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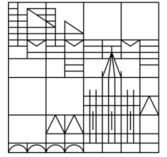

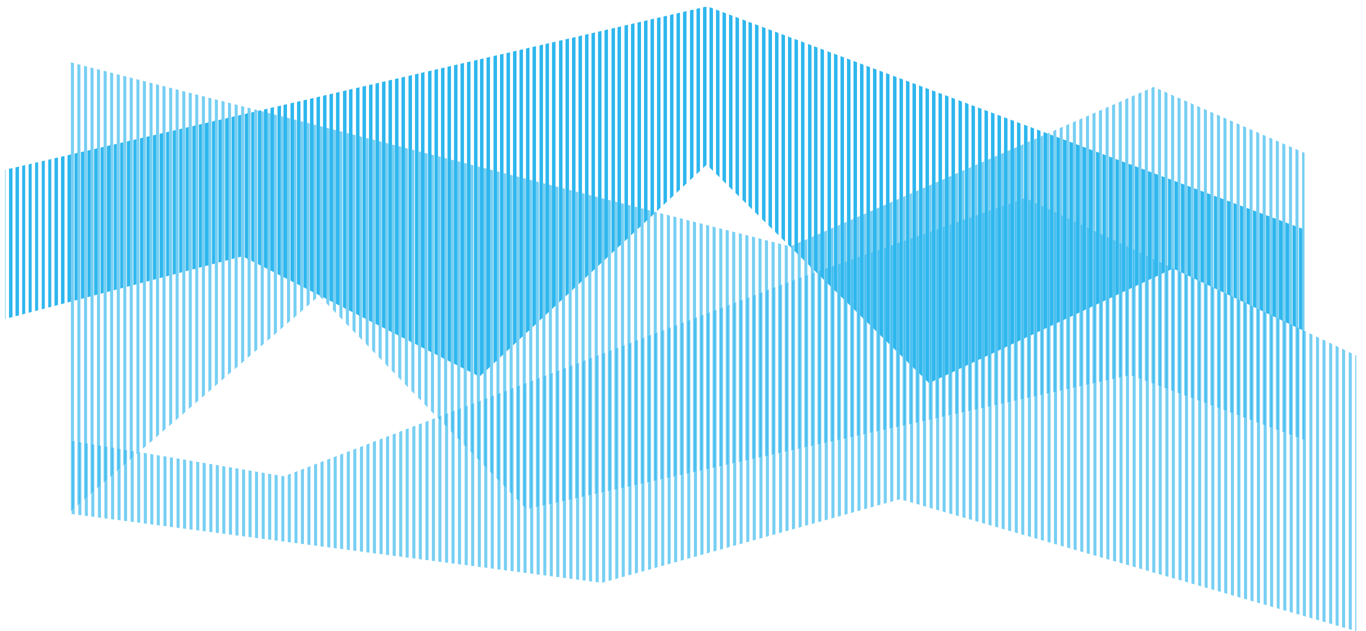

Health care attitudes and institutional trust during the COVID-19 crisis: Evidence from the case of Germany

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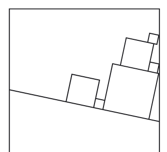

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Abstract

The COVID-19 pandemic poses a tremendous challenge to health care systems around the globe. Using original panel survey data for the case of Germany, this paper studies how specific trust in the health care system's ability to cope with this crisis has evolved over the course of the pandemic. It also examines whether this specific form of trust is associated with general political trust, as well as individual willingness to support additional public spending on health care. The paper finds that levels of trust in the health care system, both regarding efficiency and fairness, are relatively high and have (so far) remained stable or even slightly increased. The analysis also reveals a strong positive association between general political trust and specific trust in the health care system. In contrast, willingness to increase health care spending—taking into account fiscal constraints—is less strongly related to perceptions of performance and political trust.

Keywords: COVID-19; health care attitudes; performance perceptions; inequality; public spending

About the author

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Health care attitudes and institutional trust during the COVID-19 crisis: evidence from the case of Germany

1. Introduction

The welfare state has long been under pressure. During its "silver age" (Taylor-Gooby 2002), fiscal austerity related to globalization, population aging, and structural change, as well as the economic and fiscal crises of the past decade, have severely reduced policy-makers' fiscal leeway to react to new challenges, well before the COVID-19 pandemic put health care systems under additional stress. On average, advanced post-industrial democracies may be better able to deal with this challenge than countries in the Global South. Nonetheless, many OECD countries have struggled (and continue to struggle at the time of writing) with the impact of COVID-19 on health care systems, the economy, and society in general.

Germany's response to the COVID-19 crisis is often regarded by international observers as successful, in particular during the early phase of the pandemic in the spring of 2020.[1] Furthermore, even though the country did not follow the liberal Swedish model of completely avoiding a lockdown during the first wave, its lockdown measures have been less restrictive than those adopted by its neighbors, especially in Southern Europe. Germany's rather successful response is also evident in its overall lower number of cases and, more specifically, the lower number of fatalities relative to population size.[2] Nevertheless and despite these accomplishments, social protest against the government's response to the pandemic started earlier and became stronger in Germany than in other European countries, culminating in a series of demonstrations, in the second half of 2020, in large cities such as Berlin and Leipzig but also in more rural southern areas.[3] These events seem to indicate that a significant part of the German population has little faith in the health care system and the government's handling of the COVID-19 pandemic.

Based on novel and original survey data collected in two waves over the course of the pandemic, this paper tackles these issues head-on by addressing the following questions: What is the level of trust of the German resident population in the ability of the health care system to deal with the crisis, and how has it changed over the course of the pandemic so far? Do German residents perceive inequalities in treatment conditions, and do they have faith that they will personally receive the treatment they need? How is trust in the health care system related to other dimensions of political trust, such as trust in the government? Lastly, to what extent are perceptions of the performance of the health care system related to individual support for additional spending on health care, taking into account various fiscal constraints such as tax increases or spending cuts in other areas?

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1 See, for example: https://www.nytimes.com/2020/08/05/world/europe/germany-coronavirus-test-travelers.html (accessed Oct 2, 2020).
2 See data on the COVID-19 global dashboard hosted by the Johns Hopkins University: https://coronavirus.jhu.edu/map.html (accessed Jan 20, 2021).
3 See, for example: https://www.tagesspiegel.de/berlin/querdenker-demonstration-in-berlin-so-will-die-extreme-rechte-den-corona-protest-unterwandern/26123250.html, https://www.swr.de/swr2/leben-und-gesellschaft/was-steckt-hinter-querdenken-100.html (accessed Dec 16, 2020).

In answering these questions, the paper builds on existing work examining the relationship between trust and the welfare state. From a theoretical perspective, it contributes novel perspectives on the impact of existential crises on support for the welfare state, an issue that is still rarely addressed in the literature because of the rarity of these crises. The paper also makes an empirical contribution through the analysis of data from a large-scale public opinion survey of the German resident population addressing themes related to the COVID-19 pandemic and conducted in two waves (in April–May 2020 and in November 2020). In the next section, I briefly introduce and review the literature on trust and the welfare state, which is used to develop the theoretical framework of the paper. The empirical analysis follows, and the final section summarizes the main findings and draws conclusions.

2. Trust and the welfare state

There is a large (and still growing) body of literature on the complex relationship between trust and the welfare state, which can only be reviewed briefly here. This relationship defies simplistic conceptions of unidirectional causality between trust and welfare state institutions, instead emphasizing their reciprocal nature (Haugsgjerd/Kumlin 2020). Early scholarship in this field (Rothstein 1998; for recent reviews, see Citrin/Stoker 2018; Kumlin et al. 2017) primarily focuses on how welfare state institutions affect political trust. The core argument here is that universalist welfare state institutions are more likely to promote political trust among citizens than particularistic institutions and policies (Korpi/Palme 1998; Rothstein 2001) because universalist policies are associated with a more egalitarian approach to welfare state beneficiaries rather than the discriminatory approach commonly linked to means-tested programs. Moreover, concrete interactions with welfare state bureaucracy (Mettler/Soss 2004; Soss/Schram 2007) and more specific perceptions of the performance of welfare state institutions and policies have been shown to matter more for political trust than broader institutional welfare regimes (Christensen/Laergard 2005; Edlund 1999, 2006; Kumlin 2013; Svallfors 2002). Lastly, even though this aspect is not further discussed below, there is debate in the literature about how welfare state institutions are not only consequential for political trust but also for generalized social trust among citizens (Kumlin/Rothstein 2005; Uslaner/Brown 2005).

Reversing the analytical perspective, much scholarship has looked at how political trust may in turn influence and feed back into the political underpinnings of the welfare state. Put simply, if citizens generally trust the government and perceive the welfare state as handling social issues adequately, their willingness to pay taxes and their general support for the welfare state is likely to increase (Hetherington 1999, 2005; Roosma et al. 2014, 2016; Rothstein et al. 2012, Toikko/Rantanen 2017; for a contrasting finding based on experimental survey methods, see Peyton 2020). However, the opposite dynamic may also occur when citizen dissatisfaction with the performance of the welfare state fuels political distrust in a reciprocal "downbound spiral" (Haugsgjerd/Kumlin 2020). Furthermore, trust as a political resource may matter particularly in times of uncertainty. As Rudolph and Evans (2005) argue, trust matters most when citizens are asked to make sacrifices in terms of either material costs or "ideological costs"—that is, supporting policies that they would normally oppose (for similar arguments, see Gabriel/Trüdinger 2011; Hetherington 2005; Rudolph 2009). Thus, high levels of trust in political institutions may significantly expand the range of options for policymakers

to implement policies that impose short-term costs while contributing to solving the problem in the long run, particularly during existential crises such as the COVID-19 pandemic.

Looking jointly at how the welfare state affects political trust and how, in turn, higher levels of trust are associated with stronger support for the welfare state reveals that identifying a dominant direction of causality is inherently difficult. Rather, trust in political institutions and support for the welfare state are deeply intertwined. The reciprocal nature of their relationship is crucial to explaining the emergence and, in particular, the long-term political sustainability of different institutional “equilibria” related, for example, to a specific division of labor between public and private actors (Busemeyer/Iversen 2020; Zhu/Lipsmeyer 2015). As the broad literature on policy feedback has repeatedly shown, once established, welfare state institutions are very difficult to change (Brooks/Manza 2007; Pierson 1993). This is not to say, however, that change is impossible: the more recent literature on policy feedback shows that established institutions can also—under certain conditions—trigger “self-undermining” feedback effects, that is, support for change (Busemeyer et al. 2019; Jacobs/Weaver 2015). This is especially true if the status quo becomes de-legitimized because of significant negative side effects, as might be the case in the current pandemic.

So far, I have reviewed scholarship on trust and the welfare state broadly defined. The literature on attitudes towards health care policy more specifically is much more limited. Only a few studies focus on explaining institutional and individual attitudes towards health care, significantly fewer than in the areas of redistribution, labor market, or even education policy (for recent reviews, see Svallfors 2012; Busemeyer et al. 2020b: Chapter 2). The influential work of Jensen (2011, 2012, 2014; Jensen/Petersen 2017) has shown that health care is qualitatively different from other areas of the welfare state and finds strong overall levels of support for health care provision and less conflict between different parts of society (see also Wendt et al. 2011). Furthermore and as a consequence, individual factors that are commonly found to determine attitudes towards the welfare state, such as variables related to self-interest and partisan ideology, matter less in the case of health care (for similar findings, see Missinne et al. 2013; for more evidence of cleavages in attitudes related to self-interest and ideology, see Naumann 2014; Wendt et al. 2010). Using survey data from the US, Lynch and Gollust (2010) argue that individual beliefs and perceptions of the fairness of the health care system matter more as determinants of policy preferences than indicators of self-interest—a most relevant finding in the context of this paper. In a series of papers focusing on Eastern European countries, Habibov et al. have shown that prevailing levels of institutional and social trust and individual perceptions of the quality of health care are systematically related to willingness to pay more taxes for health care provision (Habibov et al. 2017, 2018; Habibov et al. 2018; Habibov et al. 2019).

Other studies have found evidence for policy feedback effects. Wendt et al. (2010), for instance, show that the particular institutional set-up of the public health care system is systematically associated with different levels of satisfaction among citizens. In a related study (Wendt et al. 2011: 168–169), the authors find evidence of a self-accelerating feedback mechanism in the case of health care as citizens in generously funded systems continue to support and demand more investments in this area. More recently, Wendt and Naumann (2018) have shown that among both citizens and health care professionals (doctors), there is little demand for large-scale changes across a range of advanced rich democracies, which can be taken as indicative evidence of

self-reinforcing feedback effects. This also applies to the dominant division of labor between public and private provision: in countries with a strong private component in the health care system, support for public provision—and potentially the welfare state more broadly in the long term—is lower (Cammett et al. 2016; Zhu/Lipsmeyer 2015).

Regarding the specific research question of this paper, two studies are of particular interest as they are concerned with the impact of large-scale health crises on individual-level preferences. Using the outbreak of a flu epidemic in the middle of the field period of the 2008 European Social Survey (ESS) as a natural experiment, Jensen and Naumann (2016) find that this real but quite limited outbreak compared to the COVID-10 pandemic led to a decline of support for government involvement in the provision of health care, in particular among right-leaning individuals. The authors explain this finding by pointing to the outbreak as a "signal of underperformance" (ibid.: 699), which lowers support particularly among those who were already skeptical of public provision. A different finding is provided by Albertson and Gadarian (2015), who study the impact of anxiety triggered by large-scale crises—including but not limited to health crises—on political trust and individual policy preferences. Using survey experiments involving simulated and real health crises such as the outbreak of H1N1 influenza in 2009, they find that large-scale crises increase rather than lower political trust, in particular among non-partisan experts. Their study also reveals enhanced support for "protective" policies, namely measures that are geared towards tackling the crisis, even if these policies involve significant restrictions such as quarantining and social distancing measures. Thus, in contrast to Jensen and Naumann (2016), Alberston and Gadarian (2015) find evidence of a "rally-behind-the-flag" effect as citizens become more trusting of elite actors in charge of handling the crisis. Taken together, the findings of these studies therefore point in different directions, suggesting that very little is known about the real-world impact of large-scale health crises.

3. Trust and healthcare attitudes during the COVID-19 pandemic

The following section develops a number of theoretical expectations regarding the determinants of trust in the health care system across a range of issues during the COVID-19 pandemic, with a particular focus on the importance of general political trust. I then put forward expectations regarding the determinants of individual willingness to pay for additional health care spending and how this might be affected by the overall crisis and by trust in the health care system more specifically. Given the historic and unprecedented scale of the COVID-19 pandemic, my theoretical expectations are, to a significant degree, exploratory.

Determinants of trust in the health care system

I start with attitudes towards and trust in the health care system. Here and in the empirical section below, I focus on different related but distinct aspects:[4] (1) perceptions of the *efficiency* of the health care system's reaction to the crisis; (2) perceptions of the *fairness* of the system's treatment of different population groups;

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[4] The empirical analysis below will show that these items are positively but only moderately correlated. Likewise, there is no common underlying latent factor.

(3) perceptions of the previous *preparedness* of the system to handle a crisis such as the COVID-19 pandemic; and (4) assessments regarding receiving *individual treatment* in the case of a COVID-19 infection (individualized trust in the health care system). Rather than examining all possible combinations of independent variables with these four issues, I focus on broader theoretical expectations, while leaving the exploration of details to the empirical analysis.

The literature on health care attitudes cited above has shown that broadly speaking, attitudinal cleavages are less pronounced in the case of health care than in that of other social policies because of its broad popularity (Jensen 2011, 2012; Wendt et al. 2011). Still, both self-interest and individual ideology are likely to influence individual attitudes and predispositions, at least to some extent (Missinne et al. 2013; Naumann 2014; Wendt et al. 2010). In line with the literature on policy feedback and welfare state performance (Soss/Schram 2007; Kumlin et al. 2017), a first plausible expectation is that previous concrete experiences with the health care system strongly affect present-day trust in the system's efficiency and fairness in handling the COVID-19 crisis. Individual variables, such as personal health status and age, in turn influence the likelihood that someone will have had more intense and long-lasting experiences with health care. Given that the German health care system is generally regarded as performing well (see below for figures from previous opinion polls), it is likely that more intense interactions with the system (e.g., related to bad personal health status or increasing age) increase trust in the handling of the crisis.[5] Still, the opposite reaction is also possible: the sick and elderly may be less likely to trust the system to handle the crisis, in particular if they feel that it has not helped them before. The latter might be particularly relevant for perceptions of the overall fairness of the system and the assessment of individual treatment conditions.

Regarding variables related to self-interest, it is well-known that health status is significantly related to material resources, that is, income and wealth (Lynch 2019). Thus, high-income and highly educated citizens, who generally experience better health outcomes than lower-class citizens, could also be more confident in the health care system's ability to deal with the COVID-19 pandemic. In the German case, in particular, this class-related effect may be reinforced by the institutional set-up of the health care system, which allows high-income individuals to opt out of the public health care scheme in favor of private insurance. About 10 percent of citizens are currently covered by private rather than public health care insurance, enjoying significantly better treatment conditions (Gerlinger/Rosenbrock 2018). Thus, higher socioeconomic status is likely to be correlated with higher levels of trust in the health care system.

Ideological cleavages are likely to matter as well, although they should be more important in the case of support for additional health care spending than overall trust in the system because the former is directly related to redistributive conflicts over scarce fiscal resources. Still, given that distrust of state-provided social benefits and services is higher among right-leaning individuals, trust in the performance of the health care system more specifically should also be lower in this group.

[5] To add more nuance to this picture, the detailed analysis by Wendt et al. (2014) reveals a widespread perception among the German population that the health care system is in need of reform. However, rather than dismantling the system, citizens largely call for more spending and investments in health care, which corresponds to the "improvement reaction" in the framework proposed by Chung and Meuleman (2017).

Besides ideological orientations, general political trust is likely to be associated with more specific trust in the health care system. As mentioned above, the existing literature remains ambivalent about the causal direction between these two factors. On the one hand, generalized political trust is likely to positively affect support for particular welfare state policies (and, therefore, the likelihood of citizens being willing to pay for these services via higher taxes). On the other hand, positive experiences with the welfare state are likely to contribute to building political trust in the long term. Rather than disentangling this relationship—which may be neither empirically possible nor theoretically sensible—, this paper aims at identifying and confirming a positive association between general political trust and trust in the health care system. Thus, generalized political trust becomes an important system-stabilizing resource, especially in times of crisis, when the effectiveness of the response depends on the voluntary commitment and contribution of citizens to the collective goal of getting the pandemic under control.

Finally, the development of the crisis itself could have a significant impact on the development of trust in the health care system as a conditioning macro-level factor. Given the highly dynamic and contingent nature of the crisis, the direction of its impact is rather unclear ex ante. The survey data analyzed in this paper was collected in two waves, in May 2020 and November 2020. The first survey wave took place shortly after the peak of the first wave of the pandemic, whereas the second survey wave was administered during the onset of the second epidemic wave. Thus, even though the timing of the surveys could have been better, the comparison of the two waves may yield interesting insights. On the one hand, the general perception within and beyond Germany was that the country managed the first COVID-19 wave quite successfully; hence, trust in the health care system should have been particularly high in the early summer. This trust, however, may have been seriously challenged as the second epidemic wave hit Germany quite hard in the fall. On the other hand, citizens' confidence in the ability of the health care system to cope with the crisis may have been particularly low in the spring as individuals were still grappling with the implications of the pandemic. In the fall, when it became clear that the system had so far handled the crisis quite well overall, confidence and trust could have increased again. Finally, trust in the health care system may be less strongly influenced by the short-term dynamics of the crisis than by long-term considerations about the appropriate role of the state. Therefore, these attitudes may be unlikely to change over the course of a few months. In short, given that all these considerations are theoretically plausible, the issue will have to be dealt with in an exploratory manner in the empirical section.

Willingness to pay for health care

Previous research cited above has shown that individuals' willingness to pay for health care through higher taxes is strongly affected by and related to perceptions of the performance of the health care system, generalized political trust, and individual determinants related to self-interest and ideology. Measuring willingness to pay via surveys is a challenging topic. When asked simply about their support for additional spending on social policy, respondents are likely to disregard or at least discount the tax increases that would be necessary to finance it (Citrin 1979). Therefore, recent research has made use of survey experiments to develop a more robust measure of willingness to pay for health care, which confronts respondents with a range of different trade-off scenarios that measure the robustness of spending support

(Busemeyer/Garritzmann 2017; Häusermann et al. 2019; Neimanns et al. 2018). This approach is also adopted in the present paper and will be explained in detail below.

Even though the analysis will control for a range of additional potential determinants of willingness to pay for health care, I concentrate on the importance of general political trust and perceptions of performance and trust related to health care more specifically. Quite simply, the theoretical expectation is that generalized political trust should be positively associated with willingness to pay, and the association should be stronger in scenarios that involve real costs in terms of higher taxes or cutbacks in other aspects of the welfare state. As argued by Hetherington (2005), Rudolph (2009), and Gabriel and Trüdinger (2011), trust should matter most where it hurts, namely when there are sacrifices to be made either in material or "ideological" terms.

Furthermore, perceptions of trust, system performance, and fairness directly related to health care should matter more for willingness to pay than more general dispositions towards the political system. This is simply because there is a more direct connection between these measures and support for additional health care spending. However, as argued by Chung and Meuleman (2017), the connection between performance perceptions and support for welfare state policies is not straightforward. Perceptions of low performance may trigger an "improvement reaction" among citizens demanding additional investments in a particular policy area to compensate for perceived performance problems, particularly if generalized political trust is relatively high. Conversely, perceptions of low performance may trigger and promote a process of "opting out" as citizens start to favor private over public provision (Busemeyer/Iversen 2020). In the German case, both are possible, but previous research by Wendt et al. (2014) shows that even though Germans perceive a need to reform the health care system, they would prefer additional spending on the public pillar to further cutbacks. Hence, I approach the empirical analysis with the theoretical expectation that there is a negative association between performance perceptions and willingness to pay for additional health care spending (positive performance evaluations go hand in hand with less demand for spending, and vice versa).

4. Empirical analysis

Background: The German health care system before the COVID-19 pandemic

The most recent assessment of the German health care system by the OECD reveals that the system is overall in decent shape but also retains some weaknesses.[6] Health care spending in Germany is significantly above the OECD average (11.2 percent of GDP in 2018), as is the number of doctors and nurses, facilitating broad access to health care. However, health care outcomes, in particular related to risk factors such as smoking, alcohol, and obesity, are lower than the OECD average. Overall life expectancy is only slightly above the cross-country average.

Data on public attitudes towards health care in Germany before the COVID-19 crisis is unfortunately scarce but some findings are available. The most detailed study has been conducted by Wendt et al. (2014), who

[6] https://www.oecd.org/germany/health-at-a-glance-germany-EN.pdf (accessed January 8, 2021).

analyze data from the German Internet Panel (GIP). As mentioned, even though Germans generally perceive a rather urgent need to reform the system, only a very small minority (11 percent) is (or was) in favor of reducing public spending on health care (ibid.: 339). About a third of respondents claimed to be willing to pay for additional spending via higher taxes (ibid.: 340). To improve the cost efficiency of the system, respondents were opposed to cutting back on services or raising private co-payments and favored cutbacks in the reimbursements of doctors and pharmacists instead.

A few additional data points can be gathered from other surveys such as the European Social Survey (ESS) and the International Social Survey Programme (ISSP). The 2016 round of the ESS, which focused on attitudes towards the welfare state, unfortunately does not feature any specific questions on health care in the welfare state module. As part of the general module, the ESS has included an item on citizens' overall satisfaction with health care services since its first wave in 2002. Broadly speaking, general performance evaluations in Germany have been more or less average, with an overall performance rating of 5.2 on a scale of 0 ("extremely bad") to 10 ("extremely good"). For most of the 2002–2018 period, Germany's perceived performance has been somewhat lower than the overall EU average, but slightly higher in the wake of the financial crisis (i.e., since 2010). There has also been a slight upward tick in performance evaluations across all countries in recent years (see Figure A1 in the Appendix). The 2008 welfare state module of the ESS contains a more specific question on the perceived "efficiency" of the health care system. Here, German respondents gave an average performance rating of 5.2, again on a scale of 0 ("extremely inefficient") to 10 ("extremely efficient"), more or less on par with the overall sample average.

A similar picture emerges from ISSP data. The 2011 module on "Health and Health Care" includes questions on the perceived performance of the German health care system. Table 1 showcases the share of respondents whose responses are in the top categories of the particular question/items, compared to the cross-country average of all countries in the 2011 wave of the ISSP.[7] Broadly confirming the previous findings, Germans seem to be fairly satisfied with the overall performance of the health care system, though not enthusiastically so. Self-professed willingness to pay for additional health care spending is significantly below the cross-national average, and also lower than in the study by Wendt et al. (2014). In terms of spending preferences, the 2016 "Role of Government" module of the ISSP, however, confirms that a large majority of Germans continue to support "more" or even "much more" government spending on health care (75.3 percent, compared to a cross-country average of 79 %). This apparent contradiction confirms the need to develop a robust measure of willingness to pay and spend on health care that takes into account fiscal trade-offs and constraints.[8]

7 In sum, 32 countries participated in the 2011 wave, mostly from the OECD area (https://search.gesis.org/research_data/ZA5800, accessed January 8, 2021). The estimate for Germany is the unweighted average for East and West Germany, which are included as separate "countries" in this ISSP wave.
8 ISSP "Role of Government" questions on government spending include a reminder that tax increases might be necessary if respondents demand much more spending. However, this reminder does not seem very effective in reigning in spending demands from respondents. See Busemeyer/Garritzmann (2017) for a similar assessment in the case of education spending.

Table 1: Selected summary findings from ISSP survey data on the state of the German health care system.

	Germany	Cross-country average
"How much confidence do you have in the health care system in your country?" (Share of respondents expressing "complete confidence" or "a great deal of confidence")	42 %	40.9 %
"In general, the health care system in Germany is inefficient." (Values indicate "strongly agree" or "agree")	38 %	36.8 %
"How willing would you be to pay higher taxes to improve the level of health care for all people in Germany?" (Values indicate "very" or "fairly willing")	25.7 %	30.8 %
"In general, how satisfied or dissatisfied are you with the health care system in Germany?" (Values indicate "completely", "very," or "fairly satisfied")	60.1 %	62.3 %

Source: ISSP "Health and Health Care" module (2011).

Data and methods

The following data is based on original survey data that was collected in two waves during the year 2020[9]. The first wave was conducted in May 2020, and the second wave followed in November. Even though the second wave added some new respondents to compensate for panel attrition, the following analysis only includes respondents that participated in both waves (respondents who participated only in the first wave were removed). Table A1 in the Appendix gives details on the number of observations per wave and the most important socio-economic characteristics, which reveal no major problems of panel attrition. The survey was conducted by survey firm Kantar, drawing on a large-scale online panel of the German resident population. Quota sampling and weights were used to achieve a representative national sample. The survey was part of a larger survey program studying the implications of the COVID-19 pandemic for inequality, sponsored by the Cluster of Excellence "The Politics of Inequality" at the University of Konstanz.[10]

The survey contains questions measuring trust in the health care system across the four issues mentioned above: perceptions of system efficiency, fairness, and previous preparedness to deal with the COVID-19 pandemic, and subjective assessments of individual treatment conditions in the case of an infection. Table 2 contains the detailed wordings of the questions (author's translation from German to English) and the coding of the response categories. As hinted at above, even though these issues are related to some extent, the empirical bivariate correlations between them are low or moderate at best, reaching a maximum of 0.3 (see Table A2 in the Appendix).

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[9] Busemeyer et al. (2020a). COVID-19 and Social Inequality - May 2020 (Version: 1.0.0), DOI: https://doi.org/10.7802/2118.
10 Further details and documentation can be found here: https://www.exc.uni-konstanz.de/en/inequality/research/covid-19-and-inequality-surveys-program/ (accessed January 8, 2021).

Table 2: Question wordings and coding of response categories.

Question wording	Response categories
Efficiency: "If you think of how the German health care system is coping with the COVID-19 crisis, how efficient would you rate the crisis response?"	11-point scale of 0 ("very inefficient") to 10 ("very efficient")
Fairness: "Do you think that doctors and nurses are giving privileged treatment to certain population groups or do you think that everybody is treated the same?"	11-point scale of 0 ("privileges for particular groups") to 10 ("everybody is treated the same")
Previous preparedness: "How well prepared was the German health care system for the COVID-19 crisis?"	5-point scale: "very well", "well", "so and so", "rather badly", "very badly"
Individual treatment conditions: "Imagine you get infected by the coronavirus. How much do you trust the health care system to provide the treatment that you need?"	5-point scale, from "very high" to "very low"

To measure individual willingness to pay and spend on health care, the survey adopted a similar approach to a previous study by Busemeyer and Garritzmann (2017) on education spending. Individual respondents were randomly assigned to four different "treatment" groups. The first group received the following question: "Should the government invest more, the same or less as now in health care after the COVID-19 crisis is over?" Respondents were asked to reply on a 5-point scale ("spend much more than before the crisis," "spend more", "spend the same amount", "spend less," and "spend much less than before the crisis"). Respondents in the other groups were given slight modifications of this question by adding a range of different fiscal trade-offs and constraints: first, "…even if it means higher taxes to pay for this"; second, "…even if other areas of social spending such as pensions have to be cut back"; and third, "…even if it means higher levels of public debt." Assessing citizens' spending preferences across these different scenarios likely provides a more robust estimate of their genuine willingness to pay and accept the necessary trade-offs to increase health care investment than simply asking a straightforward question as previous surveys have done. Furthermore, by studying the determinants of spending preferences across these different groups, it is possible to discern differences across individuals in the "strength" of their preferences.

Additionally, I include the following socio-economic control variables: gender (1=female); household net income measured in six categories, representing quintiles in the known distribution of net household incomes in Germany (less than 900 Euros; 900–1,500 Euros, 1,500–2,600 Euros; 2,600–4,000 Euros; 4,000–6,000 Euros; more than 6,000 Euros); education background in three categories (low=basic school certificate [*Hauptschulabschluss*] or less; middle=lower secondary school certificate [*Realschulabschluss*]; high=academic school certificate [*Abitur*])[11]; and age, operationalized in three categories (18–39 years; 40–59 years; more than 60 years old). Individual ideological orientations are measured on the commonly used 11-point left-right scale, from "left" (0) to "right" (10). The survey also contains information on individual sympathies for different political parties. Personal health status is measured by a self-reported (i.e., subjective) assessment on a 5-point scale, from "I am doing very well health-wise" to "I have a serious illness,"

[11] In principle, a further differentiation within the highly educated group is possible but does not lead to substantially different findings.

with intermediate categories. The analysis also includes a dummy variable asking if the respondent personally knows someone in their social network of family, friends, and work-related connections who has tested positive for the novel coronavirus.

Finally, I include two measures of political trust. The first is a factor variable that was constructed from items probing individual trust in the following actors or institutions: the federal government, the federal parliament, the state government, political parties, TV, newspapers, social media, the health care system, the police, and science. Individual responses were coded on a 7-point scale, from “no trust at all” (1) to “very trusting” (7). A factor analysis revealed one dominating factor (Eigenvalue=3.3; Cronbach’s α=0.93), which was used in the analysis as a measure of general political trust. The second measure refers to trust in the government in the handling of the COVID-19 crisis more specifically. The particular question reads: “What do you think: how truthfully has the government reported on the outbreak of the coronavirus?” Again, responses are measured on a 5-point scale, from “not truthfully at all” to “very truthfully.” The bivariate correlation between the two trust variables is moderately high (0.52).

Descriptive statistics and changes over time

Before I present and discuss the findings from a multivariate analysis of determinants, I want to briefly examine descriptive statistics and how trust in the health care system has changed over the course of the COVID-19 pandemic so far. The brief answer is: not much. Table 3 presents summary measures of the most important dependent and independent variables in this study. Regarding perceptions of efficiency, the German resident population assesses the performance of the system as somewhat above average and *increasing over time* as the crisis unfolds. Respondents also have a rather positive view of the fairness of the system (almost 60 percent hold a positive view on this issue). In contrast, only about a third state of respondents think that the system was well prepared to face the crisis. Individualized trust in the health care system to provide the necessary treatment in the case of a COVID-19 infection is high (69 percent during the first wave), but slightly declining as the crisis unfolds and the system comes under increasing pressure. General political trust remains stable across the two waves, at an intermediate level,[12] whereas the more specific measure of trust in the government to inform citizens truthfully about the COVID-19 outbreak increases from 49 percent to 53 percent. Nonetheless, the share of respondents providing a positive answer on this item is worryingly low. The average willingness to support additional spending for health care has also remained high and stable over the course of the pandemic (further details on this below). By and large, therefore, we observe a picture of stability rather than radical change: trust in the health care system has so far remained quite stable throughout the crisis, and my estimates are not far off from previous estimates regarding performance perceptions.

[12] The small discrepancies between the simple mean value (increasing from 4.15 to 4.2) and the change in the average value of the common factor (from 0.07 to -0.02) can be explained by changes in the distribution of values (as the range of the factor variable changes between the first and the second waves). Taken together, these values indicate stability rather than change.

Table 3: Descriptive statistics and changes over time.

	May	November
Efficiency perceptions, % holding a positive view (7–10 on a scale of 0 to 10)	53.27 %	57.09 %
Fairness perceptions, % holding a positive view (7–10 on a scale from 0 to 10)	59.67 %	58.87 %
Preparedness perceptions, % saying that the system was well or very well prepared to handle the crisis	35.93 %	33.57 %
Individualized trust in health care, % saying that they have high or high very high trust in getting the treatment they need	69.13 %	66.90 %
General political trust, average value on trust factor variable, on a scale of -3.2 to 2.7 (Cronbach's α=0.92)	0.07	-0.02
General political trust, average value of aggregated index on a 0–10 scale	4.15	4.20
Trust in information policy of federal government, % saying that the government reports rather or very truthfully	49.33 %	53.04 %
Willingness to support additional spending, % supporting more or much more spending (averaged over treatment conditions)	68.45 %	69.0 %

Multivariate analysis of trust in the health care system

Next, I turn to a more rigorous multivariate analysis of the determinants of trust in the health care system. For the items measured on an 11-point scale, I employ simple linear OLS regression, using survey weights. For the other items, I reduce the 5-point scale to a dichotomous measure to enhance readability and ease of interpretation.[13] In the latter case, I use logit regression models, again with survey weights.

Table 4 shows the results of the analyses of perceptions of efficiency and fairness. The table contains two models for each dependent variable, one with and one without the political trust measures. Comparing these two specifications reveals that the inclusion of trust variables has significant implications: it boosts the share of explained variance significantly (from 0.043 and 0.037 in models 1 and 3 to 0.141 and 0.124 in models 2 and 4, respectively), and it deflates the explanatory power of other independent variables, in particular household income, educational background, and age, but also individual ideological predispositions. The table also confirms the descriptive findings above, namely a significant increase in perceptions of efficiency between the first and second waves, but no change in perceptions of fairness.

As tentatively hypothesized above, individual socioeconomic status is associated with the perceived performance of the health care system. Respondents with a higher household income and a higher educational background are more likely to have positive views on both the efficiency of the crisis response and the fairness of the system. Elderly persons, who can be expected to come into extended contact with the health care system more frequently than younger persons, are also more likely to hold positive views on the efficiency and fairness of the system. However, personal health status is not associated with perceptions of

[13] More specifically, for the item on previous preparedness, I combine the categories "very well" and "well prepared" (coded 1) and contrast them with the remaining categories (coded 0). Regarding individual treatment conditions, respondents expressing "very high" and "high" trust in getting the treatment they need are coded 1, whereas the others are coded 0.

efficiency, and those in ill health tend to hold more negative views on the fairness of the system. Hence, the age effect could be driven by a general inclination to express trust in the welfare state among the elderly rather than positive experiences with the system. Interestingly, the analysis also reveals that respondents who personally know someone who developed a COVID-19 infection have more trust in the system (both regarding efficiency and fairness), although this effect disappears once general political trust is controlled for. Equally, a left-wing ideological predisposition is associated with more positive views both on the efficiency and the fairness of the system (the latter being potentially more surprising than the former). Here too, however, the effect disappears once general political trust is included.

Table 4: Determinants of perceptions of efficiency and fairness.

	Perceived efficiency		Perceived fairness	
	(1)	(2)	(3)	(4)
Gender (female)	-0.0649	-0.0294	0.0384	0.0524
	(0.0978)	(0.0937)	(0.105)	(0.101)
Net household income	0.112***	0.0617	0.219***	0.165***
	(0.0433)	(0.0413)	(0.0462)	(0.0446)
Educational Background	0.327***	0.126**	0.281***	0.0616
	(0.0636)	(0.0628)	(0.0689)	(0.0683)
Age (40–59 years old)	0.243**	0.0916	0.499***	0.329**
	(0.121)	(0.115)	(0.133)	(0.129)
Age (60+ years old)	1.046***	0.511***	1.044***	0.495***
	(0.128)	(0.123)	(0.142)	(0.142)
Left-right ideology	-0.0869***	0.00845	-0.0895***	-0.000123
	(0.0258)	(0.0247)	(0.0283)	(0.0281)
Personal health status	-0.0756	-0.0477	-0.113**	-0.0879*
	(0.0480)	(0.0465)	(0.0518)	(0.0503)
Know person with COVID-19	0.279**	0.0987	0.244**	0.0549
	(0.113)	(0.107)	(0.119)	(0.118)
Wave 2 dummy	0.344***	0.341***	-0.0574	-0.0911
	(0.0985)	(0.0946)	(0.105)	(0.103)
General political trust		0.545***		0.407***
		(0.0691)		(0.0775)
Trust in gov. information		0.447***		0.558***
		(0.0542)		(0.0604)
Constant	4.834***	3.665***	5.635***	4.273***
	(0.310)	(0.327)	(0.338)	(0.362)
Observations	3,799	3,703	3,802	3,706
R-squared	0.043	0.141	0.037	0.124

Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

Regarding the association between general political trust and trust in the health care system, the analysis reveals a strong positive association between both measures of trust on the one hand and perceptions of efficiency and fairness on the other. This is similar to previous findings by Lynch and Gollust (2010) in the US. The effect is sizable as well: a change of one standard deviation in the factor variable measuring political trust is predicted to be associated with a change of 0.38 on the efficiency scale (SD=2.71) and 0.37 on the fairness scale (SD=2.95). For the variable measuring trust in the government's information policy, the predicted changes are even more significant (0.52 and 0.64, respectively). This approximates to the magnitude of the coefficient estimate of old age. When including the two trust measures separately (not shown for reasons of space), the coefficient estimate for each individual variable almost doubles in magnitude (for both dependent variables). Given the moderately high correlation between the two variables mentioned above, this is not

surprising. Excluding one variable to the benefit of the other would potentially introduce omitted variable bias, hence, I include both simultaneously in the main models.

Table 5 contains the results of analyses of citizens' assessment of the previous preparedness of the health care system as well as individualized trust in getting the necessary treatments in case of an infection. Again, individual socioeconomic status is associated with both dependent variables. Similar to the results above, the association between socioeconomic variables and the dependent variables is affected and mediated by the inclusion or exclusion of the political trust variables, but the "dampening" effect is less pronounced here than in Table 4.

Table 5: Determinants of perceptions of preparedness and individualized trust.

	Perceptions of previous preparedness		Individualized trust in treatment conditions	
	(1)	(2)	(3)	(4)
Gender (female)	0.0449	0.0833	-0.155*	-0.138
	(0.0803)	(0.0840)	(0.0859)	(0.0937)
Net household income	0.112***	0.0816**	0.172***	0.150***
	(0.0360)	(0.0380)	(0.0391)	(0.0423)
Educational background	0.0449	-0.0897	0.401***	0.217***
	(0.0525)	(0.0559)	(0.0580)	(0.0625)
Age (40–59 years old)	0.135	0.0181	0.423***	0.304**
	(0.100)	(0.105)	(0.109)	(0.119)
Age (60+ years old)	0.262**	-0.129	0.863***	0.407***
	(0.109)	(0.117)	(0.120)	(0.130)
Left-right ideology	-0.0102	0.0496**	-0.0775***	0.0121
	(0.0199)	(0.0219)	(0.0225)	(0.0237)
Personal health status	-0.179***	-0.166***	-0.241***	-0.264***
	(0.0379)	(0.0401)	(0.0413)	(0.0455)
Know person with COVID-19	0.162*	0.0167	0.384***	0.241**
	(0.0928)	(0.0976)	(0.101)	(0.110)
Wave 2 dummy	-0.175**	-0.165*	-0.164*	-0.199**
	(0.0798)	(0.0842)	(0.0867)	(0.0950)
General political trust		0.356***		0.236***
		(0.0612)		(0.0630)
Trust in gov. information		0.322***		0.610***
		(0.0489)		(0.0515)
Constant	-0.553**	-1.446***	0.275	-1.273***
	(0.249)	(0.294)	(0.280)	(0.329)
Observations	3,799	3,703	3,800	3,704
Pseudo R^2	0.011	0.062	0.052	0.151

Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

High-income and well-educated individuals as well as older respondents are more likely to express a higher degree of individualized trust in receiving the necessary treatment. To some extent, this may be a side effect of the dualized health care system in Germany, which allows richer citizens to opt out of the public scheme and buy into private insurance instead, which generally offers better treatment conditions. Unfortunately, however, the survey does not contain information on the individual's health insurance status. Departing from the results above, individual personal health status has a more consistent and robust effect across the different model specifications: not surprisingly, individuals in bad health have a more negative view of the preparedness of the system to cope with the COVID-19 pandemic and express less trust in receiving the

necessary treatment. In keeping with the previous results, however, respondents who know someone who developed a COVID-19 infection hold more positive views and express greater trust in the system. Thus, immediate experiences with the health care system during the pandemic seem to strengthen trust in its ability to cope with it. The association between ideological predispositions and perceptions of preparedness and individualized trust is neither consistent nor robust across model specifications. Again confirming the descriptive findings presented above, Table 5 shows that perceptions of the preparedness of the system and individualized trust in getting the necessary treatment have decreased somewhat between the first and second waves.

Turning to the measures of trust, Table 5 again reveals a strong and positive association between general political trust and the dependent variables. The predicted changes in the probability of holding a more positive view of the previous preparedness of the system resulting from a change in general political trust by one standard deviation are 7.6 percentage points and 5.6 percentage points for individualized trust. The corresponding effect sizes for the more specific trust variable on the COVID-19-related information policy of the government are larger: 8.5 percentage points for perceptions of preparedness and 9.9 percentage points for individualized trust. Thus, I find that general political trust is an important predictor of and therefore resource for more specific trust in the health care system during times of crisis.

Support for additional public spending and willingness to pay

Finally, I present an analysis of spending preferences on health care and commensurate willingness to pay. As a reminder, the literature on this issue claims that positive performance evaluations of a particular domain of social policy should be associated with greater support for additional spending. The association between more specific measures of trust and spending support should also be stronger and more robust than the association between general political trust and spending support.

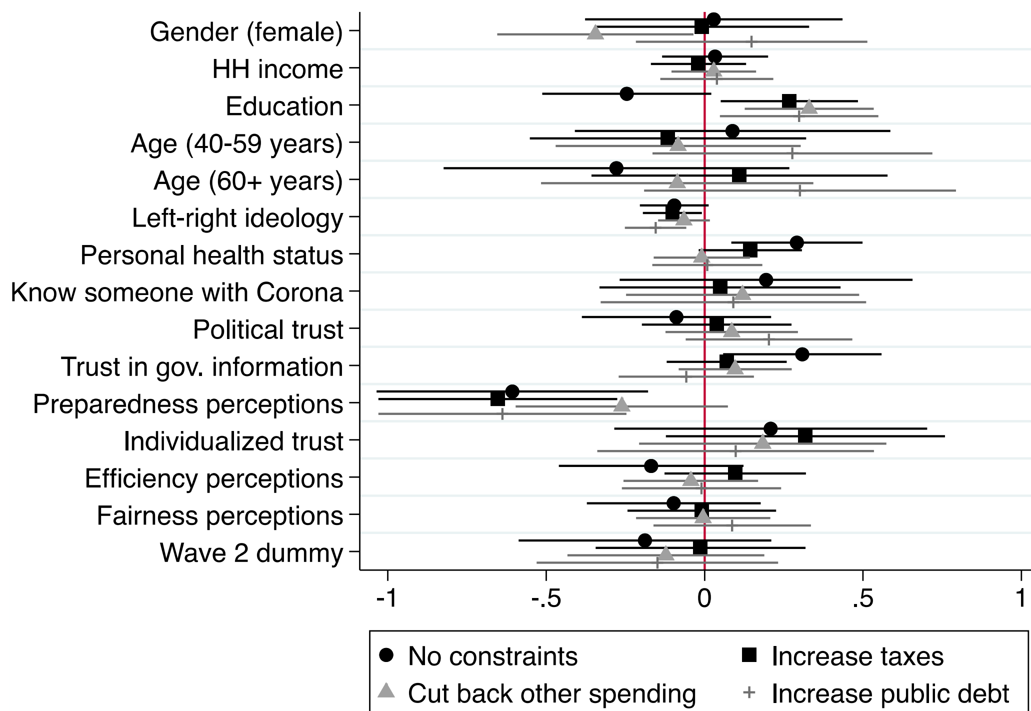
Figure 1 shows the findings of a multivariate analysis of spending preferences. As explained above, the dependent variable is a dichotomous variable that takes the value of 1 if the respondent expresses support for “more” or “much more” spending on health care after the COVID-19 pandemic. A range of fiscal constraints is introduced across the different treatment groups. Comparing simple means of spending support across these groups confirms a pattern that has already been observed in the case of education spending (Busemeyer/Garritzmann 2017): when no fiscal constraints are mentioned, average support for additional spending on health care amounts to 80.6 percent, which is slightly above the value expressed in the last round of the ISSP “Role of Government” survey, potentially indicating a small increase in spending support. However, once respondents are confronted with a range of fiscal trade-offs and constraints, support for additional spending drops significantly. When faced with tax increases, only 66.7 percent of respondents are still in favor of additional health care spending. Meanwhile, 74.3 would still support spending increases if these are financed by increasing levels of public debt. Spending cutbacks are the least popular, with only 53.2 percent of respondents still in favor of more government spending in health care. This pattern is very similar to the case of education spending (Busemeyer/Garritzmann 2017), but there are important differences: support for additional spending in exchange for cutbacks is much lower (about half) for education spending than for

health care. Whether this is indeed related to spending pressures in the context of the COVID-19 pandemic or an inherent difference between education and health care cannot be determined here, since the available surveys only include one or the other. However, it would be an interesting question to investigate in future research, with new survey data.

Figure 1 combines the results of four different regression models for each of the sub-groups. For simplicity, I employ a comprehensive model specification that includes both variables on general political trust and the more specific trust measures. The results do not change significantly when these variables are included separately or in different combinations (results not provided for reasons of space). I also include a standard set of socio-economic control variables. Confirming the findings of Jensen (2011, 2012) and others, the income-related class cleavage is not very pronounced in the case of health care spending, as richer individuals are not more or less likely to demand additional spending than poor individuals. In contrast, educational background matters, particularly in the scenarios that involve fiscal constraints. In these cases, more educated respondents are more likely to support additional spending on health care, potentially because they are more aware of the need for preventive investments in this area. I also find a borderline significant association with left-right ideology, with left-wing supporters being slightly more in favor of spending increases than right-wing supporters. However, compared to other areas of social policy-making, the ideological cleavage is less pronounced.

As concerns the trust variables, I do not find a significant association between general political trust and spending support. General political trust appears to be associated with more specific measures of trust in the health care system (see above) but not with support for additional spending. Regarding the more specific measures of trust, the models show that neither perceptions of efficiency or fairness nor individualized trust are significantly related to spending support. Only one variable matters here: perceptions of the previous preparedness of the health care system to cope with the crisis. Respondents who regard the system as well-prepared to handle the crisis (about a third of the sample) do not see the need for additional spending, whereas those with a critical perception demand further investments. In short, this is a classic case of "improvement reaction" according to Chung and Meuleman (2017), as citizens demand additional public spending to deal with perceived weaknesses of the system. In this respect, the findings are similar to those of Wendt et al. (2014). This association is robust across the different sub-groups, with the exception of the "cut back other spending" scenario, in which the association becomes insignificant, probably because respondents have difficulty in prioritizing different spending areas. In terms of predicted probability, an increase of one standard deviation in the measure of perceptions of previous preparedness is predicted to be associated with a decrease in spending support of about 4.3 percentage points. Thus, the magnitude of the effect is significant but not necessarily huge.

Figure 1: Determinants of support for additional government spending on health care.



Robustness tests and further issues

In the following section, I discuss further issues and extensions and present some robustness tests. A first issue concerns possible changes in the association between independent variables and the dependent variables across the waves—that is, interaction effects between micro-level variables and the wave dummy. No theoretical expectations were formulated in this regard, which is why I treat this issue in an explorative manner. For each of the four dependent variables of trust in the health care system (perceptions of efficiency, fairness, and previous preparedness, and individualized trust), I calculate interaction models, using the Stata "margins" command and including the additional control variables as in models 2 and 4 in Tables 4 and 5, respectively. These are displayed graphically in Figure A2 in the online appendix. As can be seen, none of these interaction effects are statistically significant, and there is little evidence of a changing association between independent and dependent variables across the two waves.

A further extension of the analysis is inspired by Jensen and Naumann (2016), who find different effects of a health crisis on trust depending on the individuals' ideological leanings. Right-leaning individuals are more likely to withdraw trust in the system in the face of a crisis than left-wing individuals, as the latter are generally more trusting of the welfare state and therefore less susceptible to crisis pressures. As the findings above show, there is a statistically significant association between left-right ideology and perceptions of the efficiency and fairness of health care (Table 4), but only if the analysis does not control for general political trust. Table A3 (in the online appendix) shows the results of a split-sample analysis of this association as an extension of models 1 and 3 in Table 4, looking at the two waves separately. Including an interaction term between ideological self-placement and the wave dummy yields similar results. Regarding perceptions of efficiency, the

association between ideological self-placement and trust remains stable and similar across the two waves, with right-leaning individuals expressing lower levels of trust. As for perceptions of fairness, the association between trust and ideology is not significant in the first wave but becomes so in the expected direction in the second wave. This finding is broadly in line with Jensen and Naumann (2016). However, once general political trust is included as an additional control, all associations between ideology and specific trust in the health care system become insignificant. Hence, I would interpret the evidence for a changing relationship between ideology and trust as weak or mixed at best.

Turning to robustness checks, a first issue is to replicate the models from Table 5, employing ordered logit models instead of logit models (i.e., the full range of the dependent variables rather than dichotomous variables). As can be seen in Table A4 in the appendix, there are some minor differences: the associations between some of the socio-economic variables (educational background, income, and, partly, age) are weaker in the ordered logit models than in the logit models. The main findings remain unchanged, in particular the robust association between general political trust and trust in the health care system, as well as those associations that were highly significant in Table 5.

Table A5 in the appendix re-runs the models from Tables 4 and 5 above, using a fixed-effects model specification. As already seen in the descriptive statistics, there is little change in trust levels, on both the aggregate and individual levels. This may also be a consequence of the fact that little time had passed between the two waves. Nevertheless, Hausman tests suggest that it may be advisable, from a methodological perspective, to include fixed effects for some variables. Table A6 shows the results for the four indicators of specific trust in the health care system. For the indicators of perceptions of previous preparedness and individualized trust, I use a more differentiated operationalization with five categories and run linear probability models (OLS) to prevent the exclusion of too many observations because of a lack of over-time variation within individuals. By and large, and mirroring the findings of Haugsgjerd and Kumlin (2020), who use a similar research design, the explanatory power of individual socio-economic determinants is significantly reduced once individual fixed effects are included, for the simple reason that there is likely to be little change in these variables over the course of a few months, even during a global pandemic. Reassuringly, the positive association between general political trust and specific trust in health care remains strong and statistically significant, with the partial exception of perceptions of previous preparedness, for which the significance level drops to 0.1. What is more, the association between trust in the government's information policy and specific trust is shown to be less robust than general political trust. This indicates that in the end, general political trust (the more encompassing concept) matters more than particular aspects of political trust.

Finally, Table A6 in the appendix includes additional analysis of spending preferences. Unlike with the four models in Figure 1 above, I do not run separate regression models for each sub-group but create a pooled sample with all observations. A categorical variable is included to indicate to which treatment particular respondents were exposed, with the first group (for which no spending constraint was mentioned) as the reference category. The table also includes models with different combinations of control variables related to general or specific trust. This analysis yields two insights. First and foremost, it confirms the central finding that there is a robust negative association between perceptions of preparedness and spending support: those

respondents who think the system was well (poorly) prepared tend to support more (less) spending. Second, and departing somewhat from the results above, Table A5 also reveals a relatively robust positive association between individualized trust in treatment conditions and support for additional spending: respondents who are confident that they will receive the necessary treatment in case of a COVID-19 infection are also more likely to support additional spending. This effect was not clearly discernible in Figure 1 above, although—and unlike for the other trust variables—the coefficient estimate for individualized trust was indeed positive (but not statistically significant). One could interpret this finding as suggesting that in addition to perceptions of preparedness, individualized trust plays a certain role as a determinant of spending support. The other trust variables (in particular general political trust) are still insignificant, confirming the findings above. The table also confirms that differences in average support for additional spending across the sub-groups are statistically significant, with cutbacks in other spending having the largest negative effect, followed by increases in public debt and tax raises.

5. Discussion and conclusion

This paper is a first analysis of how trust in the performance of health care systems has evolved during the COVID-19 pandemic, using the case of Germany as an example. This pandemic represents a historically exceptional situation for all welfare states. Maintaining the trust of citizens in the ability of the system to cope with the crisis is and will remain crucial, not least because individual commitment and willingness to contribute to the collective goal of fighting the spread of the virus is a necessary element of a successful crisis response strategy.

There are several important takeaways from this analysis. The first concerns the impact of the COVID-19 pandemic on trust, broadly defined. In contrast to Jensen and Naumann (2016), who studied the impact of a "regular" influenza wave on trust in health care, I do not find evidence of a significant decline in trust in the health care system during the pandemic, even when looking at individuals subscribing to different ideological worldviews separately, as the authors do. At the same time, there is little evidence for the significant increase in trust in the functioning of the system suggested by Albertson and Gadarian (2015), although I do find that citizens' perceptions of the efficiency of the system in coping with the situation become more positive as the crisis unfolds. By and large, however, trust in the efficiency and fairness of the system as well as individualized trust about receiving the necessary treatments remains stable. On the one hand, this is good news as the German health care system apparently continues to enjoy a high degree of public support, despite the historic challenge. On the other hand, this analysis covers a relatively short period of a few months. As the crisis continues (and worsens in the winter of 2020–2021), trust in the functioning of the system may decline after all.

The second important takeaway is that, unsurprisingly, individual circumstances matter greatly as determinants of trust. As could be expected, citizens in better socio-economic positions tend to have more trust in the system. Slightly more counter-intuitively, older respondents are also more likely to have high levels of trust in health care, potentially because they have more concrete experiences and interactions with it. However, respondents who report being in bad health are less trusting. Knowing someone who has been

infected with COVID-19, in contrast, is positively associated with trust. In sum, the findings are mixed concerning the association between individual socio-economic determinants and circumstances and trust in health care.

Third, as regards individual determinants of trust, the most robust finding is that of a positive association between general political trust and trust in the health care system, which holds across all the different issues and dimensions of specific trust (i.e., perceptions of efficiency, fairness, and preparedness, and individualized trust in treatment conditions). Hence, respondents who generally trust the government (and other political institutions) are also more likely to trust the government to correctly inform the population about the COVID-19 outbreak, as well as to trust the health care system to react efficiently and fairly. Establishing a causal direction between general political trust and specific trust in the health care system is difficult and probably moot since they tend to reinforce each other. One might consider the COVID-19 outbreak as a “natural experiment” (of giant proportions), which would imply that general political trust before the crisis could determine more specific trust in the performance of the health care system during the crisis. This would, however, imply that specific trust in health care during the crisis is independent of trust in health care *before* the crisis, which is unrealistic. Hence, I would rather refrain from making an explicit statement about unidirectional causality. Finally, even though general political trust matters for specific trust in the health care system, both have a limited impact on the individuals’ support for additional health care spending and, by implication, their willingness to pay for these spending increases. This is an important counterpoint to existing work on this issue (Habibov et al 2018), which may have underestimated the strength of this association.

What are the implications of this study beyond the case of Germany? Given the lack of comparable survey data so far, one can only speculate. Even though Germany is not necessarily one of the best-performing countries in health care (OECD 2019), its health care system still performs rather well overall and is broadly supported by the public. Thus, countries with a less well-performing system might suffer more from declining trust in the system. What is also striking is that support for additional spending on health care is and remains high, as found by previous scholarship (Jensen 2011, 2012), but it does not seem to increase significantly during the crisis, even though a large share of the population thinks that the system was badly prepared. This partial contradiction in public opinion might spell trouble for future discussions about health care reform after the pandemic. Then, proposals to increase spending on crisis prevention (which creates benefits in the long term, but few in the short term) are likely to compete with calls for short-term compensation of the negative consequences of the crisis for the economy and labor markets. So far, it seems that the crisis has not been severe enough to fundamentally change the dynamic of public opinion in this particular regard.

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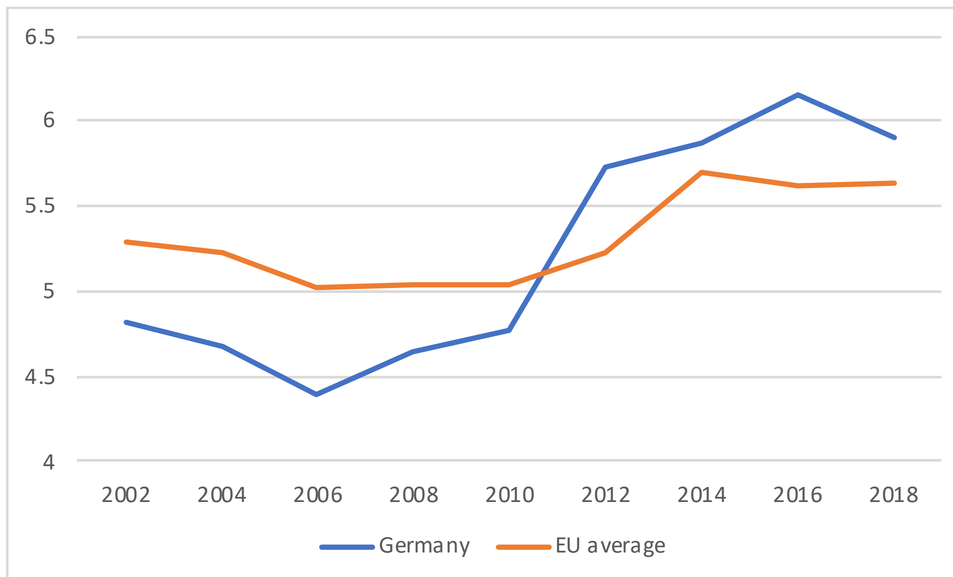
Appendix

Figure A1: Performance perceptions of health care in Germany and the EU (average).



Source: own calculations, based on European Social Survey (ESS), waves 1-9.

Table A1: Descriptive statistics.

	Wave 1		Wave 2		Panel dataset		
	N	%	N	%	N	%	Diff. % W1
Gender							
Male	1.594	48,93	1.603	48,84	1.334	48,83	-0,10
Female	1.660	50,95	1.672	50,94	1.394	51,02	0,07
Diverse	4	0,12	7	0,21	4	0,15	0,03
Age							
18-39 years	1.006	30,88	999	30,44	790	28,92	-1,96
40-59 years	1.140	34,99	1.149	35,01	975	35,69	0,70
60+ years	1.112	34,13	1.134	34,55	967	35,40	1,27
East/West-Germany							
East Germany	1.292	39,66	1.282	39,06	1.104	40,41	0,75
West Germany	1.966	60,34	2.000	60,94	1.628	59,59	-0,75
Education							
Low	1.030	31,61	1.036	31,75	837	30,64	-0,97
Midddle	1.143	35,08	1.153	35,13	955	34,96	-0,12
High	1.085	33,30	1.093	33,30	940	34,41	1,11
Income (net household)							
Less than 900 Euro	153	4,70	128	3,90	119	4,36	-0,34
900 - 1500 Euro	378	11,60	484	14,75	305	11,16	-0,44
1500 - 2600 Euro	927	28,45	875	26,66	785	28,73	0,28
2600 - 4000 Euro	757	23,24	770	23,46	642	23,50	0,26
4000 - 6000 Euro	454	13,93	488	14,87	398	14,57	0,64
6000 Euro and above	110	3,38	133	4,05	95	3,48	0,10
Number of observations	3.258		3.282		2.732		

Table A2: Bivariate correlations between measures of trust in the health care system.

	Previous preparedness	Individual treatment conditions	Efficiency	Fairness
Previous preparedness	1			
Individual treatment conditions	0.3054	1		
Efficiency	0.1535	0.2530	1	
Fairness	0.1348	0.3096	0.2544	1

Table A3: Association between left-right ideology and efficiency and fairness perceptions, split sample.

	Efficiency perceptions	Fairness perceptions
Left-right ideology, Wave 1	-.0957856** (.0401)	-.1250192*** (.0379)
Left-right ideology, Wave 2	-.0817718** (.0320)	-.051528 (.04188)

Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

Table A4: Determinants of preparedness perceptions and individualized trust in treatment conditions, ordered logit models.

	Perceived efficiency		Perceived fairness	
	(1)	(2)	(3)	(4)
Gender (female)	0.055	0.089	-0.101	-0.072
	(0.80)	(1.24)	(1.44)	(1.00)
Net household income	0.053	0.014	0.131	0.100
	(1.70)	(0.43)	(3.96)**	(2.97)**
Educational background	0.031	-0.126	0.305	0.144
	(0.68)	(2.64)**	(6.58)**	(3.01)**
Age (40-59 years old)	0.186	0.058	0.303	0.146
	(2.14)*	(0.64)	(3.33)**	(1.55)
Age (60+ years old)	0.293	-0.148	0.624	0.157
	(3.13)**	(1.50)	(6.43)**	(1.52)
Left-right ideology	-0.029	0.037	-0.082	-0.008
	(1.58)	(2.00)*	(4.31)**	(0.39)
Personal health status	-0.177	-0.163	-0.283	-0.290
	(5.42)**	(4.86)**	(7.53)**	(7.38)**
Know person with Corona	0.102	-0.069	0.359	0.211
	(1.21)	(0.79)	(4.47)**	(2.53)*
General political trust		0.425		0.268
		(7.65)**		(4.64)**
Trust in gov. information		0.363		0.584
		(8.31)**		(12.85)**
Wave 2 dummy	-0.196	-0.199	-0.117	-0.146
	(2.82)**	(2.78)**	(1.68)	(2.02)*
Cut-off 1	-3.078	-2.358	-3.381	-2.128
	(13.08)**	(8.88)**	(12.85)**	(7.41)**
Cut-off 2	-1.337	-0.493	-2.309	-0.990
	(5.98)**	(1.92)	(9.36)**	(3.67)**
Cut-off 3	0.207	1.167	-0.754	0.729
	(0.92)	(4.51)**	(3.12)**	(2.69)**
Cut-off 4	2.187	3.254	1.200	2.905
	(9.18)**	(11.96)**	(4.94)**	(10.47)**
Observations	3,799	3,703	3,800	3,704

Absolute t values in parentheses; * p<0.05; ** p<0.01

Table A5: Determinants of specific trust in health care, fixed effects models.

	Efficiency perceptions (1)	Fairness perceptions (2)	Previous preparedness (3)	Individualized trust (4)
Gender (female)	-1.189*	-0.543	0.315	-0.263
	(0.656)	(0.637)	(0.205)	(0.174)
Net household income	0.0403	0.104	-0.0494	0.0325
	(0.124)	(0.120)	(0.0387)	(0.0328)
Educational background	-0.157	-0.654**	-0.0331	-0.0535
	(0.318)	(0.314)	(0.0991)	(0.0840)
Age (40-59 years old)	2.101*	1.547	-0.721*	-0.457
	(1.276)	(1.239)	(0.399)	(0.338)
Age (60+ years old)	3.622**	1.705	-0.531	-0.0624
	(1.419)	(1.378)	(0.444)	(0.376)
Left-right ideology	-0.0163	0.0652	-0.00475	0.0151
	(0.0622)	(0.0602)	(0.0194)	(0.0165)
Personal health status	0.0150	-0.139	0.000764	-0.0535**
	(0.0948)	(0.0921)	(0.0298)	(0.0252)
Know person with Corona	0.0191	0.281	-0.0785	0.00503
	(0.177)	(0.172)	(0.0554)	(0.0468)
General political trust	0.455***	0.349***	0.0711*	0.0900***
	(0.117)	(0.114)	(0.0368)	(0.0312)
Trust in gov. Information	0.141	0.168*	0.0931***	0.0292
	(0.0989)	(0.0961)	(0.0309)	(0.0264)
Wave 2 dummy	0.366***	-0.161*	-0.0991***	-0.0309
	(0.0895)	(0.0868)	(0.0280)	(0.0237)
Constant	4.041***	6.558***	3.479***	4.168***
	(1.282)	(1.253)	(0.401)	(0.340)
Observations	3,703	3,706	3,703	3,704
R-squared	0.029	0.020	0.027	0.016
Number of individuals	2,138	2,138	2,137	2,137

Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1.

Table A6: Determinants of support for additional spending on health care, pooled sample.

	Increase spending on health care? (1=more or much more, 0=the same as now or less)			
	(1)	(2)	(3)	(4)
Gender (female)	-0.0642	-0.0897	-0.0803	-0.105
	(0.0878)	(0.0863)	(0.0862)	(0.0856)
Net household income	0.0237	0.0268	0.0303	0.0255
	(0.0392)	(0.0386)	(0.0385)	(0.0383)
Educational background	0.202***	0.228***	0.220***	0.239***
	(0.0584)	(0.0568)	(0.0564)	(0.0562)
Age (40-59 years old)	0.0377	0.0480	0.0455	0.0603
	(0.110)	(0.109)	(0.109)	(0.108)
Age (60+ years old)	0.0427	0.110	0.0993	0.141
	(0.121)	(0.118)	(0.117)	(0.117)
Left-right ideology	-0.0931***	-0.107***	-0.109***	-0.107***
	(0.0235)	(0.0227)	(0.0227)	(0.0224)
Personal health status	0.0884**	0.0995**	0.1000**	0.102**
	(0.0424)	(0.0417)	(0.0416)	(0.0409)
Know person with Corona	0.121	0.115	0.113	0.126
	(0.101)	(0.0998)	(0.0996)	(0.0996)
General political trust	0.0577			
	(0.0617)			
Trust in gov. Information	0.101**			
	(0.0513)			
Preparedness perceptions	-0.517***	-0.480***	-0.471***	
	(0.0962)	(0.0934)	(0.0931)	
Individualized trust in treatment conditions	0.207*	0.288***	0.315***	
	(0.110)	(0.107)	(0.100)	
Efficiency perceptions	-0.0258	0.0184		0.00526
	(0.0602)	(0.0573)		(0.0556)
Fairness perceptions	0.00908	0.0434		0.0560
	(0.0601)	(0.0584)		(0.0557)
Wave 2 dummy	-0.115	-0.104	-0.101	-0.0952
	(0.0882)	(0.0863)	(0.0854)	(0.0858)
Increase taxes	-0.750***	-0.765***	-0.785***	-0.733***
	(0.132)	(0.130)	(0.130)	(0.130)
Cut back other spending	-1.317***	-1.326***	-1.325***	-1.293***
	(0.128)	(0.127)	(0.127)	(0.126)
Increase public debt	-0.354***	-0.387***	-0.385***	-0.366***
	(0.137)	(0.135)	(0.135)	(0.134)
Constant	1.181***	1.214***	1.346***	1.162***
	(0.344)	(0.319)	(0.293)	(0.315)
Observations	3,684	3,779	3,786	3,788