

## AN INSURANCE-BASED MODEL OF COMPENSATORY WAGE DETERMINATION<sup>\*†</sup>

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### **Abstract:**

This paper aims to provide an account of the theory of compensating wage differentials that does not factor in the worker's marginal productivity or measure her loss in terms of net disutility. It is argued that the worker's claim to a productivity wage is undermined by the pervasive influence of luck. In addition a utility-based metric is rejected on the grounds that it reflects the existing inequality in the distribution of resources. We propose instead that compensatory wage differentials should be fair in the sense that they are envy-free. That is, no one prefers their combination of working conditions and compensatory wage to anyone else's. In order to characterize the envy-free compensatory wage we employ a hypothetical insurance market where each insuree is unaware of the job she will end up in.

### **Özet:**

#### **Sigorta Piyasası Bazlı Tazmin Edici Ücret Belirlenmesi Modeli**

Bu çalışmada, işçilerin marjinal verimliliklerini ve işçilerin fayda cinsinden kayıplarının ölçümünü içermeyen tazmin edici ücret

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**Keywords:** Theory of compensating or equalizing wage differentials, no-envy/ envy-freeness, adaptive preferences, resourcism, insurance market, veil of ignorance.

**Anahtar Sözcükler:** Tazmin edici veya eşitleyici ücret farklılıkları teorisi, adil tazmin edici ücret farklılığı, uyumlu tercihler, sigorta piyasası.

farklılıkları teorisinin formüle edilmesi amaçlanmaktadır. İşçilerin verimlilik ücret talepleri kişilerin kendi kontrolü dışındaki faktörlerin etkisi nedeniyle geçersiz hale gelmektedir. Buna ek olarak fayda bazlı bir ölçüt kaynak dağılımındaki var olan eşitsizliği yansıttığı için reddedilmektedir. Çalışmada, bunun yerine tazmin edici ücret farklılıklarının hiç kimsenin kendi çalışma koşulları ve tazmin edici ücret bileşimini bir başkasının kine tercih etmemesi anlamında adil olması gerektiği önerilmektedir. Bu anlamda tanımlanan adil tazmin edici ücreti karakterize edebilmek için her bir sigortalının hangi işi elde edeceğini bilmediği varsayımsal bir sigorta piyasası kullanılmıştır.

In this paper, we seek to explore the extent to which the theory of compensating wage differentials (or equalizing differences) can provide a fruitful basis for coupling the objectives of economics and distributive justice.<sup>1</sup> With that in mind, we aim, in the following, to work through how far a strictly compensatory explanation of wage differentials can be taken while remaining faithful to the demands of efficiency and fairness. The main conclusions we reach are that: (a) wage compensation should be based on resource deficiency rather than utility deficiency (sections 1-4); (b) The compensatory wage should be envy-free (sections 5-9); (c) Wage differentials based on marginal productivity are only introduced if a reasonable standard of living for all is threatened (section 10).

## 1. COMPENSATING DIFFERENTIALS

Wage compensation aims to balance-out the net negative effect of the performance (and the prior education and training required to perform it) on the worker. Thus it provides an incentive to perform or shift jobs. This means that if a job has a comparatively greater net negative effect on a worker, then the employer will need to compensate her more through remuneration (including employee benefits) or improved work conditions, in order to engage production. The different compensation payments that result are justified on the basis that workers incur different personal costs from different jobs.<sup>2</sup>

However, the theory of compensating differentials does not just aid our understanding of wage determination and incentives in the labor market. It also elucidates how workers' preferences and abilities are coordinated with market demand. As Sherwin Rosen conveniently puts it, the theory shows how 'two conceptually distinct transactions' are brought together (1986: 642-643). According to one market the employer, motivated by profit maximization, seeks to buy and sell the attributes associated each worker. In other words, they are willing to pay employees based on a combination of preference-match with the

job (extent of denial and therefore cost of wage compensation), ability (potential productivity) and market demand. According to the other market the employee, motivated by preference-satisfaction maximization, seeks to buy the attributes of the job-type (i.e. extent of preference match) and sell their personal work characteristics to the employer. The acceptable match between these two markets is defined by the best mutual coordination given the feasible choice on offer.

Finally, the compensatory approach to wage determination has normative appeal for liberal-egalitarian political philosophers because the distribution of wages is not sensitive to factors beyond the workers control in the way that a wage based on marginal productivity would be. Egalitarians of a liberal persuasion take the view that the ubiquitous intervention of good and ill luck undermines a workers claim to a wage in return for the value generated her performance and its outcome (productivity wage). For a worker's ability to acquire and perform well in a job is significantly dependent upon factors beyond her control – genetic endowments she is born with, the social and economic conditions she is born into, her upbringing and so on – which conspire to help bring about something that is valued by others.<sup>3</sup> Compare this with the worker's claim to a wage in return for the harm she incurs in the process of attempting to create value (i.e. compensatory wage). That determinant of the worker's wage appears to avoid the problem posed by luck simply because it focuses on the loss incurred by the worker rather than how much, if any, of the value generated by her performance she can take credit for. All that matters is the denial suffered as a consequence of her performance, rather than how much personal control she can claim to have had over the performance and its outcome.

## **2. DEFINING THE NEGATIVE CONSEQUENCES OF WORK.**

By definition compensation is the restoration of a baseline quality of life (Goodin, 1989: 59). But that begs two questions: (1) what is the appropriate metric for the quality of life that is denied by work? What does a person forgo when he works?; (2) What is the baseline to be restored?

(1) Metric: The standard answer to the first question is to define deprivation in terms of a preference-satisfaction account of utility.<sup>4</sup> The denial of personal ends (what the worker values in life) that the person would have realized in the absence of work. Thus, in the absence of work each person may not have had to commute; live in a crowded city; work in a stressful, noisy, unclean, boring or risky environment; invest time and money in prior education and training; and so on. From this is added the

preference gains that the person acquires by performing the task in order to arrive at the net disutility level. That is, the extent to which the person's preferences overlap with the job description both directly (e.g. the doctor who strongly desires to help others, the ski-instructor who loves skiing, the socializing made possible in the work-place etc.) or indirectly (e.g. accrual of skills that may be used outside of the job or in another job).<sup>5</sup>

(2) Baseline: What preference-satisfaction position should the person be restored to? Typically we would argue that the compensation baseline is the quality of life that was enjoyed before commencing the work (including education and training). Hence, the baseline is the worker's utility level *status quo ante*. It is important to note that the baseline is dependent on what utility level the person did in fact previously achieve. That utility level will depend on, firstly, access to resources (e.g. family support, savings or welfare transfers) that enable the achievement of at least some of the person's preference-set, and, secondly, the expense entailed in pursuing the preference set.<sup>6</sup>

This implies that compensation is not actually concerned with the extent of the workers prior utility. Rather it uses it as a benchmark position to which the claimant must be returned. In other words, compensation is only concerned with the net negative effect of the work relative to the baseline or, how far the person has been moved from the previous utility level. From this it is apparent that, given that each person's pre-existing utility level will not necessarily be the same, compensation does not imply leaving each person equally well off. Hence, the compensation is intended to have the effect of leaving each claimant as well off as *before* but not as well off *intersubjectively*. Two people who perform the same task and who have identical preferences will receive the same level of compensation, but will not necessarily end up with the same level of utility.

It should be noted that most of the literature on compensating differentials bases its analysis on a comparison between jobs, rather than between pre-work and job. We take it that this amounts to the same thing because the new job that a person shifts to pays compensation both for the additional disutility relative to the old job (if it exists), as well as the disutility incurred by the old job relative to pre-work. This is just another way of saying that the new employer must balance-out the total disutility. Clearly when we are simply looking at wage differentials between jobs, the utility level associated with the previous job is the relevant baseline. But if we are concerned with total compensation then the pre-work utility level is the relevant baseline.

Neutralizing the negative effect of work relative to the pre-work baseline represents the absolute minimum wage that the employer can offer. Undercompensating (paying less than the denial) would simply fail to entice workers to the job. In contrast, overcompensating (payments in excess of the direct denial incurred by the job) would constitute a surplus. In neither case is the person compensated in the *strict* sense of the term. However, overcompensation does imply an extended sense of compensation: once a person is earning in excess of compensation (say, for example, productivity payments) in a job then that forms a baseline (i.e. the prior level of preference-satisfaction). On that reading of the baseline, prospective employers must not only balance out the direct denial (denial relative to pre-work), but also the overcompensation received in the prior job. Compensation in this extended sense must balance-out the *total* level of preference-satisfaction that was made possible by the prior job. Failure to do so would mean that the worker would be left worse-off than the baseline. Indeed, taking working conditions and total earnings that the worker would have in the next best alternative job is how the theory of compensating differentials is typically understood.

Overcompensation payments are necessary in reality if only to entice people to work or change jobs for if the compensation only leaves the person indifferent between pre-work and work, there is no reason to work. People will only engage in work if it provides the means to further their personal ends and life-plans (i.e. enable a level of preference satisfaction greater than non-work). Compensating simply for the narrower sense of denial would fail not only to enhance one's preference-satisfaction, but also to provide for each person's basic needs. Nevertheless, for the time being we restrict ourselves to the primary or strict sense of compensation represented by what is directly denied by work. Hence, we assume that compensation only explains part of the total wage. That is to say, wage compensation acts as an incentive to perform undesirable tasks but not to work in general. We assume that there is in fact an additional wage quotient (noncompensatory payments) that is both equal for all workers and sufficient to motivate people to work. Based on this assumption all wage *differentials* are explained by compensation for direct denial. In the final section we begin to explore the extent to which that assumption must be weakened as a result of efficiency considerations (i.e. necessary incentive payments over and above the direct negative effect of the job).

### 3. NORMATIVE PROBLEMS WITH THE UTILITY-BASED METRIC

The problem with any preference-sensitive allocation of resources is that it generates unfair outcomes:<sup>7</sup>

(a) Expensive distastes.

Compensation that is based on utility will end up allocating more resources to those with a more costly preference-set (i.e. those who require more resources in order to satisfy the same utility level). We may accept expensive preferences if they are in some way necessary (e.g. the person who requires expensive medical treatment, the sculptor who requires expensive materials etc.) but not if they simply reflect a person's desires (e.g. preferring champagne to beer). As a result those with a cheaper preference-set (those who require less resources to satisfy their preferences) end up subsidizing those who have expensive preferences. Thus compensating those with expensive tastes will deny scarce resources to others including those who are perhaps more needy.<sup>8</sup> In the context of wage compensation this problem arises because some workers may be unreasonably fussy about the conditions under which they are working. That is, they may be averse to the characteristics of the job-type (e.g. prior education, the risk, commute time, location, night shifts, unpleasantness etc. associated with the job). Similarly a person may dislike the status associated with the job (e.g. a strong distaste for blue-collar work). Consequently, because of their expensive distaste such workers will demand a level of compensation higher than the average worker in order to re-attain their pre-work utility level.<sup>9</sup>

(b) Adaptive preferences.

The fact that a person has expensive or inexpensive preferences hinges on the resource-set (i.e. resource opportunity) they have access to during their upbringing. Those coming from more advantaged backgrounds are more likely to have expensive preferences because they have a wider feasibility-set. Hence, the fact that a person is an unreasonably fussy worker may reflect prior resource advantage. While the fact that another person is an overly uncomplaining worker may reflect prior resource disadvantage; She is more accepting of poor working conditions because she has already, as a survival strategy, resigned herself to a life in which they should not pine for the (perceived) unobtainable. Consequently, because each person's preference-set tends to reflect her upbringing, the utility-sensitive compensation will only serve to reflect and

further entrench the pre-existing inequality of opportunity (Elster 1983: chapter 3) (Sen, 1992: 6-7&55).

Because of such preference variation, utility constitutes an inappropriate basis for measuring compensation. Compensation in general and wage compensation in particular does not, and should not, aim to provide the 'exact equivalent' of what has been denied to the person.<sup>10</sup> The issue then becomes one of determining when a person's preferences underestimate the compensation she is due (i.e. inexpensive tastes) and overestimate what they are due (i.e. expensive tastes). That is to say, we require an impartial procedure for determining compensation that is not over-sensitive to preferences and the prevailing resource distribution that underpins them. This concern for distributive impartiality overlaps with the fundamental liberal idea that, in the public realm, persons should not be favoured or disfavoured simply in virtue of what they choose to value.<sup>11</sup>

It may be argued that the market will ensure that workers are not overcompensated as a result of expensive distastes. This is because employers will seek those qualified employees who have a closer preference-match (i.e. who are less costly). But that will tend to have the opposite effect where ability is of marginal importance to recruitment decisions-where there is an over-supply of the same skills (e.g. unskilled work or a flood of computer technicians into the job market). In that case it is those with inexpensive tastes that will be employed. Due to adaptive preferences the wage received will undercompensate workers (e.g. factory workers will be compensated according to what they have come to accept in life rather than what they are in fact due). Moreover, where there is an under-supply of those with the requisite skills, employers will be obliged to compensate those amongst them who have expensive preferences. In general terms, those from less advantaged backgrounds (who tend as a result to have lesser skills that are widely available and less expensive tastes) will be denied resources by the fact that those from more advantaged backgrounds (who tend as a result to have greater skills that are less available and more expensive tastes) command a larger share of the social product. Clearly therefore the market is an inadequate mechanism with which to determine the appropriate level of compensation because it only serves to further accentuate the problem of expensive and inexpensive tastes rather than resolve it.

#### **4. THE RESOURCIST METRIC<sup>12</sup>**

A resourcist account overcomes these difficulties by basing compensation on the means to pursue personal ends (personal objectives that include preferences) rather than the achievement of personal ends. Resources are taken

as the appropriate metric of life-quality because people should receive a fair means with which to pursue their preferences rather than the satisfaction of the preferences themselves. That is to say, the metric of compensation becomes the *means* to pursue one's personal ends not the *achievement* of the ends themselves. Those who are denied due to harm (whether voluntary incurred as in the case of work or, non-voluntarily incurred as in the case of an accident, or lesser talent etc.) are compensated based on what they can reasonably expect in terms of resources rather than their ends in themselves.

A fair resource allocation permits us to differentiate between whether a person's preferences are genuinely expensive or inexpensive. Thus, if the fair resource provision is insufficient to achieve one's preference-set it is expensive (i.e. work tastes are too fussy), while if it is more than sufficient to achieve one's preference-set they are inexpensive (work tastes are too accepting). This has the secondary effect of appropriately framing each person's preferences: a person's preferences will adapt to the fair resource means rather than merely the pre-existing distribution of resources (Schaller, 1997: 263-264). If a person finds that the fair resource-means is insufficient to pursue his preferences (i.e. there is a utility shortfall *ex post* compensation) he must either suffer that predicament, mutate his preferences to fit or change jobs.<sup>13</sup> In other words, the compensator (e.g. employer, insurer, tortfeasor, state etc.) is delegated responsibility for providing a fair resource means, while the compensatee is delegated responsibility for her personal ends.<sup>14</sup>

## 5. ENVY-FREE COMPENSATION

The idea behind the resourcist argument is not to grant each person the same resource share (equal share or equal compensation) because that would be too insensitive to choice of preferences choice. But at the same time the idea is not to be completely choice sensitive. In other words the resource allocation should be sensitive the preferences one chooses only to the extent that scarcity permits. A resource allocation is fair if each person does not envy any body else's allocation. This result follows if it is possible for each person to have made the choices that everyone else has made. No one will prefer someone else's resource bundle set to their own because they had the equal opportunity to choose it themselves. Consequently each person weakly prefers their own resource bundle even though it might, due to individual preference variation, differ in extent and content to what others have (Dworkin, 1981b: 285-287).<sup>15</sup>

The appeal of the no-envy approach to economists is that it does not require an interpersonal comparison of utility (i.e. we do not calculate each person's level of preference satisfaction in order to ascertain who is better-off).



We need only know that each person does not prefer the resource bundles that each other person has. Thus, to know whether I prefer my bundle rather than another person's bundle I do not gauge how much *he* prefers his bundle. Rather I am only concerned with which bundle *I* prefer. In other words, the identity of the other person is irrelevant. That means not just that I am unconcerned with how much he prefers each bundle, but also with who he is (i.e. whether I like or dislike him, what race he is, and so on). Hence the no-envy test can be described as the *intrapersonal* comparison of alternative resource bundles, not an *interpersonal* one. It is only at the level of mutual no-envy that some form of interpersonal comparison pertains. But in order to arrive at that conclusion no prior interpersonal comparison is required; it is simply a logical implication of the fact that each person prefers (i.e. according to his own ranking) the bundle he chooses.

## 6. HYPOTHETICAL INSURANCE MARKET: INSURANCE BEHIND A VEIL OF IGNORANCE

The next question we must ask is how do we define envy-free compensation? Borrowing from Dworkin (1981b) we argue that a hypothetical insurance market (HIM) can help us to understand what such a compensatory framework might entail. The idea is to consider what insurance coverage people would choose against being in particular types of jobs if they are ignorant of certain facts that exist in the real world.

Thus, behind the veil each insuree is:

1. Gifted an equal premium budget (which is by definition envy-free). The budget constraint has the effect of building scarcity into the deliberative process. Thus by implication the preference-satisfaction of the participants is constrained. But given that it must be fully expended it also means that those with engrained inexpensive distastes do not understate their resource demands.<sup>16</sup>
2. Aware of her preferences.
3. Aware of the character of each job-type. Thus, combined with 2, the insuree is aware of the net negative individual consequences of each job-type (i.e. the extent to which each hinders and promotes one's preferences.
4. Ignorant of her abilities and therefore the probability of ending up in each job-type. Thus the deliberator is unable to predict what kind of job-type she will end up in.
5. Ignorant of market demand and therefore the probability of ending up in a particular job-type. Combined with 4 we can say that each

person is equally uncertain about what job-type they will end up in and will therefore suppose that there is an equal chance of ending up in any job.<sup>17</sup>

Thus, in all respects the hypothetical participants are identical except insofar as they have different preference-sets.<sup>18</sup> Based on this deliberative context we ask what level of coverage would the insuree be willing to pay for in premiums against being in each job-type?<sup>19 20</sup> That coverage defines the fair compensatory wage that is due to each worker in each job.

Before proceeding to discuss the form of fairness implied by HIM it should be made clear how the scope and content of Dworkin's project differs from our own. Like Dworkin we are concerned with compensating the constraint placed on our ability to pursue personal ends (i.e. opportunity or resource denial) rather than the actual denial of those personal ends (i.e. preference-satisfaction). Thus, even though the reason for opportunity denial in each case is different (for Dworkin it is inequality of skill; for us it is work) the basic concern is the same.<sup>21</sup> In general terms, therefore, the objective of the insurance approach is to indemnify against constraints on ends-pursuit (for Dworkin we insure against the possibility of having lesser internal resources; for us we insure against ending up in a job we do not prefer). That is not to say that wage compensation does not tackle the problem of unequal internal resources. However, it does so not by directly compensating for skill differentials, but rather selecting a wage basis, namely compensation, that does not entail any reference to the worker's productive potential or output. (We return to the efficiency problem posed by this strictly compensatory approach to wage determination in the final section.) Furthermore, unlike Dworkin, the focus is the net resource deficiency due to work, not resource deficiency in general. Thus wage compensation is not directly concerned with the internal or external resource advantages that each person brings to the job, nor each person's ability to use their compensatory outside of the job. In other words, fair wage compensation enables no-envy equality in the context of work, not in general.

## **7. IN WHAT WAY IS THE HIM ENVY-FREE?**

Each person chooses her insurance coverage for the set of jobs based on the same budget. Thus the procedure is fair because the allocation hinges on equal opportunity (rather than arbitrary resource allocation) and personal choice. As Dworkin notes (1981b: 297) insurance permits us to make circumstance subject to choice; we can make calculated gambles that will moderate the effects of events beyond our control. This generates an envy-free distribution because each person chooses in order to maximize *her* (expected)

preference-pursuit based on the same choice position (equal purchasing power and equal knowledge of preferences and job-types). Thus, the insurees cannot envy each other's expected wage compensation for each job because they chose their coverage level based on symmetrical conditions. That is, I cannot envy the wage indemnity that my fellow worker actually receives even if it is numerically greater, because I had the same opportunity to purchase the same coverage. Thus I may have insured less than he did because my preferences match the job more closely. However, even if our preferences are identical I cannot envy him because I took a calculated gamble (i.e. choice) by insuring less against that job-type (Dworkin, 1981b: 297-298).

What underpins the above argument is that HIM constitutes a fair procedure. We accept the hypothetical compensation distribution that emerges because we accept the way that it was arrived at (i.e. choice given equal budget and information). That is to say we accept the outcome in virtue of the procedure. In the literature on distributive justice this is known as 'pure procedural justice'<sup>22</sup>: we know the distributive outcome is fair purely in virtue of the fact that the procedure is fair, rather because of an independent standard of what a fair outcome is. *Prima facie* it may seem that envy-freeness operates as an independent standard for judging the outcome. Thus we accept the outcome not only because the procedure is fair but also because the outcome is envy-free. Insofar as both conditions hold we have what is called 'perfect procedural justice'. However, we would argue that the only reason the outcome is envy-free is the procedure *per se*. This is because although a worker may in fact envy a fellow worker with the same preference match but greater compensation, they cannot legitimately envy their colleague because they accepted the procedure that brought about that outcome (a procedure in which they freely and equally participated in). Thus it is the procedure that makes the outcome envy-free rather than the outcome itself. While it does not provide precise wage compensation figures<sup>23</sup> the HIM allows us to think through what wage compensation *should* be due to the fact that it is a procedure that encapsulates no-envy. Consequently we have an impartial heuristic device rather than leaving it to the whims of personal preference (inexpensive and expensive preferences), political decision (i.e. non-neutral distribution) or the market.

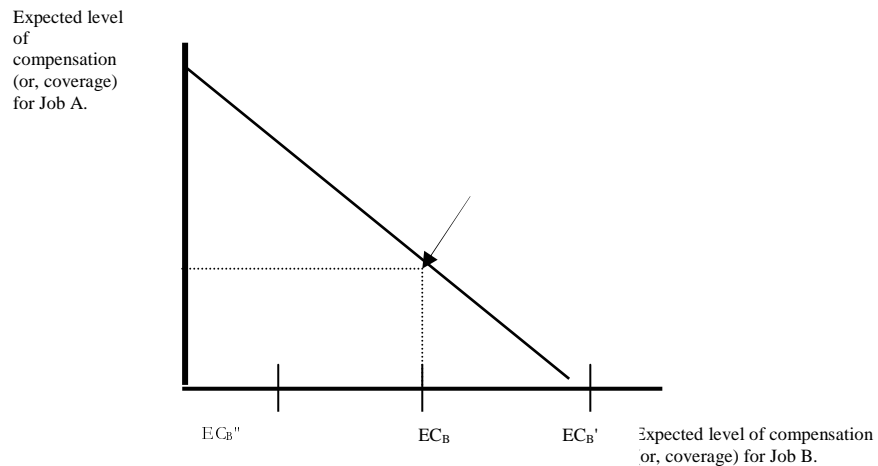
## 8. THE INSURANCE MARKET: TWO JOB MODEL

In the proceeding sections we have tried to not only explain the idea of no-envy but also to explore its philosophical underpinnings. In order to clarify what is involved here, it will be useful to take a step back and consider the model from the point of view of a simple budget line analysis.

### Characterization

1. The insuree can end up in Job A or B.
2. The insuree is willing to pay more of a premium for the job they prefer less.
3. But that willingness to pay is adjusted according to (a) the probability of ending up in either job,  $\pi_A$  and  $\pi_B$  (because the insurer is behind the veil the insurer rationally chooses based on equal chance) (b) The premium rate (price per unit of coverage) for each job,  $\gamma_A$  and  $\gamma_B$ . (c) Budget constraint (How much coverage can be purchased based on an equal allocation of tokens and the premium rates).<sup>24</sup>
4. Agents will seek to maximize the expected overall resource-means (including coverage) for both possibilities (i.e. maximize the expected opportunity to pursue their ends).

Under these conditions the insurance market model can be established as follows. Job A is preferred to Job B because it has a lesser negative impact on the person's ability to pursue her preferences. Since A is preferred the insuree is willing forgo comparatively more of her budget insuring against B. The insuree's choice can be shown with the help of Graph I.



**Graph 1.**

- The coverage bundle  $EC_A$  represents the agent's chosen coverage bundle. It is equal to the total coverage  $K_A$ . In order to attain that coverage, the insuree pays  $\gamma_A K_A$  in premiums. Under these conditions, if we

denote the insuree's total given budget by  $TB$ , her budget constraint can be written as:

$$TB = \gamma_A K_A + \gamma_B K_B$$

This equation also shows that the insuree spends all her budget on insuring against both jobs. The slope of the budget line is equal to the premium ratio,  $\gamma_B/\gamma_A$ .

- From this analysis we can infer that the choice of coverage bundle for each insuree also represents the mutual no-envy point. This is because it is the best each person can do given the *same* circumstances (equal budget and information) in order to realize *their* preferences.

- The choice also indicates the (insurance-derived) compensating differential between the two jobs,  $EC_B - EC_A$ . That is, the point at which, the coverage leaves the insuree 'resource indifferent' between the two jobs.

- From this we can see how a combination of the insurance budget, premium rate and uncertainty counters the problem of expensive and inexpensive distastes.

(a) Expensive distastes: If we define  $EC_B'$  as the resource level that would completely satisfy the preferences denied by  $J_B$ ,  $EC_B' - EC_B$  represents the net resource deficiency caused by B. Thus,  $EC_B' - EC_B$  indicates the limit that the budget places on preference-realization. Furthermore, the agent will not opt for expending most or all her budget on B (even if we assume intensely disliked) because uncertainty implies the possibility of ending up in A (which even if less disliked comparatively, still incurs preference dissatisfaction).

(b) Inexpensive distastes: If we define another point  $EC_B''$ ,  $EC_B'' - EC_B$  indicates the extent of the coverage in excess of that required by the insuree's preferences. Given that the entire budget must be expended the agent will increase the coverage for each job (in the same proportion i.e. the ratio at which B is preferred less than A is maintained) until the budget is exhausted. Hence even if the agent is an overly uncomplaining worker she will still receive the higher compensation level.

## 9. NO-ENVY AND PARETO EFFICIENCY

This differs from the standard approach in the economic literature on no-envy. There the allocation problem is framed in terms of allocating a finite set of resources amongst a group of people. Thus it is presupposed that each person's bundle choice will impact on the feasible choice set available to others (see for example Baumol's Edgeworth Box analysis (1987: Chapter Two)). In the equal budget model outlined here one person's choice of indemnity bundle does not in any way limit the indemnity options available to others. Rather those options are constrained by one's budget and the premium rate. In other words the transaction takes place between the insurer (who adjusts the premium rate in proportion to probability) and insurees, not between insurees.

It may be asked why the budget model is preferred to the exchange model given that the HIM can be modified in the following way: Assume that each person's insurance budget is tradable, such that those who are denied less by the two jobs can apportion some of their budget to those who are denied more by them (in effect this means that the coverage bundles are tradable). Such a model would enable a more efficient allocation of resources than the equal budget model while remaining envy-free. However, it only serves to return us to the familiar problem of over-sensitivity to preferences. The trade might take place between those who are overly tolerant and those who are excessively fussy. Because an equal fixed budget prevents such trades the chosen coverage bundles are restricted to a fair range.

Therefore the account of no-envy that is outlined here is in tension with Pareto efficiency.<sup>25</sup> The no-envy bundle may at most only accidentally coincide with the Pareto optimal bundle. But what should be made clear is that Pareto and no-envy constitute two competing allocative rules rather than, as is commonly presupposed, a conflict between fairness and efficiency. Pareto efficiency is actually based on enabling greater overall utility given that that no one is made worse-off. That is to say, it is actually a proposed allocation rule, not an efficiency rule (Le Grand, 1991: 32-34).

We may respond to the fact that the two allocation rules are in tension in two ways. Firstly we may simply accept that they are at odds and therefore permit a policy trade off between them (Le Grand, 1991: 69). But a second response is more appealing given the arguments that have already been made in the paper. That is to redefine Pareto efficiency in terms of no-envy rather than utility. The conflict between the two allocative rules disappears once we remove the utility-based metric of life-quality that Pareto efficiency presupposes. Thus, in keeping with the basic thread of this paper, if the metric is interpreted in terms of resources rather than utility and if the no-worse-off constraint is

defined in terms of no-envy, then the two rules are no longer in tension. In that case a Pareto-improvement becomes one in which at least some are made better-off in terms of opportunity but no one is left envious (i.e. it is permissible to maximize overall resources up to the point at which one person becomes envious). In this way the constrained aggregative character of Pareto efficiency is preserved but the utility metric is not. Indeed, if we accept the arguments already made here based on over-sensitivity to preferences then, a no-envy interpretation of Pareto efficiency is superior to the utility-based one (e.g. I may only be no-worse-off simply because I have inexpensive tastes that have been framed by a lesser prior resource-set).<sup>26</sup>

### CONCLUSION: PRODUCTIVE EFFICIENCY

In this paper we have attempted to construct a theoretical model of wage compensation that is not over-sensitive to preferences. That overall project was motivated by the further egalitarian concern that wages should not be based on the productive abilities for which each worker is not responsible (i.e. advantages and disadvantages that are a function of birth and upbringing). We must now ask whether such an exclusively compensatory account of wage differentials is compatible with social objectives that lie outside of the context of wage determination *per se*. That is to say, it may be argued that productivity or incentive wage payments in excess of fair compensation might be necessary in order to generate the minimal level of social product required to enable people to pursue a meaningful life.

However, productivity payments are *not* necessary in order to entice workers into socially desired tasks. This is because fair wage compensation will make each job just as attractive to workers in terms of no-envy, but not in terms of preference-satisfaction (i.e. the actual achievement of preferences enabled by the fair resource-means). That is to say, envy-free compensation may not fully compensate the agent's net disutility. Hence, where there is a discrepancy between fair resource compensation and net utility loss in a job the agent will be motivated to relocate to another task where there is less or no such discrepancy (i.e. where his job distaste is less expensive).<sup>27</sup>

The real problem with wages based strictly on compensation rather than productivity indicators such as effort and marginal product, is that workers need not be concerned with productive output (i.e. the fact that the worker incurs more burdens from work does not necessarily entail greater productivity) (Van Parijs, 1995: 164).<sup>28</sup> Because of this incentive deficiency it is questionable whether the economy will generate sufficient growth to ensure a reasonable

standard of living. That is to say, the constraint on productivity-based wages implied by non-envy (i.e. leaving productivity out of the total wage) may no longer be justified so long as such an outcome is plausible. Differential payments over and above compensation may be required in order to guarantee a reasonable standard of living. Note that what counts here is not production efficiency *per se* but rather the social objective to which it is targeted—a reasonable standard of living. Hence, it is the objectives of equality defined by no-envy and reasonable life-quality that are in potential tension. The productivity-based wages required to enable each individual to pursue a meaningful life may leave some people envious. In contrast, exclusively compensation-based wages may thwart the ability of each individual to pursue a meaningful life.

One possible solution to this problem is to point out that each employee has an equal opportunity to compete for productivity payments and therefore that those who receive less or no such payments have no grounds to be envious.<sup>29</sup> But this clearly does not follow given that productive ability is in large part determined by factors beyond each person's control. That is to say, the unequal distribution of talents at birth and the unequal distribution of socio-economic advantage during one's upbringing would mean the opportunity is not equal. No-envy implies that it must be possible for each person to have made the choices that anybody else can make. But if *i* is less capable than *j*, that means he cannot choose to obtain the same amount of productivity payments as *j*. Consequently, he will envy *j*'s productivity receipts. Thus the no-envy formulation of equality further reinforces our primary normative concern that the arbitrary allocation of internal resources should not determine the wages each person receives.

This leaves us with the necessity of making the following policy trade-off between compensation-based wages and productivity-based wages. Firstly, productivity-based wage differentials (i.e. 'envy payments') are only justified insofar they help to ensure that the worst-off position in society is the least worst off position when compared with all other alternative arrangements (Rawls, 1971: 75, 78). Thus in order to maximally level up the worst-off position unequal productivity wages may be required in order to entice talented workers to contribute to the social product.<sup>30</sup> Secondly, all other wage differentials are explained by fair compensation (i.e. 'envy-free payments').



## NOTES

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<sup>1</sup> The coincidence between the explanatory and normative implications of the theory has been noted by Dick (1975), Lamont (1997) and Groot (2002), but otherwise has drawn little attention.

<sup>2</sup> For the classic exposition of the theory of compensating or equalizing wage differentials see (Smith, 1977 [1776], bk. I, ch. 1-10, esp. ch. 10).

<sup>3</sup> For the original exposition of this line of argument see John Rawls (1971: 100-4).

<sup>4</sup> Terminological clarification: In the distributive justice literature writers tend to use the term welfare in place of utility. To remain consistent with the economics literature we shall adhere to the term utility. We take preference-satisfaction as an *indicator* of utility. Utility in turn is taken as an indicator of a person's quality of life.

<sup>5</sup> Another standard position, exemplified by the Walrasian model, is to gauge the worker's loss simply in terms of the quantity (e.g. leisure time forgone) rather than the quality of work. We reject that approach on the grounds that fails to take into account variations in working conditions and the preferences of workers. For further discussion on that point see Pagano (1985: 21-27 & 113-114).

<sup>6</sup> An additional factor is each person's ability to convert resources into utility. The problem here is not the expense of the preference but rather that some people may require more resource units to satisfy the same preference. See Sen (1984: 169-220). For reasons of clarity we shall proceed based on the assumption of equal conversion ability.

<sup>7</sup> For an excellent overview and analysis of the following arguments see Schaller (1997: 262-266).

<sup>8</sup> See (Rawls, 1993: 181-187) (Arrow, 1973: 254) (Dworkin, 1981a: 228-240) (Arneson, 1989 & 1990) and (Cohen, 1989).

<sup>9</sup> This should be differentiated from those workers who demand higher compensation based on what is called offensive tastes. E.g. A bigoted white teacher who demands higher compensation in return for working in a predominantly black school. The problem that offensive tastes pose for a preference-sensitive distribution is discussed by Rawls (1971: 30-31) and Dworkin (1981a: 198-199). But as Cohen argues (1989: 912-913) the preference-satisfaction approach can resolve this by making the distribution of resources only sensitive to *inoffensive* tastes. Thus we take this not to be as serious a challenge as the problems raised by expensive preferences and adaptive preferences. However, an intriguing aspect of the theory of compensating differentials is that it provides a means to measure discrimination. See for example (Rosen, 1986: 663-666) and (Becker, 1996: 140-142).

<sup>10</sup> This challenges the standard interpretation of the concept of compensation. The standard view is that the harmed person should be restored to exactly the same position that they previously enjoyed. Thus a landmark decision of the US Supreme Court argues that the claimant should receive 'the full and perfect equivalent' of that which is denied (*Monongahela Navigation Co v US* 148 US 312, 326 (1893)). A similar landmark decision in UK Common Law argues that compensation should 'put the party who has been injured, or suffered, in the same position as he would have been in if he had not sustained the wrong'. (*Livingston v Rawyards Coal Commission* (1880) 5 App Cas 25, 39, *per* Lord Blackburn. Quoted in K. Stanton *The Modern Law of Tort* (1994),

144). See also (Goodin, 1989:59). Such careful attention to the claimant's prior position makes compensation unnecessarily sensitive to unreasonable preferences.

<sup>11</sup> As Dworkin argues even if we stay with a utility metric we eventually have to employ a particular interpretation of utility. Such an interpretation will favor some and not others. It is therefore implausible to generate a value neutral compensation schedule if we persist with a utility-based metric (Dworkin, 1981a).

<sup>12</sup> The following arguments draw from Ronald Dworkin's seminal work on equality (Dworkin, 1981a&b) as well as other defenders of the resourcist liberal-egalitarian position; Notably, Rawls (1971 and 1993) and Van Parijs (1995). In the field of economics the resourcist position is critically discussed by Fleurbaey (1995a and 1995b) and Roemer (1993 and 1996).

<sup>13</sup> Arneson (1989 & 1990), Cohen (1989) and Roemer (1993) have pointed out that preferences are not always controlled by the agent (i.e. not voluntarily cultivated or adaptable). Indeed the adaptive preference argument suggests that people are not fully in control of the formation of their preferences. Thus if expensive tastes are uncontrolled then their holders are unfairly penalized by a resourcist distribution. The resourcist reply to this is to point out that (a) fair resource means in general will appropriately frame one's preference-set (Schaller, 1997: 263-264) and (b) preferences that remain uncontrollable constitute a clinical rather than a distributive problem (Rawls 1993: 185 incl. n.15 and Daniels, 1990: 288-292).

<sup>14</sup> This approximates the division of labor between society and the individual proposed by Rawls (1993: 185; 189-190). See also Fleurbaey (1995a, b) and Schaller (1997: 259-261).

<sup>15</sup> The idea of envy-freeness was previously proposed in the field of economics by (Foley, 1967) (Kolm, 1996) (Varian, 1974 & 1975) (Pazner and Schmeidler, 1974). See also (Baumol, 1986) and (Arnsperger, 1994). Although, as they acknowledge, this solution to the problem of fair allocation, is hardly a modern innovation.

<sup>16</sup> This resolves the potential challenge that people might be non-*envious* simply because they have adapted inexpensive tastes. See for example Le Grand (1991: 70-71).

<sup>17</sup> For this reason we assume that the insurer has the same level of information and therefore calculates the premium based on the same level of uncertainty. This means they will risk spread in order to break-even. Thus the premium rate will be the same for each job-type. Note that in the practice of actual insurance markets the insuree and insurer also have equal knowledge. But the premiums are more 'individualised' because there is greater knowledge (less uncertainty). Thus insurance is adjusted according to groups (i.e. adjusted according to age group, region etc). In our case insurer/insuree is unaware of whom is high probability and who is low probability. Thus premiums are averaged across job-type. (This means there is no advantage for high probability (cheap insurance) and disadvantage for low probability (over expensive)—which would mean the insurer could not break-even—because probabilities are unknown to the insuree as well).

<sup>18</sup> It may be argued that it does not make sense to speak of preferences where a person is ignorant of their abilities. What one prefers will at least in part be influenced by the abilities one has. In general this seems to be an accurate interpretation of preference-formation and it is a problem acknowledged by Dworkin (1981b: 316).

<sup>19</sup> One limitation of HIM is that it does not take into account changes in the set of job-types that are demanded by the market or the character of those jobs. Hence, it is not intended to be a one-off timeless indication of fair compensation.

<sup>20</sup> One interesting characteristic of insurance is that the decision rests simultaneously on the person's willingness to pay premiums and willingness to accept compensation. This may make it immune to the problem noted by others that willingness to pay and willingness to accept tend to generate different results. See for example Brian Barry's discussion of the Contingent Valuation Method (CVM) (1995: 152-159). Despite the obvious similarities, CVM differs from HIM insofar the valuation is mediated through an insurance market. This means that the person must balance the cost of insurance against the desire to reduce job deprivation under conditions of uncertainty.

<sup>21</sup> Indeed the issue of how to deal with unequal internal resources is perhaps the main concern for those economists who focus on envy-freeness. For an overview of the proposals that have been made see Baumol (1986: 39-49).

<sup>22</sup> For a discussion of the different forms of procedural justice see Rawls (1971: 85-86).

<sup>23</sup> The hypothetical outcome of insurance behind the veil will indicate the ordinal ranking of jobs according to resource denial. The problem of course is that the total compensation per hour is contingent on the wage-reserves available to the employer. In practice wage compensation may be needed to be allocated on the basis of an occupational average coverage rather than individual coverage (say individualized job contracts).

<sup>24</sup> Because the insuree must expend all her budget risk averseness need not be factored in.

<sup>25</sup> Put more conceptually, the conflict arises because both imply different metrics of life-quality (utility and resources) and, correspondingly, a different conception of the constraint that should be placed on resource allocation (no worse-off in terms of utility vs. no-envy of other's resource bundles). Furthermore, unlike Pareto efficiency, no-envy is not in itself aggregative insofar as it does not imply the (constrained) maximization of resources. However, as we argue shortly, it can be plausibly construed in an aggregative way; i.e. maximize resource allocation provided no one is left envious.

<sup>26</sup> This also resolves the oft-made challenge made against Pareto efficiency that it may, irrespective of (in)expensive tastes, only serve to entrench substantial inequality: any attempt to make the poor better-off cannot be justified if it has the effect of making the rich worse-off (Sen, 1987: 32). It seems, therefore, that no-envy theorists have become unnecessarily absorbed with resolving the apparent incompatibility with Pareto efficiency when a fuller understanding of philosophical arguments that ground no-envy reveals that such a project is a self-contradictory exercise. We deploy no-envy because of the problematic assumptions that lie at the heart of the standard characterization of Pareto efficiency.

<sup>27</sup> If we took a strictly utility-sensitive approach, as Julian Lamont appears to do (1997), this implies that a non-compensatory payment (e.g. productivity bonus) is required to encourage socially optimal moves. This it seems to us is significant problem for the standard welfarist interpretation of the theory of compensating differentials. That is to say, it fails to explain why a worker would change tasks given that it leaves her just as well off subjectively (what Rosen (1986:647) calls a coin-toss position). It is exactly because there is a possible discrepancy between fair compensation and preference satisfaction that the proposed model accommodates the required incentive effect.

<sup>28</sup> This problem appears to be ameliorated to some extent at least by the fact that employers will choose workers based on preference and ability match with the job (Because (1) where preferences, abilities and job-type overlap production will be higher and (2) the more preferences and job-type overlap the less compensation is required). But unless unemployment pertains there will be insufficient incentive to improve one's preference-ability-job-type coordination through, say, education. Moreover, once the person is in the job there still remains no incentive to be productive in spite of one's potential because wages are unrelated to output.

<sup>29</sup> This is akin to Varian's (1974) "wealth-fair" proposal. See also (Baumol, 1986: 43-45).

<sup>30</sup> Such payments can only be conceived of as compensatory in the extended sense noted in section two; namely where the baseline to be restored includes the productivity payments that the agent would receive in the next best alternative job.

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