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WIDER Working Paper 2024/14

Institutional trust in the time of corona

Evidence from countermeasures in Germany

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Abstract: We study how the stringency of policy measures to counter the COVID-19 pandemic affects individuals' trust in formal institutions. Drawing on micro-level panel data from Germany spanning an 18-month period from the onset of the pandemic, we show that, on average, there is a pronounced negative relationship between the stringency level of COVID-19 countermeasures and trust in institutions. We present empirical evidence to argue that the underlying mechanism is a perceived illegitimate attack on civil liberties, reducing trust in the judiciary in particular. This effect is concentrated in the period from October 2020, six months into the pandemic, when stringency measures in Germany started to increase again. For the early stage of the pandemic, we present evidence for competing, positive impacts of stringency responses on trust in government, consistent with other studies of pandemic onset, resulting in no significant net impact on institutional trust in that stage. In consequence, our findings suggest that hard lockdown measures beyond the initial stage of a pandemic are highly detrimental for institutional trust.

Key words: COVID-19, coronavirus, pandemic, crisis, survey data, trust, institutions

JEL classification: D02, H12, I18, R28

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1 Introduction

Modern democracies are built upon the protection of civil rights and freedoms, which are sometimes referred to as "sacred values", emphasizing that these liberties should not be compromised (Tetlock 2003). Yet, crisis and emergency situations like disease outbreaks do create trade-offs between individual civil liberties and public health, safety and security (Alsan et al. 2023). Therefore, leaders face difficult decisions over enacting public policies that regulate people's behaviors and deprive them of some of their freedoms, such as curfews and social distancing orders. Despite a surge of research into such restrictive policies in the wake of the COVID-19 pandemic (Bargain and Aminjonov 2020; Pak et al. 2021; Groeniger et al. 2021; Baekgaard et al. 2020; Goldfinch et al. 2021; Toshkov et al. 2022; Graeber et al. 2023), to date it is not well understood how these restrictive policies affect trust in government and other formal institutions.

In this paper, we study how the stringency of policy measures chosen during the COVID-19 pandemic affects individuals' trust in formal institutions. Institutional trust is highly consequential for societies' trajectories, cohesion and welfare as it fosters compliance with government policies (Pak et al. 2021), is integral to the social contract between states and citizens (Baker 2012), and can be viewed as a form of state capacity: "In situations of high trust, the state will be able to get more things done at a lower cost." (Besley and Dray 2022: 2). Thus, understanding the determinants of institutional trust is particularly relevant for times of crises, where state effectiveness is key to mitigating the challenges and resulting impacts crises create for people affected by them (Baliki et al. 2022). In addition, crisis-induced shifts in institutional trust shape how societies cope with future crises (Aghajanian et al. 2023).

A priori, it is theoretically unclear whether (more) stringent policies increase or decrease trust in institutions, and how impacts vary across pandemic stages and personal circumstances. We consider and test four mechanisms that may undergird a link between policy stringency and institutional trust.

Policy stringency may increase institutional trust. First, stringency may support trust when citizens perceive the countermeasures as a reflection of the severity of the situation, triggering or amplifying "rally effects" (Mueller 1970). Rally effects stem from an emotional reaction to intense situations and threats, usually at the national level, which causes people to collectively "rally" or "rally around the flag" and boost trust in and support of their government, for example by serving as a secondary source of control (Colloca et al. 2024) (see detailed literature review in Appendix A). While probably limited to a few months (Johansson et al. 2021; Kritzinger et al. 2021), rally effects are particularly pronounced for specific events and new situations, which suggests that (tougher) countermeasures may increase institutional trust in the wake of a rally

effect, especially after the onset of the pandemic (*rally mechanism*). Second, institutional trust can also reflect an opinion as to whether the state and its institutions and actors are willing and able to be responsive, to do what is “right” and to act in the interest of the people (Miller and Listhaug 1990; Levi and Stoker 2000). Thus, stringent measures to counter the pandemic may be interpreted a signal of the state being responsive, capable and caring about its citizens, thus boosting institutional trust (*signalling mechanism*).

Yet, policy stringency may also decrease institutional trust. On one hand, pandemics strengthen governments, erode institutional checks and balances and open up opportunities for ‘executive aggrandizement’ (Guasti 2020; Edgell et al. 2021). Strict infection prevention regulations contrast the implicit social contract, that expectations will be fulfilled, which underlies trust in institutions (Keele 2007). But particularly during such crises political objectivity and partisanship of governments are often under scrutiny (Adolph et al. 2021). Thus, choices of strong countermeasures may be interpreted as political capture (J. Liu et al. 2022; Adolph et al. 2021), with opportunistic governments consolidating their political power and moving to more autocratic forms of governance and to heavy-handed monitoring and policing. In turn, such perceptions may decrease trust in government and formal institutions more generally (*power grab mechanism*). On the other hand, pandemics are also a test for the judiciary (Petrov 2020). As shown by J. Liu et al. (2022), the characteristics of a legal system affect a government’s responsiveness during a public health crisis and can result in differing levels of trust. Policies to counter pandemics, such as restrictions of movement, association and business freedoms, violate basic rights and curtail civil liberties. If perceived that way, this may induce feelings of illegitimacy and of a lack of being protected by formal institutions, thus reducing trust in them (*liberties mechanism*).

Specifically, we analyze the relationship between the stringency level of national COVID-19 countermeasures and individuals’ trust overall, in the national government, local government, police and courts, based on the case of Germany. While important decisions were also taken at the state level, the response to the COVID-19 in Germany was based on a ‘National Pandemic Plan’ and measures were highly coordinated across states (RKI 2020).

We study the period between March 2020, when SARS-CoV-2 initially spread to Germany, and September 2021. Over this period, the severity of countermeasures varied substantially and the country experienced multiple lockdown periods, which varied both in intensity and duration. Similarly, infection rates as documented in reliable official records varied strongly over this same period. Notably, there was variability in policy strategies for given infection levels and dynamics. This variation enables us to model the impacts of similar policy stringency levels conditional on infection levels and dynamics, which may influence both policy stringency and institutional trust.

We draw on detailed online survey data collected in the “Life with Corona” (LwC) project (Stojetz et al. 2022). Our full study sample includes 17,228 individual-level observations collected across the 18-month study period from all sixteen German states. The data set includes a panel sub-sample providing 2,555 observations from individuals for which we have at least two data points over the span of the study period, from different points in time. We use both the full and the panel samples and match the survey data at the date level with national policy stringency data from the Oxford COVID-19 Government Response Tracker (Hale et al. 2021) and data on national infection rates from the Johns Hopkins University COVID-19 Data Repository (Dong and Gardner 2020).

The identifying assumption in our main analyses is that the stringency level of countermeasures on the day when institutional trust was surveyed is exogenous, conditional on control variables included in the model. Using the pooled and panel survey data and the COVID-19 data, we empirically address potential endogeneity concerns stemming from time-invariant local- and individual-level factors, seasonality, COVID-19 case levels or temporal changes therein, and reverse causality from average trust to policy stringency.

Our key result is that, on average, there is a pronounced negative relationship between the stringency level of COVID-19 countermeasures and trust in institutions. We present empirical evidence to argue that the underlying mechanism is a perceived illegitimate attack on civil liberties, reducing trust in the judiciary in particular. The effect is concentrated in the period from October 2020, six months into the pandemic when stringency measures in Germany started to increase again. For the early stage of the pandemic, we present evidence for competing, positive impacts of stringency responses on trust in government, consistent with other studies of pandemic onset, resulting in no significant net impact on institutional trust in that stage. Thus, our findings suggest that hard lockdowns beyond the initial stage of a pandemic are highly detrimental for trust in institutions.

Our study contributes to understanding the social impacts of crises. It is becoming increasingly clear that crisis situations, ranging from violent conflict to climatic disasters to public health emergencies, can both bring groups of people together (Bauer et al. 2016; Voors et al. 2012; Liao et al. 2011) or drive them apart (Algan et al. 2018; Ashford et al. 1989; Potts et al. 2019; Bangerter et al. 2012). What is not well understood is under which conditions such positive or negative social impacts are triggered. What has become increasingly clear, however, is that crisis impacts on behaviors and perceptions are strongly shaped by how individuals and groups experience a crisis, warranting micro-level analyses (Justino et al. 2013; Potts et al. 2019; Woelfert and Kunst 2020; Kevins 2019). We provide micro-evidence from variation in conditions within the COVID-19 crisis and tease out impacts on trust stemming from that variation within.

The specific literature on institutional trust in the context of the COVID-19 pandemic has focused on the role of trust for behaviors and outcomes at the individual and group levels (Brodeur et al. 2021; Sarracino et al. 2021; Martinez-Bravo and Sanz 2022; Suhay et al. 2022; Fanny Lalot et al. 2022; Schomaker et al. 2020; Jäckle et al. 2023; Woelfert and Kunst 2020). Existing studies considering countermeasures have focused on trust as a mediator or moderator variable, primarily for prosocial behaviors, health outcomes and pandemic management (Bargain and Aminjonov 2020; O'Hara et al. 2020; Pak et al. 2021). Studies of trust as an outcome have focused on country-level comparisons of trust levels at the onset of the pandemic, and on trust in government, often arguing over the presence or absence of "rally effects" induced by the new crisis (Rieger and Wang 2022; Pak et al. 2021; Chen et al. 2022; Zahariadis et al. 2023; Colloca et al. 2024; Bengtsson and Brommesson 2022; Kritzinger et al. 2021; Schraff 2021; Groeniger et al. 2021; Baekgaard et al. 2020). Yet, it remains obscure which aspect of the complex crisis (onset) treatment may induce these effects, what shapes trust in other formal institutions than the national government, and especially what drives trust in later stages of the pandemic, even though it has now been shown that trust levels of various forms have varied significantly over the course of the pandemic (Aassve et al. 2024). Notably, there has been particular interest in the study of lockdowns in the initial stage of the pandemic (Baekgaard et al. 2020; Kritzinger et al. 2021), but it remains disputed what the causal influence of the countermeasures is (Bol et al. 2021; Schraff 2021). Thus, specific research into the causal impacts of restrictive policies on institutional trust has received relatively little attention, especially beyond the initial stage of the pandemic. This lacuna is in part the result of data limitations and methodological challenges, especially in teasing out causal relations. We expand the literature on the determinants of trust in time of Corona by drawing on micro-level (panel) survey evidence to identify the causal mechanisms of how policy stringency shape various forms of institutional trust beyond the onset and initial stage of the pandemic.

The rest of the paper is organized as follows. In section 2, we review and summarize relevant literature in more detail. section 3 presents the study context, data and econometric specifications used for the empirical analysis. section 4 presents our results. section 5 discusses our findings and concludes.

2 Detailed literature review

This section provides an overview of dominant literatures on the COVID-19 pandemic and trust that are relevant to our paper.

Comparisons over time. Existing work on the impacts of the COVID-19 pandemic on trust has tended to compare group means over time. It is observed that institutional trust in the EU (Pastarmadzhieva and Angelova 2021) as well as EU member states (Verboord 2024) re-

mains stable when compared to pre-pandemic levels. Similarly, Thoresen et al. (2021) find no statistically significant deviation in generalized trust from the anticipated levels derived from pre-pandemic levels. Colloca et al. (2024), tracing time trends, find that trust in political institutions exhibited an initial rise between June 2019 and April 2020, followed by a subsequent decline below pre-pandemic levels, whereas trust in non-partisan (such as the judiciary or police) and international institutions decreased initially, but recovered as the pandemic persisted. Okada et al. (2023) notes a general decline in trust in organizational information sources as the pandemic persists.

Societal and group-level drivers of trust. Several studies have analyzed **country-level differences** that shape trust. For example, studies from the Netherlands (Groeniger et al. 2021), Denmark (Baekgaard et al. 2020), New Zealand (Sibley et al. 2020) as well as Australia (Goldfinch et al. 2021) explore the effects of lockdown and governments' management of the crisis on trust using panel data collected before and during the lockdown. These studies document a positive effect of lockdown on trust in institutions. However, the degree of the effect differs between countries (see also Arin et al., (2021), or Kritzinger et al., (2021)), while trust levels also differ between governmental bodies (Bol et al. 2021; Baekgaard et al. 2020). Others use the acute phase of the pandemic as a proxy for the COVID-19 crisis (in Sweden, Esaiasson et al., (2020), or South Korea, Kye and Hwang, (2020)), and find that the deepening of the COVID-19 crisis had a positive impact on institutional trust. Generally, countries that are more centralized and exhibit lower government effectiveness, freedom, and societal trust, but have separate ministries of health and a health minister with a medical background, acted more promptly and decisively in response to the situation, whereas those characterized by higher levels of interpersonal trust, trust in government, and general freedom scores tended to respond more slowly to the spread of the pandemic, and limit individual freedoms more cautiously (Toshkov et al. 2022).

This points towards a potential underlying mechanism driving trust levels based on perceptions of the severity of the crisis and the threat to individual and societal health. Therefore, several studies have focused on societal or group-level drivers of trust, especially on a potential "rally around-the-flag effect" (or simply "**rally effect**") at the onset of the pandemic (Colloca et al. 2024; Bengtsson and Brommesson 2022; Johansson et al. 2021; van der Meer et al. 2023; Hegewald and Schraff 2024; Kritzinger et al. 2021). This effect describes an increase in trust stemming from an emotional reaction, based on the perception of a threat due to the severity and intensity of the health emergency. Several studies claim the existence of such a rally effect, particularly at the onset of the crisis (Colloca et al. 2024; Bengtsson and Brommesson 2022; Johansson et al. 2021; Aassve et al. 2024). However, studies also suggest that after this initial peak in support, citizens shift towards more rational perceptions (Johansson et al. 2021; van der Meer et al. 2023; Hegewald and Schraff 2024; Aassve et al. 2024). Other studies also

suggest that the detected increases in institutional trust may be related to other factors such as perceptions of government actions, health risks, economic concerns, and messaging strategies, and evaluations of the political responses (Baekgaard et al. 2020; Bol et al. 2021; Kritzinger et al. 2021; Aassve et al. 2024; van der Meer et al. 2023; Groeniger et al. 2021). Schraff (2021) argues that an increase in the level of trust may be linked to the cumulative number of COVID-19 cases. Related, living in an area characterized by elevated relative mortality during the initial wave of the pandemic led to increased trust in the health system (Costa-Font and Vilaplana-Prieto 2023). In addition, in a large-n cross-country study, J. Liu et al. (2022) affirm that effective government communication, such as public information and campaigns, disseminating official policies, measures, and actions to all stakeholders, is crucial to maintain public trust. Altogether, as the pandemic endures beyond the initial shock, it appears crucial that, the public perceives governmental actions to be appropriate, effective, and justified to overcome health risks, and to protect from a major health emergency.

Most important for our paper are existing studies on the **impacts of countermeasures**. Existing studies into the impact of policy restrictions have focused on economic impacts of hard lockdowns, including employment and growth (Demirgüç-Kunt et al. 2021; König and Winkler 2021; Kok 2020; Ueda et al. 2021), food prices (Akter 2020) and stock markets (Aggarwal et al. 2021; Yang and Deng 2021; Ashraf 2020; Kizys et al. 2021). Another body of work has studied compliance with hard lockdown measures, such as stay-at-home measures, including the role of trust, which appear to play a key role for acceptance and compliance of policies (Bargain and Aminjonov 2020; Brodeur et al. 2021; Pak et al. 2021; Sarracino et al. 2021; Martinez-Bravo and Sanz 2022; Suhay et al. 2022; Fanny Lalot et al. 2022; Schomaker et al. 2020; Jäckle et al. 2023; Woelfert and Kunst 2020). These studies mainly found higher compliance when individuals trust in institutions (see e.g. Jäckle et al., (2023)). Furthermore, studies, investigating how trust affects policy stringency, focus mainly at the onset of the COVID-19 crisis (Bargain and Aminjonov 2020; Pak et al. 2021).

Comparing mostly early pandemic phases to either each other or pre-pandemic phases, several studies have focused on lockdowns. These suggest that hard lockdown measures strengthen trust in institutional entities (Groeniger et al. 2021; Sibley et al. 2020; Stanzani 2020; Baekgaard et al. 2020; Arin et al. 2021; Bol et al. 2021). In contrast, a panel study from Italy by Stanzani (2020) finds the opposite effect. Here, the lockdown condition is associated with a lower level of trust in institutions, compared to the pre-lockdown situation. Further, Schraff (2021) challenges the causality of the lockdown effect on trust. While initially a positive effect of a lockdown on institutional trust is observed, a similar effect is observed in a placebo scenario, leading Schraff to the conclusion that the positive change is not causally linked to the lockdown measures.

Moreover, there are only few studies so far that aim to explain the relationship between trust and the stringency of policy measures. Existing studies have focused for example on the impact of strict prevention measures on air quality (Orak and Ozdemir 2021; Kumar and Managi 2020; Zhang et al. 2022) or mobility (Maire 2020; Y. Li et al. 2021; Brodeur et al. 2021), whereas only few studies examined the relationship between policy stringency and trust. Overall, a strict and rapid response by the government seems to foster higher trust in the governments' management of the crisis (Rieger and Wang 2022), particularly for those most concerned of the spread of the virus (Lieberoth et al. 2021). Examining the moderating effect of political trust on the effectiveness of strict measures, Chen et al. (2022) find policy effects to be larger for higher levels of political trust. Based on the level of policy stringency, Bargain and Aminjonov (2020) measure people's willingness to comply and find it to be higher in regions with high trust, further underlining the effect of trust on the efficacy of strict measures. Similarly, Pak et al. (2021) find that stricter regulations lead to higher levels of compliance. Precisely, based on their survey data the effect of strict measures on compliance is twice as large for individuals that report high levels of trust. Nevertheless, these studies predominantly rely on data from the onset of the pandemic, while deeper understanding of the inverse effect, of policy stringency on trust, over the course of the pandemic still is lacking.

Individual-level drivers of trust. Other studies have examined the **impacts of personal characteristics and experiences on trust**, with a particular focus on personal exposure to COVID-19. A handful of existing micro-level studies from early periods of the pandemic provide inconclusive results. Some find that self-reported personal experience with the virus, such as testing positive, being admitted to the hospital, or losing someone to the disease, correlates with an increase in institutional trust (Thoresen et al. 2021; Daniele et al. 2020a; Stanzani 2020). Thoresen et al. (2021) report a positive change in institutional trust during the early phase of the pandemic in Norway only for people with COVID-19-related experiences. N. Liu et al. (2023) find that while high exposure to COVID-19 during the formative years of trust development worsened social trust, which is in line with Aksoy, Eichengreen, and Saka (2020), it strengthened trust in local authorities and healthcare professionals (N. Liu et al. 2023). At the same time, some studies find the opposite effect. Experiencing the pandemic as a young adult appears to have a lasting detrimental impact on confidence in political institutions and leaders, provoked by the pandemic-related economic challenges, and largest for individuals under weak governmental structures (Woelfert and Kunst 2020). Additionally, Amat, Arenas, Falcó-Gimeno, and Muñoz (2020) document a significant negative impact on political trust among individuals directly exposed to COVID-19 in Spain. Experimental evidence reports that priming respondents with COVID-19-related questions decreases trust (Daniele et al. 2020a). In our own prior work, we find that knowing people who contracted the disease decreases trust in the initial stage of the pandemic, but own sickness with the virus does not (Brück et al. 2020). More generally, it is safe to say that a number of individual characteristics affect trust (Gozgor 2022;

Suhay et al. 2022) during the pandemic. When focusing on the relation of subjective well-being and trust a positive relation can be established (Wei et al. 2022; S. Li et al. 2022). Age, education and gender seem to be prevalent factors determining trust during COVID-19 (N. Liu et al. 2023; Gozgor 2022; Rieger and Wang 2022) as well as compliance with countermeasures (O’Hara et al. 2020; Daoust 2023). According to Gozgor (2022), the set of demographic factors influencing public trust in governments does not change for the COVID-19 crisis.

In addition, a number of studies point out the impact of an individual’s **information and beliefs** on trust. For example, Aksoy, Cabrales, et al. (2020) survey people from nine EU countries and find that the pandemic reduced trust in institutions only among the respondents who believed that their country is strongly affected by COVID-19, while also Stanzani (2020) finds the lowest levels of institutional trust among respondents in the epicenters of infection. Martinez-Bravo and Sanz (2022) rely on evidence from Spain and find that providing respondents with information on the actual management of the disease reduces trust in the respective government. With a three-wave panel survey and an information-provision experiment, Aassve et al. (2024) find that negative evaluations of pandemic management correlate with decreased political trust and a corresponding increase in social trust, thereby inducing a shift from trust in formal to informal institutions. Further, the type of information sources individuals consume also seems to play a crucial role in determining institutional trust and compliant behavior (Y. Liu and Liu 2023; Dawson et al. 2023). According to Daniele et al. (2020b), trust in the EU, as well as trust in social welfare spending drops among respondents who have been primed with COVID-19-related questions, while trust in experts and science increases and trust in the incumbent party remains stable. Furthermore, when alternatives to lockdown measures appear, such as the announcement of vaccinations, trust in government and elected politicians also decreases (Heap et al. 2021). These findings again indicate that whether individuals perceive governments to be capable of deterring a health emergency, lowering case rates, and protecting its population by enforcing appropriate countermeasures, determines trust levels, which in turn, affects the course and severity of the pandemic.

A set of literature focuses on **behavioral and welfare impacts of trust** on outcomes at the individual and group levels. Through behavioral as well as survey experiments during different phases of the pandemic, some studies suggest that higher institutional trust may lower mortality rates (Yuan et al. 2022; Chen et al. 2022; Gavresi et al. 2023; Ji et al. 2024) and increase the willingness to get vaccinated (Trent et al. 2022; Hill et al. 2023; Kyprianidou et al. 2023; Gavresi et al. 2023; Zarbo et al. 2022). Jasielska et al. (2023) discovered a positive association between trust and socially responsible behavior, except for individuals whose close contacts experienced COVID-19. Negative trust impacts are also observed: for example, regions characterized by low trust in political institutions may experience higher mortality rates (Charron et al. 2023). Generally, the majority of existing research finds a positive relationship between

institutional trust and compliance with governmental measures (Pak et al. 2021; Sarracino et al. 2021; Fanny Lalot et al. 2022; Schomaker et al. 2020; Power et al. 2023; Kyprianidou et al. 2023; Brodeur et al. 2021; Yu et al. 2023; Andrade-Molina et al. 2023; Scandurra et al. 2023; Y. Liu and Liu 2023; Jäckle et al. 2023), although the effect differs for individual government bodies (see Suhay et al.,(2022), Robinson et al., (2021), Yu et al., (2023)). For instance, Boulton et al. (2024) discovered a correlation between compliance and trust in local policing. European citizens are most likely to comply with preventive measures when they trust both national political institutions and media institutions, whereas trust in other entities is comparatively less influential (Verboord 2024). Further, higher trust serves as a protective factor against conspiracy beliefs, with trust in governments moderating the negative association between conspiracy beliefs and the sense of duty to comply (Murphy et al. 2022). By contrast, a study by Woelfert and Kunst (2020) finds that in an experimental setting trust did not affect adherence to social distancing measures.

3 Empirical framework

3.1 Study context

Although the first Coronavirus case in Germany was detected already on January 27, 2020, it took months until the health risks associated with the disease were perceived as more than minor (Bundesministerium für Gesundheit 2023). By the end of February 2020, recorded new infections started to rise rapidly. After increasing precautionary measures, on March 22, 2020, a first lockdown was introduced by the German government, including strict physical distancing guidelines, such as prohibiting contact with more than two people in public, closures of schools or restaurants, as well as restrictions on visiting rights in care institutions. Furthermore, borders were closed and curfews were imposed. On May 4, 2020, most of these stringent measures were lifted (Bosen and Thureau 2021; Bundesministerium für Gesundheit 2023).

However, due to the low case rates in spring 2020, a large share of the population remained vulnerable to infection, leading to a rapid spread of infections later in 2020 (Wieler et al. 2021). Followed by a mild summer with only two minor outbreaks, infection levels started to increase again from August 2020 onwards, the onset of a 'second wave'. Confronted with increasing discontent and a heightened sense of public criticism, the German government's response to the second wave was slow (Walsh and Douglas 2021). Opting for a 'Lockdown Light' on November 2, 2020, tightening social distancing measures once again and closing some high-risk sectors, such as restaurants, bars or sports venues, while schools remained open (Deutsche Welle 2021; Walsh and Douglas 2021). By December 2020, vaccinations were approved and efforts to immunize the population began, prioritizing initially at-risk groups and individuals who are frequently exposed, such as hospital staff (Bundesministerium für Gesundheit 2023).

Yet, the light restrictions at that time permitted case levels to continue rising, almost pushing intensive care units to the brink of collapse. Measures were only tightened when even Chancellor Angela Merkel acknowledged that "we have lost control of this thing" (Sauerbrey 2021). A hard lockdown was eventually implemented from mid-December 2020. Policies were tightened further in the beginning of January 2021. Schools and non-essential shops remained closed for all of January, while private and public gatherings were reduced to only one additional person from a different household, and curfews limited mobility. The second wave of recorded new infections peaked in January 2021, and by the end of January, the 7-day incidence continued to stay below the target values of 100 daily new infections per 100,000 people, demonstrating that while the restrictions were strict, at least infection rates decreased. Schools re-opened in February, with refined infection protection concepts (Bosen and Thureau 2021; Bundesministerium für Gesundheit 2023).

After this slow-down of infections, case levels started to rise again in March 2021, marking the beginning of a 'third wave'. Close personal contact was increasingly restricted to one additional person from another household, a curfew from 10 p.m. to 5 a.m. was implemented, and with thresholds for higher local incidence levels non-essential shops and schools were closed as well. Taking a cautious approach, the government therefore aimed to strike the balance between the desire for a return to normalcy and maintaining control over the pandemic. Starting in April 2021, the vaccination campaign expanded beyond the initial risk groups. By end of April, the third wave was slowed down, although the German health ministry continued to advocate for caution. By early June 2021, half of the population had received at least their first vaccination shot. Countermeasures were softened and removed step-by-step, allowing once again for a relatively normal summer (Bosen and Thureau 2021; Bundesministerium für Gesundheit 2023).

A 'fourth wave' of infections started mid-August 2021, with a new virus variant driving infections mainly among the younger population. However, the so-called '3-G' rule allowed more freedoms for anyone who was vaccinated, had recovered from a previous infection, or tested negative within the last 24 hours (Bosen and Thureau 2021; Bundesministerium für Gesundheit 2023).

Overall, Germany's strong health care system, relatively rapid response rate to increasing infection levels, as well as transparent communication allowed to prevent a serious collapse of the health care system over the entire pandemic period (Wieler et al. 2021). Nevertheless, state institutions encountered serious resistance, during the second wave of the pandemic. Debates regarding restrictive measures became significantly more politicized and emotionally charged, compared to spring 2020 (von Münchow 2020). Thousands participated in demonstrations where mandated physical distancing measures were disregarded, advocating for a return to a "normal" state of affairs (von Münchow 2020; Tagesschau 2021). Further, citizens began to

question the legality of policies constraining fundamental liberties. In 2020, German courts received more than 10,000 requests to review anti-pandemic measures (Welt 2021). Measures restraining crucial rights, such as the right to demonstrate or practice a religion, were adjusted to account for disproportional constraints of civil liberties (Tagesschau 2021). Policies were only considered lawful, if the public objective was evident, if they were deemed necessary, if no less intrusive alternatives existed, and if safeguarding the public interest was paramount enough to justify the extent of curbing a fundamental right (von Münchow 2020). Despite their severity, the Federal Constitutional Court even deemed the strict contact restrictions and curfews at the height of the second wave as proportionate to the seriousness of the crisis (Bundesverfassungsgericht 2021). Nevertheless, many cinema, theater, or shop proprietors have not perceived the state’s infection prevention regulations as proportionate and uniformly applied (Knight 2020).

Our survey data captures individual perceptions and levels of trust across four waves of spikes in infection rates. A purported lack of readiness of the government after the first wave and the decreased surprise factor associated with subsequent outbreaks sparked heightened public resistance to wide-reaching infection prevention regulations. Nevertheless, this period coincided with substantial portions of the population being seriously affected by and worried about the new disease, and the German government enforced new and more stringent measures multiple times to control infection dynamics and prevent the collapse of the healthcare system. Therefore, the study period is marked by serious incisions into people’s private lives and economic situations at multiple times under varying circumstances.

Our data allows us to investigate the effect of public health policies’ stringency on trust and the underlying dynamics of the public perception across a strongly varying circumstances, spanning four major waves of infection rates. The following section will elaborate more on how our study period and data are well-suited to investigate these developments.

3.2 Data

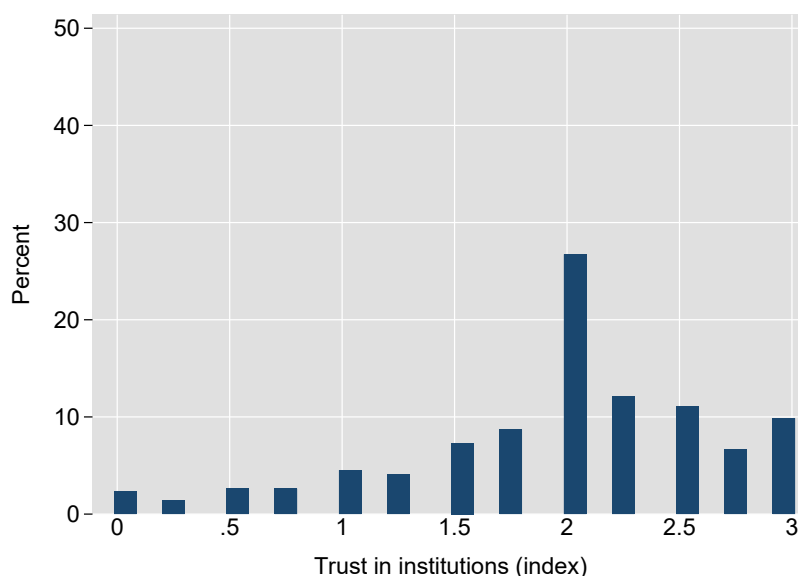
We use survey data from the Life with Corona (LwC) project (Stojetz et al. 2022), a research study, which continuously collected real-time survey data from Germany between March 2020 and September 2021. For this study, we analyze 17,228 observations collected between March 23, 2020 and September 22, 2021 from individuals living in Germany (Figure A1, Figure A2). This specifically includes longitudinal survey information from 2,555 panel observations individuals who answered the survey multiple times during the study period.

LwC combined snowball and panel sampling to survey individuals across societal strata (Stojetz et al. 2022). The survey was advertised openly via Google, social media platforms, newspapers, and networks. This strategy maximizes the number of respondents, meeting basic sample

size requirements for intra- and international comparisons, but can result in unrepresentative samples. To mitigate potential biases, we generate post-stratification weights based on population data on age, gender and education to ensure that the data is representative according to key underlying population characteristics. Participants who declared interest in answering the survey again in the future were proactively invited to retake the survey (approximately) every 3 to 6 months. Observations are time stamped, which enables temporal matching with data on policy stringency at the date level.

Trust in institutions. We calculate an index of individuals’ trust in institutions based on four survey questions. The questions ask respondents to state how much they trust each of the following institution on a scale from 0 (low trust) to 3 (high trust): their national government, their local government, the police and the courts. We build a simple additive index by summing up the responses to the four questions and dividing by four so that the numerical values of the resulting index have a similar interpretation as for individual items. As a result, the index is a continuous variable ranging from 0 to 3. Figure 1 shows that the distribution of the index is centered around values of 2, which means that the average individual only has moderate trust in institutions across dimensions. All variables have similar distributions with the second highest category (value = 2) as the most frequent one, chosen by slightly above 50 percent of respondents for each (Figure A3). For the regression analyses we standardize the index and components to zero mean and unit standard deviation.

Figure 1: Trust in institutions



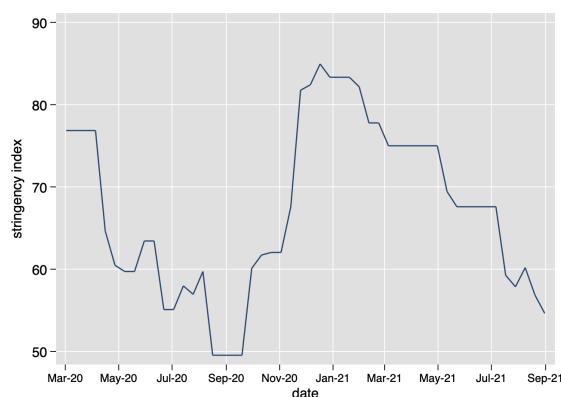
Source: authors’ calculations.

Policy stringency. We match the survey data with information from policy stringency calculated by the Oxford COVID-19 Government Response Tracker (OxCGRT) initiative at the date level.

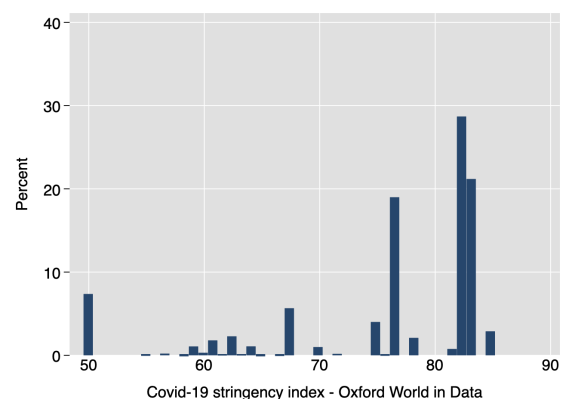
Our main variable is a composite index provided by OxCGRT, which ranks the strictness of government restrictions related to COVID-19 on a scale from 1 to 100. The index is calculated for more than 180 countries and includes nine response indicators such as school closures, workplace closures, cancellation of public events, restrictions on gathering size, closure of public transport, stay-at-home requirements, restrictions on internal movement and international travel as well as public information campaigns (Hale et al. 2021). The data are harmonized so that the index values are comparable across countries. The stringency levels and changes we study for the German case also transfer quantitatively elsewhere.

Figure 2a summarizes the variation in the stringency of national policies for the whole study period. We see substantial variation in the level of stringency over the study period. Figure 2b shows the stringency index for the days the survey respondents participated in the LwC survey and indicates that the LwC dataset covers the full spectrum of variation across all survey observations.

Figure 2: Distribution of daily policy stringency
(a) Across all dates in study period



(b) Across all survey observations



Source: authors' calculations.

Hard lockdowns. We define 'hard lockdowns' as extended periods with stringency levels greater or equal to 75. We zoom into such a (long) hard lockdown in Germany by studying a sub-sample for the period from mid-December 2020 to the end of February 2021,¹ for which we have particularly many observations, and create a dichotomous 'hard lockdown' indicator, which equals 1 for observations from days with stringency levels of great or equal to 75. When we zoom in to the daily level of the hard lockdown period, Figure A4 illustrates how stringency index increased to 75 on 15 December, to 82 on 16 December and the remained above 75 until 28 February (exact date).

¹ There was also a short period of high stringency levels at the onset of the pandemic but in addition to having been the onset it was also brief in comparison to the lockdown we study.

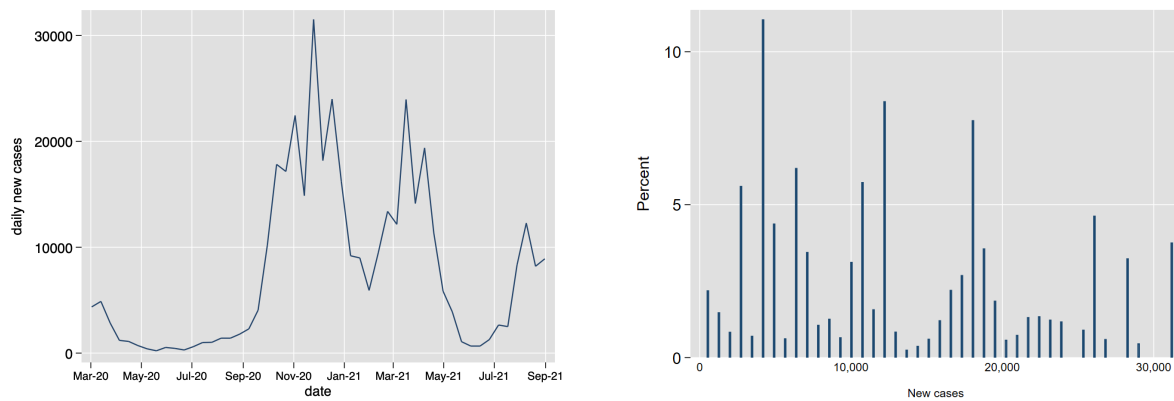
COVID-19 infections. Our indicators for COVID-19 case levels and changes at the national level are based on data from the COVID-19 Data Repository, provided by the Center for Systems Science and Engineering (CSSE) at Johns Hopkins University (Dong and Gardner 2020).

Figure 3a shows the variation in the new daily cases over the entire study period. Figure 3b indicates that LwC data covers well the variation.

Figure 3: Distribution of daily level of reported new COVID-19 cases

(a) Across all dates in study period

(b) Across all survey observations



Source: authors' calculations.

Summary statistics. Table 1 presents descriptive statistics for our main study variables, based on the raw, unweighted and unstandardized data. The institutional trust index as well as all trust components it is built from have mean levels of around 2, which suggest a moderately high level of trust (on a scale from 0 to 3). The average respondent is 49 years old, 67 percent of respondents are women and 30 percent have received secondary education as their highest level of education. As noted above, we use population weights for our regression analyses, which are based on population data on age, gender and education. Table A1 presents summary statistics based on these weights.

Table 1: Trust and demographic statistics.

	Mean	S.D.	Min.	Max.
Trust in institutions (index)	1.95	0.71	0	3
Trust in national government	1.83	0.91	0	3
Trust in local government	1.80	0.86	0	3
Trust in police	2.09	0.79	0	3
Trust in courts	2.09	0.79	0	3
Stringency level	75.25	10.56	50	85
New cases (2 weeks)	11991	9136	145	25757
Change in level of new cases (2 weeks)	944	2636	-8221	7550
Age	48.72	17.50	19	93
Female	0.67	0.47	0	1
Secondary education (highest)	0.30	0.46	0	1
Tertiary education (highest)	0.64	0.48	0	1
Married	0.58	0.49	0	1
Unemployed	0.03	0.17	0	1
Rural	0.21	0.41	0	1
Observations	17228			

3.3 Econometric specifications

Our statistical models take the following linear form, where the effect of interest β is estimated by pooled ordinary least squares (OLS) and individual-level fixed-effect panel regression:

$$Trust_{it} = \beta Stringency_t + \gamma' X_{it} + \varepsilon_{it} \quad (1)$$

Here, *Trust* is an indicator of institutional trust; *Stringency* denotes the level of policy stringency; *X* is a flexible vector of controls variables, which includes state-level fixed effects in our pooled models and individual-level fixed effects in our panel models, and ε is the error term.

The identifying assumption for a causal interpretation of our β estimates is that the stringency level of countermeasures on the day when institutional trust was surveyed is exogenous, conditional on control variables included in the model. By carefully controlling for individual characteristics such as age, gender and education, we aim to mitigate concerns that individual traits may confound our estimates in the pooled OLS models. Another concern may be that we erroneously pick up variation stemming from seasonality; for example, the study period covers two springs. Therefore, we also estimate models that include season fixed effects. Exploiting the longitudinal sub-sample, we run panel models that control for individual-level fixed effects, thus removing potential bias stemming from any time-invariant individual-level differences underlying differences in institutional trust outcomes. Such concerns may arise if, for example, individuals who choose to take the survey in times of high stringency levels are

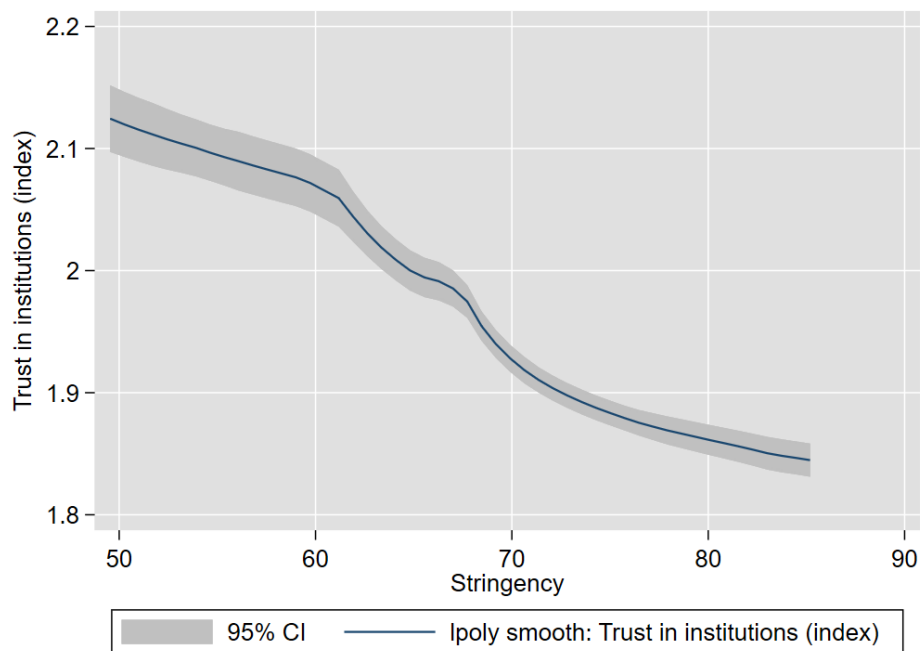
systematically different from respondents in times of low stringency levels. In addition, levels recorded COVID-19 infections and changes therein over time may correlate both with the stringency of policies and likely also correlate directly with institutional trust. We thus also carefully control for these 'COVID-19' variables in certain specifications. Another potential concern is that of reverse causality if institutional trust influences the policy stringency level. We argue that governments usually do not have perfect and real-time knowledge of institutional trust among citizens, and even if they do it seems unlikely that average trust triggers immediate changes in policy stringency and the level of trust on a given day does certainly not affect the level of stringency on that same day. However, average trust is fairly slow-moving over time and if average trust in the weeks prior to the survey date influences policy stringency that may introduce bias.

4 Results

4.1 Main results

Our key result is that there is a pronounced negative relationship between the stringency level of COVID-19 countermeasures and trust in institutions. Figure 4 plots the locally smoothed mean level of institutional trust over the level of policy stringency. The local estimates suggest a (nearly perfect) linear relationship between institutional trust and policy stringency.

Figure 4: Trust in institutions over stringency



Source: authors' calculations.

Robustness. In Table 2, we report results from multiple linear regression models, which provide further evidence that the negative relationship between policy stringency and trust is statistically significant and suggest a causal interpretation. In our parsimonious baseline specification of a pooled ordinary least squares regression, we find that a one standard deviation (SD) increase in policy stringency is associated with a .16 SD decrease in institutional trust. In column 2, we show that the pronounced negative relationship between stringency and institutional trust is robust to controlling for state and season fixed effects.² In column 3, we add ‘COVID controls’ to the model, the national daily rate of new infections both on the survey date as well as two weeks prior to the survey date, which both correlate with the stringency of policies Table A2. In column 4, we show that the negative relationship in the pooled model also obtains in the sub-sample of panel observations as the point estimate only changes marginally from column 3 to 4 (both about .12 SD).

Table 2: Stringency index and trust in institutions

	Pooled				Panel		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Stringency	-0.158*** (0.010)	-0.145*** (0.012)	-0.124*** (0.034)	-0.118* (0.063)	-0.107*** (0.020)	-0.110*** (0.021)	-0.164** (0.065)
COVID controls	No	No	Yes	Yes	No	Yes	Yes
SE controls	No	Yes	Yes	Yes	No	Yes	Yes
Season FE	No	Yes	Yes	Yes	No	No	Yes
Basic FE	None	State	State	State	Ind.	Ind.	Ind.
N	17228	10731	10731	2488	2555	2555	2555
R ²	0.02	0.08	0.08	0.02	0.05	0.07	0.07

Note: significance levels: *** p<0.01, ** p<0.05, * p<0.1, standard errors in parentheses. The reported variables are standardized, standard errors are clustered at the state level in (1)-(4) and at the individual level in (5)-(7). Column (4) estimates the same model as column (3) but for the sub-sample of panel observations only. COVID controls: average number of new infections in past two weeks, changes in the average level of new infections in past two weeks. SE controls: age, gender, education, employment status, marital status, and a rural dummy (as these are virtually time-invariant in panel observations we omit those in the individual-level fixed effect specifications).

To further address concerns of omitted variable bias, we estimate panel models that include individual-level fixed effects and thus control for any time-invariant unobserved factors at the individual level that may drive our main result (columns 5-7). The individual-level fixed effects models confirm that the statistically significant negative relationship between the stringency level and institutional trust is robust and has a causal interpretation. With sequentially add COVID controls and season fixed effects, we estimate in the richest specification that a one SD increase in policy stringency leads a .16 SD decrease in institutional trust (column 7).

² The number of observations drops significantly as the state is only known for about two thirds of observations. We view the inclusion of state-level fixed effects as important to capture potentially important variation across states.

Addressing reverse causality from institutional trust and policy stringency as noted above, in Table A3 we report correlations of policy stringency on the survey date with the level of average trust one and two weeks prior to that date as well as with the difference between the two levels (change in trust in the two weeks prior to the survey date). The results provide strong evidence against such an effect, as we observe that neither average trust levels nor changes predict stringency significantly, neither in statistical nor in economic terms, and the explanatory power for each model is extremely low.

Hard lockdowns The near-linear negative relationship between stringency levels and institutional trust suggests that hard lockdowns, which entail high levels of stringency, are highly detrimental for trust. To study the implications of hard lockdowns in further, we compare stringency levels of greater or equal to 75 to levels below that. A threshold of 75 corresponds to the 75th percentile of the stringency level distribution (at the date level). In practice, in the German setting, this corresponds to measures such as prohibiting private or public gatherings with more than a few individuals from other households, closing schools, cultural, leisure and sporting facilities, and non-essential stores, or the introduction of curfews limiting individual mobility (Bundesministerium für Gesundheit 2023; Deutsche Welle 2021; Bosen and Thureau 2021).

For the empirical analyses, we zoom in on the hard lockdown in the Winter of 2020/2021. Specifically, we focus on the period from 8 November, 2020 till 21 January, 2021, for which we have a lot of observations, and drop observations from a two-week window around the start date of the hard lockdown. That is, we omit observations from one week prior that date (8 December, 2020) to one week after that date (22 December, 2020). By excluding these observations, we avoid potential implications of individuals anticipating the hard measure, which is usually announced a few days in advance, shortly before the start of implementation and of individuals still trying to understand it shortly after it starts.

As documented in Table 3, we find the expected highly negative consequences of a hard lockdown in terms of institutional trust. In our parsimonious specification, a hard lockdown is associated with a drop of .65 in institutional trust compared to no hard lockdown (conditional on age and gender). Given a mean of 1.90 and a standard deviation of .74 for trust in institutions this is a sizable difference of close to one standard deviation. The sizable difference is fairly stable when we control for other socio-economic and COVID variables as well as the number of days number of days in realized lockdown at the survey date.

Table 3: Lockdown and trust in institutions

	(1)	(2)	(3)	(4)
Hard lockdown	-0.65*** (0.08)	-0.43*** (0.09)	-0.58*** (0.10)	-0.35** (0.13)
Number of days in hard lockdown				-0.01* (0.00)
N	2631	2392	2392	2392
R ²	0.039	0.121	0.130	0.133

Note: analyses include only observations between 08 November 2020 and 8 December 2020 as well as between 22 December 2020 and 21 January 2021. Standardized variables, robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. (1) Covariates: age and gender. (2) Covariates: age, gender, education, being employed, being married, living in rural area and state fixed effects. (3) and (4) Covariates: controls from (2), average number of new cases two weeks ago, and changes in the average level of daily cases.

Different institutions. Table 4 presents results for the separate types of institutions included our index measure. We observe a causal negative impact of policy stringency of every item, with the important exception of trust in the police. We interpret the lack of a pronounced impact of trust in the police as evidence against an important role of a perceived power grab and move towards autocratic governance for creating a negative link between policy stringency and institutional trust. By contrast trust in courts decreases the most across institutions. A one standard deviation increase in policy stringency induces a decrease of .17 in trust in courts, which is about 9% of the overall mean level (2.04). In addition, the explanatory power of the model is much larger for trust in courts, as indicated by the R². These results suggest, across formal institutions that the policy stringency level is particularly important for trust in the judiciary.

Table 4: Different types of institutions

	(1) National government	(2) Local government	(3) Police	(4) Courts
Stringency	-0.056** (0.021)	-0.094*** (0.023)	-0.028 (0.024)	-0.171*** (0.024)
N	2555	2555	2555	2555
R ²	0.027	0.050	0.012	0.115

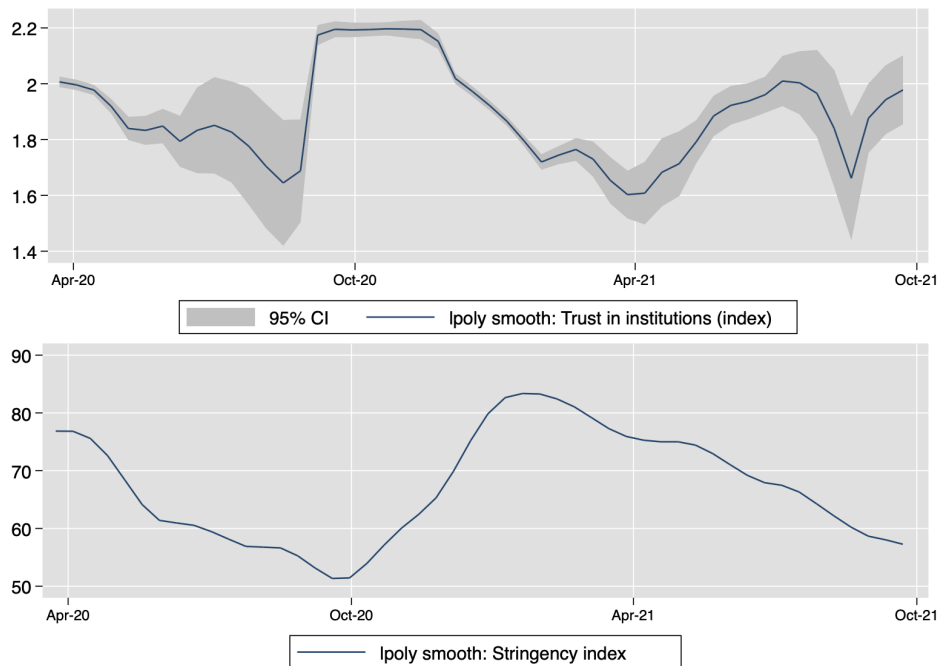
Note: significance levels: *** p<0.01, ** p<0.05, * p<0.1, standard errors clustered at the individual level in parentheses. Panel model specification as in column (7) of Table 2.

4.2 Heterogeneity

Over time. Figure 5 shows time trends of our main dependent (trust in institutions) and independent variable (policy stringency) over time. The upper panel suggests that the level of average trust varied substantially over the study period. In combination with the bottom panel,

visual inspection suggests that the overall negative relationship between the level of policy stringency and trust in institutions was strongest after October 2020. Before October 2020, there is also strong temporal variation in the level of policy stringency but the relationship with institutional trust seems less clear due to fairly large confidence bands around mean trust, which stems from a moderate number of observations.

Figure 5: Stringency index and trust in institutions over time

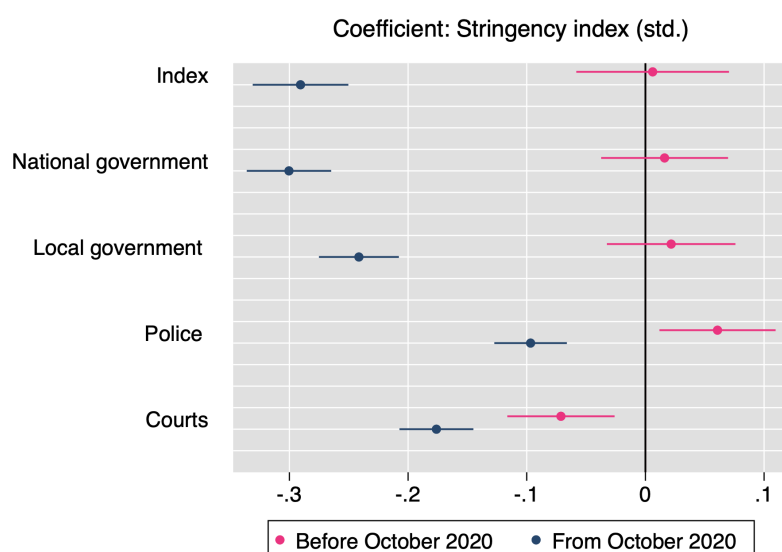


Note: significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$, standard errors clustered at the individual level in parentheses. Bottom panel: smoothed daily level of the policy stringency index across the study period. Top panel: smoothed mean level of the institutional trust index across the study period.

Source: authors' calculations.

To test the visual result formally, we pool observations up to September 2020 on the one hand and from October 2020 onwards on the other. Given the substantial variation in stringency levels up to September 2020, we can test the link of interest for both periods separately, using our most demanding pooled models. As shown in the top panel of the coefficient plot presented in Figure 6, the negative relationship is concentrated in the period from October 2020, when stringency started to increase again. For the initial period we do not find a significant association between the stringency level and institutional trust. The point estimate is very small in magnitude and positive.

Figure 6: Different types of institutions by period



Note: 90 percent confidence intervals. Specification: Model specification as in column (4) of Table 2.

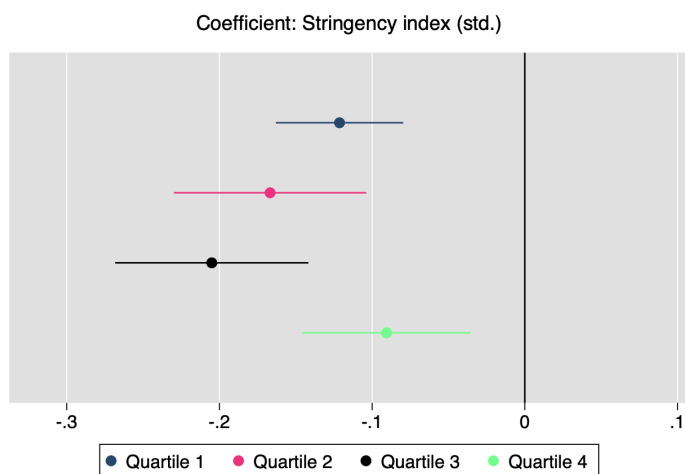
Source: authors' calculations.

Studying the different dimensions of the index separately, important differences across the dimensions emerge. In the initial period of the pandemic, there is a weakly positive association of stringency with trust in the national government, local government and the police, for which estimate is statistically significant and largest in magnitude. By contrast, trust in courts decreases with stringency in the initial period. In the period from October 2020, when stringency began to rise again, a different picture emerges: now, an increase in stringency decreases trust in any institution, emphasizing the structural difference between the initial and later stage of the pandemic and disappearing of mechanisms creating positive links between stringency and trust.

By COVID-19 infection levels and change. The level of recorded new COVID-19 cases and their changes over time may not only be a confounding but also a moderating variable in models of the impact of policy stringency on institutional trust. That is, the marginal effect of a given increase in stringency may vary with the COVID-19 situation at the time. In Figure 7, we explore whether the impact of policy stringency increases varies with the COVID-19 infection dynamics when the measures are implemented. If a power grab were a dominant mechanism, we would expect that the negative impact of increased stringency be more pronounced when COVID case levels are relatively low as it would appear less justified. Specifically, we create quartiles of levels of new cases on the survey date and test our main relationship separately for each quartile. The results do not suggest a clear pattern, with coefficients not being significantly different from each other. We hence conclude that the negative impact of increased stringency does not vary significantly with the underlying level of new COVID-19 infections

providing further evidence against perceptions of a power grab as dominant mechanisms causing decreases in institutional trust.

Figure 7: Trust in institutions by new COVID-19 cases



Note: 90 percent confidence intervals. Model specification as in column (2) of Table 2.

Source: authors' calculations.

4.3 Policy support and well-being

Next, we study self-reported information on individuals' support for the countermeasures and their subjective well-being. Both indicators are likely correlates of trust in institutions in the COVID-19 pandemic and were collected as part of the LwC survey over the entire study period.

As shown in Table 5, our panel estimates suggest that there is no net causal effect of policy stringency on the level of support of these policies, having strong support, and life satisfaction. The estimates are small in magnitude and not statistically significant.

Table 5: Policy support and well-being

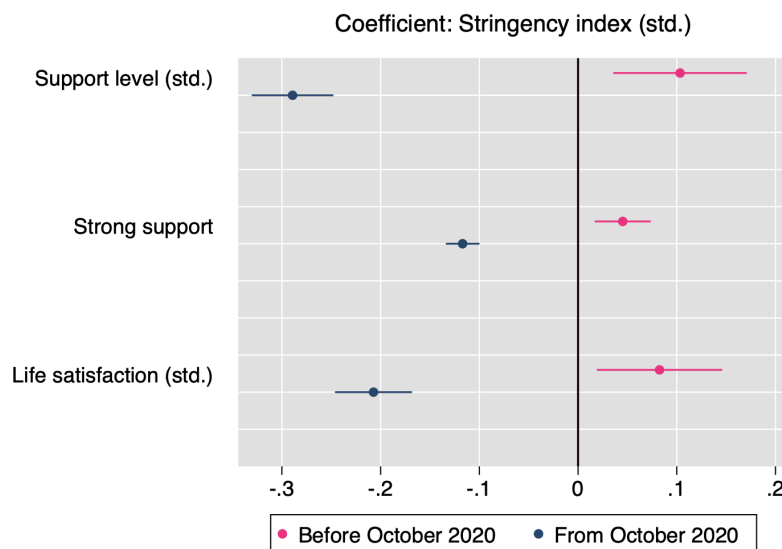
	(1) Support level (std.)	(2) Strong support	(3) Life satisfaction (std.)
Stringency	0.035 (0.071)	0.014 (0.024)	-0.083 (0.075)
N	2656	2656	2675
R ²	0.02	0.02	0.03

Note: significance levels: *** p<0.01, ** p<0.05, * p<0.1, standard errors clustered at the individual level in parentheses. Model specification as in model (7) of Table 2.

The results reported in Figure 8 suggest that these results mask important differences between the two periods of before versus from October 2020. Estimating our most demanding pooled models for each period, we observe a moderate but positive association of an increase in national policy stringency with support for such policies as well as subjective well-being. In the

period from October 2020, however, increases in policy stringency are associated with pronounced *decreases* in supporting countermeasures and subjective well-being, marking a dramatic reversal.

Figure 8: Policy support and well-being by period

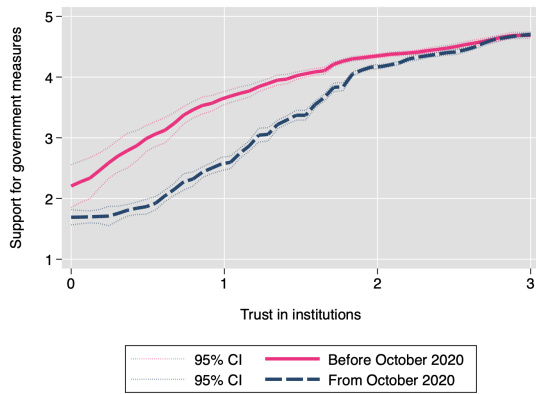


Source: authors' calculations.

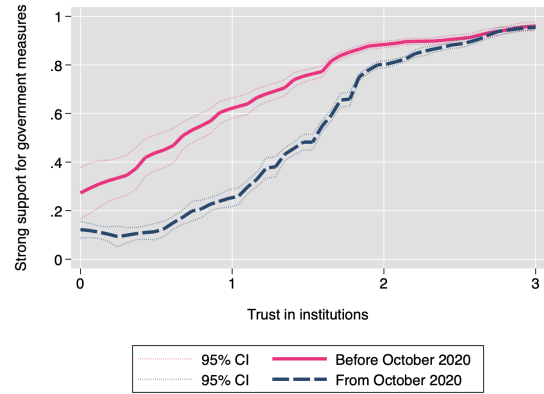
In Figure 9 we inspect the relationship between institutional trust and these variables. As suggested by previous literature (see above and Appendix A), trust in institutions is intimately linked with support of national policy measures to counter the pandemic. For both the level of support and the binary indicator of strong support there is a negative and strong link with the level of institutional trust. To illustrate, high support ranges from shares around 90 percent at high levels of trust to as low as 20 percent for low levels of trust. We observe an important difference in the relationship between the periods before and from October 2020. While for high values of trust, high support shares are similar across periods, the share drops much stronger with less trust in the period from October 2020 compared to the initial stage of the pandemic. For example, for a rather low level of trust at a value of 1 the estimated high support was around 60 percent before October 2020 but only 20 percent in the period from October 2020.

Figure 9: Institutional trust and policy support.

(a) Level of support (1-5)



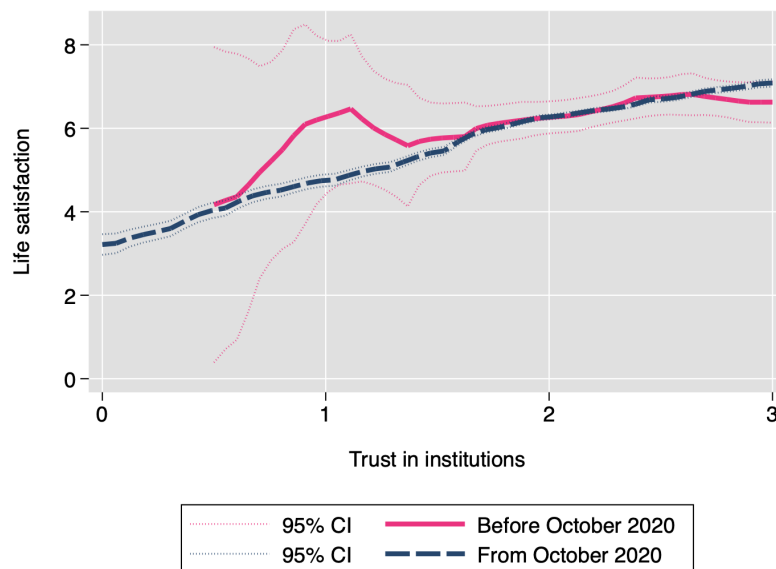
(b) Strong support (0/1)



Source: authors' calculations.

As suggested by previous literature (see above and Appendix A), trust in institutions is also closely related to individuals' well-being Figure 10. Unlike for the level of policy support, we do not observe a difference in the relationship with life satisfaction across the two periods Figure 10. Rather, there is a nearly perfectly linear correlation between the level of institutional trust and the level of life satisfaction. The confidence band for low values of institutional gets large for the initial stage due to a moderate sample of observation with very low values of trust in that period.

Figure 10: Institutional trust and life satisfaction



Source: authors' calculations.

Taken together, we interpret these results as further evidence for a structural difference between the initial stage of the pandemic and the later stages. In our view, the null effects in the initial stage are best explained by multiple mechanisms that are at play in the initial stage. On the one hand, the restrictive nature of more stringent policies may reduce individuals' life quality and

lead them to question the legitimacy of the measures, reducing institutional trust and support of stringent countermeasures. On the other hand, in the face of a serious, indeed unprecedented health threat more stringent response may induce sentiments of having to stick together (rally effect) and/or being protected by a capable state (signaling effect), which is consistent with other studies of pandemic onset. In the absence of much evidence and when faced with a common threat, strong government action was appreciated. Once the initial stage is over and stringency starts to rise again, it appears that the offsetting second mechanism disappears and the negative impacts of more stringency on trust, well-being and being supportive of the policies dominate. Over time, experiences and views of the pandemic diverged and one size ceased to fit all; trust in institutions thus fractured.

5 Conclusion

A dominant narrative in the discourse about institutional trust during the COVID-19 pandemic has been that during lockdowns in the initial phase of the pandemic societies around the world have rallied around the flag, strengthening unity and the social contract. Our paper tests how national countermeasures affect trust in institution over the first 18 months of the pandemic in Germany, drawing on a large micro-level (panel) data set.

We demonstrate that, beyond the initial stage of the COVID-19 pandemic, higher stringency of pandemic countermeasures causally decreases trust in institutions, suggesting that later hard lockdown measures are highly detrimental for the social contract. We argue that the reduction in trust is underpinned by individuals' perceptions of stringent countermeasures as an attack on individual freedoms, which are not protected by, for instance, the courts. For the early stage of the pandemic, that effect appears to be offset by mechanisms boosting trust, which is in line with other literature describing increases in trust at the onset of the pandemic.

After less than six months of sticking together and feeling protected by a capable state, due to rally and signaling effects, these effects wear off and societal cohesion is showing significant cracks. While German public health was quite well maintained during the pandemic, public trust in institutions quickly suffered a large hit from the countermeasures supporting public health. Crisis situations have the potential to both unite and divide societies - or indeed to do both, sequentially.

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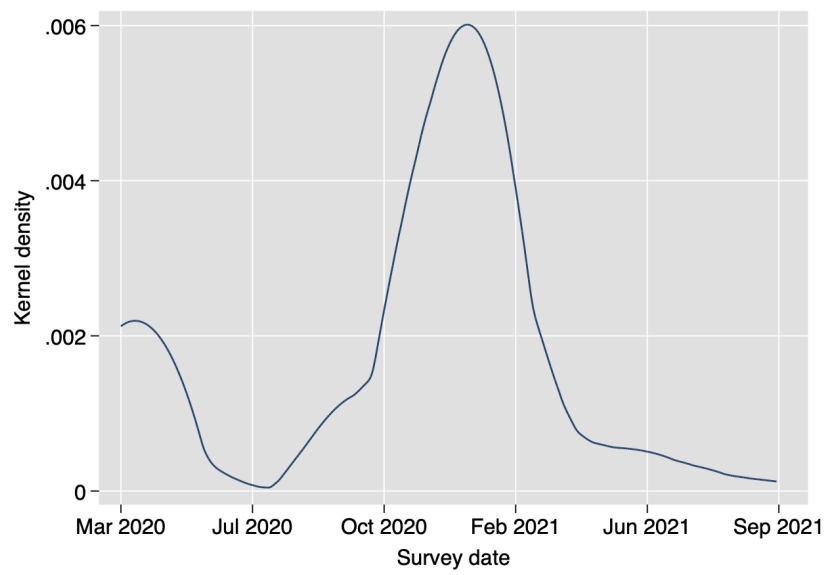
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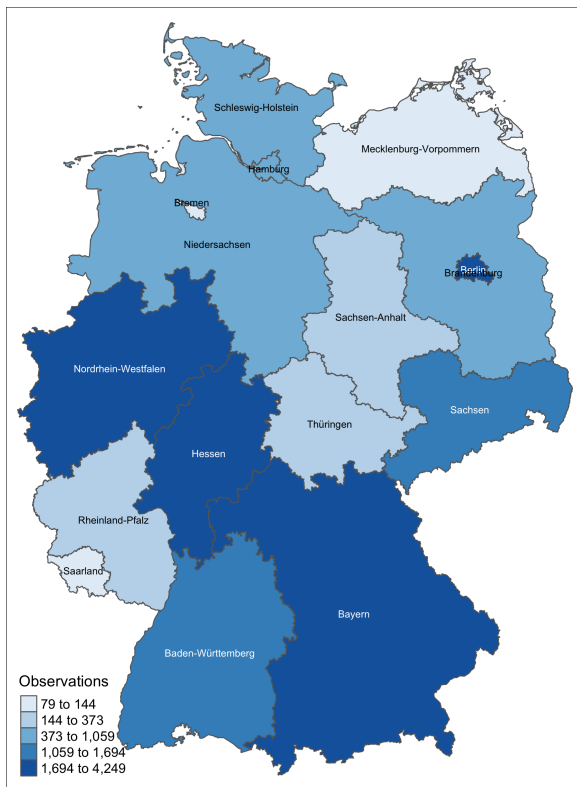
A Appendix: additional tables and figures

Figure A1: Survey sample by survey date



Source: authors' calculations.

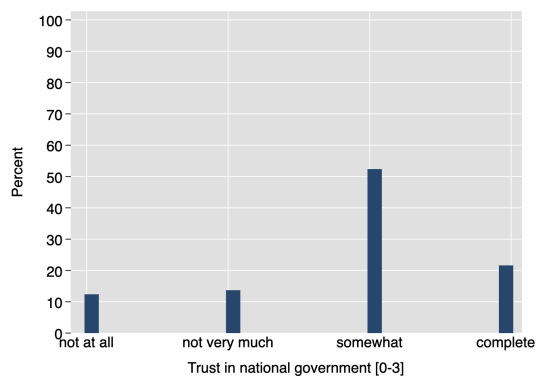
Figure A2: Survey sample by state



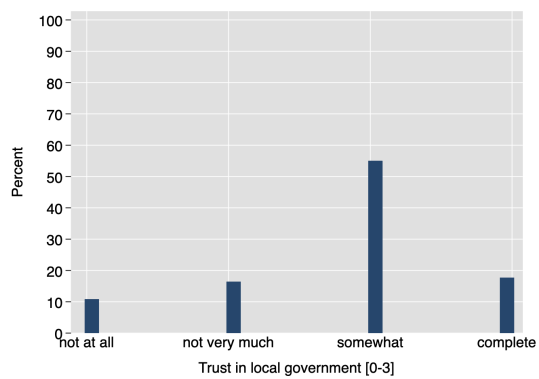
Source: authors' calculations.

Figure A3: Distribution of trust variables

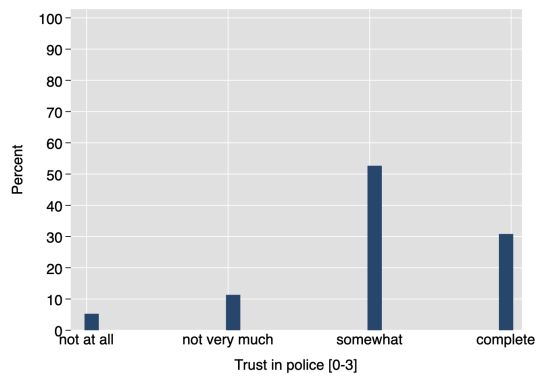
(a) National government



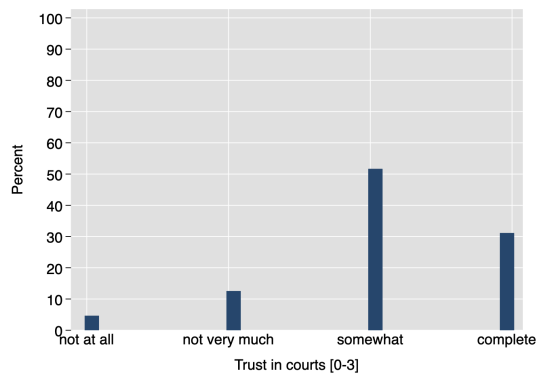
(b) Local government



(c) Police

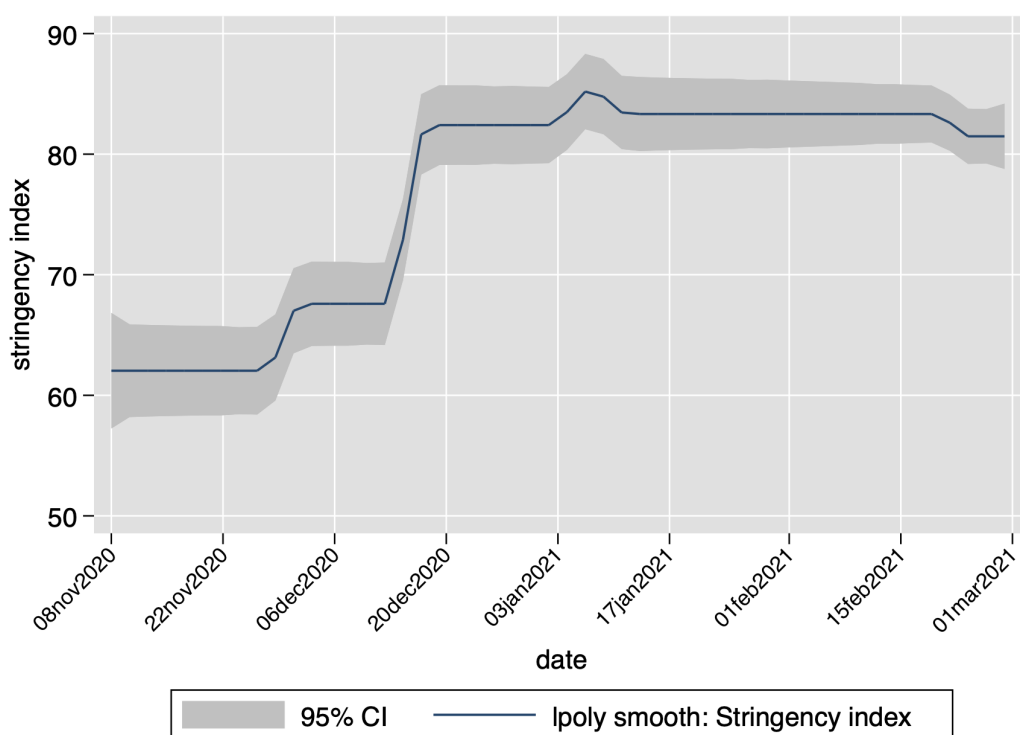


(d) Courts



Source: authors' calculations.

Figure A4: Hard lockdown



Source: authors' calculations.

Table A1: Trust and demographic statistics (weighted)

	Mean	S.D.	Min.	Max.
Trust in institutions (index)	1.90	0.74	0	3
Trust in national government	1.75	0.95	0	3
Trust in local government	1.73	0.90	0	3
Trust in police	2.08	0.83	0	3
Trust in courts	2.04	0.82	0	3
Stringency level	76.42	9.73	50	85
New cases (2 weeks)	12611	9137	145	25757
Change in level of new cases (2 weeks)	945	2711	-8221	7550
Age	50.73	18.36	19	93
Female	0.52	0.50	0	1
Secondary education (highest)	0.62	0.49	0	1
Tertiary education (highest)	0.34	0.47	0	1
Married	0.58	0.49	0	1
Unemployed	0.03	0.17	0	1
Rural	0.25	0.43	0	1
Observations	17228			

Table A2: New cases and stringency index

	Outcome: stringency index (day)		
	(1)	(2)	(3)
Average number of new cases last week	0.596*** (0.035)		
Average number of new cases 2 weeks ago		0.672*** (0.032)	0.653*** (0.032)
Changes in the average level of daily cases			-0.126*** (0.032)
N	537	530	530
R ²	0.356	0.452	0.467

Note: standardized variables, robust standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1.

Table A3: Robustness check: reverse causality

	Outcome: stringency index (day)		
	(1)	(2)	(3)
Average trust last week	-0.052 (0.038)		
Average trust 2 weeks ago		0.006 (0.038)	-0.040 (0.042)
Change in the av. level of trust			-0.080 (0.051)
N	537	530	530
R ²	0.003	0.000	0.004

Note: significance levels: *** p<0.01, ** p<0.05, * p<0.1, robust standard errors in parentheses.