Private health insurance and redistribution preferences in the Austrian health care system: A case of mere self-interest?

Thomas Resch (✉ thomas.resch@univie.ac.at)
University of Vienna

Research Article

Keywords: health insurance, redistribution in health care, scarcity, resource allocation, prioritisation, solidarity, fairness, health equity, reciprocity

Posted Date: February 1st, 2022

DOI: https://doi.org/10.21203/rs.3.rs-1302302/v1

License: This work is licensed under a Creative Commons Attribution 4.0 International License. Read Full License
Abstract

Background: Private health insurance (PHI) is a relevant financing source in many health care systems, including the Austrian one where more than a third of the population possess such an insurance. The effect of PHI on redistribution preferences in health care has been an understudied phenomenon. This article examines such a relationship. Further the mediating effect of fairness attitudes within said relationship is analysed.

Methods: The data for this study come from the Austrian Corona Panel Project (ACPP). OLS regression models are employed to elicit the links between the variables.

Results: In this article evidence for considerable self-interest in support for redistribution in health care with matching fairness attitudes is found. Additionally, social redistribution preferences for benefits and taxation, political party preferences and pandemic risk perception play a role.

Conclusion: Health policy makers should carefully consider these relationships when adapting the public health care system to challenges, such as increased financing pressure or a pandemic. This could be done by incorporating vulnerable groups and public preferences at large in an open debate about the design of the health care system, its financing and its consequences for redistribution.

Introduction

“A fundamental principle of WHO’s work in health financing is the concept of universal coverage. This requires access for all people to appropriate promotive, preventive, curative and rehabilitative health care at an affordable cost.” (Evans et al. 2005, p. 83).

The spread of the SARS-CoV-2 virus and governments’ responses to the pandemic resulted in significant changes of collective and individual behaviour, attitudes, preferences, and emotions, as well as of moral norms (Van Bavel et al. 2020). Many scholars have highlighted that the COVID-19 pandemic disproportionately affects marginalised and vulnerable groups when it comes to health care (e.g. Shadmi et al. 2020; Fortuna et al. 2020; Devakumar et al. 2020; Marmot and Allen 2020; Bambra and Lynch 2021; Ismail et al. 2021) Numerous studies deliver rigorous evidence for such exacerbated inequity in health amidst the pandemic in various countries (e.g. Azar et al. 2020; Baqui et al. 2020; Adams-Prassl et al. 2020; Birenbaum-Carmeli and Chassida 2021; Dimopoulos-Bick et al. 2021; Mackey et al. 2021). Due to concerns of equity and of pandemic preparedness many scholars and the public have also increasingly (re-)discovered health care policy (e.g. Fuchs 2020).

Private health insurance (PHI) \footnote{1} plays a significant role in health policy and in many health care systems, as primary, complementary, supplementary and/or substitutive means of covering and funding health care. Therein, PHI can have profound effects on redistribution and equity in health (e.g. Van Doorslaer et al. 1999; Ataguba 2021). In the COVID-19 pandemic insurance companies introduced new costs and delayed or reduced others, as many workers globally lost their jobs and with them their insurance

\footnote{1}
coverage (e.g. Roehr 2020; Blumenthal et al. 2020; Bundorf et al. 2021). However, little is known about the nexus between the possession of PHI and redistribution preferences in health care. Additionally, the current pandemic might have fundamentally altered such a causal relationship.

I suggest using individual survey data to explore the effect of PHI on support for redistribution in health care. As Austria has statutory health insurance (SHI), yet a high degree of PHI, it is an ideal case to study said effects.

Insurance is a dilemma in health care rationing and priority setting because health care needs are distributed very heterogeneously across society and because such needs very often arise unexpectedly in brute luck (Brock 2007). While this dilemma has been addressed in theory, empirical research has so far not considered what people with PHI and people without PHI actually want in terms of redistribution in their health care systems. Thus, the questions asked in this study are: How do the health care redistribution preferences of people with PHI differ from those of people without PHI? And do these persons consider treatment prioritisation of privately insured as fair?

Existing Research

Redistribution in health care

Previous research has shown that possession of PHI seems to decrease the political support for the public health care systems in nations with private duplicate health insurance systems, yet not in countries with private primary health insurance (Mou 2013). Pfarr and Schmid (2016, p. 624.) find in a German sample that “Persons who benefit from public coverage exhibit a positive willingness to pay for an extension of the coverage beyond the status quo. The others are not willing to contribute to this end”. Jensen and Naumann (2016) find different levels of support for public health care between demographic groups and between people leaning toward the political left or right in 17 European countries. Further research indicates that income affects willingness-to-pay for public health care in 29 countries included in the ISSP (International Social Survey Programme; Azar et al. 2018) and that perceptions of inequities in health care impact preferences for government provision of health insurance in the USA (Lynch and Gollust 2010). Age also matters for the preferences towards health maximisation and for egalitarian concerns in health care in a Polish study (Kolasa and Lewandowski 2015). Akkazieva et al. (2006) investigate health policy preferences of patients in Hungary. They find that patients primarily have a preference for solidary measures in health care. Read et al. (2021) analyse an English sample and demonstrate that the majority of respondents prefer social care in later life to be paid for by the user and the state in a shared way. Lu et al. (2021) show that the UK public seems to prefer a collective approach to raising additional funds for health and social care by a public organisation. Soroka and Lim (2003) find for the USA and UK that issue framing defines the responsiveness of health care expenditures to public preferences. Wendt et al. (2010) compare 14 European countries and find that higher income is associated with less desire for state involvement in health care in all studied countries, except for the Netherlands. Henderson and Hillygus (2011) show that self-interest and partisan attachments strongly
affect health care attitudes in the USA. In an Icelandic sample the majority of respondents favour higher health care expenditure and health provision by the state (Vilhjalmsson 2016). Choma et al. (2018) find that in the USA preferences for the distributive fairness perceptions of equality and need in health care mediate the relationship between political orientation and attitudes on the ACA (Affordable Care Act).

Further, personal experiences with the health care system shape attitudes towards health care policies in many countries (Larsen 2020) and in the USA specifically (Lerman and McCabe 2017). Chavanne (2020) finds for an US sample that support for redistributive health care increases as bad luck becomes more important in causing poverty yet is unaffected as good luck becomes more important in causing wealth. Kullberg et al. (2021) do not find evidence that voluntary health insurance, i.e. PHI, changes the willingness to pay higher taxes for public health care in Sweden. Yet, the authors do not consider redistribution in Swedish health care from a wider angle that would include anything but readiness to contribute more personally.

Heap et al. (2020) demonstrate that people in the UK and USA highly prefer health over wealth, when being presented with a trade-off between lives lost to COVID-19 and disposable income losses. Barry et al. (2020) show that in the early stage of the COVID-19 pandemic the majority of US adults supported social and health policies, such as paid sick leave, universal health insurance, an increased minimum wage, as well as various unemployment support policies.

As redistribution in health care is expected to increase with public spending on public health care, health care expenditure and finance is a key part of health policy. Research with Danish survey data shows that respondents exhibit a willingness to improve the quality of the public health care system at the expense of private consumption (Gyrd-Hansen and Slothuus 2002). Empirical evidence suggests that Australians mostly care about outcome egalitarianism and not about cost per life year in their preferences for the allocation of the health budget (Richardson et al. 2012). Research with a Greek sample finds that preferences for public health expenditure allocation have more support among relatively poor citizens (Xesfingi et al. 2016). Foremmy et al. (2020) find that preferences for health care expenditure almost doubled in the COVID-19 pandemic in Spain compared to a 2018 benchmark and that Spanish citizens would on average allocate 22.5% of the public budget to the health sector, which is considerably higher than the 15% of real public spending on health in Spain.

One debate relevant to PHI deals with two-tier medicine. “Today, that prevailing question focuses rather on what society could do for its citizens in optimizing their lives. Such an approach amounts to loading the dice in favor of redistribution” (Breyer and Kliemt 2015, p. 149). Further: “The concept of solidarity provided for a long time the ideological rationale for the transfer of financial contributions by individuals by way of compulsory health insurance schemes or national taxation to a universal health care system that should guarantee equal access to health care for those who are in need” (Ter Meulen and Jotterand 2008, p. 191). While health care has functioned averagely well in Austria in OECD comparison (Tchouaket et al. 2012), increasing pressures towards two-tier medicine threaten such proper functioning of health care systems globally (cf. Ter Meulen and Jotterand 2008; Breyer and Kliemt 2015). Results for health
care preferences in Zambia, which de-facto has a two-tier system, show that socioeconomic status has an effect on various preferences for health care quality attributes (Hanson et al. 2005). Shickle (1997) investigates public preferences for health care prioritising in the UK and develops arguments for and against certain criteria of priority setting, wherein health care professionals, managers and the general public partly exhibit different preferences. Barbosa and Cookson (2019) find for Brazil that possession of private health insurance coverage and residing in an urban location both contribute more to health inequity than income does. Overall, PHI seems to increase health inequity in the EU (Mossialos and Thomson 2002), as failures in private health insurance markets (such as moral hazard, monopoly, adverse selection and risk selection) can result in inequality and inefficiency (Powers and Faden 2006; Thomson et al. 2020).

**Fairness in prioritisation**

When trying to employ purely rationality-based economics to medical priority setting one soon runs out of road (cf. Robinson 1999). While often Quality-adjusted life years (QALYs) or Disability-adjusted life years (DALYs) are evaluated (cf. Sassi 2006), questions of fairness remain. In addition, decision makers often encounter political and institutional constraints when setting medical priorities (Godard et al. 2006). So far research has focused on stated preferences for health care prioritisation (cf. Whitty et al. 2014).

Previous research already demonstrated that there is self-interest in fairness attitudes towards priority setting across countries (Álvarez and Rodríguez-Míguez 2011; Rogge and Kittel 2016; Ryen et al. 2019). In the context of the COVID-19 pandemic some self-interest also seems to be present (Grover et al. 2020). To investigate treatment prioritisation of people based on their health insurance status, i.e. possession of PHI, opens a gap in the literature. What has been done so far is research on income-related health care inequalities, where findings of 23 countries suggest that the majority of people regard income-based health privileges as unfair, which is particularly true for persons with insufficient health insurance coverage (Von dem Knesebeck et al. 2016). Moreover, lower cost barriers in health care and higher public health care spending correlate with higher perceived unfairness of health inequalities in an investigation of 28 OECD countries (Immergut and Schneider 2020).

As for priority setting preferences, evidence from Germany shows that the public only considers effectiveness without the cost component in determining whether health care insurance should pay for treatment (Diederich and Salzmann 2015). A Swedish investigation shows that citizens think the public health services should always offer the best possible care irrespective of cost, while doctors support this approach less strongly. When it comes to health care financing, Swedish policy makers favour higher taxes, whereas doctors prefer complementary private insurance and increased patient fees (Rosén and Karlberg 2002). Also addressing the financial aspect of prioritisation, Damm et al. (2014) show that the economic-based cost-effectiveness ratio (CER) is supported by advanced economics students significantly more than by law, philosophy or medicine majors in Germany. Mirelman et al. (2012) demonstrate that there are priority setting preferences for efficiency criteria over equity criteria among
policy makers in four countries (Norway, Nepal, Brazil, Uganda) but not in Cuba. Thus, it appears that preferences for medical prioritisation depend on context, i.e. where and whom one asks (cf. Orton et al. 2011). Overall, there is evidence that the general public emphasises health equity (e.g. Reckers-Droog et al. 2018), while medical decision makers include efficiency and cost-effectiveness criteria more strongly (e.g. Tanios et al. 2013). However, to explicitly consider monetary contribution in prioritisation decisions is rejected by both medical professionals and laypersons, as also evidence from Switzerland shows (Krütli et al. 2016).

**Theoretical Background**

**Solidarity, equity, fairness and reciprocity in health care**

Prainsack and Buyx (2011; 2017) argue that solidarity is the acceptance by a person or by a group to carry financial, practical and/or emotional costs to support others with whom they recognise similarity in a relevant aspect. This similarity can be a common goal, shared risk or an objective, as well as subjective, characteristic. Particularly, in health care such solidarity comes in three tiers: It can be interpersonal, communal on the group level or contractually incorporated into institutions. Solidarity in public health care systems with SHI is a prime example of institutionalised solidarity because citizens contribute based on their wages and salaries and receive medical treatment and care that correspond to their needs. Solidarity in an ideal state can be seen as the outcome of a ‘social contract’, in which personal and ethical allocation preferences of a collective are reconciled through impartial consideration, i.e. under the veil of ignorance (cf. Dolan et al. 2003).

Olsen (2011) provides an account of equity in health care. He suggests that in countries with publicly funded health care two principles are paramount: Equal access for equal need and reduction of health inequalities. While the former represents the ideal of universalist welfare, the latter recognises that some health inequalities are perceived to be inherently unfair. Daniels (2001) argues that there is a social obligation to guarantee the existence of institutions, such as social insurance or subsidies for PHI, that protect equal opportunity in a rebuke to efficiency maximisation, aggregate welfare maximisation and utilitarian objectives. Yet, equity and inequity in health care remain to be normative concepts. First, as Anand (2002) argues, inequality aversion differs between different domains in health care and such an aversion ought to be higher across some population groups than others. Second, equity and equality are not the same, even though health equity incorporates the idea of equal opportunity to be healthy. Third, health equity cannot be directly measured but merely be grasped “... as the absence of disparities in health (and in its key social determinants) that are systematically associated with social advantage/disadvantage” (Braveman and Gruskin 2003, p. 256).

Fairness denotes the “... view that some important types of health inequalities are considered unfair” (Olsen 2011, p. 815). Therein, fairness also remains normative. Brock (2002) points out that ‘fair’ treatment priority can be given to the worst off, according to benefits aggregation or so that fair chances can be pinned against best possible outcomes. All of these, and more, may seem fair to certain people in
certain circumstances. Daniels (2007) advocates three core concerns for fairness in health that are equity, efficiency, and accountability, that should be fulfilled to meet central criteria of fairness in health policy.

Reciprocity can be direct, generalised (indirect), strong, weak, conditional, unconditional, negative, and/or positive. Generally, “... a reciprocal action is modeled as the behavioral response to an action that is perceived as either kind or unkind” (Falk and Fischbacher 2006, p. 294). Framed differently, “Reciprocity demands proportionate balancing of the benefits and burdens of social cooperation between participants...” (Viens 2008, p. 1). I argue that in its essence reciprocity should be evaluated insofar it can or cannot alleviate the ‘tragedy of the commons’ and whether it can establish a social norm in a given context. A scenario with identical individual incentives but absent cooperation is known as the tragedy of the commons (e.g. Gächter et al. 2017). Gross and De Dreu (2019) demonstrate that attenuation of said tragedy depends on the costs of individual solutions. If they are low, cooperation deteriorates, even if individual negative reciprocity (punishment) is available. However, centralised punishment institutions or establishment of social norms of cooperation and of generalised reciprocity\footnote{2} can solve the dilemma. Thus, when individualism is reasonably cheap, cooperation depends on a type of governmental enforcement and/or on the establishment of a social norm that facilitates cooperation.\footnote{3}

Solidarity is a collectivised practice in public health care systems with SHI. Equity in health care encompasses an ideal to aspire to and to work towards and fairness involves the individual and normative attitudes on redistribution dilemmas and decisions about allocation of scarce medical resources. In theory reciprocity, in its generalised form, can amplify or replace continuous state monitoring of and intervention in health insurance markets. However, the state often may be a required institution to generate and stabilise such generalised reciprocity through governmental constraints on resource consumption (cf. Hardin 1968; Frischmann et al. 2019).

**PHI & redistribution preferences**

There is a debate of whether the state should retrench from health care or should rather guarantee its provision to the public (cf. Taghizadeh and Lindbom 2013; Del Pino and Ramos 2018). While people can be found on a continuum between those two positions, public opinion on health care is shaped by welfare regime type, type of health care system and individual characteristics (Gevers et al. 2000).

While PHI can add benefits to society (cf. Colombo, and Tapay 2004), it also can manipulate health care systems’ pursuits for equity by circumventing guiding principles, rules and regulations. Additionally, PHI is regressive, whereas social insurance is progressive in high-income countries (Hsiao and Liu 2001). PHI is not equally accessible to all social strata, minorities and vulnerable groups alike (e.g. King and Mossialos 2005; Kiil 2012; Jin et al. 2016).

People who possess PHI might cut short waiting times and lists, get different drugs or have access to private health care providers, thus distorting medical priority setting and aggravating health inequities (e.g. Borrell et al. 2001; Blendon et al. 2002; Schoen and Doty 2004; Van Doorslaer et al. 2008; Allin and
Hurley 2009; Grignon et al. 2010; Lapidus 2017). For Austria Czypionka et al. (2018, p. 13) note: “Although illegal to prioritize patients with VHI, empirical evidence shows that VHI policy holders can obtain faster access to elective care in public hospitals”. Similar observations can be made for instance in Germany (Lungen et al. 2008; Ramos et al. 2018) and in Ireland (Whyte et al. 2020).

British evidence shows that longer waiting lists result in more frequent purchases of PHI (Besley et al. 1999). Research also indicates that people with PHI use health care services and prescription medicines more frequently and intensely than people without PHI, for example in France (Buchmueller et al. 2004) and in Denmark (Kiil and Arendt 2017). Summarising, those who contribute to PHI do so expecting a benefit from their premium payments, be it shorter waiting lists, more advanced drugs or more frequent use of health care overall. Thus, people with PHI exhibit a higher and perhaps exacting demand for health care. Supporting this, Olsen et al. (2004) find that Danes who were subjected to taxation contribution framing more often use altruistic arguments for being willing to pay, while respondents who encountered insurance premium framing are more likely to name selfish reasons.

Now addressing the supply side, doctors have a competing interest to provide sound treatment to their patients (Tollison and Wagner 1991). This manifests as doctors seem to be driven by both self-interest and ideology in their attitudes towards private welfare services (Martinussen 2008), where doctors’ self-interest can be furthered by financial incentives (e.g. Rodwin 2004). In fact, doctors nowadays frequently promote and prescribe novel drugs albeit there may be no evidence of those drugs’ superior efficacy. Even medical professionals follow market forces and self-interest (Light 2010) and such self-interest for private practice can increase inequity for patients and medical professionals alike (Oliver 2018). As patients follow doctors’ advice they might also utilise private health care services provided by some doctors (cf. Wiles and Higgins 1996; Waring and Bishop 2013). Summarising, when health care providers receive payments from public and private sources “… doctors and hospitals will have incentives to prioritize VHI-financed patients” (Sagan and Thomson 2016, p. 99; cf. Oxholm et al. 2021).

H1: People with PHI disfavour redistribution in health care, whereas people without PHI favour redistribution.

Perceived fairness: Beyond self-interest

“Few individuals in the developed world will be able to afford the health care they will need in their lifetimes” (Latham 2012, p. 130). Thus some kind of health insurance is necessary to guarantee basic treatment and minimum standard of equity in health care. The fairness of possible health insurance schemes is closely tied to issues of distributive justice and consequently also relates to how health care is financed (cf. Clark and Weale 2012).

Context has been shown to significantly affect which distributive justice principles people apply, i.e. people exhibit different justice attitudes in different situations (Liebig and Sauer 2016). Van Hootegem et al. (2020) show that in health, equality is the most popular justice principle in a Belgian sample, but not
when it comes to unemployment benefits or pensions. People have different justice attitudes within the health care domain as well, when high resource scarcity is pinned against medium or low resource scarcity in health-health trade-offs (cf. Scott and Bornstein 2009).

To alleviate the dilemma of scarcity between health and wealth and within health people need to form some kind of bond. They need to find an equilibrium where they can cooperate, without levying health-related costs on any individual that this individual could not afford and without causing unfair costs for all other group members, while also not reducing the health of these other group members. I now provide two rationales for distinguishing SHI and PHI on grounds of fairness in order to address such a dilemma.

First, both PHI and SHI require the reciprocity and shared interest of its members that are in an interdependent state with possibility of sanctions. Also, both kinds of health insurance require a level of chance solidarity (Lehtonen and Liukko 2011). But while PHI relies on voluntary contribution, SHI is solidaristic in terms of generalised reciprocity (cf. Koos and Sachweh 2019). Reciprocity also plays a crucial role in PHI (cf. Leitner and Lessenich 2003), where PHI rather follows a market-logic of reciprocal exchange with risk-adjusted premiums. I suggest that PHI constitutes direct reciprocal exchange as ‘risk reciprocity’ and SHI is a form of generalised indirect exchange with a long-term outlook (cf. Molm et al. 2007; Ullrich 2002). Thus, PHI and SHI are distinguishable on the basis of their modes of reciprocity.

Some duties are conditional on reciprocity, such as the duty to share fairly. These duties result from someone's status as a moral person or are binding and conditional on mutual exchange. Thus, even non-contribution on the part of a person, who is unable to contribute, does not imply that they are exempt from distributive justice (Lister 2011). It is important to note, that SHI does not discriminate on the basis of factors that can cause inability to contribute, while PHI discriminates through exclusion and through setting high risk premiums. Hence, SHI is de-facto luck-egalitarian, i.e. does not differentiate between bad brute luck and bad option luck (cf. Vallentyne 2002; Segall 2007; Cavallero 2011; Björk et al. 2020).

Second, I share the view that health care constitutes a public good in its fundamental properties (e.g. Karsten 1995; Abdalla et al. 2020; and more broadly cf. Kallhoff 2014; Sunstein and Ullmann-Margalit 2001). Kohn (2020) presents solidarism as a way out of the public-private dilemma, where “Reallocation can take the form of universal insurance that secures the individual against misfortune or collective benefits such as hospitals and infrastructure” (Kohn 2020, p. 1109). Further, there needs to be compensation for negative externalities produced by commodification. The solidarist position includes “… that the positive achievements are produced collectively and a critique of modes of allocation that reflect power and luck rather than justice”. (Kohn 2020, p. 1113). Therefore, SHI and the public provision of health care address redistribution, which functions as a protection against misfortune. In addition, it is argued that gains are achieved collectively and should be fairly allocated, rather than according to luck and power.

By contrast, PHI concerns the voluntary and private provision of a public good. Evidence for cooperation in such a scenario points towards inequity and individualistic-opportunistic behaviour (e.g. Chan et al. 1996; Heap et al. 2016; De Geest and Kingsley 2019; Gross et al. 2020). PHI faces two fundamental
issues: the free rider problem and the assurance problem. Both can be solved via contracts and centralised punishments. “Overall, public provision tends to produce less efficient outcomes than private provision by allowing the possibility of severe underprovision of the public good. On the other hand, if a society dislikes income inequality and prefers progressive taxation, then public provision may deliver more desirable outcomes” (Slavov 2014, pp. 253-254). Thus, (economic) efficiency is positioned in a trade-off with equity, which further indicates that PHI is associated with a market-logic of direct reciprocity, i.e. tit-for-tat, and a sense of solidarity that is limited to the interpersonal tier but that does not extend to collective or contractual tiers.

Seeing health care as a (global) public (solidarity) good versus through the lens of private provision has some serious and differing ethical implications. If we accept the latter, then “There are clear indications that in a market-driven medical system with poor regulation, the poor are not getting appropriate services for what they are paying” (Das 1999, p.118). And if we trust in market mechanisms for resource allocation in health care and health insurance, then we also accept the cost-effectiveness-equity trade-off and the trust in private firms to provide healthcare more efficiently than public entities. In this case market justice is preferred over social justice in health care (cf. Budetti 2008). To sum up, SHI and PHI are distinguishable on grounds of them being different reciprocal exchange types and on grounds of the division over fairness in public good provision that the two exhibit. In short, the different reciprocal exchanges and the division over fairness in public good provision ought to generate fairness differences between those, who only hold statutory insurance, and those, who possess PHI.

H2: Finding the prioritisation of privately insured persons fair increases the effect in H1.

**Auxiliary explanations**

The auxiliary variables employed in this study are located on the micro-level. However, they are attitudes and preferences directed towards institutions, i.e. the public health care system, the government, political parties, and the Austrian population's public health.

There is ample research on the role of trust in institutions and redistribution preferences in general welfare. Overall, higher trust is associated with higher demand for redistribution (e.g. Hetherington and Husser 2011; Yamamura 2014; Silva et al. 2016). Busemeyer (2021) finds that higher trust in the performance of the health care system and higher political trust increase support for additional health care spending in Germany. It is reasonable to expect that higher trust in relevant institutions corresponds to a stronger support of redistribution in health care as well.

H3: The higher the trust in the government and in the public health care system, the more a person favours redistribution in health care.

Some partisan theory suggests that left-wing voters tend to be people on low incomes, whereas right-wing voters are more likely high income earners (cf. Borck 2007). Additionally, left-wing parties spend
more on public health care than right-wing parties when long enough in power (Herwartz and Theilen 2014). In line with this Koos and Leuffen (2020) find that Germans with party preferences for left-wing parties are slightly more financially solidary than supporters of mainstream parties and potential voters of right-wing parties are considerably less financially solidary in context of the COVID-19 pandemic. However, when it comes to medical solidarity Koos’ and Leuffen’s (2020) results suggest that party preferences become less distinct factors when compared to financial solidarity. So, it seems people exhibit both partisan differences overall and differences in solidarity in differential domains, where solidarity in health-related areas may be higher than in others. Hence, there may be notable differences between voters of different parties in their redistribution preferences in health care, as they might not share fundamental beliefs and expectations in the welfare state and the role of government in health care.

H4: People who would vote for a conservative, liberal or right-wing party disfavour redistribution in health care while left-leaning party voters are in favour of it.

Generally health care can be seen as a vital part of the welfare state (e.g. Moran 2000). Yet, the provision of high-quality health care can be located with the state, with private entities or with both as the private-public mix. Missinne et al. (2013) investigate 24 European countries and find that support for state responsibility to provide universal health care is high, setting significant self-interest and ideological disposition aside. It seems plausible that people who think the state should provide high-quality health care also support redistribution in health care.

H5: The more a person supports state-provision of health care, the more they favour redistribution in health care.

The Meltzer-Richard Theorem (Meltzer and Richard 1981) suggests that the relatively poor want more government and the relatively rich want less government. The median voter, i.e. the person(s) with median income, will get the decisive vote on the size of government. Andreoli and Olivera (2020) lend support for this in finding that receiving social net benefits results in supportive preferences for redistribution and Armingeon and Weisstanner (2021) find that political ideology and self-interest interact when predicting redistribution preferences. Therein lies a trade-off between taxation and social spending or social benefits. High taxes can guarantee generous social benefits, while low social benefits can make low tax rates feasible. I propose that from preferences about said trade-off, which concerns the role of the state and welfare more broadly, one can also derive preferences for redistribution in health care more specifically.

H6: The more people favour social redistribution, the more they are also in favour of redistribution in health care.

Last, the COVID-19 pandemic poses a risk to public health and risk perception has for instance been linked to protective health behaviour (e.g. de Bruin and Bennett 2020). As health care systems, particularly ICUs, are in danger of being overburdened (e.g. Moghadas et al. 2020), there should be more
support for redistribution in health care when perception of COVID-19 induced risk to the population is high.

H7: The higher the population-level COVID-19 risk perception of a person, the more they support redistribution in health care.

The Austrian health care & insurance system

The Austrian health care system is solidaristic in the sense that people contribute on the basis of their ability (e.g. a specific percentage of people’s salaries that is taken off automatically) and receive services based on need (Ter Meulen 2017; Spahl and Prainsack 2021). Austria has a Bismarckian public health system. Its core funding mechanism is compulsory social security contributions that are directly or indirectly tied to employment and to occupational status. Insured persons can include children or other family members without separate insurance. In addition, there is a growing sector of PHI for those who want services beyond the services covered by the statutory health insurance. PHI covers ‘extras’, such as access to private doctors, a single-occupancy room during hospital stay et cetera. Austria has very high health insurance coverage (about 99%) and its population reports few unmet medical needs (Toth 2019).

In a previous analysis Austrians exhibited the highest satisfaction with their health care system out of 14 investigated Western European countries, but Austrians also had the third lowest rank in wanting extensive state involvement in health care (Wendt et al. 2010).

McAlister and Helton (2021) describe Austria as a publicly funded health care model with equality of care by the providence of universal healthcare for all citizens. Income-related inequalities in health care in Austria are on comparatively (OECD and EU) low levels (Devaux 2015; Ásgeirsdóttir and Ragnarsdóttir 2013). According to Bambra (2005) Austria has a medium level of decommodification in health care. Further, Reibling et al. (2019) put Austria in a health care cluster that includes high supply-and choice-oriented public systems, which means Austria has a publicly financed health care system that is personnel-intensive and offers relatively free choices to patients. However, there seems to be potential for ‘institutional corruption’ that undermines the principles of good health, equity and efficiency in the Austrian health care system (Sommersguter-Reichmann and Stepan 2017), as it does in Europe and the USA more broadly (Sommersguter-Reichmann et al. 2018).

Table 1

| Private health insurance in Austria. Thomson and Mossialos (2009, p. 16) |
### Market roles

| Market roles          | Eligibility                                           | Examples of benefits covered                                                                 | % of population covered (2006) | % of total expenditure on health (2006) |
|-----------------------|-------------------------------------------------------|---------------------------------------------------------------------------------------------|-------------------------------|---------------------------------------|
| Complementary (services) | Whole population                                      | Dental and eye care, physiotherapy, home visits, psychotherapy,                             | 33%[4]                       | 5.3%                                  |
| Supplementary         | Occupations opting out of the                        | health resorts, rehabilitation, drugs, CAM                                                  |                               |                                       |
| Substitutive          | statutory scheme (some self employed), individuals not eligible for statutory cover | Private wards/hospitals and doctors, choice of hospital doctor, faster access (elective care), per diem cash benefits for inpatient care |                               |                                       |

### Data & Variables

The data analysed in this paper stem from the Austrian Corona Panel Project (ACPP), an online panel survey conducted among the Austrian resident population, which started in late March 2020 and is ongoing to date (cf. Kittel et al. 2020). The ACPP respondents have a minimum age of 14 and the age range is not restricted towards old age. Respondents were quota sampled based on the key demographics of age, gender, region, municipality size, and educational level based on official statistics, with the quota sample being structured to closely mirror the Austrian resident population. For the subsequent analysis data of ACPP wave 22 is used, which was fielded mid-April 2021. The full data paper is available in Kittel et al. (2021).

### Redistribution preferences

The dependent variable is an additive index of eight variables of preferences for redistribution in health care. These were developed for the ACPP and answers are on 5-point Likert scales. Three preferences directly grasp the relationship between public and private medicine.[5] The other five preferences encompass equality of treatment, public spending increase on health care, personal willingness to pay higher contributions, higher contributions for cost-intensive patients, and handling of medical excess payments (user charges). More information on these preferences and the index is located in the Appendix (Fig. A1-A5).

### Private health insurance, fairness and auxiliary variables
The main predictor variables are possession of PHI (dichotomous) and attitudes on fairness of prioritising privately insured persons, where the latter is on a 5-point Likert scale. Auxiliary variables are trust in government and in the public health care system. Further, party preferences are considered, wherein conservative, liberal and right wing parties are pooled, as well as left-wing parties, and also other parties and non-voters with those who would cast a void ballot and ‘do not know’ responses. Government responsibility to provide high-quality health care grasps the concept of state welfarism versus retrenchment. Redistribution preferences in distributive welfare are considered where high taxes and high social benefits are pinned versus low taxes and low social benefits. Perceived health risk is the personally assessed threat of COVID-19 to the Austrian population’s public health.

All predictor and auxiliary variables are standardised. Multiple imputation is applied for all auxiliary variables and consequent listwise deletion of missings yields a final sample size (N) of 1027 respondents.

**Methods**

The analyses are done using OLS regression models with demographic and political sample weights to examine the association between PHI-possession, attitudes on fairness of prioritising privately insured and redistribution preferences in health care. Auxiliary variables are examined independently and then inserted into the main model. An interaction model is computed to test the interplay between the two main predictors in their effect on redistribution preferences. To test robustness Generalised Structural Equation Modelling with Confirmatory Factor Analysis (CFA) is conducted, where the eight redistribution preferences form a dependent latent variable. To additionally check robustness I employ Polychoric Principal Component Analysis (PCA) in OLS regressions. All statistics were carried out with the Stata 16.1 software.

**Results**

In the demographically weighted sample 74% do not possess PHI, while 26% do. The distributions of eight redistribution preference statements show considerable variances (see Fig. 1 and in Appendix Fig. A1), and so do the attitudes on fairness of prioritising privately insured (see Fig. 2).

Fig. 1 shows that some health redistribution policies are more contested than others. Agreement to guarantee equal treatment and care for all is the most agreed upon answer, followed by support to increase public spending on health care. However, to personally pay higher contributions to finance the public health care system is rather unpopular, and so is to levy costs on patients. The largest cleavages between people that possess PHI and the ones who do not show in the three redistribution preferences that explicitly address expansion or restriction of private and respectively of two-tier medicine (for more details see Figures A1-A3 in the Appendix).
On average people with PHI exhibit lower support for redistribution in health care than persons without (see Appendix Exhibit A6).

Table 2

*OLS Regression Models*

*Dependent variable: Additive index of redistribution preferences in health care*

*Demographic & political sample weights*
| Model                                | Baseline Model | Fairness Model | Auxiliary Model | Full Model | Interaction Model |
|--------------------------------------|----------------|----------------|-----------------|------------|-------------------|
| Possess PHI                          | -0.261***      | -0.170***      | -0.181***       |            |                   |
|                                      | (0.05)         | (0.05)         | (0.04)          |            |                   |
| Fairness of prioritising privately insured | -0.147***      | -0.129***      |                |            |                   |
|                                      | (0.02)         | (0.02)         |                |            |                   |
| Trust in public health care system   | 0.026          | 0.024          | 0.020           |            |                   |
|                                      | (0.03)         | (0.03)         | (0.03)          |            |                   |
| Trust in government                  | -0.090**       | -0.072**       | -0.071*         |            |                   |
|                                      | (0.03)         | (0.03)         | (0.03)          |            |                   |
| Party preference for left-wing       | 0.121*         | 0.113*         | 0.103*          |            |                   |
|                                      | (0.05)         | (0.05)         | (0.05)          |            |                   |
| Party preference for conservatives, liberals, right-wing | Reference | Reference | Reference |            |                   |
| Other/No party preference            | 0.118*         | 0.104          | 0.108           |            |                   |
|                                      | (0.06)         | (0.06)         | (0.06)          |            |                   |
| Government responsibility            | 0.086***       | 0.084**        | 0.084**         |            |                   |
|                                      | (0.03)         | (0.03)         | (0.03)          |            |                   |
| Social redistribution                | 0.077***       | 0.071***       | 0.072***        |            |                   |
|                                      | (0.02)         | (0.02)         | (0.02)          |            |                   |
| Health risk for Austrian population  | 0.081**        | 0.073**        | 0.073**         |            |                   |
|                                      | (0.03)         | (0.02)         | (0.02)          |            |                   |
| Do not possess PHI X Fairness of prioritising privately insured | -0.128***      |                |                |            |                   |
|                                      | (0.03)         |                |                |            |                   |
| Possess PHI X Fairness of prioritising privately insured | -0.202***      |                |                |            |                   |
|                                      | (0.04)         |                |                |            |                   |
The inferential analysis shows that the possession of PHI is significantly and negatively associated with support for redistribution in health care (p<0.001). This effect holds true across all employed models.

When adding the variable ‘fairness of prioritisation of privately insured persons’ to the Baseline Model the results show that assessing such a priority setting as fair is significantly and negatively related to support for redistribution in health care as well (p<0.001). This also applies to the Full Model, which includes the auxiliary variables.

The Auxiliary Model only consists of the auxiliary covariates. It shows that trust in government has a significant and negative effect on support for redistribution in health care (p<0.05). This effect persists in the two further models as well. In addition, preferring a left-wing party is significantly and positively associated with such a redistribution. People that think it is the government's responsibility to provide and guarantee high-quality health care are also more in favour of redistribution of health care (p<0.01). Preferring higher taxes and more generous social benefits has a highly significant and positive effect on redistribution preferences in health care throughout all models (p<0.001). Perceiving COVID-19 to be a greater risk for the Austrian population also results in more support for redistribution in health care (p<0.01).

Figure 4 shows that in the Full Model having no PHI but finding prioritisation of privately insured as (somewhat) fair results in lower support for redistribution. Possessing PHI and having the same fairness attitude yields even lower support for redistribution in health care (see also Fig. A7 in the Appendix).

In the Interaction Model it is evident that regarding the prioritisation of privately insured persons as fair reduces the support for redistribution in health care in not privately insured and even more so in privately insured people.

The GSEM yields similar results as the Full Model, with the only difference that trust in the public health care system becomes significantly and positively associated with redistribution preferences in health care (see Appendix Table A2). The OLS regressions with the Polychoric Principal Component Analysis (PCA)
index also corroborate the initial results, with exception of the political party effects, which do not show significance anymore (see Appendix Table A3).

Conclusion

As H1 has been corroborated in this study, it appears that self-interest plays a considerable role in redistribution preferences in health care. However, self-interest cannot explain the whole picture. In this study fairness attitudes for prioritising privately insured persons have been considered as well. This is novel insofar usually prioritisation principles such as severity of illness, fair innings or proportional shortfall are discussed (cf. Stolk et al. 2005) and not explicit prioritisation of privately insured persons. The second rationale besides self-interest that can explain the findings in this study rests on reciprocity and the prosperity of health care being a public good.

Dolan et al. (2003, p. 546) argue that in a social and personal perspective people ask ex ante “What value do I attach to treatment being available to a group of people amongst whom I might find myself?” This question does not foreground mere self-interest but similarity with a shared group, namely the group of privately insured. When a person accepts to share costs to aid others with whom they recognise similarity in a relevant aspect this may be a case of solidarity (cf. Prainsack and Buyx 2011, 2017). This aspect of similarity may even be the possession of PHI, where people agree to share burdens and benefits beyond public insurance and pay premium payments into private insurances.

While trust in the public health care system has no significant effects, trust in government exhibits, contrary to expectations, a negative effect on support for redistribution in health care. The most straightforward explanation for this is that at the time of the survey there was a conservative-led government coalition in Austria and, as argued, conservative-leaning persons tend to dislike redistribution. Thus, people who put more trust in the government might simply be conservative party voters.

People with a preference for left-wing parties support redistribution in health care. This might be because the left wing traditionally finds more backing in lower-income groups, who cannot afford to pay PHI premiums. It can also be because left-wing supporters are ideologically more ready to favour redistribution, irregarding of their own social stratum or status.

Persons who think high-quality health care provision is a government responsibility supported redistribution in health care as well. This indicates that people who want a strong public health care system, also want one that public resources are redistributed to potentially reduce inequity in health care.

Austrian residents who support higher taxes and more social spending or social benefits also favour redistribution in health care. This highlights that people are consistent in their welfare choices and that health care, while having special ethical importance, does not stand out compared to social welfare and government redistribution overall.
Last, health risk to the general Austrian population has a significant positive effect on support for redistribution in health care. This may be because the pandemic has aggravated inequity in health care and people with a high risk perception feel this inequity needs to be addressed through increased redistribution in the public health care system.

Discussion & Policy context

Various scholars call for ‘evidence-based medicine’ and public engagement, also by including health care preferences of the public for issues such as prioritisation (e.g. Dolan and Tsuchiya 2012) or economic evaluations of health care interventions (Versteegh and Brouwer 2016). Shickle (1997) advocates including public preferences in health care policy, though to a limited degree: First, surveys are not a satisfactory tool to solely derive such preferences from. Second, the preferences and attitudes of vulnerable minorities must be heard. Third, the public may be reluctant to actually take responsibility for implementations of their own preferences. Thus, an in-depth debate about health care system changes and prioritisation rules that includes the public can be a solution.

Overall, states should foster health integration, financing, resilience, and equity, as well as strengthen and align global health security and universal health coverage (Lal et al. 2021). The implementation of an health equity framework for practitioners, e.g. Peterson et al. (2020), with special attention to socio-economic determinants of health and redistribution in health care is also advised. The same applies to priority setting guidelines for ICU triage (e.g. Persad et al. 2009; Nates et al. 2016; Emanuel et al. 2020) and for non-ICU prioritisation, particularly in primary health care (e.g. O’Connor et al. 2017; Núñez and Chi 2021). Such prioritisation decisions should not solely be delegated to the medical professionals on duty, but also be informed by policy makers, by experts in relevant fields (medicine, public health, bioethics, law, etc.), and by public preferences. Yet, public preferences for resource allocation in health care should cautiously be evaluated under consideration of the special interests of vulnerable and marginalised groups and be vetted by an ethics committee, as such preferences are likely to be biased, context-sensitive and not made under the proverbial veil of ignorance. Concerns for generalised reciprocity, fairness, solidarity, and equity should all be incorporated in priority setting decisions.

This study has shown that privately insured survey respondents exhibit considerable self-interest and also justify this to be fair. The implications of this are manifold. First, policy makers should be clear and explicit about whether they want to foster a medical two-tier system or not. If the answer is yes, then preferences of privately insured persons should be considered. If not, the findings in this study are thought-provoking because privately insured people may create a demand for practises that endanger the principles of equity, efficiency and good public health for the population as a whole. In the long term PHI might also undermine solidarity in the health care system because people who possess PHI may exclude non-PHI holders in their understanding of reciprocity, fairness and solidarity, which have to be foregrounded and reinforced especially amidst a pandemic.
Second, if policy makers want to safeguard existing solidaristic health care systems, they might want to actively counter the self-interest of the privately insured through dialogue and proactive policies. This could work by strictly regulating what PHI can encompass and what not, enabling incentives for PHI that however do not in any way threaten the principles of equity, efficiency, public health and the practice of solidarity. Tax subsidies for and deductibles of PHI should be carefully evaluated. Third, 34% in the sample of this study were undecided whether privately insured should be prioritised for treatment. This large group of ‘uncertainty’ ought to be involved in a publicly open debate about health care systems with questions about the structure and funding thereof, as well as concerns for equity.

Leiber et al. (2015) see a divergence in health insurance systems in comparing Germany, Austria and the Netherlands. They also note that political stakeholders look at other countries when thinking about reform in their own country. Thus, health care policy and health insurance policy are not isolated and purely national issues, but rather a transnational, if not global, concern. Leopold et al. (2020, p. 1) show when it comes to national reimbursement decisions for health care in New Zealand and in Belgium the most relevant aspects are “1) political commitment to initiate change, 2) broad involvement of all stakeholders, and 3) commitment of all to engage in a long-term process”. Similar guidelines are recommendable for the adaptations and reforms of health care and of health insurance in any nation.

Additionally, “When PHI is a major mechanism for health care financing, the sicker tend to purchase PHI, but when PHI is complementary or supplementary, the better off, who have the capacity to pay, may have higher tendency to purchase PHI” (Jeon and Kwon 2013, p. 75). Therefore, in social insurance systems with a statutory insurance scheme, like the Austrian one, it seems possible that PHI is purchased not only to receive supplementary services but also in the expectation to be potentially prioritised for treatment. This generates serious pressure for health care policy makers to avoid the establishment of two-tier medicine.

Following Miller and Horowitz (2000) it would be beneficial for patients if doctors made their financial incentives explicit and openly communicated their private practice, if existent, to patients in order to foster transparency. It would also be advantageous to health policy stakeholders and the public at large if medical priority setting standards and practises were to be made explicit.

It is a lasting concern that shifting the balance between solidarity and self-reliance in favour of the latter would decrease redistribution in health care (cf. Hinrichs 1995). Nevertheless, health care in Europe has become more privatised (e.g. Maarse 2006; Albreht 2009), liberalised and marketised (e.g. Borges 2011; Krachler et al. 2021). But “… the commitment to solidarity, equity and universality is still a reality in the EU” (Borges 2016, p. 82). Wouters and McKee (2017) ask for caution about any expansion of private health care and Assa and Calderon (2020, p. 17) emphasise: “… to make health systems sustainable at various levels of development and given the expectation of worsening environmental conditions, there is an urgent need to reconsider the neoliberal impulse to privatize health care systems. The short-term benefits from such privatization policies - e.g. reduced costs, shorter waiting times - must be weighed against the long-term damage such policies can do to countries’ ability to cope with a rapidly-spreading
infectious disease”. Some scholars are alert when it comes to more privatisation of health care, as a strong public health care system is equipped better to manage pandemics than a weakened one (e.g. De Ceukelaire and Bodini 2020; Armocida et al. 2020; Buzelli and Boyce 2021). Even more alarming is that in health systems of low- and middle-income countries (LMICs) private medicine has largely failed to provide adequate prevention, treatment and care in the COVID-19 pandemic (Williams 2020; Williams et al. 2021).

In Germany pay-dependency and inflexibility of SHI, incomplete risk adjustment for sickness funds, risk segmentation in the insurance market, and shorter lists waiting for PHI-holders make PHI schemes more attractive than SHI for many people (Normand and Busse 2002; Nuscheler and Knaus 2005; Bünnings and Tauchmann 2015; Lungen et al. 2008) Wörz and Busse (2005) highlight high costs, long waiting lists and user charges (excess payments) as issues in the German SHI. Bauhoff (2012) finds supply-side selection can emerge even in stringently regulated health insurance markets as the German one. The Dutch health insurance reforms brought along enhanced consumer choice, which, while not benefiting everyone equally, adds value to some patient-groups through risk pooling (Maarse and Ter Meulen 2006). Further, the reforms in the Netherlands induced shifts from residential to non-residential care, decentralisation of non-residential care, and expenditure cuts (Maarse and Jeurissen 2016).

These examples show systemic developments in European health insurance markets and health care financing. The commodification, segmentation, and differentiation of health insurance schemes also mark a shift in reciprocity, away from a generalised indirect exchange towards risk reciprocity, which embraces the ‘liberal egalitarian ethos’. This implies that people's trajectories and misfortunes become increasingly individualised, i.e. emphasis is put on individual agency and self-governance. Overall, the dominating narrative and its consequent policies move in the direction of ‘residual provision’ and ‘weak conditionality’. The former means that basic necessities of the ones (most) in need are covered, but these needs must mostly be demonstrated to be within the realm of bad brute luck. The latter denotes that contributions are not strictly dependent on certain expected reciprocations (cf. Mau 2004). Therefore, it can be argued that PHI-holders contribute in the anticipation of (vague) future ‘risk benefits’, in a rather interest-rational mode (cf. Ullrich 2002).

Lessons from the Nordic European countries raise concerns that PHI could undermine trust in and support of the public health care system and could result in suboptimal allocation of resources because public and private health care providers have to compete with each other (Tynkkynen et al. 2018). In Sweden privatisation of health care services preceded a rise in demand for PHI, which is likely to result in less equal and less fair access to health care overall (Lapidus 2020). A comparison of SHI and PHI in Germany and Chile shows that PHI can even in a niche role undermine overall health care funding and equitable access, treatment and care, as the whole system is at risk to drift towards ‘two-tier medicine’ (Roman-Urestarazu et al. 2018).

Over the past decades the private sector and private capital have become gradually more involved in the public sphere of health policy and health care. This has happened on the political level and particularly in
health care management, finance and provision, for example in Britain and Australia (e.g. Greenaway et al. 2004; Petratos 2005; McDonald and Duckett 2020). However, this trend came at a cost. Promoting efficiency and cost-effectiveness has amplified the trade-off with health equity, which becomes even more obvious in the COVID-19 pandemic (e.g. Sandiford et al. 2018; Galea and Vaughan 2019; Galea 2021).

A related pivotal argument is that PHI reproduces and magnifies asymmetrically distributed socio-economic determinants of health, e.g. income and socio-economic status. So, rather wealthy, healthy and high-status persons receive access to PHI coverage and thus to higher quality health care or shorter waiting times. Yet, treatment of pre-existing conditions, emergency medicine, highly specialised health care and continuous chronic care are left to the state because their provision is not profitable, as for instance evidence from Sweden shows (Kullberg et al. 2019). Addressing these issues, Starfield and Birn (2007) suggest that universal social programmes together with greater income redistribution would significantly reduce inequity in health.

While public preferences for redistribution are illuminating to further understand health care financing and redistribution, one should be very cautious in interpreting, let alone implementing, these public preferences. If we are to include representatives of the PHI industry or customer base in negotiations and decisions on health care policy, we must be aware of the underlying interests of this lobby and know the respective consequences, which seem particularly disconcerting regarding health equity and the socioeconomic gradient in health.

**Limitations and future research**

This study is limited both in space and in time. To address the former, future research should consider comparative analyses across different welfare regimes and health care systems in various countries. While this study offers a good vantage point and can represent social insurance models with statutory health insurance, different health care systems may produce very different redistribution preferences and effects of PHI on them. This study is also temporally limited as the data used stems from pandemic contexts. Post COVID-19 redistribution preferences in health care may show different patterns under different contingencies. Thus, ideally panel-survey data should be gathered to make amid- and post-pandemic comparisons feasible.

**Declarations**

**Ethical approval and consent to participate**

Research ethics approval for this study was not required according to institutional and national guidelines.
Consent for publication
Not applicable

Availability of data and materials
Kittel, Bernhard; Kritzinger, Sylvia; Boomgaard, Hajo; Prainsack, Barbara; Eberl, Jakob-Moritz; Kalleitner, Fabian; Lebernegg, Noëlle S.; Partheymüller, Julia; Plescia, Carolina; Schiestl, David W.; Schlogl, Lukas, 2020, "Austrian Corona Panel Project (SUF edition)", https://doi.org/10.11587/28KQNS, AUSSDA.

The datasets generated during and/or analysed during the current study are available in the AUSSDA repository, https://data.aussda.at/

Competing interests
The authors declare that they have no competing interests.

Authorship
All authors contributed equally in production of this manuscript.

Funding
The project has been funded by the Austrian Science Fund (Grant P33907-G) and the Vienna Science and Technology Fund (Grant EL-COV20-006). Data collection has additionally been financially supported by the rectorate of the University of Vienna, the Austrian Chamber of Labour and the Federation of Austrian Industries. The funders had no role in the study design, data collection and analysis, the decision to publish, or the preparation of the manuscript.

Authors' contributions
Not applicable (one author)

Acknowledgements
Not applicable

Authors' information
References

1. Abdalla, S. M., Maani, N., Ettman, C. K., & Galea, S. (2020). Claiming health as a public good in the post-COVID-19 era. *Development, 63*(2), 200–204.
2. Adams-Prassl, A., Boneva, T., Golin, M., & Rauh, C. (2020). Inequality in the impact of the coronavirus shock: Evidence from real time surveys. *Journal of Public Economics, 189*, 104245.
3. Akkazieva, B., Gulacsi, L., Brandtmuller, A., Péntek, M., & Bridges, J. F. (2006). Patients’ Preferences for Healthcare System Reforms in Hungary. *Applied health economics and health policy, 5*(3), 189-198.
4. Albreht, T. (2009). Privatization processes in health care in Europe—A move in the right direction, a ‘trendy’ option, or a step back? *The European Journal of Public Health, 19*(5), 448–450.
5. Allin, S., & Hurley, J. (2009). Inequity in publicly funded physician care: what is the role of private prescription drug insurance?. *Health economics, 18*(10), 1218-1232.
6. Álvarez, B., & Rodríguez-Míguez, E. (2011). Patients’ self-interested preferences: Empirical evidence from a priority setting experiment. *Social science & medicine, 72*(8), 1317-1324.
7. Anand, S. (2002). The concern for equity in health. *Journal of Epidemiology and Community Health, 56*(7), 485.
8. Andreoli, F., & Olivera, J. (2020). Preferences for redistribution and exposure to tax-benefit schemes in Europe. *European Journal of Political Economy, 63*, 101880.
9. Armingeon, K., & Weisstanner, D. (2021). Objective Conditions Count, Political Beliefs Decide: The Conditional Effects of Self-Interest and Ideology on Redistribution Preferences. *Political Studies*, 0032321721993652.
10. Armocida, B., Formenti, B., Ussai, S., Palestra, F., & Missoni, E. (2020). The Italian health system and the COVID-19 challenge. *The Lancet Public Health, 5*(5), e253.
11. Ásgeirsdóttir, T. L., & Ragnarsdóttir, D. Ó. (2013). Determinants of relative and absolute concentration indices: evidence from 26 European countries. *International journal for equity in health, 12*(1), 1-16.
12. Assa, J., & Calderon, C. (2020). Privatization and Pandemic: A cross-country analysis of COVID-19 rates and health-care financing structures. *Research Gate*.
13. Ataguba, J. E. (2021). The Impact of Financing Health Services on Income Inequality in an Unequal Society: The Case of South Africa. *Applied Health Economics and Health Policy*, 1-13.
14. Azar, K. M., Shen, Z., Romanelli, R. J., Lockhart, S. H., Smits, K., Robinson, S., ... & Pressman, A. R. (2020). Disparities In Outcomes Among COVID-19 Patients In A Large Health Care System In California: Study estimates the COVID-19 infection fatality rate at the US county level. *Health Affairs, 39*(7), 1253-1262.
15. Bambra, C., & Lynch, J. (2021). *The Unequal Pandemic: COVID-19 and Health Inequalities*. Policy Press.
16. Bambra, C. (2007). Going beyond the three worlds of welfare capitalism: regime theory and public health research. *Journal of Epidemiology & Community Health, 61*(12), 1098-1102.

17. Bambra, C. (2005). Cash versus services: ‘worlds of welfare’ and the decommodification of cash benefits and health care services. *Journal of social policy, 34*(2), 195-213.

18. Azar, A., Maldonado, L., Castillo, J. C., & Atria, J. (2018). Income, egalitarianism and attitudes towards healthcare policy: A study on public attitudes in 29 countries. *Public Health, 154*, 59-69.

19. Baqui, P., Bica, I., Marra, V., Ercole, A., & van der Schaar, M. (2020). Ethnic and regional variations in hospital mortality from COVID-19 in Brazil: a cross-sectional observational study. *The Lancet Global Health, 8*(8), e1018-e1026.

20. Barbosa, E. C., & Cookson, R. (2019). Multiple inequity in health care: an example from Brazil. *Social Science & Medicine, 228*, 1-8.

21. Barry, C. L., Han, H., Presskreischer, R., Anderson, K. E., & McGinty, E. E. (2020). Public support for social safety-net policies for COVID-19 in the United States, April 2020. *American journal of public health, 110*(12), 1811-1813.

22. Bauhoff, S. (2012). Do health plans risk-select? An audit study on Germany’s Social Health Insurance. *Journal of Public Economics, 96*(9-10), 750–759.

23. Besley, T., Hall, J., & Preston, I. (1999). The demand for private health insurance: do waiting lists matter?. *Journal of public economics, 72*(2), 155-181.

24. Birenbaum-Carmeli, D., & Chassida, J. (2021). Health and socio-demographic implications of the Covid-19 second pandemic wave in Israel, compared with the first wave. *International Journal for Equity in Health, 20*(1), 1-12.

25. Björk, J., Helgesson, G., & Juth, N. (2020). Better in theory than in practise? Challenges when applying the luck egalitarian ethos in health care policy. *Medicine, Health Care and Philosophy, 23*(4), 735–742.

26. Blendon, R. J., Schoen, C., DesRoches, C. M., Osborn, R., Scopes, K. L., & Zapert, K. (2002). Inequities in health care: a five-country survey. *Health Affairs, 21*(3), 182-191.

27. Blumenthal, D., Fowler, E. J., Abrams, M., & Collins, S. R. (2020). Covid-19—implications for the health care system. *New England Journal of Medicine, 383*(15), 1483-1488.

28. Borck, R. (2007). Voting, inequality and redistribution. *Journal of economic surveys, 21*(1), 90-109.

29. Borges, D. da C. L. (2011). European health systems and the internal market: Reshaping ideology? *Health Care Analysis, 19*(4), 365–387.

30. Borges, D. da C. L. (2016). *EU health systems and distributive justice: Towards new paradigms for the provision of health care services*? Routledge.

31. Borrell, C., Fernandez, E., Schiaffino, A., Benach, J., Rajmil, L., Villalbí, J. R., & Segura, A. (2001). Social class inequalities in the use of and access to health services in Catalonia, Spain: what is the influence of supplemental private health insurance?. *International Journal for Quality in Health Care, 13*(2), 117-125.
32. Braveman, P., & Gruskin, S. (2003). Defining equity in health. *Journal of Epidemiology & Community Health, 57*(4), 254–258.

33. Breyer, F., & Kliemt, H. (2015). “Priority of liberty” and the design of a two-tier health care system. *Journal of Medicine and Philosophy, 40*(2), 137-151.

34. Brock, D. W. (2007). Health care resource prioritization and rationing: why is it so difficult?. *Social Research: An International Quarterly, 74*(1), 125-148.

35. Brock, D. (2002). Fairness and health. *Summary Measures of Population Health: Concepts, Ethics, Measurement and Applications. Geneva (Switzerland): World Health Organization*, 717–726.

36. Buchmueller, T. C., Couffinhal, A., Grignon, M., & Perronin, M. (2004). Access to physician services: does supplemental insurance matter? Evidence from France. *Health economics, 13*(7), 669-687.

37. Budetti, P. P. (2008). Market justice and US health care. *JAMA, 299*(1), 92-94.

38. Bundorf, M. K., Gupta, S., & Kim, C. (2021, September). Trends in US health insurance coverage during the COVID-19 pandemic. In *JAMA Health Forum* (Vol. 2, No. 9, pp. e212487-e212487). American Medical Association.

39. Busemeyer, M. R. (2021). Health care attitudes and institutional trust during the COVID-19 crisis: Evidence from the case of Germany. Working Paper Series / Cluster of Excellence ‘The Politics of Inequality’ ; No 01.

40. Busse, R., Blümel, M., Knieps, F., & Bärnighausen, T. (2017). Statutory health insurance in Germany: a health system shaped by 135 years of solidarity, self-governance, and competition. *The Lancet, 390*(10097), 882–897.

41. Buzelli, M. L., & Boyce, T. (2021). The Privatization of the Italian National Health System and its Impact on Health Emergency Preparedness and Response: The COVID-19 Case. *International Journal of Health Services, 00207314211024900*.

42. Bünning, C., & Tauchmann, H. (2015). Who opts out of the statutory health insurance? A discrete time hazard model for Germany. *Health economics, 24*(10), 1331–1347.

43. Cavallero, E. (2011). Health, luck and moral fallacies of the second best. *The Journal of Ethics, 15*(4), 387–403.

44. Chan, K. S., Mestelman, S., Moir, R., & Muller, R. A. (1996). The voluntary provision of public goods under varying income distributions. *Canadian Journal of Economics*, 54–69.

45. Chavanne, D. (2020). Headwinds, tailwinds and preferences for redistributive healthcare. *The Social Science Journal, 1*-18.

46. Choma, B. L., Barnes, A. J., Braun, R. T., & Hanoch, Y. (2018). Dissecting the politics of “Obamacare”: The role of distributive justice, deservingness, and affect. *Journal of Applied Social Psychology, 48*(11), 634-642.

47. Clark, S., & Weale, A. (2012). Social values in health priority setting: A conceptual framework. *Journal of Health Organization and Management*.
48. Colombo, F., & Tapay, N. (2004). Private health insurance in OECD countries: the benefits and costs for individuals and health systems.

49. Croson, R. T. (2007). Theories of commitment, altruism and reciprocity: Evidence from linear public goods games. *Economic Inquiry, 45*(2), 199-216.

50. Czypionka, T., Röhrling, G. and Six, E. (2018). Can people afford to pay for health care? New evidence on financial protection in Austria. Copenhagen: WHO Regional Office for Europe.

51. Damm, K., Prenzler, A., & Zuchandke, A. (2014). Does the perception of fairness and standard of care in the health system depend on the field of study? Results of an empirical analysis. *BMC health services research, 14*(1), 1-11.

52. Daniels, N. (2007). *Just Health: Meeting Health Needs Fairly*. Cambridge: Cambridge University Press. doi:10.1017/CBO9780511809514

53. Daniels, N. (2001). Justice, health, and healthcare. *American Journal of Bioethics, 1*(2), 2–16.

54. Das, V. (1999). Public good, ethics, and everyday life: Beyond the boundaries of bioethics. *Daedalus, 128*(4), 99–133.

55. Davies, B., & Savulescu, J. (2019). Solidarity and responsibility in health care. *Public Health Ethics, 12*(2), 133-144.

56. Deauvais, M. (2015). Income-related inequalities and inequities in health care services utilisation in 18 selected OECD countries. *The European Journal of Health Economics, 16*(1), 21-33.

57. de Bruin, W. B., & Bennett, D. (2020). Relationships between initial COVID-19 risk perceptions and protective health behaviors: a national survey. *American Journal of Preventive Medicine, 59*(2), 157-167.

58. De Ceukelaire, W., & Bodini, C. (2020). We need strong public health care to contain the global corona pandemic. *International Journal of Health Services, 50*(3), 276–277.

59. De Geest, L. R., & Kingsley, D. C. (2019). Endowment heterogeneity, incomplete information & institutional choice in public good experiments. *Journal of Behavioral and Experimental Economics, 83*, 101478.

60. Del Pino, E., & Ramos, J. A. (2018). Is welfare retrenchment inevitable? Scope and drivers of healthcare reforms in five Spanish regions during the crisis. *Journal of Social Policy, 47*(4), 701-720.

61. Devakumar, D., Bhopal, S. S., & Shannon, G. (2020). COVID-19: the great unequaliser. *Journal of the Royal Society of Medicine, 113*(6), 234-235.

62. Diederich, A., & Salzmann, D. (2015). Public preferences regarding therapeutic benefit, costs of a medical treatment and evidence-based medicine as prioritization criteria. *Journal of Public Health, 23*(3), 137-148.

63. Dimopoulos-Bick, T., Walsh, L., & Sutherland, K. (2021). Indirect Impacts of COVID-19: A Case Study of Evidence, Advice and Representation From Consumer and Community Members in New South Wales Australia. *Journal of Patient Experience, 8*, 2374373521998628.
64. Dolan, P., & Tsuchiya, A. (2012). It is the lifetime that matters: public preferences over maximising health and reducing inequalities in health. *Journal of Medical Ethics, 38*(9), 571-573.

65. Dolan, P., Olsen, J. A., Menzel, P., & Richardson, J. (2003). An inquiry into the different perspectives that can be used when eliciting preferences in health. *Health economics, 12*(7), 545–551.

66. Emanuel, E. J., Persad, G., Upshur, R., Thome, B., Parker, M., Glickman, A., ... & Phillips, J. P. (2020). Fair allocation of scarce medical resources in the time of Covid-19. *New England Journal of Medicine, 382*(21), 2049-2055.

67. Falk, A., & Fischbacher, U. (2006). A theory of reciprocity. *Games and Economic Behavior, 54*(2), 293–315.

68. Fleurbaey, M. (2005). Health, wealth, and fairness. *Journal of Public Economic Theory, 7*(2), 253-284.

69. Foremny, D., Sorribas-Navarro, P., and Vall Castelló, J. (2020). Living at the Peak: Health and Public Finance During the Covid-19 Pandemic. Available at SSRN: https://ssrn.com/abstract=3578483 or http://dx.doi.org/10.2139/ssrn.3578483.

70. Fortuna, L. R., Tolou-Shams, M., Robles-Ramamurthy, B., & Porche, M. V. (2020). Inequity and the disproportionate impact of COVID-19 on communities of color in the United States: The need for a trauma-informed social justice response. *Psychological Trauma: Theory, Research, Practice, and Policy, 12*(5), 443.

71. Frischmann, B. M., Marciano, A., & Ramello, G. B. (2019). Retrospectives: tragedy of the commons after 50 years. *Journal of Economic Perspectives, 33*(4), 211–228.

72. Fuchs, V. R. (2020). Health care policy after the COVID-19 pandemic. *Jama, 324*(3), 233-234.

73. Gächter, S., Kölle, F., & Quercia, S. (2017). Reciprocity and the tragedies of maintaining and providing the commons. *Nature Human Behaviour, 1*(9), 650–656.

74. Galea, S. (2021). The Price of Health Equity. In *JAMA Health Forum, Vol. 2, No. 4*, e210720-e210720.

75. Galea, S., & Vaughan, R. (2019). Tradeoffs between equity and efficiency at the heart of population health science: a public health of consequence, April 2019. *American journal of public health, 109*(4), 541.

76. Gevers, J., Gelissen, J., Arts, W., & Muffels, R. (2000). Public health care in the balance: exploring popular support for health care systems in the European Union. *International Journal of Social Welfare, 9*(4), 301-321.

77. Goddard, M., Hauck, K., Preker, A., & Smith, P. C. (2006). Priority setting in health—a political economy perspective. *Health Economics, Policy and Law, 1*(1), 79-90.

78. Greenaway, J., Salter, B., & Hart, S. (2004). The evolution of a ‘meta-policy’: The case of the private finance initiative and the health sector. *The British Journal of Politics and International Relations, 6*(4), 507–526.

79. Grignon, M., Hurley, J., Wang, L., & Allin, S. (2010). Inequity in a market-based health system: Evidence from Canada's dental sector. *Health Policy, 98*(1), 81-90.
81. Gross, J., Veistola, S., De Dreu, C. K., & Van Dijk, E. (2020). Self-reliance crowds out group cooperation and increases wealth inequality. *Nature Communications, 11*(1), 1–9.

82. Gross, J., & De Dreu, C. K. (2019). Individual solutions to shared problems create a modern tragedy of the commons. *Science Advances, 5*(4), eaau7296.

83. Grover, S., McClelland, A., & Furnham, A. (2020). Preferences for scarce medical resource allocation: Differences between experts and the general public and implications for the COVID-19 pandemic. *British journal of health psychology, 25*(4), 889-901.

84. Gyrd-Hansen, D., & Slothuus, U. (2002). The citizen's preferences for financing public health care: a Danish survey. *International Journal of Health Care Finance and Economics, 2*(1), 25-36.

85. Hanson, K., McPake, B., Nakamba, P., & Archard, L. (2005). Preferences for hospital quality in Zambia: results from a discrete choice experiment. *Health economics, 14*(7), 687-701.

86. Hardin, G. (1968) The Tragedy of the Commons. *Science, 162*(3859), 1243–1248.

87. Harmon, C., & Nolan, B. (2001). Health insurance and health services utilization in Ireland. *Health economics, 10*(2), 135-145.

88. Heap, S. H., Koop, C., Matakos, K., Unan, A., and Weber, N. (2020). COVID-19 and People's Health-Wealth Preferences: Information Effects and Policy Implications. Available at SSRN: https://ssrn.com/abstract=3605003 or http://dx.doi.org/10.2139/ssrn.3605003

89. Heap, S. P. H., Ramalingam, A., & Stoddard, B. V. (2016). Endowment inequality in public goods games: A re-examination. *Economics Letters, 146*, 4–7.

90. Henderson, M., and Hillygus, D. S. (2011). The Dynamics of Health Care Opinion, 2008–2010: Partisanship, Self-Interest, and Racial Resentment. In *Journal of Health Politics, Policy and Law* 36 (6), pp. 945–960. DOI: 10.1215/03616878-1460533.

91. Herwartz, H., & Theilen, B. (2014). Health care and ideology: a reconsideration of political determinants of public healthcare funding in the OECD. *Health Economics, 23*(2), 225-240.

92. Hetherington, M. J., & Husser, J. A. (2012). How trust matters: The changing political relevance of political trust. *American Journal of Political Science, 56*(2), 312-325.

93. Hetzer, M., & Sornette, D. (2013). An evolutionary model of cooperation, fairness and altruistic punishment in public good games. *PLoS One, 8*(11), e77041.

94. Hinrichs, K. (1995). The impact of German health insurance reforms on redistribution and the culture of solidarity. *Journal of Health Politics, Policy and Law, 20*(3), 653–687.

95. Hsiao, W., & Liu, Y. (2001). Health care financing: assessing its relationship to health equity. *Challenging inequities in health: From ethics to action, 261*, 275.

96. Immergut, E. M., & Schneider, S. M. (2020). Is it unfair for the affluent to be able to purchase “better” healthcare? Existential standards and institutional norms in healthcare attitudes across 28 countries. *Social Science & Medicine, 267*, 113146.

97. Ismail, S. J., Tunis, M. C., Zhao, L., & Quach, C. (2021). Navigating inequities: a roadmap out of the pandemic. *BMJ Global Health, 6*(1), e004087.
98. Jensen, C., & Naumann, E. (2016). Increasing pressures and support for public healthcare in Europe. *Health Policy, 120*(6), 698-705.

99. Jeon, B., & Kwon, S. (2013). Effect of private health insurance on health care utilization in a universal public insurance system: a case of South Korea. *Health policy, 113*(1-2), 69-76.

100. Jin, Y., Hou, Z., & Zhang, D. (2016). Determinants of health insurance coverage among people aged 45 and over in China: Who buys public, private and multiple insurance. *PLoS One, 11*(8), e0161774.

101. Kallhoff, A. (2014). Why societies need public goods. *Critical Review of International Social and Political Philosophy, 17*(6), 635-651.

102. Karsten, S. G. (1995). Health care: Private good vs. public good. *American Journal of Economics and Sociology, 54*(2), 129–144.

103. Keser, C., & Van Winden, F. (2000). Conditional cooperation and voluntary contributions to public goods. *Scandinavian Journal of Economics, 102*(1), 23-39.

104. Kiil, A., & Arendt, J. N. (2017). The effect of complementary private health insurance on the use of health care services. *International journal of health economics and management, 17*(1), 1-27.

105. Kiil, A. (2012). What characterises the privately insured in universal health care systems? A review of the empirical evidence. *Health Policy, 106*(1), 60-75.

106. King, D., & Mossialos, E. (2005). The determinants of private medical insurance prevalence in England, 1997–2000. *Health services research, 40*(1), 195-212.

107. Kittel, B., Kritzinger, S., Boomgaard, H., Prainsack, B., Eberl, J-M., Kalleitner, F., Leberneeg, N. S., Partheymüller, J., Plesc, C., Schiestl, D. W., Schlogl, L. (2020). Austrian Corona Panel Project (SUF edition). [https://doi.org/10.11587/28KQNS](https://doi.org/10.11587/28KQNS), AUSSDA.

108. Kittel, B., Kritzinger, S., Boomgaard, H., Prainsack, B., Eberl, J-M., Kalleitner, F., Leberneeg, N. S., Partheymüller, J., Plesc, C., Schiestl, D. W., Schlogl, L. (2021). The Austrian Corona Panel Project: monitoring individual and societal dynamics amidst the COVID-19 crisis. *European Political Science, 20*(2), 318-344.

109. Kolasz, K., & Lewandowski, T. (2015). Does it matter whose opinion we seek regarding the allocation of healthcare resources?-a case study. *BMC health services research, 15*(1), 1-10.

110. Kohn, M. (2020). Public goods and social justice. *Perspectives on Politics, 18*(4), 1104–1117.

111. Koos, S., & Leuffen, D. (2020). Beds or bonds?: Conditional solidarity in the coronavirus crisis. *Policy Papers / Cluster of Excellence ‘The Politics of Inequality’ ; No. 01.

112. Koos, S., & Sachweh, P. (2019). The moral economies of market societies: Popular attitudes towards market competition, redistribution and reciprocity in comparative perspective. *Socio-Economic Review, 17*(4), 793–821.

113. Krachler, N., Greer, I., & Umney, C. (2021). Can public healthcare afford marketization? Market principles, mechanisms, and effects in five health systems. *Public Administration Review.

114. Krütli, P., Rosemann, T., Törnblom, K. Y., & Smieszek, T. (2016). How to fairly allocate scarce medical resources: ethical argumentation under scrutiny by health professionals and lay people. *PLoS one,
115. Kullberg, L., Blomqvist, P., & Winblad, U. (2019). Health insurance for the healthy? Voluntary health insurance in Sweden. *Health policy, 123*(8), 737-746.

116. Lal, A., Erondu, N. A., Heymann, D. L., Gitahi, G., & Yates, R. (2021). Fragmented health systems in COVID-19: rectifying the misalignment between global health security and universal health coverage. *The Lancet, 397*(10268), 61-67.

117. Lapidus, J. (2020). Indirect and Invisible Regulations Set in Stone: A Driving Force behind the Rise of Private Health Insurance in Sweden. *The ANNALS of the American Academy of Political and Social Science, 691*(1), 243–257.

118. Lapidus, J. (2017). Private health insurance in Sweden: fast-track lanes and the alleged attempts to stop them. *Health Policy, 121*(4), 442-449.

119. Latham, S. R. (2012). Justice of and within health care finance. *Medicine and Social Justice, 121–130.*

120. Larsen, E. G. (2020). Personal politics? Healthcare policies, personal experiences and government attitudes. *Journal of European Social Policy, 30*(4), 467-479.

121. Lehtonen, T.-K., & Liukko, J. (2011). The forms and limits of insurance solidarity. *Journal of Business Ethics, 103*(1), 33–44.

122. Leiber, S., Greß, S., & Heinemann, S. (2015). Explaining Different Paths in Social Health Insurance Countries—Health System Change and Cross-border Lesson-drawing between Germany, Austria and the Netherlands. *Social Policy & Administration, 49*(1), 88-108.

123. Leitner, S., & Lessenich, S. (2003). Assessing welfare state change: The German social insurance state between reciprocity and solidarity. *Journal of Public Policy, 23*(3), 325–347.

124. Leopold, C., Lu, C. Y., & Wagner, A. K. (2020). Integrating public preferences into national reimbursement decisions: a descriptive comparison of approaches in Belgium and New Zealand. *BMC health services research, 20*(1), 1-10.

125. Lerman, A. E., & McCabe, K. T. (2017). Personal experience and public opinion: a theory and test of conditional policy feedback. *The Journal of Politics, 79*(2), 624-641.

126. Levy, M., & Nir, A. R. (2012). The utility of health and wealth. *Journal of Health Economics, 31*(2), 379-392.

127. Liebig, S., & Sauer, C. (2016). Sociology of justice. In *Handbook of social justice theory and research* (pp. 37–59). Springer.

128. Light, D. W. (2010). Health-care professions, markets and countervailing powers. *Handbook of medical sociology, 6*, 270-289.

129. Lister, A. (2011). Justice as fairness and reciprocity. *Analyse & Kritik, 33*(1), 93–112.

130. Lu, H., Burge, P., & Sussex, J. (2021). Measuring public preferences between health and social care funding options. *Journal of choice modelling, 38*, 100266.
131. Lungen, M., Stollenwerk, B., Messner, P., Lauterbach, K. W., & Gerber, A. (2008). Waiting times for elective treatments according to insurance status: A randomized empirical study in Germany. *International Journal for Equity in Health, 7*(1), 1–7.

132. Lynch, J., & Gollust, S. E. (2010). Playing fair: fairness beliefs and health policy preferences in the United States. *Journal of Health Politics, Policy and Law, 35*(6), 849-887.

133. Maarse, H., & Jeurissen, P. (2016). The policy and politics of the 2015 long-term care reform in the Netherlands. *Health Policy* 120.3: 241–245.

134. Maarse, H., & Bartholomée, Y. (2007). A public–private analysis of the new Dutch health insurance system. *The European Journal of Health Economics, 8*(1), 77–82.

135. Maarse, H. (2006). The privatization of health care in Europe: An eight-country analysis. *Journal of Health Politics, Policy and Law, 31*(5), 981–1014.

136. Maarse, H., & Ter Meulen, R. (2006). Consumer choice in Dutch health insurance after reform. *Health Care Analysis, 14*(1), 37–49.

137. Mackey, K., Ayers, C. K., Kondo, K. K., Saha, S., Advani, S. M., Young, S., ... & Kansagara, D. (2021). Racial and ethnic disparities in COVID-19–related infections, hospitalizations, and deaths: a systematic review. *Annals of internal medicine, 174*(3), 362-373.

138. Marmot, M., & Allen, J. (2020). COVID-19: exposing and amplifying inequalities. *J Epidemiol Community Health, 74*(9), 681-682.

139. Martinussen, P. E. (2008). Self-interest or Ideology? The Attitude of Norwegian Medical Specialists towards Private Welfare Services. *Scandinavian Political Studies, 31*(2), 149-172.

140. McAlister, M., & Helton, J. D. (2021). A Comparison of the United States and Austrian Healthcare Needs and Systems. *INQUIRY: The Journal of Health Care Organization, Provision, and Financing, 58*, 00469580211000162.

141. McDonald, F., & Duckett, S. (2020). Embracing Private Finance and Private Provision: The Australian System. *Is Two-Tier Health Care the Future, 267–292*.

142. Meltzer, A. H., & Richard, S. F. (1981). A rational theory of the size of government. *Journal of political Economy, 89*(5), 914-927.

143. Miller, T. E., & Horowitz, C. R. (2000). Disclosing Doctors' Incentives: Will Consumers Understand And Value The Information? The challenge in disclosing physicians’ financial incentives is to educate patients without eroding their trust in their physicians. *Health Affairs, 19*(4), 149-155.

144. Mirelman, A., Mentzakis, E., Kinter, E., Paolucci, F., Fordham, R., Ozawa, S., ... & Niessen, L. W. (2012). Decision-making criteria among national policymakers in five countries: a discrete choice experiment eliciting relative preferences for equity and efficiency. *Value in health, 15*(3), 534-539.

145. Missinne, S., Meuleman, B., & Bracke, P. (2013). The popular legitimacy of European healthcare systems: a multilevel analysis of 24 countries. *Journal of European Social Policy, 23*(3), 231-247.

146. Moghadas, S. M., Shoukat, A., Fitzpatrick, M. C., Wells, C. R., Sah, P., Pandey, A., ... & Galvani, A. P. (2020). Projecting hospital utilization during the COVID-19 outbreaks in the United States.
Proceedings of the National Academy of Sciences, 117(16), 9122-9126.
147. Molm, L. D., Collett, J. L., & Schaefer, D. R. (2007). Building solidarity through generalized exchange: A theory of reciprocity. American Journal of Sociology, 113(1), 205–242.
148. Moran, M. (2000). Understanding the welfare state: the case of health care. The British Journal of Politics and International Relations, 2(2), 135-160.
149. Mossialos, E., & Thomson, S. M. (2002). Voluntary health insurance in the European Union: a critical assessment. International journal of health services, 32(1), 19-88.
150. Mou, H. (2013). The political economy of the public–private mix in health expenditure: an empirical review of thirteen OECD countries. Health policy, 113(3), 270-283.
151. Nates, J. L., Nunnally, M., Kleinpell, R., Blosser, S., Goldner, J., Birriel, B., ... & Sprung, C. L. (2016). ICU admission, discharge, and triage guidelines: a framework to enhance clinical operations, development of institutional policies, and further research. Critical care medicine, 44(8), 1553-1602.
152. Nockur, L., Pfattheicher, S., & Keller, J. (2021). Different punishment systems in a public goods game with asymmetric endowments. Journal of Experimental Social Psychology, 93, 104096.
153. Normand, C., & Busse, R. (2002). Social health insurance financing. Funding health care: options for Europe, 59.
154. Núñez, A., & Chi, C. (2021). Investigating public values in health care priority–Chileans´ preference for national health care. BMC public health, 21(1), 1-12.
155. Nuscheler, R., & Knaus, T. (2005). Risk selection in the German public health insurance system. Health economics, 14(12), 1253–1271.
156. O'Connor, P. J., Sperl-Hillen, J. M., Margolis, K. L., & Kottke, T. E. (2017). Strategies to prioritize clinical options in primary care. The Annals of Family Medicine, 15(1), 10-13.
157. Oliver, D. (2018). Private practice by NHS doctors—still controversial?. BMJ, 362.
158. Olsen, J. A. (2011). Concepts of equity and fairness in health and health care. In The Oxford handbook of health economics.
159. Olsen, J. A., Kidholm, K., Donaldson, C., & Shackley, P. (2004). Willingness to pay for public health care: a comparison of two approaches. Health Policy, 70(2), 217-228.
160. Orton, L., Lloyd-Williams, F., Taylor-Robinson, D., O'Flaherty, M., & Capewell, S. (2011). The use of research evidence in public health decision making processes: systematic review. PloS one, 6(7), e21704.
161. Oxholm, A. S., Di Guida, S., & Gyrd-Hansen, D. (2021). Allocation of health care under pay for performance: Winners and losers. Social Science & Medicine, 278, 113939.
162. Ozono, H., Kamijo, Y., & Shimizu, K. (2016). Institutionalize reciprocity to overcome the public goods provision problem. PloS one, 11(6), e0154321.
163. Persad, G., Wertheimer, A., & Emanuel, E. J. (2009). Principles for allocation of scarce medical interventions. The Lancet, 373(9661), 423-431.
164. Peterson, A., Charles, V., Yeung, D., & Coyle, K. (2020). The Health Equity Framework: A Science-and Justice-Based Model for Public Health Researchers and Practitioners. *Health Promotion Practice, 15*24839920950730.

165. Petratos, P. (2005). Does the private finance initiative promote innovation in health care? The case of the british national health service. *The Journal of Medicine and Philosophy, 30*(6), 627–642.

166. Pfarr, C., & Schmid, A. (2016). Redistribution through social health insurance: evidence on citizen preferences. *The European Journal of Health Economics, 17*(5), 611-628.

167. Powers, M. and Faden, R. R. (2006). *Social justice: the moral foundations of public health and health policy.* Oxford University Press, USA.

168. Prainsack, B., & Buyx, A. (2017). *Solidarity in biomedicine and beyond* (Vol. 33). Cambridge University Press.

169. Prainsack, B., & Buyx, A. (2011). *Solidarity: Reflections on an emerging concept in bioethics.* Nuffield Council on Bioethics London.

170. Ramos, A. L., Hoffmann, F., & Spreckelsen, O. (2018). Waiting times in primary care depending on insurance scheme in Germany. *BMJ health services research, 18*(1), 1-9.

171. Read, S., Erens, B., Wittenberg, R., Wistow, G., Dickinson, F., Knapp, M., ... & Mays, N. (2021). Public preferences for paying for social care in later life in England: A latent class analysis. *Social Science & Medicine, 274*, 113803.

172. Reckers-Droog, V., Van Exel, J., & Brouwer, W. (2018). Who should receive treatment? An empirical enquiry into the relationship between societal views and preferences concerning healthcare priority setting. *PloS one, 13*(6), e0198761.

173. Reibling, N., Ariaans, M., & Wendt, C. (2019). Worlds of healthcare: a healthcare system typology of OECD countries. *Health Policy, 123*(7), 611-620.

174. Reuben, E., & Riedl, A. (2013). Enforcement of contribution norms in public good games with heterogeneous populations. *Games and Economic Behavior, 77*(1), 122–137.

175. Richardson, J., Sinha, K., Iezzi, A., & Maxwell, A. (2012). Maximising health versus sharing: measuring preferences for the allocation of the health budget. *Social Science & Medicine, 75*(8), 1351-1361.

176. Robinson, R. (1999). Limits to rationality: economics, economists and priority setting. *Health Policy, 49*(1-2), 13-26.

177. Rodwin, M. A. (2004). Financial incentives for doctors. *BMJ, 328*(7452), 1328-1329.

178. Roehr, B. (2020). The health of private insurance in the US during Covid-19. *BMJ, 370*.

179. Rogge, J., & Kittel, B. (2016). Who shall not be treated: Public attitudes on setting health care priorities by person-based criteria in 28 nations. *PloS one, 11*(6), e0157018.

180. Roman-Urrestarazu, A., Yang, J. C., Ettelt, S., Thalmann, I., Ravest, V. S., & Brayne, C. (2018). Private health insurance in Germany and Chile: Two stories of co-existence, segmentation and conflict. *International Journal for Equity in Health, 17*(1), 1–14.
181. Rosén, P., & Karlberg, I. (2002). Opinions of Swedish citizens, health-care politicians, administrators and doctors on rationing and health-care financing. *Health expectations, 5*(2), 148-155.

182. Ryen, L., Jakobsson, N., & Svensson, M. (2019). What should guide priority setting in health care?: A study of public preferences in Sweden. *Nordic Journal of Health Economics, 7*(1), 82-89.

183. Sagan, A., & Thomson, S. (2016). Voluntary Health Insurance in Europe: Role and Regulation: Health Policy Series.

184. Sandiford, P., Consuelo, D. V., Rouse, P., & Bramley, D. (2018). The trade-off between equity and efficiency in population health gain: Making it real. *Social Science & Medicine, 212*, 136-144.

185. Sassi, F. (2006). Calculating QALYs, comparing QALY and DALY calculations. *Health policy and planning, 21*(5), 402-408.

186. Schoen, C., & Doty, M. M. (2004). Inequities in access to medical care in five countries: findings from the 2001 Commonwealth Fund International Health Policy Survey. *Health Policy, 67*(3), 309-322.

187. Scott, J. T., & Bornstein, B. H. (2009). What's fair in foul weather and fair? Distributive justice across different allocation contexts and goods. *The Journal of Politics, 71*(3), 831–846.

188. Segall, S. (2007). In solidarity with the imprudent: A defense of luck egalitarianism. *Social Theory and Practice, 33*(2), 177–198.

189. Silva, J. Morgandi, M. and Levin, V. (2016). Trust in Government and Support for Redistribution. World Bank Policy Research Working Paper No. 7675, Available at SSRN: https://ssrn.com/abstract=2780719

190. Sommersguter-Reichmann, M., Wild, C., Stepan, A., Reichmann, G., & Fried, A. (2018). Individual and institutional corruption in European and US healthcare: overview and link of various corruption typologies. *Applied Health Economics and Health Policy, 16*(3), 289-302.

191. Sommersguter-Reichmann, M., & Stepan, A. (2017). Hospital physician payment mechanisms in Austria: do they provide gateways to institutional corruption?. *Health economics review, 7*(1), 1-13.

192. Shadmi, E., Chen, Y., Dourado, I., Faran-Perach, I., Furler, J., Hangoma, P., ... & Willems, S. (2020). Health equity and COVID-19: global perspectives. *International journal for equity in health, 19*(1), 1-16.

193. Shickle, D. (1997). Public preferences for health care: prioritisation in the United Kingdom. *Bioethics, 11*(3-4), 277-290.

194. Slavov, S. N. (2014). Public versus private provision of public goods. *Journal of Public Economic Theory, 16*(2), 222–258.

195. Soroka, S. N., & Lim, E. T. (2003). Issue definition and the opinion-policy link: public preferences and health care spending in the US and UK. *The British Journal of Politics and International Relations, 5*(4), 576-593.

196. Spahl, W. & Prainsack, B. (2021). Lived Solidarity in the Austrian Healthcare System. *EASST Review, 40*(1).
197. Starfield, B., & Birn, A. E. (2007). Income redistribution is not enough: income inequality, social welfare programs, and achieving equity in health. Journal of Epidemiology & Community Health, 61(12), 1038-1041.

198. Stolk, E. A., Pickee, S. J., Ament, A. H., & Busschbach, J. J. (2005). Equity in health care prioritisation: an empirical inquiry into social value. Health Policy, 74(3), 343-355.

199. Sunstein, C. R., & Ullmann-Margalit, E. (2001). Solidarity goods. Journal of Political Philosophy, 9(2), 129-149.

200. Taghizadeh, J. L., & Lindbom, A. (2014). Protests against Welfare Retrenchment: Healthcare Restructuring in Sweden. Scandinavian Political Studies, 37(1), 1-20.

201. Tanios, N., Wagner, M., Tony, M., Baltussen, R., van Til, J., Rindress, D., ... & Goetghebeur, M. M. (2013). Which criteria are considered in healthcare decisions? Insights from an international survey of policy and clinical decision makers. International journal of technology assessment in health care, 29(4), 456-465.

202. Ter Meulen, R. (2017). Solidarity and justice in health and social care (Vol. 41). Cambridge University Press.

203. Ter Meulen, R., & Jotterand, F. (2008). Individual responsibility and solidarity in European health care: further down the road to two-tier system of health care. Journal of Medicine and Philosophy, 33(3), 191-197.

204. Thomson, S., Sagan, A., and Mossialos, E. (2020). Why private health insurance?. 10.1017/9781139026468.001.

205. Thomson, S., Busse, R., Crivelli, L., Van de Ven, W., & Van de Voorde, C. (2013). Statutory health insurance competition in Europe: A four-country comparison. Health Policy, 109(3), 209–225.

206. Thomson, S., & Mossialos, E. (2009). Private health insurance in the European Union. Studies and Reports on Health and Long-Term Care, European Commission, Brussels.

207. Thomson, S., & Mossialos, E. (2006). Choice of public or private health insurance: Learning from the experience of Germany and the Netherlands. Journal of European Social Policy, 16(4), 315–327.

208. Toth, F. (2019). Prevalence and generosity of health insurance coverage: a comparison of EU member states. Journal of Comparative Policy Analysis: Research and Practice, 21(5), 518-534.

209. Tollison, R. D., & Wagner, R. E. (1991). Self-interest, public interest, and public health. Public Choice, 69(3), 323-343.

210. Tynkkynen, L.-K., Alexandersen, N., Kaarbøe, O., Anell, A., Lehto, J., & Vrangbæk, K. (2018). Development of voluntary private health insurance in Nordic countries—an exploratory study on country-specific contextual factors. Health Policy, 122(5), 485–492.

211. Ullrich, C. G. (2002). Reciprocity, justice and statutory health insurance in Germany. Journal of European Social Policy, 12(2), 123–136.

212. Vallentyne, P. (2002). Brute luck, option luck, and equality of initial opportunities. Ethics, 112(3), 529–557.
213. Van Bavel, J. J., Baicker, K., Boggio, P. S., Capraro, V., Cichocka, A., Cikara, M., Crockett, M. J., Crum, A. J., Douglas, K. M., & Druckman, J. N., et al. (2020). Using social and behavioural science to support COVID-19 pandemic response. Nature Human Behaviour, 4(5), 460–471.

214. Van Doorslaer, E., Clarke, P., Savage, E., & Hall, J. (2008). Horizontal inequities in Australia’s mixed public/private health care system. Health Policy, 86(1), 97-108.

215. Van Doorslaer, E., Wagstaff, A., Van der Burg, H., Christiansen, T., Citoni, G., Di Biase, R., ... & Winkelhake, O. (1999). The redistributive effect of health care finance in twelve OECD countries. Journal of health economics, 18(3), 291-313.

216. Van Hootegem, A., Abts, K., & Meuleman, B. (2020). Differentiated distributive justice preferences? Configurations of preferences for equality, equity and need in three welfare domains. Social Justice Research, 33(3), 257–283.

217. Versteegh, M. M., & Brouwer, W. B. F. (2016). Patient and general public preferences for health states: a call to reconsider current guidelines. Social Science & Medicine, 165, 66-74.

218. Viens, A. M. (2008). Public health, ethical behavior and reciprocity. The American Journal of Bioethics, 8(5), 1–3.

219. Vilhjalmsson, R. (2016). Public views on the role of government in funding and delivering health services. Scandinavian Journal of Public Health, 44(5), 446–454. https://doi.org/10.1177/1403494816631872

220. von dem Knesebeck, O., Vonneilich, N., & Kim, T. J. (2016). Are health care inequalities unfair? A study on public attitudes in 23 countries. International journal for equity in health, 15(1), 1-8.

221. Waring, J., & Bishop, S. (2013). McDonaldization or commercial re-stratification: Corporatization and the multimodal organisation of English doctors. Social Science & Medicine, 82, 147-155.

222. Wendt, C., Kohl, J., Mischke, M., & Pfeifer, M. (2010). How do Europeans perceive their healthcare system? Patterns of satisfaction and preference for state involvement in the field of healthcare. European Sociological Review, 26(2), 177-192.

223. Whitty, J. A., Lancsar, E., Rixon, K., Golenko, X., & Ratcliffe, J. (2014). A systematic review of stated preference studies reporting public preferences for healthcare priority setting. The Patient-Patient-Centered Outcomes Research, 7(4), 365-386.

224. Whyte, R., Connolly, S., & Wren, M. A. (2020). Insurance status and waiting times for hospital-based services in Ireland. Health Policy, 124(11), 1174-1181.

225. Wiles, R., & Higgins, J. (1996). Doctor-patient relationships in the private sector: patients’ perceptions. Sociology of Health & Illness, 18(3), 341-356.

226. Williams, D. O., Yung, K. C., & Grépin, K. A. (2021). The failure of private health services: COVID-19 induced crises in low-and middle-income country (LMIC) health systems. Global Public Health, 1–14.

227. Williams, O. D. (2020). COVID-19 and Private Health: Market and Governance Failure. Development, 63(2), 181–190.
228. Wouters, O. J., & McKee, M. (2017). Private financing of health care in times of economic crisis: A review of the evidence. *Global Policy, 8*, 23–29.

229. Wörz, M., & Busse, R. (2005). Analysing the impact of health-care system change in the EU member states–Germany. *Health economics, 14*(S1), S133–S149.

230. Xesfingi, S., Vozikis, A., & Pollalis, Y. (2016). Citizens’ preferences on healthcare expenditure allocation: evidence from Greece. *Health Expectations, 19*(6), 1265-1276.

231. Yamamura, E. (2014). Trust in government and its effect on preferences for income redistribution and perceived tax burden. *Economics of Governance, 15*(1), 71-100.

232. Zweifel, P. (2011). Voluntary private health insurance. In *The Oxford Handbook of Health Economics*.

**Figures**

![Mean differences between PHI/No-PHI](image_url)

**Figure 1**

Differences in mean dis/agreement in 8 redistribution preferences in health care between persons with and without private health insurance (PHI), (with demographic & political sample weights).
Figure 2

Fairness of prioritising privately insured persons grouped by health insurance status (with demographic & political sample weights).
**Figure 3**

Predictive margins based on Full Model (with demographic & political sample weights, average marginal effects)
Figure 4

Predictive margins based on Full Model (with demographic & political sample weights, average marginal effects)

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- Appendix.docx