

AT A GLANCE

## Inequality of earnings in Germany generally accepted but low incomes considered unfair

By Jule Adriaans and Stefan Liebig

- While it is not possible to scientifically determine a fair earnings distribution, surveys enable conclusions on what is perceived as a fair or unfair earnings inequality
- Gross earnings perceived as fair would not be less unequal; low and middle earnings would increase
- Overwhelming majority of respondents find lower incomes too low; 38 percent rate high incomes as too high
- Perceived unfairness is associated with a lack of both work effort and political participation
- Policies need to take perceived unfairness of earnings into consideration and low earnings need to be addressed

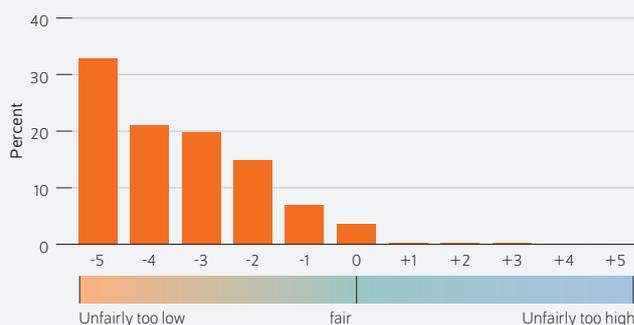
**“Fair” earnings would still be distributed unequally, but low incomes would be higher. Overall, low incomes are seen as unfair.**

Based on answers about one’s own fair earnings and on a fairness evaluation of low earnings in Germany

Comparing the actual and “fair” earnings distributions



Fairness evaluation of low monthly gross incomes (on average 1,200 euros a month)



Source: Authors' own calculations, based on SOEP v32 (DOI: 10.5684/soep.v32), LINDS-2.

Note: The figure on the left is based on pooled data from 2009, 2011, 2013, and 2015 (n = 28,455). Income values are inflation-adjusted to the consumer price index of 2009. The figure shows the smoothed earnings distribution for full-time employees (Kernel density estimation). For illustrative purposes, monthly gross earnings exceeding 10,000 euros were dropped from the calculation of the density function.

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FROM THE AUTHORS

*“An overwhelming majority of respondents in our survey consider low earning incomes in Germany to be unfairly low. Interestingly enough, only about a third of the people surveyed find high earnings unfairly high.”*

— Stefan Liebig, study author —

# Inequality of earnings in Germany generally accepted but low incomes considered unfair

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## ABSTRACT

Earnings differences are a recurring topic of public discussion in Germany. Data from the long-term Socio-Economic Panel (SOEP) study as well as a separate survey of German employees (LINOS) show that earnings inequalities are generally perceived as fair while a substantial share of the respondents find the current earnings distribution in Germany unfair. This applies above all to the middle and lower end of the earnings distribution, where respondents perceive there to be particularly severe underpayment. More rarely do respondents find that employees earning high salaries are unfairly overpaid. Perceived unfairness in the upper strata of the earnings distribution is associated with a reduction in effort at the workplace while perceived unfairness in the lower end of the earnings distribution is accompanied by a lack of participation in the democratic process.

The development of income differences in Germany is a recurring topic of public debate. Due to the potentially damaging societal consequences of earnings inequalities, it is often demanded that policies intervene in the earnings distribution.<sup>1</sup> Even if this demand sounds reasonable at first, the scientific literature shows that the alleged connection between earnings inequalities and negative societal consequences has not been clearly proven.<sup>2</sup> Earnings inequalities can—in both a time and country comparison—foster or weaken economic growth and political stability.

One reason for these diverging results is that the effect of such inequalities depends on how fair or unfair citizens perceive them to be. Inequalities are not necessarily perceived as unfair, for example when the degree of inequality is in accordance with a society's normative principles. The equity principle (or performance principle), a firmly established distributive principle in Western societies, calls for those who perform better and work harder to be paid more. If the allocation of earnings is based on such criteria, earnings are unequally distributed. However, the resulting inequality is considered fair because it is the result of applying recognized norms.<sup>3</sup> Research to date shows that distributions perceived as fair increase subjective well-being and promote behaviors that support the underlying political or economic structures. In this case, inequalities do not endanger social cohesion but rather promote it by ensuring that people are engaging in society and the workplace.

Referring solely to the negative societal consequences of earnings inequalities is therefore too reductive. To be able to empirically assess the societal consequences of earnings inequalities, it must first be examined to what extent earnings

<sup>1</sup> OECD, *Divided We Stand: Why Inequality Keeps Rising* (Paris: OECD Publishing, 2011).

<sup>2</sup> For an overview on perceptions of inequality and satisfaction see Andrew E. Clark and Conchita D'Ambrosio, "Attitudes to Income Inequality: Experimental and Survey Evidence," in *Handbook of Income Distribution Volume 2*, eds. Anthony B. Atkinson and Francois Bourguignon (North Holland, 2015), 1147-1208. On inequality and its effects on economic growth see Hanne Albig et al., "How rising income inequality influenced economic growth in Germany," *DIW Economic Bulletin* no. 10 (2017) (available online).

<sup>3</sup> Carsten Sauer, Peter Valet, and Stefan Liebig, "Welche Lohnungleichheiten sind gerecht? Arbeitsmarktbezogene Ursachen von Lohnungleichheit und die wahrgenommene (Un-)Gerechtigkeit des eigenen Erwerbsergebnisses," *Kölner Zeitschrift für Soziologie und Sozialpsychologie* 68 (2016): 619-645 (in German).

inequalities are considered unfair and what behavioral consequences are expected as a result of this perceived unfairness. This report focuses on these two questions using Socio-Economic Panel data and a separate employee survey (Box 1).

### Earnings in a fair world would not be less unequal

Fairness is a normative concept based on value judgments. Therefore, it cannot be scientifically determined if earnings inequalities are fair or unfair. What can be empirically investigated, however, is whether and under what conditions earnings inequalities in society are judged as fair or unfair and what consequences this may have.

To determine what sort of earnings distribution society deems fair, one can first ask the employed what earnings they would consider fair for themselves. The earnings distribution in an ideal world—one where every employee perceives themselves as fairly remunerated—can be determined using that information. This “fair” earnings distribution can be compared with the actual earnings distribution to see how the distribution would change if everyone were paid what they deem fair.

The perceived (un)fairness of one’s own earnings has been surveyed every two years in the SOEP since 2009. Respondents report their actual gross monthly earnings as well as the gross monthly earnings they would consider to be fair compensation for their work. This results in both an actual as well as an ideal “fair” distribution of gross monthly earnings (Figure 1). The “fair” earnings distribution is shifted slightly to the right, indicating that employees in Germany would be paid more for their work in a “fair” world, especially those with lower and middle earnings. However, looking at the distribution reveals that the distributions of actual and “fair” earnings are largely identical. Thus, the “fair” distribution does not follow an egalitarian ideal of distribution: even in a “fair” world there would be earnings inequalities. The distribution would be much narrower if respondents perceived less inequality as fair.

### Low earnings perceived as unfair by most

Information on existing ideas about fair or unfair earnings inequalities is also provided by the respondents’ assessment of others’ earnings or the earnings distribution within a society. The latter offers the possibility of explicitly determining the perceived fairness at the upper and lower ends of the earnings distribution.

As part of the LINOS study, respondents were asked to rate the earnings of the lowest and top ten percent of earners as well as the earnings in the middle of the earnings distribution (Box 2).

Half of those surveyed rated gross monthly earnings of 6,100 euros—earned by those in occupations such as doctors, engineers, and university professors—as fair (Figure 2). Around 12 percent of the respondents found these earnings

#### Box 1

##### Data

The analyses of the fairness of one’s own earnings use data from the Socio-Economic Panel (SOEP). All further analyses use data from the LINOS study.

##### Socio-Economic Panel (SOEP)

SOEP is a representative annual survey of private households and people in Germany conducted by DIW Berlin.<sup>1</sup> Since 2009, the perceived fairness of one’s own earnings has been surveyed every two years. Employees have already rated the fairness of their earnings four times (2009, 2011, 2013, and 2015). Over 28,000 observations were collected in this way and used for Figure 1.

##### LINOS Study

The LINOS (Legitimation of INequality Over the life-Span) study is a representative survey of employed persons subject to social security contributions in 2011 that was carried out as part of the DFG-funded project “Legitimation of Inequalities over the Life-span” in 2017. The analyses presented here use data from around 2,400 employees who participated in the second wave of the survey (LINOS-2) and were asked about their attitudes towards fairness.

<sup>1</sup> Jan Goebel et al., “The German Socio-Economic Panel (SOEP),” *Journal of Economics and Statistics* (2018).

to be unfairly low while only 38 percent considered them unfairly high.

The opposite can be seen for the lower end of the earnings distribution. Low earnings are rated as too low by the overwhelming majority of respondents. Only around four percent of respondents rated average gross monthly earnings of 1,200 euros—earned by those in occupations such as cleaners, hairdressers, and parcel carriers—as fair or too high. The intensity of perceived unfairness is particularly pronounced when rating the lowest earnings. The middle of the earnings distribution also tends to be rated as unfair. Only 16 percent of respondents considered middle earnings of 2,700 euros—earned by those in occupations such as nurses, accountants, and electricians—as fair while an overwhelming share of around 81 percent found the amount unfairly low. This shows a pattern already visible in Figure 1: most respondents would consider an increase in lower and middle earnings fairer.

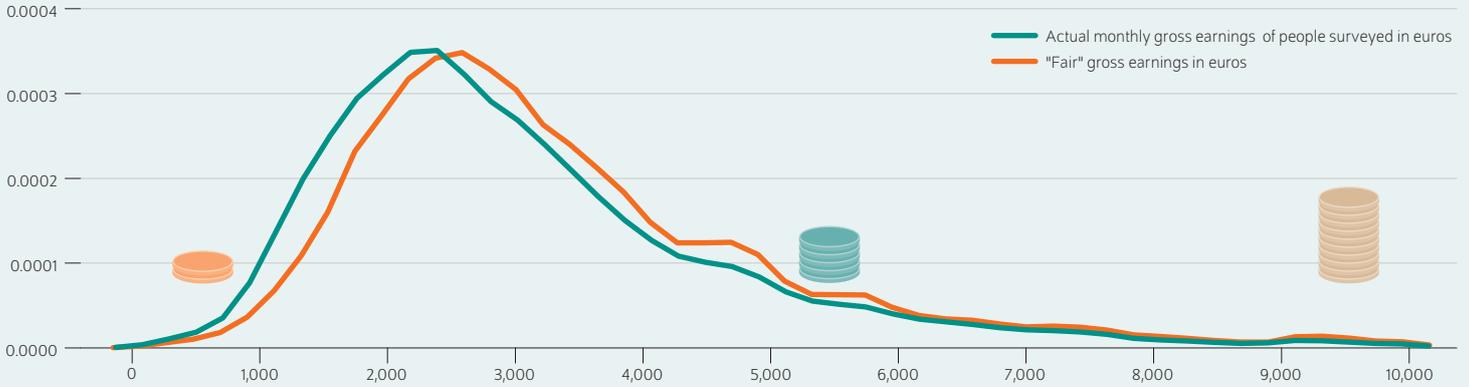
### Perceived unfairness associated with lack of work effort and political participation

Employees in Germany perceive inequalities they find unfair. Possible consequences resulting from this depend

Figure 1

Comparing the actual and "fair" earnings distributions

x-axis: Monthly gross earnings in euros; y-axis: Density



Note: The figure is based on pooled data from 2009, 2011, 2013, and 2015 (n = 28,455). Income values are inflation-adjusted to the consumer price index of 2009. The figure shows the smoothed earnings distribution for full-time employees (Kernel density estimation). For illustrative purposes, monthly gross earnings exceeding 10,000 euros were dropped from the calculation of the density function.

Source: Authors' own calculations, based on SOEP v32 (DOI: 10.5684/soep.v32).

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Earnings in a "fair" world would still be unequally distributed.

Box 2

Fairness evaluation of the earnings distribution

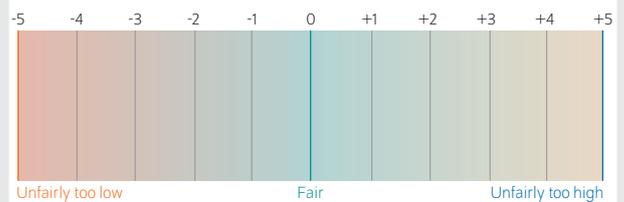
The LINOS study covers the evaluation of the fairness of the earnings distribution. The earnings distribution was assessed in three steps: subsequently, a fairness evaluation of the highest ten percent, the lowest ten percent, and middle earnings was asked. In order to make the assessment of high, middle, and low incomes comparable across respondents, additional contextual information on the three income levels was presented. The corresponding average earnings of the tenth, fifth, and first earnings deciles as well as three occupations representative of each of the three earnings classes were shown in the three questions. The calculation was based on data from the 32nd wave of the Socio-Economic Panel (SOEP).<sup>1</sup> Only full-time and salaried employees were taken into account when calculating the earnings deciles. In each income class, one example for a female-dominated and male-dominated occupation was selected as well as a mixed-gender occupation. Doctors, engineers, and university professors were given as examples of occupations with high incomes averaging 6,100 euros gross monthly earnings. Occupations representative of middle incomes averaging 2,700 euros gross monthly earnings were nurses, accountants, and electricians. With average monthly gross earnings of 1,200 euros, cleaners, hairdressers, and parcel carriers were selected as examples for low income occupations.

The assessment uses an eleven-point scale that reflects both the direction and intensity of the perceived unfairness. This approach

is based on the Justice Evaluation Function by Guillermina Jasso<sup>2</sup> which simultaneously captures the direction and intensity of the perceived unfairness. The negative values (-5 to -1) on the scale are representative of unfair underpayment while the positive values (+1 to +5) signify unfair overpayment. The middle of the scale (0) represents fair earnings.

Think about what others in Germany earn before taxes and other deductions: how fair are the gross earnings of those working full-time in occupations with high incomes, such as medical doctors, engineers, or university professors, and earning 6,100 euros on average per month? Would you say that these earnings are fair, unfairly too low, or unfairly too high?

Please use the following scale ranging from -5 to +5.



<sup>1</sup> Jan Goebel et al., "The German Socio-Economic Panel (SOEP)," *Journal of Economics and Statistics* (2018).

<sup>2</sup> Guillermina Jasso, "On the Justice of Earnings: A New Specification of the Justice Evaluation Function," *American Journal of Sociology* 83, no. 6 (1978): 1398-1419.

on whether an employee perceives their own earnings or the earnings of others as unfair. It seems reasonable to assume that perceived unfairness of one's own earnings tends to elicit individual reactions. Research shows that perceiving one's own earnings as unfair can lead to people reducing their performance in the workplace and becoming less committed.<sup>4</sup> This is quite understandable: if one has the impression that they are being paid too little for their work, then they reduce their efforts on the job accordingly. People respond in such a way as to restore what they consider to be a fair relationship between expenditure and earnings. At the workplace, this can lead to people reducing commitment or leaving the company.<sup>5</sup>

But what might be the consequences of perceiving others as unfairly rewarded? To answer this question, the importance of perceived unfairness in relation to one's own earnings on the one hand and to the earnings distribution within society on the other was examined using data from the LINOS survey. It is not possible to test causal relationships as the analyses use cross-sectional survey data. Nevertheless, these data can show associations which can point to causal effects of perceived unfairness. The analysis focuses on two possible reactions: decrease in the quality of workplace performance and the willingness to participate in federal elections. The latter is especially important when debating the possible political consequences of growing inequality, as participating in elections is a way to get involved in reducing inequality in society. On the other hand, perceived unfairness can also lead to people withdrawing from the political process.

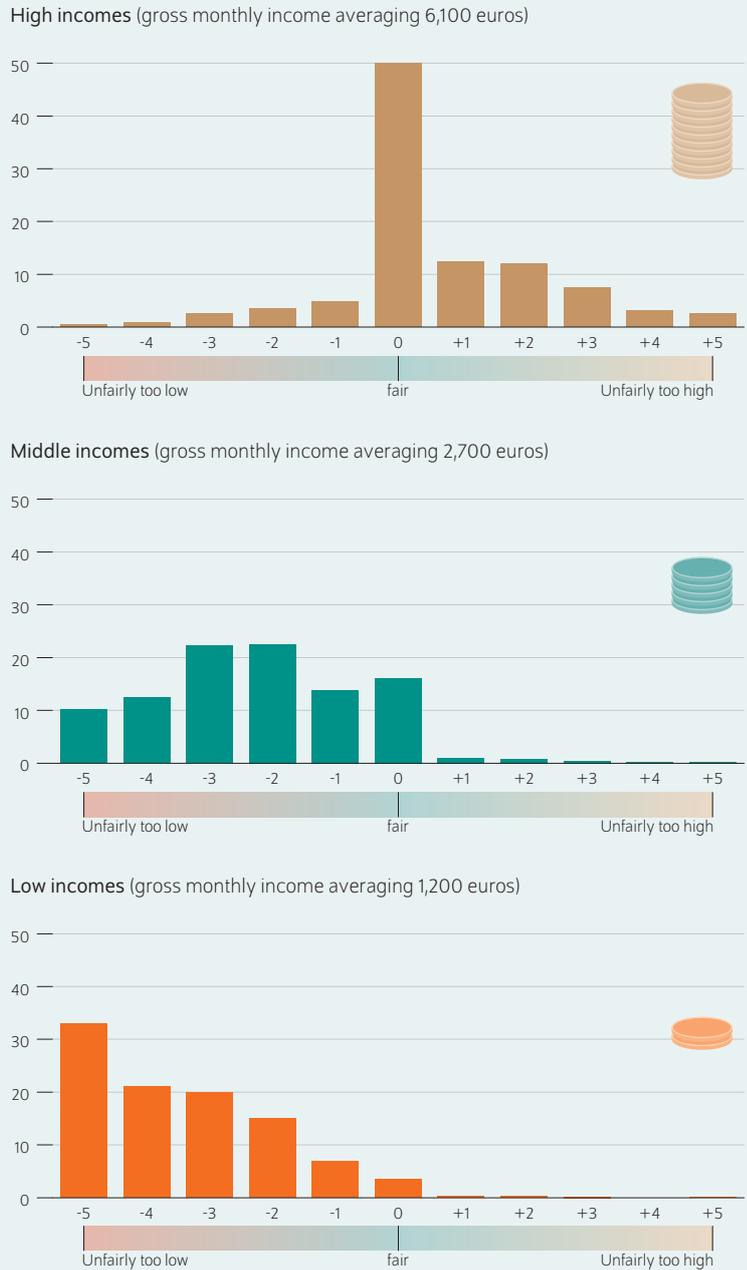
The effect of perceived fairness of high, middle, and low earnings as well as of one's own earnings can be examined independently of one another using regression analyses (Table). The analyses investigate whether the evaluation of the earnings distribution—in addition to the evaluation of one's own earnings—has an independent effect on the reported reluctance to perform in the workplace and the intention to participate in the next German federal election (*Bundestag* election).

In line with previous research, the results from Model 1 show that respondents who consider themselves unfairly underpaid also report greater reluctance to perform in the workplace. But the evaluation of one's own income as unfair is not the only relevant factor. The perception that others earn unfair incomes is also important. While the perceived unfairness of low and middle earnings does not affect workplace performance, the perception that high earnings are too high is associated with reduced performance.

Model 2 shows that perceiving one's own earnings as unfairly low also lessens the probability that one will vote in the next

Figure 2

**Fairness evaluation of monthly gross incomes**  
In percent of employees



Source: Authors' own calculations, based on LINOS-2.

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Half of the respondents find high incomes fair, the overwhelming majority perceive low incomes as being too low.

<sup>4</sup> See for example Robert D. Pritchard, Marvin D. Dunnette, and Dale O. Jorgenson, "Effects of perceptions of equity and inequity on worker performance and satisfaction," *Journal of Applied Psychology* 56, no. 1 (1972): 75-94.

<sup>5</sup> See for example Stefan Liebig and Jürgen Schupp, "Immer mehr Erwerbstätige empfinden ihr Einkommen als ungerecht," *DIW Wochenbericht*, no. 31 (2008): 434-440 (in German; available online; accessed on August 27, 2018).

Table

**Estimation of the effects of perceived unfairness on performance at the workplace and political participation**

	Model 1: Reduced performance <sup>1</sup>	Model 2: Would not vote in federal election <sup>2</sup>
Perception of fairness <sup>3</sup>		
Own earnings	-0.187*** (0.023)	-0.130* (0.056)
High earnings	0.056* (0.025)	0.056 (0.060)
Middle earnings	0.006 (0.026)	0.090 (0.060)
Low earnings	0.013 (0.026)	-0.173* (0.086)
Controls		
Education (CASMIN)	-0.122*** (0.020)	-0.236*** (0.050)
Age in years	-0.012*** (0.003)	-0.036*** (0.009)
Sex (1 = female)	-0.161* (0.073)	0.044 (0.196)
(Pseudo-)R <sup>2</sup>	6.70%	6.30%
N	2,417	2,417

Data: LINOS-2. Model 1: OLS regression. Model 2: Logistic regression (log odds). Standard errors in parantheses. \* p < 0.05, \*\*\* p < 0.001

- 1 Measured by agreement with the statement: "I have decided to limit my job performance to the absolute minimum requirements." The response scale ranges from "Does not apply at all" (1) to "Applies completely" (7).
- 2 The LINOS study does not ask about past voting behavior but about the intention to vote in the next federal election. The binary variable indicates respondents who reported they did not intend to vote in the next federal election.
- 3 Fairness evaluation of own gross earnings as well as high, middle, and low incomes. The fairness evaluation uses an eleven-point scale that runs from (-5) "unfairly too low" via (0) "fair" to (+5) "unfairly too high" (See Box 2).

Source: LINOS-2.

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federal election. The perceived unfairness of the earnings distribution also has an effect. People who evaluate low earnings as too low have a higher tendency to not participate in the political process. The effects show that perceived unfairness may contribute to a lack of political participation.

A similar pattern appears for both reactions examined: both the perceived unfairness of one's own earnings as well as unfairness in the earnings distribution within society are associated with disengagement at the workplace and withdrawal from the political process.

**Conclusion: Policies need to address perceived unfairness of earnings; low earnings should be the priority policy field**

Political debates on inequality must urgently take into account which inequalities are judged to be unfair. The present analysis shows that inequalities are not necessarily perceived as unfair. If employees would receive the earnings they considered fair, then those with middle and low earnings would be paid more, but the distribution of gross earnings and thus earnings inequality in Germany would remain at the same level.

Both the assessment of one's own reward situation as well as the reward of others are important. When rating the incomes in the upper, middle, and lower earnings brackets in Germany, the respondents found that people receiving lower and middle earnings were in some cases severely underpaid.

This perception is possibly construed as a failure of the political system and, accordingly, tends to result in people not participating in elections.

The broad consensus on the unfairness of low earnings suggests that policy interventions in the earnings distribution should start by addressing lower earnings. Introducing the minimum wage in Germany in 2015 and subsequently raising it were first steps in this direction.

If people think that excessive wages are being paid at the upper end of the distribution, this can be perceived as violating the performance principle. Frequent debates around the disproportionate earnings of top managers who are being paid very well even if they have caused significant harm to the company may suggest to many that the fundamental expectation that rewards should be in line with performance does not hold for certain groups in society. And if one can't rely on this key pillar of working life, uncertainty about the effects of one's own efforts settles in. As a result, there is a lack of incentives for investing in one's own performance and commitment to the workplace. What is needed here is not so much a change in policy but a change in the companies themselves, which are likely to suffer as a result of employees' reduced efforts. It is on them to ensure that the performance principle is actually applied equally to all groups of employees.

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