

Improving Reintegration:

Profiling and Targeting as a Solution for
the Deadweight Loss of Reintegration

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Abstract

Profiling and targeting techniques make use of the differences in the observable characteristics of unemployed individuals. Based on these characteristics estimations can be made on the unemployment duration and the effectiveness of individual reintegration programs.

This thesis opts for an introduction of these techniques in the Dutch reintegration field. By means of a simulation it is shown that the introduction of profiling and targeting will decrease unemployment rates. The main reason for this is the reduction of the deadweight loss of reintegration. The deadweight loss of reintegration is the loss that occurs when unemployed workers are offered a reintegration path, despite that they would have found employment otherwise.

Abstract in Dutch

Profiling en targeting technieken maken gebruik van verschillen in beschikbaar karakteristieken van werkloze individuen. Op basis van deze karakteristieken kunnen voorspellingen worden gemaakt over de werkloosheids duur en de effectiviteit van de separate re-integratie programma's.

Deze scriptie opteert voor de introductie van deze technieken in het Nederlandse re-integratie beleid. Met een simulatie wordt aangetoond dat de introductie van profiling en targeting het gemiddelde werkloosheidspercentage doet dalen. De belangrijkste reden hiervoor is de vermindering van de deadweight loss of reintegration. De deadweight loss of reintegration is het verlies dat wordt gemaakt als een werkloze individu een re-integratie traject krijgt aangeboden terwijl hij op eigen kracht werk had kunnen vinden.

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Preface

In our modern society work has become more than a means to acquire income. Being employed means having an identity. Losing employment is much more than a loss of income. It is therefore that creating employment and battling unemployment is such an ever present item on the political agenda.

However the government itself contributes to unemployment; in offering unemployment benefits the economic incentive to find employment is reduced and therefore the mean weeks of unemployment overall is increased. Since offering unemployment benefits to ensure the unemployed workers with a basic income is considered a necessity, battling unemployment is pursued through another route. Reintegration is the main instrument for the government in reducing unemployment.

The basic idea of reintegration is that an unemployed worker is without work because of obstacles that can be overcome; an unqualified worker can be trained, an unmotivated worker can be motivated, a lack of work experience can be encountered by test placing a worker. In theory this is a valid approach and it makes sense to invest in reintegration. In practice the results of reintegration fall behind. Reintegration contributes but little to increase employment chances.

In this thesis I will opt for a new approach for reintegration. Instead of making reintegration paths available for all unemployed workers, as is the case now, I will recommend an approach where based on an estimation of unemployment duration reintegration paths are only offered to unemployed workers with a high enough potential duration of unemployment. Another alteration I recommend is program allocation based on statistics. Based on observable characteristics estimations can be on what program suits the participant best. The mechanisms I propose are known in the literature as profiling and targeting.

The thesis is structured as follows. In the first chapter I will explain the economics of reintegration and unemployment; in this chapter it is explained what in theory the effects of reintegration are. This theoretic aspect is complemented with a literature review on unemployment, unemployment benefits and reintegration. In this section of the first chapter I

also introduced profiling and targeting as a possible contribution to the reintegration policies in the Netherlands.

The second chapter is on the practical side of reintegration. The focus hereby lies on reintegration policies in the Netherlands. I will explain the dynamics of the reintegration field and its players. A description is given on the costs and benefits of the relevant parties. This chapter will then continue with an overview on the studies on the effectiveness of reintegration in the Netherlands.

Based on these observations I will point out the potential weaknesses of the reintegration policies in the Netherlands, weaknesses that can be encountered by potential solutions I will recommend. Among the potential solutions are the mechanisms of profiling and targeting.

In the third chapter I will introduce the profiling and targeting mechanism in depth. The dynamics of these instruments are explained and the international experiences are summarized.

The fourth chapter is the most important part of this thesis. In the fourth chapter I will introduce a small model of employment and unemployment. The model will represent in simple manner the economics of unemployment and reintegration in the Netherlands. The basis of this model is the incentive of the unemployed worker; what effect has reintegration on the decision to look for work. In this model it can be easily seen what effect the implementation of profiling as well as targeting has on these incentives. The introduction of profiling eliminates the incentive to wait for a reintegration path instead of actively seeking work.

This thesis will end with a general conclusion of the thesis completed with formal recommendations.

Chapter 1

Unemployment and Reintegration

1.1 Introduction

Working is important to people, employment therefore matters to society and to the government

In our society labour is more than a means to acquire income. It gives the opportunity 'to keep up' in a changing society, an opportunity to gain new levels of knowledge and learn new skills. More than an income labour gives means to development, meaning and integration.

(Coalition treaty between the parliamentary parties of CDA, PvdA en ChristenUnie, 7 February 2007, p.23)

Not only is labour important to the individual self, it also is a valuable asset in the production process of a nation. Labour as a production factor stimulates economic growth; increasing labour participation will therefore increase economic production. It is therefore important to keep individuals employed and get unemployed people into work.

Another reason why the government wants unemployed workers to become employed is the costs associated with unemployment; the government pays unemployment benefits to those without work. These benefits are paid to ensure that individuals still have enough money to maintain a certain standard of living.

Not all reasons to start reintegration are of an economic nature; it also makes political sense to commence reintegration. Since unemployment is most likely the economic indicator that is of most concern for voters, the government needs to show their voters that they take unemployment to heart. Although it might not always make economic sense to pursue reintegration it does make political sense to invest in reintegration.

In this chapter we will study the general view on unemployment and reintegration. First we will deliver a general framework on unemployment. Based on this framework the effects of certain reintegration aspects will be shown. After the economics on both unemployment and

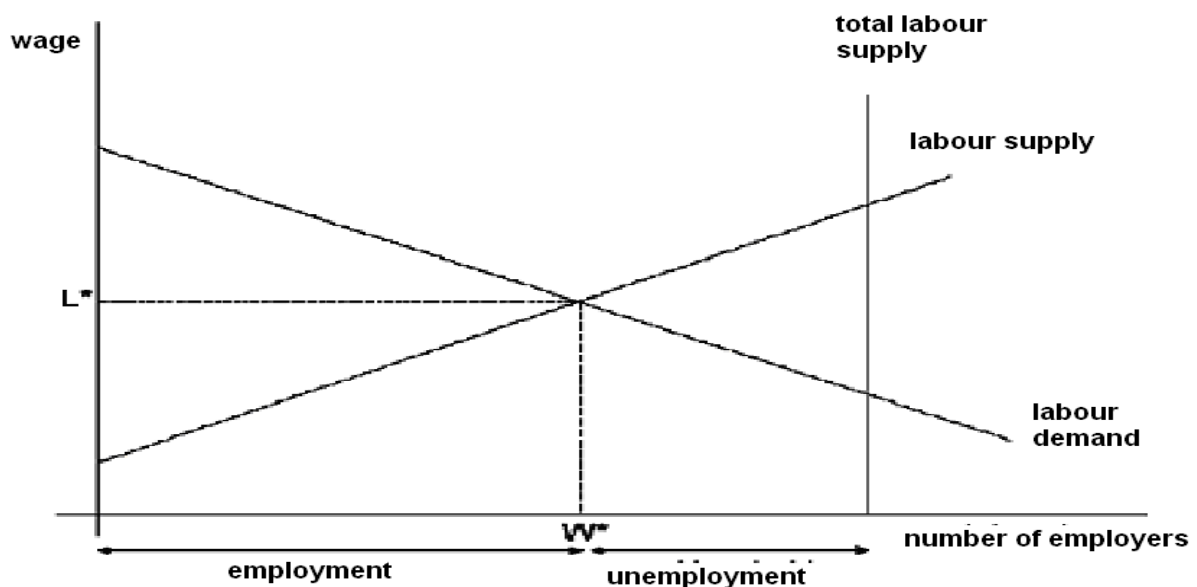
reintegration an overview of the general economic literature on unemployment insurance and reintegration is presented.

1.2 Economics of Unemployment

In this segment I will shortly explain the economics of unemployment. These economics are best captured in the graph presented below. It shows the classic economical view on the labour market; demand versus supply of labour.

On the horizontal axis the total number of (potential) employees is displayed; this amount is limited by the right vertical axis; this vertical axis is marked 'total labour supply'.

On the left vertical axis wage is displayed. The labour demand is defined by a downward sloping line; a high wage rate causes a low demand for labour because the margin on labour productivity is relatively smaller; a lower wage demand will increase the demand for labour. The labour supply is defined by an upward sloping line; a low offered pay makes that few employees are willing to offer their services, increasing the offered wage will increase the number of potential employees.



(Kok *et al*, 2006, p. 11)

Employment is reached where the two lines meet. To the left of w^* there will be an increasing supply of labour; employers offer wages that encourage employees to offer their services. The

increasing supply of labour employers to lower these wages until l^* is reached, the general equilibrium.

To the right of w^* the supply of labour is too high, which causes the employers to offer still lower wages. These wages discourage labourers; they stop their offering of labour and decrease the supply of labour. This causes the offered wages to rise until l^* is reached. We are back at w^* .

In the classical economic view the unemployment reached in the figure is voluntary. The unemployed worker refuses to work for a small wage and therefore his or her unemployment is considered voluntary. Since the labour market is in practice not as simple as projected in the figure such a conclusion is naive. There are many different reasons for unemployment that are not voluntary. In the second chapter three possible reasons are given, including a lack of motivation by the worker.

Although the presented figure is a simplification of the labour market it will give a good basis for the projection of the effects of reintegration.

1.3 Economics of reintegration

When workers become unemployed they lose their income. Since their cost of living is independent of being employed, they lose money rapidly if their standard of living is maintained. This loss of income will serve as an incentive to search for reemployment.

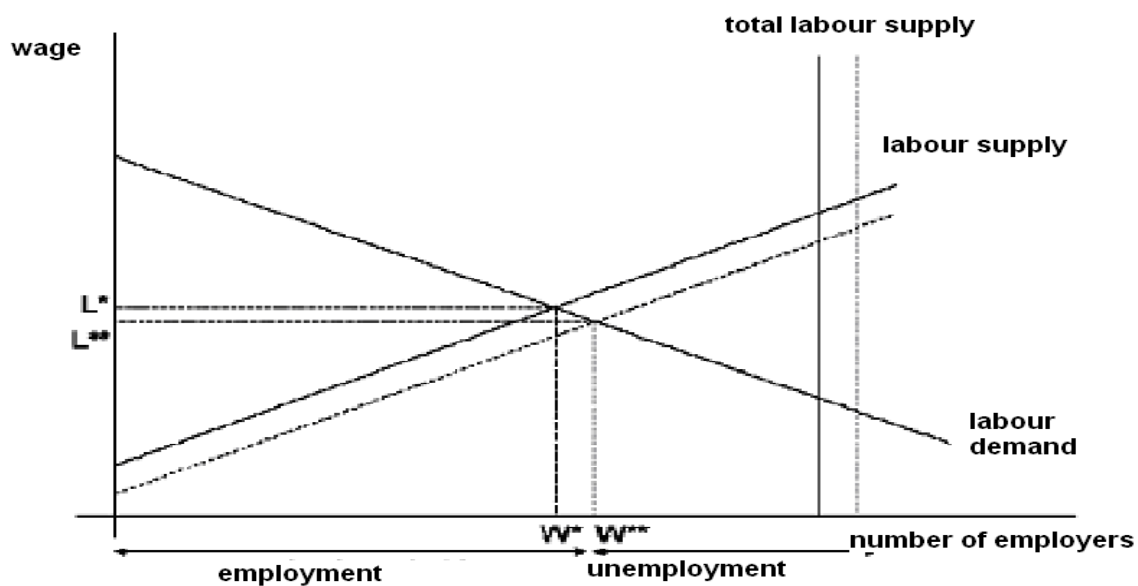
Losing income will have an important impact on the worker's life and the worker most likely wants to be insured for this risk. In the classic economic view the private market would deliver the best allocations for this unemployment insurance. However such a market will fail to provide this insurance in unemployment. There are two reasons for this; adverse selection, workers with the highest chance of unemployment will have the highest demand for such an insurance causing private firms to charge relatively high premiums which could exclude many people from insuring, and moral hazard, unemployed workers might experience higher unemployment with insurance than otherwise would be the case (Rosen, 2005). To eliminate these failures everyone is obliged to insure for unemployment and this service is maintained by the central government.

The government pays unemployment benefits for the unemployed workers. But this payment works negatively on the incentive to search for reemployment of the claimant. The loss of

income is less than before for the unemployed worker, therefore his need for reemployment decreases. Since the worker's unemployment costs the government money, they have an incentive to reemploy the claimant. The process of getting unemployed workers into jobs is called reintegration.

The effects of reintegration are best presented based on the graph in 1.2.. Kok *et al* (2006) have presented in their study on the economic effects of reintegration on the labour market.

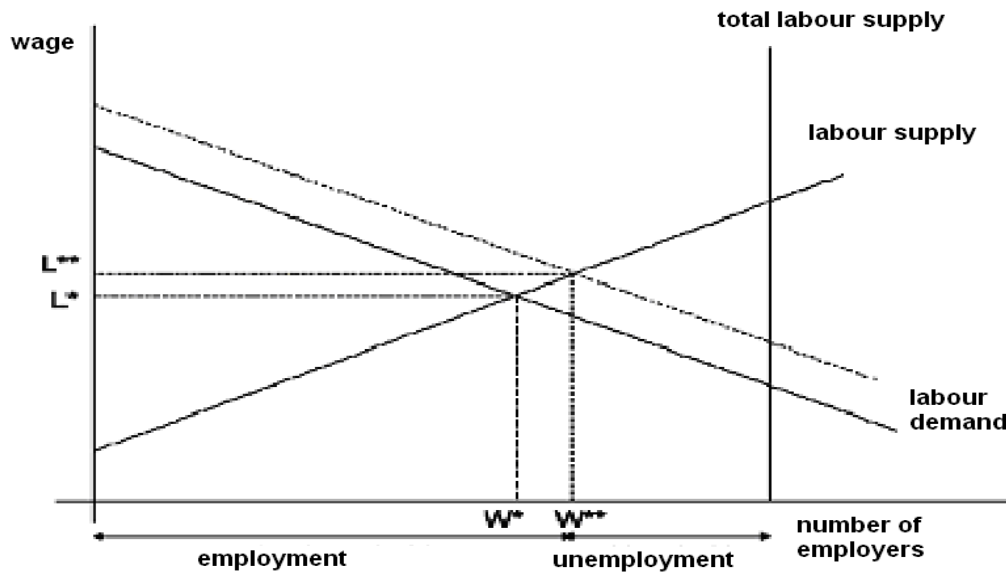
One possible effect of reintegration is an increase in the total labour supply. A possible reason for the increased total labour supply is that reintegration paths have motivated unemployed workers to look for employment, who would not look before and were therefore not considered part of the total labour supply. The increase in the total labour supply causes unemployment to rise. The upward sloping labour supply shifts to the right. Increased labour supply makes that employers can offer lower salaries to job-applicants; wages decrease and employment rises. The equilibrium is reached in w^{**} with a corresponding loan of l^{**} which is lower than before. The effects on employment vary; if employment rises stronger than the total labour supply this will result in a decreasing unemployment.



(Kok *et al*, 2006, p. 12)

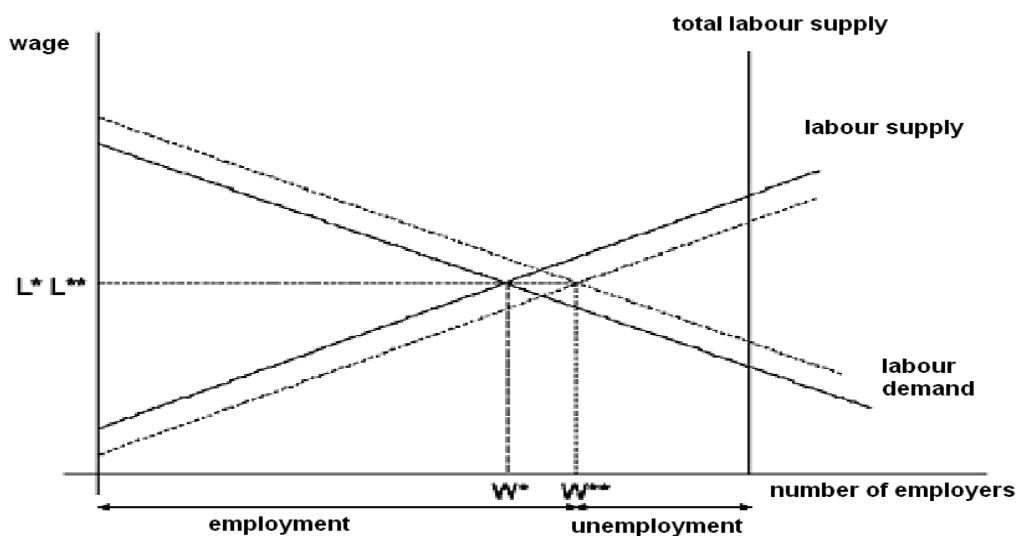
Reintegration can also improve the labour productivity of employees. An example of this is schooling. In the graph below this is captured in the rightward shift of the labour demand curve. For every potential employee the employers offer higher wages, rewarding them for the

general increase in productivity. This results in increased employment with higher wages, only if total labour supply is unaffected.



(Kok *et al*, 2006, p. 12)

Another method of reintegration is mediation. A better connection between supply and demand causes that per job-offer there are more applicants; the competition between applicants will drive down wage demands. On the other hand labour demand rises because employers can find workers more easily than before, this will result in an increase in loan.



(Kok *et al*, 2006, p. 13)

The general result is increased employment; the effects on wages are not so clear, they can rise if labour demand rises faster than wage demands fall.

Another effect of re-integration is that after a jobless man finishes his re-integration path he becomes more productive and/or more motivated to find a job. His chances in the labour market increase. As his chances increase he moves up in the queue for work; his moving up comes at the expense of those unemployed workers before him who find themselves one place further from a labour position. This is called repression. De Koning *et al* (2005) have given a summary of studies on this subject and they state that with subsidized labour repression is about 80%.

Calmfors *et al* (2002) have summarized a number of studies on displacement effects and found that the closer the program is to regular employment the higher the displacement effect is. Subsidised employment seems to displace regular employment, but this is not the case with labour market training.

1.4 Literature on unemployment and reintegration

A great deal of the literature on unemployment and reintegration concerns the height and duration of unemployment benefits. The general view on unemployment benefits is that they act as a disincentive for looking for a job. Burda and Wyplosz (2005) mention in their basic macro-economic study book the unemployment trap; if unemployment benefits are high and long-lasting they stimulate the unemployed worker to take more time to find employment, while his skills and re-employability decreases.

Mortensen (1977) has presented a basic microeconomic theory on the relation between unemployment insurance and job search decisions. A first conclusion is that if a claimant reaches the end of his unemployment insurance the chances on exiting unemployment insurance rise; the claimant is willing to work for a lower wage than before. Another point made by Mortensen is that an increase in unemployment benefits will result in a higher exit rate from unemployment to employment; unemployed workers who are not eligible for benefits (new entrants, those who have exhausted their benefits and quits) will now accept jobs quicker, since working will make them eligible for unemployment benefits. This effect is called the entitlement effect. Higher benefits will result in higher reservation wages for

unemployed workers in the beginning of unemployment and lower reservation wages when unemployed worker face benefit exhaustion.

Moffitt and Nicholson (1982) (in Katz and Meyer, 1988) describe in a static model that many unemployed workers maximize their utility by ending their unemployment in the last week of unemployment benefit duration. They show that an increase in the level and length of the unemployment benefit duration will therefore lead to an increase in the mean duration of unemployment.

The main finding of Moffitt and Nicholson would imply that the unemployment benefit duration should be as short as possible or non-existing. This would lead to a higher hazard rate out of unemployment and thus would increase social welfare.

However Katz and Meyer (1988) find that unemployment insurance receivers while being longer unemployed receive higher wages than the non-recipients, these higher wages will then raise social welfare. Van Ours and Vodopivec (2006) found no evidence for this statement; they concluded that increasing the potential duration of unemployment does not affect the quality of jobs.

Katz and Meyer also find that extending the potential benefit duration by one week results in an increase in the mean weeks of unemployment by 0.16 to 0.20 weeks. They also find strong evidence that exits rates of unemployed workers sharply increase when exhausting point of unemployment benefits is reached. The hazard rate increases 94 percent from 6 weeks before exhaustion to 2 weeks before exhaustion. Another influence on the hazard rate is the level of benefits; Katz and Meyer find that the benefit level has a large negative effect on the hazard rate. In one example the hazard rate decreases with 5.4 percent when the benefit level is increased by 10 percent.

Reviewing the literature it seems that a long duration of unemployment benefits will lead to a longer unemployment spell. This however needs not to be the case. Davidson and Woodbury (1996) in their article find that an optimal unemployment insurance program must have an infinite duration. Based on a model they have designed they compared a program with benefit level x and duration T with another program with a lower x and a higher T (this would mean a tax neutral change). They show that such an increase would be beneficial to all agents. First the search effort of the model is held constant, meaning that reemployment rates and employment are not affected by the change in duration. Since tax rates are unchanged the utility of the employed workers stays the same. The income of the unemployed workers is a

bit lower in the T weeks of unemployment but this compensated for in the extended week, where they receive benefits they would not have received in the original scheme. The extension of the benefit duration leads to a Pareto improvement until T is set to infinity. This change will lead to a decreased risk associated with unemployment, and it will make all unemployed workers better off since their utility has increased. The utility of workers, who face possible chances of unemployment in the future, will also increase as a result of this change.

If the search level now is adjusted to new equilibrium levels it is easy to see that the search efforts of the unemployed will decrease since the expected utility of being unemployed has risen. Since all unemployed workers reduce their search efforts unemployment will rise; this increased unemployment will reduce tax revenues which will cause a decreased benefits payment. This decrease will, according to the authors, not outweigh the possible benefits of the extension. Since we now have discovered that an infinite duration of unemployment benefits is optimal, we need to establish the replacement ratio, the benefit/wage ratio. Without exhaustion point in the unemployment duration search effort will not vary over time. Davidson and Woodbury find that the optimal replacement rate would lie between 0.60 and 0.74. A small number of firms or a small change of unemployment will lead to a higher replacement ratio.

A remarkable conclusion is that if the benefit duration is limited to 26 weeks, as is the case in the U.S., the optimal replacement ratio would be 1.30.

Most of literature on unemployment is on the relation between the duration of benefit payments and the duration of unemployment. However there is some literature on the reintegration part of unemployment.

Meyer (1992) has studied the experiments performed in the unemployment insurance policies in the U.S.. The first focus lies on bonus experiments; unemployed workers who would quickly find employment are considered to receive a cash bonus. This cash bonus serves as an incentive to accept employment more quickly.

In the first experiment in Illinois all claimants who 11 weeks after filing for unemployment insurance started a job were rewarded with a 500 dollar bonus. The effect of this bonus system was a decrease in mean weeks of benefit by over 1 week. A negative aspect of this incentive for earlier acceptance of employments is that claimants are more likely to accept jobs that are less desirable. However Meyer did not find a smaller wage for those who

received a cash bonus. This positive outcome was not matched in other experiments in Washington and New Jersey. Meyer states that it is unclear what effect the introduction of bonuses could be when applied in a permanent scheme. Three uncertainties are concerned with this bonus program. First the bonuses might cause repression; a worker becoming employed at the expense of another claimant. A different fraction of eligible clients may apply for the bonus resulting in a different cost structure. And people between jobs may apply for unemployment insurance, which they normally would not need, motivated by the easy bonus. In light of these insecurities the positive effects of the Illinois experiment need not to be taken as fact.

Another experiment was the job search experiment, where improved provision of job finding services and increased enforcement of the job search requirements for the receipt of unemployment insurance. Experiments in Nevada and Minnesota resulted in a decrease of 1.6 to 4.3 weeks in mean weeks of benefit. Meyer states that these experiments have some design weaknesses and have the least complete evaluations. Other experiments showed about the same reduction in mean weeks as the bonus experiment.

The advantage the job search experiment did have over the bonus experiment was that it lacked an incentive for filing for unemployment insurance. The repression factor of the bonus experiment however is still valid for the job search experiment.

Meyer still concludes that the job search experiment is more promising than the bonus experiments.

O'Leary and Wandner (2005) give us a review of the current studies on the effectiveness of reemployment services and job search rules. They state that the enforcement of work search requirements can speed up reemployment; the same goes for the reemployment services.

All the papers above have studied unemployment insurance and benefits data in the United States. But a number of studies focus on Europe.

Calmfors *et al* (2002) have investigated the active labour market policies in Sweden. They concluded that ALMPs did not improve matching efficiency, but there is a small but positive effect on labour force population. They also concluded that employment probabilities of participants grow after participation in a subsidized employment, where participation in a training program did not improve employment probabilities.

Adamchik (1999) has studied that effect of unemployment benefits in Poland on the reemployment probabilities. Based on data from 1994 to 1996 she states that the estimated

overall effect of unemployment benefits on the probability of reemployment is negative. She also concludes that exiting rates increase if benefits reach the point of exhaustion.

Røed and Zhang (2001) studied the effect of unemployment benefits on unemployment duration in Norway and concluded that men are more receptive to marginal changes in the unemployment benefits. A 10 percent reduction in unemployment benefits would result for unemployment duration of approximately 10 months in a reduction of 1 month for men and 1-2 weeks for women.

Fredriksson and Söderström (2008) did a study on the effect of benefit generosity on unemployment duration and they found that if the replacement rate increased by 5 percentage points unemployment increased with 25 percent.

Most of the current literature on reintegration is on the effectiveness of reintegration and possible improvement of reintegration policies. A great deal of this literature is on the profiling and targeting in reemployment services.

Profiling and targeting are statistical mechanisms that could contribute to the effectiveness of reintegration.

Based on observed characteristics estimations can be made on unemployment duration. This is called profiling. With this information reintegration policies can be more effective if those unemployed workers with predicted long term unemployment are assisted. Assisting those workers will save the most money for the government.

Suppose an unemployed worker with predicted unemployment duration of 24 weeks comes in and an unemployed worker with predicted unemployment duration of 12 weeks, it is more efficient to focus on the first unemployed worker because when this worker is reintegrated it will save the government more. However it is obvious that a worker with a higher predicted unemployment duration is harder to reemploy than an unemployed worker with lower unemployment duration.

While profiling delivers estimations on duration spells of unemployed worker, targeting gives information on the most effective instrument for a certain jobseeker.

As we have seen in a preceding part of this chapter results of various instruments differ among groups. Targeting systems can allocate reintegration instruments more efficient. Based on observable characteristics the various effects of the different reintegration instruments can be predicted. While profiling is one-dimensional targeting is more multi-dimensional and more complex.

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Profiling and targeting will form the basis of this thesis and therefore the academic literature and international experience will be treated in separate chapter.

1.5 Concluding remarks

Unemployment is an important political topic, since it influences the lives of many individuals. Becoming unemployed has such a drastic impact on people's lives that individuals want to be insured for this risk. Because of two big market failures, adverse selection and moral hazard, this insurance is not maintained by a private party but by the central government.

The government offers unemployment benefits for individuals who lose their jobs, these benefits act as a compensation for the sudden loss of income. But in this way the government negatively influences the unemployment rate. Receiving unemployment benefits negatively influences the incentive to look for employment.

Reviewing the literature confirms this negative relation; increase the potential benefit duration will result in increased unemployment duration. The literature also states that exit rates tend to increase when the exhaustion point approaches. This problem can be encountered by an infinite benefit duration; an option mentioned by Davidson and Woodbury.

In order to reduce unemployment the government commences reintegration. Reintegration is services offered to unemployed workers to remove the obstacles that stand between them and a job. Examples of such obstacles are a lack of motivation or a lack of human capital.

A negative aspect of reintegration is that it might cause repression. In that case reintegration only changes the place in the queue for a particular unemployed worker at the expense of another ex-worker. There is some evidence of this repression in the empirical literature, but these effects tend to be reduced if reintegration paths are far from regular employment.

The literature on reintegration is very diverse. It is stated that reemployment services can speed up reemployment.

A great deal of the literature on reintegration is on the statistical methods profiling and targeting that can contribute to the effectiveness of reintegration. This part of this literature will be the main subject in chapter 3.

The following chapter is more on the practical side of reintegration. This part will look at the practices of reintegration policies in the Netherlands and the effectiveness of reintegration.

Chapter 2

Reintegration in the Netherlands

2.1 Introduction

In the previous chapter the theoretical aspects of unemployment and reintegration have been the subject of study. In this chapter the focus will lie on the more practical side of reintegration. In theory reintegration makes perfect sense, but what of these theoretical aspects will hold in reality.

In this part of the thesis our attention is on the reintegration policies in the Netherlands. First the facts and figures of unemployment in the Netherlands will be presented to give a good view of unemployment in the Netherlands.

After this the structure of the reintegration policies is treated. For every player in the reintegration field a description is given

This is complemented with a review of studies on the effectiveness of reintegration services in the Netherlands. These studies will form the basis for a description of the weaknesses in the reintegration policies.

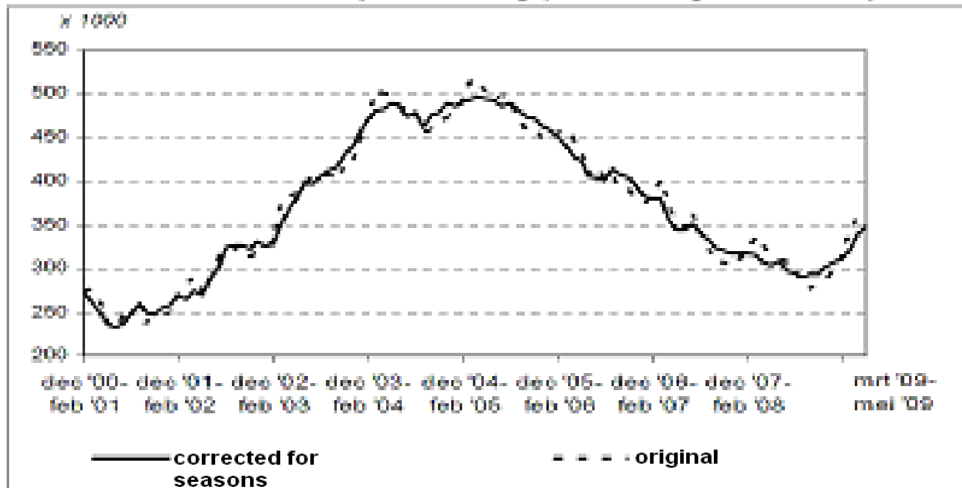
These weaknesses will be encountered with potential solutions. This solution is mostly based on the statistical methods of profiling and targeting that have been introduced in the previous chapter.

2.2 Facts and Figures

Below a graph is shown with the recent unemployment figures in the Netherlands. After some years of relatively low unemployment figures (in May 2007 the Netherlands had the lowest unemployment rates in the European Union¹) unemployment has started to rise again caused by the economic recession started in 2008.

¹ Source: CBS webmagazine, 17 July 2007, <http://www.cbs.nl/en-GB/menu/themas/arbeid-sociale-zekeerheid/publicaties/artikelen/archief/2007/2007-2245-wm1.htm>

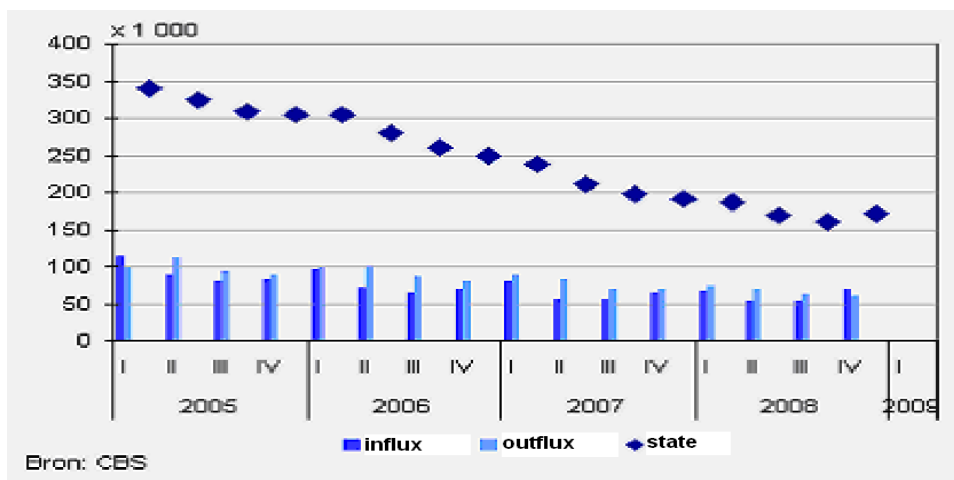
Grafiek 1: unemployed labour force (3-monthly average)



(CBS Press release June 18th 2009 PB09-046)

The in- and outcome rate of the Unemployment Act (WerkloosheidsWet, WW) shows a similar pattern. In the last quarter of 2008 there are more persons coming in than persons going out of the WW; this has not happened since the first quarter of 2005.

WW: Inflow and outflow



2.3 The structure of the reintegration market in the Netherlands

The reintegration field has a number of players active. The most important player in the reintegration market is the worker who becomes unemployed. This individual is without work and lacks labour income. Because he is without income and is willing to work, he is entitled to receive unemployment benefits². This payment comes with conditions. The benefits

² When a person is fired at once the worker can come without benefits, the worker is blameable unemployed. Improving Reintegration: Profiling and Targeting as a Solution for the Deadweight Loss of 15 Reintegration – Master Thesis M. Kippers

entitled people are supposed to do anything in their power to acquire work; most of the time this means that claimants are obliged to apply for suitable jobs.

Most of the time people with benefits are capable of finding jobs on their own. 7 out of 10 people who stream in the unemployment benefit stream out within 12 months (Department of Social Affairs and Employment, 2008).

Other people need assistance in the form of a reintegration path. Groot *et al* (2006) give three reasons for unemployment and why following a reintegration path can help. First there could be discrimination in the labour market; employers do not hire workers corresponding to a certain group. A reintegration path that consists of reducing the employers' insecurities by offering a test placement could be helpful for those unemployed workers. Secondly an unemployed worker could be less motivated for a job; then a motivational training could be fruitful. Another reason for unemployment is the lack of qualification and skills needed for employment; to counter this problem schooling is the obvious method.

The UWV-werkbedrijf (a merger of the Centrum voor Werk en Inkomen, CWI, and Uitvoeringsinstituut WerknemersVerzekeringen, UWV) is responsible for the intake of this part of the unemployed persons, before this was the task of the CWI.

This intake makes the difference between the unemployed who have a great chance of streaming out unemployment and those who have less chance. People who have a relatively small distance to the labour market and are shortly unemployed have a high chance of streaming out to regular work. For these people mediation is the best practice. Connecting the supply and demand of labour makes the market more transparent and gives the ex-worker better opportunity to find the right job.

Those who are not taken into consideration are referred to other reintegration paths. The implementation of this is handled by the UWV-werkbedrijf, before this was the UWV, and the communities.

There are differences between the two parties with respect to both the financing and the available instrumentation. The community is responsible for the reintegration of the Wet Werk en Bijstand (WWB, Act of Labour and Social Welfare). The costs of this are financed through a flexible re-integration budget; the amount of this budget should be 1.25 mrd in 2011 75% of the budget not spent can be taken in to the next year. (Department of Social Affairs and Employment, 2008).

For the instrumentation the community can choose between a regular reintegration path and subsidies on labour costs.

The UWVwerkbedrijf can apart from the two methods mentioned above also approve the IRO (an individual's reintegration contract) of a beneficiary. The unemployed person then chooses his own reintegration company and corresponding reintegration path, and this is monitored by the UWV.

Kok *et al* (2008) in their study on the effectiveness of reintegration in Amsterdam define 7 types of reintegration instruments.

1. Coaching: activities on social activation and direct mediation. In this part the interview with the client is the most important activity.
2. Provisions on the sides: these activities are mostly supportive of other instruments, examples are childcare and debt assistance
3. Training: the activities have the purpose of developing a certain skills, examples are application training.
4. Occupational training: these training programs are designed to educate the unemployed worker for a specific employment.
5. Practical activity: these are mostly internship and subsidised working places; the purpose of these working places is 'learning by doing'.
6. Starters counselling: here unemployed workers are helped in their efforts to start up their own business.
7. Investigating opportunities: The unemployed worker is assisted in their orientation on the labour market.

These reintegration paths are executed by reintegration firms on the private market. This market exists since 2002 and it consists mostly of small businesses; more than half of the firms have less than 11 employees (Department of Economic Affairs, 2008).

The players in the reintegration market are all faced with costs and benefits. Groot *et al* (2006) give us an overview of the costs and benefits of the participants.

First and foremost we begin with worker, who loses his job and after following a reintegration path he finds himself employed. The costs and benefits are clearly visible; after the unemployed worker finds employment he receives a pay and loses his benefit payment and

will suffer some work-related costs. Most likely the wage rate will be higher than his lost benefit payment plus work-related costs.

Besides these costs and benefits he will suffer some costs and benefits that are not so quantitatively. The newly worker will lose his free time but he will experience some extra happiness from his new position. It is difficult to see how much these aspects affect the welfare of the individual.

The second player is the employer who hires the unemployed worker. From the employer's perspective you could see the employee as the marginal worker, being there where the lines of supply and demand meet in the graph of chapter 1. In that case the employer makes zero profit; the extra production gained by hiring the worker is equal to the wage paid.

Another more intuitive approach to the employer's costs and benefits is that the employer will experience a higher production by hiring the worker, but he will face the cost of paying the employee. Since the employer hired the worker we could expect that he thinks his expected benefits are higher than the expected costs. If the expected extra production that comes from hiring the employer is less than the wage paid, it would not be beneficial to hire the employee.

The costs for a reintegration path are in principle equal to the price of a reintegration path. In most cases the reintegration companies are compensated for the cost made, thus the reintegration company makes no profit. Groot *et al* (2006) however state that reintegration businesses do make profits (an inquiry in 2005 99% of firms state that they make a profit).

The government, the communities and the UWV save, after the unemployed worker is employed, the costs for benefits and the corresponding administrative costs. Opposite these benefits are the cost of the reintegration path and corresponding administrative costs. Added to these costs are the work-related subsidies (childcare is one of the best examples). Furthermore there are some non-quantitative elements contributing to the costs and benefits of reintegration. Examples are spill-over effects, lower health-care expenditures, better perspective for the worker's children, reduced criminality and bettering of social cohesion. It seems plausible that being employed reduces the risk of criminal behaviour, since lack of income cannot be a motive anymore. Reduced health care expenditure because workers tend to visit the hospital less than unemployed workers also doesn't seem counter intuitive. The problem is that these gains are very difficult to quantify.

For the government it is therefore more difficult to see if benefits are higher than costs; there are many factors involved and many non-quantitative. In a following part of this chapter we'll find that a cost and benefit analysis can be turn out negative for the government. Therefore the economic stimulus for the government does not seem the biggest motive to play its part in the reintegration business.

2.4 Measuring effectiveness of reintegration

In the previous part the structure of the reintegration market has been described, the attention now is on the effectiveness of this system in the Netherlands.

Studies of the effectiveness of reintegration are divided in studies on gross effectiveness, net effectiveness and social returns.

Studies on gross effectiveness are based on registration of in flux and out flux of unemployment benefits. The stream of workers is measured on entering unemployment and leaving unemployment; these measurement are linked with reintegration participation.

The problem is that these results tell us little about the effectiveness of reintegration policies. Based on these figures added value of reintegration cannot be defined, because there is no definitive causal relation between following a reintegration path and out flow to work. We cannot tell if reintegration causes this out flux to work. Some people will be offered a reintegration path and find a job, while could have been employed without following a reintegration path. The effect is called the deadweight loss of reintegration. This effect is important since the deadweight loss of reintegration decreases the effectiveness of reintegration (Department of Social Affairs and Employment, 2008).

Studies of net effectiveness try to find the value added of reintegration. The results of this study are superior to the results of gross effectiveness studies; however the study itself is far more complex. In order to obtain good results it is necessary to conduct an econometric analysis. To perform a precise econometric analysis a treatment group has to be designed and the results of this group need to be compared to a control group. In this case the treatment group consists of those participating in a reintegration path and the control group will consists of non-participants. If these groups share the same characteristics we can compare employment rates and concluded if reintegration adds to employment chances. The main difficulty with this comparison is that the government cannot deny an unemployed worker a

reintegration path; therefore there is no control group. To conquer this problem a control group is calculated based on some observable characteristics. But not all characteristics that matter for the control group are observed; therefore the control group is not perfect. An example of an unobservable characteristic is motivation; the worker's motivation is not administered but it contributes to the employability of the unemployed worker.

Another aspect is that the available data is mostly used for administrative purposes; it needs modification to be usable for analyses (Department of Social Affairs and Employment, 2008).

Studies on social returns are based on a cost-and-benefit analysis. The problem with this kind of study is that many costs and benefits are based on presumptions. The non-quantifiable aspects for the government are earlier mentioned; it is difficult to prize these aspects. And since the prizing of these effects is vital to a cost and benefit analysis the prize of these aspects has to be estimated based on presumptions. The results of a social cost and benefit analysis are therefore weak, but still they can give a good description in what direction cost and benefit could lie (Department of Social Affairs and Employment, 2008).

2.4.1 Gross effectiveness

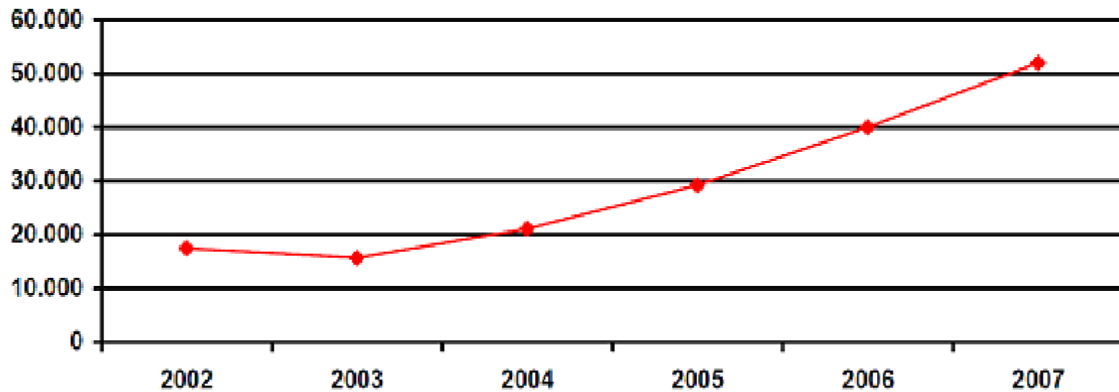
The department of Social Affairs and Employment (Sociale Zaken en Werkgelegenheid, SZW) has studied the effectiveness of reintegration policies themselves. In a policy screening in 2008 a survey was given of studies on the effectiveness of reintegration policies.

First gross effectiveness was studied, comparing the gross in- and outcome. In the report they referred to figures from the CBS (Centraal Bureau voor de Statistiek, Central Bureau of Statistics) and the UWV (Uitvoeringsinstituut WerknemersVerzekering, Institute for the Employment Insurance); 26% of gross income was back in work within 2 years; in 2004 this was 41%.

Recent figures of CBS (Nulmeting 60% doelstelling, Uitstroom naar Werk) state that this percentage in 2005 has risen to 56.2%.

The UWV has presented in their year report the gross effectiveness in a graph.

**number of
reintegrations**



In 2007 52.000 unemployed workers were reemployed after following a reintegration path; 30700 of them after following a reintegration path and 14.800 after following an individual reintegration path. They conclude that this increased number of reemployed workers is caused by the reintegration coaches; the UWV states that an external bureau has concluded that the appointment and extension of reintegration coaches causes that unemployed workers get reemployed at a lower cost. (UWV, 2008)

2.4.2 Net effectiveness

To measure the effectiveness of reintegration net effect studies are used. These studies are advanced techniques to point out the causal relation between reintegration policy and its effect.

Apart from the more methodical problems mentioned earlier results of net effectiveness studies tend to correlate with many factors. Among others the economic conjuncture, the specific demographic and price influence net effectiveness of reintegration policies

A prime example of how economic conjuncture can influence the net effectiveness is the lock-in effect. The lock-in effect is what happens when unemployed workers participate in a reintegration path and only after finishing this path start looking for work, while they could have already had jobs had they not participated in the reintegration path. This effect is most

visible in a high conjuncture with a tight labour market and with unemployed workers with a relative short distance to the labour market. This effect is linked with the dead weight loss of reintegration, this loss happens when a reintegration path is offered to an unemployed worker who can find work without help (Fitzenberger *et al*, 2006).

Based on various studies the department conclude that in general there is a small but positive effect. Groot *et al* (2008) find that starting a reintegration path within a year increases the chances of finding work within one-and-a-half year after finishing with 0.9%. A reintegration path started in the second year increases job chances with 1.3%. Heyma (2006) finds an increased job chance of 0.7%.

In a recent study on the effectiveness of reintegration in the city of Amsterdam it was concluded that participating in a reintegration path increases job chances from 26.5% to 33.3%. Compared to a previous study in 2005 in Amsterdam there has been an increase of effectiveness; in a previous study following a reintegration path would lead to an increased job chance by 4.2% point, this year it was an increase by 6.8% point. The study not only measured net effectiveness of the reintegration policies in general but also of various reintegration instruments apart. The authors conclude that coaching and professional training are most effective (Kok, Hop and Alla, 2008).

The effect of professional training differs greatly with different target groups. Professional training is most effective for unemployed workers between 35 and 44 years of age; without following a reintegration path they would have a job chance of about 18%, while following a professional training would increase job chances to about 47%. Another aspect that stands out is that professional training is more effective for low-educated claimants; an explanation is that there is a low demand for the initial education of the unemployed worker.

The effects of coaching don't differ much between target groups. The effect of coaching however is greater for those with a relative short distance to the labour market; coaching for them is more a less a direct mediation for a job.

2.4.3 Social Return

Based on the costs and benefits described in 2.3 there has been performed cost and benefit analysis for the social returns on reintegration.

Kok *et al* (2006) tried in their investigation to quantify the proposed costs and benefits in order to perform their cost and benefit analysis. This analysis is thus based on a number of presumptions. The presumptions are shown below.

Tabel 3.1 presumptions cost-and-benefit analysis in euro's

	welfare	WW	WAO	employers
general presumptions				
effect reintegration path on individuals job chance	calculated	calculated	calculated	40%
repression of workers	0-50%	0-50%	0-50%	0-50%
repression of other claimants	0-50%	0-50%	0-50%	0-50%
time horizon	5-10 years	5-10 years	5-10 years	1 year
discount rate	4%	4%	4%	n.v.t.
presumptions per entry				
1 payment costs	12.461	15.100	12.148	25.000
2 realization costs payment distribution	6%	6%	6%	n.v.t.
3 realization costs reintegration	526	750	750	150
4 prize reintegration path	3.250	2.000	2.500	2.000
5 cost reintegration path	3.250	2.000	2.500	2.000
6 production	100-120%	100-120%	100-120%	150% gross wage
7 gross wage	15.271	18.505	14.887	25.000
8 tax	15%	15%	15%	25%
9 workrelated costs	4%	4%	4%	4%
10 subsidy child care	0	0	0	0
11 immaterial income	pm	pm	pm	pm
12 leisure	pm	pm	pm	pm
13 healthcare costs	131	9	514	500
14 criminality	110	0	0	0
15 disruptive effects of taxing	25%	25%	25%	25%

Bron: SEO Economisch Onderzoek

(Kok *et al*, 2006, p. 7)

The costs of benefits are from the year report of the department of Social Affairs and Employment. The healthcare cost are quantified on the basis of the risk equalisation model of the Dutch National Health Service, this model realises that health insurers are compensated for the insured with a higher risk. The figures for criminality are estimated in connection with various studies on the relation, monetary relation, between unemployment and criminality.

Four scenarios are constructed by Kok *et al* (2006) to test the sensitivity of the presumptions. In the basic scenario there is no repression, while the second scenario has a repression of 50%.

In the third scenario the newly worker is not considered to be the marginal worker, but his actual production lies 20% above the gross wage paid. In the last scenario the time period for discounting is not 10 years but only 5.

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Per participant costs and benefits are compared. On the basis of these comparisons and corresponding balances a cost-and-benefit-analysis is performed for the social welfare, the act of unemployment and the act of those unfit for work.

The following tables present the results of the analyses.

Tabel 4.7 Total social costs and benefits of reintegration paths, that were started after 6 months, for social security receivers

	scenario 1	scenario 2	scenario 3	scenario 4
repression	0%	50%	0%	0%
marginal value employee	0%	0%	20%	0%
time horizon	10years	10years	10years	5year
balance social security expenses	-1503	-2681	-1503	-2638
balance employer	0	0	1090	0
balance repressed employee	0	-1262	0	0
balance claimant	2935	2935	2935	1497
balance rest of society	-64	-692	-64	-507
balance social perspective	1369	-1699	2458	-1647

Bron: SEO Economisch Onderzoek

(Kok *et al*, 2006, p. 30)

Tabel 5.7 Total social costs and benefits of reintegration paths, that started after 6 months, for benefit receivers per path

	scenario 1	scenario 2	scenario 3	scenario 4
repression	0%	50%	0%	0%
marginal value employee	0%	0%	20%	0%
time horizon	10years	10years	10years	5year
balance social security expenses	-1578	-2759	-1578	-2169
balance employer	0	0	1093	0
balance repressed employee	0	-1266	0	0
balance claimant	3488	3488	3488	1723
balance rest of society	425	-174	425	-138
balance social perspective	2335	-712	3428	-584

Bron: SEO Economisch Onderzoek

(Kok *et al*, 2006, p. 42)

Tabel 6.8 Total costs and benefits of reintegration paths, that started after 6 months, for Disablement Insurance Act receivers per path

	scenario 1	scenario 2	scenario 3	scenario 4
repression	0%	50%	0%	0%
marginal value employee	0%	0%	20%	0%
time horizon	10 years	10 years	10 years	5 year
balance social security expenses	4710	2720	4710	427
balance employer	0	0	1847	0
balance repressed employee	0	-2145	0	0
balance claimant	1099	1099	1099	507
balance rest of society	1902	790	1902	437
balance social perspective	7710	2464	9557	1371

Bron: SEO Economisch Onderzoek

(Kok *et al.*, 2006, p. 50)

Based on these results the authors can apparently conclude that for a reintegration path taken 6 months after entering benefits society more than it costs. The yield is the highest for sick employees and those unfit for work. This is only true when there is no repression and the time period is 10 years.

The analysis also clearly shows who gains the most with reintegration. The unemployed worker gains in every case and scenario. The balance for the government is only positive for the reintegration the disabled workers. Mostly the reduced cost of paying benefit does not match the cost of the reintegration path.

The overall conclusion is that the social return on reintegration is positive. Overall society gains by commencing reintegration.

In spite of the positive social balance this investigation has not be free from critiques. As also stated by the authors this report has many presumptions and many figures are not certain. The positive results of this report therefore are weak.

Although based on presumptions these figures give an estimation and direction in what direction cost and benefits lie.

2.5 Weaknesses in the reintegration policies and possible solutions

As can be seen in the above analysis reintegration does contribute to the finding of a job, but this contribution is less than optimal. If reintegration has the task to get unemployed workers into jobs, net effectiveness of about 1 or 2 percent is too little.

A reason why the net effectiveness of reintegration policies is low is that many unemployed workers are capable enough to find employment on their own; this is the deadweight loss of reintegration. Only a small part of the unemployed population is benefited by reintegration policies. Mostly those standing furthest of the labour market gain the most by reintegration policies (Van der Heul, 2006)

Another reason for the low score is that the net effectiveness of reintegration only looks at becoming employed after following a reintegration path, while some reintegration paths are not designed for job finding but for social participation. And some reintegration schemes are for unemployed workers who have a very low chance of employment just get them a bit nearer to the labour market. Although these reintegration policies yield low scores on net effectiveness they generate some social gain; they can lead to work on a long term basis.

In his article on reintegration Koning (2008) sees profiling and targeting schemes as a possible solution to lacked effectiveness of reintegration. Profiling and targeting are statistical methods that divide unemployed workers in homogeneous groups based on some observable characteristics. Based on these characteristics estimations can be made on potential duration of unemployment and/or the best possible reintegration path. In the next chapter profiling and targeting will be treated more in depth.

Another weak point in the reintegration market is that the initiator of the reintegration policies, the government, gains the least in reintegration. In the analysis by Kok *et al* (2006) the social balances for the government are mostly negative, only with the reintegration of disabled workers the government gains. These negative balances will not be a reason to stop participating in the reintegration businesses, but it might be a good reason to look at who is paying for what results in the market. The negative balances for the government mean that they gain the least, whereas the unemployed workers in the analysis gain the most.

A possible solution could be to divide the cost responsibility of reintegration. A claimant should be made responsible for more of the cost than is now the case. In order to limit the influence on behaviour of the claimant, one could opt for a scheme where the claimant pays

after the reintegration path has been a success. The return on reintegration for the government will grow because of a lower cost, the yield for the claimant will decline but it will still be beneficial for the unemployed worker to participate.

A study on this will go beyond the scope of this thesis, but it might be an interesting option for further research.

Cream skimming is another weakness in the reintegration field. Cream skimming occurs when only the unemployed workers with most potential are assigned to reintegration paths. The main purpose of this selection is to get a better result for a certain caseworker and reintegration path. Selecting the unemployed worker with the most potential has a negative effect on reintegration policies since it contributes to the dead weight loss of reintegration and the lock-in effect; the unemployed worker has the potential of finding unemployment on his own, instead he is assigned a reintegration path limiting his search effort.

Heckman *et al*, (2002) studied cream skimming in relation with the results of the Job Training Partnership Act. Based on a model they come to the conclusion that if cream skimming would occur in JTPA only modest efficiency gains or losses are produced.

Heckman *et al* (1996) earlier concluded that caseworkers target the program resources on the least advantaged; it was stated that reports on cream skimming in the JPTA were overstated.

Lechner and Smith (2007) have done a research on what the value added of a caseworker is. Their attention was focused on the caseworkers active in Switzerland. They concluded that the performance of the caseworker's allocation of services is about as well as a random assignment of services. Performance was measured in employment rates a year after the program was started. Lechner and Smith concluded that the caseworker did not add much value the results of reintegration services.

Although these reports have shown that the effects of cream skimming are mostly overstated, caseworker discretion is a possible source of ineffectiveness. A statistical program based on profiling and targeting techniques could limit the discretion of the caseworker resulting in a more effective reintegration market.

The private reintegration market is not functioning as well as it could be and this can also be considered a weak point in the reintegration policies. Groot *et al* (2006) did a study on the well functioning of the private reintegration market. A conclusion was that there was not a reputation mechanism in the market that causes the better performing companies to grow

compared to the others. This results in a less effective reintegration policy. A more efficient market causes a better allocation of reintegration services and will result in higher net effectiveness of reintegration. Another aspect of the reintegration market is the diversity of active businesses. There are for profit (FP) reintegration companies active next to not for profit (NFP) organisations.

Koning (2007) finds that FP organisations are more active in selecting clients; they sent back more clients (provider induced selection) than NFP organisations do. Compared to that FP organisation have a lower client induced selection, whereby clients do not actively participate in a reintegration path, compared to NFP organisations.

Although ‘cream skimming’ occurs more by FP organisations, they are also more stimulating towards unemployed worker. Koning finds that NFP organisations have higher job placement rate in terms of at least twelve months contract than FP organisations. For the overall job placement rate, no significant differences are found.

A better functioning of the reintegration market could contribute to the improvement of effectiveness of reintegration. But the private reintegration market is still a young market and therefore a restructuring of the market would be too premature and it is not sure what this restructuring could yield.

From all the possible solutions, profiling and targeting unemployed workers seems to have the most potential. Introducing this statistical method could eliminate the problems with caseworker discretion, cream skimming and the lack of effectiveness of reintegration. Other solutions are beyond the scope of this thesis and therefore our analysis will be on the potential of profiling and targeting as a positive contributor of the reintegration policies.

2.6 Concluding remarks

In a previous chapter we could see that in theory reintegration positively contributes to the reduction of unemployment. In this chapter the focus is turned on the practical aspects and as is mostly the case theory and practice continue to differ.

In the Netherlands there are two important players in the reintegration field; first there is the unemployed worker, who is eventually invited to participate in a reintegration path to improve

his employment chances, and secondly there is the government, who through offering reintegration services tries to reduce unemployment rates.

A cost-and-benefit analysis has indicate that only the unemployed worker gains from reintegration, the rise of income offset work related costs. However this gain is a pure economic gain and the transition from unemployment to employment is likely to influence certain non-quantitative elements such a social status (from having a job) and extra free time. It is difficult to prize these elements, but in monetary terms the unemployed worker gains from reintegration.

The government however loses on reintegration; the cost of a reintegration path is higher than the amount of saved benefit payments. Only with reintegration paths for disabled workers the government seems to gain by offering reintegration paths.

Overall society seems, according to the same study, to gain from reintegration.

This chapter has also given a review on studies on the effectiveness of reintegration. The main conclusion was that reintegration paths positively contribute to employment chances, but that this positive contribution is small. The general conclusion was that following a reintegration path increase job chances by about 1% point. It was also stated that reintegration paths are more effective for unemployed workers further from the labour market.

Another interesting study showed that in Amsterdam they found out that professional training is more effective with unemployed workers between 35-44 years.

Weaknesses of the reintegration policies that have been pointed out in this chapter are the lock-in effect and the deadweight loss of reintegration. The effects occur when a reintegration path is offered to an unemployed worker who could have been reemployed if he had not participated in a reintegration path. A potential solution for this problem is the introduction of profiling and targeting, techniques that have been described in the first chapter.

In the following chapter profiling and targeting will be the main subject; this chapter will describe the dynamics of profiling and targeting and the international experiences.

Chapter 3

Profiling and Targeting

3.1 Introduction

In the previous two chapters profiling and targeting have been introduced as a possible contribution to the effectiveness of reintegration. In this chapter profiling and targeting will be the main subject of study.

First the dynamics of the two systems is described; this is complemented with the international experiences.

3.2 Profiling

In chapter 1 profiling has been introduced as a statistical mechanism that can contribute to the effectiveness of reintegration. The principal mechanism of profiling is estimations on the potential unemployment duration that will provide the basis on which is decided if a reintegration path will be offered.

A theoretical framework by Frölich *et al* (2003) shows the dynamics of profiling.

The first part of the profiling process is the estimation of the duration of unemployment for the unemployed worker. The duration is estimated by measuring the potential outcome for unemployed person i based on relevant and available characteristics set x from not participating in a program according to rules set by the profiling model.

$$D_i = R^*[Y_i^0 | X = x_i]$$

D_i = Duration of unemployment

R^* = Rules set by the profiling model

$[Y_i^0 | X = x_i]$ = The potential outcome of participating in program 0, this stands for not participating in any program, for person i with relevant characteristics x .

This outcome will perform as a threshold value for participating in reemployment or reintegration programmes.

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$$P_i = 1(D_i \geq \bar{D})$$

Only if the duration of unemployment is higher than or equal to a predetermined unemployment rate the unemployed work can participate in reintegration programmes.

The benefits of introducing profiling are that reintegration paths are only offered to those who really need it; this will reduce the deadweight loss of reintegration. The costs for reintegration paths are evidently reduced since the number of participants is reduced.

Since 1993 every state in the United States is required to implement a Worker Profiling and Reemployment Services (WPRS) system. The goal of this program was to reduce the cost for unemployment benefits for the government. For every unemployed person the potential unemployment duration was predicted, and based on these predictions claimants of benefits were forced to participate in reemployment services. This means that people whose chances of a long duration spell were high would receive assistance in their efforts towards finding a job. The aim was to reduce the average weeks of duration spells.

Black *et al* (2003) have examined the effect of WPRS system on the mean weeks of Unemployment Insurance (UI) benefits. The authors based their study on the available data in Kentucky. The WPRS system was installed in 1994 in Kentucky; the study focuses on UI spells between the beginning of the system and June 30th 1996.

The profiling model was developed by the University of Kentucky; they gave profiling score between 1 and 20, where 20 would imply that an unemployed person would exhaust between 95 and 100 percent of their benefits. This model was limited because of privacy laws; sex, age, race, ethnicity, and veteran status could not be implemented in the profiling model. Based on the scores the unemployed worker would receive an invitation for the reemployment services. The participation was obligatory; failure to participate without a reasonable cause would result in a termination of unemployment benefits. Because of limited spaces in the reemployment services only those people with high scores were invited.

Based on empirical analyses Black *et al* find that *...the WPRS treatment shortens the duration of UI claims, reduces benefits paid, and raises earnings...* (Black *et al*, 2003, p.10).

Participants of the treatment receive on average 2.2 weeks fewer benefits than the control group. However, most of this result comes from early exits from the UI benefits; mostly these actions are caused by the notification of the duties of the reemployment services.

As of December 1st 2004 profiling has been integrated in the Danish labour market policies. Rosholm *et al* (2006) describe in their article the workings of the profiling system in Denmark. The model exists of a number of components. First there is the job barometer which graphically represents the prediction made based on statistical profiling. The caseworkers can use this information in the first meeting with the unemployed worker, combined with an overview of past periods on public assistance. Then there is a dialogue guide helping the caseworker to identify the claimant's strengths and weaknesses. Last the unemployed worker needs to prepare some personal information before his or her first meeting with the caseworker. The aim of this system is to predict the employability of the worker.

Rosholm *et al* also study the accurateness of the predictions. They find that the system makes 66% correct predictions.

The Job Seeker Classification Instrument (JSCI) was implemented in 1998 in Australia. A high risk of becoming long-term unemployed is a reason for intervention in the form of training programmes and wage subsidies (Frölich *et al*, 2003).

3.3 Targeting

The framework I will present here is also based on Frölich *et al* (2003).

The outcome of this system will be a score for person i with relevant and available characteristics x of participating in programmes p , where $p = 0$ means non-participating.

$$S_i^p = R^* [Y_i^p | X = x_i]$$

S_i^p = The score for participating in program p for individual i .

R^* = Rules set by the targeting model

$[Y_i^p | X = x_i]$ = Potential outcome of participating in program p for individual i with characteristics x .

The unemployed worker will only be assigned to the program that has potentially the highest score for him.

$$p^* = \arg \max_p (S_i^p)$$

Targeting systems are based on expected effect heterogeneity in reintegration policies. Caliendo *et al*, (2008) studied this effect heterogeneity in Germany. Based on figures of participation between 2000 and 2002 they divide claimants in different groups and looked if there were differences in treatment effects. Groups could consist of claimants under the age of 25, or claimants who had participated in ALMP before unemployment. They found that programme effects were different across groups. Most of these results were unfortunately not significant. However Caliendo *et al* did find effect heterogeneity an important topic that could be investigated more thoroughly. The authors also have shown that this effect heterogeneity could improve efficiency of ALMP.

The Frontline Decision Support System (FDSS) is a fine example of targeting benefit claimants. Eberts (2005) describes the FDSS as a *...set of tools that can help front-line staff make better decisions for all costumers regarding the array of services provided in one-stop career centres. (p.81)*

Eberts and O'Leary (2002) provide a solid description of the FDSS. The FDSS consists of two modules; first there is the systematic job search module (SJSM) and the second is the service referral algorithm (SRM).

The SJSM provides information on the probability of return to work in the prior industry, expected job growth in the prior occupation, likely reemployment earnings, available suitable job vacancy listings and related occupations.

The SRM exists of two parts. First there is a ranking based on effectiveness for core and intensive services for clients with similar characteristics and there is a ranking based on effectiveness for job training prospects for clients with similar characteristics.

Eberts (2005) states that the feedback on the use of FDSS has been positive. The caseworker can give more precise predictions on the effect of reintegration; a comparison now can be made on how similar people have performed in reemployment services.

Eberts (2002) earlier in pilot project on a targeting system, shows that the job retention rate for a treatment group are significantly higher than for the control group that was randomly

assigned in reemployment services. He also states that the benefits of the statistical and referral system sufficiently more than cover the operating expenses.

Frölich *et al*, (2003) have done a study on the potential of implementing a targeting system in the active labour market policies. Based on a study by Lechner and Smith (2003) (this is similar to Lechner and Smith (2007) where they founded that caseworkers were not performing very well in allocating programmes under unemployed workers, Frölich *et al*, concluded that the caseworkers need to be assisted by a statistical system. This system has to provide them with information on what the effects of certain reintegration path on certain homogeneous groups could be. With a hypothetical test case Frölich *et al*, find that statistically assisted programme allocation would be contribute to a higher employment rate; they estimated that by implementation of this system employment rate could have been 57.5% one year after programme start instead of 49.8%.

Partly based on this study the Swiss State Secretariat for Economic Affairs started a pilot study on the effects of statically assisted programme allocation. Behncke *et al*, (2007) have evaluated this initiative and came to a surprising conclusion, they found that there was no significant difference in choice of labour market programme for the treatment group and the control group; caseworkers largely ignored the system outcome or they were confident that their own estimations were more accurate. The discretion of the caseworker was in conflict with the targeting system. Behncke *et al*, stated that strong incentives are required to comply caseworkers with the system.

Canada also experimented with a statically based targeting system (Colpitts, 2002). In 1994 a microcomputer based prototype was built of the Service and Outcome Measurement System (SOMS). SOMS consisted of a relational database of client specific information for employment insurance beneficiaries, a means for examining the results of past services provided by the public employment service and a computerized model to predict what services would most benefit a particular job-seeker.

The problem with SOMS was its predictive component. One problem with the predictive element was that the majority of the claimants were selected for the same reintegration path. To counter this problem the model provided scores on the several programmes to come to a better allocation; the problem however was that the confidence intervals of the programmes were too large to precisely define the effect of the programme.

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3.4 Concluding remarks

Profiling and targeting methods are statistically based systems that group certain people with similar characteristics together. Based on these characteristics predictions can be made on potential duration of unemployment or on expected programme effects. Profiling candidates to see their potential duration of unemployment could help to focus attention on the most needing unemployed workers. Assisting the workers that have high expected unemployment duration and therefore are most likely to exhaust their unemployment benefits will save the government more money than if their focus lies on the unemployed workers with low expected durations. Profiling systems have been implemented in the USA and Denmark.

Targeting is a more specified system than profiling and is therefore conceived as superior to profiling. Targeting system will give estimates on how programmes will affect job prospects of certain groups; targeting schemes are therefore more complex. The only real implementation of targeting is in the USA with the FDSS. A study in Switzerland showed that if targeting is to be implemented the caseworker will have to be stimulated to act in line with the system's estimations.

Profiling and targeting are interesting initiatives that can contribute to the effectiveness of reintegration policies. It will therefore be worthwhile to investigate possibilities of implementation in the Dutch reintegration policies. In a next chapter we will look into the effects of implementation in Netherlands.

Chapter 4

A model on unemployment and reintegration

4.1 Introduction

The purpose of this chapter is to show that the introduction of profiling and targeting could reduce the deadweight loss of reintegration and could positively contribute to the effectiveness of reintegration.

Based on the experiences of the previous three chapters I will perform some simple numerical examples that visualize the effect profiling and targeting can have on the effectiveness of reintegration.

4.2 Constructing the model

The world here exists of an employment stage and two unemployment stages. As a participant you are either employed or unemployed. And since in this model being unemployed equals receiving benefits, workers who are in between jobs will not be considered unemployed.

The participants in this model make their decision based on income. Since wages are higher than benefits in this model, participants want to be in the employment stage.

The difference between the two unemployment stages is that in one unemployment stage the unemployed workers only receive benefits and in the other unemployment stage the claimant receives its benefit and gets a reintegration path invitation.

4.3 The model

As stated in the previous part of this chapter you can either be employed or unemployed in this simulation, and since the participants only care about income definitions are needed to define the value of being employed or unemployed.

An important aspect of my model is that people value unemployment and employment differently as the economic situation changes. The economic situation influence job-finding and job-losing rates and therefore influences the value of being employed. Pissarides (2000)

in his book on unemployment search gives the following definitions for the values of unemployment and employment in a continuous time frame.

The stream value of unemployment is $rU = z + \beta(W - U)$. The unemployed worker receives benefits z , he expects with a chance β to return into employment and receive the present discounted value of the expected gain of becoming employed ($W-U$).

The stream value of being employed is $rW = w + \lambda(U - W)$. This value consists of receiving wage w and facing a risk λ of becoming unemployed. Losing employment will result in an expected loss of ($U-W$).

Pissarides solves both equations for the permanent incomes of unemployed and employed workers, where z is the level of unemployment benefits and w is the received wage and r is the rate of interest.

$$rU = \frac{(r + \lambda)z + \beta w}{r + \lambda + \beta}$$

$$rW = \frac{\lambda z + [r + \beta]w}{r + \lambda + \beta}$$

Since w is assumed bigger than z it follows that employed workers have higher income than unemployed workers. If it were a matter of choice an individual would thus rather be employed than unemployed.

As was stated before the unemployment stage will consist of two stages. In the first stage the unemployed worker will only receive benefits. And in the second stage or reintegration stage of unemployment the worker is offered a reintegration path, which he is obliged to participate in.

In this model I also assume that participation in a reintegration path will alter job prospects. This implies that β_1 is the initial chance of employment and β_2 is the chance of employment after the reintegration stage of unemployment.

The stream value of the two unemployment stages is as follows.

$$rU_1 = \frac{(r + \lambda)z + \beta_1 w}{r + \lambda + \beta_1}$$

$$rU_2 = \frac{(r + \lambda)z + \beta_2 w}{r + \lambda + \beta_2}$$

For simplicity the value of employment is calculated using the initial job chance.

$$rW = \frac{\lambda z + [r + \beta_1]w}{r + \lambda + \beta_1}$$

In the previous chapters we have seen that following a reintegration path will increase job chances, although not by much. This implies that $\beta_2 > \beta_1$.

The increase of job chances after following a reintegration path will result in a higher stream value of unemployment after a reintegration path than before. The flow value of unemployment under β_2 is higher than under β_1 because the derivative is strictly positive and $\beta_2 > \beta_1$.

The introduction of reintegration thus causes that the value in the first period of unemployment is lower than the value of unemployment in the second period or the reintegration period.

This distinction is very important in our model; unemployed workers have an incentive to wait one period of unemployment as reintegration adds to their job-finding rates. Whether or not the unemployed workers decide to wait depends on their current valuation of unemployment and employment as we will see in a later part. Since valuations differ with respect to the economic situation the decision will also depend on the economic situation.

An important note is that Pissarides solves his equations in continuous time, whereas the model I will present is a discrete time model. The model of Pissarides is therefore not directly applicable. However Pissarides clearly shows what influence job-finding and job-losing rates can have on the valuation of unemployment and employment, and therefore the formulas on how people value employment and unemployment are based on the formulas by Pissarides.

In the beginning all participants will start in the employment stage. After the first period λ times the number of workers active in the employment stage will lose employment.

When a worker is laid off he enters the first stage of unemployment. There he receives benefits. In the first stage of unemployment the ex-worker is faced with a choice; he can actively seek work or he can wait for the arrival of the second stage of unemployment, the reintegration stage. If the ex-worker intends to seek work he will face some costs, examples of these costs are travel costs for attending job interviews and perhaps costs for new clothes. The search costs are labelled c_1 . If he actively seeks work his chance of employment will be β_1 . If he does not find work he will enter the second stage of unemployment. The decision if the unemployed worker will actively seek work or wait for the second stage of unemployment is

based on the following formula, $-c_1 + \beta_1 \left(\frac{rW}{1+r} \right) + (1 - \beta_1) \left(\frac{rU_2}{1+r} \right) > \left(\frac{rU_2}{1+r} \right)$.

The chance of becoming employed minus the search costs should be higher than the alternative of the stream value of unemployment in the reintegration stage of unemployment.

The choice depends on the initial job prospects. The unemployed worker will only seek work

$$\text{if } \beta_1 > \frac{(1+r)c_1}{rW - rU_2}.$$

If β_1 is high enough, the unemployed workers will enter the job market. On the job market β_1 of the number of unemployed workers that actively seek work will be matched with a job and will enter the employment stage in the next period. The rest of the unemployed workers that were not matched move on to the second stage of unemployment.

If β_1 is too small all unemployed workers will wait not actively seek work and thus wait for a reintegration path that is offered in the second stage of unemployment.

This threshold value of β_1 will cause that in general the unemployed workers with low job chances will wait for an invitation for a reintegration path. The claimants that wait for reintegration will enter the reintegration stage and are completed with the unemployed worker who have actively looked for employment but have not been matched.

It is clearly visible that an increased effectiveness of the reintegration policies has a negative influence on the threshold value of β_1 ; if β_2 increases rU_2 will increase also and thus the expected gain of employment will decrease. If search costs stay the same, the threshold value of β_1 will increase. To put it more simple if reintegration becomes more effective it increases the incentive to wait for reintegration instead of actively seek work.

In this way reintegration paths are offered to unemployed workers who would have found employment otherwise; this is similar to the deadweight loss of reintegration and the lock-in effect.

After the unemployed workers have finished their reintegration paths they are matched with based on β_2 instead of β_1 , and since they have no incentive to wait for a reintegration path they will all actively seek employment. After the second period unemployed workers still face some search costs, however the assumptions is that all unemployed workers will seek employment such that the search costs cannot influence the decision and is therefore omitted. Only if search costs are extremely high unemployed workers will not search and stay unemployed.

If these unemployed workers are not matched in the second they will remain unemployed and seek work in the following period, they will not be offered another reintegration path; their job finding rate will only increase because of a change in the economic situation. In the next period these unemployed workers of the second stage that were not matched continue to search and are still active in the second stage. At the end of this next period they face the same beta as the entrants that came the period before them. The matching chances are thus equal for those that were not matched in the previous period and those that just finished their reintegration path.

In other words unemployed workers stay in the second period until they find employment, but they only receive one reintegration path, the reintegration path offered at the entry of the second stage.

4.3.1 Profiling

If profiling is now introduced in this model it will not change the model by much, but some essential alterations occur. Instead of a sequential ordering of the two stages of unemployment there is now a central ordering device that decides if an unemployed worker can participate in a reintegration path. Based on a profiling variable a decision can be made on whether or not to send an invitation to an unemployed worker.

The element of concern that is the basis of this profiling mechanism is the duration of unemployment. Based on certain observable variables an estimation is made on the potential duration of unemployment. The unemployed workers who have a potential duration that is above some ex ante decided threshold value can expect and invitation for a reintegration path. When profiling is implemented the first thing that changes is the sequential ordering of the different stages of unemployment; there is no longer a first and a second stage of unemployment instead there is a stage where reintegration paths are offered and a stage without these reintegration paths.

This different ordering of stages has its effect on seeking decision of the unemployed; the seeking decision is now not affected by the effectiveness of reintegration paths β_2 ; with the implementation of profiling the incentive for the unemployed workers to wait for a

reintegration path is non-existent. Profiling could thus eliminate the deadweight loss of reintegration and the lock-in effect of reintegration.

The expectation is that the effectiveness of reintegration paths increases, since reintegration paths are considered more effective for unemployed workers with a relatively weak labour position (van der Heul, 2006). And since profiling causes only workers with long potential unemployment duration to enter the reintegration stage, the overall effectiveness of reintegration should increase. And since reintegration is offered right after applying for benefits, this could also be beneficial. Before profiling occurs unemployed workers with low job prospects will have to wait one period before entering a reintegration path; profiling now reduces this waiting period and reduces the periods where the government has to pay benefits.

4.3.2. Targeting

The introduction of targeting does not alter the original structure of the model. The implementation of targeting affects the effectiveness of reintegration. The job prospects after the completion of a reintegration path depend on what program is followed and on the individual's characteristics.

As was seen in chapter two professional training was highly effective for persons between 35 and 44 years old. Based on this information professional training could be targeted on this particular age group such that their job prospects after a reintegration path are much higher. However this would lead to a higher incentive for people between 35 and 44 to not actively seek work and wait for reintegration even though they could have very high initial job prospects. In this way targeting increases the deadweight loss of reintegration.

If targeting is implemented it should thus only be implemented in the combination with profiling.

4.4 Numerical Simulations

The dynamics of the simulations are as follows. In the first period everyone participates in the employment stage. At the end of the first period λ times the number of people active in the employment stage is laid off and will enter the first stage of unemployment in the following period.

In the next period these unemployed workers will decide based on their initial job chances versus the search cost divided by the expected gain of employment if they will actively seek work or if they will wait for the second stage of unemployment.

If they enter the job market β_1 of them will be matched and enter the employment stage; the rest will move on to the second stage of unemployment.

After the second stage of unemployment β_2 of the unemployed workers will be matched and enter the employment stage. Those unemployed workers that were not matched remain unemployed and might be matched in the next section, where matching is based on the current β_2 .

In order to start the simulation the relations defined in the preceding parts of this chapter need to be quantified.

First I assume that job prospects behave pro-cyclical. Thus if the economic situation is at its best the job finding rates are highest. This behaviour of job finding rates is confirmed by Shimer (2005). In this model the economic situation moves in a cyclical motion between 0 and 6; 6 is the best economic situation that corresponds with the highest job prospects.

Job prospects also differ per individual. For simplicity I use 6 categories of individuals. The groups are ranked according to their labour position; being in group 1 indicates that the individual has the highest job prospects.

To summarize there are two elements that effect job prospects the economic situation and the individuals labour position. The impact of these aspects is equal such that the chance of employment is calculated according to the following formula.

$$\beta_1 = 0.5 * (0.9 - 1/15 * category) + 0.5 * (0.5 + (economicindicator / 3) * 0.2)$$

The minimal value of β_1 is 0.5 and the maximum value of β_1 is 0.9.

Since reintegration adds to the job prospects, and contributes more with worse cases, the chance of employment after reintegration is calculated with the following formula.;

$$\beta_2 = \beta_1 + 0.01 * (category / 3)$$

The value of 0.01 is based on the reviews on reintegration that have been the subject of study in chapter 2. In that chapter it was also stated that reintegration is more effective with worse cases.

The average job finding rate with this formula is 0.7. This number is based on the statement in chapter 2 that 7 out of 10 workers find employment by themselves.

The decision to actively seek work or to wait for the reintegration stage is based on the job prospects. As stated above this decision is based on the following formula

$$\beta_1 > \frac{(1+r)c_1}{rW - rU_2},$$

where rW and rU_2 are calculated according the solutions by Pissarides that are explained in section 4.3.

The formula for the job separation follows a similar pattern as the job finding rate. The first assumption is that job separation rate is a-cyclical and assumed constant. This is confirmed by Hall (2005). A further assumption is that the job separation is influenced by individual's labour position as was the case with the job finding rate.

The following formula is constructed

$$\lambda = (\text{category} / 3) * \lambda^*$$

λ^* is the average job separation rate. This rate is calculated based on a formula by Pissarides (2000). He states that his model works towards a natural unemployment rate. The formula for

this natural unemployment rate is $\frac{\lambda^*}{\beta + \lambda^*}$.

In our model we will choose a natural rate of unemployment of 4%, based on an estimated NAIRU; Gianella *et al* (2008) estimated the NAIRU for the Netherlands and the NAIRU in the 2000s was about 4%.

If the average job finding rate equals 0.7 and the natural unemployment rate equals 0.04 than the average job separation rate should equal 0.03. In the simulation it should be visible that unemployment and employment figures move round some stationary figure of unemployment.

The matching of workers with job depends on β ; β times the number of seeking unemployed workers equals the amount of matches made.

The simulation starts with 100000 participants in the employment stage. The interest rate is set at 0.04 and the cost of searching is set at 0.0125. The search cost is set at this rate to ensure that some people will at some point in time wait for reintegration instead of actively seek work. The wage is set at 1 and the benefit level is 0.6. The duration of the simulation is 300 periods.

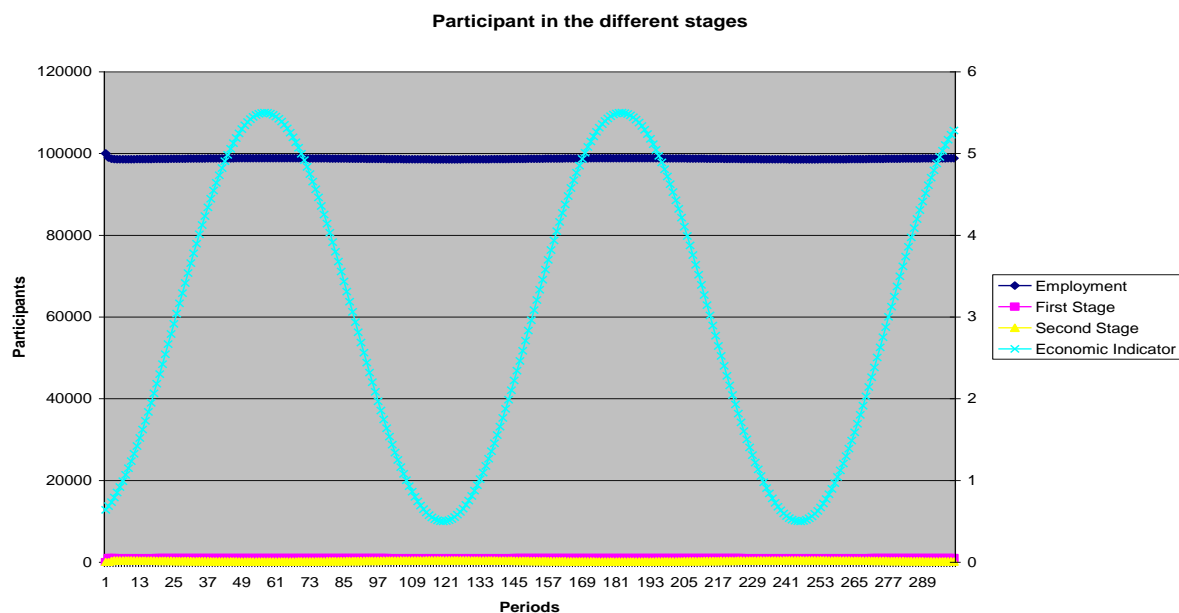
I follow Davidson and Woodbury (1996) in their approach of an infinite duration of unemployment benefits and a replacement rate of 0.6.

Improving Reintegration: Profiling and Targeting as a Solution for the Deadweight Loss of 43 Reintegration – *Master Thesis M. Kippers*

4.4.1 The basic model

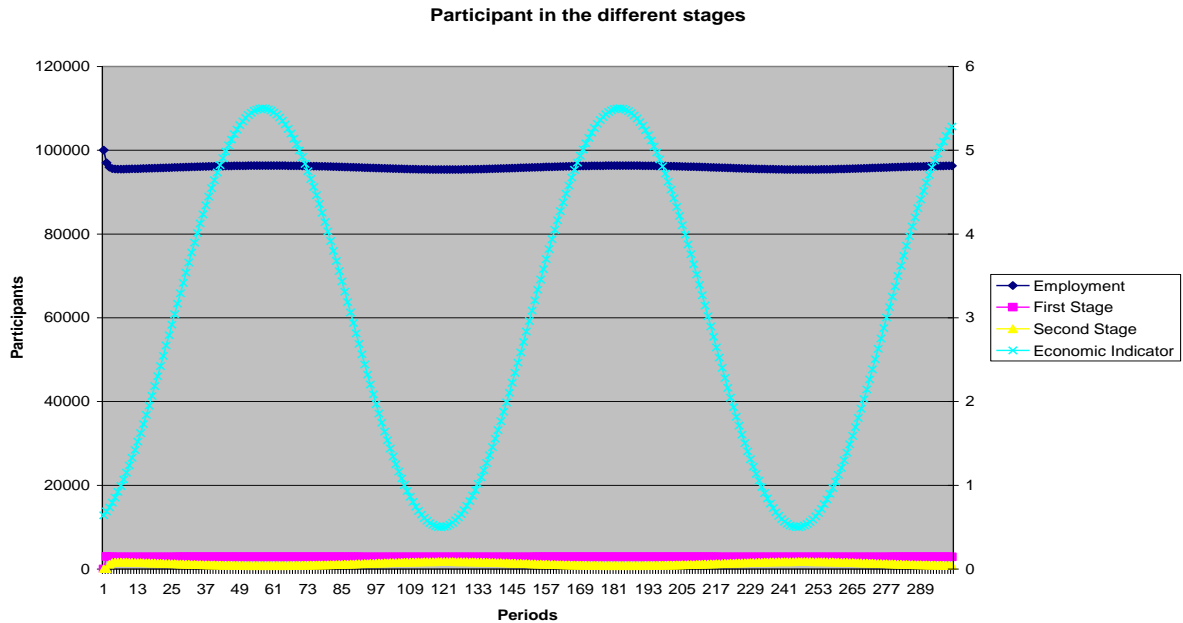
In this section the results of the simulations are presented. The first graph given below shows what happens if the 100000 participants are all active in the best labour category. The light-blue line shows the cyclical motion of the economic situation.

The starting point is that all 100000 participants are employment in the first period. At the end of this period λ of them enter the first stage of unemployment. After second period a new portion enters the first stage of unemployment; of the first period participants a selection will flow to the second stage and a selection will flow into employment. As can be seen the first periods are just a starting path to get to a normal pattern that is visible in the latter periods. The analysis therefore focuses on this normalised pattern.



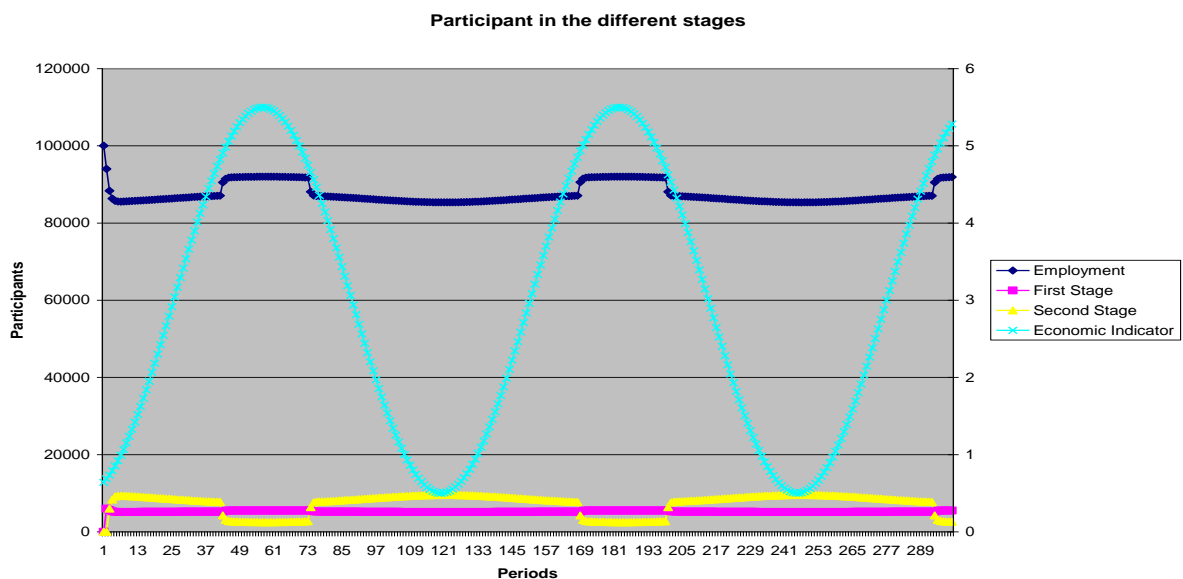
The first thing to conclude based on this graph above is that the employment rate is relatively high and moves in a cyclical motion. Most of the unemployed workers will find employment in the first stage; there are less people active in the second stage than in the first stage.

If the category is now set at 3 it will lead to the following graph.



The main difference is that in category 3 the employment rate is lower. But still most people will find employment within the first stage of unemployment. But it is also visible that in bad economic times there are more unemployed workers active in the reintegration path. Although not so clearly visible the number of participants in the second stage is more volatile

For workers active in category 6 it is expected that employment rate will also decrease. This will not be the only difference in comparison with the two graphs above; it is expected that for unemployed workers it is in economic worse times more beneficial to wait for reintegration in the first stage of unemployment. The effect of this waiting is clearly visible in the following graph.

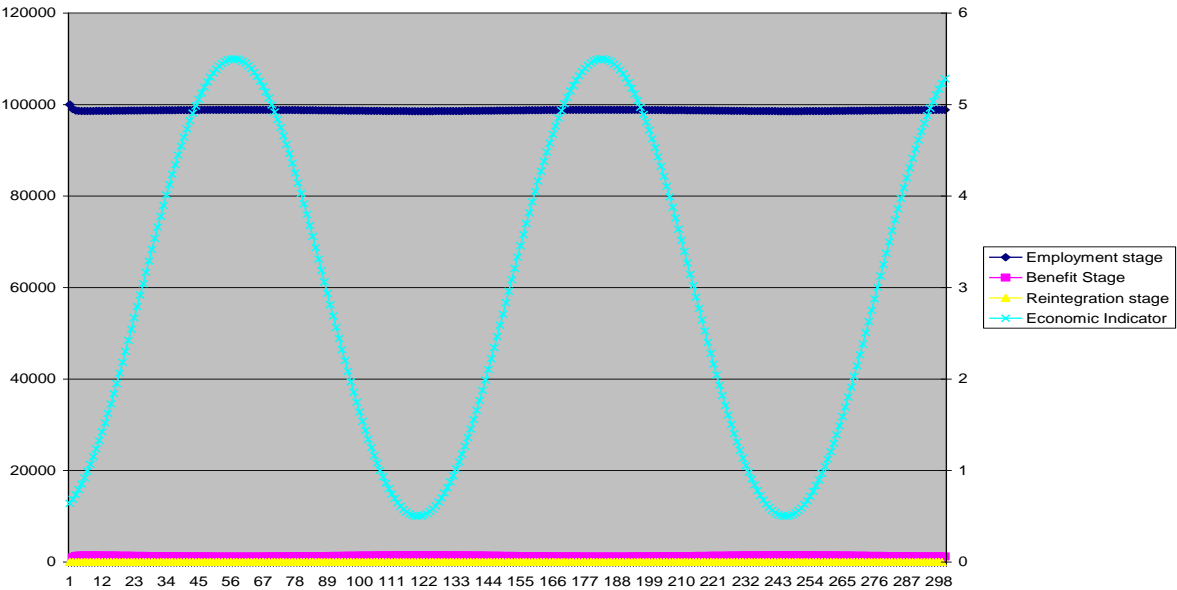


The effect of waiting for reintegration causes a shift upwards in the participants of reintegration below a certain economic growth. This shifts represent the lock-in effect, unemployed workers are kept in the unemployment stage for an extra period, because they have waited for the reintegration path to start.

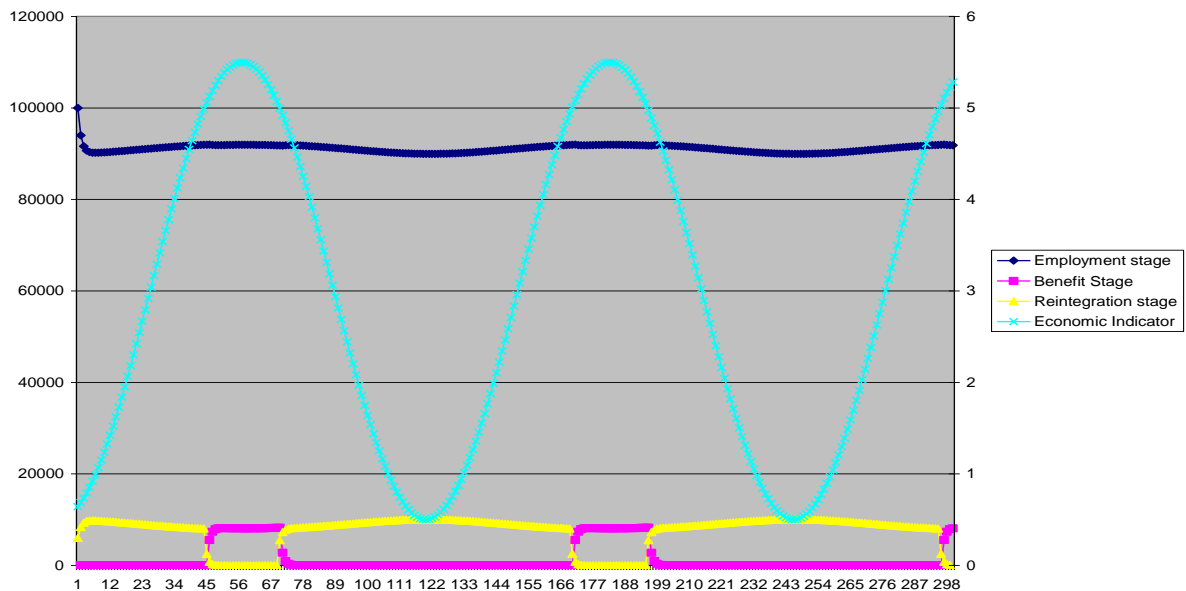
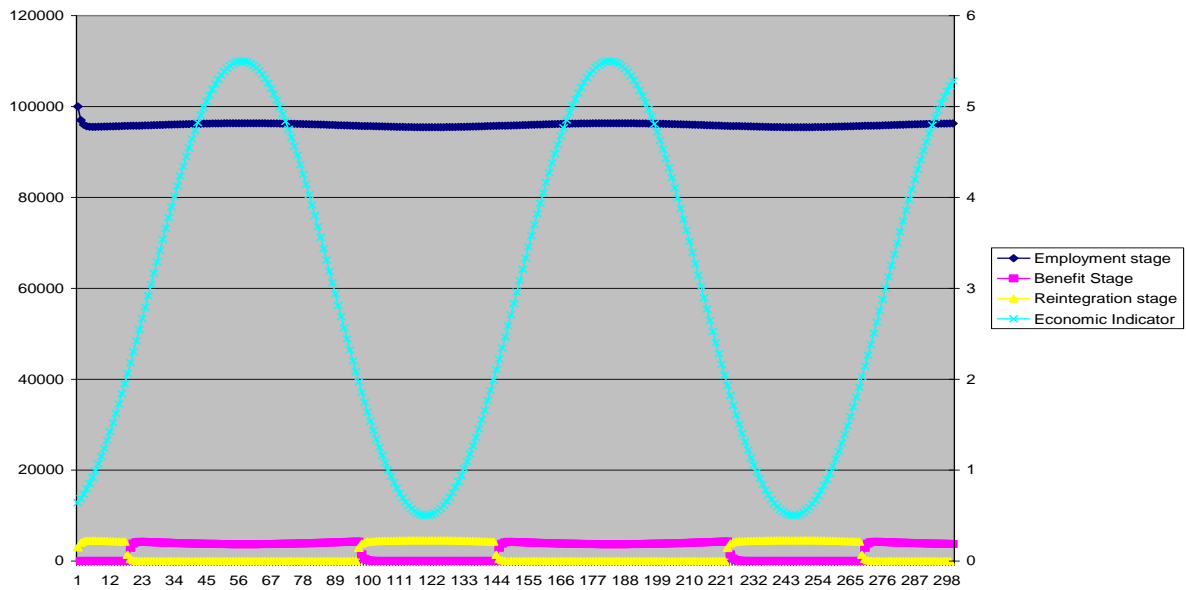
4.4.2 A profiling mechanism

When a profiling system is introduced we see a different pattern. A central ordering device decides whether an unemployed should be offered a reintegration. The variable of interest is the expected duration of unemployment. The expected duration of unemployment is in our model $\frac{1}{\beta_1}$; if employment chance is higher the potential duration of unemployment is lower.

If the threshold value of this parameter is set at 1.5 we end up with the following graphs for the categories 1, 3 and 6.



As is easily observed none of the unemployed worker in category 1 are active in the reintegration stage, since they can find employment on their own. If the unemployed workers were active in a higher category they will be offered a reintegration path in bad economic times; this is clearly visible in the following graph of unemployed workers active in category 3.



Profiling causes that reintegration paths are only introduced to unemployed workers who need it. As can be seen reintegration paths are most of the time offered in worse economic times. And claimants that have a lower labour position will be offered a reintegration path sooner. Offering reintegration paths only in weaker economic times will reduce the lock-in effect of reintegration. Another aspect of profiling is a reduction in cost for reintegration paths. For unemployed workers in the first category no reintegration paths are offered when profiling is introduced, whereas without profiling there were still unemployed workers in the first category participating in a reintegration path. It seems safe to say that when profiling is

introduced the lock-in effect and dead weight loss of reintegration will be reduced as will the costs.

A comparison shows that the implementation of profiling reduces the unemployment rates. In the tables below the mean unemployment rate is given of the 300 periods in the previous graphs for the subsequent categories.

First a table is given for the mean unemployment rate without profiling per labour category.

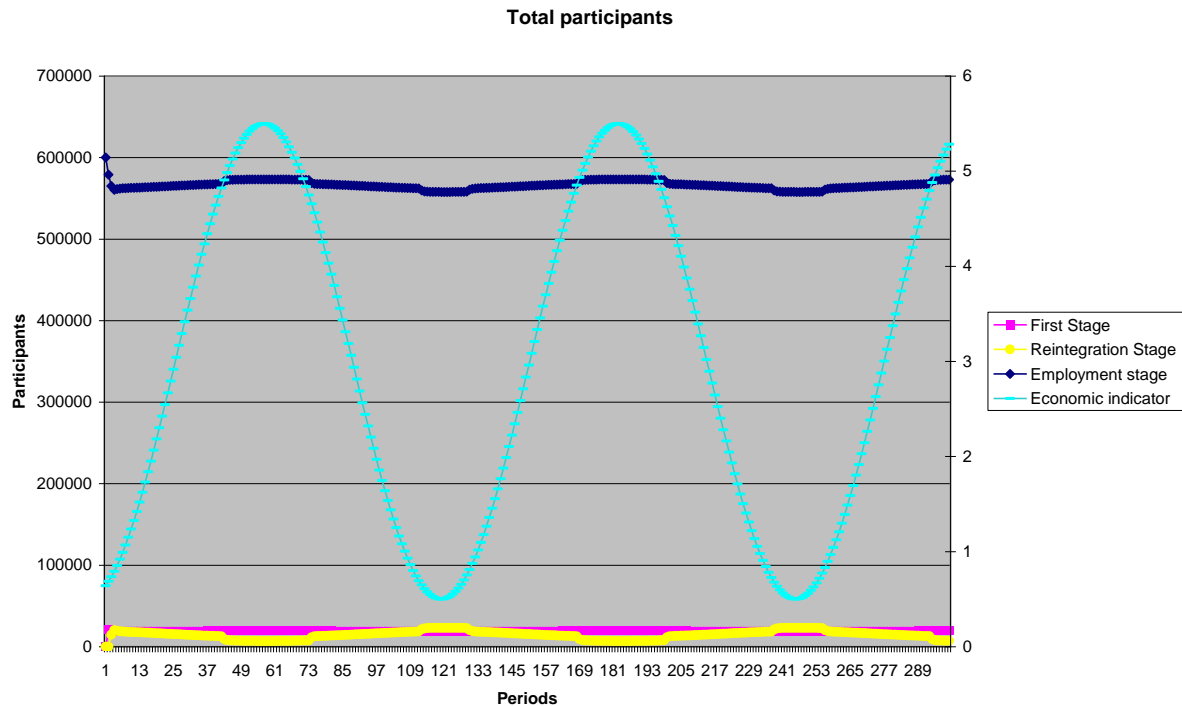
Cat.	Mean Unemployment rate
1	1,2884%
2	2,6535%
3	4,1012%
4	5,6378%
5	7,7594%
6	12,4674%

The higher the category the higher is the unemployment rate. The same is visible in the graph below. When profiling is introduced it reduces mean unemployment rates for unemployed workers in a worse labour position. For unemployed workers in better categories, namely 1 and 2, the mean unemployed rate is higher, however this difference is not as much as with the lower labour positions.

Cat.	Mean Unemployment Rate
1	1,2897%
2	2,6543%
3	4,0939%
4	5,6130%
5	7,2119%
6	8,8862%

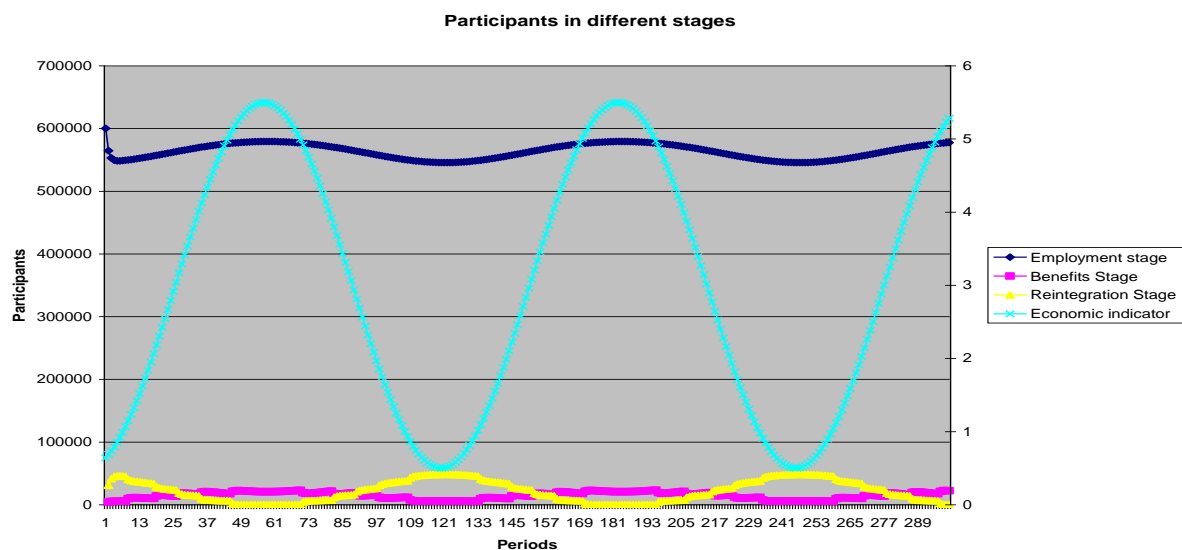
The effect of profiling on the total unemployment is more visible if we select a group that consist of 600000 people equally distributed among the 6 categories.

If there is no profiling, we end up with the following graph.



The mean employment rate in this graph is 5.6513 %.

When profiling is introduced we get the following graph.



The mean unemployment rate in this graph is 4.9581 %. As can be seen quite easily the reintegration path is brought into action in dire economic times; in comparison with the situation without profiling the number of participants in the reintegration stage is higher and the number of participants in the benefits stage is lower. The general conclusion is that with the implementation of profiling the shocks in employment that were apparent in the basic model are now absorbed by the reintegration stage.

When profiling is implemented the number of participants in the reintegration stage of unemployment is more volatile than without the implementation of profiling. Such volatility could have severe implications for the reintegration market; at one time the demand for reintegration path is immense and the other time there is no demand at all. If profiling would thus be implemented there should be good understanding of how this volatility affects the reintegration market.

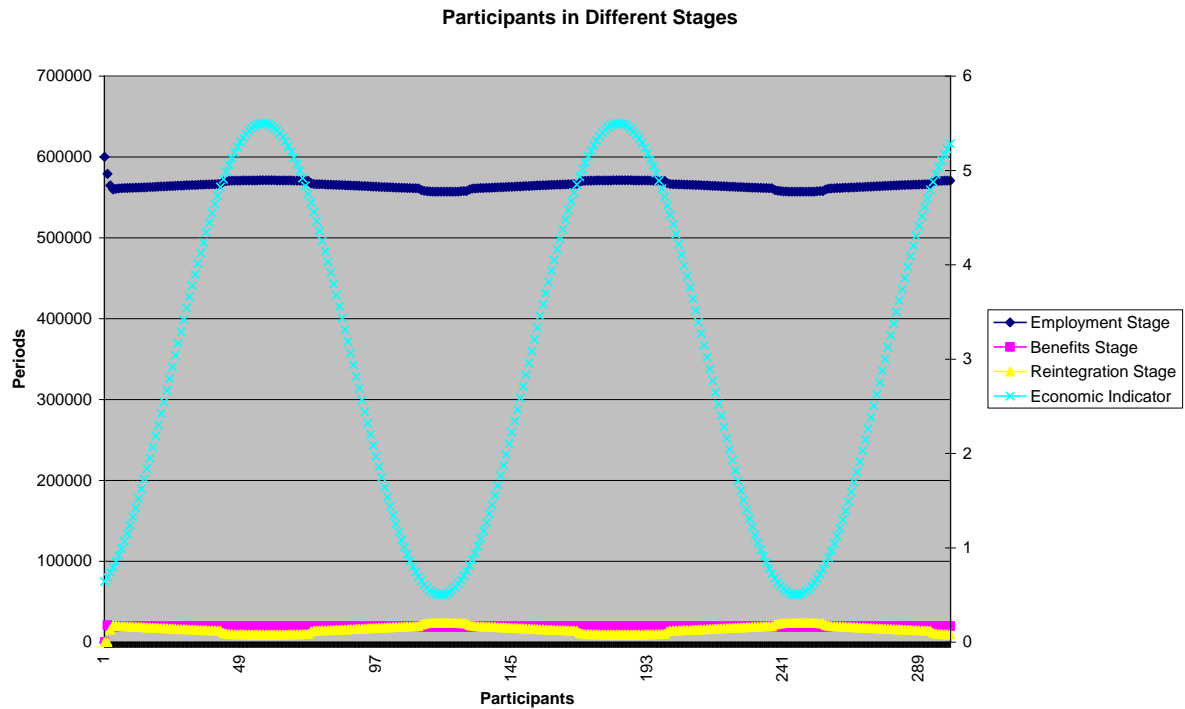
Based on this simple simulation it can be concluded that profiling reduces unemployment rates, by reducing the lock-in effect and the deadweight loss of reintegration. However before implementing such a mechanism it would be wise to investigate the effects this implementation has on the private reintegration market.

4.4.3 A targeting system

To introduce a targeting system in our model a change is needed in our approach. Before we have assumed that within the labour categories individual characteristics were equal. To see what effect targeting could have the model needs to be changed a little.

The assumption is that within this simulation a specific program is targeted at people with similar characteristics. To quantify this approach the assumption is that for one-fifth of the persons active per labour category job prospects after the reintegration stage increase not with 0.01 but with 0.04.

If only targeting is introduced, thus without a profiling mechanism, we get the following graph.



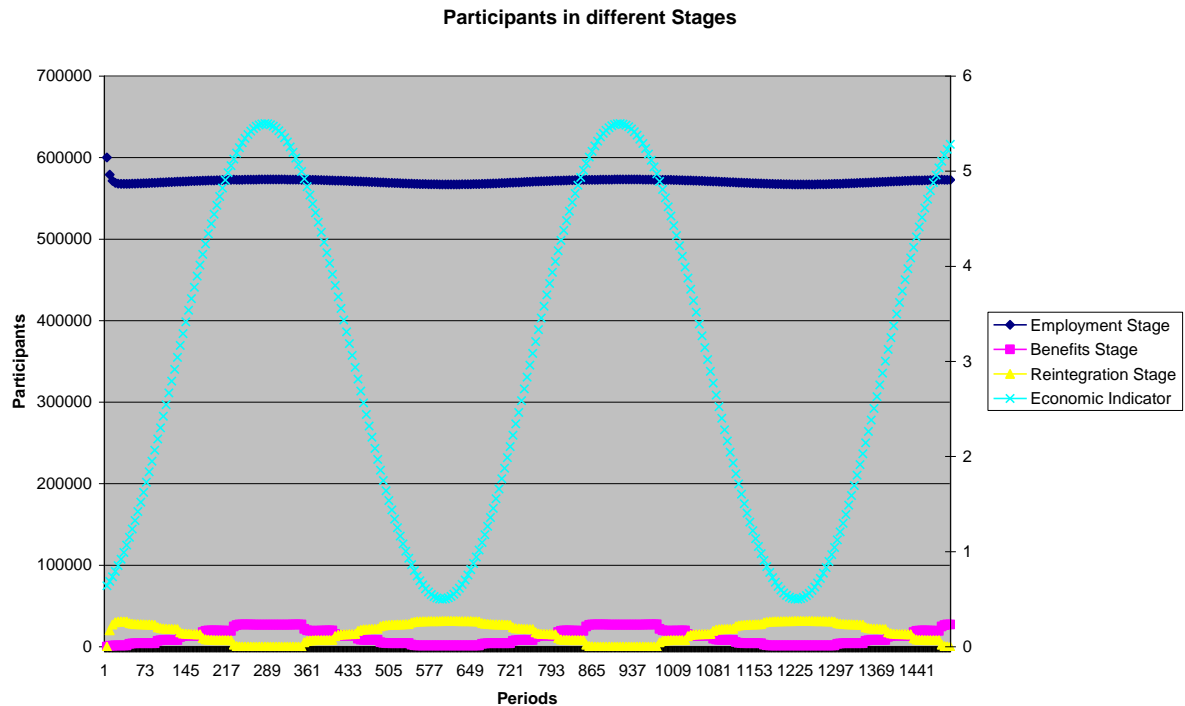
The mean unemployment rate is 5.8733%. For the different groups we get these mean unemployment rates.

Cat.	Mean Unemployment Rate
1	1,2874%
2	2,6494%
3	4,1316%
4	6,2508%
5	8,3692%
6	12,5511%

The mean unemployment rate is higher than the model with profiling and more curious the mean unemployment rate is higher than the basic model.

The main reason why this happened is because the lock-in effect has a stronger working. The targeted part of the labour category now has a stronger incentive to wait for reintegration irrespective of what labour position it has.

Thus it is obvious that targeting only should be implemented in combination with profiling system as was foreseen in a previous part of this chapter. If the same assumptions are used as before we end up with the following graph for the 600000 individuals.



The mean unemployment rate here is 4.9211%, which is lower than the mean unemployment rates before.

The mean unemployment rates for the different groups are given below.

Cat.	Mean Unemployment Rate
1	1,2904%
2	2,6524%
3	4,0832%
4	5,5828%
5	7,1491%
6	8,7684%

In all categories except category 1 and 2 mean unemployment rate is lower than in model with profiling alone. However this difference is small.

4.5 Concluding remarks

The simulation above is a simplification of the unemployment and reintegration policies in the Netherlands. However these simulations reveal some crucial dynamics such as the lock-in effect and the deadweight loss of reintegration. It shows what effects the incentive to wait for a reintegration path can have on the mean unemployment rate.

If profiling is introduced this incentive is removed. The decision whether to wait for reintegration can no longer be made by the unemployed worker. It is their job prospects that decide if they are invited for a reintegration path.

The simulations have shown that the introduction of profiling will reduce the mean unemployment rates for the participants active in the higher labour categories. The effect overall is also positive.

The explanation that profiling is not so effective for unemployed workers with a relatively better labour position is that in the original model some of them did benefit from the participation in a reintegration path, and in the new model these unemployed workers are denied a reintegration path. However this negative effect of profiling is more than offset with the increased effectiveness with the other unemployed workers, who clearly benefit from the earlier start of the reintegration path.

However the implementation of profiling has also effect on the volatility of the demand for reintegration paths, and it is therefore wise to investigate what effects this could have for the private reintegration market before implementation.

Adversative to the implementation of profiling, the introduction of targeting affects all unemployed workers in the same manner. The simulations have shown that targeting if not combined with a profiling mechanism could damage the employment rates of the model. If a certain group is targeted, this group has an increased incentive to wait for a reintegration path irrespective of what labour position it has. This would lead to an increased deadweight loss of reintegration.

If targeting is implemented in combination with a profiling mechanism the overall mean unemployment rate is at its lowest.

A general remark is that this model and its relations are a gross simplification of reality and that it should be studied further to make a more realistic estimation of what effect the implementation of profiling and targeting. However this model has revealed some essential relations that have shown that profiling and targeting could benefit the reintegration policies in the Netherlands.

Chapter 5

Recommendations

5.1 Introduction

At the end of the thesis I will summarize the previous chapters. I will then reiterate the main conclusions of the thesis. Based on these conclusions I will end with some recommendations.

5.2 Summary

Reintegration is the service that the government offers to unemployed worker to help them be reemployed. The government offers this service because unemployment is a cost to the government; first the government pays unemployment benefits to the unemployed workers and second the government loses out on production and taxes because unemployed worker are unused assets in the production process.

Paying unemployment benefits has a negative influence on the unemployment duration. Benefits reduces the incentive for the unemployed worker to look for work; academic literature underlines these assumptions with empirics stating that extending the potential benefit duration by one week would lead to an increase in mean weeks of unemployment of 0.16 to 0.20 weeks. The length of the benefit duration also influences exit rates. As the exhausting point comes nearer exit rates increase. Introducing an infinite duration of unemployment benefits as offered in the theory of Davidson and Woodbury (1996) could eliminate the high exit rates at the end of the benefits period.

These empirics would suggest that reducing the benefits duration period to nil would decrease unemployment rates

However to reduce unemployment the government commence reintegration. Reintegration paths reduce unemployment through an increase of labour supply, through an increase in human capital or through a better connexion between supply and demand of labour.

In theory reintegration has a positive contribution, however the practice is different. A study on the effectiveness of reintegration in the Netherlands showed that following a reintegration path only has a small but positive effect on the employment chances of the unemployed

workers. The average effect reintegration paths have on unemployed workers is an increased job chance by 1%.

Weak points in the reintegration policies are the following. Two major weak points are the dead weight loss of reintegration and the lock-in effect. The underlining problem of both effects is that a reintegration path is offered to an unemployed worker who could have been reemployed without following a reintegration path.

Another weak point is that the initiator of reintegration seems to gain the least from reintegration, that is in pure economic terms. The government pays more on reintegration than it saves on reduced benefit payments. It could be that the incentive to participate in reintegration is more a political than an economic one.

Other weak points are cream skimming and an underperforming private reintegration market. A solution to these problems is the introduction of statistical mechanisms such as profiling and targeting.

Based on observable characteristics estimations can be made on the potential duration of unemployment. This mechanism is called profiling. Based on these estimations it can be decided if an unemployed worker is offered a reintegration path. Profiling could thus eliminate the deadweight loss of reintegration as well as the lock-in effect.

The Worker Profiling and Reemployment Services in the US is an excellent example of profiling in practice. Studies have stated the WPRS has shortened the duration of unemployment.

The Frontline Decision Support System is an example of a targeting system. Targeting uses the observable characteristics to make a prediction on what is the best suited program for a certain homogenous group.

Based on the information of the first three chapters a model was introduced. This model captured the basics of unemployment and reintegration. This model was extended with a profiling system and a targeting system to see what differences it makes. It was clearly visible that the introduction of profiling reduces the deadweight loss of reintegration. Instead of choosing to wait for a reintegration path a statistical mechanism makes the decision if the unemployed worker is offered such a path.

Another aspect of the model was that it showed that implementing a targeting system without a profiling system could increase the lock-in effect of reintegration. If targeting is introduced it is more beneficial to wait for reintegration for the targeted groups.

A simulation of the model clearly showed these observations. The simulations indicated that the introduction of a profiling system could be beneficial for the battle on unemployment. Profiling is beneficial because it delivers reintegration paths right away to those who need it the most.

The model also shows that targeting should only be implemented in combination with a profiling system.

5.3 Conclusions and recommendations

The idea that every unemployed worker can participate in a reintegration path is in principle very noble. Denying an unemployed worker to participate in a reintegration path seems unfair since every unemployed worker faces the same burden of unemployment.

But not all unemployed workers are alike, they have different characteristics. These characteristics tell us something about the individual's potential. Examples of these characteristics are age, sex and education. These characteristics make that unemployed workers are not alike and moreover that some ex-workers have better prospects on employment than others. These better prospects imply on average shorter unemployment duration.

If these unemployed workers, who have short expected unemployment durations, participate in a reintegration path they are sort of trapped. This trap is called the lock-in effect; if these claimants would not have participated in a reintegration path they could have already found employment. Denying these claimants a reintegration path now seems valid. Thus, instead of focusing reemployment services on everyone the focus lies on those who need it most.

With the introduction of profiling this is exactly what happens. Based on an estimation on the potential duration of unemployment a decision is made if a reintegration path is offered. Offering only to those who need it will increase the effectiveness of reintegration since reintegration is more effective for those unemployed workers who are furthest from the labour

market. And since the number of participants is decreased the cost for the government are also decreased.

The simulations have shown that the implementation of profiling will decrease mean unemployment rates. Also the international experience of the Worker Profiling and Reemployment Service has shown that profiling benefits the effectiveness of reintegration.

It is therefore that I recommend the implementation of profiling in reintegration field. However the well working of a profiling system depends on the accurateness of the predictions, if predictions are not accurate and precise it has no use of implementation since the chance of lock-in effects increase as does the deadweight loss of reintegration.

Another aspect is the reaction of the private reintegration market on the introduction of a profiling system. Before profiling is implemented it should be clear what the increased volatility means for the functioning of the private reintegration market.

If on top of the implementation of profiling a targeting system is introduced the unemployment rates could decrease even more. The simulation based on increased job chances for a certain subgroup show that in combination with a profiling system unemployment rates will decrease.

With targeting also this result will depend heavily on the accurateness of the predictions. Internationals experiences have shown that targeting can be fruitful for the reintegration policies.

In my opinion the introduction of profiling will have a greater impact on the effectiveness of reintegration than targeting.

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