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Efficiency Wages: Variants and Implications*

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Advertisment

Wages a ect productivity and non-wage costs with important labor market implications. E ciency wage theories center on these issues. This article provides a brief non-technical overview.

Abstract

Higher wages increase labor costs but improve the productivity of the labor force through several channels. If firms take this into account and set their wages accordingly, the resulting wages may fail to adjust demand and supply but may engender phenomena like over-education, discrimination, regional wage di erentials and a tendency for larger firms paying higher wages. All these phenomena are well established empirically. E ciency wage theory provides an integrated explanation for them, rather than a sundry list of diverse reasons. At the same time, it provides an e ciency argument for progressive income taxation.

Keywords: *Efficiency wages, selection wages, turnover wages, discipline wages, shirking, size-wage effect, firm-size effect, congestion-wage effect, Reder-competition, discrimination, hiring standards, minimum wage, income taxation*

Journal of Economic Literature Classification: J , J , J , J , M , D , H , H

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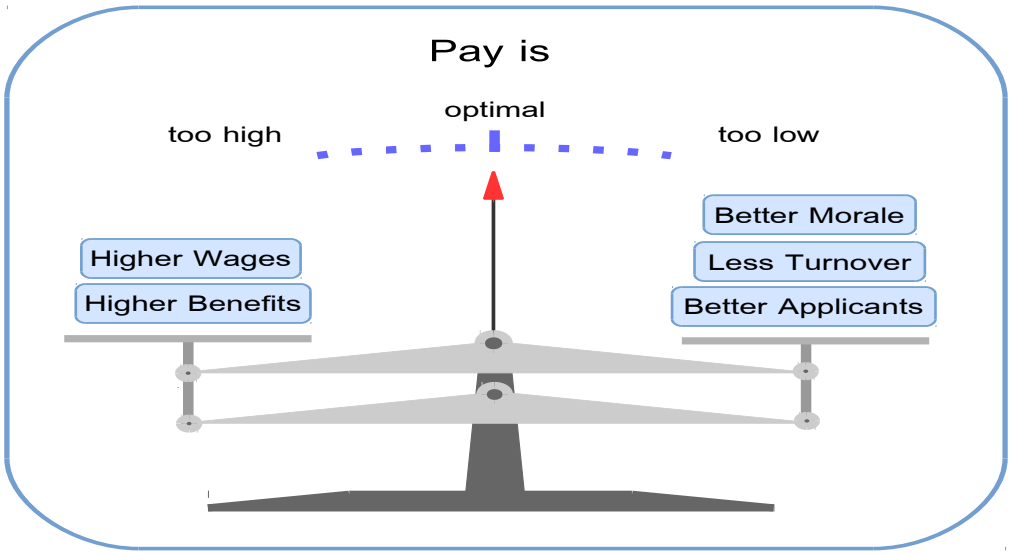
E W C

Standard demand-supply theory treats labor markets largely in analogy to commodity markets, where quality is well defined and demand and supply are equated by price. But unlike prices, wages serve, from the point of view of the firm, several other functions that a ect profitability. E ciency wage theory focuses on these e ects that are specific to labor markets but are sometimes incompatible with wages that equate demand and supply. Taking these e ects into account permits to understand a number of empirical phenomena in a unified way. Such an analysis leads to unorthodox policy conclusions, such as that progressive taxation may enhance e ciency.

By paying higher wages, firms may increase the e ciency of their work force through several channels:

- **Selection**. with higher wages, more applicants will be available, and especially more particularly promising applicants will apply. This permits the firm to implement more demanding hiring standards and end up with a more productive labor force.
- **Turnover**. With higher wages, labor turnover will be reduced. This reduces turnover costs.
- **Discipline**. The higher the wage, the more will the workers avoid behavior that may trigger dismissal. This may improve work discipline.
- **Morale**. Workers who are paid well will work better.

Conversely, lower wages may decrease the scope for selecting workers according to expected productivity and go along with higher turnover, less discipline and attenuated morale. E ciency wage theory analyzes the market implications that are entailed if the firms take these e ects into account.



The costs (left) and benefits (right) of increases in wages and fringe benefits to the firm. The e ciency wage balances these costs and benefits optimally.

S I

The di erent channels through which the wage level (including fringe benefits) a ect the productivity of a firm's labor force - selection, turnover, discipline, morale, and possibly others - are not mutually exclusive but occur jointly and often reinforce each other, although they are, in the theoretical literature, typically analyzed separately. Yet the di erent channels often entail quite similar results.

The Wage Structure and Progressive Taxation

Consider the case that the taxation of labor income is made more progressive. A progressive taxation means that the marginal tax rate – the proportion of additional income earned that goes to taxes – exceeds the average tax rate. An increase in the marginal tax rate (and possibly an increase in the tax-free allowance) renders it more costly for firms to make use of the above mentioned channels:

- **Selection**. In order to obtain the same selection e ect in presence of a more progressive wage tax, the firms must make higher o ers, as a larger part of

any wage increase is taxed away. The selection wage e ect will become less e ective (more costly) and the firms will make use of it to a lesser extent.

- **Turnover**. Likewise, the turnover wage e ect will become less e ective (more costly) and the firms will use it to a lesser extent.
- **Discipline**. In the same way, the discipline wage e ect will become less potent (more costly) and the firms will use it less.
- **Morale**. The e ect on morale will be attenuated in the same manner.

All in all, we would expect that the wages o ered by firms decline if the progressivity of the wage tax or income tax is increased.

This contrasts with the conclusion that emerge from standard theory, according to which an increase in progressivity reduces the benefits of acquiring additional qualification. Therefore supply of qualified workers will decrease at the given wage level while demand remains unchanged. Excess demand for these workers rises, and pre-tax wages increase.

Hence the conclusions that emerge from e ciency wage theory di er from those that are entailed by standard wage theory. Unfortunately not many detailed empirical studies of such e ects are available. The finding reported in a recent large OECD study [ ] that the tax wedge (the fraction of taxes and social contributions in gross wages) goes along with more equality in pre-tax earnings points in this direction, and the observation that pre-tax wage inequality is very high in the US and quite low in the Scandinavian countries that have more redistribution is in line with the prediction obtainable from e ciency wage theory.

Efficiency Wages and Minimum Wages

In standard demand- and supply theory, the introduction of a minimum wage will eliminate some low-paying jobs and lift the wages of some other low-paying jobs to the minimum wage, but this will leave, by and large, wages above the minimum wage una ected. In contrast, and from the point of view of e ciency wages, an increase in the minimum wage will reduce the relative attractiveness of jobs that are paid slightly above the minimum wage and render jobs that were formerly paid below the minimum relatively more attractive. This will make a wage increase for wages above the minimum wage more e ective as an instrument to increase the scope for selection, reduce turnover, and improve morale and discipline. This suggests a spillover e ect of a minimum wage: an increase in the minimum wage

will raise the lowest wages and wages close by. Empirical findings are in favor of such a prediction [ ]. Such an interpretation would also be in line with the observation that actual wages substantially exceed collectively set standard wages in countries with centralized wage setting [ ].

The Size-Wage Effect

Large employers pay significantly more than smaller employers for comparable workers. This is the size-wage e ect, also referred to as the firm-size wage e ect, the employer-size wage e ect, or the establishment-size wage e ect [ ]. It is one of the most robust empirical labor market regularities, but conflicts with demand-supply theory, according to which the same kind of work is expected everywhere to be paid alike. The e ciency wage channels can account for the size-wage e ect:

- **Selection**. Large firms employ more capital per worker and realize a deeper internal division of labor than comparable small firms. This permits them to achieve higher labor productivity, but they have to face higher overhead costs. The quality of the work force is therefore more important for large firms than for small firms. They make higher wage o ers than small firms in order to attract more applicants and select more carefully.

- **Turnover**. As large firms face higher overhead costs than small firms, the losses induced by higher labor turnover are more pronounced for them than for small firms. Hence larger firms have a stronger incentive to reduce labor turnover by o ering higher wages.

- **Discipline**. As labor productivity and overhead costs are higher in large firms, the losses due to sloth are more pronounced for them than for small firms. Hence they are prepared to pay more than small firms to reduce sloth.

- **Morale**. If higher wages may help to induce a better morale, this will again make this channel more important for large firms than for small firms, because they operate with higher labor productivity while facing larger overhead costs.

The Congestion-Wage Effect

Wages for the same kind of work tend to be higher in congested metropolitan areas, as compared to sparsely populated regions [ ]. The di erent channels through which e ciency wage theory works can account for this regularity:

- **Selection**. Because commuting costs are on average lower in congested areas, an increase in the wage o er reaches more potential applicants, some possibly working in other firms in the region. Hence the section e ect obtainable from raising the wage o er will be more pronounced in a congested metropolitan region than in a sparsely populated rural region.

- **Turnover**. Labor supply reacts more strongly to wage changes in congested areas because more similar opportunities are available, and the turnover e ect will be stronger.

- **Discipline**. As the workers have more alternatives available in metropolitan areas, the threat of dismissal is less e ective to maintain discipline, and wages must be higher than elsewhere in order to prevent sloth and shirking.

- **Morale**. This channel seems to the author to be of less relevance regarding the congestion-wage e ect.

Wage Discrimination

Wage discrimination occurs if workers with similar productivity characteristics are paid wages that di er according to group a liation. Such discrimination is mostly discussed with respect to gender or race. In the following, only the discrimination of women is considered, but the argument carries over di erential payment for similar workers across di erent occupations [ ]. The mechanisms are similar to those discussed in the context of the size-wage e ect and the congestion-wage e ect and hinge on the observation that women are traditionally more concerned with domestic duties, including child care, than men. This makes non-pecuniary job attributes more important to them than to men and renders, consequently, pay relatively less important.

- **Selection**. If women react less to higher wages than men, the selection e ect of higher wages will be less for women than for men, and firms will use the instrument of higher wage o ers to broaden the pool of applicants to a lesser extent for women jobs than for male jobs.

- **Turnover**. Turnover and turnover costs will be less a ected for women than for men, and firms will make less use of higher pay to reduce the turnover of women.

- **Discipline**. If women value attributes like proximity to home, or more family-friendly workers hours more than men, they have fewer alternatives than men for employment elsewhere. The discipline e ect of a dismissal needs less support by higher wage premiums for women than for men.

- **Morale**. This channel seems to this author to be of lesser relevance in supporting discrimination.

Hiring Standards over the Business Cycle

Hiring standards vary over the business cycle: In periods of high unemployment, firms have ample choice among applicants and hiring standards are rather stringent, while firms accept less qualified applicants in periods of high employment. This e ect is extensively documented for labor markets that di er considerably, like those of the US and Germany [ ]. At the same time, with high unemployment, wage o ers tend to be lower, relative to the going wage, as the selection problem is not as severe as in periods of high employment. While wages vary pro-cyclically, hiring standards and over-qualification vary counter-cyclically.

Ineffciency Features of Efficiency Wages

An e cient wage structure is characterized by wages that di er according to compensating di erentials: Each worker is indi erent between her or his job/pay combination and the next best alternative available. This means that all markets are cleared. A wage structure emerging under perfect competition would have this e ciency property. With e ciency wages, some labor markets may be characterized by permanent excess supply of labor: firms could find workers who are willing to work at a lower pay, but the negative e ects on turnover, selection, morale, and discipline prevent firms from lowering their wage o ers. If this is the case, the wage di erentials exceed compensating di erentials – they are larger than what economic e ciency would require. (The excess supply may not show up as unemployment, as the job seekers may hold less attractive jobs elsewhere.)

Relationship to Other Theories

Many phenomena mentioned above, such as the size-wage e ect, the congestion-wage e ect, or wage discrimination can be also be accounted for by other theories. Phenomena like the size wage e ect, the congestion wage e ect, or wage discrimination are often held to be incompatible with standard demand-supply theory,

but this is not entirely true. By making suitable assumptions about preferences and technology, nearly everything can be "explained" in the standard framework as well: the size wage e ect by an aversion to work in large firms, discrimination by discriminatory preferences, or the congestion wage e ect by a combination of advantages of agglomeration with a preference for living on the country side, etc. Yet some phenomena accounted for by e ciency wage theory elude demand-supply theory, such as labor markets characterized by permanent excess supply.

E ciency wage considerations do not exclude other theoretical approaches, however, but rather can complement them. Take dynamic monopsony theory [ ]. A monopsonist may care about selection, turnover, discipline, or morale just like anyone else, and take into account that its labor demand will a ect the optimal e ciency wage that is to be o ered [ ]. Similarly, search theory can take account of turnover costs, discipline- and morale e ects just as it often includes selection e ects right from the beginning [ ]. As a consequence, it appears not very useful to test a monopsonistic theory of wage setting or some search theory against some version of an e ciency wage theory. The important question really seems to be to find out what can be gained by including e ciency wage considerations.

Limitations and Gaps

The empirical and laboratory evidence is usually discussed for the channels separately. A detailed discussion would surpass the scope of the present elementary survey article in space and technicality, but it can be said that the channels are all backed up by some evidence, usually relating to quite specific cases, but it remains often controversial whether the size of the one e ect under study is strong enough to rule out market clearing wages. (A certain condition, known as the "Solow condition", would have to be satisfied.)

It has been urged here that it is perhaps preferable to not look at the di erent channels separately, but rather to concentrate on the joint e ects working through the channels and check the predictions obtainable this way. One relates, for example, to the e ects of tax progressivity on pre-tax wage di erentials. Large systematic studies may be in order here.

A potential other line of argument can relate to the e ects of technological progress on wage dispersion. It has been suggested that technical progress has entailed, in most occupations, a sharp increase in non-routine cognitive tasks, such as doing research, planning, or selling, and a pronounced decline in algorithmic or routine tasks [ ]. This would sharpen the problems of selection, turnover, and morale in the course of technical progress and render e ciency wage e ects

even more pronounced, leading to increasing wage inequality and over-education. Empirical analysis would be welcome.

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E ciency wage theory contributes to understand a range of diverse and empirically important labor market phenomena in a unified way. Each single phenomenon – discrimination, the size-wage e ect, the congestion-wage e ect, over-qualification and its cyclical response over the business cycle – has been rationalized in other ways as well. The strength of e ciency wage approach is that it suggest a unified explanation for all these diverse and empirically well-established phenomena. All these phenomena o er, therefore, *jointly* empirical support for the e ciency wage perspective. For policy purposes it would be important, however, to evaluate such joint e ects of the di erent channels empirically. This is currently lacking. If such a joint evaluation supports the hypothesis, this would have important policy implications, particularly regarding an e ciency enhancing e ect of progressive income taxation.

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