EPRU

Economic Policy Research Unit
Institute of Economics
University of Copenhagen
Studiestræde 6
DK-1455 Copenhagen K
DENMARK
Tel: (+45) 3532 4411
Fax: (+45) 3532 4444
Web: http://www.econ.ku.dk/epru/

**Optimal Workfare with Voluntary
and Involuntary Unemployment**

Claus Thustrup Kreiner
and Torben Tranæs

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Claus Thustrup Kreiner
University of Copenhagen, EPRU[†]and, CESifo

Torben Tranæs
Rockwool Foundation Research Unit, CESifo, and IZA

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Abstract

This paper studies whether a benevolent government should use workfare as part of its unemployment benefit policy. We consider a population composed of employed and unemployed workers as well as individuals who do not seek employment. Job search behavior is private information implying that voluntarily unemployed individuals can claim unemployment insurance (UI) benefits intended for unemployed workers. As a consequence, pecuniary benefit schemes underinsure workers against unemployment. We show that requiring unproductive activities (workfare) in exchange for UI benefits may create a Pareto improvement by facilitating better unemployment insurance for workers, and we characterize the situations where this is the case. (*JEL* H2, J65)

1 Introduction

Traditionally workfare has been employed in poverty alleviation programs. In particular, in the US where many states have a history of requiring some type of workfare activity in exchange for poverty relief payments. In the last two decades, it has become more and more common to use workfare in relation to joblessness in general. For example, many unemployment insurance (UI) experiments in the US have included elements of effort requirements. In these experiments recipients of UI benefits need to show up at the Employment Service frequently or participate in part-time courses on how to search and apply for jobs (see Meyer, 1995). Activities like these expropriate time from unemployed workers and thus reduce their current utility, independently of whether their job search skills improve. This is also the case in European countries where participation in Active Labor Market Programs is now compulsory for recipients of unemployment benefits:[1] after a given period of unemployment, individuals have to submit to some effort requirements in order to continue to receive benefits. Defining workfare broadly as benefits given conditionally on the recipients fulfilling some obligations, workfare is, in effect, being introduced into the unemployment benefit system.

The existing studies on workfare focus entirely on its use in poverty alleviation programs. More specifically, these studies have analysed whether workfare should be used as a mean of preventing the non-poor from claiming relief payments. The main conclusion from the analyses is that there is no obvious welfare argument for requiring (unproductive) workfare activities in exchange for poverty relief (Besley and Coate, 1992, 1995).[2] In Cuff (2000) and Beaudry and Blackorby (2001), it may be socially

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[1] The countries of the European Union have committed themselves to require work or educational effort in return for unemployment benefits after the first year of unemployment (The European Council, 1997). In many countries participation in Active Labor Market Programs has been required for years but without actually being enforced. E.g., the Netherlands did not start to sanction people who did not participate before 1992 (van den Berg et al., 2004).

[2] In their framework, where individuals differ only with respect to productivity, it is inefficient to

optimal to use workfare in poverty alleviation programs but it requires a rather special combination of heterogeneity in abilities and work-disutility. Thus, workfare may only serve as an optimal screening device if low-ability individuals also have a low disutility of labour compared to the high-ability individuals.

While the existing literature has examined the use of workfare as part of an optimal redistribution policy, our goal is to analyse the optimality of introducing workfare in unemployment benefit policies. That is, we investigate whether there is a welfare argument for the new practise of requiring workfare activities of unemployed individuals in general. This implies that not only individuals on the margin of the labor market are a target – the average worker is also subject to workfare when unemployed. To capture this we assume that individuals who wish to work cannot be sure to obtain employment in each period. The reason may, for example, be standard search frictions: economic development causes some jobs to disappear and because of incomplete information it takes time before an unemployed worker is matched with a new firm. The unlucky workers who did not get a job become *involuntarily unemployed* and provide therefore a reason for implementing an unemployment insurance system.

Beyond the group of workers, who are either employed or unemployed, we consider an additional group of individuals who are without a job because they prefer not to work. Although these individuals are *voluntarily unemployed*, they may be entitled to some transfers from the government.[3] More specifically, we assume that voluntarily unemployed individuals can obtain a minimum transfer level, defined as the amount the government is willing to give individuals who are in the working age but do not wish

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use workfare to secure a minimum *utility* level for all. It may though be optimal to use workfare to provide a minimum *income* level as this ignores the disutility of performing workfare activities.

[3]The group of voluntarily unemployed is not necessarily composed only of individuals who live their entire life outside the labor force. The group may also consist of otherwise hard working individuals who at some point in time may prefer not to work, say, because of child birth.

to take on regular work.[4] Nevertheless, the voluntarily unemployed individuals may claim UI benefits – if these benefits are more generous than the minimum transfer level – because job search behavior is private information.[5]

This kind of adverse selection may explain the absence of privately provided unemployment insurance as shown by Chiu and Karni (1998). In the publicly provided benefit system we study, the adverse selection implies that workers become underinsured against unemployment. In this case, a government may chose to use workfare as a device to separate involuntarily and voluntarily unemployed in order to provide a better unemployment insurance for workers. In fact, we show that this can Pareto improve the government's unemployment benefit policy.

This illustrates how the adverse selection problem in our model with involuntary unemployment differs from the adverse selection problem faced in poverty alleviation programs. In the latter workfare is used to prevent high productive individuals from claiming poverty relief while in our analysis workfare is used to discourage voluntarily jobless individuals from obtaining unemployment benefits intended for involuntarily unemployed workers.[6] As a consequence, the conditions for workfare to be Pareto optimal

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[4]In most advanced countries there exist defacto income transfers to jobless individuals who could work but prefer not to. In principle this level (the minimum transfer level) is often zero but in practise it is not. In Denmark, for example, it is zero in principle, but in practise it is equal to social assistance in the short run and equal to a lower but still non-trivial level in the long run. In the United States the minimum transfer level is also strictly positive in the long run as people without an income can always claim food stamps.

[5]There are clear indications that this actually happens. For instance, in the Netherlands and Denmark in the early nineties *only* 55% and 60%, respectively, of benefit recipients indicated that they wanted a job and were actively searching for one (see Angenent, Bommeljé, and Schep, 1993; Pedersen and Smith, 1995). See also the discussion in Karni (1999).

[6]There is some evidence pointing to this discouragement effect of workfare. Meyer (1995) evaluates a number of UI experiments some of which have an effort requiring element to them and find that this can easily influence the take up rate. The most direct evidence is due to Black, Berger, Noel, and Smith (2003). They are able to identify a sharp increase in the early exit from UI for recipients who face effort requirements. What triggers the exits seems to be the letter which informs recipients that the continuation of their benefits is conditional upon their participation in certain programs. Another strong piece of evidence that 'activation' has a deterrence effect is Gerdsen (2003) who shows how the tail of the unemployed hazard rate function out of unemployment shifts to the left as activation in Denmark during the 1990s was required earlier and earlier in an unemployment spell.

are also very different. In our case, individuals only have to differ with respect to disutility of work – with voluntarily unemployed individuals having the *high* disutility of work. In poverty alleviation programs, a necessary condition for the optimality of workfare is that those not working have both a *low* disutility of labour and a low productivity.

Our results also show that the scope for implementing Pareto improving workfare benefit systems is larger if voluntary unemployment constitutes a large fraction of overall unemployment and if the minimum income transfer level of the government is low. On the other hand, if individuals have the same tastes for work, it is never optimal to require that UI benefit recipients spend a certain number of hours on workfare activities in exchange for their benefits (time workfare). But in this case, it may be optimal to require that the recipients perform a specific task in exchange for benefits (task workfare), namely when the productivity of the individuals differ.

The remaining part of the paper is organised as follows. The next section presents the model. The third section derives the Pareto optimal benefit policies and characterizes when pecuniary benefit systems are dominated by workfare benefit systems. The last section makes some final remarks.

2   The Model

We study the problem of a benevolent government that wishes to design a benefit system for unemployed individuals. We assume that the population is composed of two types of individuals: workers who wish to work and non-workers who do not. As a consequence, the unemployed population consists of both involuntarily and voluntarily unemployed. Individual characteristics are private information and the government cannot observe individual productivity, tastes for work, or whether an individual has received a job offer. Hence, the government cannot distinguish a voluntarily unemployed person from

an involuntarily unemployed person; joblessness can both be bad luck or by choice. The optimal benefit policy depends, of course, on how much weight the government puts on each type of individual. However, instead of solving for an optimal policy, our aim is to characterize all the Pareto optimal benefit policies and study whether these policies include workfare.

The Timing of Events

First, each individual decides whether or not to join the labor force. Second, all members of the labor force receive a job offer with probability $\rho \in (0,1)$.[7] Those who receive a job offer either accept or reject and if they reject they remain jobless. Individuals who either rejected a job offer or who did not get an offer are unemployed and can claim unemployment compensation, which is a package $\{b, \ell^e\}$, consisting of a monetary transfer, b, and an effort requirement, ℓ^e, measured in time units. A pecuniary compensation scheme has $\ell^e = 0$ and a workfare scheme has $\ell^e > 0$. Hence, to collect benefits under a workfare scheme, unemployed individuals have to spend a certain amount of time on workfare activities.

Individuals who choose to stay outside the labor force receive a transfer, $\hat{b} \leq b$, and, without loss of generality, we assume that $\hat{b}$ is not accompanied by any effort requirements.[8]

Individual Characteristics

A fraction η of the population are workers (type w), while the remaining individuals are non-workers (type n). The preferences of an individual of type i are represented by

$$u_i = v^i(y_i, \ell_i), \quad i \in \{w, n\},$$

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[7]To simplify the analysis we assume that unemployment is exogenous. Of course, the introduction of workfare may also influence the natural rate of unemployment. However, to focus on the use of workfare as a screening device we abstract from such effects.

[8]It is never Pareto optimal to require effort of those outside the labor market. It would be possible to reduce the effort requirement and the benefit level of those outside the labor market keeping their utility level fixed while increasing the utility of workers through a lowering of the tax rate.

where y_i is net-income, ℓ_i is forgone leisure, and $v^i(\cdot)$ is a utility function with standard properties. The marginal rate of substitution between income and leisure is defined as $MRS^i \equiv -\partial v_2^i(y_i, \ell_i) / \partial v_1^i(y_i, \ell_i)$. We wish to study situations where workers are more eager to work than non-workers. Thus, we assume that $MRS^w(y_i, \ell_i) < MRS^n(y_i, \ell_i)$, i.e., for a given combination of income and leisure, type w requires less income compensation than type n in order to work an additional hour.

An employed individual of type i earns a net-income of $\omega_i \ell_i - t$ where ω_i is an exogenous hourly wage rate, while t is a tax levied on employed individuals in order to finance the benefit system. We assume that the utility function of workers fulfill the boundary conditions $\lim_{y_w \to 0} v_1^w(y_w, l_w) = \infty$ and $\lim_{l_w \to \infty} v_2^w(y_w, l_w) = -\infty$, implying that there is always an internal solution, ℓ_w^*, to

$$\omega_w = MRS^w(\omega_w \ell_w^* - t, \ell_w^*), \tag{1}$$

which determines the optimal number of working hours for a type w individual *if* he decides to work. For type n we assume that $MRS^n(0,0) > \omega_n$ which is a sufficient condition ensuring that type n will never work.[9]

Constraints on Feasible Benefit Policies

When choosing a benefit policy $\{t, b, \ell^e, \hat{b}\}$ the government knows the distribution of individual characteristics but cannot observe neither the characteristics of any particular individual nor whether an individual has received a job offer. This imposes some restrictions on which policies the government can implement:

$$v^w(\omega_w \ell_w^* - t, \ell_w^*) \geq v^w(b, \ell^e), \tag{2}$$

$$v^n(\hat{b}, 0) \geq v^n(b, l^e), \tag{3}$$

$$\eta[\rho t - (1-\rho)b] - (1-\eta)\hat{b} \geq 0. \tag{4}$$

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[9]This condition is sufficient but not necessary for our results. If the inequality is not fulfilled our results still hold provided that non-workers do not want to work at the minimum transfer level chosen by the government, $\underline{b}$ (defined in the next section).

The first constraint reflects that the government needs to make sure that workers prefer employment to unemployment because it is impossible for the government to observe whether a worker rejects a job offer in order to claim benefits. If inequality (2) does not hold, the only benefit system that can exists is the trivial one with $t = b = \hat{b} = 0$.

The second constraint states that the government's benefit policy needs to be incentive compatible. The model may have either a separating equilibrium or a pooling equilibrium depending on whether non-workers choose the benefit package $\{b, \ell^e\}$ or the package $\{\hat{b}, 0\}$. However, it turns out that it is sufficient to focus only on the separating equilibrium where non-workers prefer to be outside the labor market receiving $\hat{b}$. Note, that it is never optimal for the government to require workfare in a pooling equilibrium as this reduces the utility of both workers and non-workers. So formally, any optimal pooling equilibrium is a special case of a separating equilibrium where $b = \hat{b}$ and $\ell^e = 0$, and it is therefore not excluded by inequality (3).

The last constraint is a government budget constraint where the first term is the net revenue of workers and the last term is the cost of transfers to non-workers.

3   Optimal Benefit Policies

In this section, we derive the Pareto optimal benefit policies and investigate whether pecuniary benefit policies can be Pareto improved by the introduction of workfare. To characterize the Pareto optimal policies, we maximize the expected utility of workers,

$$E\left(u_w\right) = \rho v^w \left(\omega_w \ell_w^* - t, \ell_w^*\right) + (1 - \rho) \, v^w \left(b, \ell^e\right), \tag{5}$$

subject to a minimum utility level of non-workers or, equivalently, subject to a given minimum level of transfers:

$$\hat{b} \geq \underline{b}. \tag{6}$$

Now, we may solve for the (constrained) Pareto optimal benefit policies by maximizing equation (5) subject to the individual labour supply of workers (1), the constraints (2)-(4), the minimum utility requirement of non-workers (6), and the requirement that all variables are non-negative. In this way, we obtain all the Pareto optimal benefit policies parameterized on $\underline{b}$. A government that cares a lot about non-workers has a high $\underline{b}$ and chooses therefore a Pareto optimal benefit policy with a relatively high utility level for non-workers.

3.1 Pecuniary Benefit Systems

A pecuniary benefit policy is characterized by $\{b, \hat{b}, t\}$ and $\ell^e = 0$. To solve for the optimal policies, note first that both the incentive compatibility constraint (3) and the budget constraint (4) always are binding. The incentive compatibility constraint then implies that the benefit levels are identical for the two types, $b = \hat{b}$, i.e. without workfare it is impossible to separate workers and non-workers. From the budget constraint, we then obtain $t = \frac{1-\eta\rho}{\eta\rho}b$. Now, if the two remaining constraints (2) and (6) are not binding, the optimal solution may be found by inserting the above relationships between benefit levels and taxes in the objective (5) and maximize with respect to b. After using the first order condition (1), we obtain

$$1 - \frac{v_1^w\left(y_w^*, \ell_w^*\right)}{v_1^w\left(b^*, 0\right)} = \frac{1-\eta}{1-\eta\rho} \equiv \Psi \leq 1, \tag{7}$$

where $y_w^* = \omega_w \ell_w^* - \frac{1-\eta\rho}{\eta\rho}b^*$. The fraction on the left hand side (LHS) measures how much additional income the worker will require in the unemployment state in order to give up one unit of income in the working state. Hence, the LHS is a measure of the marginal benefits of additional unemployment insurance for the workers. The RHS measures the share of voluntary unemployment in overall unemployment which is also a measure of the marginal cost of additional unemployment insurance for workers. When

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income of workers is moved from the employment state to the unemployment state, Ψ measures the share of the benefits that is given to non-workers instead of unemployed workers. Hence, if the population contains many non-workers (η is low) and if the likelihood of unemployment is low among workers (ρ is high), voluntary unemployment will be relatively high implying that unemployed workers, ceteris paribus, obtain less unemployment insurance.

In the full optimization problem, the benefit level given by eq. (7) may be in conflict with the labor market participation constraint in (2) and with the minimum transfer level in (6). Note, that the labour market participation constraint implies that the benefit level has to be below some upper bound $\bar{b}$. Hence, the solution to the full optimization problem is characterized by

$$b^* = \underline{b} \quad \text{or} \quad 1 - \frac{v_1^w\left(y_w^*, \ell_w^*\right)}{v_1^w\left(b^*, 0\right)} = \Psi \quad \text{or} \quad b^* = \bar{b}. \tag{8}$$

Notice from this solution that it is always (constrained) Pareto optimal to have some level of benefits for non-workers. Hence, a government that does not care about non-workers, corresponding to a minimum transfer level $\underline{b}$ equal to zero, will always end up giving benefits to non-workers. The reason is of course that the government cannot give workers any unemployment insurance without giving the same amount in transfers to non-workers.[10]

3.2 Workfare Benefit Systems

Having characterized the Pareto optimal pecuniary benefit policies, we now address whether these policies may be Pareto improved by introducing workfare. More specifically, we derive the conditions under which a small increase in ℓ^e around the initial

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[10]In the model, it is always optimal to have some insurance as the marginal utility of insurance goes towards infinity when $b \to 0$ because of the boundary condition. Without this condition, it may not be optimal to have any unemployment benefits for $\underline{b} = 0$. This corresponds to the non-existence of market provided unemployment insurance in Chiu and Karni (1998).

equilibrium increases the expected utility of workers for a given utility of non-workers. From the incentive compatibility constraint (3), we obtain

$$\frac{db}{d\ell^e} = MRS^n \left(b^*, 0 \right),$$

which yields the amount that benefits may be raised without having non-workers claiming the benefit package intended for unemployed workers.

Next, we total-differentiate the utility function of workers (5) and insert the above equation as well as $dt/db = (1 - \rho) / \rho$ obtained from the budget constraint (4). The result shows that a pecuniary benefit system with $b^* < \bar{b}$ may be Pareto improved by the introduction of workfare if

$$1 - \frac{v_1^w \left(y_w^*, \ell_w^* \right)}{v_1^w \left(b^*, 0 \right)} > \frac{MRS^w \left(b^*, 0 \right)}{MRS^n \left(b^*, 0 \right)}. \tag{9}$$

The LHS is identical to the LHS in eq. (7) and measures again the marginal benefits of additional unemployment insurance for workers. The RHS is a measure of the marginal cost of additional unemployment insurance for workers. This was also the case in eq. (7) but the type of costs are completely different now. Before, under a pure pecuniary benefit system, the marginal costs reflected an income loss of workers because non-workers also obtained a rise in benefits. Now, the marginal cost of additional insurance reflects a loss inflicted upon workers because of the introduction of workfare. The size of this loss depends on the taste for leisure of workers relative to non-workers. The denominator on the RHS of (9) gives the required time spend on workfare activities in order to discourage voluntarily unemployed from claiming the high benefit level, while the numerator reflects how much workers lose (measured in units of income) per hour spend on workfare activities. Thus, the RHS of inequality (9) converts the worker's utility loss of doing the required workfare activities into an equivalent income loss.

To conclude, inequality (9) shows that a pecuniary benefit system can be Pareto improved if the insurance incentive of workers is sufficiently large and if the difference in

valuation of leisure between workers and non-workers is sufficiently large. In addition, the inequality reveals that if workers and non-workers had the same valuation of leisure, but maybe different productivity, workfare would never be optimal.

If we consider a pecuniary benefit system where the initial benefit level lies in between the minimum transfer level of the government, $\underline{b}$, and the threshold determined by the labour market participation constraint, $\bar{b}$, we have

Proposition 1 *A pecuniary benefit system with $\underline{b} < b^* < \bar{b}$ can be Pareto improved by the introduction of workfare if*

$$\Psi > \frac{MRS^w(b^*, 0)}{MRS^n(b^*, 0)}. \tag{10}$$

Proof. This follows directly by substituting the solution in (7) into the condition (9). □

Condition (10) states that if the marginal cost of additional insurance in the initial pecuniary benefit system is above the marginal cost in the corresponding workfare system then a Pareto improvement can be achieved by the introduction of workfare. The larger the share of voluntary unemployment in overall unemployment (Ψ) and the larger the difference between the valuation of leisure between workers and non-workers the more likely it is that workfare creates a Pareto improvement.

Proposition 1 only characterizes the possibility of Pareto improvements for the cases where (2) and (6) are not binding. If the minimum transfer level in constraint (6) is binding, it is still optimal to use workfare as long as condition (9) is satisfied. Consider, for example, an initial situation where the minimum transfer level and the unconstrained benefit level are just equal and where the workfare condition (10) is meet. In this case, the two conditions (9) and (10) are identical. This implies that the workfare condition

(9) also will be satisfied after a small rise in the minimum transfer level $\underline{b}$. Hence, if workfare is optimal when $\underline{b}$ is not binding, it will also be optimal to use workfare in some cases where $\underline{b}$ is binding.

On the other hand, if $\underline{b}$ is raised to $\bar{b}$ then the labour market constraint (2) becomes binding. In this case, workfare is never optimal. If workfare is used to relax the labour market participation constraint, the worker may obtain additional benefits. However, this can only continue until the pre-workfare utility level is reached. Thus, the worker is not able to obtain any utility gain in the unemployment state but faces a strictly lower utility when working because of an increase in the tax rate needed to finance the higher benefits.

From these considerations, we are able to establish,

Proposition 2 *There exists $\tilde{\Psi} \in (0,1)$ and $\tilde{b} \in (0,\bar{b})$ such that for any minimum transfer levels $\underline{b} \in [0,\tilde{b}]$, any pecuniary benefit system is Pareto dominated by a workfare benefit system if the voluntary part of overall unemployment is sufficiently high, $\Psi \geq \tilde{\Psi}$.*

Proof. Note first that if $\underline{b} = 0$, the benefit level in the pecuniary system is either determined by eq. (7) or $b^* = \bar{b}$. Second, if $\Psi \to 1$ it follows from (7) and (2) that $b^* \to 0$ and $b^* < \hat{b}$. In this case the pecuniary system is characterized by (7) implying from (10) that workfare creates a Pareto improvement. By continuity, it follows that there must exist some $\tilde{\Psi}$ such that $b^* < \hat{b}$ and condition (10) is fulfilled for all $\Psi \geq \tilde{\Psi}$. Finally, note that if $\Psi = \tilde{\Psi}$, the minimum transfer level $\underline{b}$ is not binding as long as it is below some given level. When $\underline{b}$ becomes binding, workfare is still Pareto optimal until some upper bound $\tilde{b}$ is reached. $\square$

Proposition 2 demonstrates that it is Pareto optimal to include unproductive workfare in unemployment benefit schemes if individuals who do not want to work constitute

a sufficiently large part of unemployment (corresponding to a small η and a high ρ). In that case, the utility loss among workers of being on workfare is small relative to the number of non-workers discouraged from claiming UI benefits. A government that weighs the utility of the two types together and does not put too much weight on non-workers (corresponding to a low value of $\underline{b}$) would want to use workfare. On the other hand, if individuals who are unemployed by choice are very important in the objective function of the government, workfare is less likely to be implemented. In that case, both UI benefits and transfers are high in the pecuniary system, implying that the marginal benefit of additional UI insurance is low.

3.3   Time Workfare vs. Task Workfare

In the preceding analysis we have assumed that workfare is a time requirement, henceforth called "time workfare". Alternatively, it would be possible to require that benefit recipients perform a particular task, "task workfare". This would not change any of the previous results if both workers and non-workers use the same amount of time performing the task. However, if workers and non-workers have different skills, it is – at least in principle – possible to devise tasks that high productivity individuals can perform faster than low productivity individuals. For example, if the two types are both bricklayers, one faster than the other, the task could simply be laying bricks.

An analysis of task workfare requires only a small modification of the model. Suppose that benefit recipients have to perform a specific task, T, for which their productivity in an ordinary job matters such that the time required to perform the task is given by

$$\ell_i^e = T/\omega_i.$$

With this type of workfare Proposition 1 is replaced by

Proposition 3 *A pecuniary benefit system with $\underline{b} < b^* < \bar{b}$ can be Pareto improved by*

the introduction of task workfare if

$$\Psi > \frac{MRS^w\left(b^*, 0\right)}{MRS^n\left(b^*, 0\right)} \cdot \frac{\omega_n}{\omega_w}. \tag{11}$$

Proof. This follows directly by recalculating the condition (9) for task workfare and substituting eq. (7) into the condition. □

Thus, the scope for using workfare is enlarged if it is possible to demand a specific task instead of a simple time requirement in exchange for benefits. In fact, contrary to time workfare, it may be Pareto optimal to use task workfare if workers and non-workers differ only with respect to productivity. This occurs if the productivity of workers is sufficiently high compared to non-workers, specifically if $\Psi > \omega_n/\omega_w$. The intuition is simply that task workfare implicitly requires more time of less productive persons, implying that effort-contingent UI benefits are less attractive to non-workers than workers although they have the same valuation of leisure. Thus, task workfare is a better screening device than time workfare. In fact, it is easy to prove that there always exists a task workfare benefit system which weekly Pareto dominates all time workfare benefit systems.

4 Discussion

We have demonstrated that the use of workfare activities for UI recipients, as embedded in the latest labor market reforms in many countries, may enhance welfare by facilitating better insurance against unemployment. UI recipients are required to perform specific tasks or to spend a certain amount of time in workfare in order to collect benefits, and these activities inflict disutility on the participants. To make our point more transparent, we have assumed that the activities themselves do not bring about any valuable product;

nevertheless, they can Pareto improve a pecuniary unemployment benefit policy.[11]

If individual characteristics are known, the UI problem is straightforward: with risk adverse workers, the UI scheme should simply insure workers fully against unemployment and no workfare should be required. But when preferences and productivity are private information and job search behavior cannot be observed, the optimal UI does not yield full insurance; voluntarily unemployed workers claim UI benefits so that only part of the tax revenue goes to compensate the involuntarily unemployed. This is when workfare becomes useful. If individuals differ with respect to their preferences for leisure, the effort requirement of workfare is going to affect them differently. This may facilitate better income smoothing for workers by keeping voluntarily unemployed from claiming UI benefits. Thus, workfare may Pareto improve the benefit system.

Our analysis shows that the gains from using workfare are large if voluntary unemployment constitutes a large part of overall unemployment and if the minimum transfer level offered by the government to voluntarily unemployed individuals is low. At a high minimum transfer level, corresponding to a high weight on voluntarily unemployed in the government objective function, workers can be offered a UI scheme with high monetary benefits without the use of workfare. The gains from additional insurance are therefore small and workfare becomes less preferable. On the other hand, when voluntarily jobless individuals are not eligible for any kinds of benefits (the minimum transfer level is zero) the case for using workfare to improve unemployment insurance is particular strong.

It is never possible to Pareto improve a benefit system by the use of time requirements if individuals differ only with respect to productivity.[12] In this case, (time) workfare is

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[11] The assumption that workfare activities are unproductive is, of course, extreme. However, there are also substantial costs associated with setting up and running a workfare system. So strictly speaking, what we assume is that costs and benefits cancel out. If workfare provides a net product, there is certainly much greater scope for using it (see Brett, 1998).

[12] This complements the findings on workfare in poverty alleviation programs. Besley and Coate (1992, 1995) show that, when individuals differ only with respect to productivity, it is never Pareto optimal to use (time) workfare to discourage individuals with high abilities from claiming benefits

not a useful screening device, as involuntarily and voluntarily unemployed individuals experience the same disutility of being on workfare. However, if specific tasks can be required then workfare may be part of an optimal benefit policy even when individuals differ only with respect to productivity. This arises because a task requirement is a better screening device, which also implies that, in principle, it is better to base a workfare benefit system on task requirements than on time requirements.

Of course, in practise a task workfare system is probably more difficult to administer compared to a time workfare system. In time workfare everybody just has to participate a certain number of hours in some workfare activities, whereas in task workfare a specific task needs to be devised for each type of skill, so that the unobserved productivity of recipients will determine different performing times for different productivity types. Thus, the gains from better screening when using a task workfare system should be balanced against the higher administrative costs of running such a system.

Our aim in this paper has been to focus entirely on the role of workfare as a screening device. Obviously, workfare is likely to also influence other important aspects of the labor market such as search behaviour and wage setting. We have also disregarded other potential ways to improve the incentives in the benefit system, see Frederiksson and Holmlund (2003) for a recent review. A key assumption behind our results is that the government cannot observe peoples tastes or intentions. If it is possible at low costs to observe individuals taste for work then the sorting might be provided more efficiently by other means than workfare. For example, monitoring and sanctions might Pareto dominate workfare if it is possible to verify whether job search is sincere and whether jobs are lost voluntarily.

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intended for those with low abilities. We demonstrate that it is also not optimal to use workfare to discourage low ability types from claiming UI benefits intended for high ability types.

References

[1] Angenent, F. J. A., J. B. Bommeljé, and G. J. Schep (1993): "From Welfare to Work; about the Position in the Labor Market Instrument in Welfare" (in Dutch: "Straf of Stimulans? Het Toepassen van Sancties als Arbeidsmarktinstrument in de RWW"), VUGA Uitgeverij, 's-Gravenhage.

[2] Beaudry, Paul and Charles Blackorby (2001): "Taxes and Employment Subsidies in Optimal Redistribution Programs." Manuscript, University of British Columbia.

[3] Besley, Timothy and Stephen Coate (1992): "Workfare versus Welfare: Incentives Arguments for Work Requirements in Poverty-Alleviation Programs." *American Economic Review*, **82**, pp. 249-261.

[4] Besley, Timothy and Stephen Coate (1995): "The Design of Income Maintenance Programmes." *Review of Economic Studies*, **62**, pp. 187-221.

[5] Black, Dan A., Mark C. Berger, and Brett J. Noel (2003): "Is the Threat of Training more Effective than Training itself? Evidence from UI System Using Random Assignment." *American Economic Review*, forthcoming.

[6] Brett, Craig (1998): "Who Should Be on Workfare? The Use of Work Requirements as Part of an Optimal Tax Mix." *Oxford Economic Papers*, **50** (4), pp. 607-622.

[7] Chiu, W. Henry and Edi Karni (1998): "Endogenous Adverse Selection and Unemployment Insurance." *Journal of Political Economy*, **106** (4), pp. 806-827.

[8] Cuff, K. (2000): "Optimality of Workfare with Heterogeneous Preferences." *Canadian Journal of Economics*, **33** (1), pp. 149-74.

[9] European Council (1997): "The Conclusions of the Executive Committee." The Meeting of the European Council in Luxemborg, November 1997.

[10] Frederiksson, Peter and Bertil Holmlund (2003): "Improving Incentives in Unemployment Insurance: A Review of Recent Research," Working Paper 2003:10, Department of Economics, Uppsala University.

[11] Gerdsen, Lars Pico (2003): "Is there an incentive effect of labour market programmes? A study of ALMP in the Danish UI system." memo, Danish National Institute of Social Research (SFI).

[12] Holmlund, Bertil (1998): "Unemployment Insurance in Theory and Practice." *Scandinavian Journal of Economics*, **100** (1), pp. 113-41.

[13] Karni, Edi (1999): "Optimal Unemployment Insurance: A Survey." *Southern Economic Journal*, **66** (2), 442-465.

[14] Meyer, Bruce d. (1995): "Lessons from the U.S. Unemployment Insurance Experiments." *Journal of Economic Literature*, **33** (1), pp. 91-131.

[15] OECD (1998): *The OECD Employment Outlook.* Paris.

[16] Pedersen, Peder J. and Nina Smith (1995): "Search Activity Among Employed and Unemployed Members of the Workforce" in G. V. Mogensen (ed.): *Work Incentives in the Danish Welfare State.* Aarhus.

[17] Van den Berg, Gerard, Bas van der Klaauw, and Jan C. van Ours (2004): "Punitive Sanctions and the Transition Rate from Welfare to Work." *Journal of Labor Economics*, forthcoming.