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## ABSTRACT

### **Education Driving the Rise in Dutch Female Employment: Explanations for the Increase in Part-time Work and Female Employment in the Netherlands, Contrasted with Germany\***

Over the last 15 years, the Netherlands has experienced a tremendous jobs boom, mainly in services and female employment. This has often been related to changes in the Dutch institutional environment. Using a model which allows for direct utility of work, we find that institutional arrangements like the tax and pension system – often cited as a cause of the Dutch employment boom – contributed only marginally, if at all, to the rise in female labor supply. The increasing proportion of women with higher education and a high valuation of market work were the two main causes of rising female participation in the labor force. In addition, greater flexibility in work schedules (part-time work) has relaxed a demand constraint, allowing more women to participate in the labor market.

We find:

- that the increased number of women with higher education has contributed substantially to the rise in female labor force participation;
- that it was only in the 1990s that the "behavioral" component contributed as much to rising female labor force participation as the "structural" (educational) component;
- that there is no evidence that institutional specifics or the change in institutional arrangements (taxes and pensions) favored female labor force participation or that they provided strong incentives for part-time work;
- that the work orientation of Dutch women is stronger than that of German women but that there is no evidence of a substantial increase in work orientation during the 1990s;
- that there is no evidence that women were previously demand-constrained in the sense that they desired to work part-time but were prevented by a scarcity of part-time work.

JEL Classification: E24, J16, J21, J22, J24

Keywords: Employment, economics of gender, employment structure, time allocation and labor supply, demand for labor, human capital

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## 1. Introduction

In the 1990s the US experienced the longest boom in history. During the same period, however, the Netherlands created more additional jobs per head of the adult population (15-64 years) than the US. In contrast, German employment population rates stagnated (see Table 1.1). Employment gains in the Netherlands were almost entirely concentrated in service industries and they were mostly due to increased participation of women. In the late 1990s the Netherlands had almost as many jobs in services as the US and was far ahead of the German economy. However, in the mid 1970s, the Netherlands and Germany were still very similar with respect to service employment. Since 1980 the employment-population rate for services (i.e. service sector employment divided by population 15-64 years old) has risen by 17 percentage points in the Netherlands whereas the German rate has increased by only 5 percentage-points (columns 4-6 in Table 1.1). Similar trends can be observed for female employment (columns 7-9). Hence the Dutch job miracle seems strongly related to an expansion of service sector employment and a rise in female employment, the two areas in which the largest differences between the Netherlands and Germany occur.

**Table 1.1: Employment-population rates (civilian employment)**

	Overall			Services			Women		
	NL	US	G	NL	US	G	NL	US	G
	1	2	3	4	5	6	7	8	9
<b>1970</b>	57.4	61.9	67.8	31.5	37.9	28.5	na	46.0	47.8
<b>1980</b>	53.1	65.9	65.0	33.5	43.4	33.1	31.2*	55.1	50.6
<b>1990</b>	60.8	72.2	63.7	42.0	51.2	36.1	46.9	64.8	53.2
<b>1997</b>	68.2	73.9	63.4	50.3	54.2	38.2	57.8	67.6	55.1

Source: OECD Labor Force Statistics, CD-ROM. Employment Outlook various years. \* = 1979.

Employment-population rates = civilian employment / population aged 15-64.

Services includes Wholesale, Retail Trade, Restaurants and Hotels; Financing, Insurance, Real Estate and Business Services and Community, Social and Personal Services.

Why did Dutch women, previously known for their extremely low labor force participation rates, start working? Why do the Netherlands and Germany exhibit such differing employment trends? Why is part-time work so popular in the Netherlands? As a general rule, differences in labor force participation between two countries or differences within the same country over time are likely to be due to differing incentive

structures and/or differing preferences. Traditionally, economists focus on changes in the incentive structure and assume preferences (tastes) to be fixed over time or identical in cross-country studies (controlled for demographic characteristics). The main reason for the economists' focus on pecuniary incentives is that these are reflected in prices<sup>1</sup>, which are 'easily' observable. 'Using changes in unobserved preferences to explain observed change in behavior would make the analyst's job too easy' is the economists' claim. But hardly any economist believes that preferences are actually fixed; the assumption is simply a useful tool for investigating changes in behavior. After all, the working age population in 2001 does not comprise the same people as the working age population in 1970. It is not implausible that a young woman in 2001 faces a very different society and has different values from her grandmother in 1970.

In this paper, we offer a new labor supply theory (based on Lancaster (1971, 1991)) which takes the social embeddedness of individuals into account and distinguishes pecuniary from non-pecuniary rewards of work. According to this theory, work has two general characteristics (outcomes): conventional material rewards and non-material rewards, which are reflected in the societal valuation of work. We focus on that part of the direct utility of work which stems from its non-pecuniary rewards in society. Our theory does not rely on changes in tastes or inter-country differences in tastes (indifference curve) but instead assumes that these are identical or constant over time. What does vary is the valuation of non-pecuniary rewards of work, which is 'easily' observable in surveys.

From this model it is possible to identify three possible reasons for the increased participation of women in the Dutch economy:

- A. Material rewards of market work have increased;
- B. Non-material rewards of market work have increased;
- C. Labor demand constraints have been relaxed.

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<sup>1</sup> Prices are used as a synonym for economic variables, i.e. they include opportunity costs.

The major hypotheses put forward to explain the rise in female (part-time) employment and the Dutch-German (part-time) employment differential can be inserted into this framework as follows:

A Material rewards of market work have increased.

1. Dutch welfare state institutions (especially the pension system) are designed to encourage (part-time) work.
2. The Dutch tax system encourages female (part-time) labor force participation.
3. The rising level of educational attainment among women leads to a higher earnings potential for a larger proportion of women.

B Non-material rewards of market work have increased.

4. The rising level of educational attainment among women is leading to higher non-material rewards of market work for a larger proportion of women.
5. The valuation of the non-material rewards of work has changed.

C. Labor demand constraints have been relaxed.

6. Demand constraints on female labor supply caused by inflexible working-time schedules and/or general lack of labor demand have been relaxed.

In the following, we will start by analyzing the major changes in female employment in the Netherlands. Secondly, we will present a labor supply model which allows work to carry a direct utility. Thirdly, we will analyze changes in institutions, such as the pension system, the tax system and health care provision, to determine whether the incentives to participate in market work have increased for Dutch women over time. We will focus on variables which may directly affect labor supply and demand and we will not investigate employment protection laws, unemployment insurance etc. in any detail (see Schettkat 2001). We will briefly contrast Dutch and German institutional arrangements because, although Germany's 'broad institutional arrangements' differ only in detail from those in the Netherlands, Germany has not experienced a comparable jobs boom.

## **2. Employment Trends in the Netherlands**

In the Netherlands, male employment-population rates have risen over time but by much less than those of married women with children below the age of 6 (Table 2.1). In 1997, the employment-population rate of this group was 23 percentage-points higher than in 1988, an annual increase of 2.5! By comparison, the 12 percentage-point increase for women with children over the age of 18 looks comparatively marginal, even though this too is an annual increase of more than 1 percentage-point. In other words, within a decade there has been a revolution in the traditionally low female employment participation rates in the Netherlands. Since the increase took place over such a short period of time, changes in the incentive structure seem a more likely explanation than cultural factors. However, the composition of the female population with young children can change completely, even in the short period of 10 years.

For the years before 1988 we refer to labor force participation rates rather than employment-population rates because the latter are not available for that period (Table 2.2). The data suggest that the increase in participation by young mothers is actually a phenomenon of the late 1980s and 1990s, whereas participation by women with older children started to rise earlier.

**Table 2.1: Employment-population rates by family status [%]**

	Single	Member of a couple <sup>1</sup>				
		Without children	Youngest child 0-5 years	Youngest child 6-11 years	Youngest child 12-17 years	child > 18 years
<b>Men</b>						
<b>1988</b>	60	72	90	na	na	72
<b>1990</b>	61	73	92	91	87	75
<b>1997</b>	66	74	92	92	90	79
<b>Women</b>						
<b>1988</b>	50	50	22	na	na	25
<b>1990</b>	51	51	27	33	37	27
<b>1997</b>	52	55	45	43	47	37

Sources: CBS Enquete Beroepsbevolking

SCP, 2000, Emancipatiemonitor, p. 61 ([www.scp.nl/boeken/titels/2000-5/nl/acrobat/emancipatie.pdf](http://www.scp.nl/boeken/titels/2000-5/nl/acrobat/emancipatie.pdf))

<sup>1</sup> Under Dutch law, the term 'couple' also refers to unmarried people who cohabit.

**Table 2.2: Labor-force participation rates of married women [%]**

	No children	1 child			2 children			3 or more children		
		0-3 years	4-5 years	6 ≥ years	0-3 years	4-5 years	6 ≥ years	0-3 years	4-5 years	6 ≥ years
<b>1975</b>	28	14	23	19	12	23	24	11	18	19
<b>1977</b>	30	14	24	21	11	22	27	13	19	22
<b>1979</b>	31	17	29	23	15	26	28	14	22	24
<b>1981</b>	32	21	35	26	18	29	34	16	25	38

Source: CBS Arbeidskrachtentelling, 1975, 1977, 1979, 1981

The high proportion of part-time work in the Dutch economy is legendary ('the only part-time economy in the world', Richard Freeman 1998) and, as everywhere, it is mainly women who work part-time. Nevertheless, the proportion of men amongst part-timers is relatively high in the Netherlands because many young men work part-time while studying. Furthermore, although many Dutch women work part-time, the majority working-time category is 25 to 34 hours. Even so, 14% of women work between 12 and 19 hours and 17% fewer than 12 hours (see Table 2.3). The female employment boom is, however, not a marginal part-time phenomenon (occurring among those working fewer than 12 hours) because the biggest increase has occurred in the 25-34 hours



category. This is now seen as almost ‘normal’ employment in the Netherlands, where part-timers generally enjoy the same rights as full-time workers. In the following, we will focus exclusively on women, since it is in their employment that the major changes have occurred.

**Table 2.3: Employment-population rates by working time and gender [%]**

years	shares in total employment				employment- population rates			
	hours per week				hours per week			
	<b>Men</b>							
	<15	15-24	25-34	>= 35	<15	15-24	25-34	>=35
1975 <sup>1</sup>	0	1	3	96	0	1	2	73
1977	1	1	3	95	1	1	2	72
1979	1	1	3	95	1	1	2	71
1981	1	1	3	94	1	1	2	67
	<12	12-19	20-34	>=35	<12	12-19	20-34	>=35
1990	6	1	7	86	4	1	5	60
1995	6	1	8	85	4	1	6	61
1999	5	3	8	84	4	2	6	64
	<b>Women</b>							
	<15	15-24	25-34	>=35	<15	15-24	25-34	>=35
1975 <sup>1</sup>	8	15	12	65	2	4	3	17
1977	13	20	10	57	4	6	3	17
1979	16	19	13	53	5	6	4	17
1981	16	22	9	53	5	7	3	17
	<12	12-19	20-34	>=35	<12	12-19	20-34	>=35
1990	18	13	28	41	7	5	11	16
1995	18	14	34	34	8	6	15	15
1999	18	14	35	33	9	7	18	17

Source: CBS Arbeidskrachtentelling (1975, 1977, 1979, 1981) and CBS Enquete Beroepsbevolking

It is important to note that, although the proportion of women working full-time ( $\geq 35$  hours) declined by more than 25 percentage-points between the mid-1970s and the end of the 1990s, this was caused by a rise in female part-time employment rather than a decline in full-time employment. This is clearly illustrated by the constant female employment-population rate for full-time work (Table 2.3, right panel).

It is well-known that labor force participation rises with educational attainment (Coleman/ Pencavel 1993). There are two main reasons for this: (1) potential earnings

may increase in response to the possession of greater human capital and (2) possession of a higher education increases the desire to use the skills acquired. Table 2.4 shows a strong positive correlation between education and employment-population rates. Most educational groups showed declining employment-population rates in the 1980s but these rose to at least the pre-1980 level in the 1990s. It is important to note that the overall growth in the female employment-population rate of more than 15% between 1977 and 1998 (bottom line in Table 2.4) is higher than any of the education-specific rates. This is only possible if the composition of the female population changed substantially over that period, an issue we analyze in more detail in Table 2.6.

**Table 2.4: Employment-population rates by educational attainment, women [%]**

Years	Total	1st level  BO	2nd level				3rd level	
			1st step		2nd step		1st step	2nd step
			General MAVO	Voca- tional VBO	General HAVO/ VWO	Voca- tional MBO	HBO	WO
<b>Employment-population rates</b>								
1977	33.9	21.6	42.2	34.9	49.4	53.6	61.5	71.7
1979	35.5	19.9	42.8	33.5	54.1	50.8	61.3	75.0
1981	39.5	22.9	40.9	34.0	57.0	52.4	66.9	79.4
1991	40.5	17.4	29.6	32.8	36.0	55.4	64.0	74.1
1998	48.9	21.2	35.3	34.1	42.3	61.1	70.2	81.5
<b>Differences in employment-population rates</b>								
81-77	5.59	1.34	-1.35	-0.88	7.60	-1.22	5.39	7.73
91-81	1.08	-5.47	-11.27	-1.19	-21.03	2.98	-2.95	-5.30
98-91	8.40	3.79	5.73	1.29	6.26	5.72	6.21	7.38
98-77	15.06	-0.35	-6.89	-0.78	-7.17	7.48	8.65	9.81

Source: computations are based on CBS Arbeidskrachtentelling (1977, 1979, 1981) and CBS Enquete Beroepsbevolking

Distinguishing the female education cells further by the age of the youngest child (Table 2.5) reveals that the difference in employment-population rates between graduate women with children below the age of 6 and women in the same position who possess no more than some junior general secondary education (MAVO) is an astonishing 54 percentage-points. It follows therefore that the changing structure of the female

population by education (i.e. the rising proportion of women with higher education) may have contributed substantially to the rising female employment-population rate.

**Table 2.5: Employment-population rates for women with children below the age of 18 by level of education [%]**

Age of youngest child	junior general secondary education (MAVO/LBO)	senior general secondary education (HAVO)	Education pre-university (VWO)	higher professional (HBO)	university
	9-10 years	10 years	11-12 years	15-16 years	>=16 years
<b>1992</b>					
0 - 5	13	20	33	52	66
6 - 11	23	27	41	59	69
12 - 17	28	36	48	59	72
<b>1997</b>					
0 - 5	17	30	48	65	74
6 - 11	23	33	46	63	71
12 - 17	29	38	55	65	82

Source: SCP, 2000, Emancipatiemonitor 2000 ([www.scp.nl/boeken/titels/2000-5/nl/acrobat/emancipatie.pdf](http://www.scp.nl/boeken/titels/2000-5/nl/acrobat/emancipatie.pdf))

An important feature of the trends in employment-population rates displayed in Table 2.4 is the fact that, although almost all groups show a decline in the education-specific employment-population rates between 1981 and 1991, the overall rate nevertheless increased over that period. The structural component – i.e. the population shift towards the groups with higher education and higher employment-population rates - must therefore have overcompensated for the negative behavioral trends. We analyze the structural and behavioral effects in Table 2.6 using the simple relation:

$$\frac{E_{\bullet}^t}{pop_{\bullet}^t} - \frac{E_{\bullet}^{t-1}}{pop_{\bullet}^{t-1}} = \sum_i \Delta \left( \frac{E_i}{pop_i} \right) * a_i^{t-1} + \sum_i \Delta a_i * \frac{E_i^{t-1}}{pop_i^{t-1}} + \sum_i \left( \frac{E_i}{pop_i} \right) * \Delta a_i$$

total effect = behavioral + structural + interaction

where: E= employment, pop=population of working age (15-64 years), a=share of educational groups in the total population ( $pop_i/pop_{\bullet}$ ), i=index for the educational group.

In words: the difference in the female employment-population rates between two years is the sum of the weighted changes in the education-specific employment-population rates (behavioral effect) plus the sum of the changes in the weights of the educational groups multiplied by the initial employment-population rate (structural effect) plus an interaction term, which is the sum of the changes in employment-population rates times the changes in the shares. The results of this exercise are summarized in Table 26. The slight rise in the female employment-population rate in the 1980s proves to have been entirely due to an increase in the proportion of women with higher education, more than making up for the decline in employment-population rates within each of the educational categories. It is only in the 1990s that we observe the structural and behavioral components contributing to the rise in the overall female employment-population rate. The overall period from the mid-1970s to the late 1990s shows a neutral behavioral component and a high structural component amounting to almost 85% of the total increase in the female employment-population rate.

**Table 2.6: Decomposition of change in employment-population rates for women, by educational attainment**

Period	Overall Change ( $e^t/\text{pop}^t - e^{t-1}/\text{pop}^{t-1}$ )	Components		
		Behavioral sum of ( $e^t/\text{pop}^t - e^{t-1}/\text{pop}^{t-1}$ ) * $a^t$ )	Structural sum of ( $e^{t-1}/\text{pop}^{t-1}$ ) * ( $a^t - a^{t-1}$ )	Interaction sum of ( $e^t/\text{pop}^t$ ) - ( $e^{t-1}/\text{pop}^{t-1}$ ) * ( $a^t - a^{t-1}$ )
<b>absolute differences (percentage points)</b>				
<b>81-77</b>	5.6	0.7	5.1	-0.2
<b>91-81</b>	1.1	-3.7	4.9	-0.1
<b>98-91</b>	8.4	4.7	3.5	0.3
<b>98-77</b>	15.1	-0.4	12.5	2.9
<b>as % of overall change</b>				
<b>81-77</b>	100.0	12.4	90.7	-3.1
<b>91-81</b>	100.0	-342.9	455.0	-12.1
<b>98-91</b>	100.0	55.6	41.1	3.3
<b>98-77</b>	100.0	-2.6	83.3	19.3

Source: computations are based on official statistics from the Dutch Central Bureau of Statistics (CBS)

To summarize this brief sketch of the major employment trends: education-specific female employment-population rates declined in the 1980s but rose in the 1990s. The continuous rise in the overall female employment-population rate is thus related to substantial shifts in the female population towards higher education. Substantial increases in employment-population rates occurred among married women at all levels of educational attainment. Whereas in the 1980s the positive structural component more than compensated for the negative behavioral component (see Table 2.6), in the 1990s both components were positive and increased the female employment-population by roughly similar amounts. Hence, a major explanation for the rise in the employment-population rates of Dutch women is the 'structural' component (i.e. the increasing proportion of women with higher education, who are generally more engaged in the labor market). However, during the 1980s, substantial changes occurred within the skill and demographic cells, leaving room for changes in the incentive structure and/or in utility functions to have their effect. Institutional explanations must be sought in those institutions influencing labor supply of and/or the demand for female labor, and more especially the labor of married women. Since it is hard to think of any labor demand that is specific to married women, it seems more plausible that the exceptional rise in

female employment was related either to supply variables or to a flexibilization of working-time schedules which made it easier for women to combine market work and household production. Women may previously have been demand-constrained in the sense that part-time jobs were simply not available, but it may also be the case that the rising demand for labor drew women into the labor market and that there had been a general labor demand constraint in earlier periods. We analyze these issues below.

### 3. A Labor Supply Model allowing for Direct Utility of Work

Except in the case of non-participation,<sup>2</sup> economic theory is undetermined with respect to the labor supply effect of wage increases. Substitution and income effects work in different directions and the net effect needs to be analyzed empirically (Rothschild, 1980). Past research found a small wage elasticity for the labor supply of men but a larger one for female labor supply (Killingsworth, 1983). One common assumption in labor supply analysis is that work - whether in the market or in the household - does not provide direct utility and that income is thus the only motivation for work (Scitovsky, 1976). In his new consumer theory, however, Lancaster (Lancaster, 1971, 1991) emphasizes that goods have various characteristics and that consumers are not interested in the possession of the good as such, but rather in the characteristics that the good possesses. For example, the consumer is not interested in a car as such, but rather in its characteristics, e.g. the mobility it provides, the speed, the comfort, the prestige. A sedan and a roadster are both cars and may sell at the same price but they differ substantially in comfort, speed and prestige. Following Lancaster (Lancaster, 1971, 1991), we argue by analogy that formal work and self-provision have different characteristics: market work may offer not only a source of income, but also direct utility in the form of fun, social contacts or prestige (Scitovsky, 1976). The enjoyment of doing the job and the social acceptance and prestige associated with it may in fact be the *only* rewards people get when they 'work for nothing' as volunteers (Freeman, 1997).

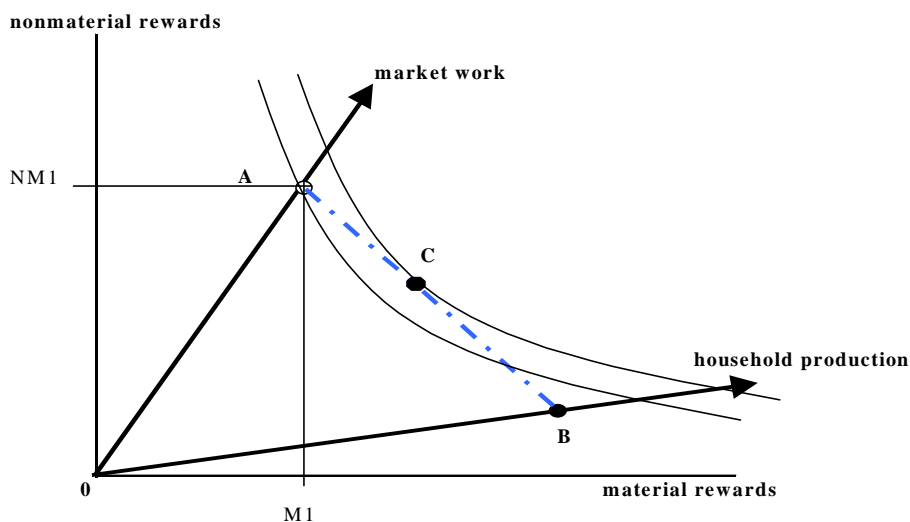
We illustrate the model in Figure 3.1, which displays the choice between market work and household production. For the sake of simplicity, we assume that market work and household production have two characteristics: non-material rewards (prestige, acceptance, enjoyment) and material rewards (the actual products). We prefer to use the terms 'non-material' and 'material' rather than 'non-pecuniary' and 'pecuniary' because we also include household production. The material rewards of market work consist of the products that the market income can buy. This obviously depends on the gross wage (including non-wage benefits), on income taxes and on the prices of market products.

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<sup>2</sup> Non-participation is a corner solution of the individual labor supply decision taken when the market wage is lower than the reservation wage. In this situation, an increase in the market wage can only increase labor supply.

The material rewards of household production consist of the output in household production valued at the market price. Non-material-material space indifference curves can be mapped as shown in Figure 3.1. Non-material rewards of market work and household production are displayed on the vertical and material rewards on the horizontal. Market work provides non-material rewards of NM1 and material rewards of M1 where all time is spent in market work (point A). Spending all time in household production will produce a combination of material and non-material rewards represented by point B. The line connecting points A and B may be regarded as a budget constraint, representing the position that can be achieved through combinations of market work and household production. Optimal situations are achieved where the budget constraint is tangential to the convex indifference curve. Note that we do not assume that tastes (indifference curves) change over time but that non-material and/or material rewards from work change. This may lead to a combination of market work and household production as displayed in point C in Figure 3.1 but corner solutions are also possible.<sup>3</sup>

**Figure 3.1: The labor supply decision in material-non-material space**



<sup>3</sup> Total income (the distance 0-A, 0-B or 0-C) consists of a weighted average of material and non-material rewards:  $OA = (OM^2 + ONM^2)^{1/2}$



High material and non-material rewards from household production would flatten the budget constraint and tend to favor household production. By contrast, high material and non-material rewards from market work may result in a very steep, vertical, and even positively sloping budget constraint, producing a corner solution of full-time employment. For example, a high individual wage will shift point A to the right (higher income from market work) and thus makes the budget constraint (A-B) steeper (diagram A in Figure 3.2). A person with a high income will tend to work full-time in market work and will substitute household production by purchased services. If the non-material rewards of market work increase - for example, due to a 'herd effect' or a network externality - non-participation in labor markets may come to seem very odd and 'every' woman will eventually be working (diagram B in Figure 3.2). If, in addition, higher demand for market products creates economies of scale, the material rewards of household production will decline, thereby making the budget constraint even steeper and moving the economy in the direction of a corner solution (like A' in Figure 3.2).

Within this framework, it is possible to identify three possible reasons for the increase in female participation in the Dutch economy:

- A. Material rewards of market work have increased.
- B. Non-material rewards of market work have increased.
- C. Labor demand constraints have been relaxed.

**A. Material rewards of market work have increased.**

The income distribution in the Netherlands, as measured by wage deciles (OECD 1998), is narrow by international standards and changed little during the 1980s and 1990s. Increases in material rewards for women participating in market work may have been connected primarily to rising educational attainment and therefore higher potential earnings for a growing proportion of Dutch women (see section 2). Since work decisions are based on net rather than gross wages, changes in the tax system or social security contributions may have increased the incentive to participate in market work (as illustrated in Figure 3.2, diagram A). We investigate changes in the institutional framework in section 4.

Figure 3.2: The effects of rising material and nonmaterial rewards on labor supply

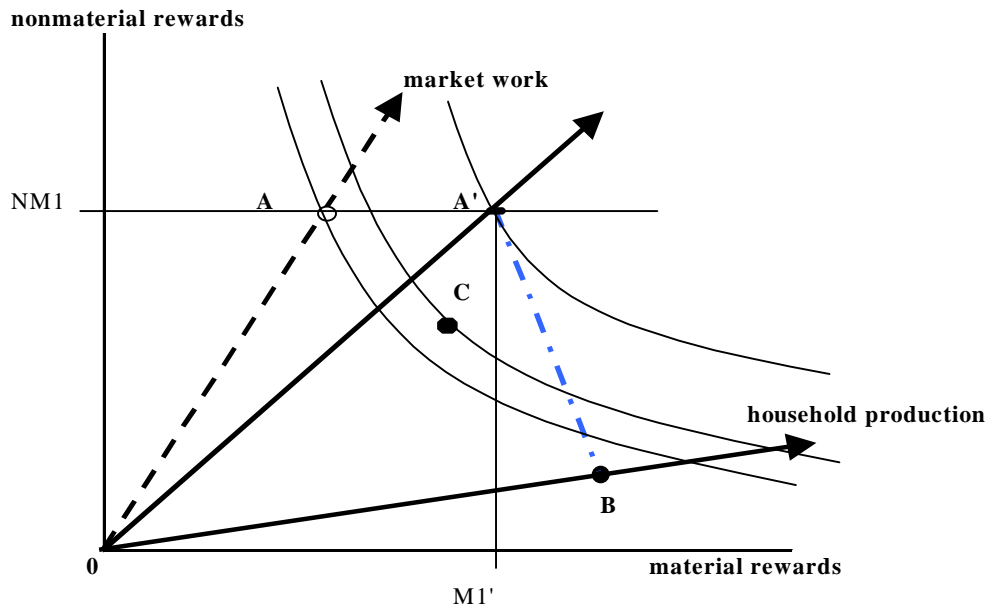


Diagram A: higher material rewards of market work

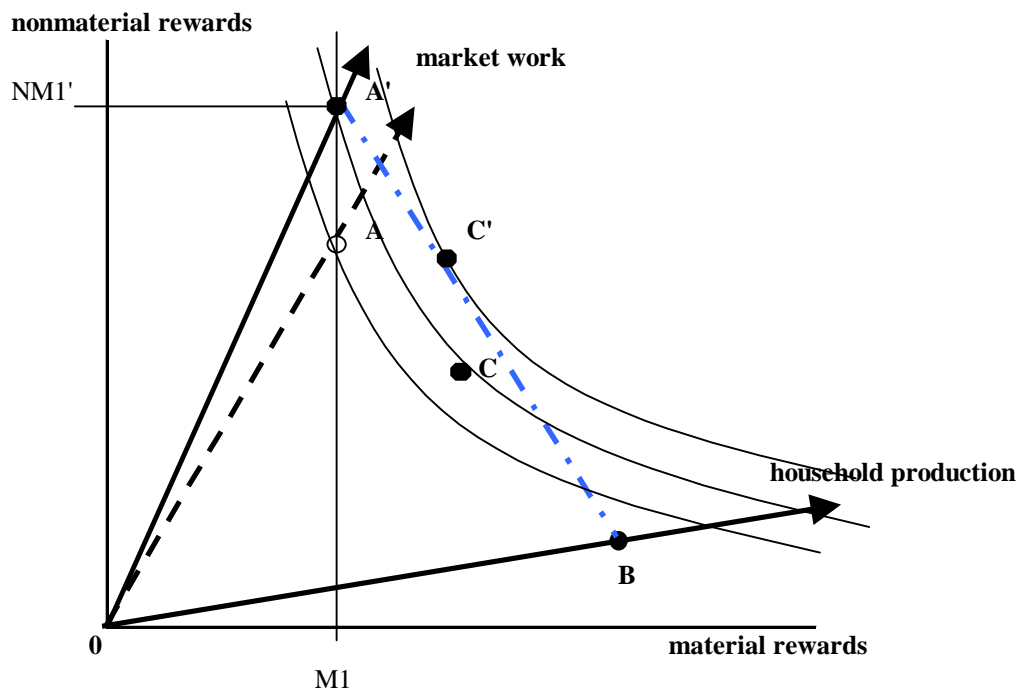


Diagram A: higher nonmaterial rewards of market work

**B. Non-material rewards of market work have increased.**

One explanation of low labor force participation by Dutch women in the 1970s and earlier (Visser, 2000) is based on the strong influence of religion and the high value placed by Dutch women on caring for their own households and children. In the Netherlands, as everywhere in Western Europe, religious values have lost much of their importance. This may have reduced the non-material rewards of household production. At the same time the non-material rewards of market work may have increased. Both changes will result in a steeper budget constraint in the non-material-material space, making participation in market work more attractive (as illustrated in Figure 3.2, diagram B).

**C. Labor demand constraints have been relaxed.**

As is well known, the Dutch economy is a 'part-time' economy (Freeman, 1998) and part-time work is mainly female work. It is clear that nowadays many Dutch women do not choose the corner solution of 'full-time' work, but opt for a combination of market work and household production. It is possible that they would in the past have opted for a combination of market work and household production as illustrated by point C in Figure 3.1, but that the part-time jobs allowing this combination were then not on offer. This implies that Dutch women were demand-constrained and that it was against their real wishes that they either refrained from market work or worked full-time. 'Demand constraint' is compatible with increases in the material and non-material rewards of market work but also with an increase in part-time work, as illustrated in Figure 3.1. If firms offer only full-time jobs, the potential labor supply available for part-time jobs may not be tapped. Women preferring part-time work may opt for non-participation rather than work full-time. A flexibilization of labor demand with respect to working hours may therefore create a large new supply.

In the following sections we investigate these three main hypotheses while focusing on changes in Dutch welfare-state institutions with respect to changes in material rewards.

#### **4. Between Beveridge and Bismarck: The Dutch Welfare State**

In general, the Netherlands has a comprehensive system of social insurance somewhere between Beveridge and Bismarck. In a Bismarck-type system, like that in Germany, eligibility for social security provision is mainly related to contributions to the social insurance system; this can be described as the insurance approach to social security provision. The other basic approach is defined by rights to social security provision existing independently of any specific contribution. That is a tax-based system of social security as outlined by Beveridge (Beveridge, 1944) and is essentially what exists in the UK. Both geographically and with respect to social security, the Netherlands is situated somewhere between the UK and Germany; its social security system lies between Bismarck and Beveridge, i.e. it has tax-based components available to all and insurance-based components which depend on specific contributions to the system. For example, every Dutch citizen receives a basic pension, whereas in Germany a pension is only available to those who have paid into pension funds. These differences may create diverging incentives for labor supply.

This section discusses this possibility via a brief overview of the tax and social security system in the Netherlands, together with some references to the German system.

##### **4. 1. Taxes**

Tax systems have long been thought to have a major influence on female labor supply (e.g. Gustafsson, 1996 and Schettkat, 1989) and indeed national tax systems treat the income of married couples in very differing ways. In Germany, for example, the income of married couples is taxed jointly by the so-called 'splitting rate'. Roughly speaking, the income of a couple is taxed at only half the rate applied to that of a single person (see below for more details). Thus, the splitting system is a generous form of taxation for married couples compared to other joint taxation systems, which may tax the joint income of couples at roughly the same rate as that of singles. An example is the US tax system. (This is what creates the so-called 'marriage penalty' in the US). In the Netherlands, individual taxation has been applied since 1973. In other words, individual incomes are taxed almost independently of family status, although some small family

components did survive until the last tax reform (effective from January 2001).

A major reform of the Dutch tax system became effective in 1990. The former nine tax brackets were reduced to three (see overview of the tax schemes in Figure 4.1) and the tax-free base was raised from NLG 4,568 to NLG 8,716. Simultaneously, the maximum marginal rate of income tax was reduced from 72% to 60%. Another major change was the integration of national insurance contributions (for old age, dependents', disability, and special health care benefits) into the first tax bracket. The rate for the first tax bracket was 38.4% and applied to incomes up to NLG 43,267. Of this, 25% consisted of national insurance contributions and only 13% of actual income tax. In the second tax bracket, the proportion of tax increased and in the third bracket tax accounted for 100% of the amount levied.

A most important factor in low-income labor supply decisions is the fact that, with the inclusion of social security contributions in the tax system, incomes of up to NLG 8,716 (the tax-free base in 2000) were exempted not only from tax but also from national insurance contributions.<sup>4</sup> This differs from the situation prior to 1990, when employees had to pay social security contributions from the moment they started earning. The change in the system of tax and social security may therefore have favored the acceptance of short-hours, low-income jobs.

Indeed, from 1990 to 1998 the number of employees paying no taxes because their incomes remained within the tax-free base increased from 900,000 to 1.25 million (a 25% increase compared to an increase of 9% for all jobs). Of these 1.25 million people, 80% earned less than NLG 5,000 per year. Probably most of them were students, whose labor force participation increased substantially in response to declining government grants. Of the 2.4 million people who earned less than NLG 15,000 a year (over the 1990-1998 period), 40% were under the age of 24. A tax-free income of NLG 8,716 a year produces a net income of about NLG 170 a week, which is equivalent to roughly NLG 14.00 an hour, assuming a 12-hour working week. The minimum wage for adults (i.e. people over the age of 23) is NLG 2,544.10 a month for full-timers, which is about

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<sup>4</sup> Although employers have to pay contributions on every guilder an employee receives from them.

NLG 14.68 an hour (on the basis of a 40-hour working week; source: website of the Ministry of Social Affairs and Employment: <http://www.minszw.nl/>). The average gross hourly wage for women was NLG 19 in 1990 and NLG 24 in 1997. For men, the equivalent figures were NLG 26 and NLG 32. Thus, the incentive of a totally tax-free income is limited to those earning very low wages and/or working very short hours.

Employment growth in the marginal working hours categories was less strong than in the 20 to 34-hour category (where the tax rates are positive) but the 1990 rise in the tax-free base reduced the tax burden on all income groups because it reduced taxable income. The tax-free base is subtracted from the bottom and makes the tax advantage dependent on the tax rate applied. For example, for incomes taxed at a rate of 60% (the top bracket) the net advantage of the tax-free base is NLG 5,230 compared to only NLG 3,050 for incomes taxed at a rate of 35% (see Figure 4.1, top diagram, for an overview of Dutch tax rates. (Source:CPB 1995).

Since the strongest increase in participation was observed among married<sup>5</sup> women, it is important to investigate whether the rise in the tax-free base favored labor supply from this group. Until 2001 - the date of the latest change in the system - one of the last surviving family components in the Dutch tax system was that the non-working partner in a single-earner couple could transfer his/her tax-free base to the working partner. There are different ways to view the effects of tax systems on female labor supply. In the so-called 'male-chauvinist' model, (Killingsworth, 1983), the wife is seen as the second earner and the tax-free base is shifted to the husband, with the wife's income being taxed from the beginning at a rate of 38.4%. In the Netherlands, this would discourage female labor supply because the net wage of the wife would be low. If, on the other hand, the wife keeps her tax-free base but only works marginal hours and remains within the 38.4% bracket, her net wage will be higher than under the 'male-chauvinist' model but the husband's tax burden will increase. Since the tax-free base reduces the taxable income from the bottom, it will always be beneficial for couples to shift the tax-free base to the partner with the highest income, who is most likely to fall within the second or third tax bracket. In most cases, therefore, the wife shifted her tax-

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<sup>5</sup> We use 'married' as a synonym for couples cohabiting, whether legally married or not.

free base to her partner, thereby achieving a reduction in the couple's overall tax burden. In 1999, according to the Ministry of Finance, about 250,000 people (out of a total of 1.25 million people - married, single and/or students - working less than two days a week) transferred their tax-free bases to their partners. (Source: chapter 8 in 'Belastingen in de 21ste eeuw', <http://www.minfin.nl/nl/Fiscaalbeleid/b21/index.htm>). The small size of this number can be taken as another indication that married women in employment were at that time largely working longer hours than the very marginal ones discussed above.

To summarize, the Dutch tax reform of 1990 favored low-income labor supply but cannot in itself explain the impressive rise in labor force participation by married women, since the tax-free base could still be transferred to the husband (which would be economically advantageous in most cases). Furthermore, the largest increase in female employment occurred in the 20 to 34-hours category, where tax rates were positive. However, the 1990 tax reform did reduce the tax burden and this may have stimulated labor supply in general.

In Germany, social security contributions are shared between employers and employees (each paying about 20% of the gross income for compulsory pension, unemployment and health insurance). Social security contributions reduce the tax base in Germany, which is levied at 20% for a tax bracket between DM 5,600 and DM 8,150, and between 19% and 53% (continuously rising) for a tax bracket between DM 8,150 and DM 120,000.<sup>6</sup> For married couples there is an income-splitting system with double the tax brackets applied to singles. In other words, married couples are taxed at roughly half the rate applied to a single person with the same income. According to OECD estimates (OECD 1995, jobs study), a single-earner married couple pays less tax than a dual-earner married couple with the same income. (The difference can be up to 8% in the case of low-income couples in which both partners have the same gross income). This effect is due to the inclusion of spouses without an income in the social security of the partner. Thus, the German tax contributions reduce incentives for married women to

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<sup>6</sup> Effective from 2001 the maximum rate in German is 48.5% (envisaged to be 42% in 2005) and the lowest rate is 23.9% (envisaged to be 15% in 2005) with a tax-free base of 13,000DM.

work and discourage short-hours employment. The system provides a big subsidy for single-earner couples.<sup>7</sup>

However, until 1999 people on very low incomes of below DM 624 per month were exempted from social security contributions.  $624 \times 12 = \text{DM } 7488$ , which is roughly equivalent to NLG 8,236 : almost identical to the tax-free base in the Netherlands.

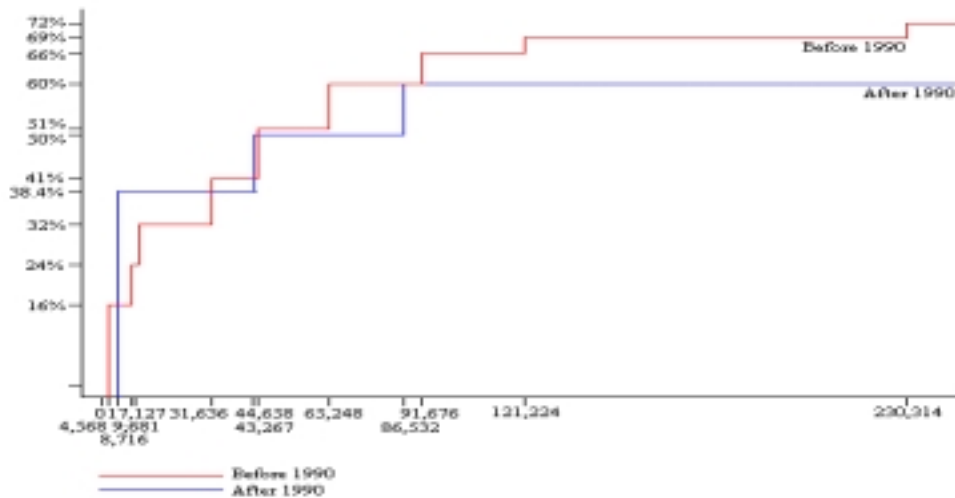
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<sup>7</sup> However, until 1999 people on very low incomes of below DM 624 per month were exempted from social security contributions.  $624 \times 12 = \text{DM } 7488$ , which is roughly equivalent to NLG 8,236 : almost identical to the tax-free base in the Netherlands.



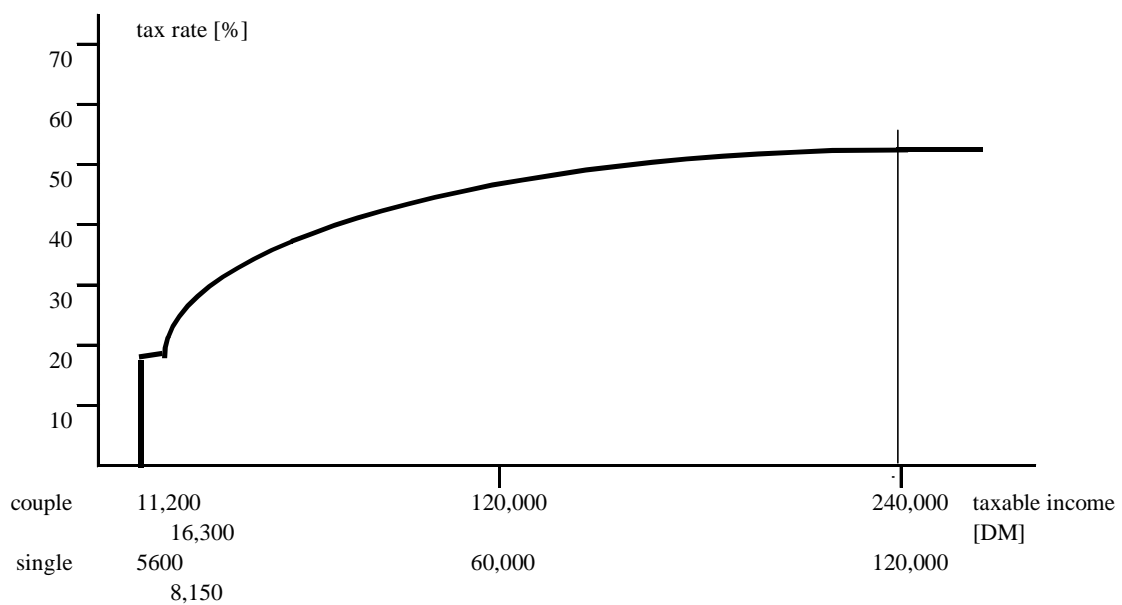
**Figure 4.1: The Dutch and the German Tax Systems**

**A: Dutch tax rates**



Sources : CPB, 1995, Replacement Rates: a Transatlantic View. Working Paper no. 80  
 Telephone information from the section of the Tax Department that advises small and medium-sized businesses (Belastingdienst Ondernemingen)

**B: German tax rates**



Sources : CPB, 1995, Replacement Rates: a Transatlantic View. Working Paper no. 80

## 4.2 Pensions

The Dutch pension system is bipartite. One part is independent of any contributions (national insurance, AOW), while the other depends on individual contributions (employee insurance). Every Dutch citizen receives an old-age pension from the age of 65, independent of any contributions or taxes paid. Citizenship is the sole criterion of eligibility for this basic 'AOW' pension. In 2001, AOW benefits amount to NLG 1,923 a month for a single person and about NLG 2,652 for a couple. This basic pension is topped up by a pension derived from contributions.

The fact that any part-time work counts disproportionately towards the length of time included in the Dutch pension formula is an incentive to participate at least marginally in the labor market. In an extreme case, a person who had worked 42 years part-time and only the last 3 years full-time would receive the same pension as someone who had worked full-time for the whole 45 years ('eindloonregeling'). In recent years, however, some pension funds have changed to the 'middelloonregeling' or average income principle. Under this scheme, the pension is 70% of the mean life-time wage. Normally, salary, holiday money and the so-called '13<sup>th</sup> month' (a bonus received at the end of each year) count towards pension, though some pension funds have set an upper limit on this.

Germans receive a pension only if they have contributed to a pension fund, i.e. if they have been employed for a minimum period.<sup>8</sup> The level of the pension is calculated on the basis of the years for which contributions have been paid and the average relative income position of the individual in every year worked. Thus, the final pension reflects the average income position of the individual over the whole working life. Pensions may be lower than the social minimum ('Sozialhilfe'), in which case they are topped up to that level. Under the German system, work producing very low pensions does not pay off and periods of part-time work reduce the relative income position and therefore the pension compared to continuous full-time work.

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<sup>8</sup> However, there is a minimum social income ('Sozialhilfe') that everybody can receive if in need.

**Summary of the Dutch and German pension formulas:**

$\text{Pension}_{\text{Germany}} = f(\text{years contributing, income position in every year})$

$\text{Pension}_{\text{Netherlands}} = \text{citizen pension} + f(\text{years contributing, last income})$

Does the Dutch pension system create incentives to work part-time?

The answer to this question depends on many assumptions. If pension prospects are an important factor in labor supply decisions, the answer is clearly yes (compared to the German system), because periods of part-time work do not reduce the final pension level below what it would have been if the same period had been worked full-time. Furthermore, any work (however few hours) raises the pension above the general old age pension, or AOW, which every Dutch citizen receives from the age of 65<sup>9</sup>. Thus, if the ‘eindloonregeling’ is applied, it is favorable to work at least part-time. In the German system (as with the ‘middelloonregeling’), periods of part-time work will reduce the pension (compared to continuous full-time work) and short periods of work producing pensions below the social minimum income level will not improve the old-age income situation at all. If pension prospects are a major motivational factor in labor supply decisions, differences in the pension system can plausibly explain the Dutch-German difference in part-time working. The question then, however, is why the boom in part-time employment among Dutch women occurred not during the 1970s, but in the 1990s, when some pension funds were already shifting to the ‘middelloonregeling’.

The pension system does not help to explain the increase in participation or in part-time work. In the Netherlands, work (of however few hours) always improves the individual's pension. Since additional employment in the Netherlands is female employment, it means that women who would not previously have had a pension above the universal AOW level are gaining additional pension rights. It is not the case that

women who were working full-time have decided to switch to part-time because it does not affect their final pension rights. So, plausible as the difference in pension systems may be in the cross-country analysis, it does not help to explain the increase in the female labor supply, whether part-time or full-time. This remains a conundrum.

### **4. 3. Health Insurance**

In the Netherlands, as in Germany, social security contributions are paid partly by employees and partly by employers. With some minor recent exceptions (care insurance, work-accident insurance, and in the future the capital-funded part of the pension), most contributions are split 50-50 between the two sides. In the Netherlands, this principle still applies but some changes have occurred. In 1994<sup>10</sup>, social insurance guaranteeing substitute income in case of illness was 'privatized', obliging employers to pay workers 70% of the last wage during the first six weeks of any period of prolonged sick leave. In 1996, this period was extended to 12 months and many collective labor agreements have since raised sickness pay to 100%.

Until 1990 every guilder earned was subject to social security contributions. Since wives were covered by their husbands' insurance, their own income incurred contributions but did not improve their insurance situation. This is similar to the German system, where wives are covered by their husbands' insurance and additional labor supply does not improve the health insurance situation. Thus, health insurance contributions can be regarded as a tax.

### **4.4 Summary**

Differences in the tax and pension systems may explain differences in part-time work between the Netherlands and Germany. However, these differences cannot readily be

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<sup>9</sup> Up to 1985, married women did not receive their own general old age pensions. Their pensions were included in their husbands'.

<sup>10</sup> With the adoption of the Continued Payment of Salary (Sickness) Act (Wet Uitbreiding Loondoorbetalingsverplichting bij Ziekte, Wulbz).

used to explain the increase in part-time work in the Netherlands. The Dutch pension system provided more incentive for part-time work before the 1990s. The tax system introduced in 1990 provided an incentive for part-time work with very short hours but the massive increase in employment occurred in the 20 to 34-hours category. We suggest, therefore, that other influences must have driven the trend in female employment in the Netherlands and that the institutional explanations for Dutch-German part-time employment differences likewise fail.

## 5. Work-Orientation

To investigate whether the non-material rewards of market work (work orientation) have changed in the Netherlands and whether they differ in the Netherlands and Germany, we use data from the International Social Survey Program (ISSP), which provides internationally comparable data on work orientation. Respondents to the ISSP questionnaire are required, among other things, to evaluate the statement 'a job is just a way to earn money' by selecting one of five possible answers ranging from 'strongly agree' to 'strongly disagree'. Strong disagreement with this statement may be taken to indicate a strong positive work orientation. Table 5.1 summarizes the responses from women of working age (15-65 years) in 1989 and 1997. The share of both married and unmarried women who 'strongly disagreed' or 'disagreed' with this statement was around 68% and remained quite stable during the 1990s. This was similar to the response of Dutch men (not shown). In other words, Dutch women seem to be as strongly work-oriented as Dutch men (although their preference within that work orientation may be for part-time work).

A comparison of Dutch and German figures in this respect (also displayed in Table 5.1) shows a remarkable difference of 15 to 23 percentage-points at the end of the 1980s, but this difference declines (and indeed even disappears in the case of unmarried women) by the end of the 1990s. For married women a difference of about 10 percentage-points remains, which appears at both extremes of the work-orientation scale. In terms of the model presented in section 3, the stronger work-orientation of Dutch women compared to their West-German counterparts would result in a steeper budget constraint and therefore in a higher probability of participating in market work.

Unfortunately we are not able to investigate the 1980s in a similar way.

**Table 5.1: Work orientation of women of working age in the Netherlands and in West Germany (response to statement 'a job is just a way to earn money') [%]**

	Netherlands		West Germany	
	Married	Not Married	Married	Not Married
	<b>1989</b>			
<b>strongly agree,</b>	20.6	18.9	33.6	37.7
<b>neither agree nor disagree</b>	13.4	12.2	15.7	16.3
<b>, strongly disagree</b>	66.1	68.9	50.7	46.0
	<b>1997</b>			
<b>strongly agree,</b>	19.6	19.6	29.5	22.0
<b>neither agree nor disagree</b>	12.4	12.1	10.9	7.5
<b>strongly disagree</b>	68.0	68.3	59.6	70.5
	<b>changes 1997-1989</b>			
<b>strongly agree,</b>	-1.0	+0.7	-4.1	-15.7
<b>neither agree nor disagree</b>	-1.0	-0.1	-4.8	-8.8
<b>strongly disagree</b>	+2.0	-0.6	+8.9	+24.5

Source: computations are based on the ISSP data set

Women's work orientation - as measured in the Netherlands in 1989 and 1997 using a dummy variable constructed from responses to the statement 'a job is just a way to earn money', with 1 for 'disagree and strongly disagree' and 0 otherwise - is strongly dependent on years of education. This result is in line with the tremendous importance of the structural component demonstrated in section 3. There is, of course, a causality problem here: we do not know whether work orientation is strong because women have invested in their education, as the standard interpretation of human capital theory suggests, or whether the causation runs from education to work orientation. A similar analysis for Germany, however, shows that years of education do not significantly affect work orientation there, a result consistent with a finding by Freeman and Schettkat (2001) that the employment-population rates of German women are comparatively low across all educational levels.

How does work orientation affect actual participation in employment? The logistic regressions displayed in Table 5.2 try to shed some light on this question. Because of the high correlation between work orientation and years of schooling, we display two models for every year. Model I uses work orientation as an independent variable, while in model II we substitute work orientation by years of schooling. In order to eliminate

the impact of participation in education on employment, we restrict the analysis to women aged between 25 and 64.

**Table 5.2: Logistic regressions of employment status on work orientation and years of schooling, women aged between 25 and 64.**

Independent variables	Netherlands				West Germany			
	1989		1997		1989		1997	
	I	II	I	II	I	II	I	II
<b>Work orientation</b>	.49*		.80**		.39*		.19	
<b>Years of schooling</b>		.05*		0.01		-.04		-.01
<b>Age</b>	-.06**	-.06**	-.05**	-.05**	-.05**	-.06**	-.04**	-.05**
<b>Marital status</b>	-1.4**	-1.3**	-.21	-.26	-.79**	-.78**	-.72**	-.63**
<b>N</b>	634	585	831	875	521	534	412	442
<b>Chi2</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>Pseudo R2</b>	.119	.124	.069	.047	.086	.087	.064	.063

Source: computations are based on the ISSP data set

work orientation [1 for 'strongly disagree'/'disagree' to the statement 'a job is just a way to earn money', 0 otherwise]

years of schooling [years spent in formal education, excluding apprenticeships]

marital status [0 not married, 1 married]

\* significant at 5%-level, \*\* significant at 1%-level

In the Netherlands, work-orientation significantly increases employment-participation for both years. Although work orientation is just a dummy variable, the difference in the explanatory power between models I and II is slight, the Pseudo R<sup>2</sup> and the coefficients for the controls being roughly similar in both models. The coefficients of the 'age' and 'marital status' variable are stable. However, work orientation significantly affects the employment status of women whereas 'years of schooling' is not significant in 1997. In the regressions for 1997, model I, using work orientation, offers a better explanation of employment status than the model using years of education. This may be taken as a hint that work-orientation may be more general, in line with the importance of the 'behavioral' component in the 1990s.

The comparable regressions for West-German women show similarly negative effects for age and marital status and an insignificant impact of years of schooling on



employment status.<sup>11</sup> Again, the finding that both work orientation and participation is high in the Netherlands leaves causality an open question. It may well be that working increases work orientation, but the reverse may also be true. However, the stability in the share of women 'strongly disagreeing' or 'disagreeing' with the statement that 'a job is just a way to earn money' may be taken to support the view that the rise in female employment in the 1990s was due less to changing work orientation than to the fact that the work-potential already existed in the late 1980s - although it may then only recently have developed - but that it required a demand-pull probably related to the flexibilization in working-time arrangements to allow women to actually participate in employment. This interpretation would be consistent with the increasing importance of the 'behavioral' component in the growth of the employment-population rate found in section 3.

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<sup>11</sup> 'years of schooling' include only years in school. Apprenticeship training is therefore excluded, a fact which may distort the German results.

## 6. Demand Constraints

Women's participation in employment may be constrained by the demand for labor. If there are no jobs, a strong desire to work may be frustrated. In other words, the general level of labor demand may constitute a demand constraint for women. However, the flexibility of working-time schedules is probably more important. If women desire (or are limited to) part-time jobs and these jobs are not on offer, for whatever reason, potential labor supply cannot become effective. In this section, we use the International Social Survey Program data set (ISSP) to investigate the question of whether female employment in the Netherlands was demand-constrained (in the sense that women could not find jobs with reduced working hours). ISSP survey data cannot be taken as objective evidence concerning the actual availability of part-time jobs since it reflects the subjective views of the respondents. However, since these actually are the views relevant to labor supply decisions, we regard the ISSP data set as a suitable basis for investigating whether Dutch women perceived a demand constraint with respect to flexible working hours.

Table 6.1 displays the perceptions of non-employed women concerning the difficulty of finding work in the Netherlands and Germany in 1989 and 1997. First of all, finding an adequate job was obviously difficult in general. The share of Dutch women reporting that finding an adequate job was difficult ('fairly difficult' and 'very difficult') was 72% in 1989 and only slightly lower (66%) in 1997, when the Dutch economy was booming. The figure was roughly similar in West Germany (69%), although unemployment was much higher at that time in Germany. Broken down by desired working hours, both categories of response ('fairly difficult' and 'very difficult') show a higher percentage for part-time work (10 to 35 hours) than for full-time work in 1989. Thus, at the end of the 1980s it was perceived to be more difficult to find a part-time job than a full-time job. Surprisingly, the proportion of women who regarded it as difficult to find a part-time job was lower (63%) in Germany than in the Netherlands. Unfortunately, the ISSP data set does not allow the 1997 responses to be broken down by desired working hours.

**Table 6.1: Non-working female job-seekers of working age in the Netherlands and in Germany, 1989 and 1997 [%]**

	finding a job is			
	easy	neither nor	fairly difficult	very difficult
<b>Netherlands</b>				
<b>1989 total</b>	<b>12</b>	<b>16</b>	<b>44</b>	<b>28</b>
full-time	21	16	42	21
part-time	7	17	51	25
<10 hours	16	14	35	34
<b>1997</b>	<b>19</b>	<b>15</b>	<b>30</b>	<b>36</b>
<b>West Germany</b>				
<b>1989 total</b>	<b>13</b>	<b>22</b>	<b>41</b>	<b>24</b>
full-time	0	0	29	71
part-time	12	24	41	22
<10 hours	16	24	42	18
<b>1997</b>	<b>10</b>	<b>21</b>	<b>37</b>	<b>32</b>

Source: computations are based on the ISSP data set

The ISSP data set also contains information on whether women in work were satisfied with their working hours and current income, or would have preferred to 'work longer hours and earn more money' or 'shorter hours and earn less money'. Table 6.2 displays the results differentiated by actual working hours for 1989 and 1997 for the Netherlands and for Germany. The majority of women in work seem to have been satisfied with their working hours in both 1989 and 1997 in either country. A comparison of the Netherlands with West Germany reveals no tremendous differences in the share of women satisfied with their working hours. If anything, German women seem to have been more satisfied with their actual working hours than Dutch women. This, however, applies only to women in work and says nothing about the preferences of those not currently in employment. However, the information in Table 6.1 suggests that in 1989 women in Germany perceived it as less difficult to find part-time work than those in the Netherlands. The distribution of actual hours worked in the Netherlands between 1989 and 1997 shows for married women a rise in the 1 to 12 hours category but also in the long hours categories (the proportion of married women working more than 35 hours increased by 10 percentage points from 1989 to 1997).

Thus, the ISSP data does not support the hypothesis that Dutch women were severely demand-constrained in the sense that they wanted part-time jobs but could not get them. It provides no evidence that a large pool of women desiring part-time work were just waiting for an expansion in the number of part-time jobs. An analysis of the expansion in part-time employment in the Netherlands conducted by Van Lomwel (2000) found that labor demand rather than labor supply was the driving force behind it. Van Lomwel (2000) found that the ratio of the firm's hours of operation to standard working hours was a major determinant of part-time employment. If hours of operation are substantially longer than standard working hours (i.e., if the ratio is substantially greater than 1), the proportion of the firm's employees working part-time will also be higher. With regard to aggregation by industries, Van Lomwel (2000, Table 4.4) reports that in 1993 the ratio of hours of operation to standard working hours was highest in 'health and care' (2.67 compared to 1.41 in the total economy), 'transport' (1.91) and 'other services' (1.63), but lowest in 'education' (1.09), 'construction' (1.18), 'government' (1.24), 'business services' (1.29), 'trade' (1.33), and 'manufacturing' (1.41). It is clear that, at the industry level, the difference between hours of operation and standard working hours cannot be the full explanation for part-time work. In 'education' about 50% of all employees were working part-time (less than 35 hours) but the ratio of hours of operation to standard working hours was lower in that sector than in any other industry. Van Lomwel's firm-level analysis is in line with the industry data for 'health and care' (more than 60% working part-time).<sup>12</sup> In 'hotels and restaurants' the proportion of part-timers was around 70%, which is clearly related to the need to match personnel capacity to fluctuations in demand over the day and week. However, in 'trade', where similar demand patterns occur, the proportion of part-timers was only around 40%.

The reduction in collectively agreed standard working hours in the Netherlands (following the Wassenaar agreement) is another reason for the rising proportion of part-time workers. Firms use part-time work to fill the gaps created by the shortening of working hours. However, if this were the major reason for offering part-time jobs, the German economy should feature as much part-time working as the Dutch one, whereas

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<sup>12</sup> Data for 1994 according to Centraal Bureau voor de Statistiek 1997.

in fact only about 16% of Germans work part-time (compared to almost 40% of Dutch workers).

**Table 6.2: Employed women's preferences for working hours, by family status, 1989 and 1997 in the Netherlands and West Germany [%]**

actual working hours	share in current working-hours category		desired working hours					
	Unmarried	married	unmarried			married		
			fewer	same	more	fewer	same	more
<b>Netherlands</b>								
<b>1989</b>								
<b>1 &lt; 12</b>	0	10	-	-	-	-	-	-
<b>12 &lt; 24</b>	17	47	0	32	68	7	78	15
<b>24 &lt; 35</b>	27	26	7	60	33	27	73	0
<b>35 &lt; 42</b>	55	16	15	77	8	28	61	11
<b>42 +</b>	1	2	-	-	-	-	-	-
<b>total</b>	<b>100</b>	<b>100</b>	<b>10</b>	<b>65</b>	<b>26</b>	<b>16</b>	<b>75</b>	<b>9</b>
<b>1997</b>								
<b>1 &lt; 12</b>	8	16	6	44	50	5	67	28
<b>12 &lt; 24</b>	19	37	2	60	38	10	79	11
<b>24 &lt; 35</b>	28	19	7	65	29	16	71	13
<b>35 &lt; 42</b>	38	21	9	71	21	30	62	8
<b>42 +</b>	6	7	-	-	-	13	88	0
<b>total</b>	<b>100</b>	<b>100</b>	<b>8</b>	<b>63</b>	<b>29</b>	<b>15</b>	<b>73</b>	<b>13</b>
<b>West Germany</b>								
<b>1989</b>								
<b>1 &lt; 12</b>	0	2	-	-	-	-	-	-
<b>12 &lt; 24</b>	9	35	-	-	-	7	79	14
<b>24 &lt; 35</b>	9	15	-	-	-	17	61	22
<b>35 &lt; 42</b>	67	39	11	75	14	8	85	6
<b>42 +</b>	15	10	6	78	17	-	-	-
<b>total</b>	<b>100</b>	<b>100</b>	<b>8</b>	<b>75</b>	<b>17</b>	<b>11</b>	<b>76</b>	<b>14</b>
<b>1997</b>								
<b>1 &lt; 12</b>	3	6	-	-	-	-	-	-
<b>12 &lt; 24</b>	11	23	-	-	-	4	75	21
<b>24 &lt; 35</b>	13	13	20	43	27	19	69	13
<b>35 &lt; 42</b>	49	32	9	69	22	15	75	10
<b>42 +</b>	24	27	7	70	22	15	85	0
<b>total</b>	<b>100</b>	<b>100</b>	<b>9</b>	<b>65</b>	<b>26</b>	<b>12</b>	<b>77</b>	<b>11</b>

Source: computations are based on ISSP data; empty cells = fewer than 10 respondents.

## 7. Conclusions

Why have Dutch women in general, and married women in particular, increased their employment participation and why has part-time working increased so much?

We find:

- that the increased number of women with higher education has contributed substantially to the rise in female labor force participation.
- that it was only in the 1990s that the behavioral component contributed as much to rising female labor force participation as the "structural" (educational) component.
- that there is no evidence that the institutional specifics or the change in the institutional arrangements (taxes and pensions) favored female labor force participation nor did they provide strong incentives for part-time work.
- that the work orientation of Dutch women is stronger than that of German women but that there is no evidence of a substantial increase in work orientation during the 1990s.
- that there is no evidence that women were demand-constrained in the sense that they previously desired to work part-time but were prevented by a scarcity of part-time work.

We conclude that most of the rise in labor force participation by married women in the Netherlands is a 'structural' effect resulting from the higher educational attainment of Dutch women. Higher education created the pool of potential labor supply which became effective when labor demand expanded, largely in response to foreign demand (Schettkat/ Reijnders 2001).

Contrary to the common view that increasing (part-time) employment in the Netherlands is entirely labor-supply driven, we find evidence that labor demand is equally important. The divergence between firms' hours of operation and standard working hours seems to have contributed to the expansion in the number of part-time jobs. In many service industries, part-time work helps to match personnel capacity to fluctuating demand patterns.

### Demand or supply?

One reason for expanding labor supply is the almost stagnating real wage since 1983. From 1983 to the end of the 1990s, real wages in the Netherlands rose by only 0.4% annually (as compared to about 1.3% in Germany).<sup>13</sup> However, real wages did not fall and to construct a labor supply argument from this wage trend it would be necessary to explain why households required higher real incomes in the late 1990s than in the 1980s. But it is true that household income growth has mainly been due to increasing household labor supply (see Table 7.1). Additional labor supply requires some substitution of household production by market production, which in turn increases labor demand (mainly in services) and creates a virtuous circle for employment (Freeman/ Schettkat 2001b).

The strong increase in the employment of married women (with children) in combination with the expansion in part-time work is reflected in Table 6.3, which shows the composition of households by the number of earners and working hours. The share of dual-earner households increased within 10 years (between 1986 and 1996) by 26 percentage-points, with the major rise occurring in the 1990s. The largest increase occurred in the number of households with '1.5-earners' (i.e. households where the man worked full-time and the woman part-time, the reverse working arrangement being the exception). This has now become the 'standard household' in the Netherlands.

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<sup>13</sup> according to OECD Economic Outlook, CD-ROM



**Table 7.1: Household composition by number of earners and working time (%)**

Household type	1986	1990	1996
<b>Single-earner</b>	<b>53</b>	<b>49</b>	<b>34</b>
- man works	50	46	30
- woman works	3	3	4
<b>Dual-earner</b>	<b>30</b>	<b>37</b>	<b>56</b>
- man and women full-time <sup>1</sup>	11	13	14
- man full-time <sup>2</sup>	16	21	36
- woman full-time	1	1	1
- two part-timers <sup>3</sup>	1	2	4
<b>No-earner</b>	<b>16</b>	<b>15</b>	<b>10</b>
<b>Sum</b>	<b>100</b>	<b>100</b>	<b>100</b>

<sup>1</sup> both partners working more than 35 hours a week.

<sup>2</sup> more than 35 hours a week;

<sup>3</sup> both partners working fewer than 35 hours a week;

Source: SCP, 2000, Emancipatiemonitor 2000, p. 63 ([www.scp.nl/boeken/titels/2000-5/nl/acrobat/emancipatie.pdf](http://www.scp.nl/boeken/titels/2000-5/nl/acrobat/emancipatie.pdf))

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