The labour supply of separated women:
the impact of individual and institutional factors

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Abstract

Among the numerous studies on the economic consequences of divorce for women little attention has been paid to changes in the labour supply of women. In this paper, we examine women's labour supply changes after separation in a European perspective. We quantify these changes and study the impact of institutional factors on these changes. Using data from 13 EU-countries of the European Community Household Panel (1994-2001), we demonstrate that women only modestly increase their labour supply after separation. Important individual-level determinants of the labour supply changes are human capital (positive), health (positive), and the presence of young children (negative). Living together with parents has a negative influence in countries with low single parent allowances. On the macro-level, institutional factors appear to have a contradictory effect: allowances for single parents *discourage* the employment of separated women with young children, whereas public child care provisions *encourage* it. The results underline the importance of distinguishing between income- and employment-related institutions in studying divorce outcomes.

1. Introduction

In the past decades many studies examined the effect of separation on women's income. The studies have shown that most women experience a large income drop after separation (Duncan & Hoffman, 1985; Jarvis & Jenkins, 1999; Poortman, 2000; Smock, 1994; Smock, Manning, & Gupta, 1999; Uunk, 2004). The income decline can be up to 50%, depending on how income is measured (Poortman, 2000). Furthermore, scholars have investigated the consequences for poverty (de Wilde, 2002; Duncan & Hoffman, 1985; Poortman & Fokkema, 2001) and welfare dependency (Hoffman, 1977; Poortman & Fokkema, 2001). De Wilde (2002) found that the consequences of separation for poverty are lowest in countries with a high level of social expenditure (Denmark, Belgium and Germany) and highest in low spending countries (Italy and most of all in the United Kingdom). And Poortman and Fokkema (2001), for instance, show that Dutch divorced women more often live on welfare than married women. Yet, less attention is paid to the consequences of separation for the labour force participation of women. So far, a few studies have investigated the labour supply of divorced women (Bradbury & Katz, 2002; Duncan & Hoffman, 1985; Finnie, 1993; Haurin, 1989; Jarvis & Jenkins, 1999; Johnson & Skinner, 1986; Poortman & Fokkema, 2001), and few of them examine in detail what factors explain these *individual* changes in labour supply. We try to explain why European women change their labour supply after a divorce, focusing on the impact of financial incentives, human capital investments, time restrictions and alternative resources. We investigate both changes in the number of working hours and transitions from non-work to work (labour force participation).

In addition, we are able to test institutional effects. So far, few studies on the economic consequences of divorce for women have made cross-national comparisons, and those who did (de Wilde, 2002; Uunk, 2004) focused on the effects on income. Studying income consequences of marital split up for women in 14 European countries, Uunk (2004) demonstrates that social welfare and public child care provisions diminish the income decline women experience after divorce. We test whether institutions have an impact on women's labour supply after union dissolution. Furthermore, we examine whether the institutional impact is contradictory. Some institutions may have unintended outcomes on the long term due to the 'welfare-trap'. In high-spending countries, welfare may be a disincentive for separated women to find a job as employment may result in loosing welfare-specific benefits. As a result, separated women on welfare may be less able to escape welfare dependency. Therefore, we distinguish between income-related institutions, such as social welfare, and employment-related institutions, such as public child care provisions. We expect income-related institutions to have a negative impact on separated women's labour supply and employment-related institutions to have a positive influence. Lastly, we take spurious effects with cross-national differences in culture into account. Female employment may be more accepted in countries with modern values about the role of women in the family and on the labour market. We expect these

values to be positively correlated with the level of public child care. Therefore, the cultural effect may be an alternative explanation of why women's labour supply changes differ between countries.

In this study we answer the following question:

What are the consequences of separation for women's labour supply and to what extent can we explain these consequences by individual and institutional factors?

To answer this question we use the European Community Household Panel (1994-2001). With this panel we are able to investigate short-term consequences of divorce and separation on the labour force participation and working hours of women. We limit our study to the female working population (women aged 18-65). Furthermore, we include dissolutions of marriages as well as of consensual unions. More and more people in (Northern) Europe live in cohabitation and never get married. Excluding those people from our analyses would leave us with a selective population of divorced women in some countries where marriage is not so common as in Southern European countries. Moreover, we focus on *de facto* relationship dissolution, because the process of divorce may take a long time (months or even years). During this period, people may already live separated and experience changes in their economic position.

2. Theoretical background and hypotheses

2.1 Previous findings

Several researchers have examined the labour supply changes of women due to marital split up for different countries. These labour supply changes differ somewhat between countries. For the Netherlands, Poortman and Fokkema (2001) compare ever divorced women (single as well as remarried) with married women. They discover that ever divorced women more often have income from labour and work more hours than never divorced women. Johnson and Skinner (1986) investigate the individual labour supply changes of American women before and after their separation between 1969 and 1977. They reveal a sharp rise in working hours of women in the two years after the separation. Most of this increase is due to the augmentation of the labour force participation of these women (from 68 percent before the split to 88 after the split). Others find increases in labour force participation as well, but they do not find such big changes (Bradbury & Katz, 2002 and Haurin, 1989 for the USA; Finnie, 1993 for Canada). Note that an average increase in labour supply reflects the net effect of separated women who begin and women who stop working for pay. Bradbury and Katz (2002) reveal that in the USA in the nineties, 12 percent of the women who lose their husbands (through death or divorce) start working, whereas 10 percent stop.

In contrast to others, Jarvis and Jenkins (1999) find for the United Kingdom a decrease in divorced women's labour supply. In their study of the early nineties, they find that 59 percent of the wives who split up worked before the divorce, against 51 percent afterwards. Moreover, they find that 15 percent of the women being employed before the divorce stop working afterwards. Another finding is that women working full-time before divorce are more likely to continue working than women working part-time.

Women might anticipate upon a divorce by increasing their labour supply. Johnson and Skinner (1986) observe a slow increase in working hours from the seventh year before separation (on average 635 hours) to the year before separation (1024 hours). But others do not find substantial pre-divorce increase in labour supply (Finnie, 1993). Poortman (2005) investigates anticipation in an alternative way by including the extent to which women expected their divorce. She finds some support for anticipatory behaviour when it comes to the effect of full-time work on divorce. However, considering the weakness of the effect and of other effects she concludes that the impact of anticipation is marginal.

Set aside the anticipation matter, we conclude that the labour supply figures of separated women differ somewhat between countries. Furthermore, some women might react to divorce with an increase in their labour supply, whereas others reduce their working hours or stop working. This cross-national variance in women's reaction to separation might be due to differences in the institutional context. Government policies may moderate the income drop women face after union dissolution and hence influence labour supply decisions. These, and other factors explaining women's labour market behaviour are discussed in the following sections.

2.2 Individual determinants

We use a simple micro-economic labour supply model to explain the changes in the labour supply of separated women. In this model we assume that women's employment decision is based on financial incentives and constraints. Economists model employment decisions as a trade-off between two commodities: time spent on paid work and time spent outside the labour market. The decision to work or not to work is based on a comparison between the market wage and a so-called reservation wage: the lowest wage rate at which it is worthwhile for a person to work. If the market wage is higher than the reservation wage, the person will seek a job. Yet, in making their decision of how people may face restrictions. Not only are people constraint by the hours they are awake, other time restrictions and their individual capacities may play a role as well.

Financial incentives
We expect that women's economic situation deteriorates because of two reasons. First, her household cannot benefit any more from economies of scale. After divorce, some expenses (e.g. housing

expenses), cannot be shared any longer. Second, previous specialization with the ex-partner ceases to exist. Especially women that lived in households with a traditional division of labour, face financial difficulties after separation. In such households men are the breadwinners and women take care of the household and children. During marriage spouses share their income, but after divorce women can no longer rely on their men's income. Both explanations lead to the expectation that women experience an income drop after separation. This financial incentive may encourage women's labour supply: non-employed women may enter the labour market and employed women may increase their working hours.

Separated women may experience financial incentives to be employed in two ways. First, women can experience an absolute low income level if they fall into poverty after divorce; getting a job may help them out of poverty. Second, a relative decline in income may be an incentive as well. If women want to keep the same standard of living, a higher income of the ex-partner leads to a stronger financial incentive. Both women in poverty and women with a high standard of living during marriage (the ex-partners' income is a proxy) may want to compensate their income loss by enlarging their labour supply. Ideally, we would like to include a poverty measure in our analyses. But unfortunately, we are not able to disentangle the recursive relationship between poverty and women's post-divorce labour supply without loosing many cases. Therefore, we decided to focus on the relative income level of women after union dissolution. Even so, alimony receipts may confuse correlations between the income of the ex-partner and women's employment. A higher income of the ex-spouse may go together with higher alimony. And the more alimony women receive, the weaker the financial incentives to work. Overall, we expect that the higher the income of the ex-partner, the more women increase their labour supply after marital split up. However, both being in poverty and receiving alimony may have a negative effect on labour supply. And since we do not measure both variables, these may entangle the positive effect of the ex-partner's income.

Employment may not be the only strategy to cushion income loss and thereby lessen the financial incentives to work (Duncan & Hoffman, 1985; Jarvis & Jenkins, 1999; Poortman & Fokkema, 2001). First of all, in some countries divorced women may receive welfare benefits. We test the influence of welfare on the macro level. Second, some women can fall back on other income sources not related to labour, such as capital income, income from renting property and private transfers. Third, remarriage and living arrangements with parents can be 'sources of income' as well. Women may move to their parents' house to reduce the fixed costs, such as housing expenses, and profit from the economies of scale of a larger household (Finch, 1989). Remarriage is another option to decrease the necessities to earn an own income. Marrying/cohabiting with a new partner who is employed can take away the financial incentives to increase labour supply. We expect that all these alternative income sources decrease women's labour supply.

<u>Restrictions</u>

In their attempt to earn a living women may face certain restrictions. We bring up two restrictions: individual capacity restrictions and time restrictions. An example of the first restriction is human capital. Becker's human capital theory implies that the more human capital people have acquired, the better their position on the labour market (Becker, 1964). Higher investments in education and more labour market experience result in higher returns (higher income levels and better jobs). Those who did not invest in their human capital face restrictions in finding a (good) job. Another individual capacity restriction is health. For women with poor health it may be less easy to increase their working hours or to find a job.

Next to these capacity differences women may face time restrictions. Having to take care of children reduces the opportunities to work. Children cost time and money; time spent on care cannot be spent on the labour market and public child care can be costly (Uunk, Kalmijn & Muffels, 2005; van der Lippe & van Dijk, 2002). Particularly, the age of children is relevant. Leibowitz, Klerman and Waite (1992) elaborate the labour supply model and assume that the value of non-working time will decrease as children age because older children require less intensive caretaking. In line with them, we expect separated women with young children to face more difficulties in increasing their labour supply than other women with children. Obviously, the costs and availability of (formal) child care are important too. We elaborate on this in the next section.

The causal relationships between the above-mentioned factors and employment are not straightforward. Women may choose not to increase their labour supply because they are living on welfare, or they might start living on welfare because they are not able to find a job. The same applies to the association between remarriage and living with family on the one side and women's employment on the other. Unfortunately, we do not have information about the decisions women make in choosing a certain strategy to obtain an income. We could try to disentangle these recursive relationships by examining remarriage and living with family in the year prior to women's post-divorce labour supply. Yet, this will substantially lower our sample size. Therefore, we decided to focus on associations, not on endogeneity matters.

2.3 Macro-level factors

The context in which separated women live is relevant as well. Countries differ in their policy, economy and culture and this context may influence the consequences of union dissolution. Cross-national differences in family and work policies act upon women's employment. For instance, policies of Scandinavian countries support women, and especially mothers, to work, in contrast to Southern European countries and countries with more market oriented policies, such as the United Kingdom and the United States (Gornick, Meyers & Ross, 1998; Kalleberg & Rosenfeld, 1990; Stier, Lewin-Epstein & Braun, 2001; van der Lippe & van Dijk, 2002). Cultural aspects of countries may effect women's

employment in countries as well. In countries with more modern gender role values women's employment may be higher (Uunk et al., 2005). These values may be an alternative explanation for cross-national differences in separated women's labour supply. In the following sections we discuss the influence of these macro-level factors.

Institutions

Several studies reveal an impact of institutions on the economic consequences of divorce (de Wilde, 2002; Uunk, 2004). Uunk, for instance, investigated income consequences of divorce and finds that higher single parent allowances and more available public child care places decrease the income drop for women after divorce. Next to public policy effects on income, many studies demonstrate the effect of institutions on women's employment. Government policies may reduce the negative child effect on employment for mothers, encourage part-time work among women, and mitigate the costs of employment interruptions (Gornick et al., 1998; Rosenfeld & Birkelund, 1995; Stier et al., 2001; Uunk et al., 2005).

In examining the impact of institutions on the labour supply changes of women after a divorce, we follow Uunk (2004) and distinguish between income-related institutions and employment-related institutions. Income-related institutions, such as welfare, are arrangements *indirectly* affecting the labour supply of divorced women. These institutions influence the post-divorce income situation of women, which may result in a reduced necessity to find a job (the financial incentives decrease). Hence, in countries with high welfare benefits, separated women on welfare may experience a 'welfare-trap'. That is, income from labour (and especially from low status jobs) is not necessarily higher than income out of welfare. Employment may even lower the disposable income since welfare-specific benefits might be lost. Hence, in high spending countries, welfare may discourage separated women to enter the labour market.

Contrary to income-related institutions, employment-related institutions *directly* affect separated women's work; arrangements such as public child care and active labour market programmes can directly take away time restrictions and increase education. Hence, women-friendly employment policies may encourage the employment of separated women, and especially that of women with young children.

Because of the small number of countries in our analyses we use one indicator for each kind of institution: income-related institutions are represented by the level of welfare paid to single parents and employment-related institutions are measured by the availability of public child care provisions.

In sum, we expect the income- and employment-related institutions to have opposing effects:
H1. The more generous single parent allowances are, the less likely women enter the labour market after separation.

H2. The more available public child care places, the more likely women enter the labour market or increase their working hours after separation.

Some separated women may benefit more from income and employment support by the state than others. We mentioned earlier that we expect separated women receiving high welfare payments to be less likely to enhance their labour supply than women receiving low or no benefits. We expect that women who can live on welfare are less likely to find alternative income resources too, such as remarriage and living with parents. As a result, the effects of remarriage and living with parents may be less strong in countries with more generous income support. We summarize this conditional effect of social welfare on separated women's labour supply as follows:

H3. The negative impact of alternative income resources on women's post-separation labour supply is stronger for women living in countries without generous single parent allowances than for women living in countries with more generous single parent allowances.

Additionally, we hypothesize that the strength of the relationship between the age of the children and labour supply is moderated by employment-related institutions such as public child care. According to economic reasoning, single mothers who cannot fall back on their relatives for child care have to find a balance between the costs and benefits of employment (Leibowitz et al., 1992). This decision-making process is influenced by the costs and availability of child care. The higher the costs and the availability, the lower the value of working time and the higher that of caring time. As young children require the most intensive caretaking, women with young children profit most by good child care provisions.

H4. The negative impact of having young children on women's post-separation labour supply is stronger for women living in countries with few public child care places than for women living in countries where more public child care is available.

Culture

From a sociological point of view, we consider the impact of values and norms. Value differences between countries go together with differences in normative climates. The values of surrounding others, people from the same community, or even from a country, function as social norms for individuals (Kalmijn, 2003). This normative climate can either restrict or encourage the labour supply of women during and after marriage. In countries where most people think traditional about gender roles, married women with children are expected to stay at home and do the housework and take care for the children. As a consequence, married mothers in those countries work less than mothers in

countries with modern working values, where mothers are encouraged to have a job (Uunk et al., 2005). Initially, we expect the same applies to divorced women.

Yet, an alternative hypothesis might be that separated women are as likely to increase their labour supply in traditional countries as in modern countries. First, the norms about women's employment may be different for divorced women than for married women. Since divorced women cannot rely on the income of a husband, people with traditional values may be willing to alleviate their disapproving norms about working women who are divorced. The second argument is related to the behaviour of separated women themselves. Divorced women more often have modern values (Jansen, 2002; Kaufman, 2000). Since they already have broken traditional norms, we expect them to care less about the traditional norms for working women. Unfortunately, the ECHP does not contain information of values on the individual level. Yet, we can control for individual gender role values by the level of education. This is a good proxy for the gender role values of individuals (Kalmijn, 2000). The higher a woman's education, the less traditional her values concerning sex roles.

To conclude, we test the following hypothesis on the macro level:

H5. The more traditional the gender role values in a country, the less likely women will increase their labour supply due to separation.

Confounding effects

Cultural aspects of countries may confound the institutional impact. If culture co-varies with government policies, the effect of policies on female employment may be (partly) spurious. In countries with traditional gender role values, for example, women-friendly policies for employment generally are limited, whereas modern countries mostly have high levels of institutional support (Uunk et al., 2005). On the other hand, public opinion about working mothers does not always match with levels of state support for maternal employment (Brayfield, Jones, & Adler, 2001; Panayotova & Brayfield, 1997). Depending on the strength of the association between culture and institutions, cultural differences between countries may weaken the institutional effect on the employment of separated women.

H6. The positive effect of more generous public child care provisions on women's post-separation labour supply decreases once cross-national differences in gender role values are taken into account.

Because of the limited number of countries in our data, we cannot include many variables on the macro level. However, we do want to take economic aspects of countries into account as they can act upon the labour supply of women too. The more employment positions on the labour market and the higher the wages for women, the easier for women to find a (good) job and the more employment will pay off. An indicator that measures how much women may gain when they enter the labour market is

the gender gap in earnings. If female wages are low, women are less inclined to increase their labour supply. Hence, separated women may increase their labour supply more in countries with a small gender gap than in countries with a large pay gap. Moreover, institutions may co-vary with the labour market situation. For example, countries with a smaller gender pay gap have more generous women-friendly employment policies (Norway and Sweden) than countries with a large pay gap (the United States and Canada) (Rosenfeld & Kalleberg, 1990). Depending on the strength of the association between employment-related institutions and the gender pay gap, the impact of institutions on women's post-separation labour supply may decrease once taking women's wages into account. We will test whether cross national differences in the gender pay gap alter the institutional effects.

3. Data and method

Data

We test our hypotheses using longitudinal data from the European Community Household Panel (ECHP) 1994-2001 (8 waves). This dataset contains highly cross-national comparable information on employment, income and several demographic characteristics of the fifteen former EU-Member States. The first wave is a sample of approximately 60500 households and about 130000 adults of 16 years and older. The national samples are representative for the country's populations. Demographic changes in the population over time are reflected in the continuous development of the sample (through births, deaths and the creation of new households).

We exclude Sweden from our analyses because the data for this country are cross-sectional. Luxembourg is excluded because of the small number of cases. Due to these exclusions we analyse thirteen countries: Denmark (DK), the Netherlands (NL), Germany (DE), Belgium (BE), France (FR), the United Kingdom (UK), Ireland (IE), Italy (IT), Greece (GR), Spain (ES), Portugal (PT), Austria (AT) and Finland (FI). For Austria we have data from 1995 onwards and Finland had joined the panel since 1996.

We analyse women between 18 and 65 years who experienced a separation (N=2179). All union dissolutions during the observation period are considered, hence women who separated twice (130) are analysed twice. We do not have information on prior marriages and cohabitations, thus we do not know which of the separations we analyse are first separations and which are later separations. We define separation as a transition from marriage or cohabitation in one year to not living as a couple in the subsequent year. We also include women who remarry or cohabit quickly (at least one year after break up) because living with a new partner may be a strategy to compensate the income decline and therefore reduce the changes in labour supply. Unfortunately, we do not have information about repartnering within one year. The labour supply of these women will probably be the least affected by separation.

Method

We measure labour supply changes of separated women during a period of eight years. First, we do two descriptive analyses. 1. We analyse the change in the number of working hours due to separation. For this analysis, we use a time window of three years (see figure 1): we observe the year in which the separation took place (t); then, we assess the number of hours a woman worked for pay in the year before separation (t-1) and compare this with the number of working hours in the year after separation (t+1). 2. We describe the changes in labour force participation in the same way. Yet, we focus on women who did not work before the separation. We have valid pre- and post-separation data for 1857 separations (15% (316 of 2179) of the separated women did not participate in the year after separation. For 21% (67) of them we could include information of the second year after separation. Of the 1930 separated women, we dropped 3.8% because of lack of labour supply information).
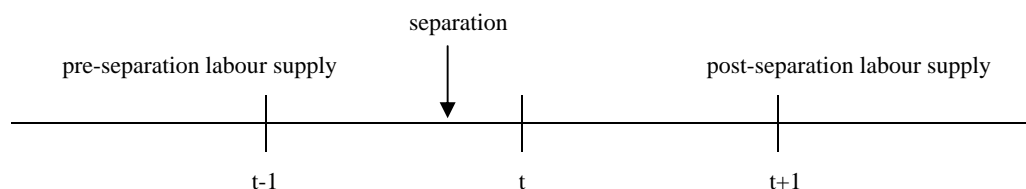
separation

pre-separation labour supply

post-separation labour supply

t-1   t   t+1

Figure 1. Time window of the descriptive analyses of changes in labour supply

Second, we perform three explanatory analyses: a multi-level regression analyses to explain the changes in working hours and two event history models to estimate the odds of increasing working hours for women who worked and the odds of working for women who did not work before the separation. All models are random effects models. These models take the nesting of individuals (level 1) within countries (level 2) into account. Therefore, they provide less biased estimates and more appropriate standard errors for the macro-level variables than models which do not consider different levels. [Event history time window]

Another advantage of these models is that we can take selection effects into account, that is a cross-national difference in the composition of divorced women (Uunk, 2004). Goode (1962), for example, states that the selectivity of the population of divorced women depends on the level of industrialisation; in low-welfare countries divorce is more 'elite' than in high-welfare countries. In case cross-national differences in the population vary systematically with the other macro-effects, composition may complicate disentangling these other effects. For instance, in countries with higher levels of public child care arrangements, separated women are more attached to the labour market than in countries with less public child care (Uunk, 2004). Hence, not only the differences in public child care may facilitate women's work, but also the cross-national differences in population composition with respect to labour supply and human capital. By including individual determinants of labour

supply changes of separated women (pre-separation labour supply, human capital), we take these compositional effects into account.

4. Operationalization

Dependent variables

We estimate changes in labour supply in three ways. First we focus on the general change in paid working hours due to separation. Next, we analyse whether women that worked before the separation increase their working hours afterwards. And last, we estimate the entry of separated women on the labour market. All variables are based on the following question: 'How many hours do you normally work in your main job or business?' and stand for the weekly hours that are worked at present. We truncate working hours greater than 60 (1.1 percent of pre-separation working hours, 0.8 percent of post-separation working hours). Women working less than 15 hours a week reported the total numbers of hours they worked at their main job and any other jobs, if they considered working as their main activity. As a result the data for women working less than 15 hours are not comparable to the hours information we have for women working more than 15 hours. Therefore, we decided to consider women who worked less than 15 hours a week as not working (4.8 percent of pre-separation hours, 3.4 percent of post-separation hours). Due to this, the average number of working hours will be underestimated and the entry and exit numbers will be overestimated.

Independent individual-level variables

The *income of the ex-partner* is measured by the disposable income of the household in the year before separation minus the disposable income of the wife before separation. The disposable household income is the total income of all household members from labour, capital transfers, private transfers and social transfers, minus negative transfers like taxes, social security contributions and paid alimony. We use the modified OECD equivalence scale to make the incomes comparable among households of different sizes and compositions. The first adult in the household is weighted with factor 1, the other household members of 14 years and older with factor 0.5, and children under 14 with factor 0.3. Furthermore, we adjust the incomes for inflation – by the Consumer Price Index of the OECD – and cross-national differences in price levels – by using Purchasing Power Parities (PPPs).[1]

    Other income sources (non-work private incomes) contain all income except income from labour and welfare. It includes capital income, property/rental income and private transfers.

    Remarriage/recohabitation is defined as the transition from not living as a couple in one year to living together with a new partner in the subsequent year. We lack information of repartnering

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[1] These PPPs convert the country's currencies to a common currency and standardize the purchasing power of the currencies.

between two waves. In the rest of the paper we will only use the term remarriage, but we mean both marriage and cohabitation with a new partner.

The *living situation* of separated women live is measured in two categories: 1. not living with adult family; 2. living with parent(s), grandparent(s) and/or adult sibling(s).

Education and labour market experience before separation indicate the *human capital investments* of women during marriage. *Education* is measured as the highest level of education achieved in the year before separation. There are three levels distinguished in the ECHP data, using the International Standard Classification of Education (ISCED): 1. Less than second stage of secondary education (ISCED 0-2) and those that are still at school; 2. second stage of secondary education (ISCED 3); 3. university degree or comparable level (ISCED 5-7). *Labour market experience* is measured differently for the two analyses. In the first analyses estimating the changes in working hours we use the number of years between the most recent working year (before separation) and the year that women started their working life as a proxy for the labour market experience of women before separation. In the second analyses in which we only analyse the odds of entry into employment of separated women we use a different measure: the number of years women do not participate anymore on the labour market.

Health is measured by the following question: 'How is your health in general?'. Respondents could answer in five categories: 'Very good', 'Good', 'Fair', 'Bad', 'Very bad'. We recoded the variable so that a high score means a good health.

The *age of the youngest child* (up to age 15) is categorized into three categories: 1. no children; 2. the youngest child is under 6 years old; 3. the youngest child is 7 through 15 years old. In the ECHP people under age 16 are considered as dependent children. The child has to be living with the mother.

Age is measured at the interview year before separation. We expect older women to have more labour market experience and are therefore more likely to increase their labour supply. Yet, cohort effects may play a role as well. Older cohorts usually have more traditional sex role values; hence these cohorts often took care for the children and homework during marriage and invested less in human capital. To test this we include age squared in the analyses as well.

Independent macro-level variables

The *income-related state provision* of a country is measured by the guaranteed monthly net *allowance for single parent families* with one child of 10 years old (1996). The measure is acquired by Uunk (2004) from the Community Information System on Social Protection (MISSOC). This measure is the sum of three allowances (if present in the country): 1. a basic allowance for welfare dependency; 2. a single parent allowance; 3. a child allowance. For detailed information on the creation of this indicator see Uunk (2004).[2]

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[2] We may include annual data in the future.

A country's *employment-related state provision* is measured by the number of public child care places per 100 children under age three in publicly funded day care services. The numbers are derived from the European Commission on Child care between 1990 and 1995. Although the child care provisions of countries vary in time, we cannot provide time-varying figures due to lack of information. For details see Uunk (2004).

For the measurement of the *norms on gender roles* we use data of the European Values Study (EVS) 1990/1999, a large-scale, cross-national, and longitudinal survey on moral and social values. The survey is carried out among citizens of 18 years and older in 33 countries. The (weighted) samples are nationally representative. The data contain six items on women's gender role attitudes. Kalmijn (2003) found that three dimensions can be derived: 1. beliefs about the consequences of mother's employment; 2. attitude towards the role of housewife; 3. attitude towards the economic independence of women. Due to the small number of degrees of freedom in our models, we will include only one of the three scales. We use the scale on attitudes about the role of housewives, because this scale measures best the gender role values. The scale about working mothers refers only to the role of the mother, not all women. Moreover, the high correlation of the scale with the public child care indicator (0.82) would lead to multicollinearity problems when including both variables in the model. Furthermore, the attitude scale about women's economic independence focuses too much on the economic necessity to work.[3] The average reliability of the scale (1990-1999) is 0.55. The scale is created from the following statements:

1. A job is alright but what most women really want is a home and children (2)

2. Being a housewife is just as fulfilling as working for pay (2)

The answering categories are: 'strongly agree', 'agree', 'disagree', 'strongly disagree'. A high score represents a more egalitarian gender value, whereas a lower score stands for a more traditional view. The scale is created by computing the mean of the items (range 1-4).

The EVS survey years do not entirely overlap the ECHP observation period. Therefore, we use for each scale the mean score of the 1990 and 1999 survey. An advantage of using the mean of both survey years may be that the reliability of the measures improves because for each measure we have two observations.

To control for spurious effects due to cross-national differences in the labour market situation, we include the *gender pay gap* in a country. The data are obtained from the European Commission (2003). We use the ratio between the average hourly earnings of female and male employees aged 15-64 who work at least 15 hours per week. The gender pay gap is the inverse of this ratio and measured as 100 minus the earnings ratio. We have annual information of the gap of the years 1995 to 2000. We assume that the pay gap in 2001 is similar to that in 2000. For 1994 we do not include information on the pay gap, since we use this year only for pre-separation information. We use the 'unadjusted' gap

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[3] The high scores in all southern European countries, meaning that people of these countries would have more liberal gender role values, indicate this.

which is not entirely comparable between countries, due to cross-national differences in occupational segregation. Yet, we want to focus on how much women may gain when they enter the labour market. If female wages are low, women are less inclined to increase their labour supply.

4. Results

In this section, we examine the impact of individual and institutional factors on women's post-separation labour supply. First of all, we present the level of institutional arrangements in the 13 studied countries. Then, we describe the labour supply changes due to separation in each country. Subsequently, we investigate to what extent the individual labour supply changes can be explained by individual and institutional determinants. In the last section the results are summarized.

Associations between institutions

We find substantial country variation in the social welfare and public child care provisions. In Denmark, Belgium, and the United Kingdom, single parent allowances are highest (in 1996: between 888 PPP in DK and 854 in UK). In Greece, Portugal, and Spain, the allowances are lowest (between 60 and 282 PPP). The ranking on public child care provisions is somewhat different. The state arrangements on child care are highest in Denmark (with 48 places per 100 children under three years old, 1990-1995). Finland and Belgium follow with 32 and 30 places respectively. France (23 places) and Portugal (12 places) provide a moderate level of public child care, whereas the other countries have a much lower child care ratio (varying from 2 up to 8 places).

In figure 1 the association between both institutions is portrayed. The figure shows a positive relation, although some countries have high spendings on single parents allowances, whereas they do not provide much public child care, and vice versa. The correlation between the two variables is 0.45, but is not significant due to the low number of countries. Denmark, Finland, Belgium, and France rate high on both indicators, the four southern European countries low.
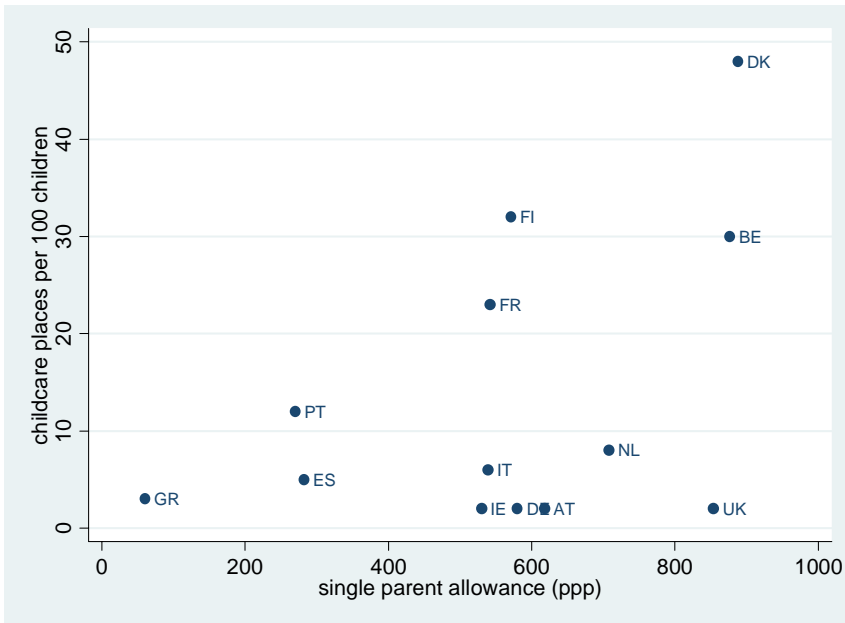
Figure 1. Public child care level by single parent allowance benefit levels of 13 EU-countries, 1990-1996

With respect to the norms on gender roles, we observe large cross-national differences as well. The Danish, Dutch and German have on average the most egalitarian gender role values (average scores are 2.66 for DK, 2.55 for NL and 2.54 for Germany). France, Belgium and Italy are the most traditional countries (means: 2.24, 2.28, and 2.29). The correlations between the institutions and the sex role scale are shown in figure 2. The scale correlate positively with the institutions.

Figure 2. Gender role values by single parent allowances and public child care level of 13 EU-countries, 1990-1999

Descriptive analyses

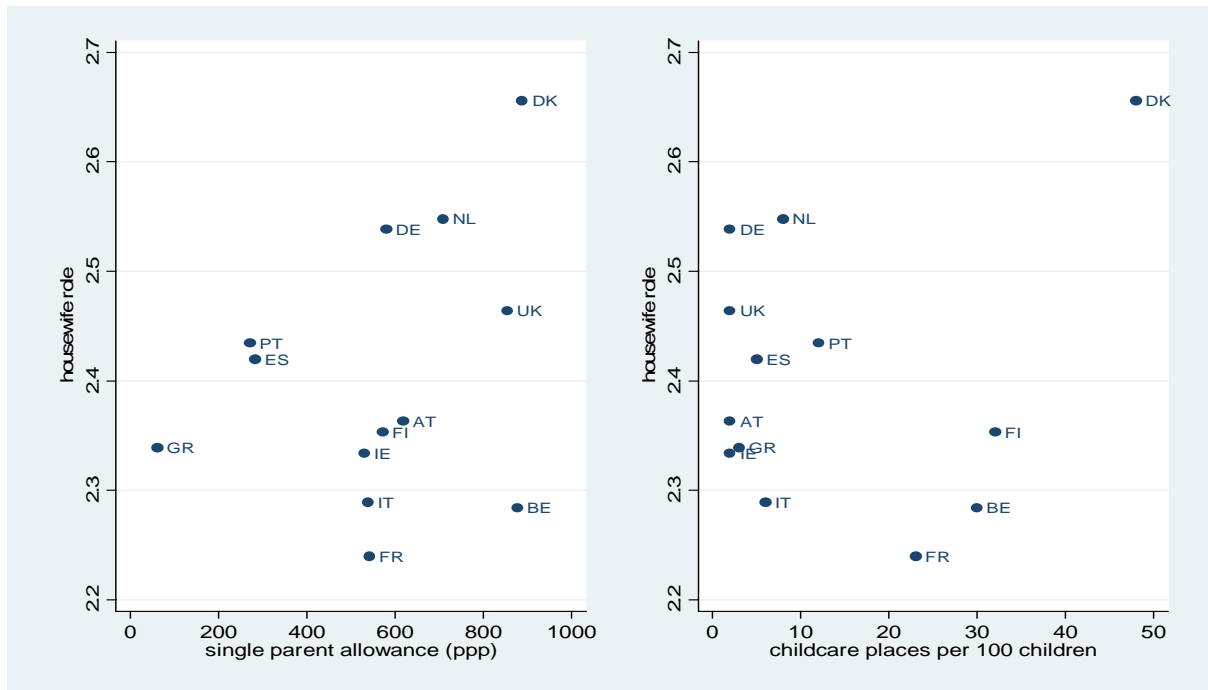To answer the first part of our research question about the consequences of separation for women's labour supply, we present two descriptive analyses. First of all, we analyse to what extent women change their working hours on average due to separation. Then, we focus on the labour force participation changes and present entry and exit figures, as well as the net changes.

In table 1 the working hours before and after separation and the net change in working hours are given. We observe substantial variation between the countries. In Finland, women worked on average the most hours for pay before they separated, followed by Austria and Germany. Women in Ireland and the Netherlands worked least. After separation, we see the same pattern occur, but with small changes. In Denmark, Italy, the Netherlands and France women largely enhance their working hours. In Finland, the United Kingdom, Greece and Ireland the mean number of weekly working hours decreases. Ireland remains at the bottom of the ranking.

In some countries separated women are a selective group. When we look at the working hours of married women (the first column), we discover a large discrepancy between the number of working hours of separated women (before their separation) in the southern European countries and that of married women in those countries (except for Portugal). Separated women work on average more hours than married women. The same holds for Austria and Germany, and to a smaller extent for the Netherlands and the United Kingdom.

Table 1. The average number of weekly working hours of married and separated women in 13 EU-countries, 1994-2001

	married women	separated women before separation	separated women after separation	net change	N
NL	12.6	16.8	21.9	5.0	177
IT	14.6	22.4	26.8	4.5	107
DK	27.2	23.4	27.7	4.4	153
FR	19.4	19.3	23.0	3.7	158
ES	13.0	21.5	24.9	3.4	132
BE	21.0	21.1	24.3	3.3	120
DE	18.9	26.3	29.4	3.1	278
PT	23.5	23.9	26.6	2.7	100
AT [a]	19.3	26.6	28.0	1.4	106
FI [b]	28.9	30.2	29.4	-0.8	123
IE	12.9	14.0	12.8	-1.2	47
UK	20.9	24.3	22.7	-1.7	304
GR	16.2	25.8	23.0	-2.8	52
Total 13 countries	18.0	23.2	25.3	2.1	1857
F-value (df)		5.7 (12)**	5.2 (12)**		

*N=1857, ** p<0,01; * p<0,05.*
[a] *For Austria only information of 1995-2001 is available.*
[b] *The Finland survey has only 6 waves (1996-2001).*

In the next table we present the participation rates of women. From this table we derive that women (before separation) participated most in Finland, Austria, Germany, and the United Kingdom. The lowest employment rates are found in Ireland, the Netherlands, and France. After separation a slightly different pattern arises. The participation rate in Denmark rises up to the level of Finland,

Austria and Denmark, whereas women's participation in the United Kingdom decreases. Note that the labour force participation of separated women is on average higher than that of married women. The difference is especially high in the southern European countries (except for Portugal). The high participation rate of separated women indicates that they are a highly selective group.

The exit and entry levels are shown more detailed in figure 3. On average, in all countries the participation rates of women increase after separation. The increase is highest in Denmark, the Netherlands and Italy. In the United Kingdom, Greece, and Finland, the exit of women from the labour market is greater than the entry. But, where in Finland few separated women change their labour supply behaviour, in Greece levels of both entry (15%) and exit (17%) are high.

Table 2. Changes in the labour force participation of separated and married women in 13 EU-countries, 1994-2001

	married women	*before separation*	*after separation*	*net change*
NL	45.8	53.1	65.0	11.9
DK	77.7	64.1	75.8	11.8
IT	41.2	60.7	72.0	11.2
PT	59.6	58.0	67.0	9.0
FR	54.4	54.4	63.3	8.9
BE	60.9	55.8	64.2	8.3
ES	33.8	56.1	64.4	8.3
DE	53.4	68.0	75.2	7.2
IE	40.3	40.4	44.7	4.3
AT [a]	53.8	73.6	75.5	1.9
FI [b]	74.3	77.2	75.6	-1.6
GR	42.4	65.4	63.5	-1.9
UK	62.1	67.4	62.5	-4.9
Total 13 countries	50.5	62.6	68.0	5.4
F-value (df)		50.5 (12)**	38.1 (12)**	5.0

$N=1857$, ** $p<0,01$; * $p<0,05$.
[a] *For Austria only information of 1995-2001 is available.*
[b] *The Finland survey has only 6 waves (1996-2001).*

To conclude, on average European women (moderately) increase their labour supply after separation. Overall in the 13 countries, 13 percent enters the labour market, whereas almost 8 percent leaves. These figures reveal a similar pattern as the results of Bradbury and Katz (2002) for the USA and Finnie (1993) for Canada. Moreover, just like Jarvis and Jenkins (1999), we find a substantial decrease in women's post-separation labour supply for the United Kingdom. Yet, we conclude that the patterns of labour supply changes differ a lot between countries. In some countries we observe much labour supply mobility (entry and exit) among separated women, whereas in others labour supply changes are small. For instance, in Denmark, the Netherlands, and Italy, women substantially work more hours after the separation than before. This is partly due to the large number of women that enter the labour market. In the United Kingdom, Greece, and Finland women on average reduce their working hours after a divorce. In these countries the labour market exit is higher than the entry.
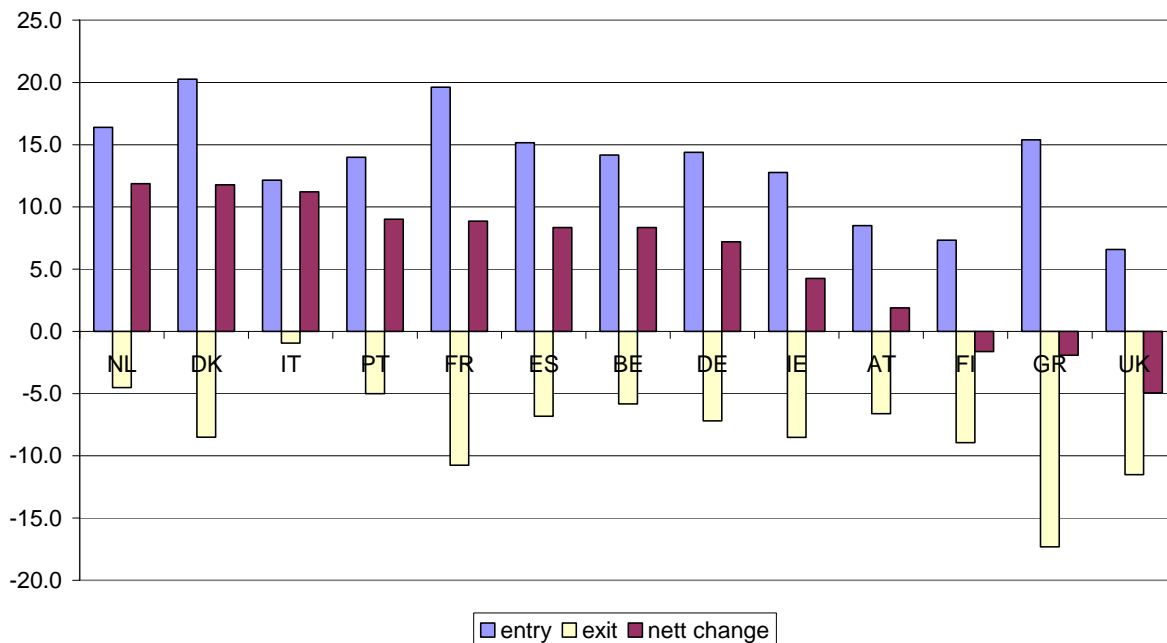
Figure 3. The entry, exit and net change on the labour market of women after separation, in 13 EU-countries, 1994-2001

Multivariate analyses

To examine to what extent individual and country level indicators explain women's labour supply changes after separation, we carry out three analyses. In the first analysis we explain the changes in working hours for all separated women by multi-level regression models. We estimate the number of weekly hours women work in the year after separation, controlling for the pre-separation number of working hours (for a similar pre-post design see Allison, 1990). In the second analysis we focus on women who worked before the split up and examine to what extent these women are likely to increase their working hours. We model this with an event history (multi-level) analysis and include the number of working hours before separation to control for ceiling effects. In the third analysis we use an event history (multi-level) model as well and estimate the odds of entering the labour market for women who did not work before the separation.

For all three analyses we stepwise estimate several models. First, we estimate a model to examine the influences of individual determinants (the income of the ex-partner, alternative income resources, human capital, the age of the children, and age). Then, we examine the impact of income- and employment-related institutions. Next, we consider the effect of cross-national differences in gender role values. Subsequently, we examine the relative impact of institutions and culture. And last, we include several cross-level interactions. In the table below these steps are presented schematically. Since the coefficients in the model with individual-level variables hardly change, we do not present this model. Important changes are mentioned in the text.

Table 2. Estimation of the labour supply models in different steps

Model	M0 (not presented)	M1, M2, M3	M4	M5	M6, M7
Variables	Micro variables	Micro variables + Institutions	Micro variables + Culture	Micro variables + Institutions + Culture	Micro variables + Institutions + Interactions
Hypothesis	-	H1, 2	H5	H6	H3, 4

Table 3 shows the results of the first analysis. We first observe the effects of the individual factors in model 1. To what extent do financial incentives influence women's post-separation working hours? The income of the ex-partner does not influence the number of working hours for separated women. An explanation for this may be that the positive effects for women without a high-income ex-partner cancel out the negative effects (decreasing labour supply) for women with a low-income ex-partner. We expected that the income situation of women who lived with an ex-partner with a high income would deteriorate most and therefore experience the highest incentives to increase their working hours. Yet, women who had an ex-partner with a low income may also experience incentives to increase their labour supply. Probably both effects cancel each other out.[4] Alternative income resources do not significantly affect women's post-separation working hours. Among these alternative sources are income not from labour or welfare, such as income from capital, property income and private transfers (including alimony), but also living with family and remarriage. In the first-model (not presented here), the effect of living with family does significantly influence women's post-separation working hours, in the direction we expected: separated women living with their family generally work less than women not living with their family. After controlling for macro level factors the effect is not significant anymore.

Women seem to be constrained by time and individual capacities. Both human capital indicators have an effect on women's post-separation working hours. The more education and the more labour market experience women have during marriage, the more hours they work after separation. Next, women's health situation affects their labour supply as well. The better their health, the more hours women work after separation. Last, children are a restriction for separated women's labour supply. The younger the children living in the household, the lower the number of post-separation working hours. On average women with children under age six work 6.7 hours less than women without children. Women with children between 7 and 15 years work 2.4 hours less.

The last individual determinant is age. The age effect also correspond with our expectation. The older women are, the more hours they work after separation. Yet, the increase in working hours slows down as women get older.

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[4] Including income deciles instead of the continuous income variable does indeed suggest different effects for different income groups. Women with an ex-partner from a low income group work the least hours. Women with middle income group ex-partners work most, together with women from the highest decile.

To conclude, constraints seem to be more important factors explaining women's post-divorce working hours than financial incentives.

[table 3, see appendix]

We now discuss the estimates of the macro variables to test our hypotheses. Because in all hypotheses we formulated the direction of the effects, we use one-tailed tests.[5]

To what extent do income- and employment related institutions have an impact on women's labour supply? The single parent allowances measure does not have a significant effect on the number of working hours. Probably, allowances particularly influence women's decision about whether or not to participate on the labour market and not so much the number of hours they work. We do not find an effect of public child care provisions either. Although the direction of the coefficient of public child care is as we expected, the coefficient does not significantly differ from zero.

In model 4 we test whether the social norms about gender roles in a country matter. These norms do not significantly influence the labour supply of women. Yet, the direction of the effect is according to our expectations (H5): the more modern a country's population think about sex roles, the more hours women in that country work after a separation.

From model 5 we can derive that the effect of social norms is not confounding with the influence of public child care (H6). The correlation between the two variables is low (.12) and hence the effects of both variables hardly change.

In the last two models the cross-level interactions are included. Are remarriage and living arrangements more influential in countries with low social welfare? Indeed, the effect of living with family is stronger in countries with low single parent allowances. In these countries separated women living with their family work about 8.6 hours less than separated women not living with their family. Contrary, in countries with high single parent allowances, women living with their family work up to maximum 11 hours more (0.013*(888-60) = 10.8). Remarriage does not influence women's working hours, neither in countries with generous social welfare, nor in countries without.

In the last model it is shown that our expectations about the cross-level interaction between public child care and the age of the children were right (H4). After separation, more available public child care provisions seem to take away the time restrictions children may bring about. Women with a child under age 6 work about 10.5 hours less than childless women. Yet, in countries with good child care arrangements this negative effect is cancelled out by an increase of maximum 12 hours (0.264*(48-2) = 12.1). For separated mothers with at least one child in the age of 7 to 15 work public child care

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[5] In all models we controlled for cross-national differences in the gender pay gap. We expected that in countries with larger pay gaps, it would be less worthwhile for women to work more hours. We do not find significant effects however, nor does including the pay gap change the coefficients of other macro factors. Because we cannot include few variables on the macro level because of the small sample size, we decided to not include the pay gap in our models presented here.

availability does not increase their working hours. They work in every country on average 3 hours less than separated women without children.

[table 4, see appendix]

In table 4 the results are shown of the event history model estimating the odds of an increase in working after separation. The results are more or less similar to the ones of the regression analysis, when it comes to the effects of individual determinants. The only difference is that we do not find an effect of health and labour market experience. Moreover, we estimated the effect of duration. Women are most likely to increase their working hours in the first year after separation. Every year later the odds decrease, to a minimum four years after separation.

The findings for the macro level are somewhat puzzling. Contrary to our expectations, a country's level of single parent allowances does not have an impact on women's post-separation increase in working hours. The availability of public child care does have an influence, but this influence is negative; the more places for public child care in a country, the less likely women increase their working hours after separation. Obviously, child care affects the increase in working hours in a different way than it affects the entry of women after separation.

From model 4 and 5 we derive that women with egalitarian gender role values do not increase their working hours more than women with conservative values and that the cultural differences between countries do not alter the strength of the negative effect of public child care provision.

The sixth model reveals that the effects of alternative income resources do not differ between countries with high and countries with low single parent allowances. We do find a cross-level interaction effect of child care and the age of the youngest child. The odds of an increase in hours are 3 times lower for women with children younger than 6 years compared to women without children (exp(1.099)). Yet, in countries with good availability of public child care, women with young children have higher odds (up to 1.20 higher) to increase their working hours (exp[(-0.016+0.020)*(48-2)]). The negative impact of having young children on women's labour supply is cancelled out in countries living in countries where more public child care is available.

[table 5, see appendix]

What is the impact of individual and institutional factors on women's labour market entry after they split up? The odds of entry are estimated in table 5. Considering the effects of the individual characteristics, we observe the same pattern as in the previous analyses, except that we now find an effect of other income sources (from capital, property or private transfers such as alimony), although it

is not what we expected; women with other income sources are more likely to enter the labour market than women without these income sources.[6]

Looking at the effects of the country level variables, we can confirm four of our hypotheses. Single parent allowances do affect the odds of entry; after taking the availability of public child care into account, higher single parent allowances in a country go together with lower chances of women to enter the labour market after separation. Apparently, income-related institutions have an unintended effect. Because in countries with high income support the financial difficulties of separated women are reduced, these women are less likely to search for a job. From model 2, we derive that the more generous public child care provisions are, the more likely women start to participate on the labour market after divorce. Moreover, this effect is stronger when we control for single parent allowances.

In the fourth model the cultural hypothesis is tested (H5). The effect of gender role values is not significant and the effect does hardly change when we take the effect of public child care into account (and vice versa) (model 5).

The last two models take the cross-level interaction effects into account. In countries with low single parent allowances, the odds of entry for women living with their family are about 5 times lower than for women not living with their family (exp(1.710)). Yet, in countries with high single parent allowances the odds increase (with exp[(-.001+.003)*(888-60)]= 5.24). Remarriage does not influence the odds of entry, neither in countries with high income support, nor in countries with low support.

As in the previous analyses of women's post-separation working hours, we find that especially women with young children benefit from employment-related state provisions. Women with children of 0 to 6 years are 3.6 times less likely to start working than childless women in countries with hardly any public child care (exp(1.291)). These odds increase in countries with good child care provisions with maximum 3.46 (exp[0.027*(48-2)]). The restriction of having young children is almost completely taken away in countries with good public child care provisions.

Summary of results

In the next table the results are summarized by our hypotheses. Institutions seem to affect women's entry to the labour market, not their working hours. Institutions have a contradictory effect on women's post-divorce labour market entry. Ample public child care arrangements enhance entry, especially for women with small children. High welfare payments, on the other hand, decrease the entry odds. Alternative income resources, such as living with family only play a role in countries that lack generous welfare payments.

The impact of public child care provisions on women's post-separation working hours is somewhat confusing. On average women in countries with many public child care places are less

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[6] The fact that the coefficient of education is not significant is due to the small sample size. When running the model without macro variables and less micro variables the effect is stronger and significant. Including health, women's age and the age of the youngest child reduce the educational effect.

likely to increase their working hours. However, for women with young children these provisions do what they were intended for: take away time restrictions to enable women to increase their labour supply.

A last finding is that women living in countries with low single parent allowances are less likely to increase their number of working hours when they live with their family than women living with their family in high welfare spending countries.

Table 6. Summary of results

hypothesis	change in working hours	increase in working hours	labour market entry	Total
	all	employed	non-employed	
1 negative effect single parent allowances	0	0	+	0/+
2 positive effect public child care provisions	0	-	+	0
3 alternative income resources*allowances	+/0	0	+/0	+/0
4 young child*public child care	+	+	+	+
5 positive effect egalitarian gender roles	0	0	0	0
6 confounding effect child care and culture	0	0	0	0

+=confirmed, -=rejected(=opposite direction of effect), 0=no effect

5. Conclusion and discussion

In this paper we examined the influence of institutions on women's labour supply changes due to separation. Using ECHP data from 13 EU-countries in the nineties, we applied multi level models to test institutional effects while controlling for compositional effects.

First, we have shown that women on average only modestly change their labour supply after separation. Moreover, we revealed that patterns of labour supply changes of separated women differ to a large extent between countries. This is an advancement upon previous literature on women's labour supply changes due to separation, which mostly focused on one country.

Next, we have demonstrated that policy matters. Especially for mothers separated women with young children, public child care arrangements have a strong effect on women's labour supply after separation. This result is in line with findings of Uunk (2005), Gornick et al. (1998), Rosenfeld & Birkelund (1995), and Stier et al. (2001).

Third, we found a contradictory effect of income- and employment related institutional arrangements on the consequences of separation. Institutions that focus on increasing women's employment, such as public child care provisions, indeed *encourage* higher labour market entry of women with young children. Arrangements of income support (such as allowances for single parents), on the other hand, *discourage* separated women's entry on the labour market. We did not find this contradictory institutional effect on post-divorce working hours. Public child care arrangements negatively effect women's increase in labour supply after split up. Once women are working their labour supply is not influenced by public child care provisions anymore.

Furthermore, we found that separated women in countries with low social welfare payments draw upon other income resources than income from labour or welfare. They go back living with their parents to reduce the costs of living. As a result, in countries with low single parent allowances, separated women living with their family are less likely to enter the labour market than separated women who do not live with their family.

A fifth conclusion is that people's values about gender roles (social norms on the country level) do not influence women's labour supply. We hypothesized that a traditional normative climate, in which women are expected to stay at home and take care for the children, would discourage separated women to increase their labour supply. We took into account possible confounding with a selection effect because separated women in traditional countries may have more modern values and therefore care less about the traditional norms on women's employment. We included the level of education as a proxy for women's individual gender role values. Probably, it would be better to test the hypothesis on the micro level. Unfortunately, we lack the data to do so.

Sixth, we investigated the influence of some individual characteristics. Besides the finding that living arrangements do have an effect on labour supply in countries with low single parents income support, we did hardly find evidence of the influence of financial incentives. The ex-partner's income and other income sources, such as capital/property income and private transfers, do not affect women's working hours after union dissolution.[7] Furthermore, we did not observe a difference in post-separation labour supply of remarried women and single women. Last of all, we examined the impact of restrictions. In accordance with previous research on the economic consequences of divorce, a lack of human capital investments of women during marriage leads to lower chances to increase their labour supply after the separation. Poor health and having young children function as restrictions to labour supply increases as well.

Our research did not unravel the recursive relationships between on the one hand women's post-divorce labour supply, and on the other hand remarriage, living arrangements, living on welfare, and poverty. Future research could focus on these endogeneity problems and disentangle to what extent different income sources lead to labour supply changes. Longer longitudinal panel data could solve these problems better.

Another advancement upon our research can be to investigate more accurately the impact of different policy indicators. For instance, women-friendly employment policies can be measured in several ways. We focused on the impact of public child care arrangements, which are aimed at women

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[7] The effect of financial incentives is difficult to observe. We expected that an absolute level of low income (poverty), as well as a relative level of low income (a substantial income drop compared to the households' income during marriage) would affect women's post-separation labour supply. However, we were not able to disentangle the absolute and relative effects. We did only test the effect of separated women's relative income level by including the ex-partner's income. We did not find an effect, probably because the effect might be entangled by the absolute income level of the new household. Further analyses of income deciles corroborate this explanation.

with children. Instead, measures of active labour market programmes or tax systems can be used to study how institutions work for all separated women. Another suggestion might be to include a measure of the legal alimony system since alimony is another income source which may mitigate the negative consequences for women of union disruption.

Finally, our research may imply some policy recommendations. We found that the impact of income support to separated women may have an unintended effect on women's labour supply. In high welfare spending countries, this might lead to negative divorce consequences in the long run, particularly for low-educated women with children who did not participate on the labour market for a while. These women can only apply for low status jobs of which the income is barely higher than welfare payments; due to the loss of welfare-related benefits their labour income may be lower than their welfare income. As a result, these women may stay trapped in welfare. To prevent this, governments might combine their income support with employment policy. Women-friendly arrangements such as good available public child care and parental leave can facilitate women's employment. But above all, active labour market programmes which are focussed on enlarging women's human capital may be effective.

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Table 3. Multi-level regression analyses of women's weekly working hours one year after separation.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
pre-separation working hours	0.475***	0.475***	0.475***	0.475***	0.475***	0.472***	0.467***
income ex-partner (before separation)	0.184	0.186	0.186	0.184	0.183	0.193	0.163
non-labour + non-welfare income (after separation)	-0.025	-0.023	-0.023	-0.019	-0.018	-0.040	-0.029
living with family	-2.106	-2.079	-2.071	-2.119	-2.013	-8.571***	-2.167*
remarriage	0.038	0.026	0.026	0.031	0.019	-4.569	0.129
education (before separation)	1.962***	1.932***	1.932***	1.958***	1.917***	1.926***	1.973***
labour market experience (before separation)	0.143**	0.143**	0.143**	0.141**	0.140**	0.143**	0.151**
health	1.702***	1.670***	1.672***	1.686***	1.664***	1.678***	1.700***
child 0-6 years	-6.653***	-6.657***	-6.658***	-6.650***	-6.669***	-6.673***	-10.487***
child 7-15 years	-2.359**	-2.343**	-2.343**	-2.353**	-2.332**	-2.467***	-3.308***
age	0.728***	0.730***	0.731***	0.733***	0.739***	0.753***	0.708***
age2	-0.023***	-0.024***	-0.024***	-0.024***	-0.024***	-0.024***	-0.023***
single parent allowance	0.001		0.000			-0.001	
childcare		0.045	0.044		0.040		-0.043
egalitarian gender roles				4.739	4.015		
allowance*living with family						0.013**	
allowance*remarriage						0.007	
care*child 0-6							0.264***
care*child 7-15							0.067
constant	-1.298	-0.945	-1.032	-11.880	-10.582	0.535	0.611
sigma u	2.054***	1.923***	1.928***	1.953***	1.857***	2.089***	1.845**
sigma e	14.792***	14.794***	14.793***	14.793***	14.794***	14.759***	14.704***
rho (%explained variance by country level)	0.019	0.017	0.017	0.017	0.016	0.020	0.016

* significant at 5%; ** significant at 1%
Number of separations: 1720

Table 4. Event history analyses of the odds of increasing working hours of working separated women, 13 EU-countries, 1994-2001

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
pre-separation working hours	-0.073***	-0.073***	-0.072***	-0.074***	-0.073***	-0.073***	-0.074***
income ex-partner (before separation)	0.013	0.017	0.014	0.014	0.017	0.013	0.016
non-labour + non-welfare income (after separation)	-0.002	0.000	0.000	-0.001	0.001	-0.001	0.001
living with family	-0.076	-0.142	-0.104	-0.093	-0.139	-0.845	-0.147
remarriage	-0.007	-0.000	-0.010	-0.005	-0.005	0.341	0.015
education (before separation)	0.278***	0.301***	0.296***	0.282***	0.301***	0.266***	0.302***
labour market experience (before separation)	-0.017	-0.016	-0.018	-0.017	-0.016	-0.017	-0.015
health	-0.090	-0.078	-0.075	-0.091	-0.076	-0.089	-0.080
child 0-6 years	-0.822***	-0.805***	-0.810***	-0.818***	-0.799***	-0.817***	-1.099***
child 7-15 years	-0.184	-0.174	-0.173	-0.183	-0.172	-0.184	-0.273
age	0.069**	0.062*	0.067**	0.068**	0.064*	0.073**	0.061*
age2	-0.002**	-0.002**	-0.002**	-0.002**	-0.002**	-0.002***	-0.002**
2 years after separation	-0.916***	-0.912***	-0.913***	-0.915***	-0.912***	-0.919***	-0.913***
3 years after separation	-0.921***	-0.912***	-0.917***	-0.920***	-0.915***	-0.916***	-0.915***
4 years after separation	-1.108***	-1.100***	-1.112***	-1.106***	-1.104***	-1.099***	-1.099***
5 years after separation	-0.899***	-0.896***	-0.906***	-0.898***	-0.902***	-0.896***	-0.891***
6 years after separation	-1.026*	-1.019*	-1.024*	-1.029*	-1.028*	-1.036*	-0.997*
single parent allowance	0.000		0.000			0.000	
childcare		-0.010*	-0.013**		-0.010**		-0.016**
egalitarian gender roles				0.122	0.262		
allowance*living with family						0.001	
allowance*remarriage						-0.001	
care*child 0-6							0.020**
care*child 7-15							0.008
constant	1.104**	1.315***	1.021**	0.933	0.669	1.124**	1.441***
sigma u	0.236	0.148	0.124	0.238	0.142	0.224	0.150
rho (%explained variance by country level)	0.017**	0.007	0.005	0.017**	0.006	0.015 **	0.007

* significant at 5%; ** significant at 1%; *** significant at 0.1%, one-tailed tested
Number of separations: 1081
Number of person years: 2299

Table 5. Event history analyses of the odds of entry of non-working separated women, 13 EU-countries, 1994-2001

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
income ex-partner (before separation)	0.028	0.030	0.033	0.026	0.028	0.030	0.031
non-labour + non-welfare income (after separation)	0.036*	0.038*	0.033	0.040*	0.043**	0.031	0.039*
living with family	-0.257	-0.165	-0.298	-0.196	-0.119	-1.710***	-0.224
remarriage	-0.065	-0.073	-0.076	-0.061	-0.068	-1.124	-0.078
education (before separation)	0.153	0.141	0.147	0.143	0.128	0.169	0.130
duration not working (before separation)	-0.049***	-0.048***	-0.050***	-0.047***	-0.046***	-0.047***	-0.049***
health	-0.354***	-0.351***	-0.340***	-0.360***	-0.355***	-0.338***	-0.352***
child 0-6 years	-0.879***	-0.880***	-0.829***	-0.913***	-0.917***	-0.916***	-1.291***
child 7-15 years	-0.494**	-0.478**	-0.452**	-0.506**	-0.489**	-0.527**	-0.666**
age	0.154***	0.157***	0.155***	0.157***	0.160***	0.164***	0.157***
age2	-0.005***	-0.005***	-0.005***	-0.005***	-0.005***	-0.005***	-0.005***
2 years after separation	-0.807***	-0.803***	-0.792***	-0.814***	-0.809***	-0.811***	-0.801***
3 years after separation	-1.034***	-1.025***	-1.020***	-1.044***	-1.038***	-1.052***	-1.047***
4 years after separation	-0.378	-0.395	-0.371	-0.397	-0.414*	-0.370	-0.428*
5 years after separation	-0.789*	-0.772*	-0.780*	-0.794*	-0.779*	-0.770*	-0.797*
6 years after separation	-0.531	-0.506	-0.508	-0.537	-0.512	-0.464	-0.523
single parent allowance	-0.000		-0.001*			-0.001*	
childcare		0.014**	0.017***		0.014***		0.001
egalitarian gender roles				1.083	0.924		
allowance*living with family						0.003***	
allowance*remarriage						0.002	
care*child 0-6							0.027**
care*child 7-15							0.011
constant	-0.532	-0.892*	-0.510	-3.256*	-3.133**	-0.091	-0.645
sigma u	0.222	0.112	0.001	0.207	0.067	0.239	0.050
rho (%explained variance by country level)	0.015**	0.004	0.000	0.013**	0.001	0.017**	0.001

* significant at 5%; ** significant at 1%; *** significant at 0.1%, one-tailed tested
Number of separations: 604
Number of person years: 1243