randomly allocated into four groups (three treatment groups and one control group). The randomization will take place at the

⁷The AEA RCT Registry number for this other experiment is: AEARCTR-0013928 . Given that we imbedded the FDI questions in their questionnaire as an auxiliary check, we are not able to insert an experimental intervention in the Chinese sample as we did for the German sample. This would be left for future research.

household level.⁸

As such, the sample size for each group will be around **590 individuals**. Our overall sample is **nationally representative**, as the Innovation Sample is ensured to be a nationally representative sub-sample of the SOEP sample. The Chinese sample will be of 2000 individuals, which is also from a nationally representative sample. The online survey would be conducted and sampled by a Chinese Ipsos subbranch.

2.1.2 Assignment to Treatment

The assignment to treatment is decided and ensured to be random by the SOEP-IS team.

2.1.3 Attrition from the Sample

We expect there to be minimal attrition from the Innovation Sample of SOEP.

2.2 Fieldwork

2.2.1 Instruments

We will use a single questionnaire in this survey, which will take the form of either computer-assisted interview or person-to-person interview. Below is a rough breakdown of the main segments of the questionnaire.

1. Reading of an introduction of FDI
2. Belief elicitation at baseline (2 questions)
3. Treatment intervention (Facts or Narrative Treatment)
4. One generic end-line question on support for Chinese FDI
5. Elicitation of concerns of FDI from three countries/regions
6. Conjoint analysis (3 questions in total)

⁸This is done due to the infrastructure constraint of SOEP-IS, such that randomization at the individual level is difficult to implement in reality. However, each individual within the same household will be administered the questionnaire separately and independently from other household members. We will cluster our standard errors at the household level.

7. Willingness-To-Accept outcomes (2 questions in total)

The total estimated time is at around 7 to 8 minutes.

For the Chinese sample, we only ask a few simple questions on the Chinese public's attitudes towards foreign direct investment, and in total the survey time will not surpass 2 to 3 minutes.

2.2.2 Data Collection

The total data collection timeline spans the entire calendar year 2023, given the fact that the innovation sample is carried out together with the annual survey data collection of the German Socio-Economic Panel (SOEP). For the Chinese sample, the data will be collected by the Chinese sub-branch of Ipsos via its online survey platform in late July and early August of 2024.

2.2.3 Data Processing

The data comes in a cleaned and confidential .dta file with each respondent's answer taking one line and completely anonymized from the SOEP-IS team, thus it does not require excessive processing. The data will be stored on secured servers at the Paris School of Economics and ZEW for safekeeping and will be used only for scientific research. For the Chinese sample, the data will be stored on the company's servers. Once collection is complete, the company will transmit the data in a de-identified .csv file.

The researcher team's institutions have ownership of the processed data and may each use them for their other research projects. The collected data will not be divulged to a person or entity outside of the research team unless every member of the team explicitly consents. Upon publication, the data will not be published for public use, but remain available in case of replication demands by the editors and other researches with the same condition of divulgation (unanimous consent in the research team).

3 Empirical Analysis

3.1 Variables

3.1.1 Manipulated Variables

The manipulated variable in our study will be the one that indicates the random assignment of individuals into one of the four treatment arms of our survey experiment. As such, there will be four of such dummy manipulated variables. Each one of them will indicate whether a given individual is assigned to one of the treatment arms or not.

3.1.2 Measured Variables

The measured variables include the following:

Baseline variables

1. At baseline, the respondents' own **personal opinions** on the concerns related to Chinese FDI in Germany, respectively on German economic prosperity and political autonomy (two variables, both ranging from -5 to 5, where -5 is extremely bad, 0 is neutral, and 5 is extremely good).
2. At baseline, the respondents' own **estimates** on the share of Chinese, American and other EU countries' FDI stocks out of total FDI stocks in Germany, which range between 0 and 1, and the sum of the three estimates should be smaller than 1 (three variables in total).

Endline variables

1. Two variables denoting the level of concern with regards to employment and technological innovation in Germany, on an FDI project from China (ranging from -5 to 5, where -5 is extremely bad, 0 is neutral, and 5 is extremely good).
2. Two variables denoting the level of concern with regards to employment and technological innovation in Germany, on an FDI project from the United States (ranging from -5 to 5, where -5 is extremely bad, 0 is neutral, and 5 is extremely good).
3. Two variables denoting the level of concern with regards to employment and technological innovation in Germany, on an FDI project from another EU coun-

try (ranging from -5 to 5, where -5 is extremely bad, 0 is neutral, and 5 is extremely good).

4. Three binary variables serving as FDI proposal preference outcomes in standard conjoint analyses (more to be detailed in the following section 3.3).
5. Two continuous variables serving as Willingness-To-Accept outcomes with regards to Chinese FDI in Germany (more to be detailed in the following section 3.3) .
6. One variable denoting support for a generic policy on improving bilateral investment relationships between China and Germany (ranging from -5 to 5, where -5 is strongly disagree, 0 is neutral, and 5 is strongly support).

Chinese-sample variables

1. One variable denoting support for a generic policy on improving bilateral investment relationships between China and Germany (ranging from -5 to 5, where -5 is strongly disagree, 0 is neutral, and 5 is strongly support).
2. Two variables denoting the level of concern with regards to employment and technological innovation in China, on an FDI project from the United States (ranging from -5 to 5, where -5 is extremely bad, 0 is neutral, and 5 is extremely good).
3. Two variables denoting the level of concern with regards to employment and technological innovation in China, on an FDI project from Germany (ranging from -5 to 5, where -5 is extremely bad, 0 is neutral, and 5 is extremely good).
4. One variable evaluating the general impact of FDI on Chinese economic development over the past four decades (ranging from -5 to 5, where -5 is extremely bad, 0 is neutral, and 5 is extremely good).

Variable transformations

Given that most of our baseline and outcome variables are measured on a Likert scale, we would also adopt the transformed forms of these variables, for instance for all the continuous variables ranging from -5 to 5, we would also transform them into binary variables which take on value one if the values are non-zero and positive (indicating positive and supportive attitudes), and zero otherwise. We will also calculate the Z-score of each variable, in the same fashion as adopted in Alesina et al. (2018),

and also calculate the average Z-score values of these endline variables at the same time as well, which will serve as alternative outcome measures detailed further in section 3.3.

3.2 Balancing Checks

We will check (through a test of equality of means) if the treated and the control group differ significantly along each of the following dimensions we measure: gender, age, geographical region fixed effects, employment status fixed effects, occupation fixed effects, education fixed effects, income range fixed effects, family size, answers to pretreatment questions on FDI shares and concerns with respect to Chinese FDI in Germany, as well as other main socioeconomic and demographic variables provided by the SOEP dataset.

3.3 Treatment Effects

The confirmatory statistical (& econometric) analyses we plan to use to test our hypotheses are the following:

3.3.1 Statistical Tools to Test Hypothesis One

In order to test hypothesis one, which is to see whether misperceptions with regards to the share and size of Chinese FDI exist, we will simply descriptively plot the distributions of German people’s own **estimates** of the share of Chinese FDI, American FDI and other EU countries’ FDI out of total inward FDI in Germany. As such there will be three distribution plots in total, and then we will compute the distance between the mean (average share) of each distribution versus the **actual** share of each country/region’s FDI in the same distribution plot. If the misperceptions on Chinese FDI are the largest, we expect to observe the largest distance between the actual share of Chinese FDI and the average estimated share of Chinese FDI, while the distance between the actual share of American (EU) FDI and the average estimated share of American (EU) FDI will be minimal.

In addition, if the large misperceptions with regard to the presence of Chinese FDI in Germany exist, it would be interesting to explore further among which segment of the German demographic such misperceptions are the most salient. In practice, we will correlate the extent of Chinese FDI misperceptions (measured as the difference between the estimated Chinese FDI share in Germany and the actual Chinese FDI

share in Germany) with a battery of demographic variables, such as gender, education levels, income levels, employment status, political inclinations, geographical locations, voting history, subjective attitudes towards in-group and out-groups, and redistributive preferences, etc.

3.3.2 Statistical Tools to Test Hypothesis Two to Hypothesis Five

In order to test hypotheses two to four, we will employ two statistical tools, the first is the following simple Ordinary Least Squares (OLS) estimation technique in Equation (1):

$$Y_i = \beta_0 + \sum_{t=2}^4 \beta_t \mathbb{1}_{\text{Treated}_t} + \beta_7 X_i + v_i \quad (1)$$

where the dummy variable $\mathbb{1}_{\text{Treated}_t}$ will take on value one if the individual is assigned to treatment group t , and zero otherwise. Here we omit the control group ($t = 1$), and $\beta_2, \beta_3, \beta_4$ will simply be identifying the mean-difference Intention-To-Treat (ITT) effects between being assigned to the one of the three main treatment groups versus being assigned to the control group. X_i are baseline demographic and socio-economic controls which will be collected with the SOEP survey, such as incomes, professional status, education levels, etc.

The Y_i variables will indicate our main outcomes of interest. It will take many forms, either it could be a general index value indicating the support for a hypothetical Chinese-investment policy in Germany, or general concerns (on job securities, innovation & technology in Germany, etc) associated with Chinese investments in Germany (also ranging from 1 to 5, with a higher value indicating less concern associated with Chinese FDI). Furthermore, given that Treatment 2 is supposed to correct the German public's misperceptions on Chinese FDI downward (i.e., a reduction of the biases), we expect the effect on support for Chinese FDI in Germany to be **increasing**, as such theoretically the sign for β_2 is supposed to be **positive**. In addition, Treatment 3 is supposed to be a negative narrative on Chinese FDI, as such, we expect β_3 to be **negative**. Ultimately, the sign of β_4 is conjectured to be **positive**, as Treatment 4 is the positive narrative treatment in Chinese FDI.

Besides the simple mean-difference estimation, part of our end-line outcomes will be elicited via a standard conjoint experiment design. Specifically, two hypothetical foreign investment proposals will be generated with the combination of a few different

levels **randomly** selected from a given set of attributes. In total we will have four attributes, namely country of investor, ownership type of the investing company, the sector of investment and the share of investment. The different levels contained within each attribute are detailed in Table 1. Within each attribute, there will be a range of different levels, for instance there are in total three levels in the attribute of "country of investor", such as "the United States", "other EU countries", and "China".

Table 1: Conjoint Design: Attributes and Levels

List of Attributes	Levels Within Each Attribute
Sector of Investment	High-tech
Sector of Investment	Low-tech
Country of Investor	The United States
Country of Investor	Other EU Countries
Country of Investor	China
Ownership Type of the Investing Company	State-Owned Enterprise
Ownership Type of the Investing Company	Private-Owned Enterprise
Share of Investment	Buying more than 50% Shares of Home Company
Share of Investment	Buying less than 50% Shares of Home Company

For each comparison scenario (between the two proposals), the levels within each attribute (country of investor, sector of investment, etc.) would be randomly selected for each proposal. Then the respondent would be asked to choose the proposal that he/she prefers.

Econometrically, we will be adopting a simple Ordinary Least Squares model as specified in Equation 2, where the outcome $Y_{i,p}$ is a dummy variable which takes on value one if individual i selected investment proposal p , and the variable $Country_{t,p}$ is a dummy variable that takes on value one when the country of investor is t in a given investment proposal p , and zero otherwise. The same applies to the ownership, sector and share of investment dummies.

$$\begin{aligned}
Y_{i,p} = & \alpha_0 + \sum_{t=US,China}^2 \alpha_t Country_{t,p} + \alpha_{state} Ownership_{state,p} \\
& + \alpha_{lowtech} Sector_{t,p} + \alpha_{>50\%} ShareInvestment_{t,p} + \alpha_2 X_i + \eta_i + \delta_p + v_{i,p}
\end{aligned} \tag{2}$$

The regression will be run at the individual-proposal level. In addition, we also

choose one level within each attribute to be the base level (i.e. the omitted level). In particular, we choose "other EU countries" to be the base level within the attribute of "country of investor", "private company" as the base level within the attribute of "ownership type of investing company", "high-tech sector" as the base level within the attribute of "sector of investment" and "buying less than 50% shares" as the base level within the attribute of "share of investment".

As such, α_s in equation 2 will help us identify the Average Marginal Component Effect (AMCE), which estimates the average change in probability of a proposal being selected if an attribute (variable) changes from one level (the base level) to another level (the level of interest) (Hainmueller & Hopkins, 2015).

Furthermore, we will also be able to estimate the aforementioned model separately within each treatment group.

For example, since the omitted component for the country of investor is other EU countries, the coefficient α_{China} will inform us that on average, if we change the country of investor from other EU countries to China, what is the decrease (or increase) in the probability of the FDI proposal being preferred by our respondents in each treatment group. This will serve as a measure of the price/cost of misperceptions with regard to Chinese FDI (relative to EU FDI) in Germany.

In addition, in order to link our standard conjoint analyses' results back to our main hypotheses, given the random assignment of our respondents into different treatment groups, we will be able to test whether the price of misperceptions associated with Chinese investors in the standard conjoint analysis is smaller (or larger) in our narrative/facts treatment groups compared to the control group. For example, we may conjecture that positive narrative treatment could have **reduced** the price of misperception associated with Chinese investments, as such this price will be smaller in the positive narrative group compared to the control group. We could perform F-tests on the equality of regression coefficients on the China dummy or US dummy across these two groups (or another treatment group versus the control group) to test whether there's a significant decrease (or increase) of Chinese penalty in some of our treatment groups compared to the control group.

In addition to the conjoint analysis, we also design two additional simple Willingness-To-Accept (WTA) endline outcome questions, where we propose two generic FDI proposals which aim at saving a German Small and Medium Enterprise (SME) of 500 employees from bankruptcy. In one proposal, we design the questionnaire so

that in proposal A the FDI investing company can save 50% of the jobs within the bankrupting German SME, and we randomly vary the country of origin of this investing company to be either the United States or other EU countries, and for the other proposal B, we keep the country of investor constant as China, and we ask our respondents to key in the number of jobs the Chinese company **at least** has to save so that he or she would be indifferent between these two FDI proposals. As such, higher the number of jobs needed to be saved in the Chinese proposal than the non-Chinese proposal would indicate a more entrenched preference against Chinese investments in Germany, which we label as the differential price of Chinese FDI plans vis-à-vis US or EU FDI plans in Germany.⁹ Consequently, we will run again the equation 1, where the result of interest would be replaced by the differential price of Chinese FDI plans versus EU or US FDI plans, and we expect this price to be **reduced** in the FDI fact check and positive narrative treatment arms, and possibly **increased** in the negative narrative treatment arm. Ultimately, in order to test hypothesis five over whether the Chinese public are more favorable towards German FDI in China than the German public are towards Chinese FDI in Germany, we would simply calculate, for exactly the same outcomes which are surveyed in both the German and the Chinese questionnaires, the Z-scores of these endline outcomes on policy support within each sample, and adopt the equality of mean test in these two independent samples. We expect the Z-score (larger value that indicates greater support for a given policy) to be significantly **larger** in the Chinese sample than in the German sample.

3.4 Heterogeneous Effects and Secondary Analyses

The main heterogeneous treatment effect that we are interested in is with respect to the political ideology of the respondent. We expect a potentially more negative effect of raising the salience of the **negative narrative** of Chinese foreign direct investments from more right-wing respondents. The heterogeneous effects on the other treatment arms are more dubious: a positive updating with either correcting mis-perceptions or increasing the salience of positive narrative may actually backfire or prove to be ineffective if respondents hold deep-rooted ideological preferences for certain policies (Barrera et al., 2020).

This brings us to the discussion of a scenario in which we detect a null effect. A

⁹We will also run regressions where the Y variable will take the value of the total raw number of jobs the Chinese company needs to save (vis-à-vis the EU company or the US company), and see if for this raw number there is a significant difference for the Chinese company alone across different treatment arms.

null effect would be due in large part to the fact that our intervention itself is very light-touched: attitudes toward Chinese investments might be much more deeply rooted due to the aforementioned ideological reasons. As such, a null effect would be interesting in itself, and it could also be potentially unpacked if we attempt to identify the sub-sample respondents who take the least staunch view from a political ideology perspective (i.e. the most ideologically malleable), and for whom these information-provision interventions might prove to be more effective. Such proxies of ideological malleability could include variables such as contact with outsiders or foreigners, centrist voting behavior, etc.

Furthermore, we could also test if there are heterogeneous treatment effects along the dimensions of regional-level exposure to Chinese trade shocks, etc, or the intensity of media coverage on China in the respective regions, etc.

For the more explorative part, we will use a generic machine-learning approach to predict whether there is a significant treatment effect heterogeneity within the data, and if yes, which are the groups most affected by the treatment, as per the method mentioned in Chernozhukov et al. (2018). This method consists of first predicting the size of the treatment effect using any general machine learning method (random forest, boosting, neural network, etc.), then calculating the aggregated characteristics for samples that are least and most affected by the treatment. For example, we would be able to see whether the respondents in the 1st quantile of treatment effect (the least treated) are overwhelmingly female, young, voting for the green party, etc.

3.5 Standard Error Adjustments

Standard errors in equation 1 are clustered at the household level. For the conjoint regressions (equation 2), the standard errors will be clustered at the individual level.

Additionally, for our primary outcomes, since the question we asked is a series of attitudes towards foreign direct investments from a certain given region/country, we will use an index to indicate their combined support to avoid multiple hypothesis testing: we will also calculate the average Z-scores for all the primary endline outcomes, as detailed in Section 3.1.

4 Research Team

The Principal Investigator is Zhexun Mo. Other investigators include Li Yang, Carsten Schroeder, and Katharina Kaepfel. The four researchers will equally take part in the analysis of the data and writing.

5 Deliverables

The main product will be a working paper, which will be submitted to a peer-reviewed journal focusing on international political economy, attitudes toward foreign direct investments, etc.

6 Calendar

We first submitted our research proposal to be included in the 2023 round of SOEP-Innovation Sample by the end of June, 2022. Then we received a positive response to include in the 2023 wave of SOEP-IS by the end of September 2022. Afterwards, the entire data collection effort was taken in charge by the SOEP team for the entire 2023 calendar year, and we received the first batch of gross final data around May, 2024 (which is to be double-checked again if it contains error).

The questions pertaining to the Chinese public’s attitudes towards foreign direct investments would start to be collected around the last week of July, 2024. The sample collection will take about 10 days and the research team expects to receive the raw data document by the 6th of August, 2024.

7 Budget

The budget for the German randomized survey is entirely covered by SOEP team, and there is no additional cost associated. The budget for the Chinese survey is covered by the research team conducting the aforementioned concurrent online experiment in China.

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