

## Fair Wages and Social Welfare

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Based on considerations concerning justice, average and minimum wages as well as unemployment aid are determined. The derived guidelines refer to net product and reflect 'reasonable' proportions between the income categories. Thus, deviations from the suggested principles may be classified as inappropriate.

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### Income Policy Without Truisms

The meaning of justice always was and still is one of the great topics of the humanities. Again and again, distinguished scholars of philosophy, theology, jurisprudence, sociology, political science, and economics have been taken by this subject. In 1971, the publication of John Rawls' *A Theory of Justice* brought into focus the characteristics of those actions which comply with 'fairness'.

Recently, several authors have given new momentum to the issue, *e.g.* Barbanel 2005, Kolm 2005, and Moulin 2003. General criteria for an appropriate division of national income are, however, lacking. The present note intends to provide reference points that mark fair remuneration for those who are employed and those who are not.<sup>2</sup> Methodologically, this task is accomplished by elaborating plausible principles of proportionality. In order to do so, the deliberations are carried out under Rawls' 'veil of ignorance': during the decision-making process the persons involved do not know whether they will be an employer, an employee or out of work in the future. Under such circumstances, mutually agreeable rules to cut the cake can be defined in theory. Thus, any deviation from these norms should be condemned as an infringement of *bonos mores* later on.

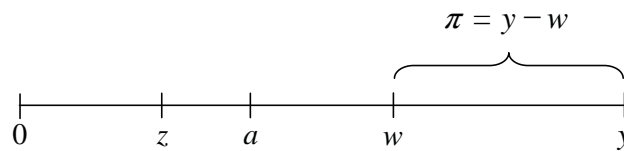
In the view of profit-maximizing entrepreneurs, *every* positive wage rate appears to be too high eventually (cf. Helmedag 2005b). Furthermore, 'free-market' economists habitually regard excess labour supply as a consequence of an extortionate pay: "At a sufficiently low wage, a dismissed worker always immediately finds a new job."<sup>3</sup> From this angle, emoluments have to fall unless full employment prevails. Honest toil for a pittance, as on a slave-galley, to maximize labour input is, however, surely not a promising perspective for the majority of people.

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It seems necessary, thus, to put the issue of ‘fair’ distribution on the agenda (once again).<sup>4</sup> To be more precise, we seek to identify three unknowns in relation to net output per period of time ( $y$ ): (1) the fair average remuneration ( $w$ ), (2) the even-handed minimum earnings ( $a$ ), and (3) the adequate amount of social welfare ( $z$ ). Figure 1 illustrates the task. Obviously, the order  $0 < z < a < w < y$  should hold for economic reasons. Yet, the various sections’ length on the line representing value added has to be clarified.

**Figure 1**  
**Payments in Relation to net Product**



For the sake of fairness, we postulate the validity of the same quotas between quantities. If one cannot agree with this concept of just distribution, reasons for deviations from the rule have to be advanced. Unless such arguments are provided, it seems cogent that in all three cases the smaller income should always be the *same* part of the greater earnings.

### A Catch-All Proportion

According to the adopted prescription, average wages are a yet unknown percentage  $s$  of net product:

$$w = sy \quad (1)$$

Per capita profits,  $\pi$ , are deemed unbiased when they amount to:

$$\pi = y - w = sw \quad (2)$$

Thus, wages absorb the same fraction of net output, as profits accrue proportionally to pay. Furthermore, this is also true for the relation between minimum and average compensation:

$$a = sw \quad (3)$$

Finally, income support should be sufficiently lower than the minimum wage. This latter rule emerges as:

$$z = sa \quad (4)$$

Apparently, the requirement of fairness brings a further unknown to the fore. Besides average remuneration  $w$ , social minimum earnings  $a$ , and welfare  $z$ , the percentage  $s$  constituting justice with regard to income shares or the ‘general fairness

ratio' has to be established. Rearranging Equation 2 gives:

$$s = \frac{y - w}{w} \quad (5)$$

This term can be interpreted as the rate of profits (or exploitation). Inserting Equation 1 in Equation 5 yields the expression:

$$s = \frac{y - sy}{sy} = \frac{1 - s}{s} \quad (6)$$

From Equation 6 follows:

$$s^2 + s - 1 = 0 \quad (7)$$

The positive value of  $s$  reads:

$$s = \frac{1}{2} (\sqrt{5} - 1) \approx 0.618 \quad (8)$$

As trained aesthetes will already have noticed, the proportion laid bare fulfils amazingly enough the 'golden section'. A point which divides a line (100%) into two parts, a shorter (38.2%) and a longer (61.8%) one, creates the so-called 'golden section' or 'golden ratio', such that the relation of the latter, the major, to the whole length is the same as that of the residual section, the minor, to the major. Such relations are often used in the fine arts, since they apparently create beauty in the eye of the beholder.<sup>5</sup>

Now fair wages as a share of net product can be specified:

$$w = \frac{1}{2} (\sqrt{5} - 1) y \approx 0.618y \quad (9)$$

Minimum wages also depend on added value. Equations 3 and 9 boil down to:

$$a = sw = s^2y = \frac{1}{2} (3 - \sqrt{5}) y \approx 0.382y \quad (10)$$

Thus, the lowest admissible compensation is equal to the minor of the golden section. Thereby, a famous relationship between average and minimum pay holds in such a setting:

$$w = \sqrt{ay} \quad (11)$$

This expression is well known in the history of economic thought as Thünen's 'wage formula'.<sup>6</sup> Moreover, the proposed relation between minimum and average wages differs only slightly from the 60% recommended by Article 4, paragraph 1, 'Adequate remuneration', of the European Social Charter.

### Fancy Meets Fact

Actually, the derived percentage is close to the one used for calculating unemployment benefits in Germany. *E.g.*, a jobless person without children receives approximately 60% of a standardized net income for a certain period of time. Subsequently, the support is reduced to social welfare.

Combining Equations 4, 8 and 10, above, leads to:

$$z = sa = s^2w = s^3y = (\sqrt{5} - 2)y \approx 0.236y \quad (12)$$

This transfer is granted independently of individual income but depends on the respective value added in the economy. By construction, the unemployment aid coincides with the difference between average and minimum fair pay:

$$z = w - a \quad (13)$$

Finally, a closer look on some data is provided in order to indicate whether the foregoing considerations correspond to reality or exceed all conceivable possibilities. The fraction of pay over net revenue constitutes real unit labour costs, a parameter looming large in public discussions. The following table shows empirical values for Germany based on working hours and employees, respectively. The derived guideline of 61.8% allows ascertaining that a “fairness ratio” is also presented in Table 1.

Remarkably, reality scarcely deviates from the maxim. For several years, the average fairness ratios based on working hours have been slightly above the norm, whereas in relation to the number of employees, unit labour costs never reached the recommended level. Strikingly, both measures exhibit a declining tendency over time. As a consequence, increasing wages (at least in Germany) are the dictates of fairness. Anyway, it is possible to contribute substantially to the discussion on distribution and financial aid by presenting exact figures that are not more or less arbitrarily chosen. Rather, they stem from a system of quantitative relations contrived to reconcile diverging interests. After all, in 2009, 31% of the employees in Germany considered their net earnings unjust (cf. Liebig *et al.* 2010).

If, however, the principles suggested here are adopted, there is hope that wages and unemployment support can be agreed upon impartially in the future. This would not only promote social balance but also mitigate the material and immaterial costs of the struggle for shares in national income.

**Table 1**  
**Labour Costs as a Share of Value Added**

Year	Working Hours		Employed Persons	
	Real Unit Labour Costs	Fairness Ratio (Fair = 100)	Real Unit Labour Costs	Fairness Ratio (Fair = 100)
1991	63,6	102,87	60,7	98,26
1992	64,3	104,09	61,5	99,48
1993	64,3	104,10	61,3	99,23
1994	63,0	101,88	60,0	97,04
1995	63,1	102,03	59,9	96,96
1996	63,0	101,90	59,6	96,46
1997	62,2	100,70	58,8	95,08
1998	62,0	100,28	58,5	94,66
1999	62,1	100,45	58,5	94,74
2000	62,9	101,83	59,3	95,92
2001	62,6	101,26	59,0	95,51
2002	62,1	100,47	58,7	94,94
2003	61,9	100,10	58,5	94,64
2004	61,0	98,70	57,7	93,39
2005	60,1	97,25	56,8	91,87
2006	58,9	95,28	55,7	90,11
2007	57,9	93,64	54,8	88,60
2008	58,3	94,32	55,2	89,27
2009	60,6	98,07	57,1	92,42

Source : Own calculations based on the national accounts of the German Federal Statistical Bureau

Note: All figures in percent.

## Notes

<sup>1</sup> Acknowledgements: I would like to express my gratitude to two anonymous referees for their valuable comments. The usual disclaimer applies.

<sup>2</sup> This article is founded on two previous German versions: Helmedag 2003 and Helmedag 2005a.

<sup>3</sup> Own translation of the citation in German: "Ein entlassener Arbeiter findet zu einem genügend niedrigen Lohnsatz immer sofort eine neue Stellung". Brunner 1970, p. 26.

<sup>4</sup> Already in the first quarter of the 19th century, David Ricardo considered this question to be central for the discipline. Cf. the preface to Ricardo 1817. Incidentally, wage theory was an important branch of political economy in the past and is currently doomed to a shadow existence.

<sup>5</sup> Cf. for more detail, Atalay 2006.

<sup>6</sup> Johann Heinrich von Thünen developed the norm in the second part of his book "Der isolierte Staat in Beziehung auf Landwirtschaft und Nationalökonomie" [The isolated State in relation to agriculture and political economy] published in 1850. Resulting from an optimization procedure, remuneration according to the geometrical mean of the subsistence wage (corresponding to  $a$ ) and the return on labour ( $y$ ), equally serves the respective intentions of workers and landowners.

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