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**Article**

## Perceived Income Justice Depends on the Economy

Weekly Report

**Provided in Cooperation with:**

German Institute for Economic Research (DIW Berlin)

*Suggested Citation:* Liebig, Stefan; Valet, Peter; Schupp, Jürgen (2010) : Perceived Income Justice Depends on the Economy, Weekly Report, ISSN 1860-3343, Deutsches Institut für Wirtschaftsforschung (DIW), Berlin, Vol. 6, Iss. 24, pp. 187-192

This Version is available at:

<https://hdl.handle.net/10419/151099>

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# Weekly Report

## Perceived income justice depends on the economy

*At least half of all employees in Germany described their wages in all three survey years under consideration here—2005, 2007, and 2009—as just. Still, major changes occurred over this period in how people perceived their earnings. Data from the Socio-Economic Panel (SOEP) Study show that after an increase in income dissatisfaction in 2007, the percentage of the population who consider their income unjust has again decreased substantially in 2009—at 30 percent—to 2005 levels. This suggests that in times of economic crisis, people are willing to lower their earnings expectations, while in times of economic growth—like the year 2007—they expect to share in the benefits of increased prosperity.*

*The analysis shows that it was mainly people in the low to medium income range and in particular skilled workers who perceived their net income as unjust, a perception that remained stable over time. This is partly due to the income taxes paid by these groups. In the upper income segment, in contrast, no negative effect of the income tax burden on perceived income justice is found.*

*Finally, the results confirm previous studies indicating that even in a world in which everyone received the wages they subjectively perceived to be fair, income differences between men and women would still persist. Women's income expectations are significantly lower than men's—even within the individual occupational groups.*

The longitudinal Socio-Economic Panel (SOEP) Study, which is conducted annually by the survey research institute TNS Infratest in Munich on behalf of DIW Berlin, provides data starting in 2005 on people's subjective ideas about the fairness—or justice—of their own earnings.<sup>1</sup> The present study builds upon previous research on this topic by DIW Berlin.

### Decline in perceived income injustice

In 2009, 31 percent of all employed people in Germany considered their net earnings to be “unjust” (Table 1). After a substantial increase from 2005 to 2007, this percent-

<sup>1</sup> Liebig, S., Schupp, J.: “Immer mehr Erwerbstätige empfinden ihr Einkommen als ungerecht.” Wochenbericht des DIW Berlin No. 31/2008, 434-440.

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**JEL Classification:**  
D31, D63

**Keywords:**  
Justice, SOEP, Inequality

Table 1

**Employed people<sup>1</sup> who consider their earnings to be unjust**

Percentage of the population

	2005			2007			2009		
	Total	West Germany	East Germany	Total	West Germany	East Germany	Total	West Germany	East Germany
Total	29	25	46	38	35	53	31	28	45
In dependent employment	29	25	46	38	35	53	31	28	46
Self-employed	28	24	45	34	30	50	28	25	35
Number of Observations	7 480	5 771	1 709	7 603	5 821	1 782	7 523	5 746	1 777

<sup>1</sup> Employed people who were surveyed in 2005, 2007, and 2009 (N = 14645) and were employed at least at one point in time (N = 9705), excluding those in training. Individuals who perceived their earnings as unjust who did not provide a specific answer to the question of a just income were not taken into account.

Source: SOEP 2010.

DIW Berlin 2010

Approximately 30 percent of all employed people evaluated their earnings as unjust. In 2007, a phase of economic upswing, the percentage was substantially higher, indicating that many people felt they were not sharing adequately in the benefits of renewed prosperity.

age has now almost returned to its original level. Distinguishing between the states (Bundesländer) of the former East and the former West Germany, we see that 28 percent of employed people in the West and 45 percent of employed people in the East con-

sider their earnings to be “unjust.” The differences between East and West Germany thus remain large, but have narrowed in 2009 compared to 2005. Thus, it appears that the justice attitudes of East and West Germans are converging gradually over time.

**Box****On the methodology of empirical justice research**

Since 2005, the Socio-Economic Panel (SOEP) Study has been asking respondents how fair they consider their personal net earnings to be once every two years.<sup>1</sup> The SOEP question asks, “Is the income that you earn at your current job just, from your point of view?”. Survey respondents can answer with yes or no. Then they are asked, “How high would your net income have to be in order to be just?” and are given a blank where they can fill in the exact euro amount.

A justice formula developed by American sociologist Guillermina Jasso provides the basis for a more nuanced differentiation of perceived injustice, beyond the simple distinction between individuals with perceived just and perceived unjust earnings.<sup>2</sup> The logarithmic relationship between actual income and the income perceived as just results from an index J, which is also used to determine the degree of perceived injustice.<sup>3</sup> The arithmetic mean

(J11) of these individual J values, or the arithmetic mean of the absolute J values (J12), can also be used to compute two further indices to express the aggregate perception of injustice.<sup>4</sup>

In this study, we find lower marginal deviations for the 29 and 38 percent of employed individuals who considered their earnings to be unjust in 2005 and 2007, respectively, than those reported in previous publications. This is the result of improved weighting factors applied to the SOEP data.

In creating the occupational status groups, the ISEI classification was used (International Socio-Economic Index of Occupational Status).<sup>5</sup> The lowest status group (20) includes unskilled labor and cleaning staff, for example, and the highest status group (90) includes doctors and professors.

<sup>1</sup> See Schupp, J.: “25 Jahre Sozio-oekonomisches Panel – Ein Infrastrukturprojekt der empirischen Sozial- und Wirtschaftsforschung in Deutschland.” Zeitschrift für Soziologie 38-2009, 350-357. The 2009 wave of the survey includes a question about the fairness of gross income, in addition to the question about net income.

<sup>2</sup>  $J = \ln(\text{actual earnings} / \text{earnings perceived as just})$ . Jasso, G.: On the Justice of Earnings: A New Specification of the Justice Evaluation Function. American Journal of Sociology, 83, 1978, 1398-1419.

<sup>3</sup> J takes on the value 0 if there is perfect justice. A positive J value results when a respondent states that his or her current earnings are

higher than would be just; a negative J value results when the actual earnings are lower than would be just. The larger the difference between actual earnings and earnings perceived as just, the larger the deviation of the J value will be from 0.

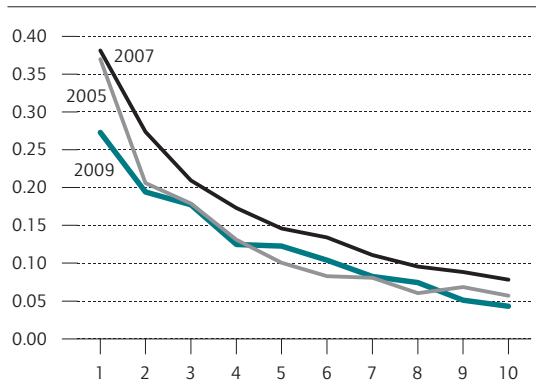
<sup>4</sup> Jasso, G. How Much Injustice Is There in the World? Two New Justice Indexes. American Sociological Review 64 (1), 1999, 133-168.

<sup>5</sup> Ganzeboom, H.B.G., De Graaff, P.M., Treiman, D.J., de Leeuw, J.: A Standard International Socio-Economic Index of Occupation Status. Social Science Research 21, 1992, 1-56.

Figure 1

### Degree of perceived earnings injustice

J12-Index<sup>1</sup>



<sup>1</sup> On the computation of the index, see box.

Source: Calculations of DIW Berlin.

DIW Berlin 2010

The degree of perceived earnings injustice in 2007 was above both 2005 and 2009 levels in all income groups.

The data not only show the percentages of the population that perceive their income as just or unjust, but also provide information on the degree of perceived injustice. This is measured with the “J12 Index” (see Box below). It has been established that perceptions of injustice regarding personal earnings depend heavily on the person’s income level. In order to make the earnings of full-time and part-time employees comparable, we use hourly rather than monthly wages in this study.<sup>2</sup>

Perceptions of injustice regarding personal earnings are strongest among low income earners (Figure 1). In the upper income groups (deciles), perceptions of injustice are significantly lower. The changes over time are similar among all income groups, increasing from 2005 to 2007 and returning to former levels in 2009.

### Tax burden does not heighten perceived injustice in upper income groups

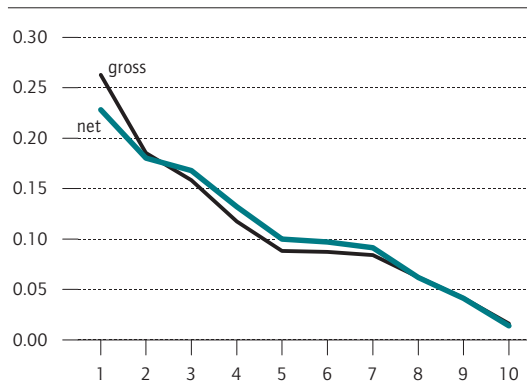
In addition to asking respondents how high their net income would have to be in order to be “just,” the 2009 SOEP survey also asked respondents the same question about their gross income. The response data allow us to compute the degree of perceived income

<sup>2</sup> To compute hourly wages, we used the number of hours actually worked by the employee.

Figure 2

### Degree of perceived earnings injustice in relation to gross and net income in 2009

J12-Index<sup>1</sup>



<sup>1</sup> On the computation of the index, see box.

Source: Calculations of DIW Berlin.

DIW Berlin 2010

Net income is perceived as more unjust than gross income in the middle income groups.

injustice separately for net and gross income, and to use this as a basis for estimating how taxes—for instance, taxes on government transfers—affect perceived injustice. The results show that people in the middle income range perceive their net income (after taxes and transfers) as more unjust than their gross (pre-tax) income (Figure 2). In the upper income groups, however, taxation of earnings does not lead to any increase in perceived injustice.<sup>3</sup>

Only at the bottom of the income hierarchy do people perceive their net income as more just than their gross income. This is probably a reflection of the lower tax burden and the receipt of government transfers by many in this lower income range.

### Half of all employed people consistently rate their income as just

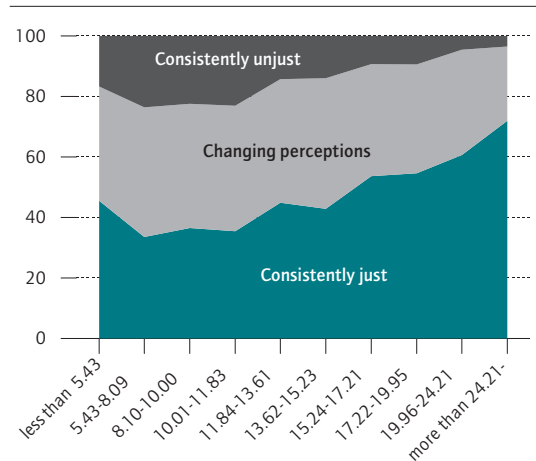
Based on data collected over three survey years (2005, 2007, and 2009), it has also been possible to examine the extent to which perceptions of the justice or injustice of net income remain stable over time. A good half of employed respondents surveyed in all three years rated their income consistently over the period as “just” (51 percent). Only around

<sup>3</sup> See the detailed findings based on more complex analyses of the 2007 data in: Liebig, S., Schupp, J. Leistungs- oder Bedarfsgerechtigkeit – Über einen normativen Zielkonflikt des Wohlfahrtsstaats und seiner Bedeutung für die Bewertung des eigenen Erwerbseinkommens. Soziale Welt 59-2008: 7-30.

Figure 3

### Stability and change in perceptions of income justice in 2005, 2007, and 2009 by individual gross hourly wages

Percentage of the population



Source: Calculations of DIW Berlin.

DIW Berlin 2010

*The higher people's gross hourly wages, the more they perceive them consistently as just.*

13 percent viewed their income in all three survey years as unjust. Among the other 36 percent of employed people, perceptions of income changed over the course of the study. As Figure 3 shows, whether perceptions of personal income changed or remained stable over time was correlated with the individual's gross hourly wages. The higher the income group, the higher the percentage of people in it who consistently rated their income as just. However, at the bottom of the income hierarchy, the percentage of people consistently rating their income as just is also relatively high. Changing perceptions between 2005, 2007, and 2009—and especially stable perceptions of injustice—are found especially in the low to medium income ranges, that is, among those with wages between eight and twelve euros per hour.

The most important factor contributing to the lasting perception of income injustice is that of long and increasing working hours (Table 2).<sup>4</sup> Four additional factors also play central roles:

- Even twenty years after German unification, it is still mainly East Germans who consistently feel underpaid.

<sup>4</sup> The statistical analysis is based on logistical regression models in which the dependent variable takes the value of 1 (consistently unjust income perception) or 0 (not consistently unjust income perception).

- Skilled workers show a particularly strong tendency to feel themselves to be paid unjustly.
- The same is true for the middle income groups, especially those with gross monthly wages between 950 and 1,800 euros.
- Finally, there are sector-specific differences: both the construction sector and social and health sector show relatively large percentages of employees who consistently feel underpaid.

Thus, the lasting perception of income injustice results, on the one hand, from factors directly related to the work context (working hours, sector-specific situations), and on the other, from membership in specific social groups (East Germans, skilled workers, middle income earners).

### Women do not perceive lower pay as unjust

In Germany, women earn 16 to 20 percent less than similarly qualified men.<sup>5</sup> This wage difference, referred to widely as the “gender wage gap,” is not, however, perceived by the women affected to be unjust. The results obtained across all three survey waves show<sup>6</sup> that men and women have very different ideas about what constitutes a “just income”: women have lower expectations than men regarding both net and gross earnings. In 2009, the income subjectively perceived by women to be just was, on average, significantly below the income perceived by men to be just.

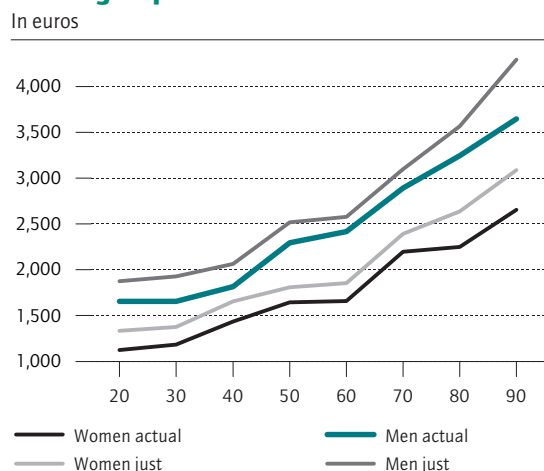
Figure 4 presents actual net incomes of men and women employed full-time by occupational status groups. The figures show that women's incomes are considerably lower than men's incomes in the different occupational status groups. Taking men's and women's ideas about “just” income into consideration here as well reveals two things: first, both men and women see the differentiation of income by occupational status groups as just, as indicated by the line for “just income,” which runs almost parallel to the line for “actual income.” This suggests that survey respondents would like to see an increase in their income but not a fundamentally different income structure. Second, when comparing

<sup>5</sup> On this subject, see the two studies by Busch, A., Holst, E.: “Verdienstunterschiede zwischen Frauen und Männern nur teilweise durch Strukturmerkmale zu erklären.” Wochenbericht des DIW Berlin 15/2008 and Busch, A., Holst, E.: “Gender Pay Gap Lower in Large Cities than in Rural Areas”. DIW Weekly Report 6/2008, 36-41.

<sup>6</sup> This finding can also be validated using other measurement methods such as factorial design. See Liebig, S., Sauer, C., Auspurg, K., Hinz, T., Schupp, J.: “A Factorial Survey on the Justice of Earnings within the SOEP-Pretest 2008.” SOEP-Papers on Multidisciplinary Panel Data Research 238, 2009.

Figure 4

**Actual and perceived just monthly net earnings for men and women employed full-time by occupational status groups in 2009**



1 The lowest status group (20) includes unskilled labor and cleaning staff, for example, and the highest status group (90) includes doctors and professors.

Source: Calculations of DIW Berlin. DIW Berlin 2010

*The income level women consider to be just is below men's actual income.*

men's and women's perceptions of a "just income," it becomes clear that women's ideas of a just income are significantly lower than men's actual income levels. Women themselves therefore believe that they rightfully deserve significantly lower incomes than men do.<sup>7</sup>

**Conclusions**

The analysis of subjectively perceived "just" earnings shows that the large majority of employed people in Germany perceived their earnings to be just across all three years of observation—2005, 2007, and 2009. Nevertheless, significant changes occurred over time. One of the most important of these was that perceived income injustice declined in 2009 to 2005 levels after a temporary increase in 2007. The economic situation in 2005 was marked by relatively high unemployment and was therefore comparable to the situation in 2009, when the financial crisis triggered a wave of layoffs, cut-backs, and hiring freezes. At both points in time, we see a comparably low level of perceived earnings injustice. The year 2007, in contrast, was marked

7 Similar results are reported in the study: Jasso, G., Webster, M. Jr.: "Double Standards in Just Earnings for Male and Female Workers." *Social Psychology Quarterly* 60, 1997, 66-78.

Table 2

**Determinants<sup>1</sup> of lasting perceptions of unjust earnings**

	Earnings considered unjust at all three points in time (2005, 2007, and 2009)
Sex (female)	0.9101
Age	1.0211***
Region (East Germany)	1.2683**
Education (Casmin)	1.0968***
Skilled worker	1.3723**
Position in the income distribution (gross income decile in 2009, reference: more than 4,350 euros per month)	
Decile 9 (3,401-4,350 euros)	12.296
Decile 8 (2,901-3,400 euros)	16.071
Decile 7 (2,501-2,900 euros)	2.5692*
Decile 6 (2,201-2,500 euros)	2.7041*
Decile 5 (1,801-2,200 euros)	3.3673*
Decile 4 (1,401-1,800 euros)	4.0039**
Decile 3 (951-1,400 euros)	4.8847**
Decile 2 (401-950 euros)	29.942
Decile 1 (up to 400 euros)	14.071
Average hourly wage over the period of observation	1.0100**
Working hours in 2005 (in hours)	1.0759***
Difference between 2007 and 2005 (reduction in working hours)	.9542***
Difference between 2009 and 2007 (reduction in working hours)	.9658***
Sectors (reference: manufacturing, only p < 0.10)	
Construction	0.6655
Social services and health care	1.7115***
N	4531
Log pseudo-likelihood	-1.612.826
Chi2 (30)	412.93
Pseudo R2	0.136

1 SOEP 2005, 2007, 2009, in each case all samples weighted for 2009, odds ratios. Probability of error: \* < 5 percent, \*\* < 1 percent, \*\*\* < 0.1 percent.

Source: DIW Berlin calculations.

DIW Berlin 2010

*Employed people in the medium income range were most likely to rate their income consistently as unjust.*

by strong economic growth, and the perception of earnings injustice reached a significantly higher level. Thus, in times of crisis, employed people are apparently much more willing to forego a higher income in order to keep their job. In times of economic upswing, on the other hand, they want their own piece of the economic pie. The fact that justice constitutes an important motivation and a criterion in such situations can be explained by its importance as a "warning system against discrimination by others."<sup>8</sup> The reason why people consider justice to be so important is that in whatever area people work together to achieve a common goal, the individual is easily exploited by others. In such

8 Liebig, S. 2010: "Warum ist Gerechtigkeit wichtig? Befunde aus den Sozial- und Verhaltenswissenschaften." In: Roman-Herzog-Institut (ed.): *Warum ist Gerechtigkeit wichtig? Antworten der empirischen Gerechtigkeitsforschung*. Munich: 10-27.



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ISSN 1860-3343  
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cases, some pay the costs and do the work, while others make no effort but enjoy the fruits of others' labor. Rules and criteria for justice make it possible not only to identify these kinds of situations but also to determine when it makes sense for the individual to stop making an effort because others are reaping all the economic benefits without contributing anything.

There is no doubt that perceived income injustice can have profound social impacts. A previous study showed that when taking socio-demographic factors into account, perceived income injustice plays a significant role in reduced voter participation, lower psychological health, and higher rates of workplace absenteeism.<sup>9</sup>

The analysis reported here clearly shows that middle income earners and especially skilled workers tend to perceive their wages and salaries as consistently unjust over time. Income taxes play a role in this perception, as seen in the difference in perceived justice of gross income versus the perceived justice of net income. In the upper income segment, the tax burden shows no negative effect on the perceived justice of income, suggesting that there is room for tax increases in this segment.

Finally the results show that even in a world in which everyone received the wages they subjectively perceived to be fair, income differences between men and women would still exist. Women's lower income expectations make sense when taking into account that their ideas about fair wages are shaped primarily by comparisons with people who have similar characteristics to themselves. Women tend to compare themselves to other women. And since women in typically "female professions" generally have lower wage levels than those in typically "male professions," they are comparing themselves with those who earn less than men. This contributes to the differences in income between men and women that continue to persist despite legal prohibitions of discrimination. Women themselves have lower income expectations and therefore make more modest demands—for example, in wage negotiations. Individual efforts alone are not enough to reduce the "gender wage gap"; even more crucial is greater transparency in wage structures. If income differences between men and women are made visible, it is to be expected that women will demand higher wages and salaries.

*(First published as "Wahrgenommene Einkommensgerechtigkeit konjunkturabhängig", in: Wochenbericht des DIW Berlin Nr. 27/2010.)*

<sup>9</sup> See Liebig, S., Schupp, J.: "Unjust Divergence in Earnings in Germany" DIW Weekly Report 3/2005, 51-56.