# Making the Unused Labour Force Work: Assessing the Facts for The Netherlands

## Discussion paper 04008 (second edition)

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The views expressed in this paper are those of the authors and do not necessarily reflect the policies of Statistics Netherlands

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**Explanation of symbols**

| | |
|---|---|
| . | = data not available |
| * | = provisional figure |
| x | = publication prohibited (confidential figure) |
| – | = nil or less than half of unit concerned |
| – | = (between two figures) inclusive |
| 0 (0,0) | = less than half of unit concerned |
| blank | = not applicable |
| 2003–2004 | = 2003 to 2004 inclusive |
| 2003/2004 | = average of 2003 up to and including 2004 |
| 2003/'04 | = crop year, financial year, school year etc. beginning in 2003 and ending in 2004 |

Due to rounding, some totals may not correspond with the sum of the separate figures.

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**CONTENTS**

# MAKING THE UNUSED LABOUR FORCE WORK

*Summary: This paper identifies a broad concept of unused labour force. This concept can be related to the transitional labour market theory. It is next reviewed in the light of economic studies using a similar construct. Pro's and con's of our approach are discussed and the literature is used to assess characteristics of groups building this concept and to identify transition from these groups to (more) employment. A first assessment of the size and some of the main characteristics of such groups is made using the Dutch Labour Force Survey of Statistics Netherlands. As far as transitions are concerned, international studies imply flows of persons from such different groups into labour will almost unavoidably have to be identified using linked longitudinal surveys among individuals. These are currently under construction at Statistics Netherlands*.

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## 1. Introduction

Labour supply decisions affect the well being of individuals and when aggregated, the welfare of an entire society in two ways. First, labour is a production factor so labour supply – in conjunction with labour demand – affects the production of goods and services available for consumption. Second, labour time itself, or its counterpart leisure, directly affects an individual's well being. A society is better off when it can produce a given amount of goods and services at lower costs in terms of labour time, i.e. with greater leisure.

This means that labour can be regarded as a scarce product in an economic sense. Nevertheless in the past decades labour has been abundantly available, i.e. labour supply exceeded demand resulting in substantial levels of unemployment. Recently we have seen the opposite picture emerging, where in some sectors labour has indeed become scarce. Even in the current recession this scarcity remains in sectors like education and health care. Next to these purely cyclical effects, we should also realise that in the longer run labour could become a scarce factor on a more structural basis, because of the simultaneous ageing and declining rejuvenation of the population. This process will occur throughout the industrialised world.

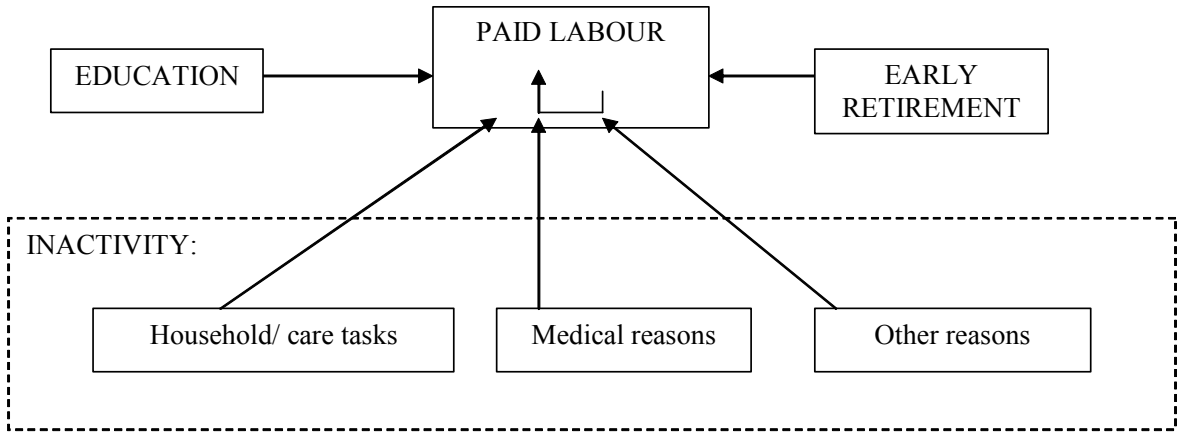
Instead of focusing on labour solely as an economic good, stressing the choice between leisure and money, scarcity or abundance and factors influencing it, like wages, labour can also be considered in relation to a wider range of alternatives to choose from besides leisure. From the viewpoint of the so-called transitional labour market (Schmid and Gazier, 2002; Taylor 2002) labour is only one of the states a person can be in during his lifetime. Moreover, from a dynamical perspective, the transitional labour market concept considers much more than just the 'economic' transition from the state of being

not employed (leisure) into employment. The transitional labour market approach starts from the observation that present day individuals choose different combinations of labour, education, care tasks and leisure at different stages in their lives. Each stage will have its own combinations.

In figure 1 an outline of this approach, based on Schmid and Gazier but adapted by us to give an adequate description of the Dutch situation. This adaptation is helpful in making this transitional labour market operational to the Dutch situation. Basically, it distinguishes four stages in the life cycle for an average person: education, paid labour, inactive on the labour market (due to various reasons) and early retirement. The most eye-catching aspect of figure 1 is the fact that inactivity is split by reason of inactivity. One of them is inactivity due to medical reasons, i.e. sickness or disability. This is an important group in The Netherlands. About 1 in every 10 persons between 15 and 64 years of age is entitled for a disability benefit. Another important group consists of persons inactive on the labour market due to care tasks, usually for young children. The third group consists of persons being inactive for other reasons, like being unemployed.

Between each of these stages in the course of life there exist transitions (flows) from one stage to the next. In this paper we will only focus on *transitions from each of the stages into paid labour*. This implies six transitions: (i) from education to a job, (ii) from job to job; (iii) from inactivity due to care tasks to a job; (iv) from inactivity for medical reasons to a job; (v) from inactivity due other reasons to a job and (vi) from early retirement to a job.

**Figure 1 – Life cycle stages and labour market flows into paid labour in a transitional labour market setting**




In this transitional labour market concept, policy measures are important to facilitate smooth transitions between each of these life cycle stages. A central issue of this paper is the possible transition from either stage into paid labour. Because of the ageing problem these transitions are becoming increasingly important to at least maintain current labour participation rates. Participation involves some definition of the labour force, which refers to both employed and unemployed persons. This means that transitions into paid labour may originate from the labour force itself, e.g. when an unemployed person finds a job, but it is not the only source for inflow into labour. When e.g. a student decides to accept an offer for a part-time job, this does involve a transition into paid labour, but not a transition originating from the pool of unemployed persons. It is therefore not only necessary to have a

clear idea of what the labour force is, but also how this alternative source, the so-called unused labour force, is defined.

The flow chart of the transitional labour market theory in figure 1 shows possible sources from which this unused labour force can emerge. In fact, it can be part of all five stages of figure 1. In the sequel of this paper these stages will be studied, with the aim to get more information on the characteristics of persons in each stage who are part of the unused labour force. In addition this information provides possible incentives to make the unused labour force (move to) work. We therefore see the unused labour force a central issue in studying the empirical consequences of the transitional labour market theory.

The transitional labour market model is used as starting point in the strategic research programme "Social and Labour Market Dynamics" of Statistics Netherlands. This paper is the result of a joint effort of the University of Groningen en Statistics Netherlands within that programme with the aim to explore, quantify and characterise the unused labour force in The Netherlands. It surveys related academic literature on this topic, which will be used to give an assessment of the characteristics of groups of persons in different stages in their course of life who are part of the unused labour force. This may help to identify policy incentives that stimulate labour supply of unused labour and so mitigate the ageing problem.

The outline of this paper is as follows. Section 2 defines our concept of unused labour force. This is viewed from an international and from a Dutch perspective. Section 3 reviews both internationals and Dutch studies concerned with some concept of an unused labour force and with transitions (flows) from that unused labour force into paid labour. Despite the fact that each study has its own denomination and its own definition of unused labour force, this review can help to identify characteristics for our concept of unused labour force. Based on these results section 4 shows groups that matter for characterising our concept of unused labour force in The Netherlands based on the literature and makes a first assessment about size and characteristics of these groups. Finally section 5 concludes.

## 2. Operational definition of unused labour force

### 2.1 International conventions on labour force definition

As we have argued, transitions into paid labour from different stages of the transitional labour market theory do not only require a definition of the labour force, but also of the unused labour force. Obviously these two concepts are related so the unused labour force is best identified when first a definition is given of the labour force itself. The labour force comprises the employed and unemployed labour force. Progress has been made to come to international standards of a common definition of the labour force. Still differences between countries remain. One important issue is whether or not to impose a restriction on the number of hours per week a person should be employed in order to be part of the employed labour force. Such a restriction would by implication also apply to the unemployed labour force. As an international benchmark we take the definitions and conventions of Eurostat, the statistical agency of the European Union, which in fact are largely in accordance with ILO standards. Eurostat defines the *employed labour force* as

> … persons over 15 years of age living in private households stating they are 'currently' working for pay or profit in a job or business *for at least one hour*, or not currently working but with a job or business from which they are temporarily absent. Persons 'at work' comprise therefore 'paid employees', 'self-employed (together with employers)', persons in 'training under special scheme related to employment' or in 'paid apprenticeship'. Persons 'working unpaid in family enterprise' are also included.[2]

Hence, according to international standards there is no hour's restriction on being counted as employed. The definition of the unemployed labour force is more complicated. Eurostat[3] defines the unemployed labour force as persons, between 15 an 74 years of age who are:

> (i) without work, i.e. neither had a job nor were at work (for 1 hour or more) in paid employment or self-employment and
>
> (ii) are available for work at short notice (within two weeks) and
>
> (iii) have actively seeking work during the past four weeks or have found a job to start later.

Even though an hour's restriction is not mentioned explicitly, by implication it has to be the same as its counterpart, the employed labour force. Hence persons fulfilling the criteria and search for a job of 1 hour a week are a part of the unemployed labour force. To conclude: the most common international definitions of labour force do not impose an hour's restriction.

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[2] See: http://forum.europa.eu.int/irc/dsis/coded/info/data/coded/en/gl009302.htm.

[3] See: http://forum.europa.eu.int/irc/dsis/coded/info/data/coded/en/gl009302.htm and Eurostat (2002)

## 2.2 Dutch conventions on labour force definition

Statistics Netherlands follows these international conventions, but takes its own stance with respect to a definition of the labour force for domestic use that suits specific problems not (yet) solved internationally.

Until 1981 the Dutch labour force in The Netherlands was based on the number of persons stating that labour was their main societal activity. After 1981 the total number of persons with paid employment replaced this definition.[4] This latter definition was not satisfactory, because

(i) it was no longer linked to what respondents felt to be their main activity,
(ii) it was (therefore) hard to be used outside labour statistics and
(iii) it was susceptible to measurement error, because
- persons holding small jobs of a few hours a week were observed poorly
- these small jobs are associated with high dynamics (large in- and outflows of persons and jobs). This implies that use of retrospective data to construct labour market flows, became unreliable.

See also Bierings et al. (1991) and Statistics Netherlands (2000).

This labour force definition implied that labour was seen purely as an economic phenomenon. A more sensible labour force definition starts from labour as a *social* phenomenon. This allows the 'labour force' also to be used outside economics, such as in social-economic surveys and surveys on state of life. Being in the labour force is now one of the activities next to school/college, disability, housekeeping or care tasks and (early) retirement. Hence this labour force concept neatly fits into that transitional labour market theory. Starting point is the fact that labour, or acquiring labour, corresponds to a person's main societal activity.

Therefore in 1991 a new labour force definition was established by Statistics Netherlands, capable of counteracting these drawbacks. This definition contained a lower bound restricting the labour force to a minimum of 12 hours a week. Introduction of this lower bound was based on what the respondents to the Labour Force Survey (LFS) stated to be their main activity in relation to the number of hours per week they worked or wanted to work. Work of less then 12 hours a week did not correspond to 'labour' as being the main activity to a majority of respondents. From 1991 the Dutch labour force is defined as

… comprising all persons in the resident population who are either employed for at least 12 hours a week or want to be employed, are available at short notice and are actively searching for work of at least 12 hours a week.[5]

The labour force consists of two groups of persons. First, the employed labour force consisting of all persons employed for at least 12 hours a week. Notice that use of the word 'job' is not mentioned. A job is the smallest unit of employment defined as "… an explicit of implicit contract between a person and an institutional unit to perform work in return for compensation for a definite period or until

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[4] In fact there was no hours restricttion. There was a boundary of labour of 20 hour a week or more for the so-called formal labour force, which was needed to construct the registered unemployment rate. Registered unemployment, at employment agencies, also had this lower bound.

[5] See: http://www.cbs.nl/nl/standaarden/begrippen/werken-leren/begrippenlijst.htm. See also Bierings et al (1991) for a justification of moving to an hours-restricted labour force concept. Note that there is no formal age restriction, but to assess participation rates an age restriction of 15-64 years of age in used.

further notice" (Colledge, 2000), without an hours restriction involved. So a person who holds a job is not necessarily part of the employed labour force.

Second, the unemployed labour force (ULF) is determined by those who

(i) are not employed or employed for less than 12 hours a week, and
(ii) have accepted work for at least 12 hours a week, or
(iii) want employment for at least 12 hours a week, and
(iv) are available, i.e. can start at short notice (within two weeks) and
(v) display active search effort in the past four weeks.

Notice that under Dutch conventions a persons working for less then 12 hours a week can be part of the unemployed labour force when he fulfils (i)-(v), while that same person would be part of the employed labour force under the Eurostat/ILO definition.

The Dutch definition of the unemployed labour force also takes the unemployed person's *preference* into account of whishing to be employed. Other countries also include such a preference criterion (Jones and Riddell, 1999, 2001). The point regarding active search needs further precision.[6] According to Eurostat, active search consists of either of the following steps:[7]

- having been in contact with a public employment office to find work, whoever took the initiative (renewing registration for administrative reasons is not an active step);
- having been in contact with a private agency (temporary work agency, firm specialising in recruitment, etc.) to find work;
- applying to employers directly
- asking among friends, relatives, unions, etc. to find work;
- placing or answering job advertisements;
- studying job advertisements;
- taking a recruitment test or examination or being interviewed
- looking for land, premises or equipment;
- applying for permits, licenses or financial resources.

These steps also apply to The Netherlands, as argued by Bierings et al. (1991). Notice that the latter two points of the list refer specifically to persons seeking self-employment. However, these 'active' search steps also contain a 'passive' step in the sense that persons just looking at job ads in newspapers without undertaking any action are included. This is not considered to be active job search in the US unemployment definition (Jones and Riddell, 1999, 2001).

The definition used by Statistics Netherlands also determines that a person is not in the labour force when he:

(i) does not want employment for at least 12 hours a week, or
(ii) does want employment, but cannot start at short notice, or
(iii) does want employment and can start at short notice but not searches actively.

[6] On http://www.hrdc-drhc.gc.ca/sp-ps/arb-dgra/publications/research/r96-15eb.pdf a comprehensive discussion of this topic is found (page 64). See also Macredie (1997), Jones and Riddell (1999, 2001).

[7] See e.g. Eurostat (2002).

## 2.3 Composition of the unused labour force

The concept of the labour force is prone to different and sometime conflicting requirements, so the same might be true for the unused labour force. When it comes to defining this unused labour force we take a broad stance that it should cover every hour of labour that can be supplied by persons, whether present in the labour force or not. This means our unused labour force concept consists of

all persons of 15 years of age and older working 0 hours a week or more, who in principle can expand their number of weekly hours of employment.

This definition has a number of implications. First, persons below 15 years are not taken into account due to compulsory education. Second, the definition has no preference restriction. Hence, whether a person *wants* to work (more hours) is not at stake here. Even if a person has no desire to work, this does not mean that he or she cannot work. Given the characteristics of such a person there may very well be circumstances under which he would be willing to accept a job. In that sense he can be seen as part of the unused labour force. Third, persons in the employed labour force can also be part of the unused labour force as long as their actual number of weekly hours of employment is more than 12, but less than a maximum number of weekly hours of employment, above which additional supply of labour hours is unwanted. We set this maximum number of weekly hours work at 35. So anyone already working 35 hours a week or more is assumed not to want to expand his or her weekly working hours. Hence, a large part of the employed labour force working part-time is in fact part of the unused labour force, because they *can* increase their hours of work. The same goes for persons working less then 12 hours a week, who are formally not in the Dutch labour force as we have seen. Some may already have a desire to work more hours, while under the right circumstances; others could be persuaded to expand their hours of employment. Fourth, the unemployed labour force is of course part of the unused labour force. Fifth, there is no timing aspect concerning availability, so persons who can and want employment but are not available at short notice are also included. This unused labour force can be expressed in number of persons, but it would best be expressed in number of hours available to fill a full-time job.[8]

This definition is obviously a very broad concept in which only those persons are excluded who *cannot* work. One is inclined to think that this refers to persons with a disability benefit, the number of which in The Netherlands approaches 1 million. This is however not the case. First, because roughly one quarter of the disabled is known to have a job and hence *can* work, perhaps in other circumstances than the ones in which they were declared disabled (Lisv, 2000). This number is recently corroborated by Weidum and Linder (2002), who studied the employment position of persons with a social benefit. They also found that 22% of all persons with a disability benefit are in fact part of the employed labour force, i.e. work 12 hours a week or more. Second, about one third of the persons with a disability benefit is only partly disabled and *can* thus (partly) work.[9] Of those who are fully disabled it depends on the type of disorder they have whether or not a(nother) job can be filled. So persons who cannot work clearly do not coincide with disabled. It is perhaps better to speak of the group of persons not in the unused labour force as those persons who *can never* work.

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[8] A full-time job is assumed to refer to a job of 35 hours a week or more.

[9] Of the partly disabled in 1998 almost 50% held a job, against 17% of the fully disabled (Lisv, 2000).

Not everyone in the unused labour force may in reality offer time for labour. Our concept merely gives an indication of the number of persons who potentially could work (more hours) and assesses the basic characteristics of some broad, homogeneous, groups within this concept. Each group has its own incentives (not) to (search for) work. The idea is that by identifying common characteristics such incentives may also become visible, which in turn may lead to specific policy measures to enhance participation of the group under consideration.

Figure 2 gives a graphical representation of the way our unused labour force concept is structured in broad categories and, where available, presents the number of persons in each group according to the Dutch Labour Force Survey of 2002. In the LFS-framework, the unused labour force consists of persons who can expand their weekly working hours and at the same time are part of any of the following three labour effort categories.

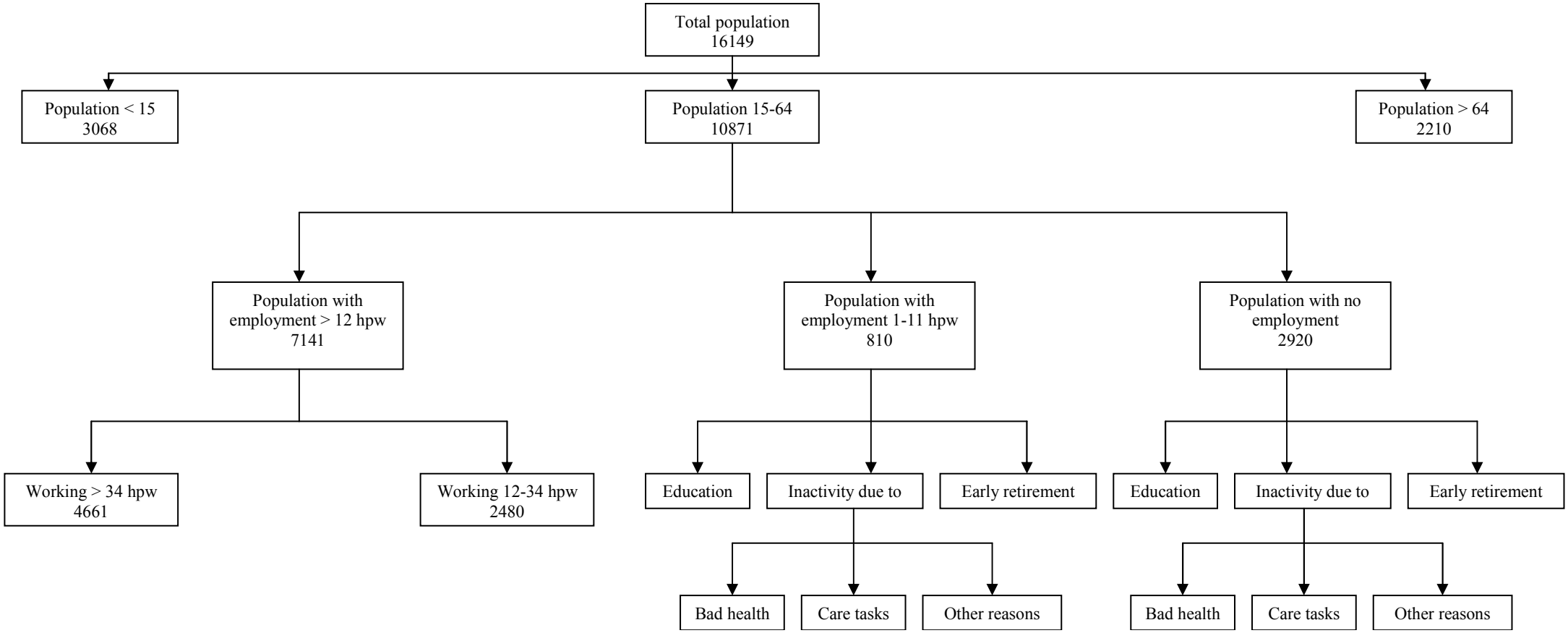
(i) Persons with employment for 12 hours or more a week who work 12-34 hours a week. This is the group of part-time employed
(ii) Persons with employment of 1 to 11 hours a week. This is the group of persons holding small jobs, not being part of the employed labour force.
(iii) Persons with no employment (0 hours a week).

In all three cases the size of the unused labour force is determined by the number of persons in each of the three labour effort groups who can increase their weekly working hours. Effectively this boils down to identifying the unused labour force based on a transition in the weekly hours worked.

The groups of small (1-11 hours a week) job holders is distinguished as a separate group here because in many cases a small job is seen as a stepping stone towards a more substantial job in terms of weekly hours work. So this group is regarded to be important in our unused labour force concept and is therefore studied as a separate group. When additional information for these three building groups becomes available it may be possible to assess if and how this unused labour force can be deployed in a useful way. These three categories can be differentiated into the four life cycle stages of figure 1 from which flows into employment occur: education, employment (job to job movement), inactivity and early retirement.

Some persons in these groups may already work for some hours, while other may not. Students may have small or part-time jobs to supplement their tuition. The same applies to persons who are not active at the labour market. We already mentioned the fact that in The Netherlands many persons with a disability benefit do in fact hold a job. Also housewives may fill a small job or do (unpaid) voluntary work and even early retired may still occupy a part-time job. See also Das et al. (2002), Weidum and Linder (2002) and Arts et al. (2002). In the next section we will review the international literature on identification of the unused labour force and provide a first assessment of the numbers in each of these groups in the unused labour force in The Netherlands.

***Figure 2 – Structure of labour force, with number of persons (x 1000) in each category in 2002 when available***



## 3. Reviewing studies of unused labour force

This section reviews the international literature on identifying concepts of an unused labour force in the vain of our definition. In a theoretical sense hidden unemployment is the denomination that comes closest to our idea of an unused labour force. These theoretical considerations usually start from the so-called discouraged worker effect. This is based on the premise that participation in the labour force is affected by variations in the business cycle. In a business cycle downturn, for some unemployed persons looking for work becomes so disheartening that they give up search and withdraw from the labour force and that persons who under normal circumstances would enter the labour force abstain from doing so. These are all labelled discouraged workers. Hidden unemployment is usually identified as the group of discouraged workers (Hamermesh and Rees, 1993, pp. 36-38). Search effort and search motivation are essential in this respect. In a neoclassical setting this means that wage and social benefit differentials are not large enough to persuade (discouraged) unemployed to search for work. See van der Wiel (1998).

The number of discouraged unemployed in The Netherlands averaged some 50 thousand persons in 2002, or 15% of the unemployed labour force, primarily women, elderly and lower educated. Notice however that our concept of an unused labour force discussed in the previous section is much broader than just the number of discouraged workers. Table 1 gives an overview of the definitions and denominations in various relevant economic studies in this field. We will discuss some these studies and provide a first assessment of the numbers of the associated unused labour force.

As far as measurement of the unused labour force is concerned we can distinguish two different methods in the international literature. First a macro approach where the unused labour force is estimated indirectly using aggregate data. In this approach the unused labour force is defined as the potential labour force, defined as the population between 15-64 that exists in addition to the actual labour force. Second, there is a micro approach in which the unused labour force is drawn from longitudinal surveys among households or individuals. In this paper we only consider this micro concept of the unused labour force.

**Table 1 – Some measures of unused labour force in economic literature**

| Author(s) | Definition of unused labour force | Drawn directly from survey | Country |
|---|---|---|---|
| Jones and Riddell, 1999<br>Jones and Riddell, 2000<br>Jones and Riddell, 2001 | 'Marginally attached' non-participants: persons who want a job but are currently not searching. | Yes | Canada, USA |
| Holst and Spieß, 2001<br>Holst and Spieß, 2002 | 'Marginally attached' non-participants: (i) persons not pursuing paid work in past 7 days but searching (e.g. unavailable at short notice, not searching in past 4 weeks, not registered as unemployed); or (ii) persons not pursuing paid work in past 7 days and not searching due to discouragement | Yes | EU-countries |
| Holst and Schupp, 2000 | 'Hidden labour force'; various measures:<br>(i) non-participants who definitely or probably want to enter employment within 5 years<br>(ii) non-participants who want to enter employment in the future<br>(iii) non-participants who want to enter employment immediately<br>(iv) non-employed searching without employment office or persons not searching but immediately available and who would accept a job if employment situation would improve<br>(v) persons in training or reintegration projects and benefit recipients | Yes | Germany |
| CofFEE, 2002 | Persons 'marginally attached' to the labour market: persons wanting for work, but (i) not available in the reference week, or (ii) not searching because of discouragement | Yes | Australia |
| FAS, 2002<br>http://www.fas.ie/FAS_Review/ | 'Potential work force': (i) discouraged workers, (ii) passive job searchers, (iii) persons not in education but wanting to work | Yes | Ireland |
| Brummelkamp and van Driel 2003 | 'Silent reserve force': person between 15-64, without a job of 12 hours a week or more, who<br>- want to work for at least 12 hours a week<br>- can start within two weeks<br>- are not registered at employment agency<br>- are not school pupils of students | Yes | Netherlands |
| Bijsterbosch and Nahuis, 2001 | 'Favourable potential labour supply': (i) persons below 54 with working experience and (ii) school leavers | No, estimated | Netherlands |
| NAP, 2001 | 'Non-searching labour reserve': persons available for work at short notice, but not searching in past 4 weeks | Yes | Netherlands |
| De Grip et al 1999 | 'Not actively searching' | unknown | Netherlands |
| Dutch Ministry of SZW | ''Persons not searching, but wanting to work' | Yes | Netherlands |
| Statistics Netherlands | Various indicators:<br>(i) unemployed labour force<br>(ii) registered unemployment | Yes | Netherlands |

| | | | |
|---|---|---|---|
| | (iii) persons wanting work for at least 12 hr/w<br>(iv) unemployment insurance benefits<br>(v) social assistance benefits | | |
| Taylor 2002 | Transition rates | unknown | EU |
| RvB, 2001 | Job searchers without a job, minus friction unemployment and school-leavers | unknown | Netherlands |

Due to differences in the definition of the labour force in the Netherlands and the most of the industrialised world, also discussed in the previous section, we distinguish studies pertaining to The Netherlands and studies pertaining to other countries. Since research is hardly ever of a theoretical nature emphasis in the sequel is on empirical studies

### 3.1 International studies

Size of unused labour force

As far as empirics is concerned two research groups have carried out most of the foreign studies on unused labour supply. First a group of German researchers centred around Elke Holst, who study aspects of the unused labour force in Germany (Holst and Schupp, 2000) and in some European countries (Holst and Spieß, 2001, 2002). In their work for Germany, micro level data from the *Sozio-oekonomische Panel* (SOEP), an annual survey among German households, are used. For the European work the European Community Household Panel (ECHP) is used.

The second group of researchers involved in analysis of the unused labour force is centred around Stephen Jones and Craigh Riddell. They study the situation in Canada and the USA using the Canadian LFS and the US Current Population Survey (CPS). See Jones and Riddell (1998, 1999, 2001).

Starting in more detail with the study for Germany by Holst and Schupp (2000), the unused – or in their terminology: hidden – labour force is found in the non-employed population, *i.e*. all persons with 0 hours of weekly employment. This population is next subdivided into five groups:

(i) non-employed who report they are registered as unemployed
(ii) non-employed in education aged 15-24
(iii) non-employed who wish definitely or probably to take up employment immediately or within one year (non-employed with a strong interest in employment)
(iv) non-employed who wish definitely of probably to take up employment within one to five years (non-employed with moderate interest in employment)
(v) all other non-employed who do not wish to take up employment after five or more years (non-employed with no interest in employment)

The unused (hidden) labour force in their approach is consists of groups (iii) and (iv) and amounts to some 1.8 million persons, or 3% of the population between 15-64, in 1998 in Germany.[10]

[10] When unemployed are included it increases to 5.9 million persons (13% of population 15-64).

The unused (hidden) labour force in a number of European countries, analysed by Holst and Spieß (2002), is identified by the group of non-employed persons in the ECHP that is 'closer to the labour market then other non-employed groups' (Holst and Spieß, 2002, p. 5). These are labelled 'attached' to the labour market. The distance to the labour market is based only on the respondent answer to specific questions in the ECHP-questionnaire:

(i) the group of persons that want employment for at least 1 hour a week but are not available on short notice and
(ii) the discouraged unemployed, defined as persons wanting work, available at short notice but showing no active search effort due to low expectations (Holst and Spieß, p. 19).

The design of the ECHP does not allow a similar definition for the unused labour force as the one of Holst and Schupp (2000). The number of attached in the EU averages about 2% of the population between 15-59 years of age (Holst and Spieß, 2002, table 8), which implies some 4.6 million persons.[11]

Analysis of the marginally attached by Jones and Riddell (1998, 1999, 2001) is similar to what Holst and Spieß have been doing for Europe. The answers to specific questions in the Canadian LFS and the US Current Population Survey (CPS) are used to identify the unused labour force, they refer to as marginally attached. Marginally attached are identified by

(i) the number of persons expressing they want to work, net of the unemployed labour force.

In fact this is the group of persons under (i) in the study of Holst and Spieß (2002). Distinctive characteristics of this group are gender, different unemployment states (temporary layoff, job searcher, future job start) and different reasons for being marginally attached (waiting, personal, discouraged). The actual number of persons being marginally attached to the labour market – and hence the size of the unused labour force in their approach – is not given. In fact their analysis focuses only on transitions from marginally attached into employment.

What all international studies reviewed here have in common is the fact that the unused labour force – irrespective of definition or denomination – is based on data availability rather than theoretical considerations. When theoretical aspects are mentioned they are usually just the discouraged worker hypothesis even when the empirical completion of the unused labour force encompasses more than just discouraged unemployed. Our concept of an unused labour force introduced in the previous section is based on a much broader concept than the above studies. The latter consider an unused labour force concept that can be made to use at relatively short notice. Only Holst and Schupp (2000) consider a longer period of five years in their definition.

Our concept of unused labour force is even wider than that of Holst and Schupp. It does not contain a specific time period after which entering the labour force should be effectuated. Neither does it exempt persons already in the labour force who work part-time. Core of our concept is the possibility of expansion of the number of hours worked, while most studies are concerned with expansion of the number of workers.

Labour market flows

What both Holst and Spieß and Jones and Riddell emphasise are transitions from the state of being (marginally) attached to the labour market into employment. Hence, essentially these studies are about

[11] Based on Eurostat data of the population by age for 1996.

the extent to which the unused labour force is made to use (i.e. has moved into paid labour). In order to get a flavour of their size, table 2 shows the transitions *per month* of persons from the state of being unemployed, marginally attached and other inactivity, respectively, to the state of being employed for the EU.[12] Table 2 shows that every month roughly 2.8% of the unemployed pass through to the employed. This is a higher transition rate than the 1.8% of the (marginally) attached that move into employment. The transition rates of other non-active persons is even smaller depending on the reason for being not active, ranging from 1.3% for students to 0.8% for non-participants due to household and care tasks.

**Table 2 – Monthly transition rates into employment from five different states for the EU (12 countries), in % of the initial category***

| From: | Unemployed | Marginally attached | Not attached and | | |
|---|---|---|---|---|---|
| | | | in education | Housekeeping | other |
| To: | Employed | Employed | Employed | Employed | Employed |
| EU-12: | | | | | |
| 1994/1995 | 2.9 | 1.9 | 1.3 | 0.8 | 1.0 |
| 1995/1996 | 2.7 | 1.8 | 1.3 | 0.7 | 0.8 |

*Transition rates refer to monthly figures, derived by divding annual figures by 12.

Source: Holst and Spieß (2002), tables 10 and 11.

The monthly transition rates reported by Jones and Riddell are much larger than the ones from Holst and Spieß (table 3). Different survey designs of the panels involved, different data frequency and different populations and countries hamper comparison between the group around Holst and Jones and Riddell. Holst and Spieß analyse annual transitions, while Jones and Riddell analyse monthly transitions. Furthermore, labour markets are known to be much more flexible – and hence labour market dynamics is much larger – in the USA and Canada then in Europe. However, this explains only part of the difference. The fact that transition rates in the US and Canada are 5-8 times larger then the European ones is also related to the design and structure of the different databases. A Labour Force Survey is probably much more tailored to labour market issues then a household panel.[13]

[12] These monthly transistions are derived by dividing the original annual transitions by 12. See also Burda and Wyplosz (1994) for a similar approach.

[13] Furthermore, both the Canadian LFS and the US CPS each individual is questioned a number of consecutive month (LFS: 6; CPS: 4). This rotation group structure is utilised by Jones and Riddell in order to construct their panel. This is not possible in the ECHP.

**Table 3 – Monthly transition rate into employment from three different states for Canada and the USA, in % of the initial category**

| From: | Unemployed | Marginally attached | Not attached |
|---|---|---|---|
| To: | Employed | Employed | Employed |
| Canada April 1997-April 1999 | 22.1 | 12.0 | 3.2 |
| USA Jan. 1994-Feb. 1994 | 22.2 | 8.7 | 3.6 |

Source: Jones and Riddell (2001), table 1 and Jones and Riddell (2000), table 1.

Summarising, the unused labour force is mainly addressed in terms of data availability rather than for theoretical reasons. The actual size of the unused labour force in international studies ranges from about 2% to some 15% of the potential labour force (i.e. the population between 15-64), depending on the definition and the fact whether unemployed are included or not. An important issue obviously concerns the number of persons moving from this unused labour force into employment. These flows depend crucially on the data used.

A related area of research in which the unused labour force is important is on the ageing problem that faces many European countries. One way of coping with an ageing labour force population is by activating the unused labour force in order to keep participation rates from falling. Many of these studies also start from a transitional labour market concept in which similar groups as in our study are distinguished. See the Finish Ministry of Labour (2003) for an excellent review.

Another related research area is specifying and estimating a so-called matching functions, where a worker or job flows (like new hires or filled vacancies, respectively) are explained by both labour supply and is labour demand.[14] Usually labour supply is covered by the stock of unemployed and labour demand by the stock of vacancies. In most empirical studies the worker or job flow that is explained by these two stocks is chosen rather arbitrary. Broersma and van Ours (1999) provide an overview of these different flow measures and show that the choice of the flow that enters the matching function fixes the two explanatory stocks. The stock of unemployed to represent unused labour supply does not suffice in many cases.

Some matching studies provide information on the actual size of the flows they analyse, which gives us another comparison with flow rates presented so far. Comparison can only be adequate when the same data frequency is considered. Blanchard and Diamond (1990) present average monthly flows of US workers, while Burda and Wyplosz (1994) show annual flows for Germany, France, Spain and the UK and Kock (2002) provides annual flows for The Netherlands. Burda and Wyplosz mention annual flows can be compared to monthly flows by dividing by 12. Of their countries under study only Germany and France can be compared to the US.

[14] A recent overview of the matching literature is found in Petrongolo and Pissarides (2000)

Table 4 shows that the monthly unemployment to employment flow of Blanchard and Diamond for the US is close to the value reported by Riddell and Jones. The same is true for the employment flow from non-participation, but not for the attached. The flows from unemployment into employment for European countries are still 2-3 times smaller than those for the US, but they are also 3-4 times larger than the ones reported by Holst and Spieß. One the one hand this is related to well-known high dynamics of the US labour market relative to Europe. On the other hand, it provides an additional argument against using the ECHP for labour force transitions.

**Table 4 – Average monthly flows of persons between employment, unemployment and non-participation, in % of the initial category**

| From: | Unemployed | Non-participants | |
|---|---|---|---|
| | | all | attached |
| To: | Employed | Employed | Employed |
| Blanchard and Diamond (1990) | | | |
| USA Jan. 1968-May 1986 | 24.6 | 2.8 | 34.0 |
| Burda and Wyplosz (1994) | | | |
| Germany Jan.-Dec. 1987 | 8.4 | - | - |
| France* Jan.-Dec. 1987 | 9.2 - 12.2 | - | - |
| Kock (2002) | | | |
| Netherlands Jan.-Dec. 1999 | 7.4 | 0.7 | |

- is not available

‡ Attached in this study refers to those non-participants indicating they want employment.

† Flow rates refer to monthly figures, derived by divding annual figures by 12.

* For France two sources for unemployment flows are available, hence two figures.

Labour supply studies

Finally, we mention a specific type of studies into the analysis of work behaviour, the labour supply studies of different groups of persons. In practically all labour supply studies the phenomenon being analysed is not related to labour market flows (transitions) in any sense. It is merely a 'stock' at a given point in time representing either

a) a Boolean variable (employed vs. not employed, or participating vs. not participating)
b) a continuous variable concerning weekly or annual number of hours of work (derived from a standard household utility function)
c) a continuous variable representing the (net or gross) labour participation rate, i.e. employment (or participation) relative to the population between 15-64.

or a (simultaneously estimated) combination of these variables.

Usually the analysis is based on (pooled) cross section data from some household survey (sometimes: panel) of the country or region under consideration. Explanatory variables are numerous, depending on the aspect of labour supply being studied. In most cases they cover one or more of the following

variables, including squares and combinations of variables. Such variables can of course also be used to identify specific categories of our unused labour force.

| |
|---|
| Gender |
| Age |
| Education level |
| Education duration (years) |
| Nationality/Race |
| Residential region/area |
| Household position |
| Age youngest child |
| Child care costs |
| History of employment |
| Work experience |
| Income (wage) |
| Income partner |
| Tax regime |
| Education partner |
| Housing status |
| Health status |
| Health status partner |
| Desired job |
| Desired hours work per week |

In most studies the various aspects refer to labour supply decisions of specific groups of persons, like

- elderly (Taylor and Urwin, 1999; O'Brien, 2000-01),
- students (Demeuelmeester and Rochat, 2000)
- disabled (Wilson, 2001)
- women, with or without children (Miller and Volker, 1983, Fayissa and Fessehatzion, 1990, Powell, 1997, Del Boca et al, 2000, Ribar, 2001).

### 3.2 Studies for The Netherlands

Size of the unused labour force

There are at least two major studies that address the identification of marginally attached in The Netherlands. Firstly, Bijsterbosch and Nahuis (2001) estimate the size of what they call the 'favourable potential labour supply'. Relevant data are drawn from the Dutch LFS. Like the international studies of 'marginally attached' this 'potential labour supply' is established by respondent's answers to specific questions in the LFS. Starting point is the group of persons who 'want employment for 12 hours a week or more'. Next the number of persons within this category, whose success of finding employment is 'favourable', can be estimated using two characteristics: age and work experience. This favourable potential labour supply amounted to 544 thousand persons in 1999, or 5.1% of the population between 15-64. In a frequency distribution for different characteristics, they report that the largest groups within this 'favourable potential labour supply' have the following characteristics: women, married, parents and wishing to work 20-34 hours a week. Cross tabulations were not reported.

The second major study is by Brummelkamp and van Driel (2003) who also use the LFS to assess what they call the 'silent reserve force'. Construction of this group is solely based on survey response and is defined by persons between 15 and 64 years old who:

1. do not work or work less than 12 hours a week and
2. want to work more than 12 hours a week and
3. can start at short notice (i.e. within two weeks) and
4. are not registered at the employment agency and
5. are not students or school pupils

When these requirements are fulfilled, their 'silent reserve force' has some 212 thousand persons in 2000 and 190 thousand in 2001, or 2.0%, respectively 1.8% of the population between 15-64. This concept is thus much smaller that the one of Bijsterbosch and Nahuis.

The main reason for this difference in size is the timing of availability. The concept of Brummelkamp and van Driel is a short-term concept focusing on the group of persons than can begin at short notice. The concept of Bijsterbosch and Nahuis is a based on a longer run principle, solely based on the desire for employment, irrespective of immediate availability. Our unused labour force definition – where the issue is neither availability, nor preference but potency: *can* a person work (more hours) – encompasses both. We view the unused labour force as a long run potential source to keep labour participation on track in view of the ageing in the coming decade.

Brummelkamp and van Driel (2003) also provide characteristics of their 'silent reserve force'. Its distribution over both sex and age is skewed, with an over-representation of females (70%) and of age group 35-54 (55%). Most females (60%) characterise themselves as housewives, many without small jobs or volunteer labour. Males characterise themselves in a wider variety of states: 25% state they are disabled, 20% states they are unemployed and only 9% label themselves as 'houseman'. The level of education of the unused labour force is not very different between sexes. More than half of them have followed secondary or tertiary education, so this is quite high. The education discipline most females have followed is (health) care. The distribution over disciplines for males is more spread. There is also an evenly spread of the unused labour force over the Dutch provinces, with slightly higher rates in the peripherical regions and lower rates in the economic heart. All in all, about three quarters of the unused labour force consist of three groups: (i) females (housewives), (ii) elderly (above 55) men and (iii) youngsters (15-24 years of age).

Labour supply studies

These groups have also been the subject of standard labour supply studies, particularly females, like Ministry of Social Affairs (2001), Janssen (2001), Vlasblom et al. (2001) in table 1. Besides these standard labour supply studies, there has also been research in the field of labour supply in a more spatial context for The Netherlands. Ekamper and van Wissen (2000) study the effects of changes in regional labour markets on (labour) migration and commuting. The latter can be seen as 'spatial' labour supply. Broersma and van Dijk (2002) distinguish a similar spatial type of labour supply when analysing the total labour supply response to a labour demand shock in a regional setting. Central issue is here where the labour supply originates from (moves out to) when a positive (negative) labour demand shock hits a region: unemployment in that region, non-participation in that region or spatial

adjustment. The latter are employed, unemployed or non-participants in other regions who move into (out of) or commute into (out of) the 'shocked' region for employment.

Labour market flows

The problem with most studies so far, both international and referring to the Dutch situation, is their preoccupation with an unused labour force that can be put into service immediately. None of the above studies is concerned with investigating the full potential labour force. The only research that tackles this issue is a study into the full system of labour market flows initiated by Broersma and den Butter (1994) and later extended by Kock (2002).[15] Here the total system of labour market flows between different labour market states is at stake: employment, unemployment and non-participant. Between these states and the stock of vacancies all in- and outflows of both persons and jobs are identified and quantified in a consistent way.[16]

However, the flows in Kock (2002) stem from a variety of sources of both surveys and administrative databases. In some cases flows are identified by the stock-flow definition, while for others specific assumptions were required.[17] The novelty of this research is that all flows are identified at the macro level in a consistent way very much like in a National Accounting system. It fails the problems of flows identified by micro-level surveys. Firstly, it is based on continuous measurement of flows and not at discrete interval in time. Continuous measurement is a characteristic of administrative data. Secondly, micro surveys usually refer to only a part of the economy, like a single industry or only unemployed moving to the state of employment, without knowledge of other flows.

The approach of Kock et al. was criticized by Allaart and van Ours (2001) who showed that many of the flows in the system are in fact dominated by observable flows, in particular the flow of employment to unemployment, because it re-appears in many other labour market flows due to use of the stock-flow definition and some of the assumptions made. They found a different magnitude of flows using the OSA-labour supply panel.

Table 5 makes a comparison between the flows in Kock (2002) and those of Allaart and van Ours (2001) based on the OSA labour supply panel. For reasons of completeness we also report comparable flows of the work of Blanchard and Diamond and of Burda and Wyplosz mentioned earlier. We only present *monthly* flows from unemployment to employment and *vice versa* and from non-participation to employment and *vice versa*. All figures are in percentages of employment. Table 5 shows that the flows (relative to employment) are much larger in the approach of Kock than those derived from the OSA panel. However, the flows for The Netherlands are much smaller, particularly for Allaart and van Ours, than values for other countries. This implies a less flexibly operating Dutch labour market than is often assumed. The difference between Kock and Allaart and van Ours is related to continuous

[15] See also Broersma, den Butter and Kock (2000).

[16] Recently, Klein et al. (2002) have proposed a similar system of labour market flows.

[17] The stock-flow definition means the fact that the change in a stock equals the inflow minus outflow. When for example only an inflow is known and the change in the corresponding stock, the outflow follows simply from the stock-flow definition

measurement of flows in administrative data sources we spoke of. The implications are also different: in the approach of Kock the net increase of employment stems from particularly from non-participation. In Allaart and van Ours the net increase in employment stems mainly from unemployed.

**Table 5 – Comparison of the average monthly flows of persons between employment, unemployment and non-participation, in % of the employment stock**

| Country: | Netherlands | Netherlands | USA | Germany | France[†] |
|---|---|---|---|---|---|
| Authors: | Kock (2002) table 4.1 | Allaart and van Ours (2001) figures 4.3 and 4.4 | Blanchard and Diamond (1990) | Burda and Wyplosz (1994) | Burda and Wyplosz (1994) |
| Monthly flows pertaining to[*]: | 1999 | 1997 | 1968- 1986 | 1987 | 1987 |
| in % of employment | | | | | |
| Flows from | | | | | |
| - employment to unemployment | 0.4 | 0.1 | 1.7 | 0.9 | 1.8 |
| - unemployment to employment | 0.5 | 0.1 | 1.3 | 0.8 | 1.6-2.1 |
| - employment to non-participation | 0.2 | 0.1 | 1.6 | 0.7 | 0.6 |
| - non-participation to employment | 0.4 | 0.1 | 2.8 | 0.8 | 0.0-0.6 |

[*] Monthly flow rates for The Netherlands, Germany and France are derived by dividing annual figures by 12.

[†] For France two sources for flows of non-participation to and from employment are available, hence two figures.

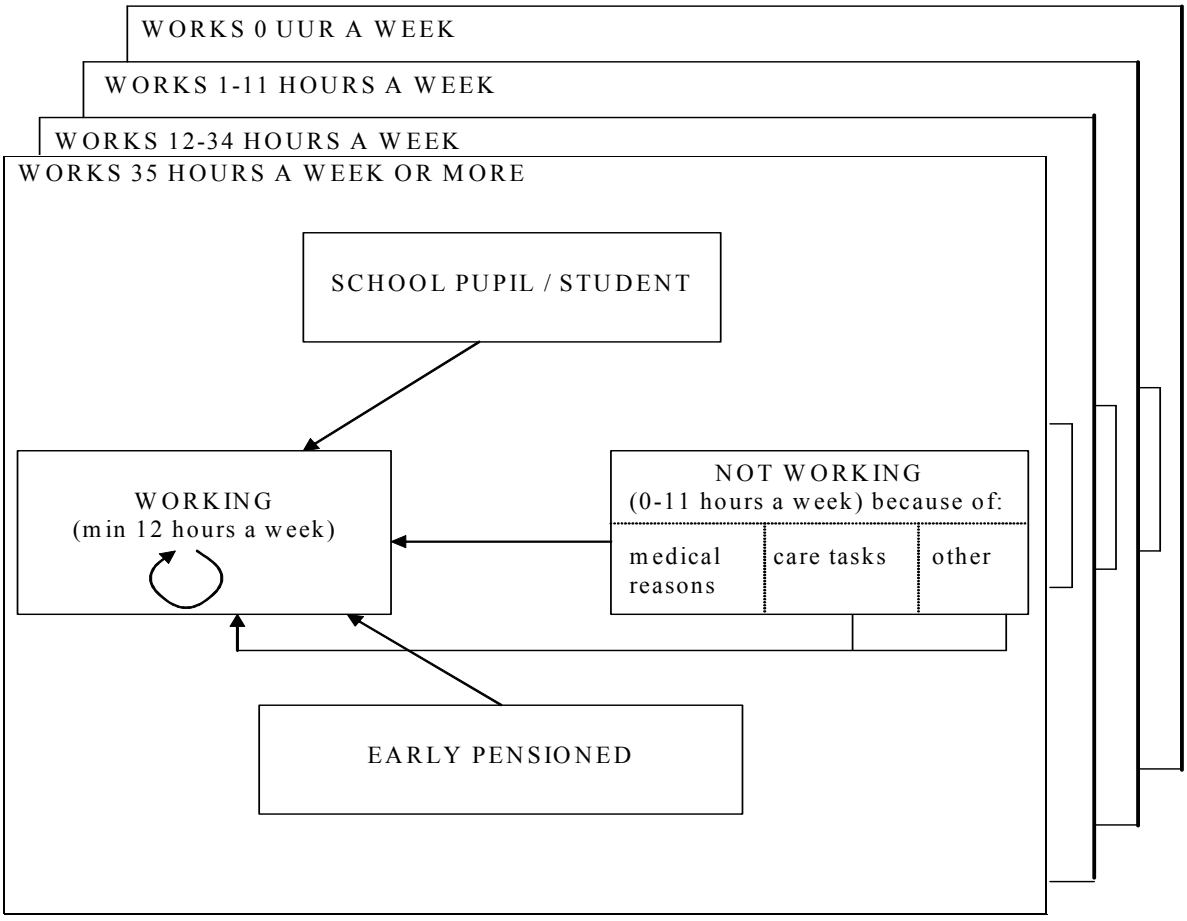
Apart from these studies no equal international investigation has been found yet that has treated labour market flows in the same way. Nevertheless in terms of the life cycle stages of figure 1 both most studies stick to the standard distinction between employed, unemployed and non-participation. Both Kock and Allaart and van Ours do identify the flow of school leavers into each of these states, but school leavers are considered to be part of non-participants (inactivity). Kock divides non-participants into disabled and all others including retired. Returning to figure 1 both studies particularly leave flows into employment from inactivity due to care tasks and early retirement untreated. Only Holst and Spieß come close to figure 1 with categories: employment, unemployment, education, housekeeping/care tasks and other. Our study tries to get a hold on all six flows of figure 1.

## 4. Assessing the facts for The Netherlands

So far we have made a definition of the unused labour force, based on an individual's labour effort in terms of weekly hours work and the potential for expansion of these hours. This property led to three distinctive labour effort categories in figure 2 based on the LFS framework. With additional information on these three building groups it may be possible to assess if and how this unused labour force can be made to use, in terms of raising the number of working hours. Using the life cycle stages of an individual (in figure 1), each of the three building categories of the unused labour force (in figure

2) can be differentiated into the four life cycle stages: education, work, inactivity and early retirement. This gives rise to the illustration of figure 3, combining each of the three building blocks in terms of labour effort with the flow chart of transitional labour markets.

**Figure 3 - Life cycle stages in four categories of labour effort (weekly working hours)**




The category of labour of 35 hours a week or more is assumed not expand its hours of work. This group is only present in figure 3 for the sake of completeness. It is not part of the unused labour force. Of the remaining three labour effort groups and for each of the positions in the life cycle stage different characteristics should be distinguished. These characteristics can be drawn from many standard labour supply studies mentioned earlier.

1. Personal characteristics:
   - gender
   - age
   - education
   - nationality
   - residential region
2. Structural characteristics:
   - household position
   - history of employment
   - working experience (duration)

| | |
|---|---|
| | - presence of children/age of youngest child |
| | - availability of childcare provisions |
| | - main source of income |
| | - household income / partner income |
| | - health status (chronical diseases) |
| | - health status partner |
| 3. Behavioural characteristics: | - desired job type (fixed vs. flexible) |
| | - desired number of working hours a week |

These characteristics, together with the life cycle position and the actual labour effort in terms of working hours a week, should be used to establish the size of the main groups in the unused labour force. Obviously choices have to be made with respect to the individual characteristics, because there are simply not enough observations available to study all characteristics simultaneously. [18] As a first step we want to assess the number of persons that can be attributed to each stage of the transitional labour market model of figure 1, irrespective of their characteristics. This provides information about the absolute size of each stage and, hence, of the source for transitions. The larger the number of persons in each stage, the larger are possible transitions from that source.

This implies that our unused labour force concept is empirically filled in terms of numbers of persons instead of number of hours, because adequate data on hours are not available. Figure 4 fills the cells of figure 1 and distinguishes the number of persons by weekly working hours: 35 hours a week or more, 12-34 hours a week, 1-12 hours a week and none.[19] This figure shows that each of the stages comprises a substantial number of persons, ranging from 370 thousand persons between 15-64, who are early retired, to 7.1 million persons in the employed labour force.[20] The number of persons with some kind of employment indicates the attachment to the labour market in each life cycle stage. In this study we will label inactive persons holding a small job of less than 12 hours a week as 'attached to the labour market'. This is an entirely different definition of (marginally) attached than used by researchers like Holst and Spieß and Jones and Riddell discussed earlier. They focus on the willingness to work to express attachment; we focus on having a small job.

Attachment to the labour market outside the employed labour force is relatively high for persons in education, where 43% hold a small job, and low for inactive persons due to early retirement, where a mere 6% holds a small job. Hence labour market attachment is high for inactive persons in education and low for early retired.

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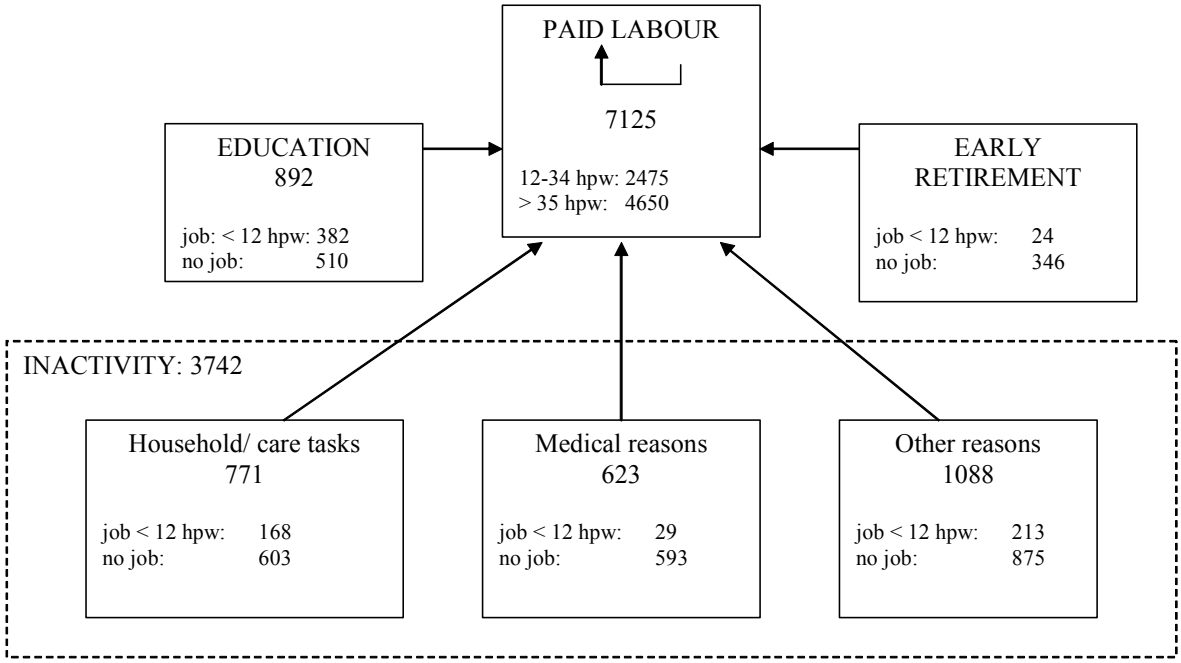
[18] Very recent a start has been made to identify the unused labour force in The Netherlands with some of these characteristics. Van der Valk (2004) links unused labour supply, defined as persons willing to work for at least 12 hour a week, with history of employment. Lucassen (2004) studies females for whom the presence of young children was a reason to stop working in their effort to re-enter the labour force after raising their children.

[19] This cell filling is drawn from the Dutch LFS of 2002 and is based on the respondents' answer to what they consider to be their main societal activity.

[20] Note that the cell of persons being inactive for 'other reasons' includes unemployed. Of the 1.1 million persons being inactive for other reasons, some 300.000 comprise the unemployed labour force.

**Figure 4 – Number of persons between 15-64 years of age in each life cycle stage of the transitional labour market model by employment in hours per week (hpw), The Netherlands 2002 (× 1000)**




Source: Statistics Netherlands (Statline and tailor-made tables, including own calculations)

Youths and elderly persons are two important groups in our unused labour force concept, because the participation rate of these two groups is known to be particularly low in comparison to other age groups. Figures 5 and 6 present male and female participation rates per age group and show that particularly at young ages (education) and old ages (early retirement) participation is very low. Apart from these extreme ends, figures 5 and 6 also show that female participation on the whole is below that of males. For ages between 25 and 50 there is a gap with male participation rates of 10 to 25 percentage point.[21] This provides a first handle for policy measures to enhance participation. What we then need is further information about characteristics of persons within these three groups.

The relatively high labour market attachment of (young) persons in education is a reassuring thought, because it means that many of them are already close to the labour market. Specific policy measures to further enhance participation or incentive to take on small jobs are not necessary. [22] Their main activity is their study and young persons will find their way on the labour market anyhow after they completed their education.[23] The group of early retired is hardly attached to the labour market. The question is if there are policy measures to make them take up work again. The low participation rate of older

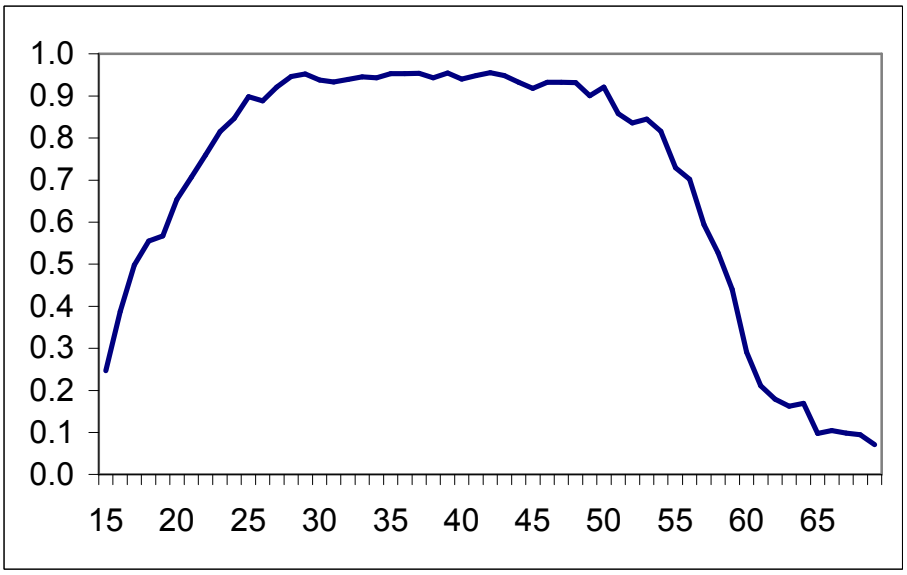
[21] The steep fall in participation after age 50 occurs by both males and females and corresponds to the early retirement age.

[22] Under the Dutch definition of labour force, mentioned earlier, labour force participation refers only to persons working 12 hours a week or more. Persons with a small job of less than 12 hours a week are not counted in the participation rate.

[23] Completion of school or study is of course an important prerequisite for school-leavers for finding employment. Policy measures to counteract drop-out from school is important for participation of school-leavers.

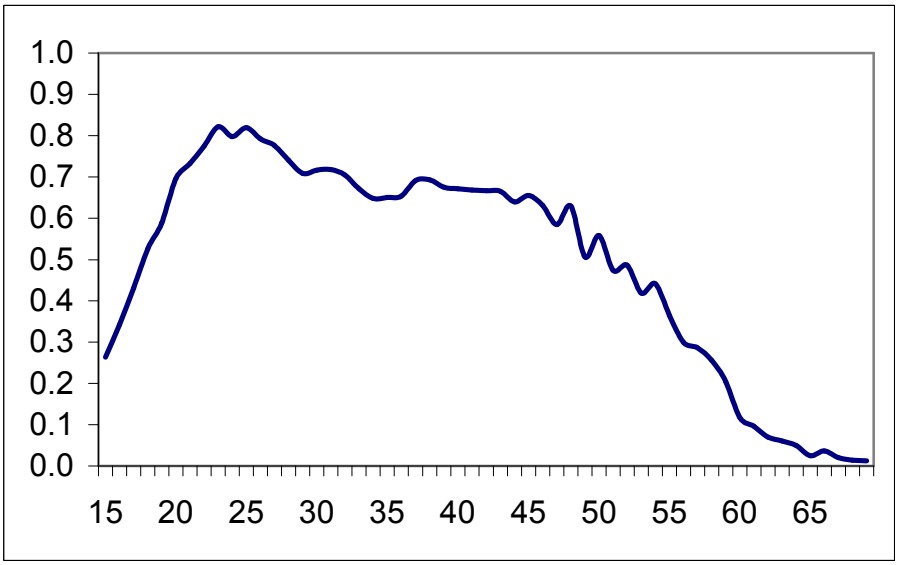
workers has already invoked policy measures to make early retirement more difficult. If these measures have an effect the participation of older workers will rise eventually.[24] The most promising group to direct policy measures to in order to enhance participation is the group of females between roughly 25-45 years of age. There exists a 'participation-gap' with males of the same age. In order to fill that gap, we first need more information about the characteristics of these age groups.

**Figure 5 – Male labour force participation by age, 2000**




Source: NIDI

**Figure 6 – Female labour force participation by age, 2000**




Source: NIDI

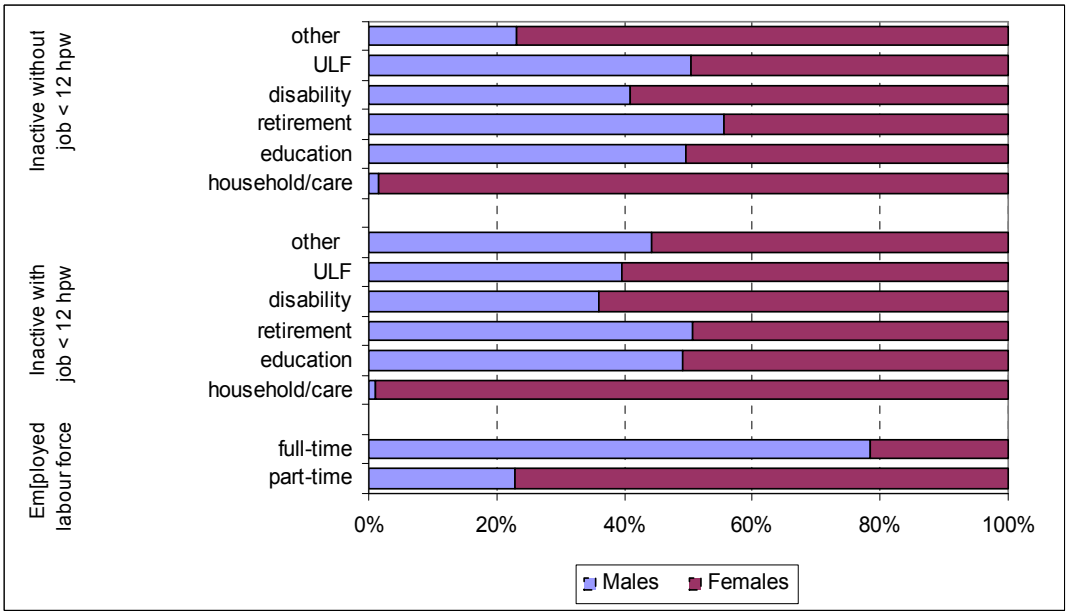
[24] This is due to the so-called cohort-effect, which means that a (permanent) change in the participation in certain age groups 'moves through' to the participation of higher ages as they become older and take with them this changed participation behaviour.

We will distinguish three characteristics: gender, age and education for the following groups:[25]

- persons in the employed labour force by weekly working hours;
- persons who are inactive for various reasons[26] holding a small job, thereby showing some attachment to the labour market;
- persons who are inactive without any attachment to the labour market.

Figures 7, 8 and 9 present the distribution by gender, age and education over these three groups. The pattern for gender in each of these groups is familiar. Full-time workers primarily consist of males and part-timers are mostly females. It is more interesting to view the distribution for inactive person by reason for inactivity and by labour market attachment. Inactivity due to household and care tasks is predominantly a female thing, without any difference with respect to having a small job or not. There is also hardly any difference between gender and labour market attachment for inactivity due to education, disability, unemployment (ULF) and early retirement. We do find a difference for inactivity due to other reasons. In this latter group, inactive males are more attached than inactive females.[27]

**Figure 7 – Distribution of life cycle and labour market stages by gender, The Netherlands 2002**




Source: Statistics Netherlands (Statline and tailor-made tables, including own calculations)

[25] Data for these groups is from the LFS 2002.

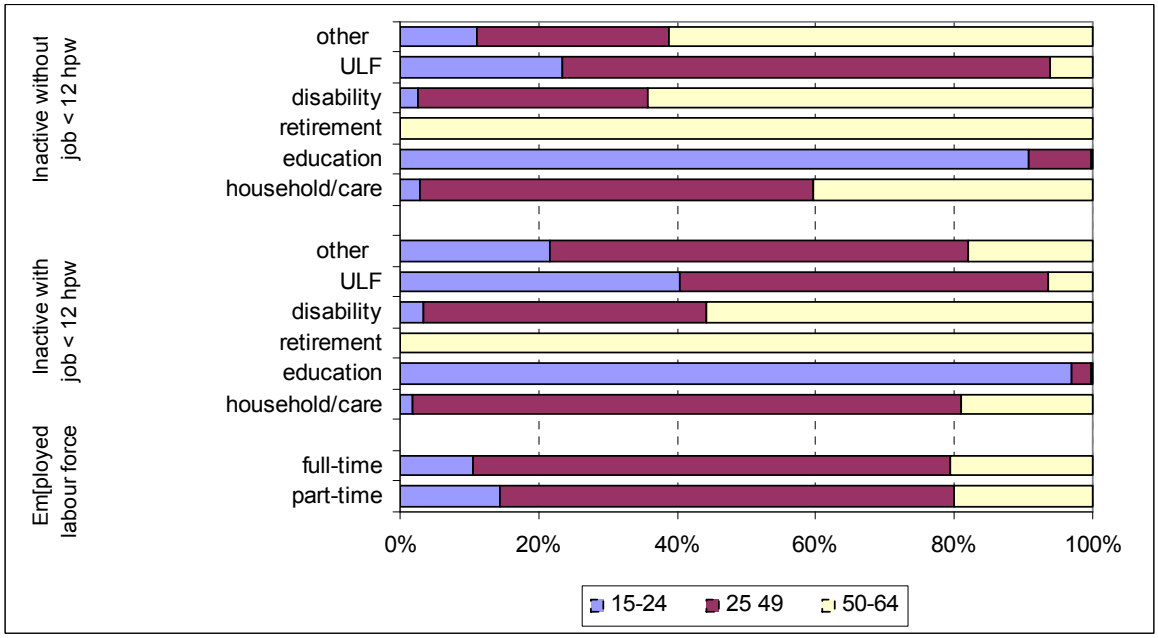
[26] We distinguish inactive persons in the unemployed labour force (ULF) separately from persons who are inactive for other reasons. The ULF is part of the (gross) participation rate and therefore does not need specific attention in terms of policy measures to enhance participation. Inactivity for other reasons is a residual term consisting of a large number of different groups.

[27] We should, however, bear in mind that figure 4 showed that in absolute terms the majority of inactive persons for whatever reason is not attached to the labour market.

Figure 8 provides evidence of differences between active and inactive persons and labour force attachment by age. Again the obvious picture emerges for full-time versus part-time workers, where the latter group has slightly more young workers than the first group. The age pattern for inactivity due to education and early retirement is also in agreement with expectations: inactive persons in education are primarily in the youngest and early-retired persons are all in the oldest age group. This holds for inactivity with and without having a small job. Disabled persons are for more than half in the oldest age group of 50-64. The age group of 25-49 is, however, more often involved in small jobs than the oldest age group.

The most eye-catching differences between age groups and extent of labour market attachment are at inactivity for household and care reasons, inactivity due to unemployment (ULF) and inactivity for other reasons. For the latter reason of inactivity, labour market attachment is high in the youngest and intermediate age group. For unemployed labour market attachment is limited to the youngest age category. Inactivity for household and care reasons by age, in conjunction with figure 7, shows that labour market attachment for females between 15-49 years of age still relatively high, while for age 50 and above it is relatively low. We can say that to a large extent this group of females between 25-49 being inactive for household and care reasons is responsible for the low female participation between 25-49 years of age (see also figure 6).

**Figure 8 – Distribution of life cycle and labour market stages by age, The Netherlands 2002**




Source: Statistics Netherlands (Statline and tailor-made tables, including own calculations)

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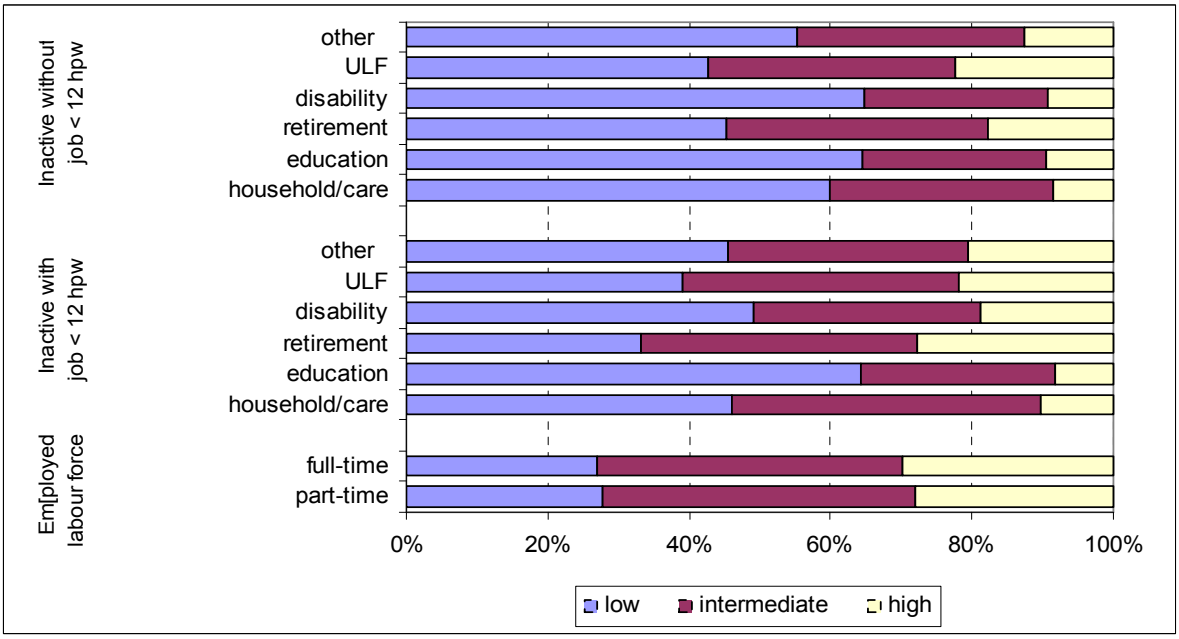
Finally, figure 9 gives the distribution of the level of education over the various life cycle stages. It shows that the pattern for employed labour by weekly working hours is hardly different. There are slightly more lower educated and slightly less higher educated workers working part-time. For all inactivity, apart from education, the share of low educated persons is slightly higher and that of

persons with a high education is lower when there is no labour market attachment compared to some attachment.

**Figure 9 – Distribution of life cycle and labour market stages by education level, The Netherlands 2002**




Source: Statistics Netherlands (Statline and tailor-made tables, including own calculations)

Table 6 summarizes these results by indicating which of the characteristics involved here is clearly dominant over the others. This table provides information about characteristics of persons that are in the unused labour force as defined in this paper. Table 6 shows that females are dominant in many life cycle stages that determine the unused labour force. This not only the case for part-time employment and inactivity for household and care reasons, but also for unemployed and disabled, both holding small jobs. Hence, unemployed and disabled females are more often attached to the labour market than their male counterparts. They have already some working experience, which makes them less difficult to address in order to increase their working hours. Age is also distinctive between life cycle and labour market stages: inactive persons, apart from those in education, with some attachment to the labour market are more concentrated in younger age groups than those without labour market attachment. The same applies to inactivity by education, where low education levels far less dominate inactivity when some labour market attachment is involved than inactivity without labour market attachment.

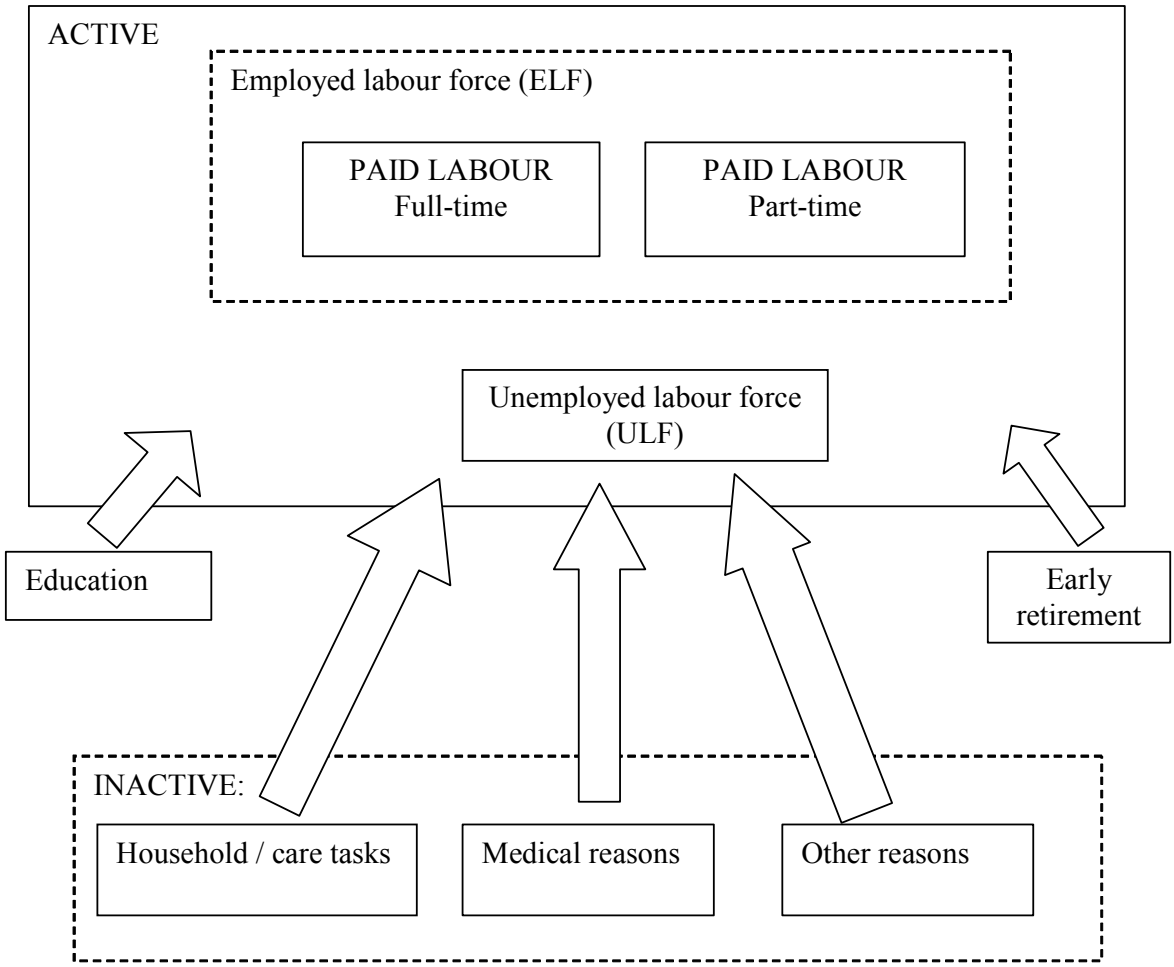
**Table 6 – Dominant characteristic by life cycle stage and labour market attachment in The Netherlands, 2002**

| Labour market status | Life cycle stage | Gender | | Age class (years) | | | Level of education | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Male | Female | 15-24 | 25-49 | 50-64 | Low | Interm. | High |
| Working | Part-time | | × | | | | | | |
| Inactive and attached | Education | | | × | | | × | | |
| | Household | | × | | × | | | | |
| | Disabled | | × | | | × | | | |
| | Retired | | | | | × | | | |
| | Unemployed | | × | × | | | | | |
| | Other | | | | | | | | |
| Inactive and not attached | Education | | | × | | | × | | |
| | Household | | × | | | × | × | | |
| | Disabled | | | | | × | × | | |
| | Retired | | | | | × | | | |
| | Unemployed | | | | | | | | |
| | Other | | × | | | | × | | |

Dominance (×) is defined as:
Gender: share of 60% or more for male of female
Age: age groups 15-24 and 50-64 require a share of 40% or more and age group 25-49 requires a share of 75% or more
Education: share of 50% or more for any of level of education
Source: Statistics Netherlands

However, identifying groups with similar characteristics in each life cycle stage and labour effort category is one thing. Identification of flows between each of these stages and categories is quite another. In order to keep things simple we focus on those flows that enhance the labour participation rate. This means person formerly inactive moving into either the employed labour force or the unemployed labour force. Figure 10 shows that this boils down to five flows. We have already argued that the flow from education into either the employed or unemployed labour force will not need additional policy measures. We have also argued that it is hardly feasible to make persons who are early retired move back to work or job search again. Disincentives to early retirement and a cohort-effect will eventually raise participation of older age groups.

**Figure 10 - Labour market flows based on life cycle stages that stimulate labour force participation**




That leaves policy measures to stimulate persons who are inactive for various reasons to move into the labour force. The residual group of 'other' reasons is heterogeneous and it is difficult to pinpoint one dominant characteristic that makes this group stand out to the other two. When studying participation enhancing labour market flows, focus should be on the two remaining groups: women inactive for household and care reasons and men and women inactive for medical reasons.

These are also the ones likely to be most relevant from a policy perspective. In terms of figures 5 and 6:

- the low participation at young age levels are probably unavoidable because of education.[28]
- the female participation gap for 25-49 year-olds can be cured by studying characteristics of women in that age group, who have moved from inactivity into the labour force or who have remained inactive, for that matter. When these characteristics are known we have a handle for policy to stimulate such flows. If for example the absence of childcare provisions is a hampering

[28] More and higher education in itself stimulates participation later on.

factor for these women to move into the labour force, then measures can be undertaken to make these provisions better accessible or less costly.

- the low participation at older age levels can be partly addressed by studying characteristics of disabled persons who have moved into the labour force, or who have remained inactive. If for example the presence of adjusted workplaces is lacking, so handicapped persons are unable to fill a job, this might also be a reason to undertake policy measures to ensure these adjustments.

## 5. Concluding remarks

This paper is about the possibilities of getting the unused labour force to go to work. Different denominations of the unused labour force can be found in economic literature, like marginally attached, hidden labour force and silent reserve force. These are all closely related and have comparable definitions. They are all determined by respondent's answers to specific questions in the LFS. The definition of unused labour force of this paper is much broader. It covers the group of persons over 15, who can expand their number of (weekly) hours work. It not only covers person being inactive (working 0 hours a week), but also persons with some attachment the labour market, like those holding small jobs (1-11 hours a week) and part-time employed (12-34 hours a week).

This unused labour force concept is closely related to both the theory of transitional labour markets, where individuals are assumed to be in any typical stage of their life cycle depending on time: education, employed, inactive and early retired and move between stages at their own discretion. Narrowing down the stage of being employed by the actual number of weekly working hours supplied, means that four different labour effort categories are distinguished, three of which build the unused labour force. The category of persons working 35 hours a week or more are assumed to be at their maximum and do not expand their working hours. They are hence no part of the unused labour force. The other three categories, consisting of persons working 12-34 hour a week (employed labour force being part-time employed), persons working 1-11 hours a week and persons without employment, build the unused labour force.

We have found that the number of persons involved in each of the stages in our unused labour concept and of the transitional labour market is quite substantial in The Netherlands, ranging from some 2.5 million part-time workers, predominantly females, to 370 early-retired, whose main characteristic is their age. One group that can be distinguished here and which is usually absent in related studies is inactive persons due to household and care reasons, primarily females. Their age characteristic, however, depends on their labour market attachment in terms of holding a small job of less than 12 hours a week. Despite the fact that in absolute terms only few inactive persons are attached to the labour market, it does appear to be an important instrument to identify dominant groups of persons in the unused labour force.

We have come to the conclusion that studying labour market flows out of the various stages of inactivity into the labour force can best be determined in terms of policy relevance. This means that focus should be placed on factors that affect the flow of females between 25-50 years of age into the labour force and factors affecting the flow of disabled persons into the labour force.

**References**


Allaart, Piet and Jan C. van Ours, 2001, *Stromen op de Nederlandse arbeidsmarkt*,OSA-publicatie A182, OSA, Tilburg. [in Dutch]

Arts, C.H., L. van Toor and S de Vries, 2002, "Stromen op de arbeidsmarkt, april-oktober 1999", *Sociaal-economische maandstatistiek*, December 2002, 66-71, Voorburg: CBS [in Dutch].

Bijsterbosch, M.G. and N.J. Nahuis, 2001, Vergroting arbeidsaanbod een uitdaging voor beleid", Amsterdam: Nederlandsche Bank NV. [in Dutch]

Blanchard, Oliver and Peter Diamond, 1990, "The Cyclical Behavior of Gross Flows of Workers in the US", *Brookings Papers on Economic Activity*, 2, 85-155.

Broersma, Lourens and Jouke van Dijk, 2002, "Regional Labour Market Dynamics in The Netherlands", *Papers in Regional Science*, 81 (3), 343-364.

Broersma, Lourens, Frank den Butter and Udo Kock, 2000, "A National Accounting System for Worker Flows", *Economics Letters*, 67, 331-336.

Broersma, Lourens and Jan C. van Ours, 1999, "Job Searchers, Job Matches and the Elasticiy of Matching", *Labour Economics*, 6, 77-93.

Broersma, Lourens and Frank den Butter, 1994, "A Consistent Set of Time Series Data on Labor Market Flows for The Netherlands", Research Memorandum No. 43, Free University Amsterdam.

Brummelkamp, G.W. and H.J. van Driel, 2003, "De stille reserve en het MKB", EIM Strategische Verkenning B200209, Zoetermeer: EIM [in Dutch].

Burda, Michael and Charles Wyplosz, 1994, "Gross Worker and Job Flows in Europe", *European Economic Review*, 38, 1287-1315.

Centre of Full Employment and Equity (CofFEE), 2002, "Labour Market Indicators: An Alternative View of the Labour Market", University of Newcastle, Australia,at http://e1.newcastle.edu.au/coffee/docs/indicators/CLMI_July_2002.pdf

Colledge, Michael, 2000, "Labour Force Indicators, Review of Standards and Practices, Statistics Directorate, OECD: Paris.

Das, M., L. van Toor and C.H. Arts, 2002, "Samenloop van banen en uitkeringen", *Sociaal-economische maandstatistiek*, December 2002, 22-28, Voorburg: CBS [in Dutch].

Demeulemeester, Jean-Luc and Denis Rochat, "Labour Participation of Higher Education Students", *Labour*, 14(3), 503-522.

Ekamper, Peter and Leo van Wissen, 2000, *Regionale arbeidsmarkten, migratie en woon-werk verkeer*, Den Haag: NIDI. [in Dutch]

Eurostat, 2002, "Euro Indicators", News Release No. 67/2002, 4 June 2002.

Finish Ministry of Labour, 2003, "Preparing for the Labour Market Change Caused by the Baby Boom Generation", Labour Administration Publication at:

http://www.mol.fi/english/reports/babyboomgeneration.pdf

Florquin, F.F., 2002, "Banen van studenten in het hoger onderwijs", *Sociaal-economische maandstatistiek*, December 2002, 59-65, Voorburg: CBS [in Dutch].

Haan, de H.F., A.A. Smit and M.J. van Gent, 2001, "Nieuwe schaarste? Nieuw aanbod Activerend arbeidsmarktbeleid op sectorniveau", TNO report 2590004/5570, Hoofddorp: TNO Arbeid [in Dutch].

Hamermesh, Daniel S. and Albert Rees, 1993, *The Economics of Work and Pay*, New York: Harper-Collins.

Holst, Elke and Jügen Schupp, 2000, "Hidden Labour Force in Germany", *Economic Bulletin*, 37 (9), p. 285-292.

Holst, Elke and C. Katharina Spieß, 2001, "Labour Market Attachment of 'Not Economically Active Persons': New Aspects of Hidden Labour Force in Europe", DIW Berlin.

Holst, Elke and C. Katharina Spieß, 2002, "Labour Market Attachment and People Outside the Labour Force: An Explorative Analysis of the Hidden Labour Fo0rce in Europe", *Journal of Applied Social Science Studies*, 122 (1), p. 55-83.

Hussmans, Ralf, Farhad, Mehran and Vijay Verma, 1990, "Survey of Economically Active Population, Employment, Unemployment and Underemployment, An ILO Manual on Concepts and Methods, Geneva: ILO.

Janssen, Mirjam M. 2001, "Ik ga niet betalen om te werken", Report for Dutch Ministry of Social Affairs. [in Dutch]

Jones, Stephen R.G. and W. Craigh Riddell, 1998, "Unemployment and Labour Force Attachment: A Multistate Analysis of Non-Employment, in: John Haltiwanger, Marilyn E. Topel and Robert Topel (eds), *Labor Statistics Measurement Issues*, Chicago: Chicago University Press.

Jones, Stephen R.G. and W. Craigh Riddell, 1999, "Unemployment and Labour Force Attachment: A Study of Canadian Experience 1997-1999", background paper prepared for Statistics Canada.

Jones, Stephen R.G. and W. Craigh Riddell, 2001, "Unemployment and Non-Employment: Heterogeneities in Labour Market States", University of British Columbia and CIAR, November 2001.

Klein, Michael W, Scott Schuh and Robert K. Triest, 2002, "Job Creation, Job Destruction and International Competition: A Literature Review", Tufts University, NBER and Federal Reserve; at: http://www.bos.frb.org/economic/wp/wp2002/wp027.pdf

Kock, Udo, 2002, *Social Benefits and the Flow Approachto the Labor Market*, Ph D Thesis, Amsterdam: Tinbergen Institute/Thela Thesis Publishers.

Landelijk instituut voor sociale verzekeringen (Lisv), 2000, "Signalement werkende ao-uitkeringsgerechtigden", Den Haag: Lisv. [in Dutch]

Lucassen, Sabine, 2004, "Herintreders op de arbeismarkt", *Sociaal-economische trends*, Voorburg: CBS. [in Dutch]

Macredie, Ian, 1997, "The Effects of Survey Instruments on the Canada/US Unemployment Rate Gap", Staff Report, Labour and Household Analysis Division, Statistics Canada.

Ministry of Social Affairs, 2001, "Plan van de aanpak herintredende vrouwen", Tweede Kamer, vergaderjaar 200-2001,27853, No. 1. [in Dutch]

Ministry of Social Affairs, 2003, site http://www.szw.nl [in Dutch]

O'Brien, Martin J. 2000-1, "Older Male Labour Force Participation: The Role of Social Security and Hidden Unemployment", *Australian Journal of Labour Economics*, 4(3), p. 206-223.

Petrongolo, Barabara and Chris Pissarides, 2001, "Looking into the Black Box: A Survey of the Matching Function", *Journal of Economic Literature*, 39 (2), 390-432.

Research voor Beleid, 2001, "Basaal: het blijvend tekort en de arbeidsreserve", website text. [in Dutch]

Schmid, Günther and Bernhard Glazier, 2002, The Dynamics of Full Employment, Social Integration Through Transitional Labour Markets, Cheltenham: Edward Elgar.

Statistics Netherlands (CBS), 2000, "Beroepsbevolkings- en werkloosheidscijfers: CAAS133", Voorburg: CBS [in Dutch].

Taylor, Mark 2002, "Labour Market Transitions in the context of Social Exclusion", A Report for the European Commission, DG Employment and Social Affairs.

Taylor, Philip and Peter Urwin, 1999 "Recent Trends in the Labour Force Participation of Older People in the UK", *Geneva Papers on Risk and Insurance*, 24 (4).

Valk, Johan van der, 2004, "Het onbenut arbeidsaanbod en hun arbeidsverleden", *Sociaal-economische trends*, Voorburg: CBS. [in Dutch]

Weidum, J. and F.S. Linder, 2002, "Arbeidspositie en opleidingsnievau van personen met een uitkering, 1998", *Sociaal-economische maandstatistiek*, December 2002, 82-95, Voorburg: CBS [in Dutch].

Wiel, Henry van der (1998), "Intr-industry Wage Differentials in The Netherlands", CPB-Report 98-4, at: http://www.cpb.nl/nl/cpbreport/1998_4/s2_4.pdf

Wilson, Sven E., 2002, "Work and Accommodation of Chronic Illness: A Re-Examination of the Health-Labour Supply Relationship, *Applied Economics*, 33, p. 1139-1156.