[VERY PRELIMINARY, PLEASE DO NOT QUOTE]

Is Part-time Employment Here To Stay[1]

Evidence from the Dutch Labour Force Survey 1992-2005

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Abstract

To balance work and family responsibilities, the Netherlands have chosen a rather unique model that combines a high female employment rate with a high part-time employment rate. The model is likely to be the result of (societal) preferences as the removal of institutional barriers in the past decade did not lead to more working hours. It is however an open question whether the model is here to stay, or whether younger generations of women will choose fulltime jobs in the near future. In this study, we investigate the development of working hours over successive generations of women using the Dutch Labour Force Survey 1992−2005. We find no evidence of an increasing incidence of fulltime employment over the successive generations. To the contrary, we find evidence of a decreasing propensity to work fulltime conditional on observed labour market characteristics like educational attainment. Our results are in line with the results of studies based on stated preferences. It therefore seems likely that the part-time employment model is indeed here to stay for at least some more decades.

Key words:

JEL code:

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1. Introduction

Many countries have experienced a strong increase in the employment rate of women. The societal models that facilitate the employment of women vary however substantially between those countries. While, for example, the Scandinavian countries offer generous parental leave and subsidized childcare facilities, a country like the US offers childcare facilities by means of low wages for those who provide childcare. The Netherlands have chosen a model that seems rather unique: the employment rate of women is high, but a large majority of employed women works part-time. An advantage of part-time employment is that it allows individuals and in particular families to balance work and other (family and care) responsibilities. An open question is however: will the model stand the test of time? Or is the part-time employment model a temporary phenomenon that facilitates the employment of the generations of women that are currently in working age, and will younger generations of women choose for fulltime employment in the near future?

ince recently, the social desirability of part-time employment has become under discussion again. One aspect of the public discussion is that the less than full use of the human capital of women may harm the emancipation of women (Mees, 2006). Another aspect is that a higher participation rate and more working hours of women may be a partial solution to the problems of the sustainability of the welfare state due to the ageing of the population (SER, 2006). Therefore the issue of part-time employment is clearly back on the political agenda and the Dutch model of part-time employment may become under pressure in the near future.

In the past, the OECD (1990, 1995) and several US authors including Leppel and Clain (1988), Blank (1989) and Tilly (1995) emphasized the negative aspects of part-time work. They concentrated their research on those who would like to work more hours (the 'underemployed'). Several recent studies however show that part-time employment may be the result of individual or household preferences as well (OECD, 2001, 2004, Jaumotte, 2003, SCP, 2006). On the basis of a comparison between Finland and Germany, Pfau-Efinger (1993) already argued that the employment behaviour of women is largely determined country-specific cultural norms and values, which in turn also influence the development of other factors. In other words, part-time employment may not simply be the result of economic and institutional factors as these factors may be chosen such that they facilitate part-time employment. This may be particularly true for the Dutch model. The research in this study is furthermore inspired by a historical development in Sweden. Like in many other countries, the employment rate of Swedish women increased strongly during the last few decades. But while the proportion of women in part-time employment increased until the mid 1980s, the proportion decreased from that time period on. Sundström (1991) concludes that part-time has increased the continuity of the labour force attachment of Swedish women, strengthened their position on the labour market and reduced

their economic dependency. So part-time employment turned out to be a temporary phenomenon that facilitated a certain generation of women to work, while nowadays most Swedish women work fulltime. Therefore the central question of this study is: may we expect such a development in the Netherlands as well?

This study uses the Dutch Labour Force Survey 1992-2005 to investigate the incidence of part-time and fulltime employment over age, period and cohort. We are particularly interested in the development over the cohorts as this will say something about the propensity of the youngest generations to work part-time. We apply empirical regressions model to disentangle the impact of age, time and cohort, and of other exogenous individual and family characteristics. The empirical analysis reveals that … [To be done].

2. The Dutch model

The Dutch labour market shows a high rate of part-time employment and the rate continues growing at a fast rate (OECD, various issues). In particularly women work part-time, although compared to other countries many men work part-time as well. This section deals with two questions: was policy important for the growth of part-time employment? And how special is the Dutch model of part-time employment in a cross-national comparison?

2.1 Role of policy

Already since the end of the 1980s, Dutch policy makers recognised that part-time employment may be a way for workers to balance work and other (family and care) responsibilities. The government implemented policies to protect and even to enforce the position of part-time workers. What role did these policies play? And did other policies like the tax system and child care provisions play an important role?

The Dutch government implemented several laws and policies that were aimed at part-time employment. In 1993, the government reinforced the legal position of part-time workers by extending the applicability of the statutory minimum wage and the minimum holiday allowance. Previously, these rights did not apply to employees working less than one-third of normal full-time hours. In 1996, the government installed a law that gave part-time workers an explicit right to equal treatment – pro rata – on wages, overtime payments, bonuses and training. In 2000, the government even awarded workers the right to request an upward or downward adjustment of the number of working hours within their current job, which employers have to honour unless there are conflicting business interests. In particular the last law is unique, only Germany introduced a similar law in 2001.

Did the policies on part-time employment lead to a larger increase in the part-time employment rate? Evidence from macro-panel data for 15 EU countries suggests that policy does have an impact on the part-time employment rate, but the Netherlands turns out to be an outlier (see footnote 29 of Buddelmeyer *et al.*, 2007). Moreover, evaluations show that the law of 2000 did not affect the adjustments of working hours within a given job, and job mobility remained to be the major channel to adjust working hours (Fouarge and Baaijens, 2004). As the rate of part-time employment started to increase before the policies were implemented in the Netherlands, it seems likely that the policies followed an already existing practice.

While human capital characteristics like education and experience determine the gross wage of a worker, the tax system codetermines the net return to paid employment. It is therefore an important part of the incentives for women to become engaged in paid employment. In the past decades, the Dutch government implemented several reforms to move the tax system from a joint tax system to a more individual based tax system. At the beginning of the 1990s, a tax reform...[extend text on tax reform]. Next, the new tax system implemented in 2001 replaced the tax allowances by tax credits and introduced a tax credit for working parents. Both reforms lowered the marginal tax burden of the second earner in the household, which are in majority women. The current government plans to reduce the size of the general tax credit slowly over time. So in the longer run the Dutch tax system will be almost fully individualized, only some joint taxation elements for working parents will remain.

Did the tax reforms lead to a larger increase in the part-time employment rate? The tax reforms clearly lowered the marginal tax burden of the second earner of the household and therefore increased the incentive to be employment. Simulation studies (Graafland and de Mooij, 1998, van Soest and Das, 2001) and an empirical evaluation study (Euwals, 2007) show that the tax reform of 2001 increased participation. The current government plan on the general tax burden is predicted to have a similar effect (CPB, 2006). The reforms however make employment more attractive against non-employment, and part-time employment does not become more attractive relative to fulltime employment. The only argument for part-time to have become relatively more attractive is that the tax rates at the higher end of the income distribution became somewhat larger, implying a higher tax burden on high income and a disincentive to work many hours. The simulation studies however show that the impact on part-time employment was limited. Furthermore, note that in several countries part-time employment is relatively attractive as the tax system contains a tax credit that is faced in slowly at low incomes and than faced out at higher incomes. Examples are the Earned-Income Tax Credit in the US and the Aid for Families with Dependent Children in the UK (Blundell, 2006). The Netherlands however never had such a tax credit, and it is only the current Dutch government which plans to introduce it. Therefore there is little reason to believe that the tax system induced part-time employment.

The availability and affordability of child care are important determinants of the participation and working hours of women. The Netherlands hardly had public child care facilities until the end of the 1980s. The limited access restricted the possibilities of women with children to work fulltime, and this is regularly mentioned as a major explanation for the high rate of part-time employment in the Netherlands (Visser, 2002, Plantega, 2004). This explanation has however become less attractive as the availability and affordability increased substantially over time. In recent years the availability is hardly restricted anymore, while the affordability improved substantially because of the introduction of a new law on child care in 2005 ('Wet Kinderopvang'). Nowadays, the government subsidises families with child care expenses directly. The subsidy varies from about one third of the costs for high-income families to almost a full hundred percent for low-income families (Jongen, 2007). Recent survey studies find that families hardly experience the lack and costs of child care facilities as a limitation for the women to participate in the labour market (SCP, 2006).

While part-time employment policies hardly affected the growth of part-time employment, there is evidence that other policies did play a role. The tax system discouraged the participation of second earners in a household, while the lack and affordability of public child care hampered their fulltime employment. Recent tax reforms and child care policy changes removed however the disincentives to work and to work fulltime.

2.1 International position

How exceptional is the Dutch model that combines a relatively high female participation rate with a high part-time employment rate? A major policy issue is on how to combine employment with family and other care responsibilities. Several countries have a high or even higher female participation rate, but many have chosen different solutions to solve the dilemma.

The Scandinavian countries combine a high female participation rate with a reasonably high fertility rate (table 2.1). Many women work fulltime, and the societal model chosen by these countries clearly facilitates the combination of employment and care responsibilities by providing child care facilities and/or maternity pay entitlements. France has a somewhat lower female employment rate, but with respect to child care facilities, part-time employment and fertility the country is rather similar to the Scandinavian countries.

Southern European countries like Italy and Spain combine a low female employment rate with a low fertility rate. The countries hardly offer childcare facilities, and part-time employment is not really common. These countries have not solved the dilemma on combining employment and care responsibilities, and repercussions on female employment and fertility are visible.

Like the Scandinavian countries, the Netherlands combines a high female employment rate with a reasonably high fertility rate. The societal model that facilitates this combination heavily relies on part-time employment. With three out of five women working less than 30 per week, no other country has such a high part-time employment rate. Nevertheless, countries like the UK and Australia have characteristics that seem close as also these countries do not particularly well on the index for child care facilities but the part-time employment rate and the fertility rate are reasonably high. In these countries, about two out of five women works less than 30 hours per week. The major difference with the Netherlands is in part-time employment policy, as the countries did not implement policies that explicitly aimed at the combination of employment and care responsibilities.

Table 0.1 Female participation, female part-time employment, child care, fertility, various countries

	Participation [a]	Part-time [b]	Child care [c]	Fertility [d]
	%	%		
Sweden	77.7	19.0	4.0	1.5
Denmark	76.7	25.6	4.4	1.7
Finland	73.2	14.9	1.5	1.7
UK	70.3	38.8	− 0.9	1.7
Netherlands	69.4	59.7	0.3	1.5
US	69.3	17.8	0.1	2.0
Australia	69.0	40.7	− 2.6	1.8
Germany	68.5	39.2	− 0.6	1.3
France	63.9	22.9	1.7	1.7
Spain	61.1	21.4	− 0.4	1.2
Belgium	58.9	34.7	1.2	1.5
Italy	50.8	29.4	0.4	1.2

[a] Labour force participation rate of women, age 15-64, 2006, OECD Employment Outlook 2007.
[b] Part-time employment rate of working women, 2006, OECD employment Outlook 2007.
[c] Index for child care coverage and maternity pay entitlement, scale from − 5 to 5, columns 1 to 3 of Table 4.9, OECD Employment Outlook 2002.
[d] Total fertility rate (children per woman), 1995-2000, World Population Prospects, The 2000 Revision, UN 2001.

3. Data

The data are taken from the Dutch Labour Force Survey (DLFS) 1992-2005. The survey is a stratified random sample of about 1% of the population of Dutch inhabitants aged 15 and older, excluding those living in institutions like nursing homes and prisons. Every year a new random sample is drawn, implying that the survey exists of repeated cross-sections. The DLFS contains detailed demographic and employment information: the employed provide information on their jobs (but not on wages), while the non-employed provide information on job search activities. We subtract a sample of women aged 18 to 64 containing about 35 000 observations per year, resulting in a total sample of about half a million observations.

3.1 Descriptive statistics

As we plan to disentangle the impact of age, period and cohort on working hours, the number of observations per age, period or cohort cell matters. The first cohort included in the data was born in 1928, while the latest cohort was born in 1987. Each cohort by year of birth and each age group per year contains about 12 000 and 10 000 observations. Only the oldest and youngest cohorts contain fewer observations as the survey starts in 1992 and ends in 2005.

[INSERT TABLE 3.1]

The statistics on demographics are in line with the current trends in society, like the ageing of the population and the individualisation of society. The average age in the sample increases from 39.1 in 1992 to 41.9 in 2005. The number of married women decreases, while the number of cohabiting women increases over time. The number of minor children remains rather constant over time, which is in line with that fact that fertility was rather constant over the last decades. Furthermore, educational attainment of both women and their partners increased steadily over time. According to the latest figures on educational attainment, the youngest generation of women has succeeded in acquiring a higher level of education that their male counterparts.

3.2 Part-time employment and working hours by cohort

The long time-span of the DLFS offers the opportunity to draw figures on the development of part-time employment and working hours over period and age per cohort. For this purpose, we need to define part-time and fulltime in terms of working hours. First, we define fulltime employment as working 35 or more per week. According to the official definitions laid down in sector-specific collective agreements, a fulltime working week contains 36, 38 or 40 working hours per week in almost all sectors. But the lowest possible number of working hours per week

in a fulltime job is 35 hours. As we will able to observe the fulltime working week of the respondents in our data source, we therefore define a general threshold for a fulltime working week of 35 hours per week. For the large part-time jobs we use 25 hours per week as the threshold. In the Netherlands, many women work exactly 24 hours per week and we want to categorize these women as having a large part-time job. Next, for the small part-time jobs we use 12 hours per week. this number follows naturally from the definitions of the official statistics for the Netherlands. For example, according to the official definition an individual is unemployed in case he does not work or does work less than 12 hour per week *and* he wants to work 12 or more hours per week.

Figure 3.1 and 3.2 show the age and cohort profile of women working part-time or fulltime. The proportion of women working less than 12 hours per week remains rather constant of the successive cohorts (figure 3.1, panel left). The proportion of women working fulltime reveals of typical development over age (figure 3.2, panel right): while the fulltime employment rate is rather high until age 25, the rate decreases rapidly from that age onward and stays constant from age 35 to 50. This timing seems to coincide with the birth of the first child, which happens at age 29 on average in the Netherlands. The figure also reveals that the incidence of fulltime employment does not seem to increase over the successive generations: at a given age, the fulltime employment rate is similar for the different cohorts.

The Dutch female participation rate increase substantially over the last decades, and the figures clearly show what kind of jobs became more important in numbers: the part-time jobs. Both the proportion of small part-time jobs (figure 3.1, panel right) and large part-time jobs (figure 3.2, panel left) increased over the successive generations. That is to say, at a given age the younger cohorts have a higher part-time employment rate than the older generations.

[INSERT FIGURES 3.1, 3.2, 3.3]

Figure 3.3 shows both the age and cohort profile of the number of working hours of women with a job. Around age 26 the number of working hours reaches a maximum on average, while afterwards the number of working hours declines. From age 35 to 55 the average working hours remain rather stable at about 25 hours. There is no clear cohort effect visible: at a given age the different cohorts have a similar number of working hours. The previous two figures showed that the proportion of small part-time jobs (12-24 hours) and large part-time jobs (25-34 hours) increased over time. So the non-existence of a cohort effect in the average working hours is explained by the fact that on average the cohort effects in the two types of part-time jobs cancel out. But also changing cohort characteristics may be important, and the next section will control for these characteristics.

Table 3.1   Weighted Summary Statistics

	Period (year)	1992	1995	2000	2005	All years
		Mean	Mean	Mean	Mean	Mean
Age		39.1	40.0	41.0	41.9	40.7
Cohort (year of birth)		1953	1955	1959	1963	1958
Household position						
Married		0.62	0.61	0.59	0.56	0.60
Cohabiting, been married		0.01	0.02	0.02	0.02	0.02
Cohabiting, never been married		0.08	0.10	0.12	0.12	0.11
Single, been married		0.09	0.09	0.09	0.10	0.10
Single, never been married		0.09	0.09	0.10	0.10	0.09
Living with parents		0.09	0.08	0.07	0.08	0.08
Other		0.01	0.01	0.01	0.01	0.01
Children						
Age youngest child 0-3		0.13	0.13	0.13	0.13	0.05
Age youngest child 4-11		0.13	0.13	0.14	0.14	0.06
Age youngest children 12-17		0.10	0.09	0.09	0.09	0.02
# Minor children equal 2		0.15	0.16	0.16	0.16	0.16
# Minor children more than 2		0.07	0.07	0.07	0.06	0.07
Children older than 18 year		0.17	0.15	0.13	0.14	0.14
Educational attainment						
Primary		0.18	0.15	0.15	0.09	0.14
Lower secondary		0.30	0.28	0.25	0.24	0.27
Higher secondary		0.37	0.38	0.39	0.42	0.40
Tertiary		0.16	0.18	0.21	0.25	0.20
Type of education						
General						
Technical						
Economic						
Health care						
Partner: educational attainment						
Primary		0.14	0.13	0.12	0.07	0.11
Lower secondary		0.22	0.21	0.20	0.19	0.21
Higher secondary		0.41	0.42	0.41	0.43	0.42
Tertiary		0.22	0.24	0.27	0.31	0.26
Partner: characteristics partner						
Age		43.0	44.0	45.2	46.4	44.8
Non-employed		0.02	0.02	0.01	0.02	0.02
# Observations		38315	43623	39774	41561	553419

Figure 3.1 Part-time employment, 1-11 hours and 12-24 hours per week by cohort and age (all women, including unemployed and non-participating women)
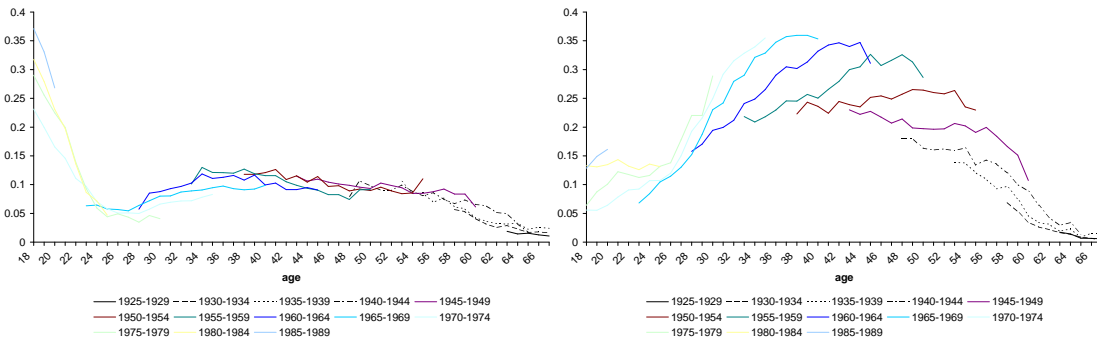

Figure 3.2 Part-time employment, 25-34 hours and more than 35 hours per week by cohort and age (all women, including unemployed and non-participating women)
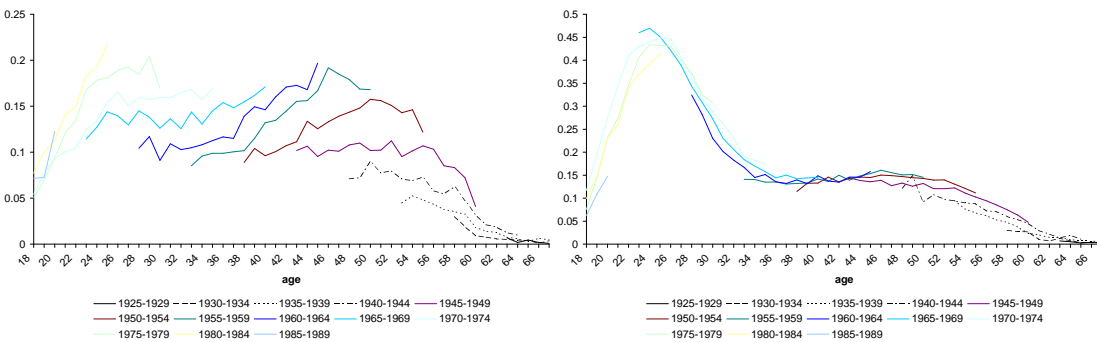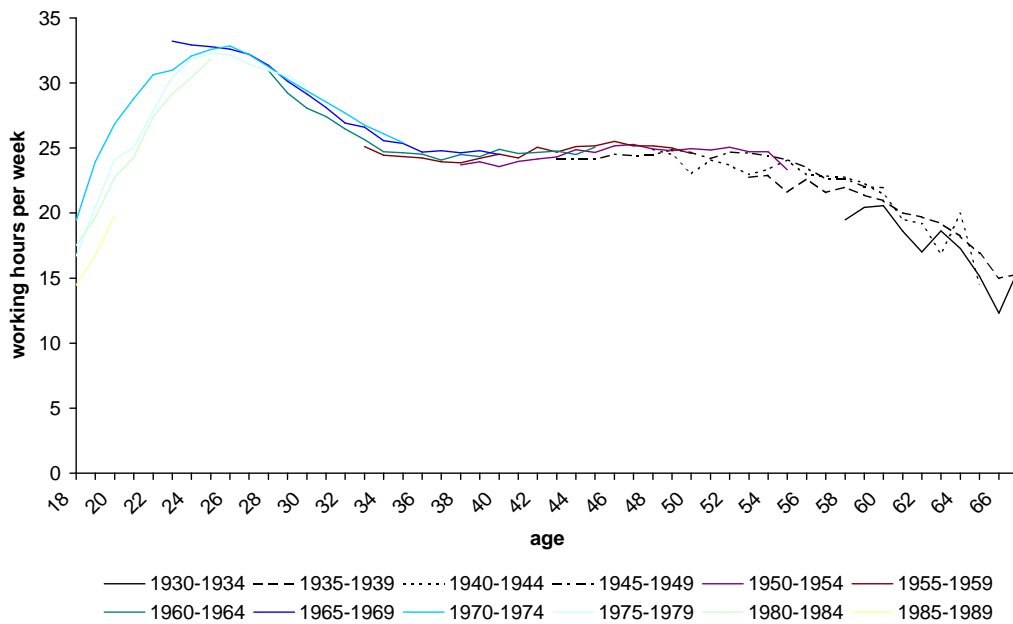

Figure 3.3 Average working hours, by age and cohort, working women

4. Empirical strategy and results

In this section, we apply regression techniques to disentangle the impact of age, period and cohort, and of other exogenous individual and family characteristics on the development of part-time and fulltime employment rate over time. The results will be used to draw conclusions on the propensity of the youngest generations to work part-time or fulltime.

4.1 An empirical model for age, period and cohort

This section specifies an empirical model to estimate the determinants of the incidence to work part-time or fulltime. The model allows for a disentanglement of the age, period and cohort effects. Indicating individual i and time t by corresponding subscripts our model specifies the endogenous variable y_{it}, which may be the propensity p_{it} to work part-time or fulltime, or which may be the working hours h_{it}. The model:

$$p_{it} = \beta_0 + \beta_1 x_{it} + g_a\left(a_{it} | \theta_a\right) + g_c\left(c_i | \theta_c\right) + g_t\left(t | \theta_t\right) + \varepsilon_{it}$$

where x_{it} is a vector of control variables, a_{it} denotes age, c_i denotes cohort and t denotes year. The g_a, g_c and g_t are functions corresponding to age, cohort and year effects. The vector $\theta = (\beta_0, \beta_1, \theta_a, \theta_c, \theta_t)$ contains parameters.

A well-known complication of the model is that not all parameters can be identified whenever the functions for age, period and cohort contain a linear term. The reason for this is that whenever both the birth year and the age of an individual are known, then the current year is known as well (or, in general, whenever two terms are known, then the third is known as well). Several ways have been suggested to circumvent this identification problem. Probably the most straightforward way is to omit an entire function altogether, and replace it by some other variable, or set of variables, which are thought to represent the concerning effects well. This procedure is often called the proxy variable approach, see for example Portait *et. al* (2002). In the current case, we will include a variable which represents the period effects of female labour supply. For instance, if period effects are thought to be the consequence of a so-called discouraged worker effect, then a logical proxy variable would be the unemployment rate.

4.2 Part-time and fulltime employment

Figure 4.1 shows the estimated cohort dummy coefficients of four separate logit-regressions. Each regression features as a dependent variable a specific class of hours worked (1-11 hours, 12-24 hours, 25-34 hours or 35 hours and more). The regression explains the probability that a

working women's working hours fall into this specific class, and not into one of the other classes or into the unemployment or non-participating class. The cohort born in 1950 serves as a reference group. The results show that cohort effects are most pronounced for large part-time jobs. Regarding fulltime jobs, more recently born cohorts have slightly more negative cohorts dummy coefficients. As for large part-time jobs, the younger cohorts have more positive cohort dummy coefficients. So the cohort effects increase the probability of being in a large part-time job and, to a lesser extent, of being in a small part-time job.

[INSERT FIGURE 4.1 ABOUT HERE]

Table 4.1 shows the estimation results of four logit-regressions, where the dependent variables now are aggregates of the formerly presented classes of hours worked ($\geq$ 35 hours, $\geq$ 25 hours, $\geq$ 12 hours and $\geq$ 1 hour per week). Presence of children significantly reduces the probability to be in a fulltime job, especially when the children are young. A higher level of educational increases the probability to work. Unemployment of the partner increases the probability to be in a large part-time job or in a full time job. Age and cohort dummy coefficients are presented in table A.1 in the appendix, interaction dummy coefficients in table A.2.

[INSERT TABLE 4.1 ABOUT HERE]

4.2 Working hours of employed women

Figure 4.2 shows estimated cohort dummies from an OLS-regression on hours worked by working women. The cohort effect is decreasing for the cohorts born after 1960. So there seems to be an autonomous trend to reduce working hours. The autonomous trend in the working hours is the result of the autonomous increasing trends in the probabilities to work part-time, while the autonomous trend for working fulltime was decreasing for the cohorts born after 1960.

[INSERT FIGURE 4.2 ABOUT HERE]

Table 4.1   Estimation result of logit-regressions on aggregated classes of hours worked by women

	≥ 35 hours		≥ 25 hours		≥ 12 hours		≥ 1 hour	
	Estimate	Strd. error	Estimate	Strd error	Estimate	Strd error	Estimate	Strd error
Position in household								
Together, been married	0,63	0,03	0,63	0,03	0,37	0,02	0,21	0,03
Together, never been married	0,58	0,02	0,73	0,01	0,61	0,02	0,49	0,02
Single, been married	0,65	0,10	0,38	0,08	0,13	0,07	0,07	0,07
Single, never been married	1,01	0,10	0,67	0,08	0,24	0,07	0,20	0,07
Living with parents	1,42	0,10	1,20	0,08	0,84	0,07	0,65	0,07
Other	1,04	0,10	0,75	0,09	0,40	0,08	0,22	0,07
Age youngest child								
0-3 years old	-2,26	0,05	-2,31	0,04	-1,70	0,03	-1,51	0,03
4-11years old	-1,65	0,06	-1,69	0,04	-1,19	0,04	-0,88	0,03
12-17 years old	-0,86	0,05	-0,78	0,04	-0,45	0,03	-0,28	0,03
# Children 2	-0,53	0,05	-0,61	0,04	-0,56	0,03	-0,40	0,03
# Children more than 2	-0,59	0,08	-0,68	0,06	-0,97	0,04	-0,70	0,04
Children 18+	-0,25	0,02	-0,24	0,01	-0,21	0,01	-0,11	0,01
Education								
Lower	-0,04	0,00	-0,03	0,00	-0,03	0,00	-0,02	0,00
Junior secondary	0,47	0,03	0,52	0,03	0,65	0,03	0,72	0,03
Senior secondary	0,57	0,04	0,69	0,03	0,91	0,03	1,15	0,03
Higher	0,82	0,04	1,02	0,03	1,27	0,03	1,56	0,03
Technical	0,25	0,02	0,21	0,02	-0,06	0,02	-0,11	0,02
Economical	0,51	0,02	0,46	0,01	0,31	0,01	0,20	0,01
Care	-0,18	0,02	0,06	0,01	0,08	0,01	0,11	0,01
Partner characteristics								
Age difference partner-respondent	-0,03	0,00	-0,03	0,00	-0,03	0,00	-0,02	0,00
Age difference partner-respondent ^2	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Dummy partner unemployed	0,21	0,03	0,11	0,03	-0,27	0,03	-0,44	0,03
Education partner: Lower	0,11	0,11	-0,01	0,09	0,13	0,07	0,32	0,07
Education partner: Junior secondary	0,09	0,11	0,04	0,09	0,37	0,07	0,64	0,07
Education partner: Senior secondary	0,24	0,11	0,21	0,09	0,55	0,07	0,78	0,07
Education partner: Higher	0,30	0,13	0,12	0,11	0,46	0,09	0,65	0,08
constant	-3,24	0,13	-3,32	0,11	-2,84	0,10	-1,85	0,10

Reference Group: married, no children, no children 18+, lower education, no partner, lower education partner, partner is employed

Figure 4.1 **Estimated cohort dummies from four logit-regressions (dependent variable: class of hours worked), reference group cohort 1950**

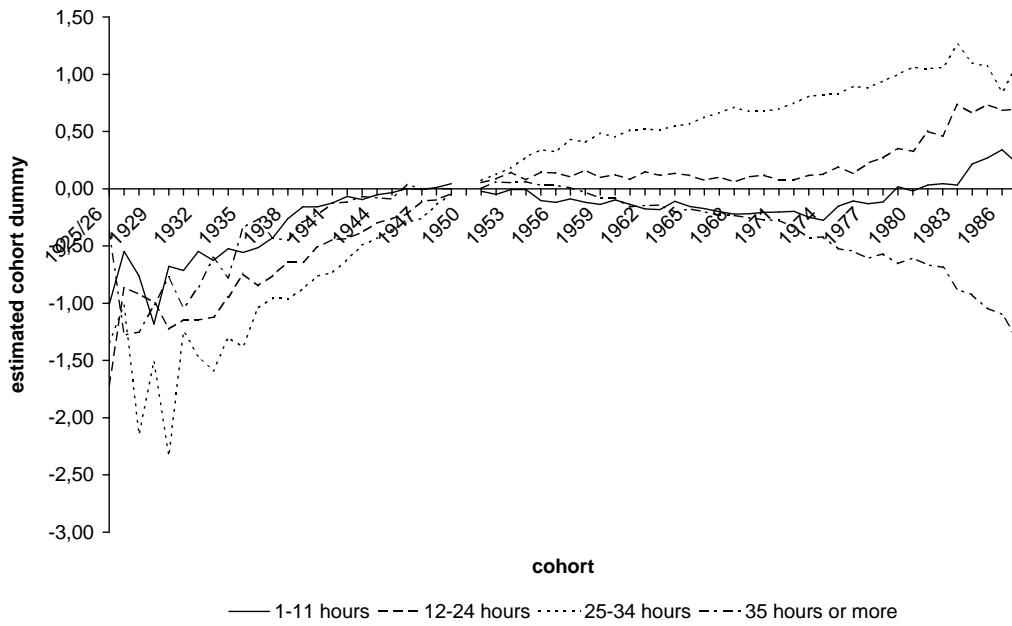— 1-11 hours - - - 12-24 hours ······ 25-34 hours - · - 35 hours or more

Figure 4.2 **Estimated cohort dummies (OLS-regression for all working women, dependent variable: hours worked)), reference group cohort 1950**

—— all working women