

NETHERLANDS: A PROBLEM OF HIDDEN UNEMPLOYMENT? DAMIEN DE WALQUE*

1. INTRODUCTION

The performance of the Dutch economy in the 1990's has been widely praised. Commentators refer to the "Dutch model" or even the "Dutch miracle". One of the key elements in this judgment is the very low unemployment rate compared to the neighboring countries. In 1999, the average unemployment rate in the European Union was 10.1 %, but only 3.9 % in the Netherlands.

However, according to the leading business newspaper in the Netherlands, *NRC Handelsblad*, the Dutch are world champions in disability insurance. The incidence of disability insurance as a percentage of the labor force is generally at least twice as large as in the neighboring countries, as documented in Table 1. Although the Dutch inactivity/activity ratio, representing the ratio between inactive persons receiving a social security benefit (this covers not only pensions, but most income replacement programs) and the working individuals is comparable to most of the neighboring countries, the two other measures indicates clearly that disability benefits are much more important both in terms of beneficiaries and in terms of expenditures, in the Netherlands than in the neighboring countries.

Does this suggest that there is a "hidden unemployment" problem in the Netherlands? This is the question addressed in this paper. In Section 2, I describe the current long-term disability insurance system. Section 3 looks at the evolution of the system over time, both in terms of the legislation and in terms of the growth in the number of beneficiaries. Section 4 uses a theoretical example to compute after-tax replacement rates and compare them with the replacement rates in the unemployment system. Section 5 concludes.

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TABLE 1
THE IMPORTANCE OF DISABILITY INSURANCE IN THE NETHERLANDS
AND NEIGHBORING COUNTRIES

	Netherlands	Belgium	United Kingdom	Denmark	Germany
Inactivity/Activity ratio					
1980	0.62	0.67	0.8	0.72	0.72
1996	0.83	0.79	1.11	0.8	0.81
Outlays on Disability Benefits as Percentage of GDP					
1980	7.3	2.7	1.9	2.6	2.6
1992	7.7	2.5	3.8	2.4	2.4
Incidence of Disability as a percentage of the labor force					
1990	8.9	4.2	3.4	3.8	3.3
1995	8	4.4	4.9	4.2	3.1

Source: Vand Der Hoek (2000).

2. THE DUTCH SYSTEM OF LONG-TERM DISABILITY INSURANCE

The current system has been revised in 1998. In the Netherlands, any individual who is not fit for work for a period longer than one year can apply to one of the three following regimes:

- *Work-Disability Insurance Act (WAO)* : for employees.
- *Work-Disability Provision for Young Disabled Act (Wajong)*: this regime is for young disabled people and is available as soon as they turn 18.
- *Work-Disability Insurance for Self-Employed Act (WAZ)* : This is the regime for self-employed, introduced in 1998, as a mandatory insurance system.

I will focus here on the WAO, the regime applicable to employees (or beneficiaries of an unemployment benefit) who are younger than 65. After a waiting period of 52 weeks, individuals who are still more than 15% work-unfit can claim a benefit. This benefit is paid as long as the person is work-unfit. The decision to grant a benefit is made for 5 years, after which the case is reviewed. Another review is performed one year after the initial decision.

Work-disability is defined as such: partly or totally not being able to work in general. This is in contrast with the regime for sick days (short term) where people are work-disabled if they are not able to work on their own job. An important feature is that the origin of the sickness or disability – at work or at home – is not relevant.

The administration decides on the work-disability status on the basis of the kind of job the individual is still able to do, given his medical condition. Work-disability in the Netherlands is not an all or nothing status, but rather allows for different levels of disability. If the difference between the individual's last previous wage and the wage he could still theoretically earn after his disability is at least 15%, then he can claim a disability benefit. The law does not prevent the

beneficiaries to work¹ or even to claim unemployment benefits, especially if the disability is only partial. Only if the work-disability is complete are unemployment benefits excluded.

The level of the benefit depends on the level of disability, the previous wage and the age of entry in the regime. The benefit takes two forms:

a. *Wage-loss benefit*: This is a percentage of the gross –before tax– daily wage in the last year before the disability. The average daily wage is calculated as such: $(\text{Monthly wage} \times 12 + \text{paid holidays} + \text{other wages supplements}) / 261$ (number of working days in one year). There is a maximum of 144.84 Euros (around 163.48 US \$)² for the average daily wage. The percentages depend on the disability level according to Table 2.

TABLE 2
LEVELS OF THE WAGE-LOSS BENEFIT

Level of Disability	Benefit as a percentage of the daily wage
15-25 %	14 %
25-35 %	21 %
35-45 %	28 %
45-55 %	35 %
55-65 %	42 %
65-80 %	50,75 %
80-100 %	70 %

Except for the important fact that there is a ceiling to the daily wage, no progressivity is built in the system: the benefit as a percentage of the previous wage depends only on the level of the disability, not on the level of the previous wage. However, this does not take into account the progressivity of the income tax in the Netherlands. This issue will be illustrated more precisely with an example in Section 3.

The wage loss benefit is paid for the durations described in Table 3, depending on the age of entry in the system (first benefit paid):

¹ However, if the work performed indicates that the individual is not at least 15% disable, then his benefit his suspended during employment, similarly, if the work performed indicates a lower disability level than initially assessed, then the benefit can be reduced. In general, since the level of disability can be reviewed at regular intervals, individuals who desire to remain on the disability benefit system have few incentives to accept an employment that would indicate a lower level of disability than initially assessed.

² This is the figure for January 1st, 2000. The figure was in Dutch Guilder but I have transformed it, as for the following figures, in Euros (€) which is now the currency of the Netherlands. On July 21st, 2003, 1 Euro = 0.886 US \$.

TABLE 3
DURATIONS OF THE WAGE-LOSS BENEFIT

Age at entry in the system	Length of payment of wage-loss benefit
Up to age 32	0
Ages 33-37	½ year
Ages 38-42	1 year
Ages 43-47	1 ½ year
Ages 48-52	2 years
Ages 53-57	3 years
Age 58	6 years
Ages 59 and above	Up to age 65

b. *The “follow-up” benefit:* At the end of the period of payment of the wage-loss benefit (or for anybody before age 33), if the person is still disabled and less than 65 years old, a “follow-up” benefit is paid. This is a percentage, depending in the same way as described in Table 2 on the disability level, of the so-called “follow-up” daily wage, up to a certain maximum. This follow-up daily wage is computed as such: for every year that the individual is older than 15 year at the date of entry in the system, add to the minimum wage 2% of the difference between the past wage and the minimum wage. The follow-up benefit may, if claimed every 5 years and if the individual is still disabled, be paid up to age 65.

A concrete example will illustrate this system. Consider an individual entering in the system at age 41, with a level of disability between 65-80 % and having a gross daily wage of 108.94 €. The minimum daily wage is assumed to be 45.39 €.

The individual will first receive, according to Tables 2 and 3, a daily wage-loss benefit of 50.75% of 108.94 = 55.28 €, during one year. Then, the follow-up benefit will be computed as such:

$$41-15 \text{ years} = 26 \text{ years}$$

$$26 \times 2 \% = 52 \%$$

$$\text{Complement} = 52 \% \text{ of } (108.94 - 45.39 = 63.55 \text{ €}) = 33.04 \text{ €}$$

$$\text{Follow-up daily wage} = 45.39 \text{ (minimum wage)} +$$

$$33.04 \text{ (complement)} = 78.43 \text{ €}$$

$$\text{The follow-up daily benefit is then: } 50.75 \% \text{ of } 78.43 = 39.81 \text{ €}$$

The WAO-gap is the difference between the wage-loss benefit and the follow-up benefit. In the example above, this difference is 15.47 €. This difference is substantial and becomes larger the higher was the past wage and the younger the beneficiary when entering the system. However, for many employees this difference is generally paid by the employer, for example through the pension funds or some insurance contract. The Dutch Information Center for Social Insurance estimates that this way, most of the employees who are more than 80 % disabled can recover at least 70 % of their previous wage.

It is with respect to the financing of the WAO system that the revision of 1998 has introduced the most important modifications. The Act of 1998 is called

PEMBA, which stands in Dutch for “Premium differentiation and market-orientation of the work-disability insurances”. The very objective of this reform was to give more responsibilities to the employers and introduce some market mechanism.

Before 1998, the employees were paying the premium, both for the WAO-system and the previous general system (AAW) for the people not covered by WAO. From 1998, the employers are paying the premium, according to the following rules:

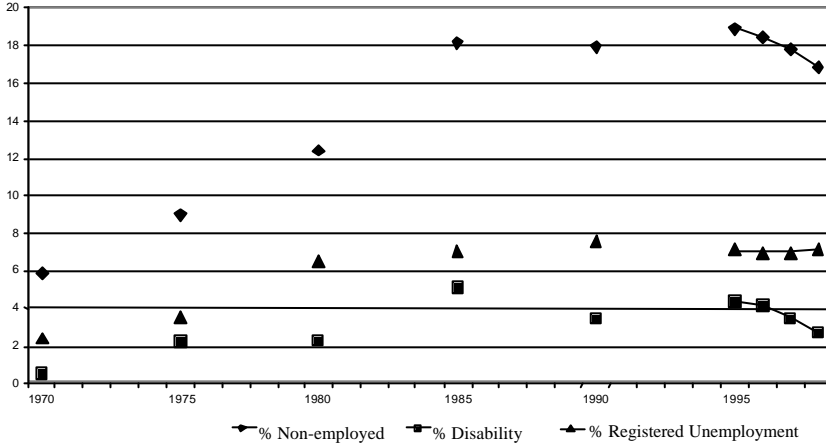
- Every employer has to pay a base-premium. This is supposed to cover the benefits that started before 1998 and the new benefits after the first 5 years.
- On top of this, there is a differentiated premium, which is supposed to cover the new benefits during the first 5 years. The premium is differentiated because it is different for each firm and depends on the numbers of people that the firm has put in the disability insurance system, compared to the average.
- The base-premium is mandatory. It is possible for an employer to opt-out from the differentiated premium. In this case, he has to bear the risk himself or insure it with a private insurance company.
- To encourage the recruitment of disabled individuals, if an employer is hiring disabled people for more than 5 % of his total wage bills, he gets substantial discounts on the premiums.

Finally, it should be noted that, in any of the three regimes, if the benefit, combined with other earnings sources in the household, brings the household under the social minimum (which depends on the size of the household), then the difference would be covered. The social minimum is 100 % of the after-tax minimum wage for married people, 70 % for single parents with children and 50 % for somebody living alone.

3. THE EVOLUTION OF THE SYSTEM OVER TIME

The WAO system was introduced in 1967: people who cannot or only partly work received a benefit of 80 % of the wage-loss. Around 1980, the first studies to describe the WAO as a form of “hidden unemployment” were published. Figure 1 describes the evolution of the fraction of the working age population that is not employed, together with two categories among this group: the individuals in registered unemployment and the beneficiaries of disability insurance. The gap between the disability and the unemployment systems starting around 1980 might provide some preliminary evidence for the “hidden unemployment” phenomenon.

FIGURE 1
NON-EMPLOYMENT, DISABILITY INSURANCE AND REGISTERED
UNEMPLOYMENT AS A PERCENTAGE OF THE WORKING AGE
POPULATION IN THE NETHERLANDS, 1970-1998. SOURCE OECD



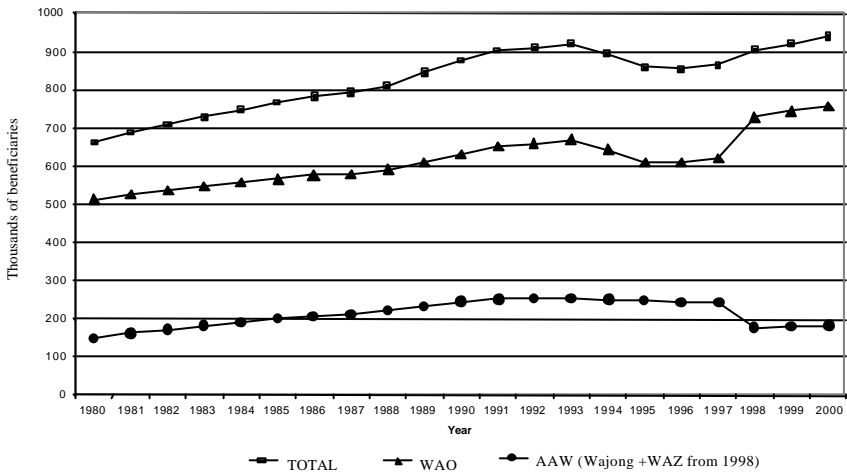
In 1985, the benefit is reduced from 80% to 70.5% of the average daily wage. From 1984 to 1990, a freeze on nominal benefits is introduced. In 1987, the system of partial benefits is introduced. In 1991, the benefit is linked to the age of entry in the system and is less favorable for people younger than 50. In 1993, it is decided to revise the case of every individual younger than 50 (around 335,000 cases are revised between 1994 and 1998³) and the age-dependency of the benefit is reinforced. The kind of job that a disabled person should be able to do is more general and does not depend any more on the previous job experience.

In 1998, the PEMBA Act is introduced. The rules for the WAO beneficiaries are the same as before, but the financing of the system is reformed as described above, with more responsibility given to the employer. The former general system (AAW) for people who were not previously employed is split between the system for young disabled (WAJONG) and the system for self-employees (WAZ).

Figures 1 and 2 give an idea of the evolution of the incidence of the disability insurance over time. Figure 1 suggests that the sharpest increase was made during the 1970's and especially between 1975 and 1980. Figure 2, which only starts in 1980, shows a more gradual but constant increase in the total number of beneficiaries up to 1994, followed by a small dip between 1994 and 1998, and a further increase thereafter. The total of beneficiaries is decomposed between the system for employees (WAO) and the remaining (AAW before 1998 and WAJONG and WAZ thereafter). The reform of 1998 seems to have shifted some people from the general system towards the WAO system for employees.

³ For 1994, this led to a reduction or withdrawal of the benefits in 52 % of the cases, and in 35 % for 1995.

FIGURE 2
BENEFICIARIES OF DISABILITY INSURANCE AT THE END OF THE YEAR:
1980-2000. (SOURCE: CBS)



4. DEFINING A REPLACEMENT RATE AND COMPARING WITH THE UNEMPLOYMENT BENEFIT

If there is a hidden unemployment problem in the Netherlands due to the generosity of the disability insurance benefits, it is interesting to try to figure out how much of his previous wage a beneficiary will get. It is also important to compare it with what he would get if he would get an unemployment benefit instead. I will try to give an idea of these replacement rates by working on the example, detailed in Section 1. Without any tax consideration, the replacement rate would be, using the calculations made in Section 1:

Wage-loss benefit: (1st year, in this example): $55.28/108.94 = 50.75\%$
 Follow-up benefit: further years: $39.81/108.94 = 36.54\%$

I now consider taxes, which are progressive in the Netherlands. For simplicity, I assume that the individual has no dependent and no other source of income. If working at a daily wage of 108.94 € the individual would have had a yearly income of: 108.94×261 (number of working days in one year) = 28,433.34 €
 If he gets the WAO benefit, he gets:

- For the first year, the wage-loss benefit: 14,428 €
- And further, the follow-up benefit: 10,390.7 €

What remains of these yearly incomes after the income tax and the social security tax have been subtracted? In the Netherlands, the income tax and the social security tax are combined in the following progressive scheme⁴:

⁴ The tax rate are from January 2000.

- 33,90 % over the first 6,924.65 €
- 37,95 % from 6,924.65 to 22,239.7 €
- 50 % from 22,239.7 to 48,913.3 €
- 60 % above

The tax paid on a yearly income of 28,434 €(if working) would be 11,261.8 € and leave an after-tax income of 17,172 €. If the individual was in his first year of disability insurance benefit, the tax paid would be 5,195.8 €and the after tax income would be 9,234.4 €. For further years of disability insurance the tax paid would be 3,662.4 €and the after tax income would be 6,725.55 €. The after-tax replacement rates are then⁵:

- Wage-loss benefit: 53.7 %
- Follow-up benefit years: 39 %

The progressivity of the tax system increases the replacement rate. One should further keep in mind that in many individual cases, the difference between the wage-loss benefit and the follow-up benefit is covered by the employer through a pension fund or private insurance.

An interesting question is how do this replacement rate compare with the unemployment benefit? I give here first a very simplified summary of the unemployment benefit rules in the Netherlands. The basic condition is to have been working at least 52 days in 4 out of the 5 years prior to the first unemployment day. In that case, the unemployment benefit is 70 % of the last wage. The length of this benefit depends on the length of the work experience, according to Table 4. After this, there is a follow-up benefit, which is 70% of the minimum wage. This is paid for 2 years if younger than 57.5 at entry, for 3.5 years if older.

Interestingly, for people who are more than 80% work-disabled, the before-tax replacement rate is the same as the unemployment benefit replacement rate (70%). However, the unemployment benefit is limited in time, whereas, if the disability persists, the disability benefit is paid up to age 65.

TABLE 4
UNEMPLOYMENT BENEFITS

Work experience of at least	Length of benefit
4 years	6 months
5 years	9 months
10 years	1 year
15 years	1.5 year
20 years	2 years
25 years	2.5 years
30 years	3 years
35 years	4 years
40 years	5 years

⁵ I stress that the above calculation is simplified since I had not the opportunity to verify every detail of the Dutch fiscal system.

If the individual has less than 4 years of work experience, but has been working at least 26 weeks in the last 39 weeks before the entry in unemployment, then he gets 70% of the minimum wage for 6 months. Finally, even if the unemployment benefit is limited in the time, it should be noted that *Social Minimum* system (a kind of general Welfare system) guarantees an income to almost everybody in the Netherlands.

I turn again to the same theoretical example, and I assume that the individual started to work at age 18. If he would be in the unemployment benefit system, he would get, since he has 22 years of work-experience: 70% of 28,434 € = 19,903.8 € per year during 2 year. Then, during 2 more years, he would get 70% of the minimum wage = 8,293.2 € per year. After tax, the replacement rates are:

During 2 years: Taxes = 7,273 € After-tax income = 12,630.7 €

After-tax replacement rate: 73.5 %

Next 2 years: Taxes = 2,866.8 € after tax income = 5,426.3 €

After-tax replacement rate: 31.6 %

After that, he would get, if still unemployed, the social minimum, i.e., since we assumed he was living alone, 50 % of the after tax minimum wage (= 7,631.7 €), i.e. 3,815.9 € The replacement rate is then 22.2%.

Table 5 compares the after-tax replacement rates in the disability and the unemployment system, for the theoretical case considered (41 year, living alone, entry in the labor force at age 18, last previous daily wage of 108.9 € minimum wage of 45.4 € and disability level of 65-80 %). If the individual foresees that the odds to find a new job are small, then, the disability system will quickly become more attractive to him. It should be added that the beneficiary of an unemployment benefit has the obligation to search for a job and to accept any reasonable job offer.

TABLE 5
AFTER-TAX REPLACEMENT RATES

Level of Disability	Benefit as a percentage of the daily wage
15-25 %	14 %
25-35 %	21 %
35-45 %	28 %
45-55 %	35 %
55-65 %	42 %
65-80 %	50,75 %
80-100 %	70 %

(*) Notice however that in many cases private insurance or pension funds contracted by the employer will cover the difference with the first year, in which case, the replacement rate will remain close to 53.7 %.

5. CONCLUSIONS

The question addressed in this paper is whether the rise in disability benefits in the Netherlands can be understood, at least partially, as a “hidden unemployment” phenomenon. This paper has defined the scope of the question and suggests that, in certain cases, the replacement rates under the disability insurance system is more favorable than the unemployment insurance system. In further research, it would be interesting to try to quantify the effect of this phenomenon on the recent decline in unemployment. One approach would be to look at the incentives structure at different ages, income level, and percentages of disability and compare this with the historical trends for each category. This would be similar to what Autor and Duggan (2003) did for the U.S.

A comparison could be made between those trends and simulations of the benefits, given respectively by the disability system and by the unemployment system. A first idea of how to calculate this has been sketched in part C where I have calculated the effective replacement rates for a theoretical example. This could be extended for different levels of income, disability and ages of entry in the system and would yield cut-off points where the disability system would become more favorable than the unemployment system. An interesting test would be if the theoretical incentives structure corresponds to the behavior observed in the data.

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 - Wet Premiedifferentiatie en marktwerking bij arbeidsongeschiktheidsverzekeringen (PEMBA).