

Inequality

The IFS Deaton Review

Attitudes to inequality: preferences and beliefs

Ingvild Almås
Alexander W. Cappelen
Erik Sørensen
Bertil Tungodden

An IFS initiative funded by the Nuffield Foundation

Attitudes to inequality: preferences and beliefs

Ingvild Almås (IIES – Institute for International Economic Studies, Stockholm University and NHH Norwegian School of Economics), Alexander W. Cappelen (NHH), Erik Sørensen (NHH) and Bertil Tungodden (NHH)¹

- In order to understand attitudes to inequality, we need to understand people's fairness preferences and beliefs about sources of inequality.
- People are more willing to accept inequalities that reflect performance than inequalities that reflect luck – and, people care more about fairness than efficiency.
- People differ in their fairness preferences both within and between countries – richer countries, and within countries richer people, are more meritocratic.
- People differ in their beliefs about the sources of inequality both between and within countries. The evidence is consistent with people having a self-serving bias in beliefs.

Background

The IFS Deaton Review of Inequalities is a token of the increased awareness and concern for inequality that we have witnessed in recent times. In order to understand this concern, and attitudes to inequality more generally, it is important to understand the perceived unfairness of existing inequalities. Inequalities may be perceived as unfair because existing inequalities deviate from what people consider to be fair, or because people have distorted beliefs about existing inequalities. Both fairness views and beliefs about the source of inequality have been shown to be important determinants of people's attitudes to inequality (Fong, 2001; Alesina and Angeletos, 2005; Almås, Cappelen and Tungodden, 2020). Hence, it is important to broaden the public discourse on inequality to capture that people distinguish between fair and unfair inequalities based on the source of the inequality, and that people differ in their beliefs about the sources of existing inequalities.

Turning to fairness preferences first, what could be considered fair sources of inequalities? Piketty (2020) emphasises that justifications of existing inequalities in modern societies are often based on differences in merits. Young (1958) introduced the term 'meritocracy' but raised concerns that this idea would widen the gap between socio-economic classes in society rather than narrowing them through equality of opportunity. More recent work has also expressed concerns about meritocracy as an organising principle for society (Case and Deaton, 2020; Sandel, 2020).

In this paper, we discuss whether performance and other sources of inequality are seen as legitimate sources of inequality. We define a meritocratic view as one where inequalities that reflect differences in performance are acceptable, but inequalities that reflect luck are unacceptable. We also discuss whether meritocracy is primarily a Western phenomenon or reflects the fairness view of people across the globe. Further, we discuss the prevalence of other potential fairness views, such as egalitarianism – holding that no sources of inequality are legitimate – and libertarianism – holding that all sources of inequality are justified (as long as there is procedural fairness).

In order to understand attitudes to inequality, we also need to understand how important concerns for fairness are relative to other factors, such as self-interest (own income) and efficiency (the total income

¹ We would like to thank the IFS Deaton Review Panel for important feedback and, in particular, we would like to thank Orazio Attanasio, Richard Blundell and Angus Deaton for comments on a previous draft of this paper.

in society). We discuss to what extent fairness is important relative to such other concerns and we discuss how the concern for fairness differs across countries and across individuals within countries.

Further, we discuss beliefs about sources of inequality. An important implication of the meritocratic fairness view is that people's beliefs about the source of inequality become a critical determinant of their attitudes to inequalities in society. Individuals who are meritocratic would view an income inequality as unfair if they believe that it largely reflects luck, but would view the same income inequality to be fair if they believe it largely reflects difference in performance. Such differences in beliefs about the sources of inequality may reflect actual differences within or between societies, but self-serving biases and irrational updating may also contribute to heterogeneity in beliefs. We discuss differences in beliefs about sources of inequality across countries, and we discuss differences in beliefs across individuals within countries.

Last, we discuss general attitudes to inequality, including whether people find existing inequalities unfair and whether they believe that the government should redistribute incomes. Comparisons of economic inequality often rely on the Gini index or some other inequality measure that compares the actual distribution to a distribution where everyone has the same income, that is, we compare it to an egalitarian distribution (Atkinson, 1970, 1975, 2015). However, as many people view some inequalities as fair (e.g. those arising from differences in performance), such standard inequality measures are not well suited to capture perceived unfairness in society. We discuss how such standard inequality measures may be adjusted to capture deviation from a different distribution than the egalitarian (i.e. a 'fair' distribution), and we discuss the challenges related to agreeing on such a norm when people hold different views on what constitutes a fair distribution of income.

Fairness and inequality

Inequality aversion and inequality acceptance

The ground-breaking papers of Fehr and Schmidt (1999) and Bolton and Ockenfels (2000) incorporated a distributional fairness motive into formal economic analysis. Fehr and Schmidt (1999) extended the standard economic model of narrowly selfish individuals by allowing people to care about outcome inequality in addition to their own monetary pay-off. They also showed that the model could describe the behaviour of participants in previous economic experiments who were willing to sacrifice economic gains in order to do what they considered fair. Charness, Cooper and Reddinger (2020) provide a comprehensive review of such evidence.

In the early contributions on inequality aversion, inequality preferences were revealed in situations where all fairness views would point to equality. Fehr and Schmidt (1999) discuss evidence from several experiments where money to be distributed can be characterised as 'manna from heaven' (i.e. the money is assigned to the participants, but none of them has done anything to earn the money). In such a set-up, with no pre-redistributive earnings, all fairness views would point to equality as the fair outcome.

More recent surveys and experiments have introduced different contexts, and shown that in settings where the inequality reflects differences in performance it is no longer obvious that inequality aversion, per se, best describes peoples' fairness preferences. Many individuals prefer inequality in some situations and equality in others situations (i.e. their preferences reflect both inequality aversion and inequality acceptance). Surveys have shown that people tend to accept inequalities that are partly or fully a result of choices that people have made (Schokkaert and Devooght, 2003; Gaertner and Schwettmann, 2007). This resonates well with theories of distributive justice arguing that people should be held responsible for factors under their control (Arneson, 1989; Bossert, 1995; Fleurbaey, 1995; Roemer, 1996, 1998).

Economic experiments have further shown that people are sensitive to participants' individual performances, when making real distributive choices. Konow (2000) introduces a context with production in an experiment with a real effort dictator game, where participants, acting as impartial spectators, determine how to distribute earnings between two individuals who have taken part in a real

effort production task. He finds, in a sample of undergraduate students in Los Angeles, that people are sensitive to individual performances when acting as impartial spectators, and by and large distribute outcomes proportional to individual performances. In this experiment, there is full information about the performance of the workers, and the spectators are anonymous and free to choose the allocation that they prefer, which makes the author able to reveal preferences through actual spectator choices (i.e. the approach can be characterised as a revealed preference approach to fairness preferences). Konow (2009) discusses the usefulness of the impartial spectator approach for revealing moral views. The sensitivity to performance revealed by the impartial spectator design (Konow, 2000) has later been revealed in other economic experiments, including Frohlich, Oppenheimer and Kurki (2004), Oxoby and Spraggon (2008), Gill and Stone (2010), Cappelen, Sørensen and Tungodden (2010) and Cappelen et al. (2013b).

From small student samples to general populations

Traditionally, experimental approaches to eliciting non-selfish or prosocial preferences have focused on selected (non-general population) convenience samples. Many of the existing experiments have been run on students from the universities where the authors teach. The reason for this is pragmatic: student samples are easily available to the researchers. However, in order to learn about attitudes to inequalities in society at large, we need to study larger and more representative parts of the population. As shown in Almås et al. (2020), it is possible to study inequality acceptance in general populations using the impartial spectator approach. We turn to a discussion of this study – its methodology and results – in the following subsection.

Fairness preferences in the United States and Scandinavia – two extremes in the OECD

A comparison of the United States and Scandinavia in terms of inequality acceptance is interesting because these societies differ significantly in terms of both the existing level of inequality and institutional structure. Figure 1 displays the Gini index of disposable income, after taxes and transfers, for all OECD countries that have this information available either in 2019 or 2018.² Further, the United States has a less elaborate welfare state than most OECD countries, and Norway has a welfare state that is generous even within the European context (see, e.g. Acemoglu, Robinson and Verdier, 2017).

In Almås et al. (2020), we study fairness preferences of the general population in these two countries. The experimental design is illustrated in Figure 2. First, workers took part in a production task on the online labour market platform. After conducting the task, workers were matched in pairs and randomised into a Luck treatment, a Merit treatment or an Efficiency treatment. For the workers in the Luck treatment, a lottery determined that one worker, worker A, would earn US \$6 whereas the other worker, worker B, would have no earnings from the task. For the workers in the Merit treatment, it was the most productive worker, worker A, who would earn \$6 and the other worker would earn nothing for the task. For the workers in the Efficiency treatment, there was again a lottery that determined that one worker, worker A, would earn \$6 whereas the other worker, worker B, would have no earnings from the task, but, in this treatment, redistribution was costly. In all treatments, the spectators could choose to implement no redistribution, some redistribution or full equalisation. In the Luck and the Merit treatments, redistribution was costless, whereas in the Efficiency treatment it was costly: for every US dollar that was transferred to worker B, there was a deadweight loss of \$1.

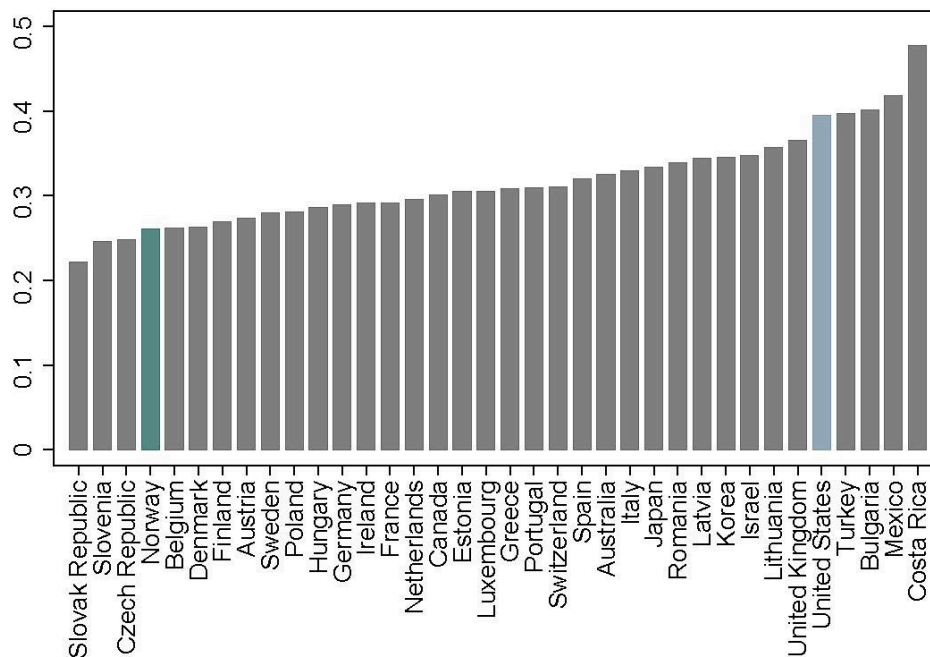
Each spectator made a consequential choice for a unique pair of for a unique pair of workers. Each of these distributions can be represented by a Gini index that then reveals the implemented inequality by spectators. By studying these distributions, it is possible to study across and within country differences in general attitudes to inequality as well as the sensitivity to performance and a cost of redistribution.

Figure 3 shows the main findings from the study. First, people in the United States accept more inequality in all treatments and thus they can be said to be generally more inequality-accepting than the population in Norway. Second, for both samples, inequality acceptance is higher when performance, rather than luck, is the source of inequality: Implemented inequality is higher in the Merit than in the Luck treatment in the United States (a Gini index about 20 percentage points higher) and in Norway (a

² We use the Gini for 2019 but use the 2018 measure if it is available for this year but not 2019.

Gini index about 15 percentage points higher). There is no such significant sensitivity related to the cost of redistribution in the United States and only a weakly significant sensitivity to such a cost in Norway, something we come back to later when discussing the importance of fairness relative to other concerns.

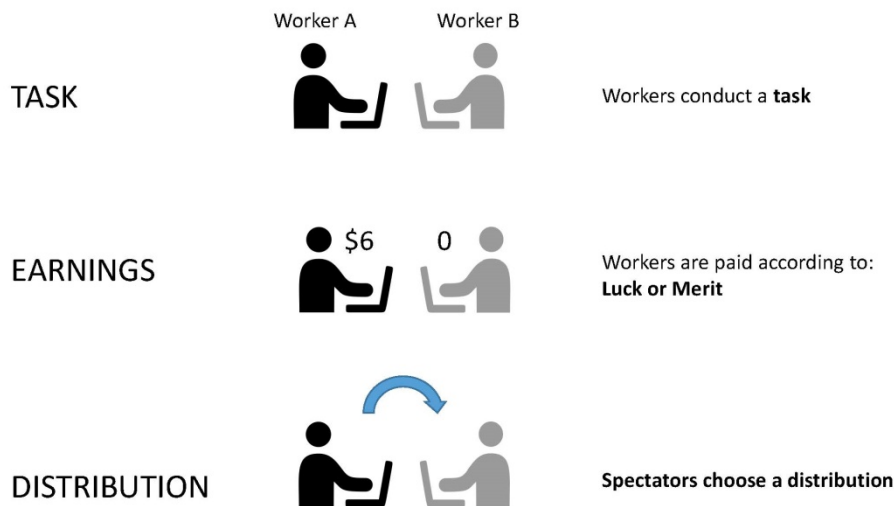
Figure 1. Gini of income in the OECD countries



Note: The figure displays the Gini of disposable income (after taxes and transfers) of the total population in the respective countries. We include all countries that have this information available in either 2019 or 2018. We use the Gini for 2019 but use the 2018 measure if it is available for this year but not 2019.

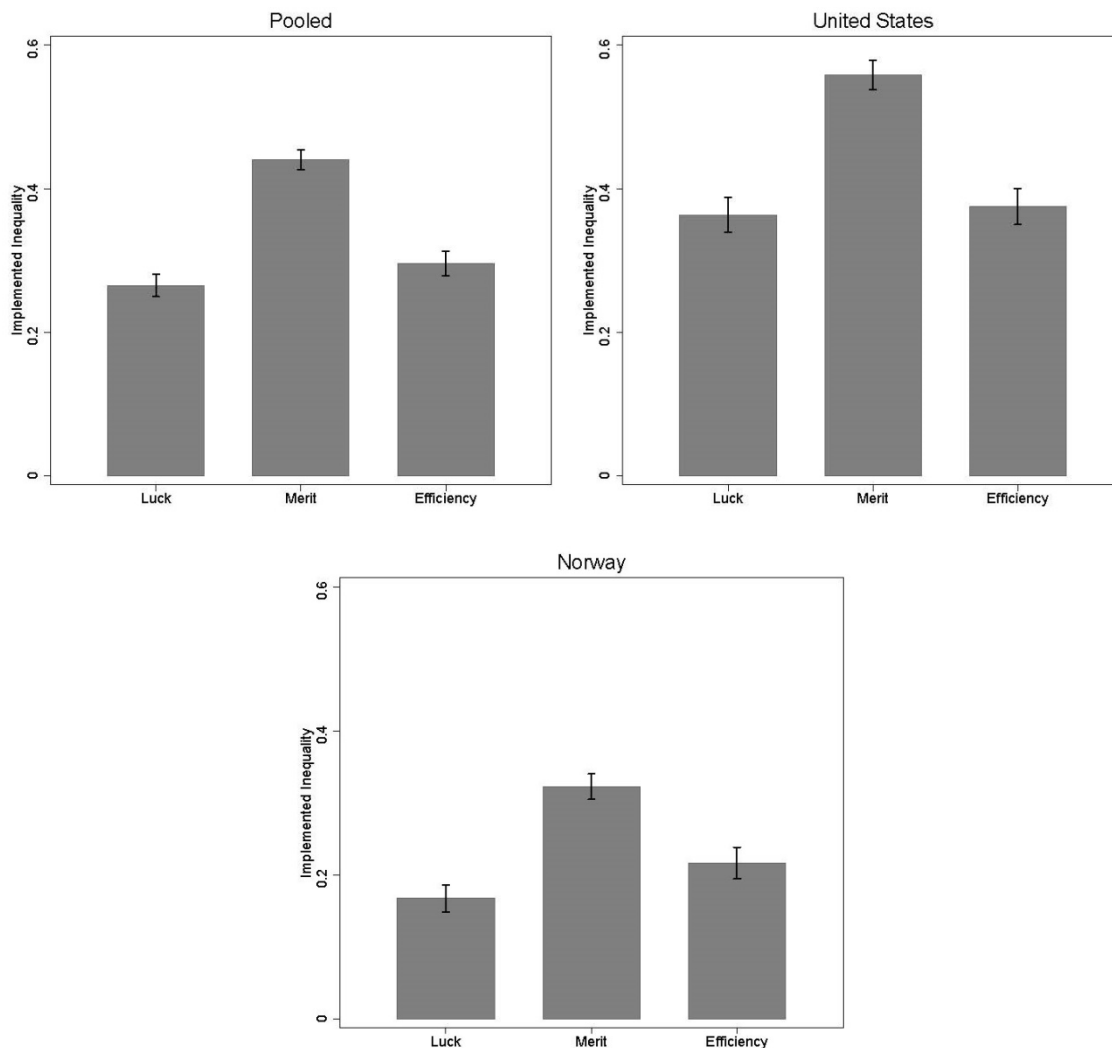
Source: OECD statistics, Income Distribution Database, <https://stats.oecd.org/Index.aspx?DataSetCode=IDD>.

Figure 2. Experimental design



Note: The figure displays an overview of the experiment. First, the workers worked on a task on the online labour market platform. Second, they were matched in pairs and either a lottery (the Luck and Efficiency treatment) or the relative performance between them (the Merit treatment) decided that one of the workers ('worker A') would earn \$6 and the other worker ('worker B') would earn \$0. Third, an impartial spectator from the US or the Norwegian sample had a chance to redistribute any amount. In the Luck and Merit treatments, redistribution is costless, whereas in the Efficiency treatment, redistribution is costly: per \$2 transferred from worker A to worker B, only \$1 is received by worker B.

Figure 3. Implemented inequality in the United States and Norway



Note: The figure is reproduced from Almås et al. (2020) and shows the average level of implemented inequality by the US and the Norwegian spectators in each of the three treatments. The standard errors are indicated by the bars.

A global outlook

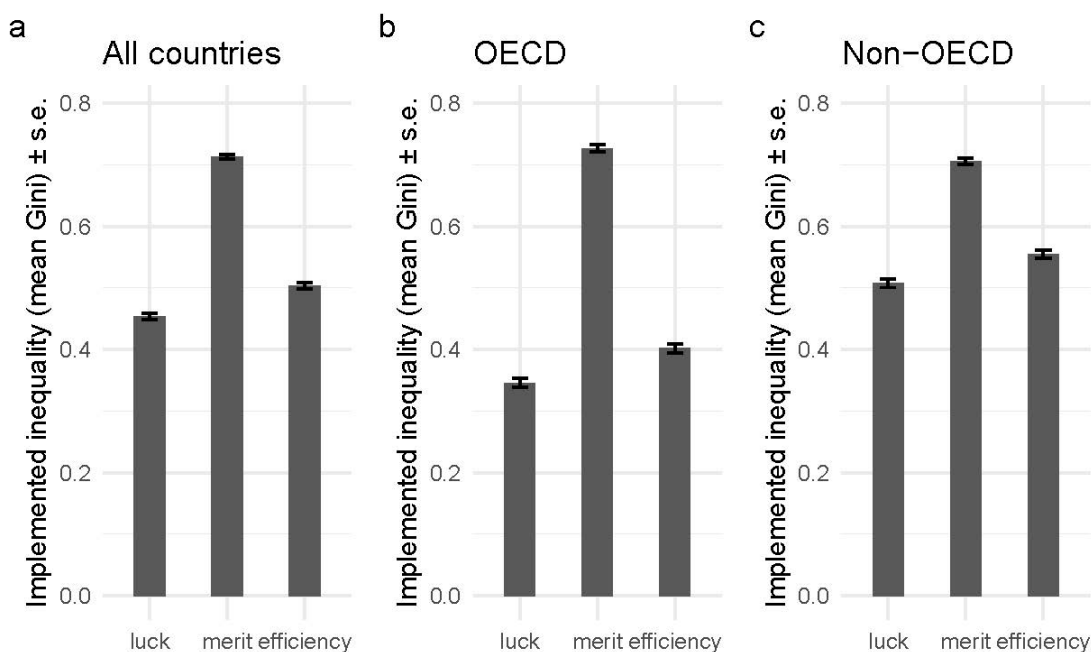
Many existing studies in social and behavioural sciences have been conducted in Western countries. This has been pointed out by, for example, Henrich, Heine and Norenzayan (2010) who pointed out that '[b]ehavioral scientists routinely publish broad claims about human psychology and behavior in the world's top journals based on samples drawn entirely from Western, Educated, Industrialised, Rich and Democratic (WEIRD) societies'. We have not seen a large study that systematically investigates inequality acceptance across countries, that includes non-Western and non-rich countries.³ To provide a global outlook of inequality acceptance, we collected data on attitudes to inequality, fairness preferences, and beliefs about inequalities, in 60 countries around the world in our project Fairness Across the World (Almås et al., 2021a). For preference elicitation, we used an experiment similar to the one in Almås, Cappelen and Tungodden (2019b). Again, we recruited real workers through an online labour market and we worked with a survey provider, Gallup World Poll, to recruit impartial spectators for this study.

In Figure 4, taken from Almås et al. (2021a), we show the implemented inequality in the Luck and Merit treatments, respectively, at the global level by pooling all observations in the global study (panel a) and

³ Note that Falk et al. (2018) provide global results for a wide range of other preferences.

for OECD (panel b) and non-OECD (panel c) countries. We can see that there is a large sensitivity to the source of inequality also at the global level. It is also evident – and something that we discuss more in the next section on the importance of fairness – that there is significantly more inequality acceptance when there is a cost of redistribution at the global level, but that this effect is much smaller than that of introducing performance as the source of inequality. Further, there is more inequality acceptance among the people in non-OECD societies than in OECD societies, in both the Luck and Efficiency treatments whereas the opposite is true for the Merit treatment. Hence, the source of the inequality seems to be more important in OECD countries (and the 'WEIRD' populations) than in non-OECD ('non-WEIRD') countries.

Figure 4. Mean inequality implemented in each treatment



Note: Implemented inequality is measured as the average of the situation specific Gini coefficients within each treatment. Panel (a) shows the numbers for the full sample, and panels (b) and (c) show the averages within the OECD and non-OECD countries.

Source: This figure is reproduced from Almås et al. (2021a).

The pluralism of fairness views

In the previous subsections, we have discussed that people, on average, accept more inequality when it is generated by differences in performance than when it is generated by luck, but, as illustrated by the difference between people in OECD and non-OECD countries, this sensitivity varies across countries. The fact that sensitivity to performance as the source of inequality has also been shown to vary within countries (Cappelen et al., 2007, 2013a; Almås et al., 2010, 2017); that is, there is pluralism in ideas about fair distributions of income.

Cappelen et al. (2007) studied a student sample in an experiment where the participants first made an investment choice and after this were matched in pairs in a distribution phase. Each player's contribution was a result of the freely chosen investment level and an exogenously given rate of return. That is, there are two sources of inequality: investment choices, and luck. Each player was matched with another player several times (in different pairs). In each pair, they were given full information about the investment level, and the exogenous rate of return for both players. All players were asked to choose a distribution as dictator and knew that with 50% probability their distribution choice would be implemented for both players and with 50% probability the other player's distribution choice would be implemented. Each player was asked to choose a distribution for each pair they were in. In this setting, there are three types characterised by three salient fairness views:

- the 'egalitarian' individual who does not accept inequalities due to luck or choice;
- the intermediate 'meritocratic' individual who accepts inequalities due to choice, but not inequalities due to luck;
- the 'libertarian' individual who accepts inequalities due to both luck and choice.

Cappelen et al. (2007) used a discrete choice model to estimate the prevalence of the three fairness views and confirmed that there was a substantial fraction of individuals with each of these views (i.e. there is pluralism of fairness views). Research following up on these ideas has shown that there is pluralism of fairness views in more general populations of adolescents and adults in Norway (Almås et al., 2010; Cappelen et al., 2015). In the next section, we present a theoretical framework that models how people with potentially different fairness views behave in situations that involve two people. This model illustrates the trade-offs between fairness concerns and other concerns such as self-interest and efficiency.

Turning to our international studies using a spectator design (Almås et al., 2020, 2021a), we can again classify people as having one of three salient fairness views in the 60 countries in study: an egalitarian position that finds all inequalities unfair; a meritocratic position that finds inequalities due to differences in performance fair, but inequalities due to luck unfair; and a libertarian position that finds initial earnings to be fair. In this study, we can use the combination of behaviour in the different treatments to reveal the prevalence of the different views in the populations under study. In each country, we can use the choices in the Luck and Merit treatments to identify shares of the population belonging to three distinct fairness types:

- the share of egalitarian individuals – the share that distributes equally even when performance is the source of inequality;
- the share of meritocratic individuals – the difference between the share that accepts inequality when performance is the source of inequality and the share that would accept inequality even when luck is the source of inequality;
- the share of libertarian individuals – the share that accepts inequality when luck is the source of inequality.

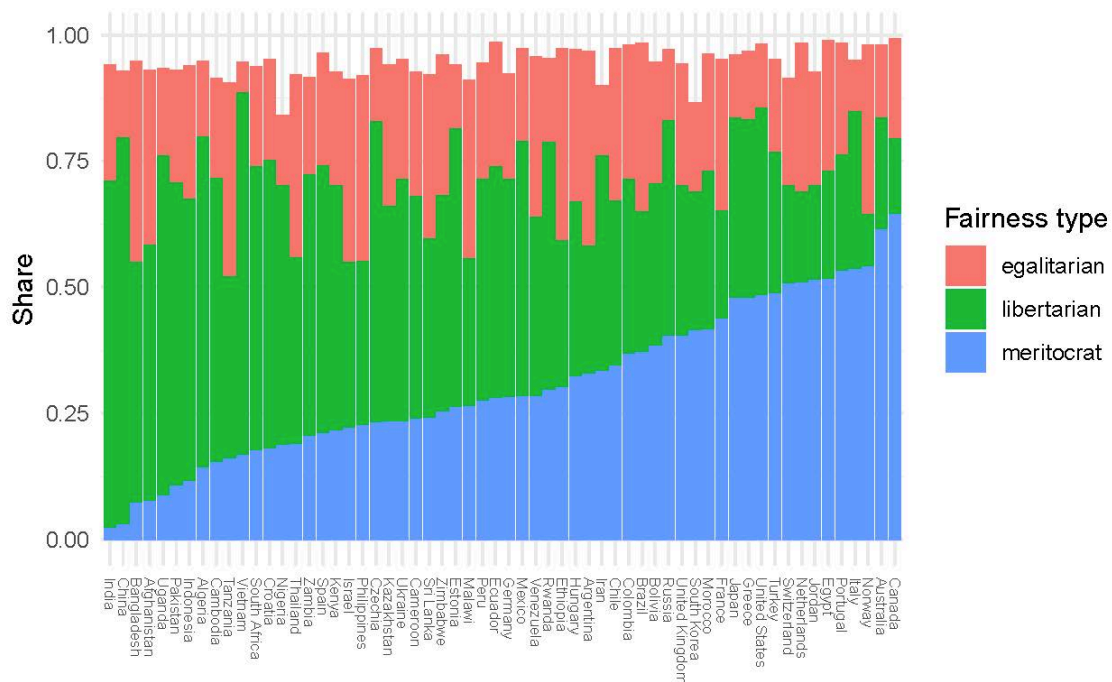
In Almås et al. (2020), we show that the main difference between the United States and Norway is that there is a much larger share of libertarians among Americans and a much larger share of egalitarians among Norwegians. However, the share of meritocrats is very similar in the two countries. Given that the literature has focused on the United States as a country on the forefront of establishing meritocratic institutions (Acemoglu and Robinson, 2012; Sandel, 2020), and the Nordic countries, including Norway, as egalitarian countries with high taxation and low economic inequality, it may seem surprising that there are similar proportions of individuals who hold a meritocratic fairness view in both countries. It is important to note that the libertarians find all inequalities fair, both those due to merit and those due to luck. Hence, if the distinction between meritocratic and libertarian views and institutions is not made, it may give the impression that meritocratic views have more support in, for example, the United States than other countries, whereas it seems that in reality it is the libertarian view that stand stronger in the United States than Norway and other European countries. In general, the distinction between meritocratic and libertarian institutions is often confused. Some of the critique of meritocracy reflects that what are sometimes referred to as meritocratic institutions may allow luck to play a big role. And if they do, they are better characterised as libertarian – rather than meritocratic – institutions.

Turning to the global outlook, Figure 5 shows the share of types in each of the 60 countries under study in Almås et al. (2021a). It is quite striking that although the share of meritocrats is substantial in many countries – including Norway and the United States, as shown before – this is not the case in all countries. Interestingly, the share of meritocrats is quite small in some countries, including China, India and a large number of the low- and middle-income countries in the world. Hence, the focus on

meritocratic views in the existing literature (see, e.g. Piketty, 2020) may reflect a Western phenomenon rather than a global one.

The observation that the populations in richer countries, to a larger extent, hold meritocratic fairness views is consistent with the fact that meritocratic institutions are vehicles for growth, given that meritocratic fairness views correspond to meritocratic institutions being in place in the countries. Looking at the correlation between the share of meritocrats and the gross national income in our sample, we see that this is indeed positive, large and significant.⁴ As this is just correlational, we do not know why this is the case. It may be that in countries with meritocratic institutions, people adopt meritocratic fairness views, as they want to understand the world as fair (cf. the belief in the just world hypothesis, as discussed by Bénabou and Tirole, 2006). It may of course also be the case that in countries where people have meritocratic views, this leads to political support to build meritocratic institutions, and hence these are established to a greater extent than in countries without such views.

Figure 5. Share of egalitarian, libertarian and meritocratic fairness types across countries in the world



Note: The figure shows the shares of each fairness view for each country identified in the experiment. For more details, see Almås et al. (2021a).

Development of inequality acceptance: family background, institutions and fairness views

Moral values and personal traits are, to a large extent, developed during childhood and adolescence. The development of children’s moral views has been a major topic in psychology (Piaget, 1965; Damon, 1977; Hook and Cook, 1979; Kohlberg, 1984) and has gained increasing attention in behavioural economics since the first economic experiment on social preferences in children was introduced by Harbaugh and Krause (2000); see Sutter, Zoller and Glätzle-Rützler (2019) and Ertac (2020) for comprehensive reviews and discussions.

The most central institution for most individuals early in life is the family. Almås et al. (2017) study the role of family background on fairness preferences. They conduct a large experiment on a representative sample of 15-year-olds in Norway. By matching the experimental data to register data on parental education and income, they were able to look at how family background was associated with fairness preferences revealed in the experiment. In the experiment, the participants took part in a real effort

⁴ Pearson’s rho for share of meritocrats and log(GNI/cap) is 0.619 with a standard error of 0.103.

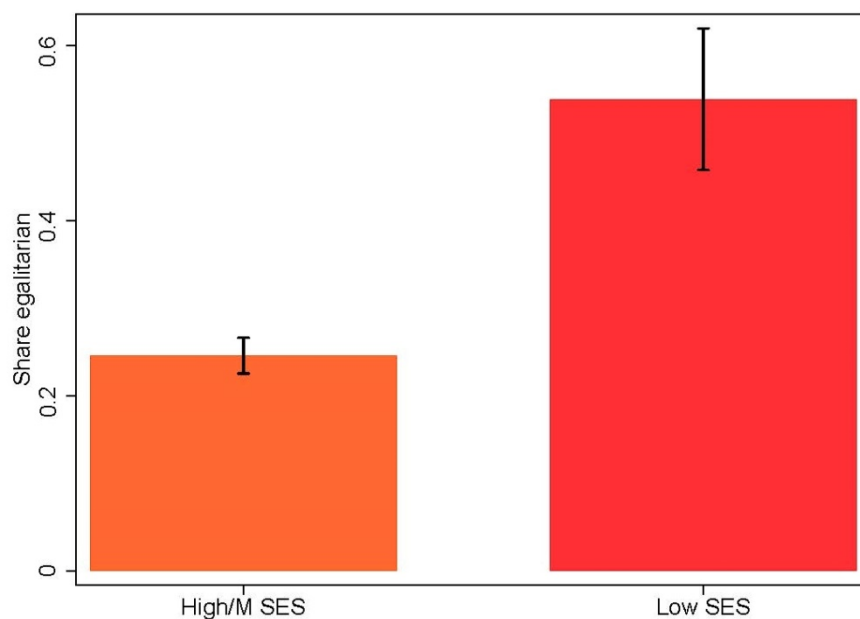
dictator game with a spectator design. The spectators were asked to distribute the total earnings of two participants between them. One, the least productive, had earned one-third as much as the other more productive worker. The spectators were given a binary choice and could choose to either distribute equally or accept the initial distribution. With this design, the share of egalitarians can be identified by the share of participants distributing equally, but it is not possible to distinguish between meritocrats and libertarians.

Figure 6 shows the socio-economic gradient in the share of egalitarians. Low socio-economic status (SES) is defined as the family being in the bottom fifth of both the income and the education distribution in the sample, where family income is measured as the sum of the income of the father and the mother and family education is measured as the average years of education of the father and the mother; see Almås et al. (2016, 2017) for further documentation and discussion of this definition. We can see that there are significantly more egalitarians among the adolescents with low SES than the rest.

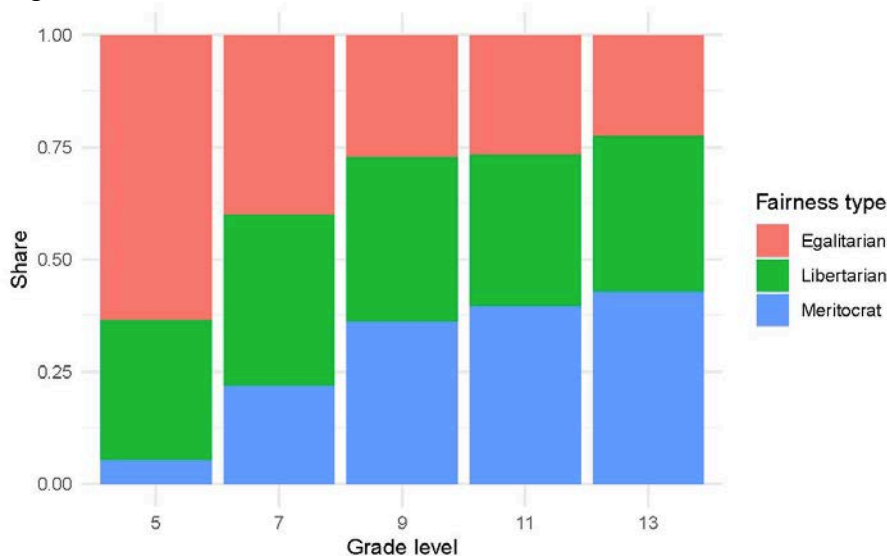
In our studies of adolescents in Norway, we have estimated the shares of egalitarian, meritocratic and libertarian individuals in adolescence (Almås et al., 2010). By studying the different shares in different age groups between 10 and 18 years of age, we can discuss the role of experience, family and institutions. Figure 7 reports the shares for each fairness view at each grade level for this model.

Most of the children in the fifth grade are egalitarian, whereas the majority fairness view from grade 7 and onward is the meritocratic view. In fact, based on evidence from related work, the distribution of views for the oldest in this age range seems to mimic closely the distribution we see for adults in Norway in other experiments (Almås et al., 2020). From this study, we cannot make a causal inference: the development we see for Norwegian adolescents may be due to neural maturation, culture or exposure to more meritocratic institutions across age, or an interplay between brain development and culture/institutions.

Figure 6. Share of egalitarians across SES



Note: The figure shows the share of egalitarians for high/medium SES and low SES, respectively. Low SES is defined as the family is in the bottom fifth of both the income and the education distributions in the sample, where family income is measured as the sum of the income of the father and the mother and family education is measured as the average years of education of the father and the mother. The bars indicate +/- one standard error. See Almås et al. (2017).

Figure 7. Share of fairness views across SES

Note: The figure shows the shares of each fairness view for each grade level. For a complete set of estimates as well as the estimation procedure, see Almås et al. (2010).

Is it possible to nail down some causal mechanisms explaining fairness preferences? Some studies use novel techniques to identify such mechanisms. Important life events, in particular own experiences with inequality, have been shown to alter fairness preferences in adulthood (Bauer et al., 2014; Barr, Miller and Ubeda, 2016; Cassar and Klein, 2019). Barr et al. (2016) find that the personal experience of an unemployment spell has a negative impact on people's willingness to acknowledge earned entitlement in a real effort version of a dictator game. A potential explanation for this behaviour is found in a laboratory experiment carried out by Cassar and Klein (2019), who show that individuals who first experience losing in a tournament later redistribute significantly more to participants losing in similar situations. By conducting experiments in the Republic of Georgia and Sierra Leone, Bauer et al. (2014) examine how the experience of war shapes the fairness views of people. They find that greater exposure to war increases egalitarian distributional preferences toward in-group members but not to out-group members.

Cappelen et al. (2020) provide causal evidence on how early childhood experiences shape the development of fairness preferences in children. In a randomised control trial examining the impact of early childhood education in the USA, children aged 3 and 4 are randomised into one of the following: a full-time pre-school; a parenting programme, in which parents teach their child at home and are incentivised based on their child's performance; or a control group. The authors measure the children's fairness preferences more than two years after the treated children completed the programme and find that the early childhood education affected the children's fairness preferences. In particular, they find that children who went to pre-school became more egalitarian in comparison with the control group. Jakiela, Miguel and Velde (2015) combine a randomised evaluation and a laboratory experiment to measure the causal impact of an educational intervention on the fairness preferences of a sample of young Kenyan women. They find some evidence of higher academic achievements causing participants to hold a more meritocratic fairness view.

The fact that experience and family background affect fairness preferences, and in particular that unfortunate experiences and low SES seem to have a negative effect on inequality acceptance, may be due to the fact that individuals adopt self-serving views – beliefs and preferences that make oneself feel better about own position in society (Bénabou and Tirole, 2006). We return to this discussion in the later section where we discuss beliefs about sources of inequality and its relation to one's own position in society.

The importance of fairness

So far, we have discussed what people consider to be a fair distribution of income, but we have been silent about how important this concern is. In order to study its importance, we can study situations where individuals have to make trade-offs between different concerns. Here, we focus on two such trade-offs: first, we discuss the trade-off between fairness and self-interest; second, we discuss the trade-off between fairness and efficiency (i.e. the 'equity–efficiency' trade-off) that many public economists have been concerned about.

To illustrate these trade-offs, let us write down a simple utility function that models the main trade-offs in a situation that involves two individuals, the person and another unrelated individual:

$$V_i^{k(i)}(y; \cdot) = y - \beta_i \frac{(y - m^{k(i)})^2}{2X} - \gamma_i \frac{(y + x - X)^2}{2X}, \quad (1)$$

where y is own income and x is the income of the other person. X is the total earnings before redistribution and m captures the fairness view of the participant. β_i captures the weight put on fairness versus self-interest and γ weight put on efficiency relative to self-interest.

Let us assume that the two individuals have been involved in a production process and that individual i has produced a_i and the earnings for the same individual are given by $p_i a_i$ where p_i is a price that is out of the control of the individual. Let us further assume that individual i endorses either an egalitarian fairness view (m^E), a meritocratic fairness view (m^M) or a libertarian fairness view (m^L), and we can define these views as

$$m^{E(i)} = \frac{X}{2}, \quad (2a)$$

$$m^{M(i)} = \frac{a_i}{a_i + a_j} X, \quad (2b)$$

$$m^{L(i)} = \frac{a_i p_i}{a_i p_i + a_j p_j} X. \quad (2c)$$

With this model, we assume that there is no uncertainty about the sources of inequality (a, p), the potential efficiency cost of redistribution (difference between $x + y$ and X) as well as the actual distribution of income (x, y, X). In controlled experiments, it is possible to secure that all decision-makers (stakeholders or spectators) have such full information and it is therefore possible to elicit differences in preferences from such experiments.

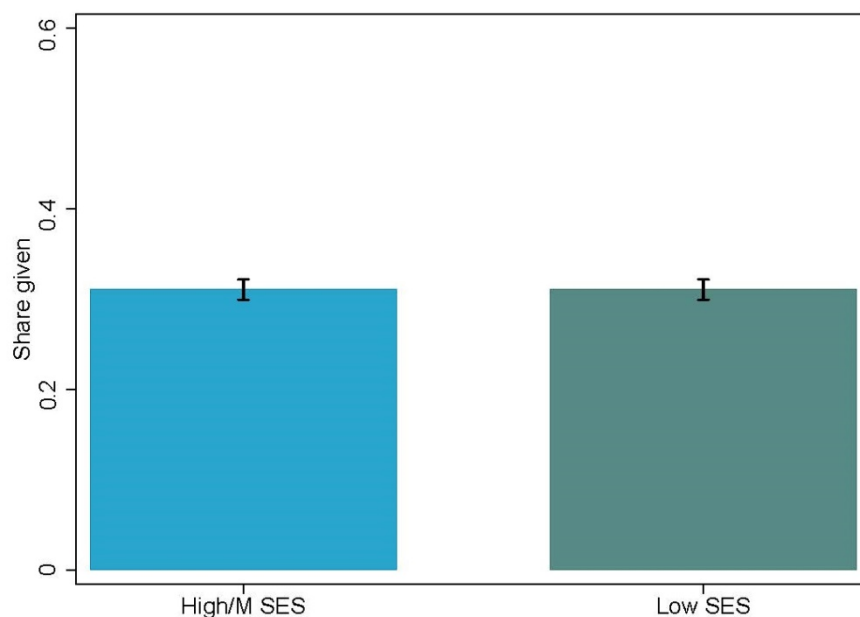
Fairness versus self-interest

The economic sciences have historically often portrayed humans as agents who are narrowly self-interested (Smith, 1776; Mill, 1874; Persky, 1995). However, in recent decades, behavioural economists have extensively documented that people are willing to sacrifice their own economic gains in order to reach more social and equal outcomes (Kahneman, Knetsch and Thaler, 1986; Loewenstein, Thompson and Bazerman, 1989; Blinder and Choi, 1990; Rabin, 1993; Forsythe et al., 1994; Babcock, Wang and Loewenstein, 1996; Bolton and Ockenfels, 2000; Andreoni and Miller, 2002; Charness and Rabin, 2002; Fehr and Falk, 2002; Fehr, Fischbacher and Gächter, 2002; Fehr and Fischbacher, 2003). Camerer (2003) provides a comprehensive discussion of this revolution.

The trade-offs between fairness and selfishness can be studied in standard dictator games (see Engel, 2011, for a review of such games) as well as in real effort dictator games with a stakeholder design. In Almås et al. (2017), we studied a simple version of the latter. In addition to the spectator choice discussed above, we introduced a choice task where the dictator was a stakeholder in the decision. Each participant was matched anonymously with another participant and both had earned 50 NOK (\approx \$5), and each participant was asked to distribute the total (100 NOK) between the two participants in the pair. The participant was free to choose any distribution of the money. Both participants were told that one of the two decisions would be randomly drawn at the end of the experimental session to decide the actual distribution of the money in the pair.

Figure 8 shows the average share given to the other participant in the experiment. In the stakeholder choice, there are two potential motives: selfishness and fairness. As both participants have a production value of 50 NOK, the fair outcome for all fairness views described above is the equal split. Hence, if the share given to the other participant is closer to an equal split than to a perfectly selfish distribution, the participants are not very selfish – and the further below an equal split, the more selfish they are. We can see that in contrast to the findings on fairness views, there are no differences in the level of selfishness between the socio-economic groups. We can see that the participants are, on average, selfish as the share given is significantly lower than 50%. But we can also see that the participants give a substantial share to the other participant even if they could have chosen to take everything for themselves, and we can see that they are closer to a 50% rule than a zero rule for the other participants. Hence, it is evident that the participants care about fairness and they are willing to sacrifice personal gains in order to achieve fairness. This is consistent with results from experiments run on adult populations in many countries around the world (Fehr and Schmidt, 2004; Charness and Rabin, 2005; Cappelen et al., 2007; 2013b).

Figure 8. Share given in stakeholder dictator game across SES



Note: The figure shows the share given to the other participant for High/Medium socioeconomic status (SES) and Low SES, respectively. Low socioeconomic status (Low SES) is defined as the family is in the bottom fifth of both the income and the education distribution in the sample, where family income is measured as the sum of the income of the father and the mother and family education is measured as the average years of education of the father and the mother. The bars indicate +/- one standard error. See Almås et al. (2017) for more details about the experiment and data.

For the trade-off between fairness and self-interest, we do not have one coherent study comparing how this trade-off varies across countries. However, we have some evidence how this trade-off varies across age groups within a society. In an important study, Fehr, Bernhard and Rockenbach (2008) examine how prosociality (or non-selfishness) develops in early childhood by using versions of the standard dictator game, where there is no production phase, but the money is rather given as 'manna from heaven' and the dictator has a stake in the distributive situation of the money. They find that a concern for fairness develops strongly throughout early childhood; at age 3–4, the overwhelming majority of children behave selfishly, whereas at age 7–8, most children prefer to eliminate unfair inequality. In related studies using variations of the dictator game, in which children of different ages are asked to transfer some of their own endowment to another child or a charity, the general finding is that children transfer more and act less selfishly with age (Bauer et al., 2014; Angerer et al., 2015; Blake et al., 2015; Maggian and Villeval, 2016; Ben-Ner et al., 2017; Samek et al., 2020).

However, the negative correlation between age and selfishness appears primarily to apply for young children. In a follow-up study with children aged 8–17, Fehr, Glätzle-Rützler and Sutter (2013) show that the weight attached to fairness reaches a peak at age 8. This is in line with Almås et al. (2010), who find no evidence of changes in selfishness in a study of children aged 10–18.

Cultural features as well as institutions in society may shape the trade-off between selfishness and fairness. As pointed out by Bowles and Gintis (2000), attitudes to inequality could be 'transmitted culturally through learning from elders'. A pioneering study on how society may contribute to explain prosocial behaviour was that of Henrich et al. (2001), who studied 15 small-scale societies around the world, establishing that all these societies showed substantial deviation from the purely selfish behaviour and that institutional features, such as the level of market integration and pay-off to cooperation, predicted social behaviour. In contrast, they found that individual characteristics of the participants did not. The reason why we see substantial variation in prosociality across societies may be that prosociality is shaped by institutions. We now turn to a discussion of how important institutions, such as formal kindergarten and the school system, mentoring programmes and the family, may directly affect deviations from selfishness and how they may work as complements or substitutes in the formation of attitudes to inequality.

Kosse et al. (2020) present descriptive and causal evidence on the role of social environment for the formation of prosocial preferences. They first show that SES as well as the intensity of the mother–child interaction are systematically related to German children's prosocial behaviour. These findings are consistent with studies showing that exposure to social norms of giving and educational interventions increase sharing (Bettinger and Slonim, 2006; Bauer et al., 2014; Blake et al., 2015; Jakiela, 2015; Falk et al., 2021).

Kosse et al. (2020) further evaluate the effect of a one-year mentoring programme offered to children and they are able to show that the random allocation of exposure to the programme leads to less selfish behaviour. The mentoring programme seems to close the gap between socio-economic groups as the children with low SES exposed to the mentoring programme are as prosocial as the children with high SES but no mentoring. As such, the findings suggest that the programme served as a substitute for prosocial stimuli in the family.

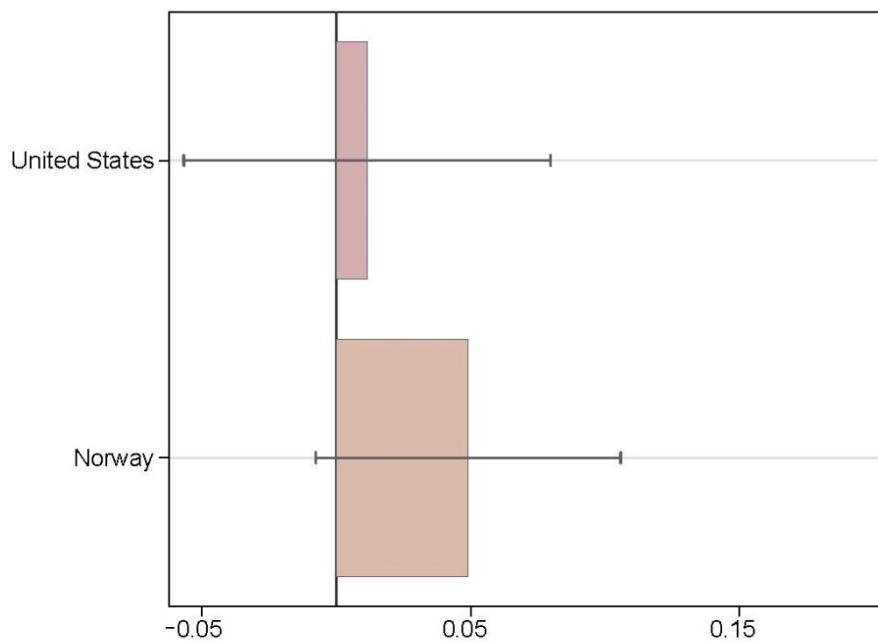
Fairness versus efficiency

Another prominent focus for economists has been the trade-off between equity and efficiency, where many models have demonstrated a need to create incentive systems that may not be in accordance with other concerns, such as fairness. However, less focus has been given to people's preferences over such trade-offs; that is, there is a lack of evidence on the extent to which the general populations care about efficiency relative to other concerns, such as fairness.

When studying people's preferences over fairness versus efficiency, the spectator design is again very useful. In an experimental setting, a spectator can be faced with a trade-off between obtaining fairness and obtaining efficiency. This trade-off was studied using the Norwegian and US samples of adults in Almås et al. (2020). We introduced a relatively high iceberg cost of redistribution in the Efficiency treatment, where for every \$2 that was sent, only \$1 arrived at the other player.

Figure 9 shows the effect of the cost of redistribution. We can see that this relatively high cost does not seem to be important relative to the fairness motive. We have seen that introducing differences in performance increases inequality acceptance substantially, whereas the introduction of a cost of redistribution does not change the inequality acceptance significantly.

Figure 9. Accepted inequality when there is a cost of redistribution relative to no cost when the source of inequality is luck



Note: The figure displays the Merit treatment effect (Luck is the base). The bars indicate the confidence interval of the treatment effect. The significance level is 5% and the confidence band 95%.

In Almås et al. (2021a), we have found evidence that about a third of the 60 countries under study show a positive treatment effect; that is, the general populations in these countries accept more inequality when there is a cost of redistribution than when redistribution is costless. However, overall, the treatment effect of a cost of redistribution is much smaller than that of introducing differences in performance as a source of inequality, and hence it seems that the fairness motive is a stronger motive for the general populations than efficiency, at least when the efficiency loss is a cost of redistribution as modelled here. This is a quite striking, and potentially important, finding for economists who have seen efficiency costs as the main justification for inequality. If the finding that the general population does not put a large weight on such a trade-off, but rather cares mostly about whether the sources of inequality are fair, holds up, much of the discussion about optimal taxation and redistribution in the field of economics does not reflect the main concerns of the populations.

Beliefs about (sources of) inequality

In the recent decade, we have seen quite a few surveys that elicit beliefs about existing inequalities in society. Using cross-country survey evidence from many countries, Gimpelson and Treisman (2018) document that people in general misperceive how high inequality is, how it has been changing, and where they themselves fit in the income distribution. Alesina, Stantcheva and Teso (2018b) study beliefs about mobility in different societies and how that affects preferences for redistribution. Karadja, Mollerstrom and Seim (2017) study how people in Sweden misperceive their own placement in the income distribution and the effect of information on the support for redistribution.

Many people care about the source of the inequality so their beliefs about these sources are important. To illustrate, consider individuals who hold a meritocratic view and regard differences in performance as fair sources of inequality, but not luck.

These individuals would find existing inequality in society unfair if they believe that luck is the main source of inequality. In contrast, they would find existing inequality in society fair if they believe differences in performance are the main sources of inequality. The importance of beliefs about sources of inequality for support for redistribution and the attitudes to inequality more generally is discussed both in theoretical models and in empirical work (see, e.g. Piketty, 1995; Alesina, Miano and Stantcheva, 2018a; Alesina et al., 2018b).

One strand of the literature has focused on differences in beliefs across countries and how they may explain different levels of implemented inequality, and different support for redistribution, across societies. Alesina and Angeletos (2005) present a model that describes the dynamics between beliefs about the extent to which different sources are important for actual inequality and the support for equalising policies. They assume that all individuals perceive luck to be an unfair determinant of income, but hard work/effort to be a fair determinant of income (i.e. they assume that everyone is meritocratic). Further, it is assumed that, for historical reasons, Europe is in a situation where individuals believe that luck is important in determining income, whereas working hard is less important. This makes Europeans reluctant to exert effort and more prone to support redistribution, as luck is an unfair source of inequality. In contrast, in the United States, people believe that effort is an important source of inequality, and people exert more effort and support less redistribution. In this way, the model produces two distinct self-fulfilling equilibria, one that Alesina and Angeletos (2005) refer to as the 'European equilibrium' – with low productivity as effort is low and a high level of redistribution as luck is an important source of inequality – and one that they refer to as the 'United States equilibrium' with a high level of productivity and low support for redistribution.

In the Fairness Across the World study, we seek to investigate in general whether there are differences in attitudes to redistribution both because of differences in fairness views, as discussed above, and because of differences in beliefs about the sources of inequality, as we discuss in this section, the latter being the most common focus in the literature. In Almås et al. (2021a), we elicit beliefs about several potential sources of inequality by asking a series of beliefs questions that take the following form:

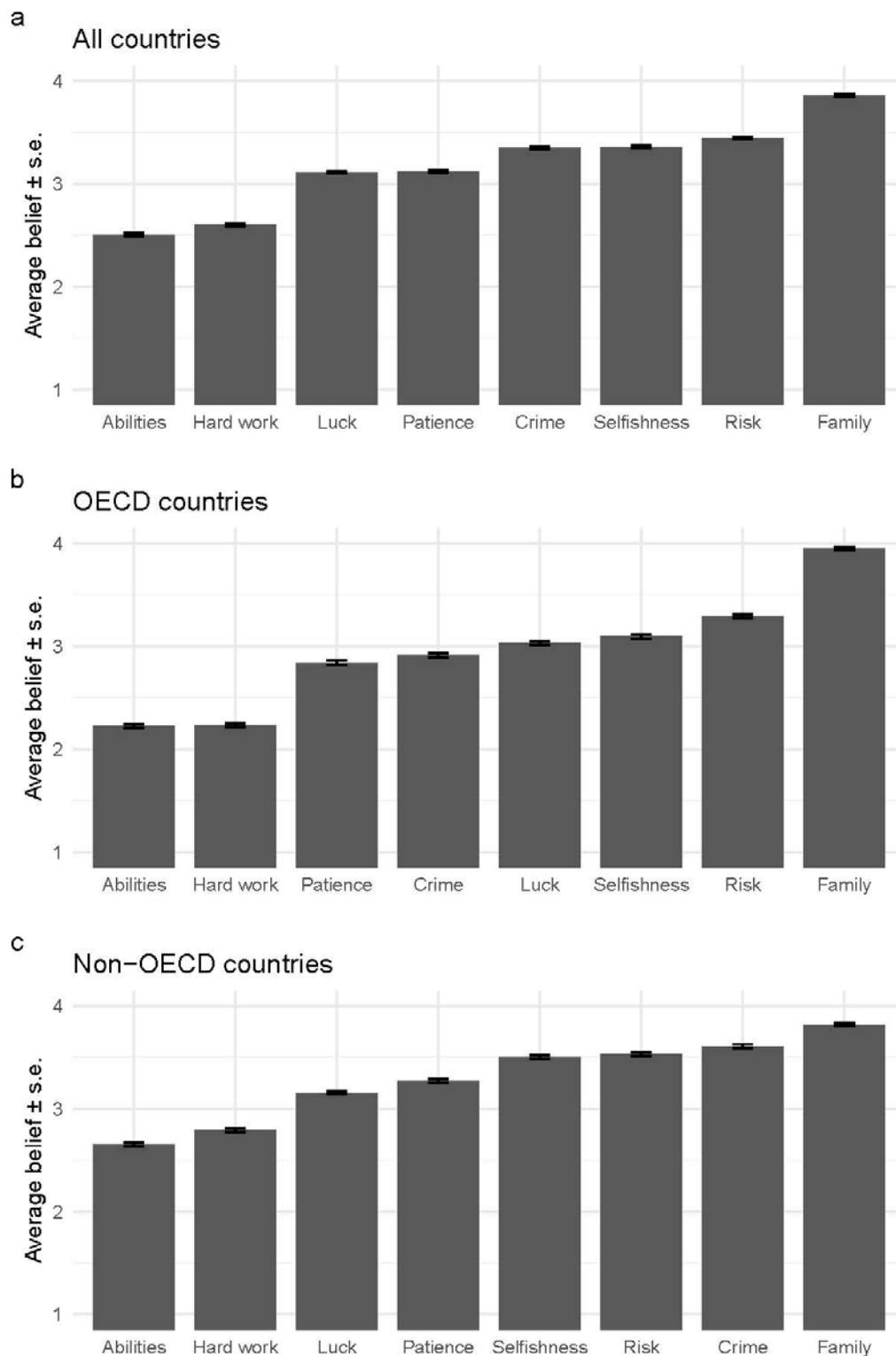
'In [*country*], one of the main reasons for the rich being richer than the poor is that the rich [*source*] than the poor.'

Here, [*country*] is a placeholder for the respondent's country of residence and [*source*] is a placeholder for one of the following sources: 'have worked harder in life', 'have had more luck in life', 'were born with greater abilities', 'have been more selfish', 'are more willing to take economic risks', 'have parents or other family members that provided them with greater opportunities' and 'have been more involved in illegal activities'. We also asked about patience by replacing parts of the text with 'the rich are more willing than the poor to give up something today to benefit from that in the future'.

Participants gave one out of five alternative responses: strongly disagree (1); disagree somewhat (2); neither agree nor disagree (3); agree somewhat (4); strongly agree (5). In order to avoid fatigue and to reduce the length of the survey, each respondent answered four out of the beliefs questions, and it was randomised which ones they responded to; the exact procedure for this randomisation is described in detail in the pre-analysis plan for this project (Almås et al., 2019a).

Figure 10 gives an overview of the results from the global belief elicitation. Panel (a) shows the results with all observations pooled. It is interesting to note that hard work and abilities, the two sources that are related to merit, are seen as less important than the other sources, and the average response for these two sources is on the 'disagree' side, although quite close to the neutral (3). The mode for both of them is (1), 'strongly disagree' that these are the main reasons. The sources that stand out as more important at the global level are selfishness, risk, family opportunities, crime and, to some extent, luck and patience, all of which have a mode of (5), 'strongly agree' that these are the main reasons, at the global level.

Figure 10. Beliefs about sources of inequality



Note: The figure shows the global responses to the belief questions in Almås et al. (2021a). Participants gave one out of five alternative responses: strongly disagree (1); disagree somewhat (2); neither agree nor disagree (3); agree somewhat (4); strongly agree (5). Statistics are calculated giving equal weight to each of the 60 countries in the study.

When splitting the countries into OECD and non-OECD countries, we can see that there are some interesting similarities and some interesting differences across the participants in these two groups of countries. First, the two sources that are related to merit are ranked with lowest importance of the factors ranked, in both the OECD and non-OECD countries. Further, family opportunities are ranked as most important in both groups of countries. However, the rankings of the other sources are somewhat different, with crime, for example, being ranked as more important in non-OECD countries than in OECD countries, and vice versa for luck. We can also see that in addition to the differences in rankings, there are some differences in levels; in particular, with all sources except for family indicated as more important in non-OECD countries than in OECD countries. For a comprehensive discussion of the distribution of all these beliefs both within and across countries, see Almås et al. (2021a).

The belief about selfishness as a source of inequality and self-serving biases

Let us now focus on one source, namely selfishness. The role of selfishness has been discussed quite extensively in economics, often with references back to the very early days of economics as a discipline, with Adam Smith famously arguing that selfishness benefits society (Smith, 1761). More recently, authors have argued that selfishness causes inequality and unfairness and that the selfish rich reduce opportunities for others (Piketty, 2014).

People's beliefs about the selfishness of the rich may play a central role for attitudes to inequality. Also, it is interesting to study whether the beliefs about selfishness as a source of inequality are different among the poor and the rich (i.e. whether people hold self-serving beliefs; Miller and Ross, 1975; Bénabou, 2015). The rich may, to a lesser extent, believe that selfishness is an important source of inequality, because it may be favourable for them to preserve a more positive view of their own position in the society by, for example, convincing themselves that they are richer than others because of their merits and not because they have been more selfish in life than others.

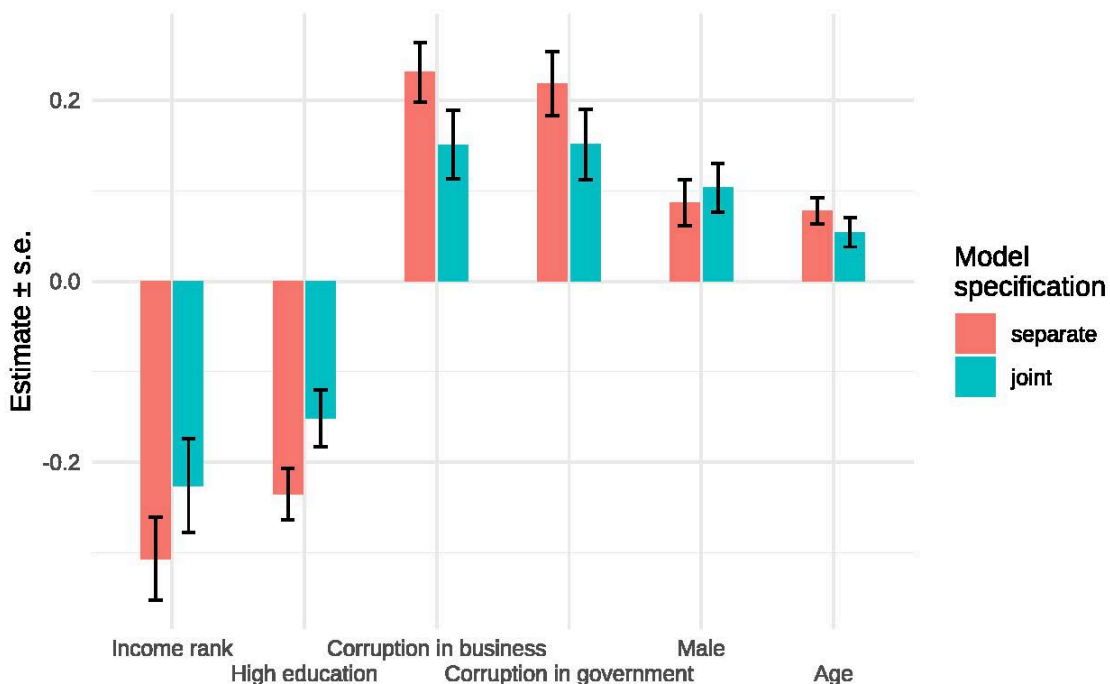
Beliefs about the role of selfishness could be rational (i.e. not self-serving). There are many differences across countries that may explain rational cross-country differences in beliefs about the role of selfishness. For example, in countries with weaker institutions and more crime and corruption, it may very well be true that selfishness is a source of inequality to a larger extent than in countries with less crime and corruption. In Almås et al. (2021b), we focus on the beliefs about selfishness. We show that there is a strong correlation between the beliefs about the role of selfishness and country indices of corruption (Kaufmann, Kraay and Mastruzzi, 2010; World Bank Group, 2020), and we show that there is a strong correlation between the beliefs about the role of crime and that of selfishness, at the country level.

But even within countries, where the same formal institutions are in place, we see that people differ in their beliefs about the role of selfishness. In particular, we see a gradient in these beliefs where richer people tend to reveal less agreement with the statement that the rich are richer than the poor because they have been more selfish in life. Figure 11 shows that there is a significant negative effect of both income and education on the belief that the rich are richer than the poor because they have been more selfish in life. There are smaller positive effects of both being a female and being older.

If the formation of beliefs can partly be explained by self-serving biases (i.e. the need to justify one's own position in the income distribution), then we should also expect to see greater polarisation in beliefs in countries with larger income inequalities. Figure 12 (taken from Almås et al., 2021b) shows the polarisation in beliefs about selfishness, as measured by the standard deviation of reported support within each country relative to the maximum standard deviation possible, across the world. It is interesting to note that neighbouring countries, such as Canada and the United States, which have quite different levels of inequality as well as different welfare states, also differ in the degree of polarisation. The United States has a greater level of polarisation than Canada does. Moreover, countries with very high levels of inequality have a high score on polarisation for this belief as well; South Africa is the most unequal country in disposable income among the 60, as measured by the World Income Distribution (Milanovic, 2019), whereas Colombia has rank 2 and Venezuela rank 16 in the inequality distribution. Zambia is another country that is high up in both the distribution of polarisation (rank 5) and inequality (rank 4). As there are many factors that could affect both polarisation and inequality in a country, we should be careful to draw strong conclusions from this correlational evidence. But we do note that it is

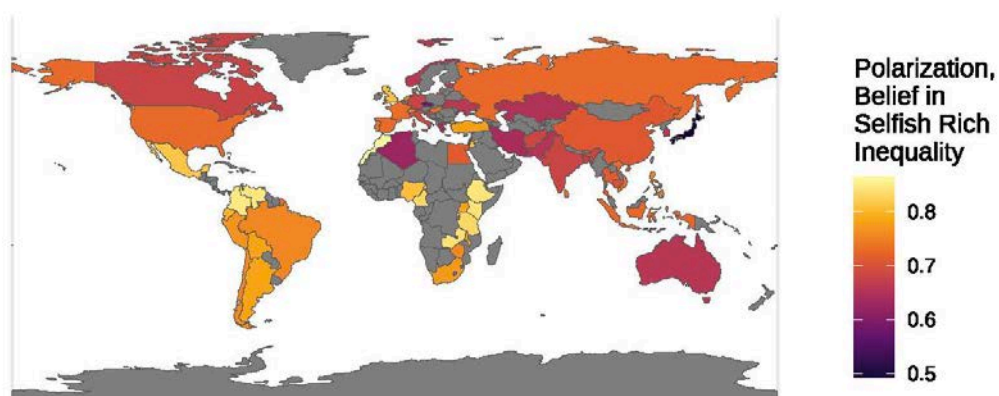
plausible that income inequality can be a force to generate polarisation in beliefs as long as belief formation is self-serving. Such an endogenous belief formation story may help to explain the seemingly increasing polarisation of beliefs in both the United Kingdom and the United States, as the two countries were at the forefront of the wave of increasing within-country inequality in the 1980s and 1990s.

Figure 11. 'Belief in the selfish rich' within-country variation



Note: The figure is taken from Almås et al. (2021b) and shows the estimated coefficients from regressing on individual characteristics of the respondent: the income rank of the household within country (using the square root equivalence scale and scaled from lowest, 0, to highest, 1); an indicator for the respondent having high education relative to the national distribution of reported education; an indicator for the respondent being male; and age. High education and gender (male) are coded binary 0/1 while age is standardised to unit variance. Estimates are reported for both separate bivariate specifications and a joint specification (with all variables included, including some non-reported controls; see Table S4 in the Supplementary Information for Almås et al., 2021b).

Figure 12. Polarisation in beliefs about selfishness



Note: The figure is taken from Almås et al. (2021b) and shows a map of the polarisation in beliefs about selfishness. Polarisation is measured as the standard deviation of reported support within each country relative to the maximum standard deviation possible (scaled 0–1).

Policy and measurement

In our Fairness Across the World study (Almås et al., 2021a), we asked our participants whether the government should aim to equalise incomes, a question that has also been asked by the World Value Survey:

'Do you generally agree, disagree, or neither agree nor disagree with this statement:

In [country], the national government should aim to reduce the economic differences between the rich and the poor.'

Again, the participants gave one out of five alternative responses, ranging from 'strongly disagree' to 'strongly agree'. There is a large global agreement with this claim, where the average response is 4.19 and the mode is 5. However, there is substantial variation in the answers given across the world, and the standard deviation of the answers is 1.38. Interestingly, when plotting the country-level responses to this against the actual inequality in countries, as done in Figure 13, there is no clear relationship. This illustrates that there are factors other than the actual level of inequality, such as perceived unfairness of existing inequalities, that are important for the support for redistribution.

We also asked our respondents about such perceived unfairness of the actual distribution in their country of residence:

'Do you generally agree, disagree, or neither agree nor disagree with this statement:

In [country], the economic differences between the rich and poor are unfair.'

Plotting the responses to this question against the support for equalising policies by the government, as we have done in Figure 14, shows a strong positive relationship. Our analysis in Almås et al. (2021a) shows that there is also a high and significant correlation for the two questions at the individual level. This indicates that there is a strong relationship between perceived unfairness of existing inequalities and attitudes to inequality and, particularly, support for equalising policies at the national level.

A challenge for society is thus to form policies that reflect the perceptions of fairness that people have. For example, a fundamental challenge with a progressive income tax system is that it does not distinguish between those with a high income depending on how the money is earned (i.e. it does not distinguish between different sources of income inequality).

In order to guide redistribution policy, we may want to construct measures of unfairness instead of inequality of the income distribution. It has been shown in the literature that it is possible to generalise standard inequality measures, such as the Gini index and the Lorenz curve, to take account of other norms than the egalitarian, norms that may be sensitive to some sources of inequality but not others (Almås, 2008; Devooght, 2008; Almås et al., 2011a; Almås, Havnes and Mogstad, 2011b; Almås and Mogstad, 2012; Hufe, Kanbur and Peichl, 2022).

Figure 13. Covariation between 'government should equalise' and inequality in disposable income at country level

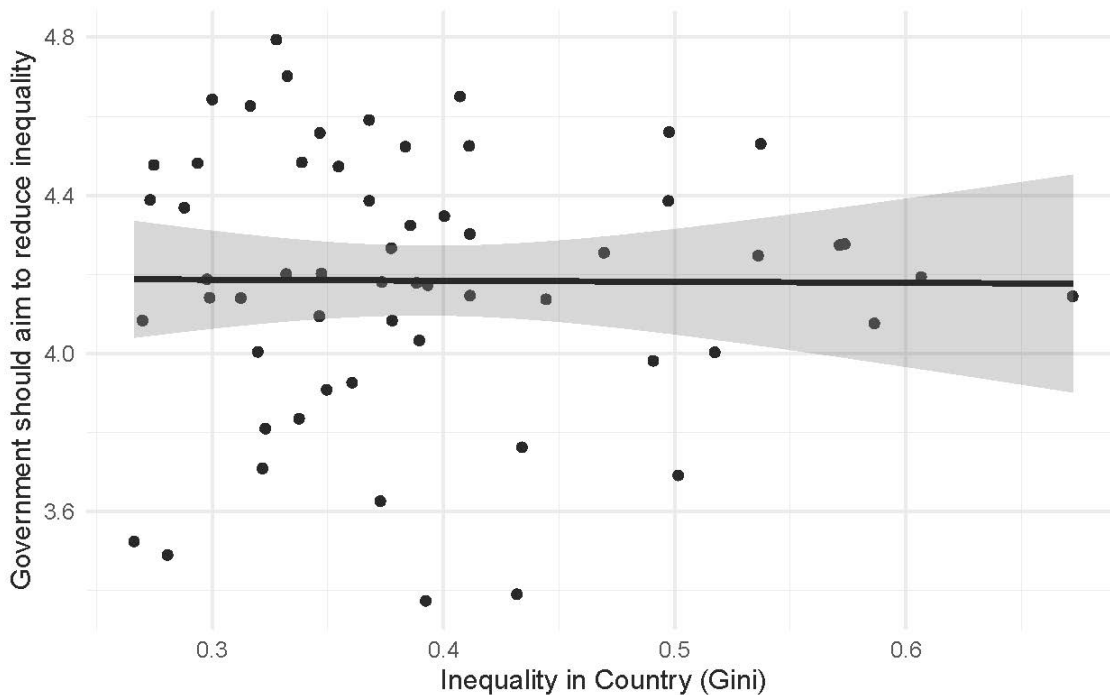
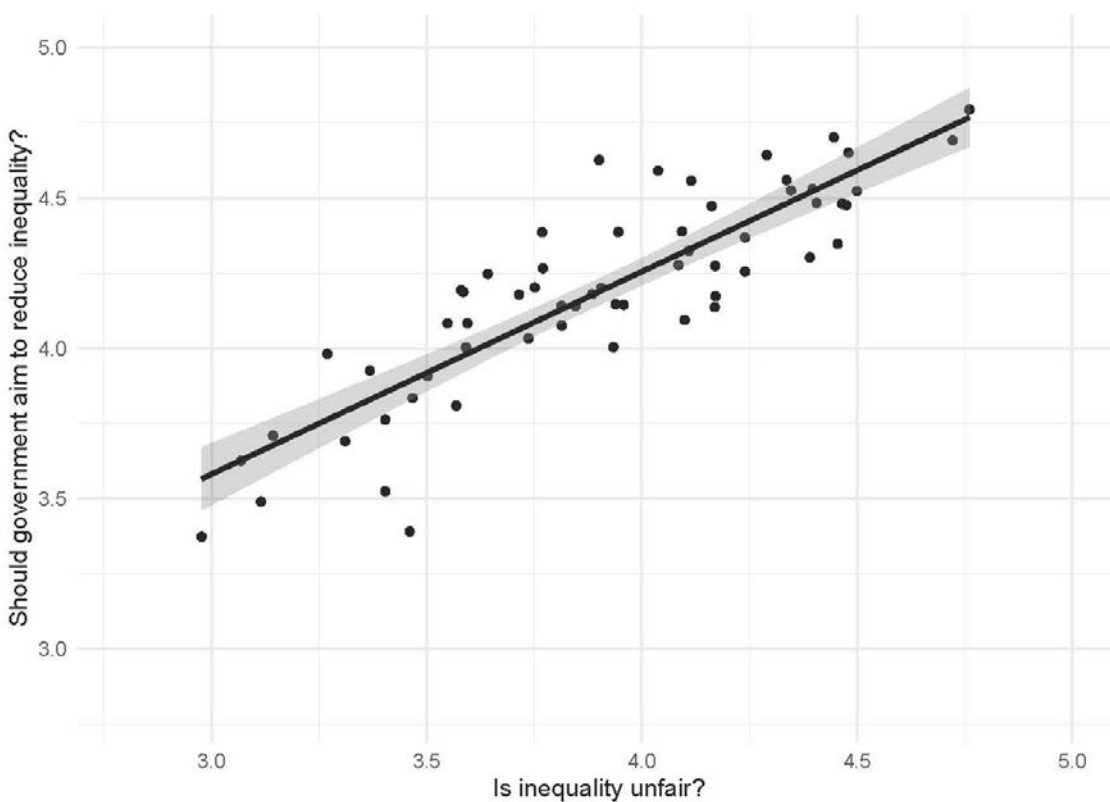


Figure 14. Covariation between 'government should equalise' and 'is inequality unfair?' at country level



However, there are some challenges. First, from the evidence discussed throughout this paper, we know that people differ in their views on what sources such an unfairness measure should be sensitive to. At an abstract level, people may disagree on whether the norm income should only be sensitive to differences in merit; that is, whether those who produce more should also have a higher fair income or whether it should also be sensitive to luck. Egalitarians would say that the fair outcome is the average income and thus the norm should not be sensitive to any sources of inequality, meritocrats would argue that the fairness measure should be sensitive to merits but not to other sources, while libertarians would argue that the fairness measure should be sensitive to merits as well as to other sources of inequality, such as luck. Therefore, there may not be one single norm that everyone agrees on.

Second, in practice, however, it is unlikely that we can find data on sources such as merit or luck directly. In order to operationalise and measure unfairness, we would have to take a stand on what measurable sources of inequality we would like our fair incomes to be sensitive to. If our outcome of interest is annual income, candidate sources to be sensitive to would then be: hours worked, years of education, type of education, public or private sector employment, occupation, parental education, region of residence, gender, age and/or immigration status. Most people may agree that an inequality measure should not be sensitive to the three latter factors: age, gender and immigration status. In fact, in most countries, it is illegal to offer differential payment based on these characteristics as it would be considered discrimination.

However, most people may agree that an unfairness measure should be sensitive to hours worked, at least to the extent that one believes that people are free to choose how many hours they would like to work. When it comes to education – both level and type – people may disagree. Meritocratic people may claim that any productivity gain measured by increased annual earnings that can be devoted to education is fair, and thus that the norm income should be sensitive to education. Others may argue that the fair income should be sensitive to one's own education but not parental education – as parental education is out of individual control but a strong predictor of individual education – and hence it is only the productivity gains from additional education, over and above parental education, that the fair income should be sensitive to.

As people may disagree on what measurable sources an unfairness measure should be sensitive to, a pragmatic solution is to construct measures based on all different relevant sensitivity cuts. If, on the one hand, all relevant cuts give the same conclusion (i.e. all cuts reveal an increase in unfairness in a society over time), then we have a robust conclusion or a dominance result. If, on the other hand, different cuts give different trends, then we would not have such a robust finding. Almås et al. (2011a), for example, showed that for all relevant cuts, unfairness had increased in Norway between 1986 and 2005. In other cases where different sensitivity cuts give different unfairness rankings, policymakers would not be guided by such a robust finding. If they want to use such measures even so, they would have to choose which measure they want to be guided by, based either on a democratic principle where they aim to choose the level of sensitivity that they believe the majority of the population have, or on the level of sensitivity that they as elected policymakers decide fits with their own fairness views.

References

- Acemoglu, D., and Robinson, J. (2012), *Why Nations Fail: The Origins of Power, Prosperity, and Poverty*, New York, NY: Crown.
- Acemoglu, D., Robinson, J. A., and Verdier, T. (2017), 'Asymmetric Growth and Institutions in an Interdependent World', *Journal of Political Economy*, 125, 1245–303.
- Alesina, A., and Angeletos, G. M. (2005), 'Fairness and Redistribution', *American Economic Review*, 95 (4), 960–80.
- Alesina, A., Miano, A., and Stantcheva, S. (2018a), 'Immigration and Redistribution', NBER Working Paper 24733.
- Alesina, A., Stantcheva, S., and Teso, E. (2018b), 'Intergenerational Mobility and Preferences for Redistribution', *American Economic Review*, 108 (2), 521–54.
- Almås, I. (2008), 'Equalizing Income versus Equalizing Opportunity: A Comparison of the United States and Germany', in J. Bishop and B. Zheng (eds), *Inequality and Opportunity: Papers from the Second ECINEQ Society Meeting*, Bingley: Emerald Group Publishing.
- Almås, I., Cappelen, A. W., Lind, J. T., Sørensen, E. Ø., and Tungodden, B. (2011a), 'Measuring Unfair (In)equality', *Journal of Public Economics*, 95, 488–99.
- Almås, I., Cappelen, A. W., Salvanes, K. G., Sørensen, E. Ø., and Tungodden, B. (2016), 'What Explains the Gender Gap in College Track Dropout? Experimental and Administrative Evidence', *American Economic Review*, 106 (5), 296–302.
- Almås, I., Cappelen, A. W., Salvanes, K. G., Sørensen, E. Ø., and Tungodden, B. (2017), 'Fairness and Family Background', *Politics, Philosophy & Economics*, 16, 117–31.
- Almås, I., Cappelen, A. W., Sørensen, E. Ø., and Tungodden, B. (2010), 'Fairness and the Development of Inequality Acceptance', *Science*, 328, 1176–78.
- Almås, I., Cappelen, A. W., Sørensen, E. Ø., and Tungodden, B. (2019a), 'Fairness Across the World', AEA RCT Registry, no. 3980 (<https://doi.org/10.1257/rct.3980-1.0>).
- Almås, I., Cappelen, A. W., Sørensen, E. Ø., and Tungodden, B. (2021a), 'Fairness Across the World: A Large Scale Experimental Study', Mimeo, NHH Norwegian School of Economics.
- Almås, I., Cappelen, A. W., Sørensen, E. Ø., and Tungodden, B. (2021b), 'Global Evidence on the Selfish Rich Hypothesis', Mimeo, NHH Norwegian School of Economics.
- Almås, I., Cappelen, A. W., and Tungodden, B. (2019b), 'Cutthroat Capitalism versus Cuddly Socialism: Are Americans More Meritocratic and Efficiency-Seeking than Scandinavians?', NHH Department of Economics Discussion Paper 04/2019.
- Almås, I., Cappelen, A. W., and Tungodden, B. (2020), 'Cutthroat Capitalism versus Cuddly Socialism: Are Americans More Meritocratic and Efficiency-Seeking than Scandinavians?', *Journal of Political Economy*, 128, 1753–88.
- Almås, I., Havnes, T., and Mogstad, M. (2011b), 'Baby Booming Inequality? Demographic Change and Earnings Inequality in Norway, 1967–2000', *Journal of Economic Inequality*, 9, 629–50.
- Almås, I., and Mogstad, M. (2012), 'Older or Wealthier? The Impact of Age Adjustment on Wealth Inequality', *Scandinavian Journal of Economics*, 114, 24–54.
- Andreoni, J., and Miller, J. (2002), 'Giving According to GARP: An Experimental Test of the Consistency of Preferences for Altruism', *Econometrica*, 70, 737–53.

- Angerer, S., Lergetporer, P., Glätzle-Rützler, D., and Sutter, M. (2015), 'How to Measure Time Preferences in Children: A Comparison of Two Methods', *Journal of the Economic Science Association*, 1, 158–69.
- Arneson, R. (1989), 'Equality and Equal Opportunity for Welfare', *Philosophical Studies*, 56, 159–94.
- Atkinson, A. B. (1970), 'On the Measurement of Inequality', *Journal of Economic Theory*, 2, 244–63.
- Atkinson, A. B. (1975), *The Economics of Inequality*, Oxford: Clarendon Press.
- Atkinson, A. B. (2015), *Inequality: What Can Be Done?*, Cambridge, MA: Harvard University Press.
- Babcock, L., Wang, X., and Loewenstein, G. (1996), 'Choosing the Wrong Pond: Social Comparisons in Negotiations that Reflect a Self-Serving Bias', *Quarterly Journal of Economics*, 111, 1–19.
- Barr, A., Miller, L., and Ubeda, P. (2016), 'Moral Consequences of Becoming Unemployed', *Proceedings of the National Academy of Sciences*, 113, 4676–81.
- Bauer, M., Cassar, A., Chytilová, J., and Henrich, J. (2014), 'War's Enduring Effects on the Development of Egalitarian Motivations in In-Group Biases', *Psychological Science*, 25, 47–57.
- Bénabou, R. (2015), 'The Economics of Motivated Beliefs', *Revue d'Économie Politique*, 125, 665–85.
- Bénabou, R., and Tirole, J. (2006), 'Belief in a Just World and Redistributive Politics', *Quarterly Journal of Economics*, 121, 699–746.
- Ben-Ner, A., List, J. A., Putterman, L., and Samek, A. (2017), 'Learned Generosity? An Artefactual Field Experiment with Parents and Their Children', *Journal of Economic Behavior and Organization*, 143, 28–44.
- Bettinger, E., and Slonim, R. (2006), 'Using Experimental Economics to Measure the Effects of a Natural Educational Experiment on Altruism', *Journal of Public Economics*, 90, 1625–48.
- Blake, P. R. et al. (2015), 'The Ontogeny of Fairness in Seven Societies', *Nature*, 528, 258–61.
- Blinder, A. S., and Choi, D. H. (1990), 'A Shred of Evidence on Theories of Wage Stickiness', *Quarterly Journal of Economics*, 105, 1003–15.
- Bolton, G. E., and Ockenfels, A. (2000), 'ERC: A Theory of Equity, Reciprocity, and Competition', *American Economic Review*, 90 (1), 166–93.
- Bossert, W. (1995), 'Redistribution Mechanisms Based on Individual Characteristics', *Mathematical Social Sciences*, 29, 1–17.
- Bowles, S., and Gintis, H. (2000), 'Reciprocity, Self-Interest, and the Welfare State', *Nordic Journal of Political Economy*, 26, 33–53.
- Camerer, C. F. (2003), *Behavioral Game Theory: Experiments in Strategic Interaction*, Princeton, NJ: Princeton University Press.
- Cappelen, A. W., Drange Hole, A., Sørensen, E. Ø., and Tungodden, B. (2007), 'The Pluralism of Fairness Ideals: An Experimental Approach', *American Economic Review*, 97 (3), 818–27.
- Cappelen, A. W., Konow, J., Sørensen, E. Ø., and Tungodden, B. (2013a), 'Just Luck: An Experimental Study of Risk Taking and Fairness', *American Economic Review*, 103 (4), 1398–413.
- Cappelen, A. W., List, J., Samek, A., and Tungodden, B. (2020), 'The Effect of Early Childhood Education on Social Preferences', *Journal of Political Economy*, 128, 2739–58.
- Cappelen, A. W., Moene, K. O., Sørensen, E. Ø., and Tungodden, B. (2013b), 'Needs versus Entitlements – An International Fairness Experiment', *Journal of the European Economic Association*, 11, 574–98.

- Cappelen, A. W., Nygaard, K., Sørensen, E. Ø., and Tungodden, B. (2015), 'Social Preferences in the Lab: A Comparison of Students and a Representative Population', *Scandinavian Journal of Economics*, 117, 1306–26.
- Cappelen, A. W., Sørensen, E. Ø., and Tungodden, B. (2010), 'Responsibility for What? Fairness and Individual Responsibility', *European Economic Review*, 54, 429–41.
- Case, A., and Deaton, A. (2020), *Deaths of Despair and the Future of Capitalism*, Princeton, NJ: Princeton University Press.
- Cassar, L., and Klein, A. H. (2019), 'A Matter of Perspective: How Failure Shapes Distributive Preferences', *Management Science*, 65, 5050–64.
- Charness, G., Cooper, M., and Reddinger, J. (2020), 'Wage Policies, Incentive Schemes, and Motivation', in K. Zimmermann (ed.), *Handbook of Labor, Human Resources and Population Economics*, Cham: Springer.
- Charness, G., and Rabin, M. (2002), 'Understanding Social Preferences with Simple Tests', *Quarterly Journal of Economics*, 117, 817–69.
- Charness, G., and Rabin, M. (2005), 'Expressed Preferences and Behavior in Experimental Games', *Games and Economic Behavior*, 53, 151–169.
- Damon, W. (1977), *The Social World of the Child*, San Francisco, CA: Jossey-Bass.
- Devooght, K. (2008), 'To Each the Same and to Each His Own: A Proposal to Measure Responsibility-Sensitive Income Inequality', *Economica*, 75, 280–95.
- Engel, C. (2011), 'Dictator Games: A Meta Study', *Experimental Economics*, 14, 583–610.
- Ertac, S. (2020), 'The Formation and Malleability of Preferences and Noncognitive Skills', in K. Zimmermann (ed.), *Handbook of Labor, Human Resources and Population Economics*, Cham: Springer.
- Falk, A., Becker, A., Dohmen, T., Enke, B., Huffman, D., and Sunde, U. (2018), 'Global Evidence on Economic Preferences', *Quarterly Journal of Economics*, 133, 1645–92.
- Falk, A., Kosse, F., Pinger, P., Schildberg-Hörisch, H., and Deckers, T. (2021), 'Socioeconomic Status and Inequalities in Children's IQ and Economic Preferences', *Journal of Political Economy*, 129, 2504–45.
- Fehr, E., Bernhard, H., and Rockenbach, B. (2008), 'Egalitarianism in Young Children', *Nature*, 454, 1079–83.
- Fehr, E., and Falk, A. (2002), 'Psychological Foundations of Incentives', *European Economic Review*, 46, 687–724.
- Fehr, E., and Fischbacher, U. (2003), 'The Nature of Human Altruism', *Nature*, 425, 785–91.
- Fehr, E., Fischbacher, U., and Gächter, S. (2002), 'Strong Reciprocity, Human Cooperation, and the Enforcement of Social Norms', *Human Nature*, 13, 1–25.
- Fehr, E., Glätzle-Rützler, D., and Sutter, M. (2013), 'The Development of Egalitarianism, Altruism, Spite and Parochialism in Childhood and Adolescence', *European Economic Review*, 64, 369–83.
- Fehr, E., and Schmidt, K. M. (1999), 'A Theory of Fairness, Competition and Cooperation', *Quarterly Journal of Economics*, 114, 817–68.
- Fehr, E., and Schmidt, K. M. (2004), 'The Role of Equality, Efficiency, and Rawlsian Motives in Social Preferences: A Reply to Engelmann and Strobel', Zurich IEER Working Paper 179.
- Fleurbaey, M. (1995), 'Equality and Responsibility', *European Economic Review*, 39, 683–89.

- Fong, C. (2001), 'Social Preferences, Self-Interest, and the Demand for Redistribution', *Journal of Public Economics*, 82, 225–46.
- Forsythe, R., Horowitz, J. L., Savin, N. E., and Sefton, M. (1994), 'Fairness in Simple Bargaining Experiments', *Games and Economic Behavior*, 6, 347–69.
- Frohlich, N., Oppenheimer, J., and Kurki, A. (2004), 'Modeling Other-Regarding Preferences and an Experimental Test', *Public Choice*, 119, 91–117.
- Gaertner, W., and Schwettmann, L. (2007), 'Equity, Responsibility and the Cultural Dimension', *Economica*, 74, 627–49.
- Gill, D., and Stone, R. (2010), 'Fairness and Desert in Tournaments', *Games and Economic Behavior*, 69, 346–64.
- Gimpelson, V., and Treisman, D. (2018), 'Misperceiving Inequality', *Economics & Politics*, 30, 27–54.
- Harbaugh, W. T., and Krause, K. (2000), 'Children's Contributions in Public Good Experiments: The Development of Altruistic and Free-Riding Behaviors', *Economic Inquiry*, 38, 95–109.
- Henrich, J., Boyd, R., Bowles, S., Camerer, C., Fehr, E., Gintis, H., and McElreath, R. (2001), 'In Search of Homo Economicus: Behavioral Experiments in 15 Small-Scale Societies', *American Economic Review*, 91 (2), 73–78.
- Henrich, J., Heine, S. J., and Norenzayan, A. (2010), 'The Weirdest People in the World?', *Behavioral and Brain Sciences*, 33, 61–83.
- Hook, J. G., and Cook, T. D. (1979), 'Equity Theory and the Cognitive Ability of Children', *Psychological Bulletin*, 86, 429–45.
- Hufe, P., Kanbur, R., and Peichl, A. (2022), 'Measuring Unfair Inequality: Reconciling Equality of Opportunity and Freedom from Poverty', *Review of Economic Studies*, forthcoming (<https://doi.org/10.1093/restud/rdab101>).
- Jakiela, P. (2015), 'How Fair Shares Compare: Experimental Evidence from Two Cultures', *Journal of Economic Behavior & Organization*, 118, 40–54.
- Jakiela, P., Miguel, E., and Velde, V.t. (2015), 'You've Earned It: Estimating the Impact of Human Capital on Social Preferences', *Experimental Economics*, 18, 385–407.
- Kahneman, D., Knetsch, J. L., and Thaler, R. H. (1986), 'Fairness and the Assumptions of Economics', *Journal of Business*, 59, 285–300.
- Karadja, M., Mollerstrom, J., and Seim, D. (2017), 'Richer (and Holier) Than Thou? The Effect of Relative Income Improvements on Demand for Redistribution', *Review of Economics and Statistics*, 99, 201–12.
- Kaufmann, D., Kraay, A., and Mastruzzi, M. (2010), 'The Worldwide Governance Indicators: Methodology and Analytical Issues', World Bank Policy Research Working Paper 5430.
- Kohlberg, L. (1984), *Essays in Moral Development: Volume II. The Psychology of Moral Development*, San Francisco, CA: Harper and Row.
- Konow, J. (2000), 'Fair Shares: Accountability and Cognitive Dissonance in Allocation Decisions', *American Economic Review*, 90 (4), 1072–91.
- Konow, J. (2009), 'Is Fairness in the Eye of the Beholder? An Impartial Spectator Analysis of Justice', *Social Choice and Welfare*, 33, 101–27.
- Kosse, F., Deckers, T., Pinger, P., Schildberg-Hörisch, H., and Falk, A. (2020), 'The Formation of Prosociality: Causal Evidence on the Role of Social Environment', *Journal of Political Economy*, 128, 434–67.

- Loewenstein, G. F., Thompson, L., and Bazerman, M. H. (1989), 'Social Utility and Decision Making in Interpersonal Contexts', *Journal of Personality and Social Psychology*, 57, 426–41.
- Maggian, V., and Villeval, M. C. (2016), 'Social Preferences and Lying Aversion in Children', *Experimental Economics*, 19, 663–85.
- Milanovic, B. (2019), 'Description of *All the Ginis* dataset', Mineo, Stone Center on Socio-economic Inequality, <https://stonecenter.gc.cuny.edu/files/2019/02/Milanovic-all-the-ginis-dataset-description.pdf>.
- Mill, J. S. (1874), *Essays on Some Unsettled Questions of Political Economy*, London: Longmans, Green, Reader, and Dyer.
- Miller, D. T., and Ross, M. (1975), 'Self-Serving Biases in the Attribution of Causality: Fact or Fiction?', *Psychological Bulletin*, 82, 213–25.
- Oxoby, R., and Spraggon, J. (2008), 'Mine and Yours: Property Rights in Dictator Games', *Journal of Economic Behavior & Organization*, 65, 703–13.
- Persky, J. (1995), 'The Ethology of Homo Economicus', *Journal of Economic Perspectives*, 9 (2), 221–231.
- Piaget, J. (1965), *The Moral Judgement of the Child*, New York: Free Press.
- Piketty, T. (1995), 'Social Mobility and Redistributive Politics', *Quarterly Journal of Economics*, 110, 551–84.
- Piketty, T. (2014), *Capital in the Twenty-First Century*, Cambridge, MA: Belknap Press.
- Piketty, T. (2020), *Capital and Ideology*, Cambridge, MA: Harvard University Press.
- Rabin, M. (1993), 'Incorporating Fairness into Game Theory and Economics', *American Economic Review*, 83 (5), 1281–302.
- Roemer, J. E. (1996), *Theories of Distributive Justice*, Cambridge, MA: Harvard University Press.
- Roemer, J. E. (1998), *Equality of Opportunity*, Cambridge, MA: Harvard University Press.
- Samek, A. et al. (2020), 'The Development of Social Comparisons and Sharing Behavior across 12 Countries', *Journal of Experimental Child Psychology*, 192, 1–16.
- Sandel, M. (2020), *The Tyranny of Merit: What's Become of the Common Good?*, London: Penguin Books.
- Schokkaert, E., and Devooght, K. (2003), 'Responsibility-Sensitive Fair Compensation in Different Cultures', *Social Choice and Welfare*, 21, 207–42.
- Smith, A. (1761), *The Theory of Moral Sentiments*, 2nd edn, Edinburgh: A. Millar.
- Smith, A. (1776), *An Inquiry into the Nature and Causes of the Wealth of Nations*, London: W. Strahan and T. Cadell.
- Sutter, M., Zoller, C., and Glätzle-Rützler, D. (2019), 'Economic Behavior of Children and Adolescents – A First Survey of Experimental Economics Results', *European Economic Review*, 111, 98–121.
- World Bank Group (2020), *World Development Report 2020: Trading for Development in the Age of Global Value Chains*, Washington, DC: World Bank.
- Young, M. (1958), *The Rise of the Meritocracy*, London: Thames and Hudson.