Narratives about Fiscal Policy:
Are Firm Decision-Makers' Tax Preferences Driven by Redistribution or Fiscal Consolidation Motives?*

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Abstract

Motivated by the increasing frequency with which business leaders publicly express their views on policy issues and by recent findings on the role of narratives in shaping preferences and behaviors, we investigate how narratives affect the tax preferences of firm decision-makers. Specifically, using a large-scale survey experiment (N=7,848), we examine how exposure to narratives of redistribution and fiscal consolidation affects firm decision-makers' attitudes toward taxes and fiscal stimulus. We find that framing taxes as payments of due debts increases the preference to pay taxes, whereas framing taxes as funds required to cover undue losses is largely ineffective, except for a notable tendency to favor raising the capital gains tax. We also observe a greater preference to pay taxes when decision-makers agree with the stimulus. Our findings on narratives and the channels affecting tax preferences have implications for fiscal policy communication.

Keywords: Tax Preferences, Fiscal Policy, Firm Decision-Makers, Survey Experiments

1 Introduction

"But for those making more than \$1 million (...)— I would raise rates immediately on taxable income in excess of \$1 million, including, of course, dividends and capital gains."

- Warren Buffet, NY Times, 2011

Public statements like Warren Buffet's 2011 op-ed reflect a growing phenomenon: business leaders taking an increasingly active role in publicly expressing their views on a wide range of policy issues. This trend has accelerated significantly in recent years. In 2019, 37.53% of CEOs publicly voiced opinions on policies — a dramatic rise from just 0.98% in 2011 (Mkrtchyan et al., 2024). These statements often address heavily debated political and societal topics such as taxation, regulation, or climate policy. Interestingly, some of these positions appear misaligned with the traditional profit-maximizing objectives of the companies they run. One policy area where this phenomenon is particularly striking is taxation.

Tax-related statements by firm decision-makers spark our interest as they directly touch on issues of redistribution and corporate responsibility. Taxes not only fund public goods and redistribute resources but also carry strong symbolic meaning in debates about equity and social justice. For firm decision-makers, statements on tax policies allow them to signal commitments to societal responsibility and long-term economic sustainability, even when these stances appear to conflict with their financial interests or those of their shareholders. This raises a critical question: why do firm decision-makers advocate for tax policies that seem counter to their self-interest?

One potential explanation lies in the persuasive power of narratives — the stories individuals tell themselves and others to make sense of and justify (economic) outcomes in the world around them. Narratives have been shown to significantly shape individual preferences and behaviors, particularly regarding *redistributive* policies (Shiller, 2017; Stantcheva, 2021; Alesina et al., 2023; Colonnelli et al., 2024). For instance, moral or social framing can lead individuals to support higher taxes, even when these measures do not directly serve their personal pecuniary interests.[1]

While most of this previous research has explored how narratives shape the general public's attitudes toward economic and political issues, relatively little attention has been paid to their influence on firm decision-makers[2] — a group that plays a major role in shaping corporate strategies and public policy debates (Milyo et al., 2000; Bertrand et al., 2014; Fouirnaies and Hall, 2018; Bertrand et al., 2020; Babenko et al., 2020). Understanding the influence of narratives on firm decision-makers' beliefs is therefore vital to uncovering the motivations driving their public policy stances, especially in key areas like taxation and fiscal policy.

Studying the formation of firm decision-makers' preferences and the impact of narratives, however, presents a methodological challenge, as experimental surveys targeting firm decision-makers are rare. We address this challenge by utilizing the German Business Panel (GBP), a large-scale

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[1]Moreover, studies have shown that the willingness to pay taxes is shaped not only by pecuniary motives (Allingham and Sandmo, 1972), but also by non-pecuniary factors (Luttmer and Singhal, 2014).

[2]We require that survey participants have managerial responsibilities in their respective firm. While the majority of our participants are CEOs (91%), we do not exclude participants who do not identify as CEO. Thus, we refer to the participants in our survey as firm decision-makers.

survey of firm decision-makers designed to investigate research questions related to firm management (Bischof et al., 2024).

Our first contribution is to explore how different types of narratives influence tax preferences of firm decision-makers. Specifically, we seek to answer the following key questions: i) Is (policy) communication a determinant of the preference for paying taxes? ii) Is there awareness about the link between public goods and taxes? iii) Do fairness concerns influence the preference for paying taxes? By addressing these questions, we provide new insights into the effectiveness of narrative-based interventions in shaping tax preferences of high-level firm decision-makers.

Our second contribution is to study these questions in a sample of firm decision-makers. The existing literature on the role of narratives in redistributive and tax preferences focuses on the taxation of *individuals* or *households*. In this paper, we shift the focus to *firm decision-makers* (who are explicitly instructed to act in their capacity as business owners or managers) and study how narratives about tax policies impact their tax preferences. Focusing on the tax preferences of firm decision-makers is crucial for several reasons. First, businesses have more opportunities than individuals to shift or underreport profits (Kleven et al., 2011), while remitting the lion's share of taxes to governments (Milanez, 2017), hence playing a central role in tax enforcement. Second, firm decision-makers have the capacity to significantly influence policy and public opinion through lobbying or corporate philanthropy (Milyo et al., 2000; Bertrand et al., 2014; Fouirnaies and Hall, 2018; Bertrand et al., 2020), meaning their preferences can directly impact policy making. Third, firm decision-makers' attitudes towards policies affect the performance of their company or the political attitudes of their employees (Babenko et al., 2020; Mkrtchyan et al., 2024). Despite the importance of understanding firm decision-makers' tax preferences, we are not aware of any studies that have addressed how these preferences are shaped.

We develop a set of questions and experimental interventions to explore how narratives influence tax preferences, collecting approximately 8,000 firm-level observations.[3] We analyze the tax preferences of firms by examining how narratives shape how much tax they would be willing to pay to finance a large fiscal stimulus package. Our study focuses on narratives surrounding the justification and implications of this large fiscal stimulus package. To make the narratives credible and relevant, we field our survey experiment shortly after the implementation of the German government's fiscal policy responses to the unexpected economic shocks caused by the outbreak of the Covid-19 pandemic. Specifically, in June 2020, Germany launched a fiscal stimulus program, part of which provided financial support to firms, financed by net borrowing of around 130 billion EUR (German Federal Ministry for Economic Affairs and Energy (BMWK), 2022). This specific context allows us to link the preference for paying taxes to concrete ("real-world") government expenditures and provides a situation in which the government's need for financing is credible, and future tax changes are possible. In addition, because this government program directly targets firms during the crisis, it is a relevant and relatable policy example for firm decision-makers.

Our experimental interventions rely on contextual cues from economic policy narratives to

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[3]Our survey results are based on stated attitudes and preferences that are not otherwise observable in administrative data. Numerous studies have demonstrated that survey responses correlate with actual behavior (Hainmueller et al., 2015; Funk, 2016; Parker and Souleles, 2019; Epper et al., 2022; Dechezleprêtre et al., 2022). This is also true for the German Business Panel. Bischof et al. (2024) show that, e.g., for revenues of almost 90% of survey responses correspond to externally reported data.

frame tax policies and tax payments. We focus on two economic policy narratives commonly used in public debates. These narratives represent two contrasting views on the role of taxation: one that emphasizes fiscal responsibility and the need for balanced government budgets, and another that highlights the importance of redistribution to mitigate unforeseen economic hardship. In particular, we randomly assigned survey respondents to three experimental groups: i) one receiving cues about the need for fiscal consolidation, including potential tax increases following the government's Covid-19 business support program; ii) another receiving cues about firms facing hardship through no fault of their own; and iii) a control group that received no such cues.

In the two economic policy narratives, we framed the 130 billion EUR stimulus package in contrasting ways: as tax payments for *due debts* or for *undue losses*. The *due debts* narrative emphasizes that increased government spending raises debt levels and will likely necessitate future tax hikes, as seen after the 2008/2009 financial crisis. This framing draws on public discourse that stresses the trade-off between government debt and taxes, portraying taxes as a necessary measure to maintain fiscal balance. In contrast, the *undue losses* narrative highlights that many firms experienced financial difficulties and losses due to external shocks like the pandemic, beyond their control. This treatment frames tax payments as a mechanism for redistributing income in response to uncontrollable misfortune rather than insufficient effort. The psychological contract underlying these narratives reflects two key themes: taxes as the price for a balanced government budget or as a tool for redistribution when income disruptions result from bad luck. These treatments are designed to address two main research questions. First, we assess whether firm decision-makers alter their attitudes towards taxes when made aware of the government's budget constraints, testing whether fiscal consolidation narratives increase the preference for paying taxes. Second, we investigate whether a narrative focused on external hardship increases the preference for taxes by fostering a stronger sense of fairness.

After assignment to the experimental treatment group, we examine the effect of the narrative treatments on firms' preference to pay taxes. We measure this preference by asking firm decision-makers how they would like to adjust taxes (in percentage points) to enable the government to support businesses during crises. Firm decision-makers can choose to adjust the following types of taxes: *corporate tax*, *local business tax*, *income tax*, and *capital gains tax*. These taxes are particularly important for firms in Germany, as they directly impact local business operations and influence firms' overall strategic planning and competitiveness. Additionally, we examine how our treatments affect firm decision-makers' attitudes towards the fiscal stimulus (i.e., whether they perceive the government intervention as justified) and their expectations of future medium-term tax rates (i.e., anticipated tax rate changes in percentage points over the next two years). We compare the effects of these narrative treatments on the preference to pay taxes against the results obtained in the untreated control group.

We obtain four main results. First, when firm decision-makers are made aware of the need to counter-finance the fiscal stimulus program through future higher taxes or spending cuts, their support for the program decreases. However, they show a greater preference for paying higher taxes now compared to the control group to fund fiscal stimulus programs. This suggests that firm decision-makers may overlook the potential costs and financing needs of such programs unless these are explicitly highlighted. In our context, narratives emphasizing fiscal prudence and reinforcing

the implicit contract between taxpayers and the state prove effective in enhancing tax payment preferences, indicating that firm decision-makers are inclined to pay taxes to help maintain manageable levels of government debt. Our results indicate that narratives emphasizing fiscal realities are effective tools to influence tax preferences. Whereas studies at the household level have found a limited effect of quantitative information on attitudes toward tax policy (Roth et al., 2022), we find that embedding such statistical facts within narratives shifts the tax policy preferences of firm decision-makers.

Second, we find that appeals to misfortune do not significantly influence firm decision-makers' support for the fiscal stimulus program or their preference for paying most types of taxes. Thus, unlike findings from household studies (Alesina and Angeletos, 2005; Durante et al., 2014; Gualtieri et al., 2019; Fisman et al., 2020), our results suggest that narratives centered on fairness and misfortune in the income-generating process have a limited impact on shaping tax preferences among firms, and are far less effective than highlighting the need to balance the government budget. However, we observe a notable exception: firm decision-makers express a desire to increase the *capital gains tax* when the role of bad luck in the income-generating process is emphasized. This suggests an increased willingness to redistribute wealth, as the *capital gains tax* primarily targets wealth accumulation. In a follow-up survey, participants indicated that redistributive motives were the main factor behind their preference for raising the *capital gains tax* rate. This finding aligns with the broader observation that many business owners support higher taxes on wealth. In addition to redistributive motives, firm decision-makers' desire to increase the *capital gains tax* may also stem from the belief that this tax has a smaller impact on the firm's production process compared to corporate or personal income taxes. Consequently, they may prefer to avoid raising taxes that, in their view, could impede economic activity.

Third, we examine the heterogeneity in treatment effects more closely. Using a data-driven machine learning approach, we estimate the distribution of conditional average treatment effects (CATE) for each decision-maker and experimental group. Analyzing this distribution allows us to verify that the treatment effects are not influenced by outliers and remain consistent for the majority of respondents within each treatment group. The analysis reveals that average treatment effects from the multi-arm causal forest closely align with those from our parametric models, confirming the robustness of the results. Additionally, our non-parametric approach highlights that while fairness considerations in the *undue losses* narrative have a limited impact on most taxes (except *capital gains tax*), the *due debts* narrative significantly boosts tax payment preferences for most decision-makers, demonstrating the power of framing fiscal stimuli as due debt.

Fourth, building on the observed heterogeneity of CATEs identified in the machine learning analysis, we test covariates expected to influence observed treatment effects on theoretical gounds. Specifically, we examine whether attitudes towards fiscal stimulus and firms' tax obligations contribute to variations in the preference to pay taxes. Our findings show that stronger agreement with the stimulus correlates with a greater willingness to pay taxes. This effect is particularly pronounced when decision-makers are exposed to the *due debts* narrative. The more firm decision-makers support the government stimulus, the more willing they are to finance it, especially when they recognize the need for counter-financing. Additionally, we observe that firm decision-makers are more likely to support tax increases on taxes their firms are not subject to. However, both

narratives are effective in reducing firms' self-interested tendencies to lower the taxes they are liable to. As a result, effective communication from policymakers and tax authorities can foster greater support for tax policies.

Taken together, our study offers new perspectives on how narratives surrounding tax policy influence the tax preferences of firm decision-makers. By exploring the effects of these narratives on fiscal stabilization and redistribution, our work contributes to the understanding of corporate responses to government policy communications, which is particularly relevant in the context of unforeseen economic challenges, such as those exemplified by the Covid-19 pandemic or economic downturns when increased government spending is needed. Based on our empirical findings, we answer the three questions posed at the beginning of this introduction as follows: i) Effective communication and relevant context about government budgeting and expenditures influence how firms' preferences towards paying taxes are shaped. ii) Firm decision-makers do not seem to be aware of the relationship between increased government spending and taxes, unless the costs of the stimulus program are explicitly highlighted. iii) Fairness narratives have limited effectiveness in increasing companies' preference to pay taxes.

Related Literature. We contribute to different strands of literature. First, we relate to the literature studying how individuals form beliefs about economic policies, in particular tax policy. Within this literature studies have examined the effect of narratives or anecdotes in experimental studies on economic policy perceptions or tax preferences of individuals. Stantcheva (2021) uses educational videos that focus on the redistributive consequences and efficiency costs concerning economic policies. The study reveals that videos emphasizing redistributive aspects increase support for more progressive taxation, while videos concentrating solely on efficiency considerations do not have a significant impact. Alesina et al. (2023) explore the effects of factual information versus a narrative about a hard-working immigrant on redistribution preferences through cross-country surveys, discovering that anecdotes more effectively increase support for redistribution than just hard facts. Similarly, Colonnelli et al. (2024) employ animated videos that portray positive or negative images of large US corporations and assess their impact on public support for corporate bailouts. Further, narratives have been shown to causally affect the formation of expectations about the overall economy and can explain economy-wide fluctuations (Shiller, 2017; Andre et al., 2024). Moreover, Graeber et al. (2024) show that people remember narratives better than pure statistical information. Our contribution to this literature lies in identifying which narratives influence *firms'* tax preferences — insights that cannot be inferred from tax return data alone. By adopting the perspective of policymakers and tax authorities, we seek to uncover communication strategies that can shape tax preferences across different relevant types of taxes, particularly during times of heightened financial pressure on government budgets.

Second, through the arguments presented in our narrative treatments, we contribute to the body of research exploring how beliefs about the causes of income and wealth inequality, alongside considerations of fairness and efficiency, influence individuals' attitudes toward tax policy. With regard to the income-generating process, previous literature has shown that individuals who view wealth accumulation as driven by luck or chance tend to support greater redistribution, especially after major economic shocks like pandemics (Gualtieri et al., 2019). Conversely, those who attribute

wealth to personal effort often favor less redistribution (Alesina and Angeletos, 2005; Durante et al., 2014; Fisman et al., 2020). Moreover, the propensity to pay taxes can also influenced by perceptions of public institutions' fairness and efficiency. Regarding fairness, Feld and Frey (2007) conceptualize the interaction between taxpayers and the government as a psychological contract, where tax compliance depends on the perceived fairness and legitimacy of the political process. This contract is strengthened when citizens feel treated equitably and agree with government spending decisions, fostering reciprocal attitudes (Alm et al., 1993; Fehr and Gächter, 1998; De Neve et al., 2021). In terms of efficiency, Roth et al. (2022) examine how households' beliefs about the debt-to-GDP ratio affect their attitudes towards government spending and taxation, showing that individuals tend to underestimate current debt levels. Moreover, when informed of the actual debt-to-GDP ratio, respondents tend to demand less government spending, while their overall attitudes toward taxation remain largely unchanged. We contribute to the literature by demonstrating that, unlike households (Durante et al., 2014; Fisman et al., 2020), firm decision-makers are less influenced by fairness-based narratives and respond more strongly to messages emphasizing the trade-offs between government spending and taxation. An exception is capital gains taxation, where fairness concerns lead firm decision-makers to support higher taxes. This preference may stem from a desire for redistribution, as capital gains taxes target wealth growth, or from the perception that such taxes are less disruptive to business operations compared to corporate or personal income taxes. Additionally, transparent communication about fiscal realities and the necessity of sustainable government financing proves more effective in shaping tax preferences than the purely quantitative information utilized in previous studies (Roth et al., 2022).

Third, apart from the literature studying the formation of beliefs about economic policies, our paper also contributes to the literature studying how personal traits and CEO activism affect their firms. CEOs have a strong influence on the firms they manage (Bertrand and Schoar, 2003). Several papers have analyzed how professional or personal experiences as well as personal traits impact the "style" of CEOs. Cronqvist and Yu (2017) find that CEOs who have a daughter place higher emphasis on corporate social responsibility. Acemoglu et al. (2023) show that managers with a MBA focus more strongly on maximizing shareholder value by reducing the wages of employees than CEOs without an MBA. Francis et al. (2016) find that political beliefs of CEOs are an important determinant of corporate tax-sheltering. However, democratic CEOs also engage in tax-sheltering if their incentives are aligned with maximizing shareholder value. More recently a nascent literature has focused on analyzing the effect of CEO activism, CEOs speaking out about their political beliefs, on firm-level outcomes. Several studies have shown that CEO activism has a positive effect on stock market returns, affects company sales or profitability (Hou and Poliquin, 2023; Homroy and Gangopadhyay, 2023; Mkrtchyan et al., 2024). The stance CEOs take when engaging in activism is often highly correlated with their personal beliefs. Hence, studying how the beliefs of CEOs and other firm decision-makers are formed and whether these beliefs are susceptible to narratives is important to understand the determinants of CEO activism.

The paper proceeds as follows. Section 2 describes the survey data used in the empirical analysis. Section 3 outlines the experimental setup and gives an overview of the different experimental treatments. Section 4 presents the main results of our empirical analysis. Section 5 examines the

heterogeneity regarding our main treatment effect. Section 6 concludes with suggestions on how our findings can be helpful to policymakers when proposing changes in tax policy.

2 Data

The survey questions used in the experimental analysis were fielded in the first wave of the German Business Panel (GBP), which ran from July to September 2020. The GBP is an online survey focusing on firm decision-makers, which collects data to improve the understanding of entrepreneurial behavior, mechanisms of change in the business landscape, and the impact of policy decisions on firms. A detailed overview of the survey can be found in Bischof et al. (2024).[4] For the empirical analysis, we restrict our sample to 7,848 firm decision-makers who participate in the survey experiment.[5]

The target group of participants ranges from business owners of small- and medium-sized companies to CEOs of large corporations. 91% of our participants are owners or CEOs. Furthermore, 60% hold a university degree and decision-makers are predominantly male (81%). To ensure no selection bias in our survey among firms, we compare the characteristics of participating firms to firms in *Orbis*[6], which did not participate in our survey experiment. We find that participating firms and non-participating firms are comparable with regard to employees, total assets and revenues (Online Appendix A.3). We also contrast our sample against the German business register of the German Federal Statistical Office for reporting year 2020 (Online Appendix A.4). The comparison shows that our sample population is quite close to the firm population in Germany with regard to industry composition, and slightly over-represents larger firms in terms of revenues and employees. For a comprehensive overview, we refer to Online Appendix A.

3 Experimental Design

We investigate whether narratives about fiscal consolidation and redistribution affect attitudes towards fiscal policies and taxes, using a survey experiment. We aim to identify communication strategies that enhance the preference to pay taxes during periods of increased financial pressure on the governmental budget. Our focus is on how narratives shape the relationship between firms as taxpayers and the government, with particular attention to the factors that motivate businesses to pay taxes.

Experimental Setup. Our survey's experimental setup consists of two treatment groups (FISCAL and SOCIAL) and a CONTROL group. Firm decision-makers are randomly assigned to receive one of the narrative treatments (FISCAL or SOCIAL) or no treatment in the CONTROL group. At the start of the survey, all participating decision-makers answer questions about their firm's characteristics, such as legal form and annual revenues. After this, firms are randomly assigned to

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[4]Potential participants are informed about the academic institution (*German Business Panel*; Part of the *University of Mannheim*), which conducts the survey, and are reminded to answer the questions from the perspective of their firm.

[5]For information on summary statistics and sample sizes, we refer to Online Appendix A.2.

[6]The contact database from which firms in our sample are drawn.

the SOCIAL and FISCAL treatment groups, where they receive the respective narrative treatments. The CONTROL group does not receive any narrative. To ensure comparability across the different experimental groups, we test for systematic differences in underlying characteristics. Our analysis shows that these characteristics are well-balanced across the treatment groups, as demonstrated in Online Appendix A.1.

After the experimental treatments, all survey participants are asked the following questions. First, we ask whether the firm decision-makers think it is justified for the government to intervene with a stimulus package to support the economy. Second, participants are asked about their expectations regarding future medium-term tax rates (i.e., tax rate changes in the next two years). Third and most importantly, we ask firm decision-makers how they would like to adjust taxes such that the government can support businesses during crises. Firm decision-makers can choose to adjust the following taxes: *corporate tax*, *local business tax*, *income tax*, and *capital gains tax*.[7] For more information on the experimental design, we refer to Online Appendix B, which presents screenshots and translations of the original survey questions.

Treatments. Our experiment is designed as follows. Participants in the FISCAL and SOCIAL treatment are both provided with information that the German government pledged a 130 billion EUR stimulus program during the Corona crisis (German Federal Ministry for Economic Affairs and Energy (BMWK), 2022). We explicitly choose the fiscal stimulus program as an example of government spending since this support program directly benefits firms. However, the economic policy narratives incorporated into our treatments present this government stimulus in different ways.

Participants in the **FISCAL treatment** group are informed not only about the government's 130 billion EUR stimulus package but also that the increase in government spending raises the level of government debt and will likely necessitate future tax increases. To bolster credibility, we note that many countries raised their tax rates following the 2008/2009 financial crisis. Additionally, we highlight that representatives of the governing party have already stressed the need to increase taxes to restore fiscal balance. Drawing on Roth et al. (2022), this treatment emphasizes the higher debt level of the German state resulting from increased government spending. In this context, we present the fiscal stimulus as *due debts* requiring counter-financing, thereby clarifying the contract between firms as taxpayers and the government. In this framing, taxes are portrayed as the price for maintaining a low-debt government, explicitly emphasizing the inherent trade-off between taxes and government debt to firm decision-makers. In the FISCAL treatment, firm decision-makers are presented with the following text:[8]

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[7]The German *corporate tax* is levied on the income of incorporated firms and amounts to 15 percent of taxable income. The *local business tax* is payable by both sole proprietorships/business partnerships and corporations, and, like the *corporate tax*, is also applied as a tax on the profits of a business. On average, the local business tax rate amounts to 14 percent of taxable profits in 2021 (German Federal Statistical Office, 2023). The *income tax* is levied on the income earned by sole proprietors or partners in business partnerships. In the case of partnerships, partners are taxed at their personal income tax rates. Finally, the *capital gains tax* covers payouts (e.g., dividends) from corporations to shareholders. For investors holding less than 1 percent in a company, this tax is a maximum of 25 percent. Investors holding more than 1 percent are taxed under a partial income procedure as part of their income tax.

[8]Online Appendix B.2.2 and B.2.3 provide screenshot of the original treatment text in German.

*The federal government has pledged support of **130 billion EUR** as part of the economic stimulus package adopted in June.*

The increased government spending and additional debt incurred in the wake of the Corona crisis could necessitate higher government revenues or spending cuts in the future.

After the 2008/2009 financial crisis, for example, tax rates were raised in many European countries. Representatives of the CDU have already announced that the debt incurred as a result of the Corona crisis will be reduced again by 2030.

For participants in the **SOCIAL treatment** group, we enhance the information on the size of the government stimulus by highlighting that many companies experienced hardship through no fault of their own as a result of the Corona crisis. To emphasize this point, we inform firm decision-makers that sales in the hospitality industry dropped by 75.8 percent compared to the same month in the previous year. This treatment is related to the experiments in Durante et al. (2014) and Fisman et al. (2020), which show that support for redistribution is higher among *individuals* if earnings are assigned according to a random process. We test whether this effect is present among firm decision-makers by emphasizing in this narrative that the income-generating process is influenced by bad luck from a negative exogenous shock, such as a pandemic, rather than by a lack of effort, and that the fiscal stimulus was implemented to address this involuntary emergency. If decision-makers value such government support, tax payments can be viewed as a mechanism for redistribution in response to an income-generating process shaped by external misfortune rather than by insufficient effort (Alesina and Angeletos, 2005). In the SOCIAL treatment, firm decision-makers receive the following text:[8]

*Many companies have experienced hardship through no fault of their own as a result of the Corona crisis, with sales in the hospitality industry, for example, plummeting 75.8 percent compared to the same month last year. The federal government has pledged support of **130 billion EUR** as part of the economic stimulus package adopted in June.*

Our experimental treatments are designed to address two main research questions. First, by comparing respondents from the FISCAL group and the CONTROL group, we test whether firm decision-makers alter their attitudes towards taxes and the fiscal stimulus when made aware of the government budget constraints and the need to counter-finance government spending. Specifically, we evaluate whether a narrative that presents taxes as necessary to keep government debt at reasonable levels successfully increases the preference for paying taxes compared to the untreated CONTROL group. Second, to determine whether a narrative addressing the role of luck in the income-generating process increases decision-makers' preference for paying taxes by fostering a higher preference for redistribution, we compare the SOCIAL group with the CONTROL group.

Our study differs from previous research in two key ways. First, we use an experimental design that incorporates narratives common in public discourse, such as electoral campaigns or media

debates on state fiscal financing, allowing us to critically evaluate the communication strategies employed by politicians and tax administrations that can effectively enhance firms' preferences for paying taxes. Second, we focus on the perspectives of firm decision-makers, who are significant tax contributors and can substantially influence public opinion as well as the attitude of their employees.

Experimental Design. Our experimental setup has several features. First, we ask participants about their expectations concerning future tax rates and their preferences regarding tax adjustments only after the experimental intervention to avoid potential priming effects. Asking respondents about tax rates beforehand might predispose them to provide consistent answers post-treatment, as they may feel compelled to maintain consistency in their responses (*consistency bias*; Falk and Zimmermann, 2013). Moreover, asking the same question twice can lead to problems related to experimenter demand effects or confuse respondents, resulting in higher dropout rates (Haaland et al., 2023). Therefore, we rely on a between-subject design to elicit the effect of our economic policy narratives.

Second, as we are interested in the effect of policy-relevant narratives on the preference to pay taxes compared to not being provided with any narrative, we opt for a pure control group (rather than an active control group design) that is not provided with any narrative cues (Haaland et al., 2023).

Third, to increase comparability between outcomes of our experimental groups in our between-subject design, we choose to measure tax expectations and the desired adjustment of tax rates quantitatively rather than qualitatively. Measuring expected and desired tax changes qualitatively would complicate between-subject comparisons, as firm decision-makers might have systematically different interpretations of terms like "moderate" or "strong" when using a verbal answer scale. Moreover, qualitative response scales can often be too vague, thereby limiting the informational content of responses (Haaland et al., 2023). Given the potential significant heterogeneity in firms' current effective tax rates, we also choose to measure tax changes relative to current tax rates rather than in absolute terms to enhance comparability.

Fourth, our experimental treatments employ a mixture of quantitative data, such as the size of the fiscal stimulus package, and qualitative narratives about the economy (Stantcheva, 2023). Given the scarcity of experimental studies utilizing anecdotes and narratives, as highlighted by Haaland et al. (2023), our research provides new evidence on the impact of narratives on expectations and preferences. This is especially important in the realm of tax policy communication by governments, where the way narratives are framed and delivered can provoke a more significant response from taxpayers than straightforward factual information (Alesina et al., 2023).

4 Experimental Results

4.1 Attitude towards the Fiscal Stimulus Program

We begin by testing whether the experimental treatments differently affect decision-makers' opinions on the fiscal stimulus program. Several studies have shown that perceptions of the political process and government actions shape individuals' judgments of various policies (Alm et al., 1993;

Fisman et al., 2020; Stantcheva, 2021). Since we emphasize fairness considerations in the SOCIAL treatment, we expect a potentially higher share of firms to perceive the fiscal stimulus as just. Conversely, support for government spending may decline if decision-makers become more aware of the costs associated with government intervention, as emphasized in the FISCAL treatment, which might ultimately be financed by higher taxes (Roth et al., 2022).

Figure 1 shows the distribution of responses to the question whether the fiscal stimulus program is perceived as justified by treatment group. Decision-makers can choose between the five answer options (*Absolutely Not Justified*, *Not Justified*, *Neither Justified Nor Unjustified*, *Justified* and *Absolutely Justified*) when answering the following question:

> *Do you think it is justified for the government to intervene with a/this stimulus package (at the taxpayer's expense)?*

In the CONTROL group, where we do not refer to a specific stimulus package, we use the indefinite article 'a'. If a treatment (FISCAL or SOCIAL) was given, where we explicitly mention the 130 billion EUR stimulus package, we use the demonstrative 'this' to indicate that we are referring to the stimulus package mentioned in the treatment. The phrase 'at the taxpayer's expense' was used only in the FISCAL treatment to emphasize the financing side of the state intervention.

[Figure 1 ABOUT HERE]

There are three key insights when examining the answer distributions by treatment group. First, the majority of decision-makers in our sample think that the fiscal stimulus package is justified. Second, mentioning the possible future costs of the government intervention, in the form of potential tax increases or spending cuts, significantly reduces support for the stimulus program (FISCAL vs. CONTROL). Nonetheless, a large share of decision-makers in the FISCAL group (approx. 60%) still view the government intervention as justified. Third, there are no meaningful differences between participants in the SOCIAL treatment and those in the CONTROL group.

Next, we estimate the treatment effect of our experimental intervention on attitudes towards the fiscal stimulus using two different specifications of the outcome variable. First, we estimate an ordinary least squares (OLS) regression using the 5-point Likert scale as the outcome variable, considering it as a continuous dependent variable. Second, we estimate a linear probability model by aggregating the outcome variable into a binary form: the dependent variable is set to 1 if the decision-maker views the stimulus as justified (either *Absolutely Justified* or *Justified*) and 0 otherwise. For the estimation, we use the following specification:

$$y_i = \beta_0 + \sum_{k=1}^{2} \beta_k \times TREATMENT_{ik} + X_i'\gamma + \varepsilon_i. \tag{1}$$

The dependent variable y_i represents the attitude towards the fiscal stimulus, defined either as a continuous 5-point Likert scale variable or as a binary outcome variable, depending on the

specification. $Treatment_{ik}$ is a categorical variable indicating the experimental treatment group firm i is in (SOCIAL, FISCAL). The coefficient β_0 shows the baseline effect for the CONTROL group and is captured by the constant term. β_k denotes the effect of the experimental groups SOCIAL and FISCAL relative to the CONTROL group. We also include results for a specification with controls (X_i), where we control for firm size, industry, legal form, gender, education, and position in the company.

Results in Table 1 indicate that the observed effect of the treatments is not sensitive to the specification of the outcome variable. In the specification in columns (1) and (2), where the dependent variable is defined as a continuous 5-point Likert scale, we observe no significant difference between the CONTROL and SOCIAL treatment groups. In contrast, the FISCAL treatment notably reduces respondents' perception that the fiscal stimulus is just. For instance, in column (1), the perception of the stimulus being just diminishes by almost a full Likert scale point (-0.773). The findings in columns (3) and (4), where we employ a linear probability model, closely align with the results in columns (1) and (2). Again, we find no significant difference between the CONTROL group and SOCIAL group, but a significant negative difference between the CONTROL group and FISCAL group. For example, in column (3), firms in the FISCAL group have, on average, a 25 percentage point lower probability of assessing the fiscal stimulus as just compared to the CONTROL group. The results are robust to using an ordered probit model with a 5-point Likert scale as the dependent variable or a logistic regression model with a binary dependent variable (see Online Appendix C). Moreover, Table 1 shows a consistent and significant difference between the FISCAL and SOCIAL treatments, with a lower proportion of respondents in the FISCAL treatment believing the stimulus is justified compared to the SOCIAL treatment (p(FISCAL vs. SOCIAL)).

Overall, our findings suggest that narratives about misfortune or bad luck in the SOCIAL treatment do not change whether the fiscal stimulus program is perceived as justified. This may be because decision-makers are aware that many firms are struggling due to the repercussions of an unforeseen crisis and not through any fault of their own. However, stressing the higher tax burden in the FISCAL treatment, and thereby priming firm decision-makers to consider the cost of the fiscal stimulus from a taxpayer's perspective, reduces the share of decision-makers perceiving the stimulus as just.[9]

[Table 1 ABOUT HERE]

4.2 Tax Expectations

Next, we present results on the post-treatment tax expectations of firm decision-makers. Asking respondents about expected tax rates after having received the experimental treatment serves two distinct purposes.

First, we want to verify that firm decision-makers do not confuse *tax expectations* and *preferences about tax rate changes* by explicitly eliciting their future tax expectations before asking them about

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[9]In a follow-up survey conducted approximately one year later, we revisited the fiscal stimulus question with a small random subset. Of the 41 panel participants, 81% either chose the same Likert scale point or shifted by just one point upward or downward. This indicates that views on the stimulus are robust rather than short-lived.

their preference to pay taxes. Second, studying tax expectations also serves as a manipulation check. By asking firm decision-makers about their tax expectations, we can verify if receiving information about the size of the fiscal stimulus alone (like in the SOCIAL treatment) alters tax expectations and subsequently influences preferences towards taxes. For example, simply informing firm decision-makers about the size of the fiscal stimulus could lead them to anticipate higher future tax rates, even without explicitly stating that the stimulus might be counter-financed by higher taxes, as is done in the FISCAL treatment.

To examine these channels, we ask decision-makers the following question regarding their tax expectations:

> *Based on your current tax rate, what changes in the following tax rates do you expect in the **medium term** (12-24 months)?*

Firm decision-makers can specify a change in percentage points ranging from -20 to 20 for the *corporate tax*, *local business tax*, *income tax* and *capital gains tax*. Additionally, a *Do not know*-option is available. To quantify the treatment effect on decision-makers' tax expectations, we run an OLS regression similar to equation (1), regressing expected medium-term changes in the *corporate tax*, *local business tax*, *income tax*, and *capital gains tax* rates on treatment dummies as follows:

$$y_i = \beta_0 + \sum_{k=1}^{2} \beta_k \times TREATMENT_{ik} + X_i'\gamma + \varepsilon_i. \tag{2}$$

In equation (2), the dependent variable y_i represents the expected medium-term tax change for the respective tax in percentage points. Similar to equation (1), $Treatment_{ik}$ is defined as a categorical variable indicating the experimental treatment firm i is in (SOCIAL, FISCAL). Additionally, we include specifications with the controls (X_i) described in Section 4.1, which account for firm size, industry, legal form, gender, education, and position in the company. Furthermore, we extend the set of control variables to include a binary variable that indicates whether the stimulus was perceived as just or not to account for the respective decision-maker's perception of the fiscal stimulus.[10]

[Table 2 ABOUT HERE]

The results in Table 2 indicate that firms in the CONTROL group, on average, expect only very minor increases in future tax rates. The largest increase is expected for the *capital gains tax* (e.g., a 2.3 percentage point increase in column (7)), followed by the *business tax* (e.g., a 0.8 percentage point increase in column (3)) and the *income tax* (e.g., a 0.8 percentage point increase in column (5)). For the *corporate tax*, no significant change is expected. Comparing the tax expectations of firms in the SOCIAL treatment to those in the CONTROL group, we find no significant difference. Consequently, our results confirm that simply being reminded of the size of the stimulus program

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[10]See Section 4.1 for the analysis of the attitude of firm decision-makers towards the fiscal stimulus.

does not have any additional effect on expectations about future tax changes compared to not mentioning the size of the stimulus.

Considering the results for the FISCAL group, we find that explicitly emphasizing that the government stimulus raises the level of government debt and will likely lead to future tax increases significantly raises expectations of future taxes. Decision-makers in the FISCAL group expect increases for all types of taxes. These increases are statistically significant and economically relevant. For instance, participants in the FISCAL group expect a 2.5 percentage point higher tax rate for the medium-term *business tax* compared to the CONTROL group (column (3)). Based on an average *local business tax* of 14% in 2021, this implies an increase of 11.5%. The coefficients for the effect of the FISCAL treatment on the *corporate tax*, *income tax*, and *capital gains tax* are of a similar magnitude. Results remain qualitatively the same when including control variables. Also, when examining differences between the FISCAL and SOCIAL treatments, we find a significant difference between the two groups, indicating that firm decision-makers in the FISCAL treatment expect higher taxes in the medium term (p(FISCAL vs. SOCIAL)), as shown in Table 2.

Overall, the results from the SOCIAL treatment show that merely mentioning the stimulus program does not have any additional effect on tax expectations compared to the CONTROL group. Further, the fact that decision-makers have higher expectations about future tax rates after receiving the FISCAL treatment indicates that they do not internalize the costs of the stimulus program unless it is explicitly mentioned to them. Thus, firm decision-makers are less aware of the link between higher government expenditures today and higher tax rates tomorrow. Therefore, the proposition of Ricardian equivalence (Barro, 1974) does not seem to hold for German firm decision-makers in our setting.

4.3 Desired Tax Changes

In this section, we present results on decision-makers' preferences to pay taxes by asking about their preferred tax rate changes. We illustrate how these preferences change in response to emphasizing either fiscal prudence considerations or the role of misfortune in our narrative treatments.

To elicit decision-makers' preferences regarding taxes, we ask participants the following question about their preferred tax rate changes:

> *From your company's perspective, by how many percentage points would you want to adjust the following types of taxes based on your current tax rate to ensure that the government is able to support businesses in crises?*

Similar to the survey question regarding tax expectations, firm decision-makers can select their preferred tax rate change for the *corporate tax*, *local business tax*, *income tax*, and *capital gains tax* on a scale from -20 to 20 percentage points, or choose the *Do not know* option. Following the concept of a *contract* between taxpayers and the tax administration (Feld and Frey, 2007; Alm, 2019), we stress the link between paying taxes and government support measures when decision-makers decide about their desired tax rate changes. We anticipate that respondents in the SOCIAL treatment and FISCAL treatment groups will prefer higher taxes compared to those

in the CONTROL group. In the SOCIAL treatment, we expect that emphasizing the role of inequalities due to misfortune will increase firm decision-makers' preference to pay taxes because of a desire for greater redistribution relative to the CONTROL group. In the FISCAL treatment, we present the fiscal stimulus as debt that requires counter-financing, thereby clarifying the contractual relationship between firms, in their role as taxpayers, and the government. If firm decision-makers value lower levels of governmental debt, we expect to observe a preference for higher taxes compared to the CONTROL group.

To estimate the effects of our experimental treatments on preferences regarding tax rates, we employ a regression model similar to equation (1). In this model, the dependent variable is specified as the desired tax rate change in percentage points for the *corporate tax*, *local business tax*, *income tax*, and *capital gains tax*, and is regressed on the respective treatment dummies. We include the respective expected tax rate in our set of control variables (see Section 4.2 for details) to account for potential confounding effects of our treatments on tax expectations and preferred taxes. Table 3 presents the results, using the CONTROL group as the baseline, with coefficients for the SOCIAL and FISCAL treatments measuring the differences relative to the CONTROL group.

[Table 3 ABOUT HERE]

We observe that firm decision-makers in the CONTROL group want to reduce their respective tax rates relative to the current tax rate. The tax they want to reduce the most is the *business tax*, which they want to lower by 4.2 percentage points (column (3)). Further, they wish to reduce the *income tax* by 3.4 percentage points (column (5)) and *corporate tax* by 3.2 percentage points (column (1)). The large effect for the *business tax* could be driven by the fact that this tax is levied on all businesses and does not depend on the legal form of a business. Interestingly, participants in the CONTROL group do not want a substantial reduction of the *capital gains tax* (column (7)).

For the SOCIAL treatment group, we find no statistically significant differences in the desired tax rates for the *corporate tax*, *business tax*, or *income tax* compared to the CONTROL group. However, participants in the SOCIAL treatment want to increase the *capital gains tax* by 1.1 percentage points more than the CONTROL group (column (7)). Except for the *capital gains tax*, respondents in the FISCAL treatment do not want to increase taxes overall but favor reductions in the *corporate tax* (-0.7 percentage points; column (1)), *business tax* (-1.4 percentage points; column (3)), and *income tax* (-0.6 percentage points; column (5)).[11] However, compared to the CONTROL group, firm decision-makers in the FISCAL treatment strongly prefer higher taxes to pay for government bailouts. This finding is consistent across different types of taxes and is statistically significant at the one percent level. The largest response is observed for the *capital gains tax*, where respondents in the FISCAL group want a 4.1 percentage point higher tax rate than respondents in the CONTROL group. Importantly, when comparing desired adjustments between firm decision-makers in the FISCAL and SOCIAL treatments, we find that decision-makers in the FISCAL treatment prefer significantly higher taxes than those in the SOCIAL treatment

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[11]E.g., for the *corporate tax*, the average desired adjustment for the FISCAL group can be calculated as follows: -3.2 (CONTROL) + 2.5 (FISCAL vs. CONTROL) = -0.7 percentage points.

(p(FISCAL vs. SOCIAL) in Table 3). Results are robust to the inclusion of control variables.[12]

Given the level of current statutory tax rates, the treatment effects are substantial. For example, the *corporate tax* rate in Germany amounts to 15%, so a difference of 2.5 percentage points implies that respondents in the FISCAL group want to lower the tax rate by 17% less than respondents in the CONTROL group. The desired increase of the *capital gains tax* by 3.6 percentage points implies a 14% increase over the statutory *capital gains tax* of 25%.

Our experimental evidence provides three main findings. First, decision-makers in the FISCAL treatment want to decrease tax rates less than participants in the CONTROL group, even when controlling for support of the fiscal stimulus program and future tax expectations. Second, participants in the SOCIAL treatment seem to favor a higher *capital gains tax* compared to decision-makers in the CONTROL group. Otherwise, there are few differences in the responses between the CONTROL and SOCIAL groups. Third, on average, firm decision-makers want to decrease all tax rates, except for the *capital gains tax*.

How can our results be explained? First, firm decision-makers seem to adjust their tax preferences when confronted with narratives emphasizing the need to counter-finance the government stimulus. This suggests that they do not fully account for the potential costs of the fiscal stimulus program and may not be aware of the need to finance such programs.

Second, the limited effect of the SOCIAL treatment on the preference to pay taxes suggests that, in our setting, firm decision-makers do not become more supportive of higher taxes after being exposed to narratives of misfortune in the income-generating process. This contrasts with findings from studies conducted among households (Durante et al., 2014; Fisman et al., 2020). A key difference between the FISCAL and SOCIAL treatments that might explain this result concerns the government's revenue sources. While the narrative in the FISCAL treatment makes it clear that government revenues are insufficient to cover the stimulus package expenditures, participants in the SOCIAL treatment are less aware of the need to finance the extraordinary expenses caused by the Corona crisis. Thus, decision-makers in the SOCIAL treatment might assume that government revenues will be sufficient to support firms in crises without the need for additional taxes.

Third, apart from the taxation of capital gains, firm decision-makers generally prefer to reduce tax rates. Our findings, which suggest that CEOs and business owners want to increase the *capital gains tax*, closely align with public statements by prominent business owners and CEOs advocating for a wealth tax.[13] There might be several explanations as to why decision-makers want to increase the *capital gains tax*. First, the preference to increase the *capital gains tax* might be driven by a willingness to redistribute, since the tax base for the *capital gains tax* is increments in wealth. Second, decision-makers might perceive the *capital gains tax* as less distortive to the firm production process than corporate or personal income taxes. Consequently, they may prefer not to increase taxes that, in their view, could potentially slow down economic activity.

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[12]Given the multiple treatments and outcomes, which can increase the likelihood of false rejections beyond the desired level, Online Appendix C.2 presents multiplicity-adjusted p-values following the approaches of List et al. (2019) and Holm (1979) (Table C.3). After accounting for multiple hypotheses testing, the results on treatment effects across the experimental groups remain robust, further strengthening confidence in the validity of the findings presented in Section 4.

[13]See, e.g., the public statements of business owners including Bill Gates and Warren Buffett on their preferences on tax policy and the repeated call for raising taxes on the wealthy (Mohamed, 2020). The effects of a *capital gains tax* and a wealth tax can be considered similar, since the *capital gains tax* constitutes a tax on the returns to wealth, while the wealth tax constitutes a tax on the stock of wealth.

To better understand the rationale underlying the wish to increase the *capital gains tax*, we conducted a small follow-up survey one month after the original survey. In the follow-up survey, a different sample of firms received the same treatment and were asked an open text question as to why they wanted to increase the *capital gains tax* if they indicated the preference to increase the *capital gains tax*. The main motive for increasing the *capital gains tax* are redistributive arguments, for example, making the wealthy pay their fair share. Given the small number of participants who filled out the open-ended text question, these results need to be interpreted with caution. Thus, we can only presume that fairness considerations do matter for firm decision-makers' attitudes towards tax policy to some extent.

Overall, the results in this section indicate that firm decision-makers are more responsive to narratives of fiscal prudence than to those of fairness in adjusting their preference to pay taxes in our setting. Extending previous results by Roth et al. (2022), we find that narratives are more effective in changing attitudes towards tax policy than hard facts. However, it appears that firm decision-makers only take into account considerations about fairness to a limited extent when forming their attitudes towards tax policy. Nevertheless, there is evidence that fairness concerns prompt decision-makers to increase taxes for the affluent, since participants of the SOCIAL treatment want to have higher *capital gains taxes* compared to firms in the CONTROL group.

5   Heterogeneity of Main Treatment Effect

In this section, we analyze the heterogeneity of the main treatment effect using two distinct empirical strategies. First, we employ a machine learning approach to explore treatment effect heterogeneity (Section 5.1). This data-driven, non-parametric method predicts treatment effects from observable characteristics in a theory-neutral framework, avoiding reliance on theoretical hypotheses for estimating cross-sectional treatment effects. Additionally, this machine learning approach generates the distribution of conditional average treatment effects (CATE) for each decision-maker and experimental group. This enables us to confirm that the treatment effects are not influenced by outliers and remain consistent across the majority of respondents within each treatment group. Second, we identify theoretically motivated predictions to test covariates that are expected to influence the observed treatment effects (Section 5.2).

5.1   Conditional Average Treatment Effects based on Causal Forests

As average treatment effects (ATE) can conceal significant variation in treatment effects, examining treatment effect heterogeneity is crucial for enabling more precise intervention targeting and gaining a deeper understanding of the distributional impacts resulting from policy interventions (Athey et al., 2019; Nie and Wager, 2021; De Neve et al., 2021). In our context, a better understanding of treatment effect variation is essential for tax administrations. It enables them to customize enforcement actions, thereby enhancing both the precision and cost-effectiveness of their communication interventions.

To assess heterogeneity in treatment effects in this section, we use the multiple-arm causal forest algorithm developed by Athey et al. (2019) and Nie and Wager (2021) to predict treatment effects non-parametrically. This data-driven machine learning approach offers the advantage of

providing a distribution of estimated effect sizes for each participant and treatment, rather than a singular ATE point estimate. Moreover, the use of out-of-bag predictions — where models estimate outcomes for observations not included in the training data — ensures that only models not trained on the respective observations are used for effect size prediction. This approach minimizes the risk of overfitting. To conduct our analysis of treatment effect heterogeneity, we include the set of observables used in Section 4.3.[14] For the algorithm, we restrict the sample to all observations with non-missing values regarding our set of covariates.

The basic idea of the multiple-arm causal forest is to estimate non-linear conditional average treatment effects (CATE) for each participant and each experimental treatment group. These non-linear CATE estimates are defined as follows:

$$\tau_k(x) = \mathbb{E}[Y_i(k) - Y_i(CONTROL) \mid X_i = x], \tag{3}$$

where $\tau_k(x)$ represents the respective CATE for the treatments SOCIAL and FISCAL ($k = \{SOCIAL, FISCAL\}$) relative to the CONTROL group, and $Y_i(k, CONTROL)$ indicates the potential outcome of respondent i depending on being in a treatment group (SOCIAL, FISCAL) or the CONTROL group. Moreover, X_i is the covariate matrix including the set of observables described above, where x stands for the realization of the respective covariates for respondent i.

The main challenge in the estimation of equation (3) is that for a given observation, only one of the potential outcomes ($Y_i(k)$, $Y_i(CONTROL)$) is observable. Nevertheless, one can estimate equation (3) by assuming *unconfoundedness* (Rosenbaum and Rubin, 1983), such that:

$$\{Y_i(k), Y_i(CONTROL)\} \perp\!\!\!\perp W_i \mid X_i. \tag{4}$$

In equation (4), W_i is a treatment indicator that denotes the experimental group to which the respondent was assigned (CONTROL, SOCIAL, or FISCAL). Given the assumption of unconfoundedness, the treatment assignment W_i can be considered independent of the potential outcome $Y_i(k, CONTROL)$ conditional on covariates X_i. Since the treatment assignment in our setting is exogenous, the assumption of unconfoundedness is reasonable (Athey and Imbens, 2016).

Due to the assumption of unconfoundedness, we can use a causal forest algorithm (Athey et al., 2019; Nie and Wager, 2021) that weights a collection of regression trees. The algorithm effectively performs local regressions within neighborhoods formed by these regression trees, based on observations with similar covariate characteristics. The treatment effect in a specific leaf of a regression tree is estimated by taking the average of all observations in this leaf belonging to the treatment group and subtracting the average of all observations in this leaf belonging to the control group (see equation (5) in Wager and Athey (2018)).[15] Moreover, using an adaptive nearest

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[14]Set of observables: size group (EC's definition for small and medium-sized enterprises (SMEs)), industry (WZ08 1-digit), legal form, gender of manager, manager education, position in the company, a dummy equal to 1 if the decision-maker finds the stimulus justified and 0 otherwise, and medium-term tax expectations.

[15]We do not transform outcomes by applying propensity score weighting in each leaf, as in Athey and Imbens (2016), to account for variations in the expected propensity to be treated ($e(x) = \mathbb{E}[W_i \mid X_i = x]$). Instead, we

neighbor estimator, neighboring observations with similar covariate characteristics receive larger weights the more often they fall into the same leaf for a specific realization of covariates x. This is achieved by the causal forest averaging over the respective neighborhoods produced by the collection of regression trees. Furthermore, as we have more than one treatment group, we employ a generalization of causal forests for multi-arm causal forests developed by Nie and Wager (2021).

[Figure 2 ABOUT HERE]

Figure 2 presents estimated distributions of CATEs for each respondent for the two experimental treatments, SOCIAL and FISCAL, relative to firms in the CONTROL group for the *corporate tax*, *business tax*, *income tax*, and *capital gains tax*.[16] The shaded regions represent the quartile ranges of each distribution. Figure 2 effectively highlights the heterogeneity in treatment effects based on the set of observables mentioned above. Moreover, controlling for the same set of covariates in a non-parametric manner in the causal forest provides valuable insights into the distributional impacts of our experimental interventions.

Three points merit attention. First, as expected, we observe that the ATEs based on the multi-arm causal forest approach are very close to the estimated ATEs based on OLS regressions for the respective taxes, as presented in columns (2), (4), (6), and (8) in Table 3. This gives us confidence that the estimated average treatment effects are robust with respect to different estimation approaches.

Second, similar to the results in Section 4.3, we do not find an effect for the SOCIAL treatment relative to the CONTROL group for the *corporate tax*, *business tax*, and *income tax*. The estimated ATEs for these taxes are close to zero. Moreover, the median of the distribution of CATEs is also very close to zero, and the distribution is nearly symmetrically centered around a zero treatment effect. This finding supports the evidence from Section 4.3 that the attitude of firm decision-makers is only influenced to a limited extent by fairness considerations. However, the results for the *capital gains tax* indicate that fairness concerns do matter to some extent, as decision-makers in the SOCIAL treatment want to increase the *capital gains tax* compared to comparable participants in the CONTROL group based on observable characteristics. Nearly three-quarters of the estimated CATEs are positive when comparing the difference between the SOCIAL and CONTROL group in Figure 2d, indicating that the SOCIAL treatment is effective in prompting decision-makers to increase taxes for corporate owners.

Third, when investigating the difference between the FISCAL and CONTROL group, we observe that for all four types of taxes, more than three-quarters of the estimated CATEs are positive. This indicates that the majority of firm decision-makers in the FISCAL treatment have a higher preference to pay taxes compared to their counterparts in the CONTROL group. Therefore, we conclude that presenting the fiscal stimulus as a *due debt*, thereby clarifying the contractual relationship between firms and the government, leads to greater fiscal responsibility in our context.

In sum, the analysis reveals that the estimated ATEs using the multi-arm causal forest approach align closely with those from OLS regressions, confirming the robustness of our results.

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follow Wager and Athey (2018) (see footnote 3) and estimate deep trees, where the leaves used to estimate treatment effects are smaller compared to the approach by Athey and Imbens (2016), making an additional transformation of our outcome variable unnecessary.

[16]The R package *grf* (Athey et al., 2019; Nie and Wager, 2021) was used to create Figure 2.

Our non-parametric machine learning approach demonstrates that, while fairness considerations in the SOCIAL treatment show limited impact on most taxes (except for the *capital gains tax*), the FISCAL treatment significantly enhances tax payment preferences, indicating the effectiveness of framing fiscal stimuli as *due debt* for tax administrations.

5.2 Heterogeneous Treatment Effects Based on Hypotheses

In this section, we investigate whether our experimental treatments have differential effects on tax payment preferences across different types of firms, based on two specific hypotheses.

First, we explore whether the attitude of firm decision-makers towards the fiscal stimulus program influences their preferences regarding taxes. We anticipate that this effect will be particularly pronounced in the FISCAL treatment, where decision-makers recognize the need to counter-finance the government stimulus. Consequently, if they deem the stimulus justified and are simultaneously in favor of keeping government debt at reasonable levels, they are likely to adjust their preference to pay taxes upwards (Alm et al., 1993; Feld and Frey, 2007).

Second, we test whether preferences towards specific tax changes depend on whether firms are required to pay the respective tax. To investigate this, we examine heterogeneous effects among firms with different legal forms. For example, unlike incorporated firms, non-incorporated firms, such as sole proprietorships and business partnerships, are not subject to the *corporate tax*.[17] We therefore examine whether the desired change in the *corporate tax* depends on the incorporation status of the firm. We expect corporations to have a lower preference for paying the *corporate tax* compared to non-incorporated firms. However, the narratives put forward in the SOCIAL and FISCAL treatments might dampen this effect, as fairness and fiscal prudence considerations could offset the incentive to reduce a firm's tax burden.

To test for these differential effects, we run separate OLS regressions of the following form:

$$y_i = \alpha + \beta \times FirmType_i + \sum_{k=1}^{2} \delta_k \times TREATMENT_{ik}$$

$$+ \sum_{k=1}^{2} \theta_k \times FirmType_i \times TREATMENT_{ik} + \varepsilon_i. \tag{5}$$

Like before, the dependent variable y_i represents the desired tax rate adjustment of the respective tax. The categorical variable $FirmType_i$ is used to test for potential heterogeneous treatment effects we are interested in. To test the two channels described above, $FirmType_i$ is defined in the following two ways. First, when looking at differences in tax changes depending on the attitude towards the fiscal stimulus, $FirmType_i$ is a dummy variable equal to one if firm decision-makers find the fiscal stimulus *Justified* or *Absolutely Justified* and zero otherwise. Second, in the case of different legal forms, $FirmType_i$ is a categorical variable equal to one for corporations and zero for non-incorporated businesses. $Treatment_i \times FirmType_i$ represents the full interaction between the respective treatment received and the legal form of the firm.

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[17]In Germany, firms with legal forms such as *GmbH*, *UG*, *AG*, *SE*, or *Genossenschaft* are subject to the *corporate tax*. In contrast, firms with legal forms such as *Einzelunternehmen*, *oHG*, *GbR*, *PartG*, *KG*, and *Personengesellschaft* are non-incorporated and therefore not subject to the *corporate tax*.

Table 4 presents the group average treatment effects (GATE) for firm decision-makers with different attitudes towards the fiscal stimulus. We observe that firm decision-makers, who find the government stimulus justified, have a higher preference to pay taxes compared to their counterparts. Further, we notice heterogeneity across treatments. While the difference between the GATEs is positive for all experimental groups, the effect is particularly strong (significant at the 1% level) for the FISCAL treatment. The economic magnitude of this effect is large. For example, with a 15% flat statutory corporate tax, a 2-percentage-point difference implies a 13% higher desired tax rate for decision-makers in the FISCAL treatment who find the stimulus justified, as compared to decision-makers in the same experimental group, who have a neutral perspective or perceive the fiscal stimulus as unjust. The strong effect of the FISCAL treatment is also present for the other three types of taxes (*business tax*, *income tax*, and *capital gains tax*).

We conclude that firm decision-makers, who support the fiscal stimulus program, have a higher preference to pay taxes. This effect is particularly strong when decision-makers realize the need for the government to counter-finance the expenditures such that the state can support firms in crises. Our findings remain robust when defining the support for the fiscal stimulus program as a continuous variable (Table D.3 in Online Appendix D.2).

[Table 4 ABOUT HERE]

In Table 5, we investigate if treatment effects differ with respect to the type of tax a firm is liable to. As mentioned above, only corporations are subject to the *corporate tax*. Therefore, we expect a lower preference to pay the *corporate tax* for corporations compared to non-incorporated firms. The GATEs presented in Table 5 support this hypothesis. Incorporated firms want a significantly lower *corporate tax* compared to non-incorporated firms.[18] Over all experimental groups, this effect is highly significant and the difference between incorporated and non-incorporated firms ranges from 1.6 percentage points to 3.1 percentage points. We also observe that the absolute difference between incorporated and non-incorporated firms becomes weaker in the SOCIAL (1.6 % percentage points) and FISCAL (1.8 % percentage points) group as compared to the CONTROL group (3.1 % percentage points). This finding suggests that fairness and fiscal prudence narratives, with which decision-makers are confronted in the SOCIAL and FISCAL treatment, can be an effective tool to dampen a firm's self-centered interest.[19]

[Table 5 ABOUT HERE]

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[18]Importantly, when only considering corporations, the FISCAL treatment still leads to a positive and highly significant effect for the *corporate tax* compared to the CONTROL group (difference: 2.8 percentage points; p-value: 0.000).

[19]In Online Appendix D, we present additional analyses investigating the heterogeneous effects on firms that received government aid or experienced different profit trajectories since the onset of the pandemic. Our findings indicate that, on average, firms that accepted government aid or faced negative profit trajectories since the pandemic began show a decreased preference to pay taxes. This could be due to these firms undervaluing public services because they perceive the government's crisis aid as inadequate. Additionally, firms experiencing significant profit downturns might be dealing with tighter financial constraints, prompting them to seek lower tax obligations compared to their more financially stable counterparts.

6   Conclusion

Firms are important taxpayers and intermediaries, making it important to understand the tax preferences of the people that run them. Our study sheds new light on the dynamics between tax policy narratives and the tax preferences of firm decision-makers. By showing how narratives about fiscal consolidation or redistribution shape firm decision-makers' beliefs, our research contributes to the understanding of how firms respond to policy communication, particularly in the context of unexpected economic challenges like the Covid-19 pandemic.

Our findings reveal a nuanced picture of how firm decision-makers react to different types of narratives. We observe that when confronted with narratives emphasizing fiscal prudence and the need to counter-finance government expenditures, there is a notable shift in their preference to accept higher taxes. This suggests a responsiveness to narratives that highlight the fiscal realities and constraints faced by the government. Conversely, narratives centered on fairness and misfortune in the income-generating process appear to have a limited impact on altering tax preferences among firm decision-makers, except for a notable tendency to favor raising the *capital gains tax*. This specific inclination towards redistributive measures, particularly those targeting wealth increments, aligns with a broader societal discourse on equity and fairness in tax policies.

Regarding our results, there are several implications. For policymakers and tax administrations, the findings underscore the importance of crafting effective communication strategies that resonate with the realities and perceptions of businesses and their managers. These aspects gain particular importance in securing support for policy changes, throughout election campaigns, and in pursuing fiscal consolidation objectives. The effectiveness of the fiscal consolidation narrative in boosting firms' preference to pay taxes suggests that transparent and realistic communication about government budgets and spending can play a crucial role in fostering firms' willingness to pay taxes. At the same time, our results caution against over-reliance on fairness narratives when communicating with firms. Finally, the observed preference for an increase in the *capital gains tax* opens avenues for policymakers to consider more progressive taxation structures. This aligns with a growing global discourse on economic equity, particularly in the wake of financial crises and economic downturns.

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Figures and Tables

Figure 1: Attitude towards the Fiscal Stimulus

(a) CONTROL

(b) SOCIAL

(c) FISCAL
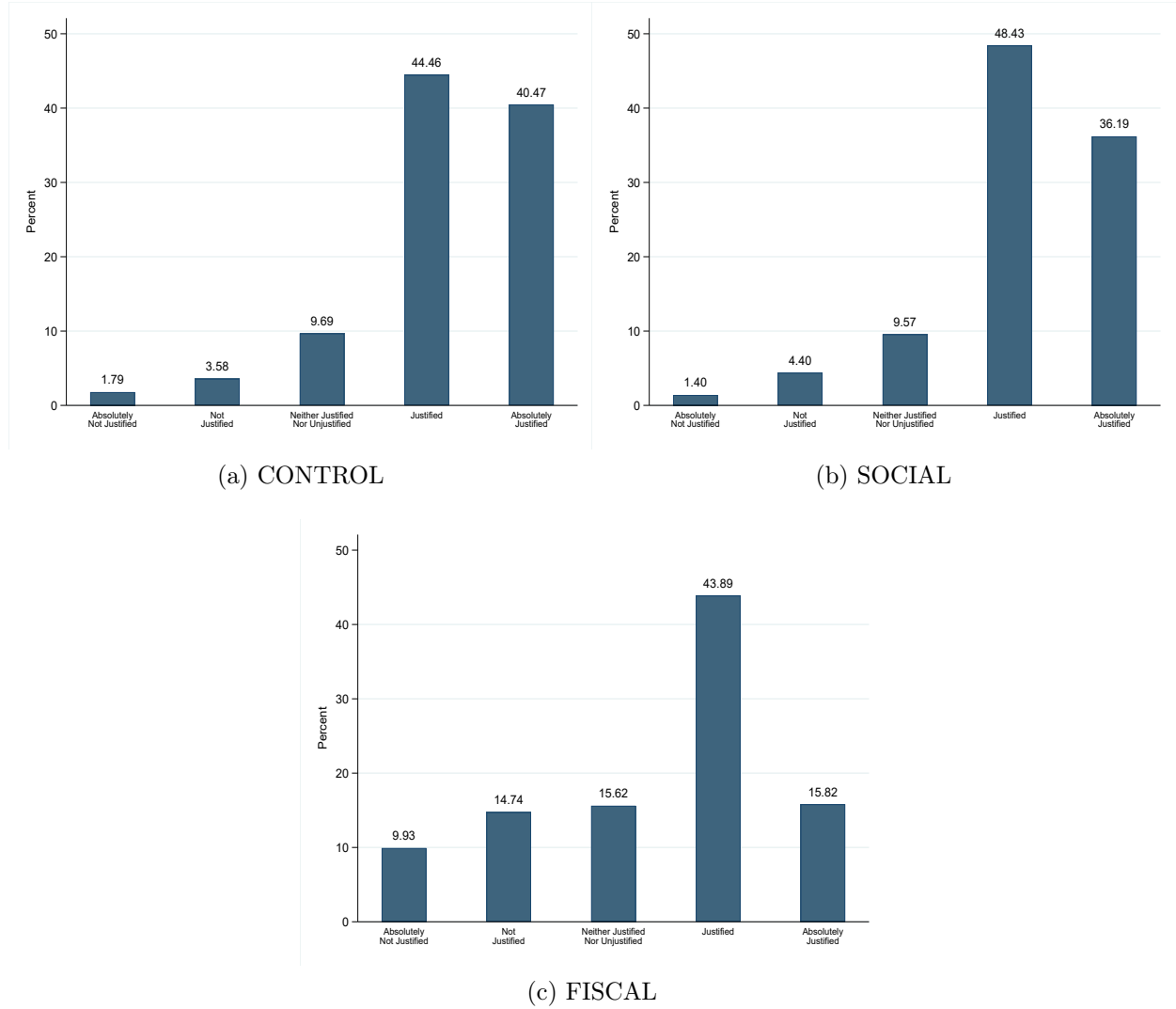
Note: Figure 1 illustrates the distributions over a 5-point Likert scale on the question *Do you think it is justified for the government to intervene with a/this stimulus package (at the taxpayer's expense)?* for CONTROL group ($N = 1,228$), SOCIAL group ($N = 2,998$) and FISCAL group ($N = 2,971$). Firm decision-makers could choose between the following five answer options: *Absolutely Not Justified, Not Justified, Neither Justified Nor Unjustified, Justified* and *Absolutely Justified.* In the CONTROL group, where no specific stimulus package is mentioned, we use the indefinite article *'a'.* In the treatment groups (FISCAL or SOCIAL), where the 130 billion EUR stimulus package is explicitly mentioned, we use the demonstrative *'this'* to refer to the specified stimulus package. The phrase *'at the taxpayer's expense'* is used exclusively in the FISCAL treatment to emphasize the financing aspect of the state intervention. For screenshots of the original survey questions, we refer to Online Appendix B.2.

Table 1: Attitude towards Fiscal Stimulus: Likert Scale and Linear Probability Model

Dependent Var.:	Attitude towards Fiscal Stimulus			
	5-Scale Likert	5-Scale Likert	Binary (0/1)	Binary (0/1)
	(1)	(2)	(3)	(4)
Constant	4.182***	4.236***	0.849***	0.863***
(Baseline CONTROL)	(0.025)	(0.031)	(0.010)	(0.013)
SOCIAL	-0.046	-0.054	-0.003	-0.002
	(0.030)	(0.037)	(0.012)	(0.015)
FISCAL	-0.773***	-0.760***	-0.252***	-0.237***
	(0.033)	(0.042)	(0.014)	(0.017)
Controls	No	Yes	No	Yes
N	7197	4291	7197	4291
Adj. R^2	0.113	0.125	0.079	0.079
p(FISCAL vs. SOCIAL)	0.000	0.000	0.000	0.000

Note: OLS estimates from the regression of equation (1). **Dependent variable in Columns (1) and (2)**: Attitude towards fiscal stimulus measured on a 5-point Likert scale (1 = *Absolutely Not Justified*, 2 = *Not Justified*, 3 = *Neither Justified Nor Unjustified*, 4 = *Justified*, 5 = *Absolutely Justified*). **Dependent variable in Columns (3) and (4)**: Dummy variable equal to 1 for firm decision-makers selecting the items *Absolutely Justified* or *Justified* and zero otherwise. **Independent variables**: experimental group, constant, and control variables if stated (size group (EC's definition for small and medium-sized enterprises (SMEs)), industry (WZ08 1-digit), legal form, gender of manager, manager education, position in company. p(FISCAL vs. SOCIAL) represents the p-value from a test of significant difference between the FISCAL and SOCIAL treatments. Robust standard errors in parentheses. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 2: Expected Medium-term Changes in Taxes

Dependent Var.:	Medium-Term Tax Expectations							
	Corporate Tax		**Business Tax**		**Income Tax**		**Capital Gains Tax**	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Constant	0.004	0.004	0.008***	0.010**	0.008***	0.012***	0.023***	0.025***
(Baseline CONTROL)	(0.003)	(0.004)	(0.003)	(0.004)	(0.003)	(0.004)	(0.003)	(0.004)
SOCIAL	-0.004	-0.004	-0.004	-0.003	-0.003	-0.006	-0.000	-0.001
	(0.004)	(0.005)	(0.004)	(0.005)	(0.004)	(0.005)	(0.004)	(0.005)
FISCAL	0.022***	0.021***	0.025***	0.019***	0.024***	0.017***	0.029***	0.025***
	(0.003)	(0.005)	(0.004)	(0.005)	(0.003)	(0.005)	(0.004)	(0.005)
Controls	No	Yes	No	Yes	No	Yes	No	Yes
N	3393	2183	3676	2366	3741	2391	3460	2220
Adj. R^2	0.029	0.036	0.027	0.030	0.028	0.036	0.034	0.032
p(FISCAL vs. SOCIAL)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Note: OLS estimates from the regression of equation (1): $y_i = \beta_0 + \sum_{k=1}^{2} \beta_k \times TREATMENT_{ik} + X_i'\gamma + \varepsilon_i$. **Dependent variable**: expected medium-term change in percentage points of respective tax. **Independent variables**: experimental group dummy, constant, and control variables (size group (EC's definition for small and medium-sized enterprises (SMEs)), industry (WZ08 1-digit), legal form, gender of manager, manager education, position in company, dummy equal to 1 if decision-maker finds stimulus justified and 0 otherwise) if indicated. p(FISCAL vs. SOCIAL) represents the p-value from a test of significant difference between the FISCAL and SOCIAL treatments. Robust standard errors in parentheses. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 3: Desired Adjustment Tax Rates

| Dependent Var.:	Adjustment Corporate Tax		Adjustment Business Tax		Adjustment Income Tax		Adjustment Capital Gains Tax	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Constant	-0.032***	-0.031***	-0.042***	-0.040***	-0.034***	-0.031***	-0.005	-0.012**
(Baseline CONTROL)	(0.003)	(0.004)	(0.003)	(0.004)	(0.003)	(0.004)	(0.004)	(0.005)
SOCIAL	-0.001	0.001	-0.001	0.001	-0.001	-0.002	0.011**	0.012**
	(0.004)	(0.005)	(0.004)	(0.005)	(0.004)	(0.005)	(0.004)	(0.006)
FISCAL	0.025***	0.018***	0.028***	0.021***	0.028***	0.021***	0.041***	0.031***
	(0.004)	(0.005)	(0.004)	(0.005)	(0.004)	(0.005)	(0.004)	(0.006)
Controls	No	Yes	No	Yes	No	Yes	No	Yes
N	3794	1783	4020	1931	4036	1943	3830	1834
Adj. R^2	0.023	0.186	0.026	0.169	0.029	0.177	0.031	0.169
p(FISCAL vs. SOCIAL)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Note: OLS estimates from the regression of equation (1): $y_i = \beta_0 + \sum_{k=1}^{2} \beta_k \times TREATMENT_{ik} + X_i'\gamma + \varepsilon_{1i}$. **Dependent variable**: desired adjustment in percentage points of respective tax. **Independent variables**: experimental group dummy, constant, and control variables (size group (EC's definition for small and medium-sized enterprises (SMEs)), industry (WZ08 1-digit), legal form, gender of manager, manager education, position in company, dummy equal to 1 if decision-maker finds stimulus justified and 0 otherwise, medium-term tax expectations) if indicated. Compared to regressions in Table 2, our set of control variables additionally incorporates expectations over the respective tax rate in regressions that include controls (as indicated). p(FISCAL vs. SOCIAL) represents the p-value from a test of significant difference between the FISCAL and SOCIAL treatments. Robust standard errors in parentheses. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Figure 2: Distribution of Conditional Average Treatment Effects (CATE) estimated by Causal Forest

(a) Corporate Tax

(b) Business Tax

(c) Income Tax

(d) Capital Gains Tax
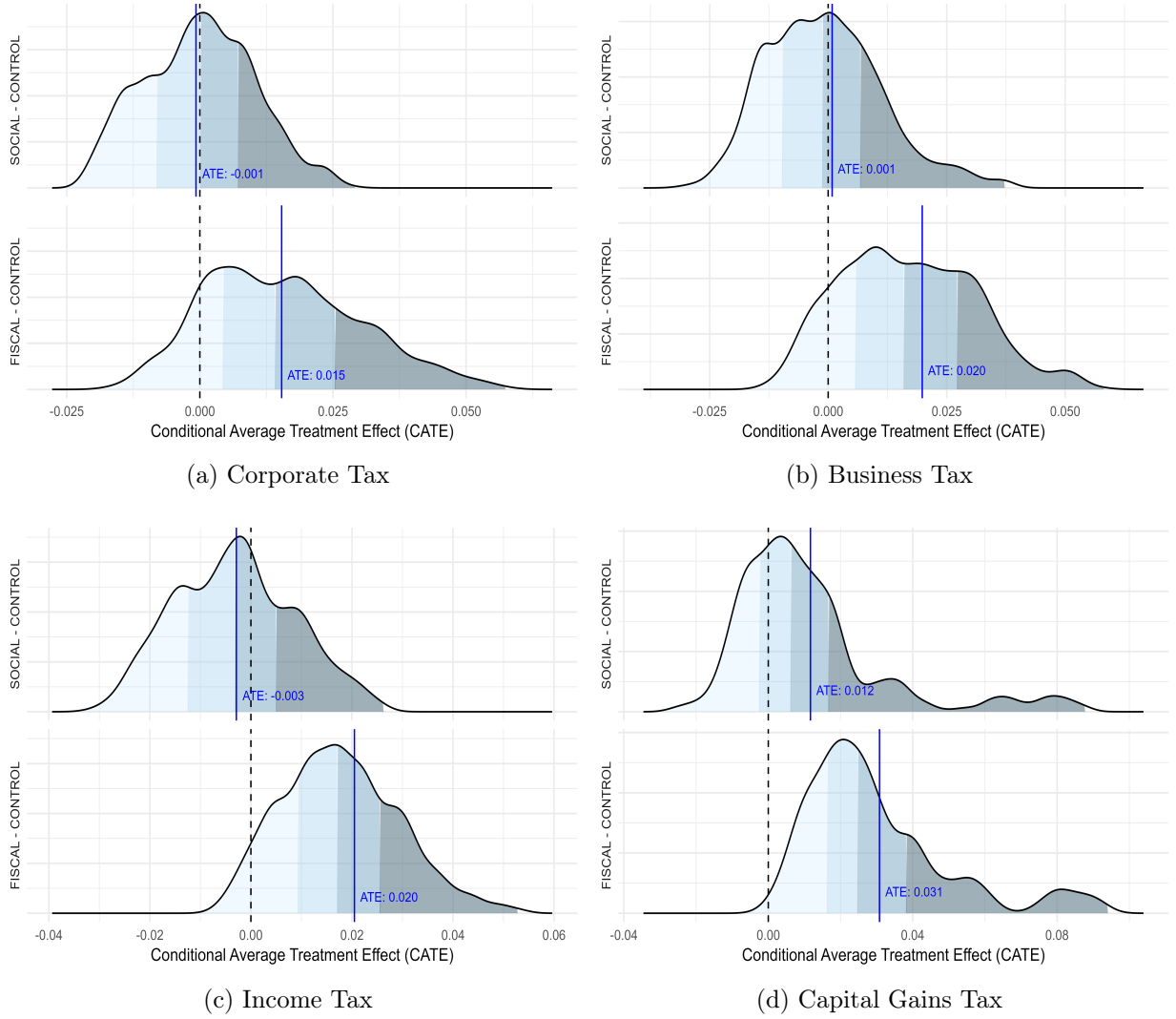
Note: Figure 2 shows estimated distributions of conditional average treatment effects (CATE) of the two experimental treatments SOCIAL and FISCAL relative to firms in the CONTROL group for the *corporate tax*, *business tax*, *income tax* and *capital gains tax*. The shaded regions represent the quartile ranges of each distribution. The covariates included in the causal forest estimation comprise the following variables, which were already part of the set of control variables in the Section 4.3: size group (EC's definition for small and medium-sized enterprises (SMEs)), industry (WZ08 1-digit), legal form, gender of manager, manager education, position in company, dummy equal to 1 if decision-maker finds stimulus justified and 0 otherwise and medium-term tax expectations. The R package *grf* (Athey et al., 2019; Nie and Wager, 2021) was used to create Figure 2.

Table 4: Heterogeneous Effects by Attitude towards Fiscal Stimulus

	Estimated GATE (SE in parentheses)		
	CONTROL	SOCIAL	FISCAL
Corporate Tax			
Not Justified or Neutral	-0.037***	-0.041***	-0.019***
	(0.009)	(0.006)	(0.003)
Justified	-0.031***	-0.030***	0.002
	(0.004)	(0.002)	(0.002)
Difference: Justified - Not Justified or Neutral	0.006	0.010*	0.020***
	(0.010)	(0.006)	(0.004)
Business Tax			
Not Justified or Neutral	-0.041***	-0.050***	-0.026***
	(0.009)	(0.006)	(0.003)
Justified	-0.039***	-0.041***	-0.006**
	(0.004)	(0.002)	(0.002)
Difference: Justified - Not Justified or Neutral	0.002	0.009	0.020***
	(0.010)	(0.006)	(0.004)
Income Tax			
Not Justified or Neutral	-0.032***	-0.051***	-0.022***
	(0.009)	(0.006)	(0.003)
Justified	-0.032***	-0.032***	0.005**
	(0.004)	(0.002)	(0.002)
Difference: Justified - Not Justified or Neutral	0.001	0.019***	0.027***
	(0.010)	(0.006)	(0.004)
Capital Gains Tax			
Not Justified or Neutral	-0.019*	-0.013*	0.019***
	(0.011)	(0.006)	(0.004)
Justified	0.001	0.010***	0.048***
	(0.004)	(0.003)	(0.003)
Difference: Justified - Not Justified or Neutral	0.020*	0.023***	0.030***
	(0.012)	(0.007)	(0.005)

Note: Table 4 presents estimated group average treatment effects (GATE) for the *corporate tax*, *business tax*, *income tax* and *capital gains tax* for firms varying by their attitude towards the fiscal stimulus. Estimated GATEs are based on the regression in column (1) (*corporate tax*), column (2) (*business tax*), column (3) (*income tax*) and column (4) (*capital gains tax*) shown in Table D.2 in Online Appendix D.2. The regressions are based on equation (5): $y_i = \alpha + \beta \times Justified_i + \sum_{k=1}^{2} \delta_k \times TREATMENT_{ik} + \sum_{k=1}^{2} \theta_k \times Justified_i \times TREATMENT_{ik} + \varepsilon_i$. Dependent variable: desired adjustment in percentage points of *corporate tax*, *business tax*, *income tax* and *capital gains tax*. Independent variables: experimental group dummy, dummy variable $Justified_i$ equal to one for firm decision-makers finding the fiscal stimulus absolutely justified or justified and zero otherwise, and a constant. The row *Difference* presents the difference between the GATE of firms finding the stimulus package justified compared to firms with a neutral or opposing attitude towards the stimulus package for the respective treatment groups (slight differences due to rounding). Robust Standard Errors are in parentheses. Significance Levels are: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 5: Heterogeneous Effects by Legal Form

Corporate Tax:	Estimated GATE (SE in parentheses)		
	CONTROL	SOCIAL	FISCAL
Non-incorporated	-0.008	-0.020***	0.009
	(0.008)	(0.007)	(0.006)
Incorporated	-0.038***	-0.035***	-0.010***
	(0.004)	(0.003)	(0.002)
Difference: Incorporated - Non-incorporated	-0.031***	-0.016**	-0.018***
	(0.009)	(0.007)	(0.006)

Note: Table 5 presents estimated group average treatment effects (GATEs) for the *corporate tax* for firms varying by legal form. Estimated GATEs are based on the regression in column (1) shown in Table D.1 in the Online Appendix D.1. The regressions are based on equation (5): $y_i = \alpha + \beta \times Corporation_i + \sum_{k=1}^{2} \delta_k \times TREATMENT_{ik} + \sum_{k=1}^{2} \theta_k \times Corporation_i \times TREATMENT_{ik} + \varepsilon_i$. Dependent variable: desired adjustment of corporate tax in percentage points. Independent variables: experimental group dummy, dummy variable $Corportation_i$ equal to one for corporations and zero for sole proprietorships/business partnerships, and a constant. The row *Difference* presents the difference between the GATE of incorporated firms compared to non-incorporated firms for the respective treatment groups (slight differences due to rounding). Robust Standard Errors are in parentheses. Significance Levels are: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Online Appendix for

Narratives about Fiscal Policy:
Are Firm Decision-Makers' Tax Preferences Driven by
Redistribution or Fiscal Consolidation Motives?

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A Summary Statistics

Section A provides summary statistics and balancing tests for both firm and manager characteristics. Moreover, summary statistics for our outcome variables of interest are presented. Lastly, we contrast our sample of firms against the entire population of firms in the contact database from which our participants come from. Additionally, we compare our participating firms with those in the German Federal Statistical Office's official business registry for 2020.

A.1 Firm and Manager Characteristics - Summary Statistics and Balancing Tests

Table A.1 presents summary statistics of firm and manager characteristics for the overall sample of firms and for the respective experimental groups. Following the definition of small and medium-sized enterprises (SMEs) of the European Commission (EC), the majority of firms (89% – *Very Small* or *Small*) in our sample employ less than 50 employees and have less than 10 million euros in revenue. In terms of legal structures, the majority of firms are corporations (71%). A larger share of sample firms (15%) are also sole proprietorships or business partnerships. Most of our firms come from trade (16%), manufacturing (12%) or information and communication (13%). Concerning firm decision-makers' attributes, most firm representatives are male (81%), possess a university degree (60%), and serve as the firm's owner or manager (91%).

Table A.1 indicates that we successfully randomized firms into our different experimental groups. Except for industry sector K (Financial and insurance activities) and M (Professional, scientific, and technical activities), all p-values from Wald chi-square test for equality of means across the experimental groups are insignificant at conventional levels. The share of 5% (2/37) significant p-values is well in line with what one would expect in the absence of any systematic differences between groups. Nevertheless, to increase the power to precisely estimate treatment effects and to control for these minor imbalances, we include a vector of control variables X_i as additional robustness checks in our regressions in Section 4 of the main paper.

A.2 Outcome Variables

Table A.2 presents summary statistics for the outcome variables of the empirical analysis for the overall sample and the experimental treatment groups, respectively. As described in Section 2 of the main text, we only include firms in our empirical analysis that participate in the survey experiment and do not drop out before the experiment section was reached. Nevertheless, as we do not force participants to answer the survey questions, we observe varying numbers of observations for each respective outcome variable in our empirical analysis.

Concentrating on firms in the CONTROL group, which are unaffected by an experimental treatment, we make the following observations: First, we observe that 85% of firm decision-makers consider the fiscal stimulus program to be justified or absolutely justified. Second, firms do not expect medium-term *corporate tax* (0.4 percentage points), *business tax* (0.8 percentage points) and *income tax* (0.8 percentage points) to increase massively. In contrast, firm decision-makers expect the *capital gains tax* to strongly increase by 2.3 percentage points, which would translate

Table A.1: Descriptive Statistics and Balancing Tests – Firm and Manager Characteristics

	Total	CONTROL	SOCIAL	FISCAL	P-value for equality across groups
Size groups - Revenues/Employees (SME-EU Definition 2003/361)					
Very Small	0.614	0.617	0.606	0.622	0.483
Small	0.272	0.263	0.282	0.266	0.299
Medium	0.082	0.090	0.080	0.079	0.462
Large	0.032	0.030	0.032	0.033	0.876
N	6,614	1,413	2,627	2,574	
Legal Forms					
Sole Proprietorship & Business Partnerships	0.149	0.152	0.147	0.150	0.901
Mixed Legal Forms (GmbH & Co. KG, KGaA)	0.099	0.099	0.096	0.101	0.820
Corporations	0.711	0.709	0.717	0.707	0.665
Other	0.040	0.040	0.039	0.042	0.889
N	7,816	1,778	3,022	3,016	
Economic Sector (1-digit WZ08)					
A Agriculture, forestry, and fishing	0.010	0.015	0.009	0.009	0.214
B Mining and quarrying	0.001	0.001	0.001	0.002	0.491
C Manufacturing	0.123	0.130	0.128	0.114	0.169
D Energy Supply	0.013	0.015	0.011	0.014	0.487
E Water supply/Sanitation/Waste/Pollution abatement	0.005	0.005	0.004	0.006	0.601
F Construction	0.073	0.071	0.070	0.078	0.514
G Trade	0.161	0.164	0.159	0.161	0.908
H Transport and Storage	0.024	0.025	0.025	0.021	0.524
I Accommodation and food service activities	0.045	0.047	0.046	0.044	0.891
J Information and communication	0.134	0.130	0.134	0.137	0.822
K Financial and insurance activities	0.032	0.033	0.026	0.037	0.087*
L Real estate activities	0.033	0.036	0.029	0.035	0.298
M Professional, scientific, and technical activities	0.108	0.090	0.119	0.107	0.010**
N Other economic service activities	0.075	0.079	0.072	0.075	0.699
O Public administration and defense/Social security	0.004	0.004	0.005	0.004	0.803
P Education	0.016	0.015	0.019	0.014	0.387
Q Health/Social Services	0.047	0.046	0.045	0.050	0.609
R Arts/Entertainment/Recreation	0.041	0.048	0.041	0.037	0.240
S Other services	0.047	0.039	0.050	0.050	0.160
T Manufacture of goods/services by private hh. for own use	0.006	0.007	0.007	0.005	0.534
U Extraterritorial organisations and entities	0.001	0.001	0.001	0.001	0.830
N	6,722	1,427	2,671	2,624	
Gender					
Male	0.808	0.795	0.809	0.813	0.517
N	4,680	951	1,879	1,850	
Education					
University Degree or PhD	0.603	0.578	0.609	0.609	0.214
Master (technical vocations)	0.136	0.141	0.129	0.142	0.439
Apprenticeships or Other	0.239	0.259	0.241	0.228	0.188
No training	0.022	0.023	0.022	0.021	0.975
N	4,829	974	1,929	1,926	
Position					
Clerk/Other	0.053	0.052	0.056	0.052	0.840
Department Head	0.035	0.034	0.039	0.031	0.367
Owner/CEO	0.912	0.914	0.905	0.918	0.391
N	4,927	998	1,975	1,954	

Note: Descriptive statistics of firm and manager characteristics for the total sample and the experimental groups, respectively. *P*-values in the last column of a Wald chi-square test for the equality of means across the three experimental groups. Size groups - Revenues/Employees (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 Federal Statistical Office (2008 edition; WZ 2008). ***, **, * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

into an increase of 9% considering the current flat *capital gains tax* of 25%. Third, we observe that the *capital gains tax* is the only tax firm decision-makers do not want to reduce strongly (-0.5 percentage points). For the other type of taxes, we observe strong desired downward adjustments (*corporate tax*: -3.2 percentage points, *business tax*: -4.2 percentage points, *income tax*: -3.4 percentage points). These reductions are also economically substantial. For instance, given a

current flat *corporate tax* of 15%, the desired reduction of -3.2 percentage points would translate into a reduction of 21%. Overall, from a fiscal policy perspective, increasing the capital gains tax would have the highest support from the perspective of firm decision-makers.

Table A.2: Descriptive Statistics – Outcome Variables

	Total	CONTROL	SOCIAL	FISCAL
Attitude towards Fiscal Stimulus				
Absolutely Not Justified	0.050	0.018	0.014	0.099
Not Justified	0.085	0.036	0.044	0.147
Neutral	0.121	0.097	0.096	0.156
Justified	0.459	0.445	0.484	0.439
Absolutely Justified	0.285	0.405	0.362	0.158
N	7,197	1,228	2,998	2,971
Medium-term Expected Tax Changes				
Corporate Tax				
Mean	0.011	0.004	-0.000	0.027
SD	(0.072)	(0.076)	(0.075)	(0.064)
N	3,393	708	1,326	1,359
Business Tax				
Mean	0.017	0.008	0.005	0.033
SD	(0.081)	(0.086)	(0.083)	(0.072)
N	3,676	759	1,442	1,475
Income Tax				
Mean	0.017	0.008	0.006	0.033
SD	(0.077)	(0.080)	(0.080)	(0.068)
N	3,741	761	1,473	1,507
Capital Gains Tax				
Mean	0.035	0.023	0.022	0.052
SD	(0.079)	(0.079)	(0.080)	(0.073)
N	3,460	706	1,335	1,419
Desired Tax Adjustment				
Corporate Tax				
Mean	-0.022	-0.032	-0.032	-0.006
SD	(0.082)	(0.085)	(0.084)	(0.077)
N	3,794	790	1,480	1,524
Business Tax				
Mean	-0.031	-0.042	-0.043	-0.014
SD	(0.087)	(0.092)	(0.088)	(0.079)
N	4,020	846	1,564	1,610
Income Tax				
Mean	-0.023	-0.034	-0.035	-0.005
SD	(0.083)	(0.088)	(0.085)	(0.074)
N	4,036	844	1,574	1,618
Capital Gains Tax				
Mean	0.016	-0.005	0.006	0.036
SD	(0.097)	(0.099)	(0.098)	(0.092)
N	3,830	778	1,473	1,579

Note: Descriptive statistics for the outcome variables for the overall sample and the experimental groups, respectively.

A.3 Sample Firms vs. Orbis Reference Group

To ensure that no systematic bias affects the selection of firms participating in our survey, we compare the characteristics of our participating firms with those of non-participating firms in the *Orbis* database (the contact database from which our sample firms were drawn). Table A.3 indicates that the participating and non-participating *Orbis* firms are comparable with respect to the number of employees, total assets and revenues. Participating firms are on average around 3 years younger and have a slightly lower equity ratio (2 percentage points). Although these differences are statistically significant, economically they are of minor importance. Overall, there seems to be no severe selection bias with regard to firms choosing to participate in our survey.

Table A.3: Sample Firms vs. Orbis Reference Group

	Sample Firms			Orbis Reference Group			
	N	Mean	Median	N	Mean	Median	t-statistic
Firm Age	5,127	20.76	15.00	473,783	23.22	18.00	7.82***
Number of Employees	1,664	31.44	13.00	399,689	36.25	12.00	0.84
Total Assets	868	3,968,898.32	822,350.50	257,959	7,567,204.73	907,651.00	0.90
Equity Ratio	492	0.43	0.41	151,908	0.45	0.42	2.04**
Revenues (in €)	607	9,376,936.17	1,986,650.00	129,226	17,161,387.72	2,010,761.50	0.58

Note: Table A.3 compares the sample of participating firms with an *Orbis* reference group of German firms (reporting year 2019) regarding the variables firm age, number of employees, total assets, equity ratio and revenues. We present *t-Tests* and the number of observations, the mean and median of each firm characteristic. We exclude 2,691 firm, which refuse to get their data in the survey linked with external data sources. Equity ratio is defined as one minus the ratio between current and non-current liabilities divided by total assets. For revenues, operating revenues (turnover) in Orbis is used. We require non-negative entries for current, non-current liabilities and total assets and a debt ratio lying between 0 and 1 to be included in the analysis of Table A.3. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

A.4 Sample Firms vs. Business Register

Next, we evaluate how our sample of participating firms aligns with the broader German firm landscape in terms of revenues, employees, and industry sector. Table A.4 compares the sample of participating firms with the population of German firms for reporting year 2020. Information about the German business universe comes from the German Federal Statistical Office (2020). With regard to revenues and employees, our sample is slightly larger compared to the firms in the overall population of firms. When we compare the distributions in terms of 1-digit WZ08 economic sector, our sample and the population of firms are mostly comparable, with minor exceptions. We slightly overestimate firms from manufacturing as well as information and communication, and underrepresent firms from construction. Overall, our sample of firms provides a comprehensive representation of the German business landscape, encompassing firms of every size and across all sectors of the economy.

Table A.4: Descriptives Sample Firms vs. Business Register 2020

Panel A: Revenues (in €)

	Sample	Business Register 2020
<= 2 Mio.	0.753	0.928
More than 2 Mio. - 10 Mio.	0.164	0.053
More than 10 Mio. - 50 Mio.	0.057	0.014
More than 50 Mio.	0.026	0.004
N	7,632	3,374,583

Panel C: Employees subject to social insurance (in full positions)

	Sample	Business Register 2020
0 - 9	0.651	0.869
10 - 49	0.259	0.105
50 - 249	0.066	0.022
More than 250	0.024	0.005
N	6,717	3,374,583

Panel D: Economic Sector (1-digit WZ08 Classification)

	Sample	Business Register 2020
A Agriculture, forestry, and fishing	0.010	
B Mining and quarrying	0.001	0.001
C Manufacturing	0.123	0.065
D Energy Supply	0.013	0.021
E Water supply/Sanitation/Waste/Pollution abatement	0.005	0.003
F Construction	0.073	0.113
G Trade	0.161	0.171
H Transport and Storage	0.024	0.032
I Accommodation and food service activities	0.045	0.069
J Information and communication	0.134	0.039
K Financial and insurance activities	0.032	0.022
L Real estate activities	0.033	0.061
M Professional, scientific, and technical activities	0.108	0.148
N Other economic service activities	0.075	0.065
O Public administration and defense/Social security	0.004	†
P Education	0.016	0.022
Q Health/Social Services	0.047	0.074
R Arts/Entertainment/Recreation	0.041	0.030
S Other services	0.047	0.066
T Manufacture of goods/services by private households for own use	0.006	†
U Extraterritorial organisations and entities	0.001	†
N	6,722	3,374,583

Note: Table A.4 presents distributions of firms with regard to revenues, number of full-time employees and economic sector (1-digit WZ08 classification (German Federal Statistical Office, 2008)) for our sample of firms and the population of firms in Germany for reporting year 2020 (German Federal Statistical Office, 2020). †: Information on marginal distributions for the respective industries not available from German company register.
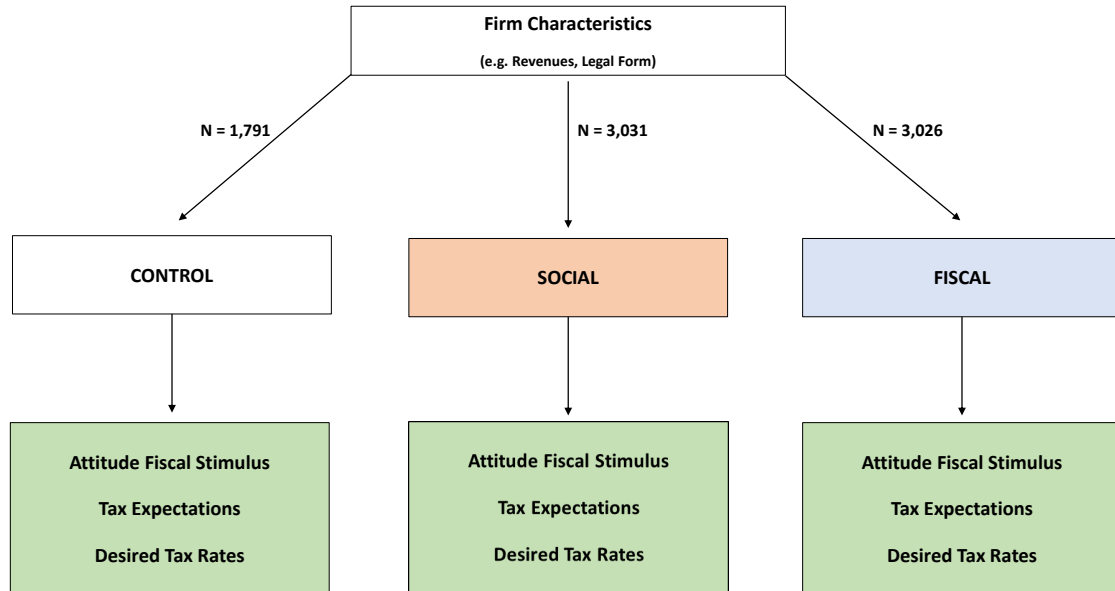
B Experimental Setup

In Section B of the Online Appendix, we detail the design of our survey experiment, present screenshots of the original experimental treatments as they appeared in the survey (in German) and provide screenshots of the original survey questions of our outcome question (also in German). In addition, we also offer English translations for all experimental treatments and outcome questions.

B.1 Experimental Design

Figure B.1 presents the design of our survey experiment. As described in Section 3 in the main text, we start by asking all survey participants about general characteristics of the firm, such as legal form or revenues. Survey participants are then randomly assigned to one of the experimental groups (CONTROL, SOCIAL, FISCAL). Depending on the assigned experimental group, survey participants then receive different information treatments in the SOCIAL and FISCAL treatment or no text when assigned to the CONTROL group. After receiving the experimental treatment, all firm decision-makers are first asked whether they think it is justified for the government to intervene with a stimulus package to support the economy. Next, participants are asked about their expectations concerning future tax rates and their preferences regarding tax adjustments. The survey then goes on with further questions not related to the survey experiment.

Figure B.1: Experimental Design

Note: Figure B.1 illustrates the design of the survey experiment.

B.2 Treatments

Section B.2 presents screenshots of the original experimental treatments as they appeared in the survey (in German). In addition, we also offer English translations for all experimental treatments.

B.2.1 CONTROL Group

In the CONTROL group, the survey participants did not receive an experimental treatment. Survey participants were only asked about their perspective on the fiscal stimulus package. In the CONTROL group, where we do not refer to a specific stimulus package, we use the indefinite article 'a' when referring to the stimulus package. Figure B.2 displays the original survey question in German. We also provide the English translation of the survey question further below.

Figure B.2: CONTROL Group - Survey Screen

Note: Figure B.2 illustrates the survey screen concerning the attitude towards the fiscal stimulus package for the CONTROL group.

English Translation:
Do you think it is justified for the government to intervene with a stimulus package?

Answer Options:
Absolutely Justified, Justified, Neither Justified nor Unjustified, Not Justified, Absolutely Not Justified

B.2.2 FISCAL Treatment

In the FISCAL treatment, firms are presented with the text shown in Figure B.3. In this section, we also provide an English translation of the experimental treatment text. In the FISCAL treatment, we mention the size of the stimulus package as well as potential fiscal consequences of the state intervention like the need for higher government revenues or spending cuts due to increased government spending in the wake of the Corona crisis. In addition, we make the prospect of tax

increases more credible by giving an example from the 2008/2009 financial crisis. On the same screen, participants are also asked about their perspective on the fiscal stimulus package, similar to firms in the CONTROL group. Moreover, as we explicitly mention a 130 billion EUR stimulus package, we use the demonstrative *'this'* to indicate that we refer to the stimulus package mentioned in the treatment. Moreover, the addition *'at the taxpayer's expense'* was only used in the FISCAL treatment, as the FISCAL treatment wants to stress the need to counter-finance the state intervention.

Figure B.3: FISCAL Treatment - Survey Screen

Note: Figure B.3 illustrates the survey screen concerning the experimental treatment and the attitude towards the fiscal stimulus package for the FISCAL treatment group.

English Translation:

Background information:

*The federal government has pledged support of **130 billion EUR** as part of the economic stimulus package adopted in June.*

The increased government spending and additional debt incurred in the wake of the Corona crisis could necessitate higher government revenues or spending cuts in the future.

After the 2008/2009 financial crisis, for example, tax rates were raised in many European countries.

Representatives of the CDU have already announced that the debt incurred as a result of the Corona crisis will be reduced again by 2030.

Do you think it is justified for the government to intervene with this stimulus package at the tax-payer's expense?

Answer Options:
Absolutely Justified, Justified, Neither Justified nor Unjustified, Not Justified, Absolutely Not Justified

B.2.3 SOCIAL Treatment

In the SOCIAL treatment, firms are presented with the text shown in Figure B.4. Again, we also provide an English translation of the treatment text further below. Similar to the FISCAL treatment, we mention the size of the stimulus package. Furthermore, we stress that many firms are in distress due to the Corona crisis through no fault of their own. We mention the hospitality industry as a striking example of a sector where revenue decreases have been extensive, as many firms in this sector had to shut down temporarily due to public life restrictions during the Corona outbreak. Analogue to the FISCAL treatment, participants are then asked about their perspective on the fiscal stimulus package. Again, we use the demonstrative *'this'* to indicate that we refer to the stimulus package mentioned in the treatment.

Figure B.4: SOCIAL Treatment - Survey Screen

Hintergrundinformation:
Viele Unternehmen sind durch die Corona-Krise unverschuldet in Not geraten, so ist zum Beispiel im Gastgewerbe der Umsatz im Vergleich zum Vorjahresmonat um 75,8 Prozent eingebrochen. Der Bund hat im Rahmen des im Juni beschlossenen Konjunkturprogramms Unterstützung in Höhe von **130 Milliarden Euro** zugesagt.

Halten Sie es für gerechtfertigt, dass die Regierung mit diesem Konjunkturpaket eingreift?

| Absolut gerechtfertigt | Gerechtfertigt | Weder gerechtfertigt noch ungerechtfertigt | Nicht gerechtfertigt | Überhaupt nicht gerechtfertigt |

Note: Figure B.4 illustrates the survey screen concerning the experimental treatment and the attitude towards the fiscal stimulus package for the SOCIAL treatment group.

English Translation:

Background information:

*Many companies have experienced hardship through no fault of their own as a result of the Corona crisis, with sales in the hospitality industry, for example, plummeting 75.8 percent compared to the same month last year. The federal government has pledged support of **130 billion EUR** as part of the economic stimulus package adopted in June.*

Do you think it is justified for the government to intervene with this stimulus package?

Answer Options:

Absolutely Justified, Justified, Neither Justified nor Unjustified, Not Justified, Absolutely Not Justified

B.3 Tax Expectations

After the experimental intervention, we first ask the decision-makers of participating firms about their medium-term tax expectations. We ask for tax expectations first, as we want to verify that firm decision-makers do not confuse tax expectations and preferences about tax policy, i.e., their preference to pay taxes. Our study's primary aim is to discern how our treatments influence firm decision-makers' stance on tax policy, taking into account their tax expectations.

Figure B.5 provides a screenshot of the original survey question in German. In addition, we present the English translation below. Answers can be given on a slider ranging from -20 percentage points to 20 percentage points. Additionally, a *Do not know* option is provided.

Figure B.5: Expected Medium-Term Tax Changes - Survey Screen

Note: Figure B.5 presents the original survey question concerning the expected medium-term tax rate change.

English Translation:

Based on your current tax rate, what changes in the following tax rates do you expect in the **medium term** *(12-24 months)?*

Please indicate your expectation in percentage points.

Answer Options:
Corporate Tax, Local Business Tax, Income Tax, Social Security Contributions, Solidarity Contribution, Capital Gains Tax

Answer Scale: [-20 percentage points, 20 percentage points]; Do not know option given

B.4   Desired Adjustment Taxes

Figure B.6 presents a screenshot of the original survey question in German concerning the desired adjustment of the *corporate tax*, *local business tax*, *income tax* and the *capital gains tax*. In this section, we also provide the English translation of the survey question. Similar to the question concerning medium-term tax expectations, answers can be given on a slider ranging from -20 percentage points to 20 percentage points. Additionally, a *Do not know* option is provided.

Figure B.6: Desired Taxes

Note: Figure B.6 illustrates the original survey question concerning the desired tax adjustment.

English Translation:

From your company's perspective, by how many percentage points would you want to adjust the

following types of taxes based on your current tax rate to ensure that the government is able to support businesses in crises?
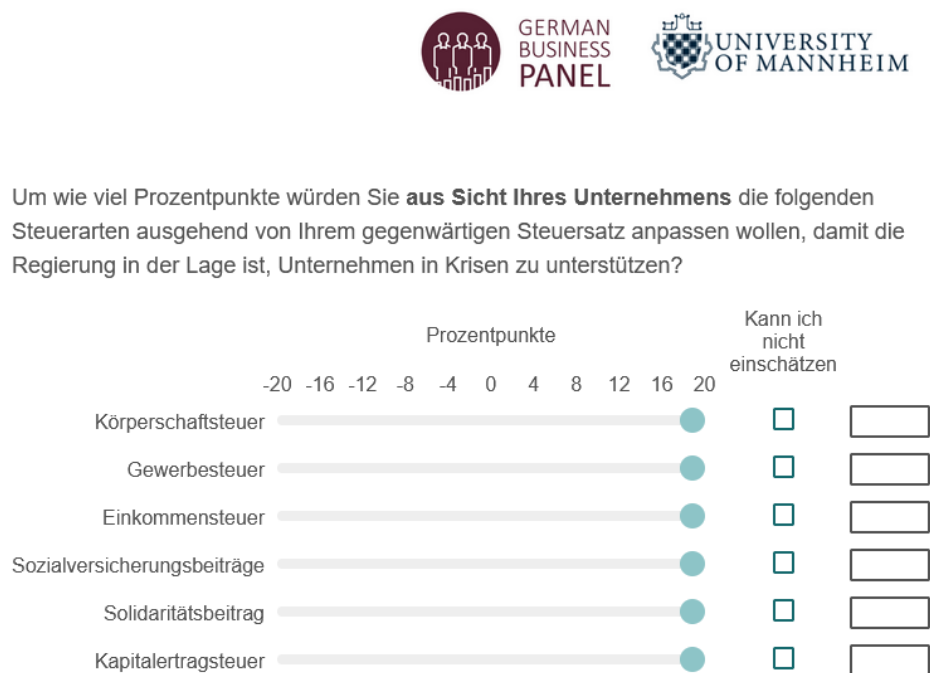
Answer Options:
Corporate Tax, Local Business Tax, Income Tax, Social Security Contributions, Solidarity Contribution, Capital Gains Tax
Answer Scale: *[-20 percentage points, 20 percentage points]; Do not know option given*

C   Supplementary Analysis - Main Results

C.1   Robustness Analysis - Attitude Fiscal Stimulus

In Section 4.1 of the main text, we show that, in our setting, the SOCIAL treatment does not have a significant effect compared to the CONTROL group on the perception of the stimulus program being just. However, when emphasizing the higher tax burden in the FISCAL treatment, firm decision-makers are less likely to perceive the stimulus as justified, as they become more aware of the cost of the fiscal stimulus. In this section, we demonstrate that the treatment effects are robust to considering two additional estimation methods.

First, we test the robustness of our results using an *ordered probit model*, in which the dependent variable is defined as a 5-point Likert scale variable (i.e., *Not Absolutely Justified*, *Not Justified*, *Neither Justified Nor Unjustified*, *Justified*, *Absolutely Justified*). The ordered probit model is particularly suitable for variables representing ordered categories. In particular, it accounts for the order of the categories without assuming equal distances between the categories. This is in contrast to a linear regression approach, which assumes continuous and equidistant intervals. Table C.1 presents the results of the ordered probit regression. We observe that the FISCAL treatment reduces the likelihood of perceiving the stimulus as just. Furthermore, the marginal effects presented in Table C.1 show that decision makers in the FISCAL treatment are less likely to select the *Absolutely Justified* category and are more likely to select the categories *Neither Justified Nor Unjustified*, *Not Justified*, or *Not Absolutely Justified* compared to the CONTROL group. In contrast, depending on the specification, the SOCIAL treatment either has no statistically significant impact or only a weak impact on attitudes towards the fiscal stimulus compared to the CONTROL group.

Second, we test the robustness of the treatment effects using a logistic estimation strategy, in which the dependent variable is equal to 1 for firm decision-makers selecting the items *Absolutely Justified* or *Justified* and is zero otherwise. An advantage of using a logistic regression is that the predicted probabilities lie between 0 and 1, which may not hold when using a linear regression model with a binary dependent variable. Table C.2 shows that the odds ratios for the SOCIAL treatment group in both models are very close to 1, indicating that the SOCIAL treatment has no significant effect on the odds of firm decision-makers considering the fiscal stimulus as justified compared to decision-makers in the CONTROL group. However, the odds ratios for the FISCAL treatment group in both models are significantly less than 1. This indicates that firms in the FISCAL treatment group have substantially lower odds of considering the fiscal stimulus as justified compared to the CONTROL group (i.e., a decrease in odds of around 73% (1-0.263)).

Overall, both additional estimation methods support our experimental results presented in the main paper regarding the perception of the stimulus program.

Table C.1: Attitude towards Fiscal Stimulus: Ordered Probit Regressions

Dependent Var.: **Attitude towards Fiscal Stimulus**		
	(1)	(2)
Baseline CONTROL		
SOCIAL	-0.071*	-0.076
	(0.037)	(0.049)
FISCAL	-0.809***	-0.821***
	(0.038)	(0.050)
cut1	-2.135***	-2.381***
	(0.041)	(0.235)
cut2	-1.544***	-1.723***
	(0.036)	(0.233)
cut3	-1.060***	-1.268***
	(0.034)	(0.233)
cut4	0.247***	0.065
	(0.033)	(0.232)
Controls	No	Yes
N	7197	4291
pseudo R^2	0.043	0.052

	Average Predictions		Marginal Effects	
			Baseline CONTROL	
Absolutely Not Justified				
CONTROL	0.016***	0.013***		
	(0.002)	(0.002)		
SOCIAL	0.020***	0.016***	0.003**	0.003
	(0.001)	(0.002)	(0.002)	(0.002)
FISCAL	0.092***	0.078***	0.076***	0.065***
	(0.005)	(0.006)	(0.004)	(0.005)
Not Justified				
CONTROL	0.045***	0.044***		
	(0.003)	(0.004)		
SOCIAL	0.051***	0.050***	0.006*	0.006
	(0.003)	(0.003)	(0.003)	(0.004)
FISCAL	0.139***	0.143***	0.094***	0.099***
	(0.005)	(0.007)	(0.005)	(0.007)
Neither Justified Nor Unjustified				
CONTROL	0.083***	0.072***		
	(0.004)	(0.005)		
SOCIAL	0.091***	0.079***	0.008*	0.007
	(0.003)	(0.004)	(0.004)	(0.005)
FISCAL	0.170***	0.153***	0.086***	0.082***
	(0.005)	(0.007)	(0.005)	(0.006)
Justified				
CONTROL	0.453***	0.444***		
	(0.007)	(0.010)		
SOCIAL	0.463***	0.457***	0.011*	0.013
	(0.006)	(0.008)	(0.006)	(0.008)
FISCAL	0.454***	0.466***	0.001	0.022***
	(0.006)	(0.008)	(0.006)	(0.008)
Absolutely Justified				
CONTROL	0.403***	0.427***		
	(0.013)	(0.016)		
SOCIAL	0.375***	0.398***	-0.027*	-0.029
	(0.008)	(0.010)	(0.014)	(0.019)
FISCAL	0.146***	0.160***	-0.257***	-0.267***
	(0.006)	(0.007)	(0.013)	(0.017)
Controls	No	Yes	No	Yes
N	7,197	4,291	7,197	4,291

Note: Table C.1 presents results from estimating equation (1) as an Ordered Probit Regression. **Dependent variable**: Attitude towards fiscal stimulus measured on a 5-point Likert scale (1 = Absolutely Not Justified, 2 = Not Justified, 3 = Neither Justified Nor Unjustified, 4 = Justified, 5 = Absolutely Justified). **Independent variables**: experimental group, constant, and control variables if stated (size group (EC's definition for small and medium-sized enterprises (SMEs)), industry (WZ08 1-digit), legal form, gender of manager, manager education, position in company. Average and marginal effects are presented. Robust standard errors in parentheses. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table C.2: Attitude towards Fiscal Stimulus: Logistic Regression

Dependent Var.:	Attitude towards Fiscal Stimulus	
	Binary (0/1)	Binary (0/1)
	Odd Ratios	Odd Ratios
	(1)	(2)
Baseline CONTROL		
SOCIAL	0.976	0.996
	(0.092)	(0.129)
FISCAL	0.263***	0.263***
	(0.023)	(0.032)
Controls	No	Yes
N	7,197	4,289
pseudo R^2	0.069	0.079

Note: Table C.2 presents odd ratios of a logistic regression from equation (1). **Dependent variable**: Dummy variable equal to 1 for firm decision-makers selecting the items *Absolutely Justified* or *Justified* and zero otherwise. **Independent variables**: experimental group, constant, and control variables if stated (size group (EC's definition for small and medium-sized enterprises (SMEs)), industry (WZ08 1-digit), legal form, gender of manager, manager education, position in company. Robust standard errors in parentheses. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

C.2 Multiple Hypotheses Testing

As our experiment involves multiple treatments (FISCAL, SOCIAL) and several outcomes of interest (e.g., corporate tax, business tax, income tax, capital gains tax), we simultaneously test several null hypotheses when comparing the effects of the treatments against the control group and against each other. However, testing multiple hypotheses at the same time increases the likelihood of false rejections beyond the preferred level. To mitigate this, we adopt the approach developed by List et al. (2019), which utilizes a bootstrap method for testing multiple hypotheses simultaneously while incorporating dependence information among the p-values—an aspect not considered by conventional methods like the Holm (1979) correction. This integration significantly enhances the power to detect truly false null hypotheses.

Table C.3 presents the multiplicity-adjusted p-values following the approach of List et al. (2019), alongside the more traditional p-values calculated using the Holm (1979) method. We compute the adjusted p-values using the STATA package *mhtexp* provided by List et al. (2019). Overall, compared to the results in Section 4 of the main paper, our findings on treatment effects across the experimental groups remain highly robust after adjusting for multiple hypotheses testing, reinforcing confidence in the validity of the reported treatment effects.

Table C.3: Multiple Hypothesis Tests - Main Results

	Mean Difference	Multiplicity adj. *p*-Values	
		List et al. (2019)	Holm (1979)
Attitude towards Fiscal Stimulus (0 - Not Justified/Neutral, 1 - Justified)			
CONTROL vs. SOCIAL	0.003	0.788	0.788
CONTROL vs. FISCAL	0.252	0.000***	0.001***
SOCIAL vs. FISCAL	0.249	0.000***	0.001***
Corporate Tax Expectations (in p.p.)			
CONTROL vs. SOCIAL	0.004	0.527	0.983
CONTROL vs. FISCAL	0.022	0.000***	0.003***
SOCIAL vs. FISCAL	0.027	0.000***	0.002***
Business Tax Expectations (in p.p.)			
CONTROL vs. SOCIAL	0.004	0.624	1.000
CONTROL vs. FISCAL	0.025	0.000***	0.002***
SOCIAL vs. FISCAL	0.028	0.000***	0.002***
Income Tax Expectations (in p.p.)			
CONTROL vs. SOCIAL	0.003	0.662	0.934
CONTROL vs. FISCAL	0.024	0.000***	0.004***
SOCIAL vs. FISCAL	0.027	0.000***	0.004***
Capital Gains Tax Expectations (in p.p.)			
CONTROL vs. SOCIAL	0.000	0.917	0.917
CONTROL vs. FISCAL	0.029	0.000***	0.003***
SOCIAL vs. FISCAL	0.030	0.000***	0.003***
Desired Adjustment Corporate Tax (in p.p.)			
CONTROL vs. SOCIAL	0.001	0.854	0.854
CONTROL vs. FISCAL	0.025	0.000***	0.003***
SOCIAL vs. FISCAL	0.026	0.000***	0.004***
Desired Adjustment Business Tax (in p.p.)			
CONTROL vs. SOCIAL	0.001	0.934	1.000
CONTROL vs. FISCAL	0.028	0.000***	0.003***
SOCIAL vs. FISCAL	0.029	0.000***	0.002***
Desired Adjustment Income Tax (in p.p.)			
CONTROL vs. SOCIAL	0.001	0.936	1.000
CONTROL vs. FISCAL	0.028	0.000***	0.002***
SOCIAL vs. FISCAL	0.029	0.000***	0.004***
Desired Adjustment Capital Gains Tax (in p.p.)			
CONTROL vs. SOCIAL	0.011	0.038**	0.048**
CONTROL vs. FISCAL	0.041	0.000***	0.003***
SOCIAL vs. FISCAL	0.030	0.000***	0.002***

Note: Table C.3 presents the multiplicity-adjusted *p*-values following the approaches of List et al. (2019) and Holm (1979). The multiplicity-adjusted *p*-values are calculated using the STATA package *mhtexp*, provided by List et al. (2019). *Mean Difference* refers to the mean differences between the experimental groups. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

D Supplementary Analysis - Heterogeneity Analysis

Section D extends the analysis on differential effects with regard to the preference to pay taxes for different types of firms and decision-makers. We provide the regressions underlying the *group average treatment effects (GATE)* presented in Section 5.2 in the main text. In addition, we investigate whether heterogeneity with respect to the take-up of governmental aid and a firms' profit change has an influence on the preference to pay taxes.

D.1 Legal Forms

Table D.1 presents results of an OLS regression of equation (5). The GATEs shown in Table 5 in the main text are based on these regression results. As shown in Section 5.2, the regressions indicate that incorporated firms want a significantly lower *corporate tax* as compared to non-incorporated firms. However, we also observe that the SOCIAL and FISCAL treatment have a positive effect on corporations compared to corporations in the CONTROL group. This suggests that narratives centered on fairness and fiscal prudence, as presented in the SOCIAL and FISCAL treatments, can effectively dampen a firm's self-interested desire to reduce the taxes it faces.

Table D.1: Heterogeneous Effects by Legal Form - Full Interaction

Dependent Variable:	Adjustment Corporate Tax
	(1)
Constant	-0.008
	(0.008)
SOCIAL	-0.012
	(0.010)
FISCAL	0.016
	(0.010)
Corporations	-0.031***
	(0.009)
SOCIAL × Corporations	0.015
	(0.011)
FISCAL × Corporations	0.012
	(0.011)
N	3328
Adj. R^2	0.030

Note: OLS estimates from the regression of equation (5): $y_i = \alpha + \beta \times Corporation_i + \sum_{k=1}^{2} \delta_k \times TREATMENT_{ik} + \sum_{k=1}^{2} \theta_k \times Corporation_i \times TREATMENT_{ik} + \varepsilon_i$. Dependent variable: desired adjustment in percentage points of corporate tax. Independent variables: experimental group, dummy variable $Corporation_i$ equal to one for corporations and zero for sole-proprietorships/business partnerships, and a constant. Robust standard errors in parentheses. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

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D.2 Attitude towards Fiscal Stimulus

Table D.2 presents OLS estimations of equation (5). The results from this table serve as the basis for the GATEs detailed in Table 4 in Section 5.2 in the main text. Furthermore, in Table D.3, we present OLS estimation results for equation (5), where support for the fiscal stimulus program is characterized not by a binary variable but by a continuous 5-point Likert scale variable treated as a continuous variable.

Overall, we observe heterogeneity across treatments. Firm decision-makers, who consider the government stimulus to be justified and are part of the FISCAL treatment group, have a higher preference to pay taxes compared to decision-makers who do not consider the stimulus program to be justified and/or belong to another experimental group (CONTROL, SOCIAL). This pattern is not specific to a particular tax but present for the *corporate tax*, *business tax*, *income tax* as well as for the *capital gains tax*. We conclude that firm decision-makers' preference to pay taxes is particularly strong when decision-makers realize the need for the government to counter-finance the fiscal stimulus supporting firms during the crisis, which is stressed in the FISCAL treatment.

Table D.2: Heterogeneous Effects by Attitude towards Fiscal Stimulus - Full Interaction

Dependent Variable:	Adjustment Corporate Tax	Adjustment Business Tax	Adjustment Income Tax	Adjustment Capital Gains Tax
	(1)	(2)	(3)	(4)
Constant	-0.037***	-0.041***	-0.032***	-0.019*
	(0.009)	(0.009)	(0.009)	(0.011)
SOCIAL	-0.003	-0.009	-0.018*	0.006
	(0.011)	(0.011)	(0.011)	(0.013)
FISCAL	0.019**	0.015	0.010	0.037***
	(0.009)	(0.010)	(0.010)	(0.012)
Justified	0.006	0.002	0.001	0.020*
	(0.010)	(0.010)	(0.010)	(0.012)
SOCIAL × Justified	0.004	0.007	0.018	0.003
	(0.011)	(0.012)	(0.012)	(0.014)
FISCAL × Justified	0.014	0.018*	0.027**	0.010
	(0.010)	(0.011)	(0.011)	(0.013)
N	3620	3830	3834	3654
Adj. R^2	0.030	0.031	0.042	0.041

Note: OLS estimates from the regression of equation (5): $y_i = \alpha + \beta \times Justified_i + \sum_{k=1}^{2} \delta_k \times TREATMENT_{ik} + \sum_{k=1}^{2} \theta_k \times Justified_i \times TREATMENT_{ik} + \varepsilon_i$. Dependent variable: desired adjustment in percentage points of *corporate tax*, *business tax*, *income tax* and *capital gains tax*. Independent variables: experimental group, dummy variable $Justified_i$ equal to one for firm decision-makers finding the fiscal stimulus absolutely justified or justified, and zero otherwise, and a constant. Robust standard errors in parentheses. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

D.3 Take-up of Governmental Aid

Section D.3 investigates whether firms which benefited directly from the governmental stimulus program are more or less inclined to pay higher taxes. In particular, we focus on firms which claimed at least one of the following three government relief measures: **Corona emergency relief (Corona Überbrückungshilfe)**, **interim aid (Sofortkredit)** or **KfW special program (Kwf-Kredit)**. In our sample, 40% of survey participants benefited from at least one of the three

Table D.3: Heterogeneous Effects by Attitude towards Fiscal Stimulus (cont. variable) - Full Interaction

Dependent Variable:	Adjustment Corporate Tax	Adjustment Business Tax	Adjustment Income Tax	Adjustment Capital Gains Tax
	(1)	(2)	(3)	(4)
Constant	-0.017	-0.023	-0.033*	-0.019
	(0.019)	(0.019)	(0.019)	(0.022)
SOCIAL	-0.018	-0.016	-0.024	-0.006
	(0.022)	(0.022)	(0.022)	(0.025)
FISCAL	-0.027	-0.026	-0.019	0.002
	(0.020)	(0.020)	(0.020)	(0.023)
$Justified\_cont_i$	-0.004	-0.004	0.000	0.004
	(0.005)	(0.004)	(0.005)	(0.005)
SOCIAL $\times$ $Justified\_cont_i$	0.004	0.003	0.005	0.003
	(0.005)	(0.005)	(0.005)	(0.006)
FISCAL $\times$ $Justified\_cont_i$	0.015***	0.014***	0.013***	0.012**
	(0.005)	(0.005)	(0.005)	(0.005)
N	3620	3830	3834	3654
Adj. R^2	0.035	0.035	0.048	0.047

Note: OLS estimates from the regression of equation (5): $y_i = \alpha + \beta \times Justified\_cont_i + \sum_{k=1}^{2} \delta_k \times TREATMENT_{ik} + \sum_{k=1}^{2} \theta_k \times Justified\_cont_i \times TREATMENT_{ik} + \varepsilon_i$. Dependent variable: desired adjustment in percentage points of *corporate tax*, *business tax*, *income tax* and *capital gains tax*. Independent variables: experimental group, categorical variable treated as a continuous variable $Justified\_cont_i$ (1 = Absolutely Not Justified, 2 = Not Justified, 3 = Neither Justified Nor Unjustified, 4 = Justified, 5 = Absolutely Justified) treated as a continuous variable, and a constant. Robust standard errors in parentheses. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

measures. We concentrate on these measures because they provide direct financial assistance, unlike other Corona-era policies (e.g., credit authorization, tax payment deferrals). This direct aid might have heightened firms' appreciation for state support during crises, leading to a higher preference to pay taxes. However, firms which have claimed at least one of these measures might be firms which are hit the hardest by the crisis. Indeed, we find that the take-up of at least one of these measures is negatively correlated (-0.30: p-value: 0.00) with having a positive profit change or no profit change compared to before the start of the pandemic. Such firms could therefore also have a lower preference to pay taxes. There are several potential explanations for this. First, firms with declining profits may, from a long-term perspective, anticipate a post-crisis economic rebound. In anticipation of future recovery, they might aim to offset pandemic losses by reducing their tax liabilities. Second, firms experiencing significant profit reductions could undervalue public benefits, possibly due to perceived insufficient governmental aid during the crisis. Third, firms with a strong profit decline might have also stronger financial constraints and therefore want to reduce their tax burden more than firms with stable or increased profits.

Table D.4 presents the GATEs for the *corporate tax*, *business tax*, *income tax* as well as for the *capital gains tax*. It differentiates based on whether firms adopted at least one of the three measures and the experimental group they belong to. The results are based on OLS regressions in Table D.5. Overall, we observe that the adoption of these governmental aid programs doesn't notably increase the preference to pay taxes compared to firms that didn't benefit from these governmental measures. In fact, firms that accessed at least one of these measures display a reduced preference to pay taxes compared to firms which did not take up one of these measures, corroborating our earlier arguments explaining their potential lower preference to pay taxes. Nevertheless, the information that current

government spending may have to be refinanced by future tax increases in the FISCAL treatment did reduce the difference between the GATEs of these two type of firms compared to the other experimental groups. Similar to the results in Section 5.2 of the main text, this finding suggests that firms react stronger to fiscal prudence narratives than fairness arguments in our setting.

Table D.4: Heterogeneous Effects by Take-up of Government Aid

	Estimated GATE (SE in parentheses)		
	CONTROL	SOCIAL	FISCAL
Corporate Tax			
No Take-up Aid	-0.026***	-0.025***	-0.002
	(0.003)	(0.003)	(0.002)
Take-up Aid	-0.041***	-0.045***	-0.013***
	(0.006)	(0.004)	(0.003)
Difference:	-0.015**	-0.020***	-0.011***
Take-up - No Take-up	(0.007)	(0.005)	(0.004)
Business Tax			
No Take-up Aid	-0.034***	-0.034***	-0.010***
	(0.004)	(0.003)	(0.002)
Take-up Aid	-0.054***	-0.058***	-0.019***
	(0.006)	(0.004)	(0.003)
Difference:	-0.020***	-0.023***	-0.009**
Take-up - No Take-up	(0.007)	(0.005)	(0.004)
Income Tax			
No Take-up Aid	-0.030***	-0.028***	-0.002
	(0.003)	(0.003)	(0.002)
Take-up Aid	-0.041***	-0.046***	-0.011***
	(0.006)	(0.004)	(0.003)
Difference:	-0.011*	-0.018***	-0.008**
Take-up - No Take-up	(0.007)	(0.005)	(0.004)
Capital Gains Tax			
No Take-up Aid	-0.001	0.009***	0.036***
	(0.004)	(0.003)	(0.003)
Take-up Aid	-0.011*	0.001	0.038***
	(0.006)	(0.005)	(0.004)
Difference:	-0.010	-0.008	0.002
Take-up - No Take-up	(0.008)	(0.006)	(0.005)

Note: Table D.4 presents estimated group average treatment effects (GATE) for the *corporate tax*, *business tax*, *income tax* and *capital gains tax* for firms, varying by having taken up government aid or not. Estimated GATEs are based on the regression in column (1) (*corporate tax*), column (2) (*business tax*), column (3) (*income tax*) and column (4) (*capital gains tax*) shown in Table D.5 in the Online Appendix. The regressions are based on equation (5): $y_i = \alpha + \beta \times Take\_up_i + \sum_{k=1}^{2} \delta_k \times TREATMENT_{ik} + \sum_{k=1}^{2} \theta_k \times Take\_up_i \times TREATMENT_{ik} + \varepsilon_i$. Dependent variable: desired adjustment in percentage points of *corporate tax*, *business tax*, *income tax* and *capital gains tax*. Independent variables: experimental group dummy, dummy variable $Take\_up_i$ equal to one if a firm claimed at least one of the following three government relief measures **Corona emergency relief/Corona Überbrückungshilfe, interim aid/Sofortkredit** or **KfW special program/Kwf-Kredit**, and a constant. The row *Difference* presents the difference between the GATE of firms having taken up these government aids and the ones which have not (slight differences due to rounding). Robust Standard Errors are in parentheses. Significance Levels are: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table D.5: Heterogeneous Effects by Take-up of Government Aid - Full Interaction

Dependent Variable:	Adjustment Corporate Tax	Adjustment Business Tax	Adjustment Income Tax	Adjustment Capital Gains Tax
	(1)	(2)	(3)	(4)
Constant	-0.026***	-0.034***	-0.030***	-0.001
	(0.003)	(0.004)	(0.003)	(0.004)
SOCIAL	0.001	-0.000	0.002	0.010*
	(0.004)	(0.005)	(0.004)	(0.005)
FISCAL	0.024***	0.024***	0.027***	0.037***
	(0.004)	(0.004)	(0.004)	(0.005)
$Take\_up_i$	-0.015**	-0.020***	-0.011*	-0.010
	(0.007)	(0.007)	(0.007)	(0.008)
SOCIAL $\times$ $Take\_up_i$	-0.006	-0.003	-0.007	0.002
	(0.008)	(0.008)	(0.008)	(0.010)
FISCAL $\times$ $Take\_up_i$	0.003	0.011	0.003	0.012
	(0.008)	(0.008)	(0.008)	(0.009)
N	3785	4011	4027	3822
Adj. R^2	0.031	0.036	0.035	0.031

Note: OLS estimates from the regression of equation (5): $y_i = \alpha + \beta \times Take\_up_i + \sum_{k=1}^{2} \delta_k \times TREATMENT_{ik} + \sum_{k=1}^{2} \theta_k \times Take\_up_i \times TREATMENT_{ik} + \varepsilon_i$. Dependent variable: desired adjustment in percentage points of *corporate tax*, *business tax*, *income tax* and *capital gains tax*. Independent variables: experimental group, dummy variable $Take\_up_i$ equal to one if a firm claimed at least one of the following three government relief measures **Corona emergency relief/Corona Überbrückungshilfe**, **interim aid/Sofortkredit** or **KfW special program/Kwf-Kredit**, and zero otherwise, and a constant. Robust standard errors in parentheses. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

D.4 Profit Change

Table D.7 investigates whether attitudes towards tax policy change when the respondent is a net recipient or a net payer of the current stimulus program. To this end, we conduct a sample split to identify whether there is a significant difference in desired tax rates between firms which experienced an increase in profits during the crisis (or experienced no change in profits) and firms which suffered a decrease in profits during the crisis. Overall, 45% of firms experienced a profit increase or no change in profits in our sample. Table D.7 shows that firms, which experienced an increase in profits during the crisis, opted, on average, for a significantly smaller reduction in desired tax rates than their counterparts that experienced a decrease in corporate profits. This pattern holds for all type of taxes. Moreover, the information that current government spending may have to be refinanced by tax increases in the FISCAL treatment did not reduce the difference between GATES of these two type of firms compared to the other experimental groups significantly (except for the *capital gains tax*). As mentioned in Section D.3, this finding can potentially be explained by the three following reasons. First, firms witnessing profit declines might, with a long-term view in mind, expect a post-crisis economic upturn. To counterbalance their pandemic-induced losses, they may seek to minimize tax liabilities in the future. Second, companies with marked profit reductions might undervalue public services, potentially feeling the government's crisis aid fell short. Lastly, firms facing significant profit downturns could be grappling with tighter financial constraints, leading them to pursue lower tax obligations compared to their more financially stable counterparts.

Table D.6: Heterogeneous Effects by Profit Change - Full Interaction

Dependent Variable:	Adjustment Corporate Tax	Adjustment Business Tax	Adjustment Income Tax	Adjustment Capital Gains Tax
	(1)	(2)	(3)	(4)
Constant	-0.045***	-0.055***	-0.047***	-0.016***
	(0.004)	(0.004)	(0.004)	(0.005)
SOCIAL	0.001	-0.000	0.001	0.012*
	(0.005)	(0.005)	(0.005)	(0.006)
FISCAL	0.028***	0.030***	0.033***	0.049***
	(0.005)	(0.005)	(0.005)	(0.006)
$Profit\_Increase/Stable_i$	0.028***	0.029***	0.028***	0.024***
	(0.006)	(0.007)	(0.006)	(0.007)
SOCIAL $\times$ $Profit\_Increase/Stable_i$	-0.002	-0.002	-0.003	-0.002
	(0.007)	(0.008)	(0.007)	(0.009)
FISCAL $\times$ $Profit\_Increase/Stable_i$	-0.004	-0.004	-0.008	-0.017**
	(0.007)	(0.008)	(0.007)	(0.009)
N	3602	3804	3815	3632
Adj. R^2	0.046	0.050	0.049	0.038

Note: OLS estimates from the regression of equation (5): $y_i = \alpha + \beta \times Profit\_Increase/Stable_i + \sum_{k=1}^{2} \delta_k \times TREATMENT_{ik} + \sum_{k=1}^{2} \theta_k \times Profit\_Increase/Stable_i \times TREATMENT_{ik} + \varepsilon_i$. Dependent variable: desired adjustment in percentage points of *corporate tax*, *business tax*, *income tax* and *capital gains tax*. Independent variables: experimental group, dummy variable $Profit\_Increase/Stable_i$ equal to one if a firm experienced a profit increase or no change in their profits since January 2020 (before the Corona pandemic started), and zero otherwise, and a constant. Robust standard errors in parentheses. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table D.7: Heterogeneous Effects by Profit Change

	Estimated GATE (SE in parentheses)		
	CONTROL	SOCIAL	FISCAL
Corporate Tax			
Profit Decrease	-0.045***	-0.044***	-0.017***
	(0.004)	(0.003)	(0.003)
Profit Increase/Stable	-0.017***	-0.019***	0.007***
	(0.004)	(0.003)	(0.003)
Difference:	0.028***	0.025***	0.024***
Profit Increase/Stable - Profit Decrease	(0.006)	(0.004)	(0.004)
Business Tax			
Profit Decrease	-0.055***	-0.055***	-0.025***
	(0.004)	(0.003)	(0.003)
Profit Increase/Stable	-0.026***	-0.028***	0.001
	(0.005)	(0.003)	(0.003)
Difference:	0.029***	0.027***	0.025***
Profit Increase/Stable - Profit Decrease	(0.007)	(0.004)	(0.004)
Income Tax			
Profit Decrease	-0.047***	-0.046***	-0.014***
	(0.004)	(0.003)	(0.003)
Profit Increase/Stable	-0.020***	-0.021***	0.005**
	(0.004)	(0.003)	(0.002)
Difference:	0.028***	0.025***	0.019***
Profit Increase/Stable - Profit Decrease	(0.006)	(0.004)	(0.004)
Capital Gains Tax			
Profit Decrease	-0.016***	-0.003	0.033***
	(0.005)	(0.004)	(0.003)
Profit Increase/Stable	0.009*	0.018***	0.041***
	(0.005)	(0.004)	(0.003)
Difference:	0.024***	0.022***	0.007
Profit Increase/Stable - Profit Decrease	(0.007)	(0.005)	(0.005)

Note: Table D.7 presents estimated group average treatment effects (GATE) for the *corporate tax*, *business tax*, *income tax* and *capital gains tax* for firms, varying by having taken up government aid or not. Estimated GATEs are based on the regression in column (1) (*corporate tax*), column (2) (*business tax*), column (3) (*income tax*) and column (4) (*capital gains tax*) shown in Table D.6 in the Online Appendix. The regressions are based on equation (5): $y_i = \alpha + \beta \times Profit\_Increase/Stable_i + \sum_{k=1}^{2} \delta_k \times TREATMENT_{ik} + \sum_{k=1}^{2} \theta_k \times Profit\_Increase/Stable_i \times TREATMENT_{ik} + \varepsilon_i$. Dependent variable: desired adjustment in percentage points of *corporate tax*, *business tax*, *income tax* and *capital gains tax*. Independent variables: experimental group dummy, dummy variable $Profit\_Increase/Stable_i$ equal to one if a firm experienced a profit increase or no change in their profits since January 2020 (before the Corona pandemic started), and zero otherwise, and a constant. The row *Difference* presents the difference between the GATE of firms having experienced a positive profit change or exhibit stable profits and firms with a profit decline (slight differences due to rounding). Robust Standard Errors are in parentheses. Significance Levels are: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

References - Online Appendix

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