The Health Dimension of Redistribution: Theory and Empirics

Angelique Acquatella, Amitabh Chandra, Michael Eber*

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Abstract

Debates on the optimality of redistributive policies have largely focused on income and consumption inequality. This paper examines whether society's distributional preferences depend on an additional margin—health status. We conduct money allocation experiments designed to separately identify distributional preferences over income and health. We find that people prefer to allocate transfers to less healthy individuals, holding income fixed, and to lower income individuals, holding health fixed. There is substantial heterogeneity in whether people's distributional preferences depend on health status and in the priority given to specific health conditions. Our results imply that the marginal social value of public expenditures on individuals with health conditions can be large, which informs the equity-efficiency trade-off underlying optimal policy design.

*Acquatella: Toulouse School of Economics. angelique.acquatella@tse-fr.eu; Chandra: Harvard University. amitabh_chandra@harvard.edu; Eber: Harvard University. meber@g.harvard.edu.

Long Abstract

Should governments use taxes and transfers to compensate individuals for disparities in health status beyond their use in addressing income and consumption inequality? The optimal design of social policies depends on society's preferences to redistribute to different members of the population. A social planner who values redistribution to the unhealthy may favor policies that condition transfers on health status regardless of ability to pay: for example, the Medicare End-Stage Renal Disease (ESRD) program disbursed $52.3 billion to US patients with kidney failure in 2021. By contrast, a social planner who has redistributive preferences over income only may design social insurance programs such as unemployment insurance by trading off the value of risk protection against the costs moral hazard.

There exists little rigorous evidence from which to estimate society's preferences for redistribution over health status separately from income. The correlation between health and income implies that a redistributive transfer targeted towards a individual in poor health may also constitute a transfer to an individual with low income. It is thus unclear whether such transfers use health status primarily as a tag for low income, or whether they reflect preferences for redistribution along the health dimension. Understanding the societal trade-off between a low-income healthy recipient and a middle-income sick recipient requires disentangling people's redistributive preferences over health and income, separately. Furthermore, society's preferences may differ from the implied preferences of regulators and other policymakers, which are often not aligned with public support (e.g.,Roth and Wang (2020)) and may reflect idiosyncratic priorities.

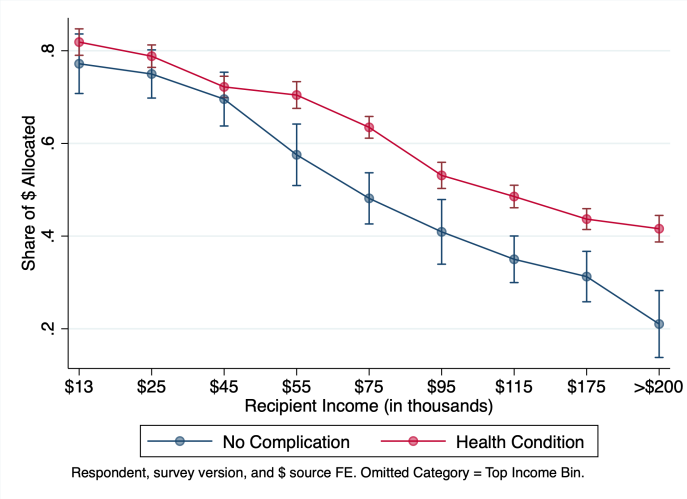
This study quantifies people's distributional preferences over health and income of beneficiaries through incentivized and hypothetical money allocation experiments. In these experiments, participants allocated money to individuals who were randomized to different levels of income, health status, age, and gender. In some experiments we include non-health shocks to separate health shocks from other calamities. The design of the experiments allows us to assign attributes to individuals randomly, removing the confounding factors that would be present in observational data. We collect extensive information about the participants' perceptions and understanding of the health or non-health shocks they see during the experiment. In our hypothetical experiments, to separate these shocks from income risk, we show participants potential recipients with full insurance; we use comprehension questions to ensure that respondents understand that insurance will pay for all medical and emergency expenses, presenting no additional risk to consumption.

We examine how the characteristics of potential recipients affect two types of distributional preferences: *social preferences* and *preferences for giving* (Fisman et al. (2007)). We define social

preferences as the preferences that individuals hold over the payoffs of others. These social preferences capture the equity weights that individuals assign to monetary transfers that benefit others. Social preferences are measured in our experiments using games in which participants allocate money between two anonymous, hypothetical potential recipients. Similarly, preferences for giving concern the trade-offs that individuals make between their payoffs and the payoffs of others. These preferences for giving encompass related aspects of people's redistributive preferences, such as their willingness to pay higher taxes to redistribute income and their charitable giving to various causes. Our experiments elicit preferences for giving through incentivized dictator games.

Pilot: Our experiments were run on the Prolific platform in June 2024 using a sample of N=500 respondents, which was selected to be representative of the United States population along age, gender, and political affiliation. Each participant completed 23 money allocation decisions, of which 18 involved two hypothetical individuals and 5 involved dictator game allocations between the participant and another player. One of each participant's dictator game decisions was randomly selected to be paid, which resulted in bonus payments to the participant and/or to the other player. To incentivize the experiment, the other player was randomly selected from a separate panel of Prolific participants who met the criteria specified in the dictator game.

Figure 1: Hypothetical experiment money allocations, by recipient income and health status

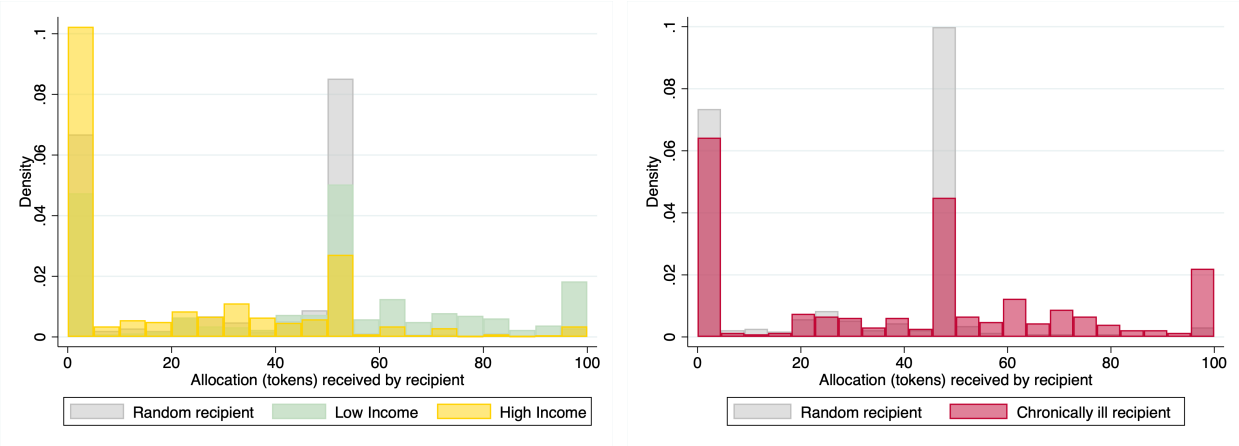


Notes: The figure plots the share of money allocated to a hypothetical recipient with variable, randomized characteristics (income, health status, age, and gender) relative to a reference hypothetical recipient with fixed characteristics ($75,000 annual household income, no health condition, 35 years old, and male). Results show the average share given to the recipient with variable characteristics across all allocation decisions, by recipient income and presence of a health condition, estimated in a regression where the dependent variable is the respondent's selected allocation, and the independent variables are categorical dummies for the recipient's income group interacted with categorical dummies for whether the recipient had a health condition or not. Controls include respondent and survey version fixed effects. Error bars represent 95% confidence intervals. The unit of observation is respondent-decision. N=3,000.

Using this experimental data, we find that respondents prefer to allocate transfers to less healthy individuals, holding income fixed, and to lower income individuals, holding health fixed. Increases in a recipient's income monotonically decrease the likelihood that the average giver allocates a greater share of available dollars to that recipient relative to a stable benchmark profile, controlling for other recipient and giver characteristics. Having a health condition increased the share of dollars allocated to a recipient holding income fixed, particularly among recipients with higher income levels. Figure 1 shows how average allocation shares decrease with recipient income and increase with the presence of a health condition, relative to a fixed reference profile with average income and no health condition. By contrast, differences in age and gender did not significantly predict allocations.

Results from our incentivized experiments were qualitatively similar to those from our hypothetical experiments. Figure 2 shows that lower recipient income and the presence of a health condition independently predicted greater allocations. By contrast, recipient age and gender did not predict allocations.

Figure 2: Incentivized dictator game allocations, by recipient income and health status



(a) Preferences Across Income (Fixed Health)

(b) Preferences Across Health (Fixed Income)

Notes: Both panels display histograms of respondent allocation decisions in the incentivized dictator game; different colors denote different recipient characteristics. Panel (a) shows the distribution of allocation decisions for a random recipient, a low income recipient, and a high income recipient. Panel (b) shows the distribution of allocation decisions for a random recipient and a chronically ill recipient. The unit of observation in both figures is respondent-decision. N=500.

Based on allocation choices in our hypothetical experiments, the most favored health conditions of those we study were Alzheimer's disease, breast cancer, and accidents resulting in paralysis. Among the least favored were depression and addictions. Participant self-reported beliefs that an individual was personally responsible for their condition was highly predictive of the condition

receiving low priority in allocation choices.

Participants in the hypothetical experiments prioritized recipients suffering from non-health adverse shocks, such as having home damage due to a natural disaster, similarly to how they prioritized those suffering from health conditions. Health status did not consistently predict allocation choices after controlling for respondents' subjective perceptions of each potential recipient's misfortune. These results support the conclusion that the public prioritizes individuals who suffer from disadvantage, and that health represents one important category of disadvantage. Participants' text responses explaining their decisions mentioned prioritizing people who experienced hardships or were in more desperate situations, echoing the motive of prioritizing the disadvantaged.

These results have direct implications for the evaluation and optimal design of tax-and-transfer policies. Evaluating the welfare benefits of a particular policy without accounting for social preferences along the health dimension may lead to incorrect estimates of the benefits of a marginal policy reform. For example, the welfare gains from expanding a program that targets both health and income, such as Medicaid where health insurance is tied to income eligibility, may exceed welfare estimates measured by willingness-to-pay if society values redistributive transfers to low-income, poor-health individuals. Second, transfer programs such as the earned-income tax credit, where eligibility is linked to income, may phase out benefits across both healthy and chronically ill individuals, but our results suggest that it may be socially undesirable to phase out benefits for those who remain chronically ill. In other words, optimal policy requires knowing *which* aspects of individual health are policy-invariant primitives (e.g. chronic conditions that affect an individual's quality of life, regardless of their level of consumption), and *how much* society values transfers to individuals in immutable health states along the entire range of counterfactual consumption endowments.

To our knowledge, we are the first to collect evidence on redistributive preferences along both income and health dimensions. In related work, Hvidberg et al. (2023) use survey data to study how perceptions of fairness and economic inequality vary across social groups, and Exley and Kessler (2023) use survey experiments to study individual equity concerns *within* consumption components, but we are not aware of studies that investigate multi-dimensional preferences over health and income. Our positive analysis of preferences complements, but is different than, the inverse-optimum literature, which relies on a revealed preference argument of government spending decisions to characterize redistributive preferences across individuals (Hendren (2020); Bourguignon and Spadaro (2012)). These methods cannot recover preferences over multiple dimensions as our experiment can. Finally, our work is directly connected to the literature about the distribu-

tional consequences of policies for both health and socioeconomic well-being (Alsan et al. (2021); Chetty et al. (2016); Alsan and Wanamaker (2018)).

This study's results support the notion that social insurance programs provide value not just by conveying financial risk protection but also as a means of compensating individuals for non-pecuniary losses resulting from shocks such as health conditions. These losses may include reductions in health, longevity, and/or time (e.g., from administrative burdens). Our results indicate that society holds more mixed views on the desirability of compensation for endogenous shocks, such as health conditions resulting from lifestyle decisions. Understanding the redistributive value of transfers to individuals with health conditions expands the ability of welfare analysis to quantify the social value of government programs.

References

Alsan, Marcella, Amitabh Chandra, and Kosali Simon, "The Great Unequalizer: Initial Health Effects of COVID-19 in the United States," *Journal of Economic Perspectives*, 2021, *35* (3), 25–46. Publisher: American Economic Association.

_ **and Marianne Wanamaker**, "Tuskegee and the Health of Black Men*," *The Quarterly Journal of Economics*, February 2018, *133* (1), 407–455.

Bourguignon, François and Amedeo Spadaro, "Tax–benefit revealed social preferences," *The Journal of Economic Inequality*, March 2012, *10* (1), 75–108.

Chetty, Raj, Michael Stepner, Sarah Abraham, Shelby Lin, Benjamin Scuderi, Nicholas Turner, Augustin Bergeron, and David Cutler, "The Association Between Income and Life Expectancy in the United States, 2001-2014," *JAMA*, April 2016, *315* (16), 1750–1766.

Exley, Christine and Judd B. Kessler, "Equity Concerns are Narrowly Framed," *American Economic Journal: Microeconomics*, January 2023. Forthcoming.

Fisman, Raymond, Shachar Kariv, and Daniel Markovits, "Individual preferences for giving," *American Economic Review*, 2007, *97* (5), 1858–1876.

Hendren, Nathaniel, "Measuring economic efficiency using inverse-optimum weights," *Journal of Public Economics*, July 2020, *187*, 104198.

Hvidberg, Kristoffer, Claus Kreiner, and Stefanie Stantcheva, "Social Positions and Fairness Views on Inequality," *The Review of Economic Studies*, November 2023.

Roth, Alvin E and Stephanie W Wang, "Popular repugnance contrasts with legal bans on controversial markets," *Proceedings of the National Academy of Sciences*, 2020, *117* (33), 19792–19798.