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**CONVERTING UNEMPLOYMENT
BENEFITS INTO EMPLOYMENT
SUBSIDIES**

Dennis J Snower

HUMAN RESOURCES



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CONVERTING UNEMPLOYMENT BENEFITS INTO EMPLOYMENT SUBSIDIES

Dennis J Snower

Discussion Paper No. 930
May 1994

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ABSTRACT

Converting Unemployment Benefits into Employment Subsidies*

This paper explores the implications of giving unemployed people – particularly the long-term unemployed – the opportunity to use part of their unemployment benefits to provide employment vouchers to the firms that hire them. The vouchers would depend positively on unemployment duration and training. The paper argues that this policy would give unemployed people and their potential employers an expanded domain of choices in the labour market and thereby reduce the market failures generated and amplified by unemployment benefit systems. A simple theoretical model is presented, followed by preliminary empirical estimates which suggest that the proposed policy may have significant potential in a number of OECD countries.

JEL classification: J23, J24, J31, J32, J64

Keywords: unemployment, employment subsidies, unemployment benefit systems

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NON-TECHNICAL SUMMARY

This paper argues that unemployment benefit systems, in trying to moderate the effects of unemployment, tend to enlarge the size of the underlying problem. Once unemployment benefits have raised the unemployment rate, it becomes particularly important to provide a social safety net for the unemployed, and unemployment benefits are often rationalized on this basis.

In pushing up wages and discouraging job search, unemployment benefit systems not only generate inefficiencies and inequities in their own right, but also augment common labour market failures, particularly those highlighted by the efficiency wage, insider-outsider, and union theories. These market failures have serious dynamic consequences, for the longer people are unemployed, the more their skills erode and the more discouraged and stigmatized they become in the job search process. When unemployment benefit systems amplify these dynamic effects, they put the long-term unemployed at a greater disadvantage in competing for jobs.

This disadvantage is augmented by market failures in the provision of training. The long-term unemployed have often had relatively little opportunity to acquire firm-specific skills and thus, in imperfectly competitive labour markets, their training is associated with a relatively large poaching externality. The long-term unemployed have also relatively high chances of facing credit constraints that prevent them from acquiring efficient amounts of training. They may also be subject to a low-skill/low-growth externality, whereby their deficient skills induce firms to create the low-skill jobs that further reduce workers' incentives to acquire skills.

In response to these problems, the paper analyses the implications of the 'Benefit Transfer Programme' (BTP), whereby the long-term unemployed are given the opportunity to use part of their unemployment benefits to provide vouchers to the firms that hire them. The vouchers would amount to employment subsidies for the unemployed.

Since it is voluntary, the policy would expand the choice sets of the unemployed and their potential employers. Employers would join only if the resulting labour costs are sufficiently low, and the unemployed would join only if the resulting wage offers are sufficiently high. The difference between what the employees receive and what the firms pay would be the unemployment benefits that are converted into employment subsidies.

The BTP has several attractive features:

(i) It would give the government an instrument for tackling the problem of long-term unemployment head-on and thereby help equalize people's employment opportunities.

(ii) The programme would generally not be inflationary, since the long-term unemployment rate has little effect on wage inflation and since the vouchers would reduce labour costs.

(iii) The BTP would be costless to the government, since the funds spent on employment vouchers would have been spent on unemployment benefits anyway. In fact, by setting appropriately the fraction of benefits convertible into vouchers, the government may reap a surplus.

(iv) The programme would be an automatic stabilizer, for when unemployment falls, the amount spent on unemployment benefits falls as well, thereby reducing the funds available for the employment vouchers.

(v) By offering higher value vouchers for firms that use them for training, the BTP could help create long-term jobs and overcome market failures in training provision. Participating firms would clearly seek to make the training maximally appropriate to the available jobs, which is something government-provided training programmes don't do. Moreover, regions of high unemployment would become ones containing many workers with training subsidies, providing an incentive for firms to move there and retrain the local workforce.

CONVERTING UNEMPLOYMENT BENEFITS INTO EMPLOYMENT SUBSIDIES

by Dennis J. Snower*

Although unemployment benefit systems vary widely among OECD countries, they all tend to increase the unemployment whose effects they are meant to mitigate. The reasons are well-known: they push up wages (by improving workers' fall-back positions in wage negotiations) and they discourage job search (for when unemployed people find jobs, their unemployment benefits are withdrawn and they have to pay taxes). Thereby many unemployment benefit systems not only generate inefficiencies and inequities in their own right, but also augment common labor market failures, particularly those highlighted by the efficiency wage, insider-outsider, and union theories. These market failures help explain why free market activity may give rise to excessive real wages and an inequitable distribution of employment opportunities. Unemployment benefits frequently drive real wages up further and widen the distribution of employment opportunities even more.

The market failures have serious dynamic consequences, for the longer people are unemployed, the more their skills erode and the more discouraged and stigmatized they become in the job search process. When the government rewards unemployment (through unemployment benefits) and penalises employment (through income taxes), it unwittingly amplifies these dynamic effects by keeping unemployed people from competing for jobs and becoming "enfranchised" in the wage determination process. As result, their unemployment becomes less effective in moderating wages or raising firms' return from searching for new recruits. In this way, unemployment benefit systems make unemployment more persistent, and put the long-term unemployed at a greater disadvantage in competing for jobs.

This disadvantage is augmented by market failures in the provision of training. The long-term unemployed often have had relatively little opportunity to acquire firm-specific skills and thus, in imperfectly competitive labor markets, their training is associated with a relatively large poaching externality. In other words, if a long-term unemployed person were given training, a relatively large share of the benefits from training would fall not on the firm supplying the training or the worker receiving it, but on third parties - the firms that can poach the workers after they have been trained. Thus the social benefit from training will tend to exceed the private benefit, regardless of how the costs of training are distributed between the trainer and trainee.

The long-term unemployed also have relatively high chances of facing credit constraints that prevent them from acquiring efficient amounts of training. They may also be subject to a "low-skill, bad-job trap", whereby their deficient skills induce firms to create the low-skill jobs that further reduce workers' incentives to acquire skills.¹

A straightforward way out of these dilemmas is to give unemployed people - particularly the long-term unemployed - the opportunity to use part of their unemployment benefits to provide vouchers to the firms that hire them. The vouchers would amount to employment subsidies for the unemployed.²

Being voluntary, the policy would expand the choice sets of the unemployed and their potential employers. Employers would join only if the resulting labor costs are sufficiently low, and the unemployed would join only if the resulting wage offers are sufficiently high. The difference between what the employees receive and what the

¹See Snower (1994a).

²Another variant is to split the vouchers between the firms and the newly hired workers. This would of course give the unemployed greater incentive to engage in job search, but reduce the firms' incentive to hire them.

firms pay would be the unemployment benefits that are converted into employment subsidies.

When people draw unemployment benefits, the government bears the cost of supporting them single-handedly. But when they transfer the benefits to wage subsidies, the government shares this cost with the firms that hire them.

This is the gist of my "benefit transfer program" (BTP), which became the basis of the British Workstart pilot schemes, introduced in the March 1993 budget. A related initiative, known as Jobstart, is running on a large scale in Australia, and kindred experiments have been undertaken in the US, Italy, and elsewhere.³

I. Salient Features of the Benefit Transfer Program

Under the the BTP, the size of the employment vouchers would depend positively on unemployment duration and training. Specifically, the longer a person had been unemployed (up to some maximum), the larger would be his initial voucher; after getting a job, the voucher would gradually fall as the period of employment proceeds. Moreover, larger vouchers (for given unemployment duration) would be given to firms that can prove they are using these vouchers entirely for training.⁴

The underlying reasoning is simple. The longer a person's unemployment duration, the greater his chances of remaining unemployed and thus often the greater the present value of his expected unemployment benefits (including social welfare receipts when unemployment support runs out). So a policy that relates employment vouchers to unemployment benefits will generally have the vouchers rising with

³For example Felli and Ichino (1988), and Woodbury and Spiegelman (1987). Though predominantly successful in reducing unemployment, these schemes all fall far short of what is proposed below. For example, the UK and US schemes do not let the employment subsidies rise with unemployment duration, and none of the schemes are tied to training.

⁴Although workers who have not received the requisite training can be given the right of complaint, leading to penalties, some cheating is inevitable.

unemployment duration. (The temporal profile must not be so steep, however, as to give some unemployed people a significant incentive to postpone job search now in order to qualify for higher vouchers later.) Moreover, the longer a person is employed, the greater his chances of remaining employed - particularly if the position involves on-the-job training. Thus for any given present value of voucher payments, the temporal stream of vouchers that maximizes employment through time will tend to have the vouchers falling with employment duration, and larger vouchers going to firms that devote them to training.

The BTP has several attractive features:

(i) It would give the government an instrument for tackling head-on the problem of long-term unemployment. As noted, the long-term unemployed are disadvantaged in the labor market, and current unemployment benefit systems provide little, if any, countervailing incentives for the long-term unemployed to find work. The BTP would help equalize people's employment opportunities by offering larger vouchers to people who have been unemployed longer.

(ii) The program would generally not be inflationary, since the long-term unemployment rate has little effect on wage inflation and since the vouchers would reduce labor costs.

(iii) The BTP would be costless to the government, since the funds spent on employment vouchers would have been spent on unemployment benefits anyway. In fact, by setting appropriately the fraction of benefits convertible into vouchers, the government may reap a surplus.

(iv) The program would be an automatic stabilizer, for when unemployment falls, the amount spent on unemployment benefits falls as well, thereby reducing the funds available for the employment vouchers. Thus the BTP would provide the highest wage

subsidies when unemployment was highest, and would automatically phase itself out of existence as the economy approached full employment.

(v) The BTP could become a potentially powerful basis for national training programs. By offering higher vouchers for firms that use them for training, the BTP could help create long-term jobs and overcome market failures in training provision. (If firms did not intend keeping their employees after the training vouchers had run out, they would have little to gain from spending the vouchers on training.) In this way, job offers under the BTP could come with the prospect of a longer-term career, which is something that government-provided training schemes do not offer. The existing schemes also run the risk of being ill-suited to people's diverse potential job opportunities, whereas under the BTP's training provisions participating firms would clearly seek to make the training maximally appropriate to the available jobs.

(vi) The BTP could help overcome regional unemployment problems. Regions of high unemployment would become ones containing many workers with training subsidies, providing an incentive for firms to move there and retrain the local workforce. And whereas existing training schemes tend to be very costly, it is well to keep in mind that this one would be free.

Whereas stimulating employment through subsidies to labor is an old idea, the novelty of the BPT lies in linking the subsidies in an integrated way to unemployment benefits, unemployment duration, and training.

II. A Simple Model

The following "toy model" provides an quick picture of how the central feature of the BTP - converting unemployment benefits into employment subsidies - works.⁵

⁵It ignores the relation of the subsidies to unemployment duration and training. Snower (1994b) provides a more detailed treatment.

Consider an economy with a fixed number of identical firms, producing output by means of labor (L). Each firm has a revenue function $R = aL - (1/2)cL^2$, where a and c are positive constants. (All variables are in real terms.) Each firm hires entrants (L_E), who turn into incumbents (L_I) after one period of employment. When an incumbent is fired, the firm pays a constant firing cost f . All workers have a mortality rate σ per period, which is equal to the birth rate.

The real wages of incumbents and entrants are predetermined when the firms make their employment decisions. Assuming entrants to have no market power and no disutility of work, the wage received by entrants is equal to the exogenous unemployment benefit (b), while firms pay $b-v$, where v is the voucher. Thus the marginal revenue minus marginal cost of an entrant is $(a-cL) - (b-v)$; with probability $1-\sigma$ the entrant becomes an incumbent, whose wage is w^* and whose present value of marginal revenue minus marginal cost is $(a-cL-w^*)/\sigma$, for a zero rate of time discount. Entrants are hired until the present value of the resulting stream of marginal revenues minus marginal costs is zero:

$$[(a - cL) - b + v] + (1-\sigma)(a-cL-w^*)/\sigma = 0 \tag{1}$$

Let each incumbent have complete market power and set his wage atomistically.⁶ Then the incumbent wage is set so that the present value of the incumbents' marginal revenue minus marginal cost plus the firing cost (f) is zero:

$$(a - cL - w^*)/\sigma = -f \tag{2}$$

Substituting (2) into (1) yields the equilibrium level of employment:

⁶Letting the incumbent wage be the outcome of a Nash bargain would yield qualitatively similar results.

$$L^* = \frac{1}{c} \left[a - b + v - (1-\sigma)f \right] \quad (3)$$

The model is closed by the BTP constraint, which ensures that the value of the employment vouchers (vL_E^*) does not exceed what is saved on unemployment benefits ($b\Delta L$, where $\Delta L=L^*-L^-$ and $*$ and $-$ stand for equilibrium values in the presence and absence of the voucher):

$$vL_E^* = v\sigma L^* \leq b(L^*-L^-) = b\Delta L \quad (4)$$

since $L_E^* = \sigma L^*$ (entrants equal to retirements) in equilibrium.

Figure 1 describes what happens when the voucher is set at the highest level compatible with the BTP constraint, so that the employment effect is maximized. This occurs when the voucher is v^* , at the intersection of the labor market equilibrium line (LE, given by (3)) and the BTP constraint (BTP, given by (4)). In order for the BTP to work, any voucher v offered by the government must generate enough employment (along the LE line) so that unemployment benefit outlays fall sufficiently for the government to afford v (along the BC curve).⁷ The resulting rise in employment is denoted by ΔL in the figure.

III. Estimating How the BTP Might Affect Unemployment

We now move beyond the simple model above, letting the vouchers be restricted to the long-term unemployed and then deriving some preliminary estimates of how the BTP might affect unemployment in various OECD countries. Accordingly, we divide the workforce into three groups: incumbents (L_I), short-term unemployed (L_{ST}) who are not entitled to vouchers, and the long-term unemployed (L_{LT}) who are. In this context,

⁷By (3) and (4), this is possible whenever $L^- < b/(c\sigma)$. It is also the condition under which the BC curve is steeper than the LE line at L^- in the figure.

there are two major obstacles to the effectiveness of the BTP: "deadweight" (vouchers are spent on people who would have found employment anyway) and "displacement" (subsidized workers crowding out other employees).⁸

Define the "deadweight coefficient" as $D = L_{LT}^-/L_{LT}^*$ (the ratio of the long-term unemployed hired without the voucher to those hired with it). Define the "incumbent displacement coefficient" as $\delta_I = -\Delta L_I/L_{LT}^*$ and the "short-term unemployed displacement coefficient" as $\delta_{ST} = \Delta L_{ST}/L_{LT}^*$ (both of which represent numbers of people displaced as proportion of the long-term unemployed hired). Furthermore, let $r = b/w$ be the replacement ratio (the ratio of average unemployment benefits to the average wage) and $s = v/w$ be the subsidy ratio (the ratio of the average voucher to the average wage). Then the BTP constraint may be rewritten as $\Delta L/L_{LT}^* \equiv \Delta L_{LT}/L_{LT}^* + \Delta L_{ST}/L_{LT}^* + \Delta L_I/L_{LT}^* \equiv 1 - D - \delta_I - \delta_{ST} \geq s/r$, and the maximal subsidy ratio is

$$s^* = (1 - D - \delta_I - \delta_{ST})r \quad (5)$$

Clearly, for the BTP constraint to be satisfied, only a *fraction* of the unemployment benefits of the long-term unemployed should be convertible into employment subsidies, where the fraction depends inversely on the deadweight and displacement coefficients.

The BTP requirement that vouchers increase with unemployment duration and with training provision is clearly meant to mitigate deadweight and displacement, since the long-term unemployed have relatively low employment probabilities and since trained workers have relatively low layoff probabilities. Displacement can be reduced further through requirements such as allowing firms to claim vouchers only for increases in net employment. But past studies in the UK and elsewhere indicate that

⁸In the previous model, the deadweight was $L_E^- = (\sigma/c)[a-b-(1-\sigma)f]$ and displacement was negative, since the additional entrants hired under the voucher were retained as incumbents.

even well-designed programs waste about 50% of the subsidies on deadweight and displacement.

Of course deadweight and displacement are not the only reasons why vouchers may be expected to have a smaller effect on employment than an equivalent reduction in the real wage. First, the voucher may reduce the employment probability of those out of the labor force (who do not qualify for the voucher) while a wage reduction increases their employment probability. Second, it is conceivable that the voucher could drive up the real wages paid by firms, thereby reducing their employment impact. In practice, however, real wages are more likely to fall, particularly if there is significant displacement.⁹

In short, if the employment effect of a proportional real product wage reduction is $\Delta L/L = -\eta(\Delta w/w)$, where η is the elasticity of labor demand, then we may represent the employment effect of an equivalent subsidy ratio by $\theta\eta s$, where θ is the "subsidy effectiveness coefficient" ($0 < \theta < 1$). Thus, by (5), the employment effect of the maximal subsidy ratio is

$$\Delta L/L^- = \theta\eta s^* = \theta\eta(1 - D - \delta_I - \delta_{ST})r \quad (6)$$

For a constant labor supply, the corresponding change in the unemployment rate is $-\Delta u/u^- = (1-u^-/u^-)(\Delta L/L)$.

Assuming that 50% of the vouchers are wasted on deadweight and displacement and that the vouchers are half as effective in raising employment than an equivalent wage reduction, we set $1 - D - \delta_I - \delta_{ST} = 0.5$ and $\theta = 0.5$. Then using the replacement

⁹The voucher improves both the firms' and workers' fall-back positions in wage negotiations, but given that the low estimated responsiveness of real product wages to unemployment, the former effect is likely to outweigh the latter. In any case, real product wages of the subsidized workers will not rise by as much as the voucher, since the voucher will generally induce additional people who are registered unemployed to compete for jobs, thereby raising the effective supply of labor.

ratios and short-run labor demand elasticities¹⁰ reported in Layard, Nickell, and Jackman (1991), we obtain provisional estimates of how the BTP might affect unemployment rates in various OECD countries, given by ($\Delta_1 u/u$) in Table 1.

To clarify the message underlying the ($\Delta_1 u/u$) column of the table, consider the case of the UK. The average cost of an unemployed person to the UK government is about 36% of the average wage ($r = 0.36$ in Table 1). If all these funds were transferred to wage subsidies, this would amount to a 36% subsidy, on average. But now suppose that only *half* the funds are transferred, so that the average subsidy comes to 18% (half of 36%). I have argued that the subsidy is unlikely to raise real wages received by workers and may well reduce them. But if we assume that workers' real wages remain constant, then firms' labor costs will fall by about the amount of the subsidy. If in addition we suppose that the subsidy is half as effective in promoting employment as an equal wage reduction, then the subsidy is about equivalent to a 9% drop in wages (half of 18%). Given an employment elasticity of -0.29 (as indicated in Table 1), then employment would rise by 2.61% (since 0.29 times 9% is 2.61%). But if employment rises by that amount, then the unemployment rate will fall by 22.4%. And this would still leave half of the funds financing the current unemployment benefit package to cover deadweight and displacement.

This estimate of the unemployment effect in the UK is conservative for several reasons. First, the labor demand elasticity quoted in Table 1 is conservative; Bean, Layard, and Nickell (1986), for example, estimate this elasticity to be -0.40 . Second, a subsidy effectiveness coefficient of 0.5 is set conservatively, particularly if the subsidy turns out to put downward pressure on wages. If, for example, the employment elasticity is -0.4 , while continuing to assume that the

¹⁰The long-run elasticities are invariably larger, implying correspondingly larger unemployment effects.

subsidy effectiveness coefficient is 0.5, then - following the reasoning above - we find that unemployment rate would fall by 50%!

Looking down the $(\Delta u/u)$ column of Table 1, we observe that the predicted unemployment effect of the BTP is much smaller in the UK than in most other OECD countries. For example, the unemployment effect is 71.8% in Canada, 34.8% in the Netherlands, 50% in Spain, and 34.8% in the US. Even if we assume that the subsidy effectiveness coefficient is only 0.3, the unemployment effect still is 55.1% in Austria, 47.1% in Denmark, and 79.9% in Germany.

Needless to say, these figures are no more than suggestive. The estimates of replacement ratios and labor demand elasticities are subject to substantial uncertainty and vary across sectors and population groups. Higher values of the deadweight, displacement, and subsidy effectiveness coefficients, a positive labor supply response to the subsidy, or an induced rise in the real product wage, would obviously yield lower predicted unemployment effects. Nevertheless, many of these effects are sufficiently large to remain impressive even after substantial allowance for error.

An alternative way of evaluating these unemployment effects is to endogenize the deadweight and displacement coefficients by assuming that (a) the deadweight depends simply on employment in the absence of the voucher, and (b) the number of people displaced depends on the number of additional long-term unemployed people hired due to the voucher.

With regard to deadweight, let ρ be the incumbents' retention probability in the absence of the voucher, so that $(1-\rho)$ is their separation probability. Assuming that the incumbent workforce is constant through time, then the number of incumbents who leave their jobs in the absence of the voucher, $(1-\rho)L^-$, is equal to the number of vacancies. Let γ be the fraction of these vacancies filled by the long-term

unemployed. Then $L_{LT}^- = \gamma(1-\rho)L^-$ is the number of jobs going to the long-term unemployed in the absence of the voucher; it is, in short, the deadweight.

Regarding displacement, assume that the number of incumbents displaced is linearly related to the number of additional long-term unemployed people hired under the BTP: $\Delta L_I = -\alpha_I \Delta L_{LT}$. Similarly, suppose that the additional number of short-term unemployed people who remain jobless due to competition with the voucher recipients is also linearly related to the number of additional long-term unemployed people hired: $\Delta L_{ST} = -\alpha_{ST} \Delta L_{LT}$, where α_I and α_{ST} are positive constants.

Substituting these assumptions into the BTP constraint $r\Delta L \geq sL_{LT}^*$, yields the maximal subsidy ratio

$$s^* = (1 - \alpha_I - \alpha_{ST}) \left(r - \frac{\gamma(1-\rho)}{\eta\theta} \right) \quad (7)$$

with an employment effect

$$\Delta L/L^- = \theta\eta s^* = \theta \cdot \eta \cdot (1 - \alpha_I - \alpha_{ST}) \left(r - \frac{\gamma(1-\rho)}{\eta\theta} \right) \quad (8)$$

Setting $\alpha_I + \alpha_{ST} = 0.25$, $\rho = 0.9$, $\gamma = 0.25$, and $\theta = 0.5$, together with the replacement ratios and labor demand elasticities above, yields the percentage changes in unemployment rates given by $(\Delta_2 u/u)$ in Table 1. Observe that these results are broadly similar to those in the $(\Delta_1 u/u)$ column.

Once again, while it would be unwise to set great store by any individual figure, the results give the overall impression that the BTP is worth serious consideration by policy makers.

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TABLE 1: Unemployment Effects

Country	u	η	r	$\Delta_1 u/u$	$\Delta_2 u/u$
Austria	5.7	0.37	0.6	55.1	51.6
Belgium	9.3	0.3	0.6	43.9	47.5
Canada	11.3	0.61	0.6	71.8	93.0
Denmark	12.3	0.49	0.9	47.1	57.4
Finland	17.9	0.046	0.75	3.9	-2.6
France	11.7	0.17	0.57	18.3	13.4
Germany	5.9	0.53	0.63	79.9	89.9
Ireland	16.7	0.3	0.5	18.7	18.7
Italy	10.2	0.182	0.02	0.8	-15.3
Netherl	8.3	0.18	0.7	34.8	31.5
Norway	6.1	0.18	0.65	45.0	38.7
Spain	22.1	0.71	0.8	50.0	68.5
Sweden	9.4	0.12	0.8	23.1	16.6
Switz	4.9	0.32	0.7	65.2	61.4
UK	10.4	0.29	0.36	22.4	17.6
USA	6.7	0.2	0.5	34.8	26.1

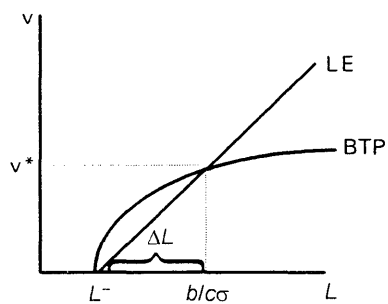


Figure 1: The Employment Effect of the BTP