POLICY PAPER SERIES

IZA

IZA Policy Paper No. 26

Wage Setting in Modern Labor Markets: Neither Fair Nor Efficient

Ekkehart Schlicht

April 2011

Forschungsinstitut
zur Zukunft der Arbeit
Institute for the Study
of Labor

Wage Setting in Modern Labor Markets: Neither Fair Nor Efficient

Ekkehart Schlicht
University of Munich
and IZA

Policy Paper No. 26
April 2011

IZA

P.O. Box 7240
53072 Bonn
Germany

Phone: +49-228-3894-0
Fax: +49-228-3894-180
E-mail: iza@iza.org

IZA Policy Paper No. 26
April 2011

Wage Setting in Modern Labor Markets: Neither Fair Nor Efficient

The increasing wage inequality in many countries is usually seen as brought about by economic forces that drive for economic efficiency within a changing technological and social environment. Ethical evaluations of these developments diverge, yet the view that free labor markets drive to efficiency remains undisputed.
This note sets out to criticize, in a non-technical manner, this efficiency presumption which is based on Adam Smith's theory of wage setting. It is urged that a Smithian wage structure would indeed be both efficient *and* fair. Yet modern labor markets work in ways that are fundamentally different to what was envisaged by Adam Smith. That makes the outcomes observed in modern labor markets, according to Smithian standards, both inefficient and unfair. As a consequence, the pursuit of the Smithian ideal requires organizational remedies, intervention and regulation in labor markets.

JEL Classification: J2, J3, D3, H2, B1

Keywords: inequality, compensating differentials, equalizing differentials, fairness, efficiency, efficiency wages, selection wages, Reder competition, collective organization, taxation, over-qualification

Contact:

Ekkehart Schlicht
Professor Emeritus of Economics
University of Munich
E-mail: schlicht@lmu.de

Increasing wage inequality can be observed in many countries. This is often seen as the result of economic forces that drive for economic efficiency within a changing technological and social environment. Ethical evaluations of such developments diverge, though. Some, like Robert Nozick, see all free-market processes and, by implication, all outcomes brought about in free labor markets, as inherently moral. Others, like Paul Krugman, insist that the market economy is just a system for organizing activity, without any special moral significance.[1] Yet the view that free labor markets drive to an efficient allocation of labor remains undisputed. In the following note this latter paradigm is critically examined in a non-technical manner, and rejected.

The efficiency presumption is based on a theory of wage setting that has been outlined by Adam Smith.[2] A Smithian wage structure would indeed be both efficient and fair. Yet modern labor markets work in ways that are fundamentally different to what was envisaged by Adam Smith. That makes the outcomes observed in modern labor markets, according to Smithian standards, both inefficient and unfair. As a consequence, the pursuit of the Smithian ideal requires organizational remedies, intervention and regulation in labor markets. Modern labor markets generate much greater inequality between wages than would be demanded by efficiency considerations, which is neither economically justified nor morally acceptable. It is imperative that such aberrations are corrected, at least in part, through appropriate measures in regulatory and tax policy. In this way, both the productive capacity of the economy and fairness and social harmony can be advanced at the same time.

Compensating wage differentials

To begin with, let us examine Adam Smith's theory of wage setting in more detail. Smith interpreted disparities in wages in essence as "compensating wage differentials." This term refers to a state in which jobs that are more unpleasant than others are also better paid. A wage differential compensates these disadvantages. Such compensation is necessary in order to obtain the

[1] Nozick (1977), Krugman (2010)

[2] Smith (1904, Book I, Chapter 10)

necessary quantity of labor (workers) in all cleared markets. Otherwise, no one would be willing to carry out disagreeable jobs. Likewise, jobs for which a great deal of prior knowledge is necessary must offer earnings which make it worthwhile to acquire this prior knowledge. Wages are thus generated in a free labor market according to Smith in such a way that there are for every employment always enough willing employees who are largely indifferent between this and another job.

If wages are determined according to the principle of compensating differentials, the level of wages can be very different between different jobs. But if one takes all advantages and disadvantages of the individual jobs into account, the discrepancies in remuneration will, according to Adam Smith, broadly compensate these various boons and drawbacks.[3] The differing wage levels serve to balance out the benefits and hardships of different jobs and in this sense are also fair.

The ensuing differences in wages due to compensating differentials are not only individually equitable but, furthermore, they are economically justified because they correctly reflect all aspects behind individual labor output. They ensure, for instance, that a job involving considerable noise exposure must be paid a premium which is high enough to offset the harm, as compared to a similar yet quieter job. Correspondingly, this job is more expensive for the firms. The greater discomfort will consequentially be expressed in the product prices. The same applies for jobs that require a high degree of qualification. Products that require higher-paid work are more expensive than products that require lower paid work. This is desirable from an economic perspective, as such prices reflect social scarcities correctly. The wage structure that results from compensating wage differential according to Smith is thus efficient and fair. We share this view to this day. The question is: does modern wage setting follow the principle of compensating wage differentials?

[3] Smith (1904, i.10.42)

Productivity and low wages

First, let us make one observation that is especially important for the current discussion: the wages described by Smith are in the long term not based on the "productivity" of the workers. Rather, the "productivity" of the workers is a market outcome and is determined by the wages which, in their turn, are formed based on the principle of compensating differentials.

The consideration is that firms will continue to hire additional labor as long as their productive contribution surpasses the wage. If this is the case for a firm, it will expand its employment and production. The price will fall and the value of the products of this work will become less. The productivity of the corresponding workers, measured by the value added, will decline. In this manner the workers become less productive. Conversely, the curtailing of unprofitable production leads to higher prices of the corresponding products, by which the corresponding work becomes more productive – without the effort of the workers having changed in the slightest. The "productivity" of a worker is thus not a characteristic of the person but a market outcome stemming from the wage of the worker.

This adjustment of the prices to the wages is a result of competition and is independent of the way by which wages are set – whether they are formed by the principle of compensating differentials or not. Over the last ten years, an extensive low wage sector has been created in Germany and some other countries. This led to lowered prices of the associated products and therefore to lower "productivity" of the people employed there. The economic consequence of such measures is prices that are generated in an economically undesired way, because similar labor is paid differently, and product prices cannot reflect social scarcities correctly. The wage differential between high earners and low earners is now explicitly not compensating and the Smithian wage setting principle is violated. Such wages are neither efficient nor fair.

Modern wage setting

The very existence of a low wage sector – in which workers receive a lower remuneration than similar workers in regular employment – serves to show that wage setting in this type of labor market takes place in a fundamentally different manner than Adam Smith had imagined it. In fact it is characteristic for modern labor markets that principles aside from compensating differentials are decisive for wage setting. This will be briefly established in the following.

The Smithian explanation that wage structures are formed in a free market based on the principle of compensating differentials rests on two arguments. First, firms must offer wages which at least compensate the additional burden, or effort, or training requirements of particular jobs. Second, there is no motive for firms to offer wages above what is necessary in order to attract labor. Compensating differentials are sufficient to do this.

The first argument still applies today. The wage differentials must correspond at least to the compensating differentials if one wishes (in the context of universally cleared markets) to find applicants. The problem is in the second argument, because there can be reasons for firms to offer wage differentials which exceed the compensating differentials. Exactly this is typical of modern labor markets and leads to high disparities in wages.

One common example can illustrate the fact that modern labor markets work differently than the simple pattern of supply and demand would suggest. This is the tendency for several qualified applicants to apply for one open position, of which the best candidate is hired. For open positions there is thus typically an excess supply of labor. Firms accordingly pay more than they would need to in order to attract candidates and fill the position, and do not reduce their wage offer to the point that only one candidate is left and in this sense market clearing is reached. It is not important in this context that firms in this situation complain of a scarcity of "qualified" applicants. This is the case in every state of the labor market, because firms will always set the hiring standards as high as possible.

Why is it that firms offer wages that exceed the compensating differentials if they could acquire labor with less money? The theoretical backing is that firms react to changes in the state of the labor market both with wage and labor grading adjustments *and* with adjustments in the qualification demands. (I have used the term "Reder competition" for this.[4]) For every job, employees with the same formal qualification will always differ in their performance. The firms compete in their wage setting for the particularly capable employees, so that the firm that pays better wages will on average acquire more efficient workers. It is with this consideration that firms set their wages. If one firm pays too little, it will not be able to maintain its best employees and must be satisfied with more average applicants. The competitors for the especially able employees and applicants are now the other firms. To some extent, the firms attempt to outbid each others' wage offers in their rivalry for the top workers. Such competition leads to a much higher degree of wage divergence than would be expected for compensating wage differentials.

This type of firm behavior and the accompanying lack of market clearing are well known.[5] It is often seen as a market imperfection, which would not arise in a "truly free" market. In this context it is common to talk of institutionally created "wage rigidity", which constrains the wage setting possibilities of firms. Yet this manner of speaking is highly misleading, because firms choose this remuneration policy themselves. It therefore has nothing to do with constraints to competition. Furthermore, wage setting is altogether not at all rigid, but rather flexible in some dimensions. Cyclical wage movements are, for example, more pronounced than price movements over the business cycle. Thus, wages do change with economic circumstances, but wage setting does not, as Smith imagined it, serve the purpose of market clearing. "Flexibility" does not mean "flexibility in the right direction". Wages react flexibly but – measured against the hypothetical ideal of market clearing – they react "wrongly". This should not to be equated with "rigidity".

Every firm sets its wage level such that the costs and benefits of a change in wages exactly balance out. This method of wage setting is carried out relative to the wage setting of the other firms, and largely independently of the principles of market clearing. This process leads, as measured against the Smithian ideal,

[4] Schlicht (2007). With Reder competition, wages exceed reservation wages. This occurs in free labor markets, while Adam Smith would presumably have argued that such an aberration from the Smithian ideal must be attributed to restrictions on competition.

[5] Bewley (1999)

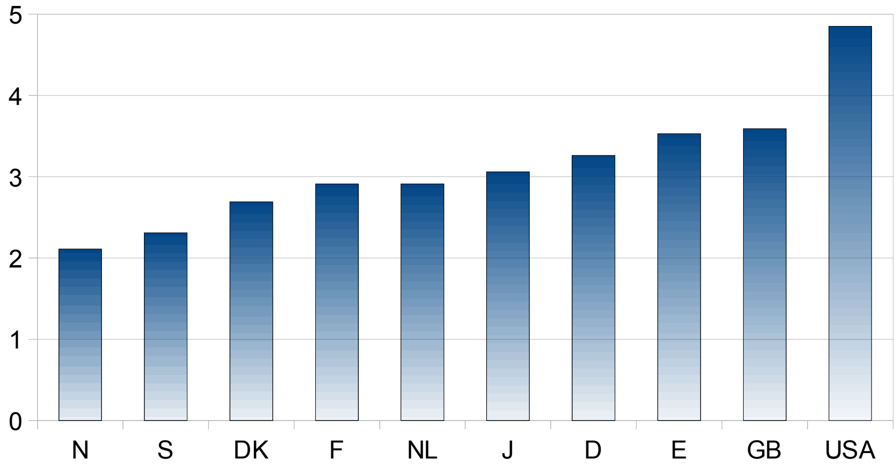

Figure 1: D9/D1: The ratio of high to low wages (90th percentile to 10th percentile) in various countries in 2007 (gross wages of full-time employees, countries denoted by license plate abbreviations, data from the OECD.)

to more pronounced wage inequality. Insofar as compensating wage differentials characterize the desirable – because efficient and fair – wage structure, divergent wage structures are unfair and inefficient.

The empirics

Independently of the question of why firms offer wages that exceed compensating differentials, we can inspect the empirical facts to find out whether firms in fact do this. If wage setting were to take place as Adam Smith imagined it, then the wage structures and wage inequality in countries which are organized on similarly industrial lines would have to be comparable, as the advantages and disadvantages of analogous jobs would large coincide.

Figure 1 illustrates wage inequality in various OECD countries on the basis of the D9/D1 ratio. This ratio reflects the relationship between high and low wages in one country: one observes the frequency distribution of the wages and takes the wage level under which 90% of all other wages lie. This is the 9th decile (D9), or the 90th percentile. Only 10% of wages are higher. This value is compared with the wage level under which only 10% of wages lie. This is the 1st decile (D1), or the 10th percentile. The measure D9/D1 therefore sheds light on wage inequality. From the figure, one sees that the wages in the US in the 9th decile are nearly five-fold higher than wages in the 1st decile. In Germany, Japan, the Netherlands and France this ratio is about 3:1, while in Norway and Sweden it is only slightly above 2:1. The wage inequality in comparable economies is thus vastly different.

The principle of compensating differentials refers to net wages, i.e. wages after taxes. Were wages determined by this principle, then the inequality in net wages would have to be similar across countries. The gross wages would have to display more inequality in the Scandinavian countries, as a result of the higher tax progression, than in countries with less progressive tax systems, such as the US. Yet the opposite is true. This also speaks against wages being formed by compensating differentials. (However, this type of relationship between higher taxation and less dispersion is to be expected when companies with high wage offers compete for as large a selection of capable workers as possible). Overall, the data in Figure 1 are thus a strong indication that wage differentials in many countries are not compensating differentials. Further, the data indicate that countries with competitive labor markets (like the US) exhibit more inequality than countries with more regulated labor markets (like the Scandinavian countries). This contradicts Adam Smith's view about the levelling effect of free competition on wages.

A further indicator for a divergence of reality from the Smithian ideal is the steadily rising wage inequality, for example in Germany. Figure 2 illustrates this development for the years 1985 to 2007. For workers in the upper salary classes, the real wage has risen by 30% in this period, while for members of the lower salary classes it has in fact declined by 1%!

In order to derive such a dramatic divergence in wages from the development of compensating wage differentials, one would have to argue that over time the disadvantages in highly paid jobs had risen dramatically or that the advantages of poorly paid jobs had improved yet further. Yet a change of this

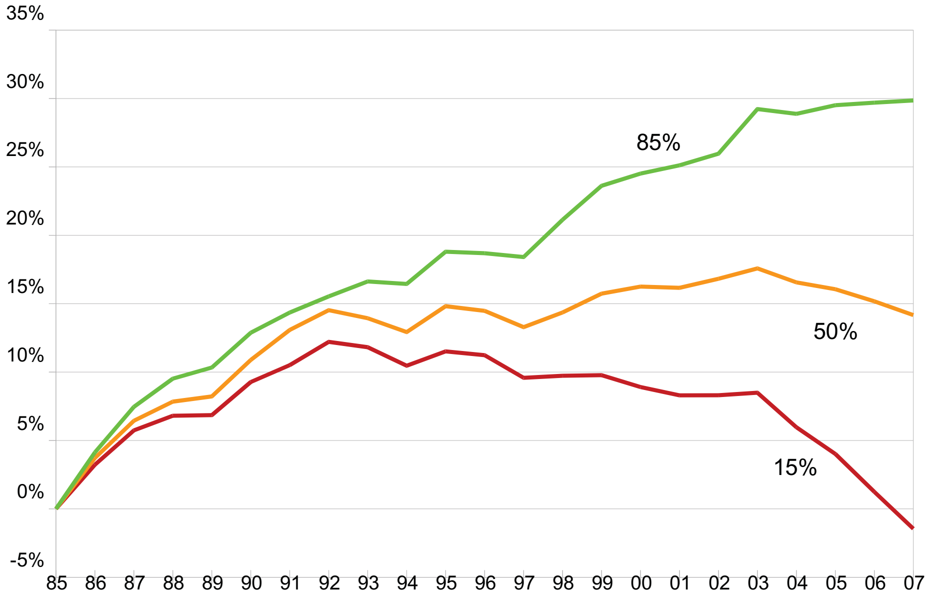

Figure 2: Development of real wage income of male regular employees subject to social insurance in West Germany from 1985 to 2007, relative to 1985: lower wage area (15th percentile), middle wage area (50th percentile) and upper wage area (85th percentile). Source: IAB Nuremberg.

magnitude seems highly implausible. Moreover, it has been shown that the level of overqualification has increased in all segments of the labor market: more and more workers are not employed in tasks appropriate to their level of training or – considered from another angle – there is more qualification than would be required to clear the market.[6] This, too, contradicts the assumption that wage differences in modern labor markets arise due to compensating differentials, as would be demanded out of both efficiency and fairness considerations.

[6] Vaisey (2006)

Economic policy implications

The thesis of this article necessarily begs the question of which economic policy measures can be taken in order to counteract the observed aberrations in wage setting.

We have noted already that realized wage differences exceed compensating wage differentials to an especially high degree, and are especially inefficient and unfair in countries with few labor market restrictions (like the United States). Following Adam Smith's advice to remove all restrictions seems to increase inequality, rather than decrease it, and render the labor market *less* efficient. Yet there are other options for enhancing both efficiency and fairness.

One possibility lies in the strengthening of collective wage setting mechanisms. Collective agreements have a leveling effect, presumably because they accentuate fairness aspects across companies to a greater extent than agreements at the company level.[7] Because fairness and efficiency aspects point in the same direction here, this also allows society to achieve improvements.

A further possibility to curtail wage inequality toward a more efficient and fair level is to increase the progressivity of taxation. This makes it less profitable for firms to challenge each other with higher wage offers for the especially productive employees, because each wage increase is partially taxed away and thus less effective. This curbs wage inequality. We have seen that the Scandinavian countries, with their highly progressive tax systems, belong to the economies with the lowest wage inequality.

The full range of possibilities and intricacies to reduce wage inequality cannot be presented here. The positive consequences for employment resulting from a reduction in wage inequality would also be worthy of discussion in this context. First, however, it is of urgently required to consider wage setting in modern labor markets afresh. Modern wage setting does not have the efficiency characteristics which Smith in his time ascribed to free labor markets and which are repeatedly assumed as fact in the public discussion.

Independently of the economic considerations, it should not be forgotten that the problem of fairness in wage setting strikes at the foundations of our

[7] Gerlach and Stephan (2006), Freeman (1998, 7)

society. More equality in a society is accompanied by better physical and mental health, better education and better living standards, particularly for children. Meanwhile, increasing inequality is correlated with an increase in drug abuse, violence and criminality.[8] All of these additional considerations are extraordinarily important. The economically appropriate measures also serve these higher goals. It is thus essential for the well being of our society to do what is economically commanded and socially required.

Acknowledgments

This paper is an English adaptation and revision of Schlicht (2010). I wish to thank Emmi Schlicht, Gerlinde Schäfer-Schlicht, Johannes Ludsteck, Roberto Cruccolini, Elmar Nubbemeyer, and Christoph Stoeckle for helpful comments and suggestions on earlier drafts and Jon Frost for preparing a preliminary English version. The usual caveat applies.

References

Bewley, T. F. (1999). *Why Wages Don't Fall in a Recession*. Cambridge, MA: Harvard University Press.

Equality Trust (2011). The Evidence. URL http://www.equalitytrust.org.uk/why/evidence. Downloaded 2/17/2011.

Freeman, R. B. (1998). War of the Models: Which Labour Market Institutions for the 21st Century? *Labour Economics*, 5(1): 1–24. URL http://econpapers.repec.org/RePEc:eee:labeco:v:5:y:1998:i:1:p:1-24.

Gerlach, K., and Stephan, G. (2006). Bargaining Regimes and Wage Dispersion. *Jahrbücher für Nationalökonomie und Statistik*, 226(6): 629–645. URL http://econpapers.repec.org/RePEc:jns:jbstat:v:226:y:2006:i:6:p:629-645.

[8] Equality Trust (2011)

Krugman, P. (2010). Economics Is not a Morality Play. URL http://krugman.blogs.nytimes.com/2010/09/28/economics-is-not-a-morality-play/. Downloaded 2/17/2011.

Nozick, R. (1977). *Anarchy, State, And Utopia*. New York: Basic Books. ISBN 9780465097203.

Schlicht, E. (2007). Wage Dispersion, Over-Qualification, and Reder Competition. *Economics: The Open-Access, Open-Assessment E-Journal*, 1(2007-13). URL http://www.economics-ejournal.org/economics/journalarticles/2007-13.

Schlicht, E. (2010). Lohnbildung in modernen Arbeitsmärkten: Weder gerecht noch effizient. *Wirtschaftsdienst*, 421-227. URL http://econpapers.repec.org/RePEc:lmu:muenec:11463.

Smith, A. (1904). *An Inquiry into the Nature and Causes of the Wealth of Nations*. London: Methuen, 5 edition. URL www.econlib.org/library/smith/smWNtoc.html.

Vaisey, S. (2006). Education and its Discontents: Overqualification in America, 1972-2002. *Social Forces*, 85(2): 835–63. URL http://www.stephenvaisey.com/documents/EAID.pdf.