Do Labour Market Programmes Necessarily Crowd out Regular Employment? A Matching Model Analysis

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by

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Abstract
It is often claimed that the usage of labour market programmes will necessarily crowd out regular employment (see, for example, Holmlund & Lindén (1993)). As a result, it could be argued that, despite their probable negative impact on unemployment, the overall benefits of using labour market programmes may in fact be dubious. In this paper, we show that the usage of labour market programmes need not necessarily crowd out regular employment. On the contrary; we find that there is the possibility of crowding in regular employment, thereby reducing total unemployment. This can be strengthened by using labour market programmes in conjunction with a strict unemployment benefit policy.

1. Introduction

Looking at Europe today, it is difficult to believe that for over two decades immediately following the end of the Second World War, full employment was the norm for most countries in Europe. That situation, however, seems to be something which most people merely regard as a memory, since full employment seems to be as extinct as the dodo. Nowadays, many workers (sic) appear to be trapped in a never-ending prison sentence of long-term unemployment with the sight of remission a distance prospect. But is this situation a necessity? Or can we avoid the cost of long-term unemployment altogether?

Whilst many people advocate using labour market programmes as a means of combating unemployment, there are strong theoretical reasons (often supported by empirical evidence) for being wary of such a proposal. Two principle reasons are put forward for not using labour market programmes. Firstly, it is often argued that by using labour market programmes this leads to more-aggressive wage bargaining on the part of workers due to their fall-back position when failing to reach a wage agreement with employers being higher. Programmes mean that workers are less concerned with the possibility of spending time as searchers. This argument against labour market programmes is certainly worth considering since there exists a possibility that labour market programmes may actually increase overall unemployment.

A second reason for being cautious about using labour market programmes, is the possibility of crowding out regular employment. As an extreme case, what is the point of putting a person on a labour market programme if all this does is prevent the said worker from gaining a regular job? Since it is regular employment which is regarded as the most productive form of employment, any possibility of crowding out must be viewed as an argument against the usage of labour market programmes.

But are the two arguments put forward against the usage of labour market programmes enough to prevent us from advocating their usage? Can there ever be a situation where the usage of labour market programmes crowds in regular employment thus reducing overall unemployment? In this paper, we use a matching model of the labour market to analyse these issues. Our model includes four possible situations for a worker to find themself in: regular employment; on a labour market programme; effective unemployment; and ineffective unemployment. Notice that we divide unemployment into two categories. By effective unemployment, we refer to those unemployed workers who search full time for work. Of those searching, these unemployed workers have the highest possible chance of gaining a regular job. Ineffective unemployment, on the other hand, refers to those unemployed workers who do not

search full time. This is due to them almost giving up hope of gaining a job, due to the length of time which they have already been unemployed. As a result, these workers are less likely to gain regular employment This distinction is strongly motivated by empirical evidence which shows that the long-term unemployed have less chance of exiting from unemployment into regular employment than the short-term unemployed.

In our model, labour market programmes can be given to workers flowing out of regular employment, workers in effective unemployment, and/or workers in ineffective unemployment. Furthermore, within the model we can also vary the level of unemployment benefits paid to those in unemployment as well as the level of pay to those on labour market programmes. We find that we are able to crowd in regular employment and thus reduce total unemployment by either directing labour market programmes at the flow out of regular employment, directing labour market programmes at effective unemployment, or directing programmes at the ineffective unemployed. This success, however, depends on the parameters of the model. The policies can be reinforced by reducing the level of unemployment benefits. Thus when we use labour market programmes, we propose that active labour market policy is strengthened whilst at the same time passive labour market policy is weakened.

This paper takes the following format: Firstly, we develop our model, making the assumptions and framework explicit; secondly, we look at the comparative statics of the model; in section 4, we look at some examples of using labour market programmes and the results obtained; and finally, in Section 5, we attempt to draw a conclusion from the preceding analysis.

2 The Model

In this paper, we analyse the usage of labour market programmes as a means of combating unemployment using a matching model of the labour market. This model is based on the model of Holmlund & Lindén, except that we have divided unemployment into two types – effective unemployment, and ineffective unemployment – and we have taken account of all searchers in the wage-bargaining process. The division of unemployment into the two types specified is strongly motivated by the current situation in many economies where a significant proportion of those in unemployment are long-term unemployed. With regard to the wage-bargaining process and how (and why) ours differs from Holmlund & Lindén's, see Miller (1995a).

In this paper the matching of workers to jobs is not instantaneous; on the contrary, it is both costly and time-consuming. The matching process is described by an aggregate matching function , where S is the number of searchers and V is the number of vacancies. This matching function exhibits constant returns to scale and is increasing in both its arguments. The number of searchers is equal to the number of effective unemployed, the number of effective searchers in ineffective unemployment, plus the number of effective searchers on labour market programmes. Thus we have the identity , where EU is the number of workers in effective unemployment, R is the number of workers on labour market programmes, and IU is the number of workers in ineffective unemployment. Effective unemployment refers to those unemployed workers who participate fully in the labour force and, with respect to other searchers, have the highest chance of gaining a regular job. They have not been unemployed for such a long time as to almost give up hope of ever gaining a regular job. Thus they see search activity as being worthwhile. Ineffective unemployment, on the other hand, refers to those unemployed workers who, due to the duration of their unemployment, regard themselves as having less chance of gaining a regular job. Thus they search less intensively than their counterparts in effective unemployment. c and g refer to the search effectiveness of those on labour market programmes and in ineffective unemployment, respectively. c can take any value between, and including, zero and one, whilst g can take any value greater than zero but less than one. c can be greater than, equal to, or less than g. Taking a value of one indicates that that category of searcher, searches full time. Thus those in effective unemployment search full time. We assume that those in regular employment do not search.

We assume that the size of the labour force (L) is fixed. Thus there are no flows either into or out of the labour force. The labour force comprises of regular employment (E), those on labour market programmes, effective unemployment, and ineffective unemployment, i.e. . Dividing each stock by the labour force, gives us the proportion of the labour force in the stock concerned. Thus , , and refer to the proportion of the labour force in

regular employment, on a labour market programme, in effective unemployment and in ineffective unemployment, respectively. Similarly, we denote the vacancy rate as . We let represent labour market tightness. An increase in denotes an increase in labour market tightness, and vice-versa. We introduce to represent the rate at which vacant jobs are filled. Due to the constant returns to scale assumption, we have , where . The flow of new hires into regular employment is given as , where . From the constant returns to scale assumption, we see that is increasing in its argument.

As , it is straightforward to see that . The terms , , and refer to the rates at which a vacant job is filled by a worker in EU, R, and IU, respectively. It is clear that the lower is c, the lower is the chance of a vacancy being filled by a worker on a labour market programme. A similar argument holds for g with respect to the probability of a vacancy being filled by a worker in ineffective unemployment.

We assume that regular job offers arrive according to a Poisson process. The arrival rate for a worker in EU is , whilst for a worker in R and IU it is and , respectively. We can see clearly that if , then the arrival rate for a worker in R is lower than for a worker in EU. Similarly, if then the arrival rate for a worker in IU is lower than for a worker in EU. Whether the arrival rate of a regular job offer is higher or lower for a worker in R as compared to IU depends on whether c is greater than g or not.

Regular jobs break up at the exogenously given rate, . Placements on labour market programmes break up at the government-determined rate, . Since we consider placements on labour market programmes to be temporary in this paper, we assume that , i.e. that placements on labour market programmes break up at a faster rate than do regular jobs. We assume that is also bounded from above since labour market programmes can be used to rehabilitate those in IU back into the effective labour force. If the length of time spent on a labour market programme were too short, this would render the ability of labour market programmes to reinstate ineffective workers as effective workers void. Thus rehabilitation is a process rather than an immediate transformation.A worker will find themself in one of four possible labour force states: regular employment; on a labour market programme; effective unemployment; or ineffective unemployment. A diagrammatic representation of our model is given in Figure 1, below. As can be seen, a worker in regular employment cannot directly enter ineffective unemployment but must first spend some time in effective unemployment before flowing into ineffective unemployment. Thus the search intensity of an unemployed worker is duration-dependent. From R, a worker is able to flow into either E or EU but unable to flow into IU. Thus we consider that the very act of being placed on a labour market programme maintains the worker as a fully effective member of the labour force if they have entered R from either E or EU, or transforms the worker from an ineffective to an effective member of the labour force if the worker has entered R from IU. We do not allow for the possibility that a worker could exit from R into IU. Providing that c and g are both less than one, then those workers in R and IU have less chance of gaining a regular job compared to a worker in EU.
Figure 1
For a steady-state equilibrium, we require that the flow(s) into a stock equal the flows out of a stock. Thus we have the following equations: [1] [2] [3] [4] [We also have the identity .]The above equations determine the stocks as proportions of the total labour force, given . (Note that depends on .) To obtain the value of , we must look at how wages and vacancies are determined. Essentially there are two sides to the wage bargain: the firm's side; and the worker's. We shall first look at the firm's side of the bargain.We denote the expected present value to the firm of an occupied job as either , , or , depending on whether the job was taken by a worker in EU, R, or IU, respectively., , and satisfy the following equations: [5] [6] [7] where represents the discount rate, and y represents the constant marginal product of an employed worker. The wage rate is related to the wage cost by the following identity: , where t is the payroll tax rate, . Taxes are required to finance labour market programmes and unemployment benefits. The expected value to the firm of a vacant job is denoted as , and satisfies the following equation: [8] where k represents the cost of maintaining a vacancy, and [9]1 where represents the average expected value of an occupied job and the average wage cost is defined as [10] As can be seen from [9], the average occupied job yields a per-period surplus of and is turned into a vacant job at the rate . The cost of maintaining a vacancy per period is k, whilst the probability of turning a vacancy into an occupied job is . A firm will keep a vacancy open as long as it yields a positive profit. In equilibrium, due to the small firm assumption, we have . Substituting this value into [9] we obtain . Substituting this into [8], we obtain the following equation: [11] This is the average zero-profit condition for

firms. The left-hand side of [11] is the expected present value of profits per worker whilst the right-hand side is the expected present value of the firm's hiring cost. As can be seen clearly, labour market tightness affects the firm's decisions on vacancies since the tighter the labour market the more costly it is to hire a worker due to the longer duration of a vacancy.

Having discussed the firm's side of the wage bargain, we shall now discuss the worker's side of the bargain before making the bargaining scheme explicit. A worker can find themself either employed in a regular job, participating on a labour market programme, in effective unemployment, or in ineffective unemployment. If a worker enters regular employment from a labour market programme, they will receive the wage . Whilst if they enter from effective unemployment or ineffective unemployment, they will receive or , respectively. We let , , , and represent the expected discounted lifetime value for workers in regular employment, on labour market programmes, in effective unemployment, and in ineffective unemployment, respectively. The j subscript on , which can be either eu, r, or iu, refers to whether regular employment was entered from effective unemployment, a labour market programme, or ineffective unemployment, respectively. The value functions are given as follows:

[12] [13] [14] [15]

[16] [17] As we can see, the rate of pay in labour market programmes is linked to the average wage in regular employment via the replacement ratio , whilst unemployment benefits in EU and unemployment benefits in IU are linked to the average wage in regular employment via and , respectively. All replacement ratios lie between zero and one, but we assume that they do not violate incentive compatibility in any way. Thus all workers will prefer a regular job to a placement on a labour market programme. We assume that all workers are protected by a safety net in that should they be unemployed, they will be entitled to unemployment benefits and/or an offer of a placement on a labour market programme. The model exhibits incentive compatibility in that the value from holding a regular job is higher than the value of being in one of the other situations. If we direct labour market programmes at those flowing out of regular employment and/or those in effective unemployment then we require to hold. Notice that if we direct labour market programmes at those in IU, we no longer require that holds; only that .The Nash bargain between a worker on a labour market programme and an employer solves the following

where is the fall-back value for workers should they not gain regular employment. The outcome of this Nash bargain is the following wage equation:

[18] where the equilibrium conditions and are imposed. As is immediately obvious, any policy that reduces the value of employment relative to the value of the fall-back position will increase the negotiated wage.The Nash bargain between a worker in effective unemployment and an employer solves the following where is the fall-back position for workers should they not gain regular employment. The outcome of this Nash bargain is the following wage equation:

[19] where the equilibrium conditions and are imposed. Again, any policy that reduces the value of employment relative to the value of the fall-back position will increase the negotiated wage.The Nash bargain between a worker in ineffective unemployment and an employer solves the following

where is the fall-back position for workers should they not gain regular employment. The outcome of this Nash bargain is the following wage equation:

[20] where the equilibrium conditions and are imposed. As, with the other two wage equations any policy that reduces the value of employment relative to the value of fall-back position will increase the negotiated wage.

From these three Nash bargains, we can obtain an average wage equation which is as follows:

where Letting , , , and , we can re-write the average utility difference between employment and the fall-back situation as (see Appendix)where Substituting this into the wage equation above and using [10] to eliminate y gives us the following equilibrium average wage equation: [21]

This equation determines average wage cost, given tightness. As can be seen, taxes do not affect wage cost. Thus taxes are borne by labour. Our complete model is now given by the steady-state equations [1] - [4], the zero-profit condition [11], and the wage equation [21]. Equations [11] and [21] determine and . By substituting into [1] - [4] we can determine e, r, eu, and iu.The model is illustrated in Figure 2, below. In the top half of the Figure, is shown the wage equation [21] and the zero-profit condition [11] in -space. The wage equation (WS) is positively sloped since and . The zero-profit condition (zpc), on the other hand, is negatively sloped due to . In the bottom

half of the Figure, the relationship between total unemployment and labour market tightness is illustrated. This relationship is formulated from equations [1] - [4]. We refer to this relationship as the "Beveridge curve".

Basically, any change which occurs in the bottom half of the diagram refers to the direct effect of a policy change, whilst any change in the top half refers to the indirect effect resulting from a policy change.
Figure 2

Ideally, we would like both the direct and the indirect effect on unemployment of a policy change to be negative. In addition, we would like to see a policy which is free of crowding-out problems. However, as we see in the next section, the policies available to us are not guaranteed to display all of these properties, theoretically.

3 Comparative Statics of the Model

In this section, we show the comparative statics of the model. Since a change in either , , or has both a direct effect on regular employment and an indirect effect on regular employment through its influence on labour market tightness , we show both the derivative of regular employment with respect to , , and as well as . The comparative statics of the model are as follows:

(see Appendix)The derivatives of e with respect to , , and , show the qualitative relationship between regular employment and the respective policy parameter when labour market tightness is held constant, i.e. the direct effect of a policy change. Also shown is the derivative of regular employment with respect to labour market tightness , i.e. the indirect effect. As can be seen, if we increase any of the policy parameters, then the direction of the direct effect on regular employment is ambiguous. Regular employment is related positively to labour market tightness , but the qualitative relationship between and labour market tightness is ambiguous i.e. whilst the qualitative relationship between the other two policy parameters and labour market tightness is negative, i.e., where , . This can be seen in the following diagram. In the bottom half of the diagram, the Beveridge curve shifts upwards to reflect the direct effect of the policy change. However, in the top half of the diagram, the zero-profit condition remains fixed whilst the wage-setting curve can move in either direction if has been changed, and can move in the direction of b if either and/or have been changed.Figure 3

As a result we cannot make any a priori predictions about what will happen to regular employment when we undertake a policy change. In all three cases, regular employment can either increase, decrease, or remain unchanged. To see clearly what happens when we alter any of the policy parameters in the model, we resort to some numerical simulations in the next section to gain some idea as to the likely effect of the usage of labour market programmes on regular employment.

One possibility which we analyse in the next section is the possibility of combining a policy of targeted labour market programmes together with a policy of reducing unemployment benefits. By this, we can offset the indirect wage effect on unemployment (which is positive) by reducing unemployment benefits (which shifts the wage equation to the right).

4 Simulation analyses of the usage of labour market programmes

In all of the simulations which we undertake, we begin from a base run where labour market programmes are absent. We then introduce programmes and see what the outcome is on the various policy objectives, regular employment and total unemployment.

4.1 An example where c=0.5 and g=0.2

Table 1

No e r eu iu 10.00.00.00.60.6–85.00.010.05.00.068100.00
20.50.00.00.60.60.71577.2322.150.390.230.054100.10 30.01.00.00.60.60.71582.975.907.353.780.065100.02
40.00.00.50.60.60.685.150.8214.020.010.044100.18 50.50.00.00.5
0.50.6579.6919.770.360.180.069100.00 60.01.00.00.50.50.6584.785.826.462.930.08099.93
70.00.00.50.50.50.586.940.6912.360.010.056100.08 80.00.00.00.50.5–86.890.009.104.010.08799.91In the base run, no labour market programmes exist. The remaining parameter values for each simulation are: ; ; ; . The cost of maintaining a vacancy k, is defined as . The probability of filling a job is defined as . The wage is normalised to 100 in the base run. In our first example, shown in Table 1, we see a situation where the total unemployment rate stands initially at 15%. In this initial situation, there are no labour market programmes, and the unemployment benefit system is passive in that it is set above its minimum level (which in this simulation we will consider to be

fifty percent of the average wage). From this base run, we move on to show various types of usage of labour market programmes, as well as a simple cut in unemployment benefits to the minimum level (for comparative purposes).

In our second simulation, we target labour market programmes at those in EU. The result is a fall in regular employment, a huge increase in the number participating in labour market programmes, and a cut in total unemployment to less than one percent. Whilst it is true that unemployment is sharply reduced, it is also the case that regular employment is crowded out. Thus we must view this policy with some caution.

In our third simulation, we guarantee all those in regular employment a place on a labour market programme, should they exit from their job. As a result of this policy, total unemployment declines but, as with the first policy, so does regular employment. Again, we must view this policy with caution since a consequence of it is crowding out of regular employment.

For our fourth simulation, we target labour market programmes at those in IU. This time there is only a slight fall in total unemployment, but regular employment is crowded in. Thus, despite the fact that the fall in unemployment is not as substantial as with the first two policies, there is absolutely no problem with crowding out. Thus we view this policy as an unequivocal success.

So far, we have not analysed the possibility of using labour market programmes in conjunction with altering the level of unemployment benefits. Since we have an initial situation where unemployment benefits are above their minimum level, we can have a policy package where labour market programmes are used along with reducing unemployment benefits. In our fifth simulation, we target labour market programmes at those in EU whilst reducing unemployment benefits to their minimum level. As a result of reducing unemployment benefits, we can reduce the replacement ratio of labour market programmes and still maintain incentive compatibility. The result of this policy is slightly better than when we targeted labour market programmes at those in EU whilst leaving unemployment benefits unaltered. Unemployment is reduced still further, as is crowding out. However, crowding out is still present; so this policy cannot be regarded as totally successful.

In simulation number 6, we guarantee those in regular employment a place on a labour market programme should they exit from their job, and we also reduce unemployment benefits to their minimum level. This time, the guarantee of a place on a labour market programme still crowds out regular employment, but less so than when we use labour market programmes on their own. Furthermore, unemployment is reduced further than the previous simulation. Despite this, we must again view this policy with caution since crowding out is still present.

In our seventh simulation, we target labour market programmes at those in IU whilst reducing unemployment benefits to their minimum level. The result is a larger reduction in unemployment plus an even stronger crowding in effect than previously, when was increased whilst unemployment benefits were unchanged. Thus this policy must surely be viewed as a success.In simulation number 8, we refrain from using labour market programmes but reduce unemployment benefits to their minimum level. The result, as can be seen, is a reduction in unemployment plus a crowding in of regular employment. However, in comparison to simulation number 7, the rate of ineffective unemployment is still high.The two best policies in these simulations were 1) the policy package of targeting labour market programmes at those in IU together with reducing unemployment benefits to their minimum level (which has both a direct effect on unemployment as well as an indirect effect), and 2) merely reducing unemployment benefits to their minimum level (which only has an indirect effect on unemployment). However, 1) leads to further crowding in than 2) and reduces unemployment by a larger amount. In addition, the proportion of total unemployment which is IU is far lower with 1) than with 2). Thus 1) is the preferred policy in this scenario.

4.2 An example where c=0.0 and g=0.1

In our second example, shown in Table 2 below, we see another situation where the total unemployment rate stands initially at 15%. As with the previous example, and all the subsequent examples in this paper, the minimum level of unemployment benefits is assumed to be 50% of the average wage. As in the previous example, here we have a situation where the unemployment benefit system is initially passive in that the level of unemployment benefit exceeds the minimum level. As with the previous example, we can alter the level of unemployment benefit along

with using labour market programmes. An important aspect of this example, is that the worker in ineffective unemployment has more of a chance of directly gaining a regular job than a worker on a labour market programme.
Table 2

No
e r eu iu 10.00.00.00.60.6–85.00.010.05.00.068100.00 20.50.00.00.60.60.9359.8388.391.180.600.066100.01
30.01.00.00.60.60.93578.807.309.274.630.068100.00 40.00.00.50.60.60.685.410.5314.050.000.042100.18
50.50.00.00.50.50.9310.8387.471.170.530.08099.93 60.01.00.00.50.50.9380.467.458.393.700.08499.91
70.00.00.50.50.5
0.7387.040.4712.480.000.053100.10 80.00.00.00.50.5–86.940.009.074.000.08499.91In the base run, no labour market programmes exist. The remaining parameter values for each simulation are: ; ; ; . The cost of maintaining a vacancy k, is defined as . The probability of filling a job is defined as . The wage is normalised to 100 in the base run.

In our second simulation, we target labour market programmes at those in EU whilst leaving unemployment benefits unchanged. The result is disastrous. Whilst it is true that total unemployment is reduced to a rate of less than 2%, regular employment has fallen to under 10% of the labour force. Most of the labour force has ended up on a labour market programme. Since we require labour market programmes to be incentive compatible in this model, the replacement ratio for a worker on a labour market programme is very high. In addition, because the fraction of the labour force on labour market programmes is so high, it is impossible for this situation to be financed.

In our third situation, we guarantee all of those in regular employment a place on a labour market programme, should they be separated from their job. This time, unemployment falls slightly but there is a significant level of crowding out. Thus this policy must be seen as a failure.

Our fourth simulation sees labour market programmes being targeted at those in IU. Unemployment declines slightly, but instead of crowding out we have a situation of crowding in. When we consider that the worker who moves from IU to R is, for a short while, giving up any chance of gaining a regular job, this may appear somewhat surprising. What actually happens is that the worker temporarily loses a weak chance of gaining a regular job in return for gaining a maximum chance on leaving R.

In the next three simulations, we use labour market programmes in conjunction with unemployment benefit policy. Labour market programmes are targeted at a particular group of workers whilst unemployment benefits are reduced to their minimum level. The policy of targeting labour market programmes at those in EU (No. 5) leads to an extreme amount of crowding out though does not reduce unemployment significantly. This situation would be impossible to finance. Targeting labour market programmes at those leaving regular employment (No. 6) does reduce unemployment but leads to crowding out of regular employment. Only the policy of targeting labour market programmes at those in IU (No. 7) leads to a crowding in of regular employment and thus a reduction in total unemployment. Thus, in this example, the only truly successful policy of using labour market programmes is to target them at those in IU. This has all the desired attributes. As with the previous example, we also reduce unemployment benefits to their minimum level without using labour market programmes. The result involves both crowding in of regular employment and a reduction in unemployment.

As can be seen, the two best policies in this example are 1) the policy package of directing labour market programmes at those in IU together with reducing unemployment benefit and 2) the policy of reducing unemployment benefits on their own. Both have the desired results of reducing unemployment and crowding in regular employment. However, 1) crowds in regular employment to a greater extent than 2) and, in addition, reduces unemployment to a greater extent. Thus 1) is the preferred policy in this example.

4.3 A situation where c=1.0 and g=0.3

In our third example, shown in Table 3 below, we see a situation where again the total unemployment rate stands initially at 15%. As with the previous examples, we show the same policies and their results. As can be seen, when labour market programmes are used in isolation, both the policy of guaranteeing those in regular employment a place on a labour market programme as well as the policy of targeting labour market programmes at those in IU crowd in regular employment, thereby reducing unemployment.

Table 3

No e r eu iu 10.00.00.00.60.6–85.000.010.005.000.068100.00
20.50.00.00.60.60.6584.0015.470.320.220.039100.22 30.01.00.00.60.60.685.525.076.163.250.063100.04
40.00.00.50.60.60.685.130.9813.860.020.045100.17 50.50.00.00.50.50.586.9112.650.280.160.058100.07
60.01.00.00.50.50.587.284.905.332.480.07799.95 70.00.00.50.50.50.586.920.8212.240.020.057100.07
80.00.00.00.50.5–86.860.009.134.010.08599.90In the base run, no labour market programmes exist. The remaining parameter values for each simulation are: ; ; ; . The cost of maintaining a vacancy k, is defined as . The probability of filling a job is defined as . The wage is normalised to 100 in the base run.When labour market programmes are used in conjunction with a strict unemployment benefit policy, then all policies crowd in regular employment, thereby reducing unemployment. The policy which crowds in the most is again the policy of directing labour market programmes at the flow out of regular employment. This crowds in more than the policy of simply reducing unemployment benefits (No. 8). Thus this is our preferred policy in this example. This is in stark contrast to the two previous examples where the policy of reducing unemployment benefits in conjunction with targeting labour market programmes at those in IU was the preferred policy.

4.4 An example where c=0.0 and g=0.5

In this, our final example, we see a situation where those on labour market programmes have no chance of gaining a regular job directly, whilst those in IU have quite a large chance of gaining a regular job in comparison to the three previous examples. The base run in this example shows an initial situation where the rate of unemployment stands at 10%. From there, we carry out the same policies as previously. Table 4 shows us what happens.

Table 4

No e r eu iu 10.00.00.00.60.6–90.000.06.004.000.232100.00
20.50.00.00.60.60.95516.3581.831.090.730.232100.00 30.01.00.00.60.60.95580.0011.115.333.560.232100.00
40.00.00.50.60.60.95585.714.859.380.060.163100.31 50.50.00.00.50.50.95517.3280.941.080.660.27099.86
60.01.00.00.50.50.95581.0011.254.892.870.28899.79 70.00.00.50.50.50.95587.344.298.310.060.206100.11
80.00.00.00.50.5–91.250.005.523.230.28899.79In the base run, no labour market programmes exist. The remaining parameter values for each simulation are: ; ; ; . The cost of maintaining a vacancy k, is defined as . The probability of filling a job is defined as . The wage is normalised to 100 in the base run.As can be seen, all the policies which involve using labour market programmes crowd out regular employment. Indeed, the crowding out caused by directing labour market programmes at those in EU would be severe. The only policy which crowds in regular employment thus reducing unemployment, is the policy of reducing unemployment benefits in isolation. However, this policy still leaves a significant proportion of workers in ineffective unemployment. Thus no policy is able to simultaneously achieve the desired objectives of lower unemployment, no crowding out of regular employment, and a significant reduction of ineffective unemployment.

5 Conclusion

In conclusion, we see that we can use labour market programmes as a means of crowding in rather than crowding out regular employment. However, whether labour market programmes should be targeted at those flowing out of regular employment, those in EU, or those in IU, depends crucially on the parameter values of the model. Indeed, as we saw in Section 4.4, it may well be the case that all policies involving labour market programmes crowd out regular employment.

As is very clear from the preceding analysis, the only policy guaranteed to crowd in regular employment is the policy of reducing the level of unemployment benefits. Whilst this policy does not have a direct effect on unemployment, it does have an indirect effect on unemployment, as seen in Figure 4 below:

Figure 4

Since this policy reduces unemployment without doing so by increasing the number of states which a worker can find themself in, the trade-off is only between unemployment and regular employment. Hence by reducing unemployment, this necessarily increases regular employment.

So if this modus operandi is the only policy available to us which guarantees a crowding in of regular employment, why bother using labour market programmes? The answer, quite simply is that labour market programmes in conjunction with a tight unemployment benefit system can give us a better result than can the sole use of a tight unemployment benefit system (see for example, Sections 4.1, 4.2, and 4.3). Furthermore, the policy of merely reducing unemployment benefits fails to reduce ineffective unemployment to the extent which targeting labour market programmes at those in IU does.

The moral of the story told in this paper, is that labour market programmes can be used to crowd in regular employment, thereby reducing unemployment. However, this result is not guaranteed. We must first find out the parameter values of the model to see if the crowding in result will hold or not. Furthermore, whilst it is true that merely reducing the level of unemployment benefits is guaranteed to crowd in regular employment, to restrict ourselves to this policy would starve ourselves of the possibility of using a more effective policy package which involves using labour market programmes together with a strict unemployment benefit system.

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7 Appendix

Letting Letting

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1 We can also define as .