Economic consequences of union dissolution in Italy: findings from the European Community Household Panel

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1. Introduction and research questions

Compared with literature in other countries, there are only a few studies on the living conditions of separated and divorced Italians. The reason for this is definitely attributable to the relatively low level within marriage instability in Italy (ISTAT 2002), which makes the issue less urgent in terms of public policies.

However, the phenomenon is rapidly growing, considering that from 1995 to 2002 the total divorce rate passed from 8% to 13.1%; similarly, the total separation rate increased in the same period from 15.8% to 25.7%. We may thus hypothesize that, in the near future the population share of those who directly (partners) or indirectly (children and partners' original families) undergo these events will grow significantly.

The diffusion speed of the phenomenon can catch the country unprepared to cope with some of the problems associated with marital instability.

Generally speaking, family career interruptions introduce complex elements which, if not properly controlled, can negatively, and sometimes irreversibly, influence people's life course. In this work, attention focuses on the economic consequences of separation.

Most studies carried out in other countries, well used to coping with the phenomenon, emphasize that union dissolutions are associated with a fall in economic resources and, generally, with worsening life-styles leading to forms of impoverishment and economic vulnerability.

Women, in particular, are the weakest actors, especially if they have children to look after (Douglas and Murch, 2000; Jarvis and Jenkins, 1999; McLanahan et al., 1995; Smock et al., 1999), although McManus and Di Prete (2001) and Aassve et al. (2006) showed that men also lose economic status after their union dissolution. Until now, the few empirical analyses considering the Italian situation seem to agree with the international literature.

In a survey carried out in the early 1990s on legally separated women, 41% of those interviewed stated that, two years after the separation, their economic condition had worsened with respect to that during marriage (Barbagli and Saraceno, 1998).

Comparative data across countries suggest that, in the years immediately after the union dissolution, Italian women see a deterioration of the household income (Dewilde, 2003; Uunk, 2004; Andreß et al., 2006). Loss of income may be particularly high for women with responsibility for children after the split. Bradshaw and Mayhew (2002) estimated that, after separation, lone mothers with pre-school or school-age children undergo a reduction of net income varying from 54% to 75%, depending on their working status and on the number and age of children.

However, other comparative analyses showed that the Italian poverty rate among children living with only one parent (in most cases, the mother) is lower than in Germany or France, and similar to that of children living in intact families (Del Boca, 2003). A convincing explanation attributes this result to country differences in the composition of divorced women. In this sense, single Italian mothers are more protected from poverty because of their higher human capital investment (education and work) and lower number of children (Del Boca, 2002).

Less clear are the economic consequences of union dissolution on men. Some analyses using individual data show that Italian men do not suffer economically after separation; on the contrary, their household income even increases slightly (Andreß *et al.*, 2006). However, the picture change greatly when we consider the subgroup of parents. According to the estimates of Bradshaw & Mayhew (2002), non-custodial fathers in any case, lose income compared with their economic situation before separation, and in some cases the loss may even reach 50%. Aassve et al. (2006) find that men are unaffected by union dissolution in monetary terms, but if well-being is measured by non-monetary deprivation, the effect of separation becomes significant and in some cases even larger than that of women. However, this does not apply to Mediterranean countries, suggesting the higher propensity of men to return to the parental home.

The present work aimed at investigating this issue in more depth with some innovations. First, we consider the potential problems of selection bias. Most of the previously cited results were obtained with descriptive analyses, which compare circumstances before and after separation. Interpretation must therefore be cautious: the trend observed in the changes of household income before and after separation may be the same as that non-splitting couples. Moreover, self-selection may severely bias the true causal relationship between union dissolution and economic consequences. Couples undergoing a marital split may be qualitatively different from those not doing so in terms of other background characteristics such as age, education level, employment, income, living arrangements and social network prior to the event. These differences may affect both the risk of union dissolution and the economic well-being of partners, so that the real impact of the event may be biased. In order to tackle all these issues and to isolate the "pure" effect of the separation event, we use a method - a Difference-in-Differences estimator combined with Propensity Score Matching techniques (see Rosenbaum and Rubin, 1983; Heckman *et al.,* 1997).

Second, we wished to overcome a problem of measure. The economic consequences of a partnership dissolution are usually analysed by examining changes in household income.

However, even when net of taxes and adjusted for household composition, household income, may give a distorted picture of the changes in individuals' economic well-being after separation. Marital dissolution implies important changes in daily expenditure and these changes differ greatly by gender. This feature is only partially taken into account by the household income measure. For example, in the case of dependent children, adjusted household income does take into account in some crude way the costs of children for the resident parent (usually the mother), but does not consider at all those of non resident parent (usually the father), like the increased expenses for alimony, travel to visit the children, or renting new accommodation. Using only household income to measure the economic consequences of union dissolution may therefore overestimate the economic well-being of the non-resident father after separation and, consequently, overestimate – at least for those with children – gender differences in the economic effect of separations.

Therefore, we did not use only the traditional monetary measure (equalized household income) in our analyses, but also other subjective indicators measuring the living standards and capability of

households to afford a certain set of expenses. Our hypothesis is that subjective indicators may reveal negative consequences even though monetary ones do not.

Lastly, we were also interested in studying the interactions between the economic consequences of separation and the different living conditions after union dissolution. Considering that in Italy maintaining a separate dwelling may be extremely expensive, we presume that those who, after separation, share the house with other adults (parents, new partners, friends) have a great opportunity to save many of housing and housework costs with respect to those who choose (or are obliged) to live alone or with their children only. In this case, the family of origin, and especially parents, can provide substantial support to separated men and women, thus alleviating some of the negative effects of union dissolution. Summarizing, for a comprehensive study of the economic consequences of union dissolution, living conditions after separation must be investigated more deeply, extending the simple classification of couples as "with or without children".

The economic impact of union dissolution in Italy is analyzed using data from the eight waves of the European Community Household Panel (ECHP) carried out in 1994-2001. This source allows longitudinal analysis, so that we can observe short-term changes. In particular, we aim at analysing changes in economic status from the year before the break-up to the year after it.

The work is organized as follows. Section 2 gives a brief description of the social and institutional Italian background. Section 3 describes the data and variables used. Sections 4 and 5 present results: the former gives some descriptive results, and the latter illustrates the model (5.1) and the effects of union dissolution after having controlled for selection bias (5.2) and interactions with living arrangements (5.3). Section 6 contains some concluding remarks.

2. The socio-institutional background

In Italy, the phenomenon of the civil dissolution of marriages has a short history. Until little more than thirty years ago, only legal separation was possible, and it did not eliminate most of the civil effects of marriage. Divorce was introduced by law in 1970. A request for divorce could be made after 5 years of legal separation, and in 1987, a new law reduced this period from 5 to 3 years. According to Italian legislation therefore - with a few exceptions - legal separation is the necessary presupposition in order to be able to get a divorce. However, not all legal separations are converted into a divorce: of the total number of separations granted in 1995, only half (51%) were translated later into divorce within the year 2002. It should be stressed that, if a couple decides to divorce consensually, in most part cases the waiting time is short. Of the divorces in 2002, almost half the cases the time elapsing between legal separation and the request for divorce was 3 years (ISTAT, 2004).

It is not surprising, therefore, that in Italy dissolution of marital unions is much lower than in other European countries. The legislation has posed (and still poses) several constraints on divorce, and this indicates that its social acceptance is still relatively low. However, in the last few years legal separations and divorces have increased sharply (fig.1). The total separation rate (x1000), which was 129 in 1990, 158 in 1995, 228 in 2000 reached 257 in 2002. A similar trend was observed for the total divorce rate: in the same years, it values (x1000) were respectively 78, 80, 115 and 131 .

Legal separation and especially divorce are not generally events undergone by young people. The people who separated in 2002 were on average 40 years old (women 39, men 42) and their marriages had lasted on average 13 years. Most of these couples (69%) had children, and half (52%) had at least one child under the age of 18, custody of whom after separation was usually granted to the mothers[1]. In addition, those who separated had higher human capital than intact couples: in 2002, half (49% men, 53% women) had medium-high education and 70% of the women were employed.

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[1] In 2002, after separation, in 85% of cases the custody of children under 18 was granted to mothers, in 4% to fathers, and 11% to both parents.

Figure 1: Number of separations and divorces in Italy, 1984-2002. Source: National Statistical Institute (ISTAT)
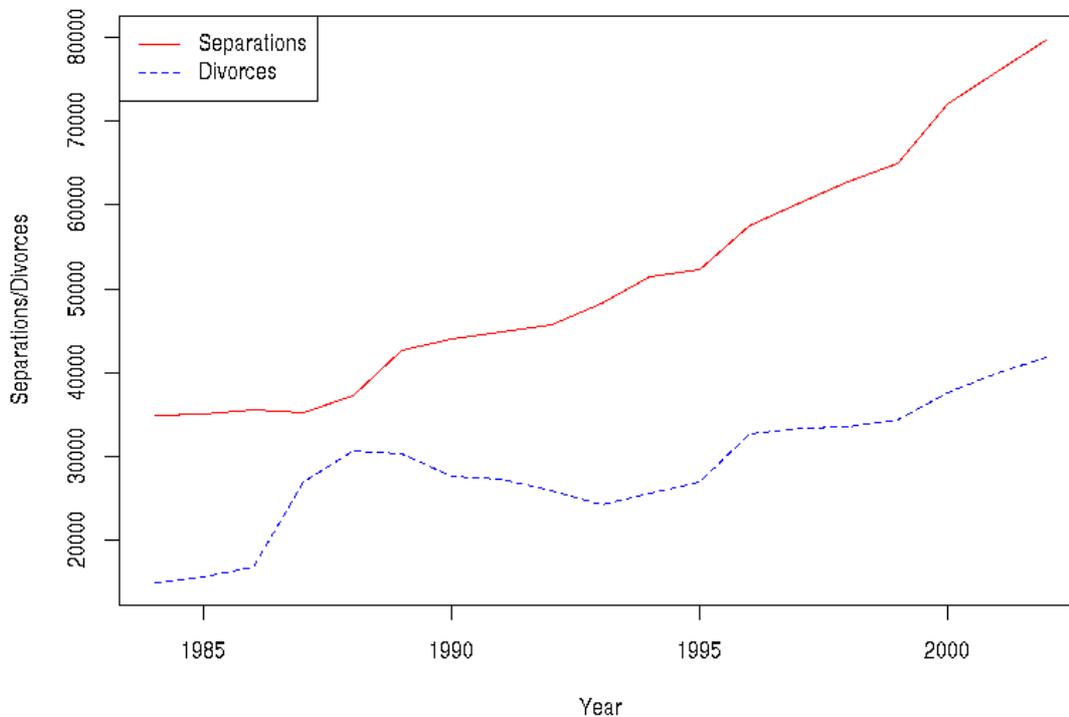
What kind of economic problems may these couples experience in the first years after separation, and what kind of support does Italian society offer them?

It is well-known that the Italian welfare system offers little support to individuals undergoing economic hardship, and family policies are also rather weak.

At a national level, most resources are destined to social security, education and health. Both the education and public health systems offer public services (often of good quality) at relatively low cost; in the case of low family incomes, costs may be further reduced or even cancelled.

Instead, there are few specific services for working mothers. Women can rely on a highly protective regulation of maternity leave, but after that the system of services for childcare is deficient, and combined with strict regulation of the labour market, and rigid organisation of everyday life, makes conciliation between working and maternal roles particularly difficult. Support from families (especially parents) often compensates for these deficiencies in the welfare system. But, cash support (to individuals and families) is also quite limited, and the few monetary assignments are mainly addressed to contrast poverty. There are few benefits for families with children, and they are limited to low-income and large households. Moreover, the institution of a minimum income is still at an experimental stage, with many variants, depending on the initiative of local administrations.

Therefore, in Italian society, separated men and women in economic difficulties can count on a system of public services and access to economic benefits which are means-tested. Access to these services (e.g., crêches, nursery schools) and benefits is further facilitated for single parent families.

However, for a separated woman, the principal factor of economic security is participation to the labour market. Considering that, generally, those who have jobs, have full, open-ended contracts, women who are employed at the moment of separation, are more protected against the risk of falling into poverty.

Instead, those without a personal income from work risk severe economic difficulties. With legal separation, solidarity ties do not disappear between the partners: the law obliges the economically

stronger partner to pay maintenance to the weaker one. In practice, housewives cannot count too much on this tool, not only because her husband may not be able, or does not want, to pay the sums fixed by the judge[2], but also because the courts have the tendency to assign only subsistence aims to this instrument. The statement according to which alimony is granted to a partner in case she/he has no "suitable personal income or cannot obtain it because of problems of age, health, or young children needing care" is interpreted in a very restrictive way and, in general, it is sufficient for a woman to have a job or to be in a position of getting one, not to receive alimony (Barbagli and Saraceno, 1998)[3].

However, judges' sentences do not consider that, in a labour market still relatively rigid and employee-protective[4] like the Italian one, women who have invested in a family - particularly if they are relatively old and/or have very young children - not only have difficulty in finding adequately paid jobs, but even in finding any work at all. Summarising, considering the characteristics of both the labour market and welfare, we must conclude that Italian women who separate from their partners/husbands without being economically independent risk finding themselves in serious economic difficulties, and this may perhaps explain the relatively high rate of participation to labour force among those who undergo a separation.

Finding somewhere to live after the split is a particularly hard problem for both ex-partners. In a country where house rents on the private market are extremely high, public residential building plans are relatively few, and the own-property share is about 70%, moving is very expensive, either renting or purchasing[5]. In this case, men with young children (living either with them or with the mother) are the most disadvantaged. If there are dependent children, judges tend to assign the house in which the couple lived before separation to the custodial parent, independently of who the owner or tenant is. In 2002, 58% of separation sentences assigned the house where the family lived before legal separation to the wife, and only in 23% of cases to the husband (the remaining cases are of couples who decided to leave their house to live in new, independent, and different dwellings). This is consistent with the fact that women are the custodial parents[6] much more frequently than men.

Important help is given to separated people by the family of origin. Although separation is still little approved by several sectors of society, siblings and especially parents are close to separated people: they support them psychologically and help them face daily problems, offering goods, services, money, and hospitality. The help offered by the family of origin is gender-differentiated because men and women have different needs: women mainly receive money, necessary goods, help in looking after children (allowing the mothers to work and maintain their economic independence); men mainly receive hospitality and help with their children (Barbagli and Saraceno, 1998). As in other circumstances, the strong bonds of the Italian family integrate deficiencies in welfare, thus attenuating the negative economic consequences of union dissolution.

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[2] In addition, Italian regulations do not provide fast inexpensive means of constraining reluctant partners to pay alimony (e. g. there are not forms of direct monetary transfer at source).

[3] In 2002, only 24% of separation sentences provided alimony for the separated partner. In the majority of cases (98%) the man pays and the mean amount is 438 euros.

[4] In the last few years the rigidity of the Italian labour market has decreased, but at the risk of a greater job precariousness. In the future, this may be a further factor of economic distress for women and men.

[5] As support of these problems – which also regard the weakest sector of society some local administrations allocate funds to supplement rent, but this instrument has prevalently charitable purposes and it is not easily accessible to the separated population. Purchasing a new house is rarely a viable option because the majority of loans at prime rate are for (young) couples who are married or that have the intention to marry.

[6] Women's advantage does not always remain. With divorce, things change, since 48% of couples leave their family house for separate, independent dwellings (ISTAT, 2004). According to a 1990 survey (moreover, not representative of Italian reality) two years after separation, a woman with the custody of children maintains the use of a house only if it is the property of the woman herself, or of both partners; if the owner is the man or the man's parents, the use of the house generally returns to him (Barbagli and Saraceno, 1998).

3. Data and variables

We use data from the ECHP to examine the relationship between union disruption and the subsequent economic situation. The ECHP is a longitudinal survey on private households, conducted annually between 1994 and 2001, in 15 EU countries (including Italy).

The survey collected much information on the economic and socio-demographic characteristics of households and of their members more than 16 years old. Its longitudinal design made it possible to follow up and interview the same set of people for several consecutive years.

For detailed analysis of the economic consequences of partnership dissolution, it was essential to use longitudinal data, as we aimed to compare the situation before and after separation. Thus for the population of interest, we considered information for years *t* (before dissolution) and *t+1* (after dissolution).

All eight waves of the panel (1994-2001) were examined. One technical issue was the definition of the event of interest. In theory we could analyze changes in marital status[7] ,i. e. the passage from married to separated state but in practice this is not a viable solution as many people do not report themselves marital status as separated until when their separation has been legally acknowledged. In the same way there may be cases of individuals in consensual unions who are registered as married.

This created many problems, and several inconsistencies with this variable and the living arrangements of separated individuals were found. These inconsistencies inevitably also affected information on household income (since it was defined as the sum of all personal incomes of all household members).

An alternative approach – the one used here - combines information on marital status and on partners' residence: if they stopped living in the same house, (not because of the death of a partner – we excluded transitions to widowhood), they were deemed to be separated. Thus, a separation is defined as the end of cohabitation of partners, either in consensual union or in marriage[8].

Clearly this choice also has some drawbacks: individuals who do not live together, not because of separation but for other causes, are considered to be separated (so that *living apart together* and *commuting marriages* may incorrectly be regarded as separations). However, in this way we defined the event of interest clearly and identified also the moment characterized by the greatest economic changes.

We restrict our analysis to the population less than 60 years old, to avoid confusing income changes due to separation and those due to retirement.

In this way, the ECHP provided a sample of 314 cases (55% women) in which we observed a partnership split (see table 1). The same table also shows some features of individuals undergoing separation. They are not a young population (on average they are 40) and most of them have children; the mean duration of the marriage was about 13 years for men and 15 for women. This should enable us to find similar characteristics of the national data of people who separated in 2002 (see section 2).

The central focus of our analysis was the economic situation of individuals before and after separation.

ECHP provides rich information on individual (yearly) and household (monthly) incomes, together with data on many subjective aspects of the economic situation (such as house quality, possession of durables, arrears, and lifestyle quality). I also provides both objective monetary (income) and subjective evaluation of the economic situation of households before and after the union dissolution. There is no other important information related, for example, to the ownership of the house and personal expenditure.

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[7]   The categories available for marital status were: married, separated, divorced, widowed, never married.

[8]   For married couples this mainly corresponds to (legal) separation: we focus on separation and not divorce, because separation is connected to greater economic changes than legal divorce, which follows separation – sometimes several years later, when the economic situation may already have stabilised (see Andreß and Gullner, 2001, quoted by Andreß *et al.*, 2006).

For our analysis, we used data on (equivalised[9]) total monthly net household income one year before and one after separation, measured in thousands of lire, that is, the sum of income from labor, assets, and private and public transfers, net of taxes, for all household members. We assume that all personal income is shared and that the individual needs of each household member are adequately satisfied by this income pool. We use here monthly household income (equivalised according to the OECD scale; see also note), instead of individual income, because the latter refers to the year prior to the survey, making it difficult to have information on the year after the split (we should have the information given 2 years after).

For better understanding of the actual impact of separation, we also consider some subjective data: income is only a monetary measure of economic well-being, and considering the effect of separation only on it, is a limited approach, as other aspects of economic well-being (e. g. life-style and house quality) are disregarded. We therefore also considered some indicators measuring perception of income variations compared to the previous year, living standard, the capability of the household to face a set of costs (like those related to the house and to some payments; see also note 10) and savings.

In addition, we considered labor market transitions, expecting that individuals, usually women without jobs, are looking for a source of personal income after separation. In fact (see again table 1), the percentage of women working is about 60% (but about 90% for men), and mean individual incomes are higher for men; the percentage of women without individual incomes is higher than that for men. After separation, some women probably need a new source of income.

Table 1 *Characteristics of individuals before union dissolution by gender.*

	ITALY	
	MEN	WOMEN
Total no. separations	142	172
N° of marital dissolutions	120	147
% non marital dissolutions	15.5%	14.5%
% couples with children	66.9%	75.0%
% living with parents	8.5%	4.7%
% working	88.7%	59.3%
Mean age	41.0	38.7
Mean age of youngest child	10.5	11.5
Mean duration of marriage	12.9	14.6
Mean duration of cohabitation	4.5	5.5
% without individual income	5.6	18.0
Mean personal yearly income (in thousands of lire)*	27,180.5	22,401.1

* Incomes are reported using the national currencies in ECHP.

Then we consider transitions in living arrangements (tables 2a and 2b) of men and women who underwent a separation. Definition of living arrangement here is made differentiating between couples with other adults (parents or siblings, excluding adult children) and couples without other adults. Most separated individuals (83% of men, 85% of women) had lived with their families without other adults before separation. The majority of them had children.

After separation there is a dramatic change of living arragements of ex-partners, and that change highly depends on the presence of children. When there are not children the routes taken by men and women after separation are quite similar: most of them live alone whereas about 17% return to

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[9] Several equivalence scales are used in the literature to control for economies of scale and varying income needs (for an overview, see Buhmann *et al.*, 1988), but a common standard has not yet been found. We used a scale that adjusts all household incomes with respect to the number of adults and minors (according to the modified OECD scale) in the household. Adults and minors in the household are given different weights: 1 is given to reference person, 0.7 to other adults in the household, and 0.5 to minors aged 14 or less.

parents' home. Instead, when there are children, we see a very great gender difference: there are about 23% of single-parent men, but the figure for women reaches 85%. This means that after separation on the whole only 15% of men live as single-aprents, 26% returnto their parents' home, but the majority live alone. About 60% of women live with their children (as single parents), 25% live alone and fewer than 10% return to their parents. In both cases (especially for men), fewer than 5% form new couples.

Thus gender has a great impact on where individuals live after separation: men are more likely to return home or to form a single household than women, who are more likely to form single-parent families.

Table 2a *Living arrangements transitions of men who underwent a separation.*

After separation	Without others		With others (with or without children)		
Before separation	Alone	With children	With a new partner	With parents	Number of cases (=100)
Without others Couple	81,08	2,70	0,00	16,22	37
Couple with children	51,85	23,46	1,23	23,46	81
With others Couple	40,00	10,00	0,00	50,00	10
Couple with children	21,43	7,14	21,43	50,00	14
Total	79	22	4	37	142

Table 2b *Living arrangement transitions of women who underwent a separation.*

After separation	Without others		With others (with or without children)		
Before separation	Alone	With children	With a new partner	With parents	Number of cases (=100)
Without others Couple	71,43	5,71	5,71	17,14	35
Couple with children	12,61	85,59	0,90	0,90	111
With others Couple	37,50	0,00	37,50	25,00	8
Couple with children	5,56	38,89	22,22	33,33	18
Total	43	104	10	15	172

4. Descriptive results

A preliminary descriptive analysis, based on the eight waves of the ECHP suggests that gender has a strong impact on the economic situation of individuals after separation. As presumed above and as found in the literature, separation makes the situation worse for women. Table 3 does show that household monthly incomes increase after separation for men, and decrease for women. Subjective data are clearly consistent with financial data for women: the income situation compared with the previous year deteriorates remarkably after separation and the ability to make ends meet is also clearly worse. In addition, women have more difficulties in affording several home-related costs (e. g. heating and furniture) and some payments (scheduled rent). The ability to maintain a living standard decreases and the percentage of women who are left with some money for savings decreases much more than that of men. As regards the working situation, women undergo an increase in the participation rate after separation.

Although for men the monthly household income increases considerably after separation, some subjective indicators show a different picture. Like women (although to a lesser extent), they report a deterioration in income situation after separation, find difficulty in maintaining their standard of living, and affording some types of expenditures.

Table 3. *Economic situation one year before and one year after separation.*

	Male		Female	
	Before	**After**	**Before**	**After**
Total monthly net household income (eq., Italian lire x 1000)	1788,9	2274,7	1625,3	1391,6
Income situation compared with previous year:				
- deteriorated	36,3	45,8	30,8	54,6
Ability to make ends meet:				
- with difficulty	55,6	52,1	61,1	71,5
Ability to afford payments related to life-style[10]	0,69	0,75	0,78	0,89
The household can afford:				
keeping its home adequately warm	83,1	82,4	82,5	78,4
replacing any worn-out furniture	45,8	42,3	42,7	33,9
The household has been unable to pay:				
scheduled rent for accommodation	2,8	3,5	2,3	3,5
scheduled mortgage payments	1,4	0,0	1,7	0,0
scheduled utility bills (electricity, water, gas)	7,7	5,6	8,2	8,1
hire-purchase installments or other loan repayments	4,9	1,4	4,7	2,9
Some money left to savings	31,7	28,6	32,6	19,8
% working	88,7	86,6	59,3	62,9

5. Modeling the economic consequences of union dissolution

5.1. Causal analysis

Although the above descriptive analysis offers many indications on the association between separation and the subsequent changes in life-style, it does not suffice to identify the causal relation between the two processes. The differences between those who undergo separation and those who do not may be influenced by the different background characteristics of the two groups. For instance, we may expect that couples undergoing separation have a different level of well-being prior to separation with respect to that of other couples. Generally speaking, the two groups may be qualitatively different in terms of many background variables, and we need to control for these variables if we aim at identifying the causal effect of separation from the spurious dependence brought about by these variables.

More than one solution is possible for this identification of causal effect. One is to use an instrumental variable (Angrist, 1998), which allows us to simulate a random assignment of treatment (in our case, the treatment is the point of separation). In observational studies, treatment is not randomly assigned, but there may be an exogenous variable correlated with treatment. For example, Angrist and Evans (1998) used same-sex children as an instrument to estimate the effect of fertility on parents' labor supply. However, finding such a variable is extremely difficult, as highlighted by Heckman *et al.* (1999).

A different route was proposed by Rosenbaum and Rubin (1983) by assuming that we record all variables X that confound the effect of treatment on outcome. This may be identified by making the estimate conditional on X. A dimensionality problem arises when the number of possible

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[10] This measure considers some aspects related to life-style: the ability to pay for a week's annual holiday away from home, to buy new, rather than second-hand, clothes, eat meat, chicken or fish, if desired, every second day, have friends or family for drinks or meals at least once a month. The value reported represents the mean of values of these four aspects: 1 if the household cannot afford that cost, and 0 otherwise. It varies from 0 to 1, and an increasing value means a worsening of the situation. We constructed this composite indicator to summarise indexes related to the some topic.

confounder variables is higher than 5, but the above authors showed that it is possible to condition on the *propensity score*, instead of *X*, i. e. the probability of undergoing the event conditional on the value of *X*, easily estimated by means of a probit or logit regression model.

Given the relative richness of information of the ECHP data and the problems of finding a proper instrumental variable, we use propensity score matching to isolate the causal effect of separation. Therefore, we assume that we observe all the confounding variables in our dataset – an assumption commonly referred to as the *conditional independence assumption* (CIA), ruling out the effect of unobserved heterogeneity. However, the fact that the CIA is quite unlikely to hold, even if we have a rich dataset cannot be neglected. One way to relax the CIA is to combine a Difference-in-Differences estimator with the matching procedure (Heckman *et al.* 1998). Basically, we estimate the effect of treatment on the prime difference of outcome in two subsequent years. Thus, for treated individuals we have the difference between outcome one year after treatment and one year before, whereas for controls (i. e., non-treated individuals), we only have just the difference between two consecutive years. In practice, this is a fixed-effect estimator, and if unobserved heterogeneity is time-invariant, its effect is netted out by the Difference-in-Differences estimator. Therefore, the CIA is a milder assumption imposed on our inference framework.

There are many matching methods (see Becker and Ichino, 2002; and Smith and Todd, 2005, for a list). In this paper we use a nearest-neighbor method in which every treated individual is matched to the closest control, closeness being determined by the distance of the propensity scores.

Table 4 shows the results of the logit model used to estimate the propensity scores.

Table 4. *Logit model on probability of undergoing separation*

	MEN		WOMEN	
	Estimate	Std.Error	Estimate	Std.Error
Intercept	-6,671	1,384 ***	-4,620	1,329 ***
Year 1995 (Ref. 1994)	0,459	0,350	0,233	0,309
Year 1996 (Ref. 1994)	0,698	0,338 **	0,401	0,303
Year 1997 (Ref. 1994)	0,741	0,339 **	0,692	0,292**
Year 1998 (Ref. 1994)	0,263	0,371	0,343	0,312
Year 1999 (Ref. 1994)	0,115	0,386	0,113	0,331
Year 2000 (Ref. 1994)	0,245	0,387	-0,002	0,350
Cohabiting union (Ref. Marriage)	1,964	0,253***	1,966	0,235***
Age	-0,015	0,010	-0,020	0,009**
Education: medium (Ref. low)	0,146	0,198	0,289	0,177
Education: high (Ref. low)	0,948	0,255***	0,091	0,309
In paid employment (Ref. not working)	-0,031	0,308	0,192	0,246
Self Employed (Ref. not working)	0,316	0,304	0,196	0,287
Personal income (log)	-0,094	0,034 ***	0,044	0,026*
Household Income (log)	0,310	0,189	-0,080	0,183
North (Ref. South)	0,125	0,225	0,209	0,206
Centre (Ref. South)	0,413	0,226*	0,388	0,209*
Number of children	-0,278	0,099***	-0,033	0,085
Parents living with household	0,428	0,194**	0,400	0,252

Signif. codes: `***' 0.01 `**' 0.05 `*' 0.1

We included here wave, age, gender, regional location, education, employment status, type of union, number of children, whether the individual was living with parent or not *before* separation, and personal and household income. We also included the value of outcome *before* treatment: as we estimate the impact of separation on several outcomes, specification of the logit model changes accordingly.

The results of our logit model are in line with the literature. The propensity to separation decreases with age, but its effect is significant only for men. Cohabiting unions are more prone to dissolution, and a high educational level is also positively associated with this risk. Again, this effect is significant only for men. Interestingly, personal income has a different impact according to gender: for men the higher the income, the lower the propensity to union dissolution, and the opposite for women. Having children a protective function against separation although this is only evident for men. People living in the south of Italy are less likely to separate. Lastly, if men live with their parents, the probability of union dissolution increases.

Therefore, the following estimates were computed net of these variables. Note that, in this framework, the correct specification of the logit model is not a problem: this method is basically a non-parametric one, so we do not need to specify the correct functional form of the relation between treatment and covariates (see Caliendo and Kopeinig, 2005).

5.2. Results

The results of table 5 must be interpreted bearing in mind the Difference-in-Differences estimator. This means that the table shows the difference between the average changes in outcome of treated and in outcome of controls. For example, the estimate –386.23 for women's total monthly household income means that the difference between income before and after separation is averagely lower by 386.23 thousand of lire than the average income change of controls.

Table 5. *Effects of separation on several outcomes[11]. Estimates with propensity score matching (1 neighbour, 1000 replications).*

	Men				Women			
	Effect	St. Err.	t-value	N	Effect	St. Err.	t-value	N
Total monthly net household income	453,43	171,531***		142	-368,23	110,734***		172
Income situation compared with previous year[1]	0,155	0,132		142	0,413	0,126***		172
Ability to make ends meet	-0,113	0,146		142	-0,430	0,131***		172
Ability to afford payments related to life-style	0,155	0,132		142	0,036	0,117		170
Ability to keep home adequately warm	0,063	0,048		142	0,018	0,045		170
Inability to pay scheduled rent	-0,021	0,024		141	-0,023	0,023		171
Inability to pay scheduled mortgage payments	0,014	0,017		142	-0,012	0,016		171
Inability to pay scheduled utility bills	-0,007	0,036		142	-0,029	0,035		171
Inability to pay loan repayments	0,007	0,029		142	0,000	0,027		171
Some money left for savings (+=worse)	-0,029	0,065		140	0,145	0,060**		172
Exit from the labour market (workers only)	0,008	0,031		126	-0,039	0,046		102
Entry into the labour market (inactives only)	0,063	0,204		16	0,114	0,067*		70
Weekly working hours (workers only)	0,588	1,260		114	1,926	1,196		94

Signif. codes: `***' 0.01 `**' 0.05 `*' 0.1

[1] The variable is coded a five-point scale: the highest values means "clearly deteriorated" and the lowest "clearly improved". Therefore a positive value associated to this item means a worsening of household income situation, due to separation.

Bearing this in mind, the results basically confirm the findings of descriptive analysis[12]: the income situation of women is highly likely to worsen after separation, more than that of men. The

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[11]   In the model a positive value for the outcome related to ability means worsening of the situation; conversely, a positive value for inability means improvement.

latter may even be better off after separation, as their equivalent monthly household income is significantly higher, whereas women's incomes drop significantly after separation.

This is confirmed by the subjective perception of economic status: for women, there is a significant drop in the ability to make ends meet due to separation, and they report a worsened income situation compared with the previous year. This is also witnessed by the effect of separation on transitions in the labor market. Women out of the labor market are more likely to enter the labor force after separation, suggesting that some of them are trying to cope with the economic shock.

5.3. Influence of living arrangements after union dissolution

In the next step, we study in detail the effect of the interactions between union dissolution and living arrangement after separation. Table 2 shows that men, especially if they have children, are more likely to return to their parental home after union dissolution, which may explain why they do not suffer so much economically. The presence of children greatly influences home assignment to women: mothers are highly likely to remain in the same house after conjugal separation, and fathers are highly likely to leave. This may be an advantage for women in terms of housing quality but a disadvantage in terms of income, as they need to share income with other non-productive family members. Conversely, men are likely to be forced to leave the conjugal home and find a new accommodation, and the increased expense for the new dwelling may offset economic advantages in terms of income (unless they return to their parental home). So we examined how the economic effect of separation interacts with living arrangements after the union dissolution[13].

We replicated the above analysis on a particular subgroup considering only men and women with children: we estimated the impact of union dissolution combined with subsequent living arrangements. We considered a specific subgroup of parents and therefore excluded all unions without children. For men "treatment" consists of undergoing separation and subsequently living alone, for women, we define "treatment" as undergoing separation and becoming a single-parent the following year. In this way, we identify what we expect to be the most common living arrangement adopted by fathers and mothers after separation. Non-custodial fathers are also usually obliged to leave the conjugal home, which is assigned to custodial mothers, and to pay alimony for their children, so they are probably the subgroup of men undergoing the most difficult economic situation. Similarly, custodial mothers are also likely to undergo the worst-case scenario among separated women: they must share their income with their children, and the alimony they receive rarely compensates the increased expenses. If the above arguments are true, estimations of marital dissolution effects on these particular subgroups should reflect this, and they may also show a significant negative impact of union dissolution for non-custodial fathers, and, for custodial mothers, an even worse scenario than what emerges from table 5.

The estimates reported in table 6 basically meet our expectations: despite their increased income, separated men reports a significantly more deteriorated income situation than the control group. They also have more problems with paying utility bills, and the index of life-style conditions is

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[12]   We use the following pre-treatment variables to specify propensity score estimation model: wave, age, education level, employment status, personal and household income, number of children, presence of parents in the household, type of union (marital or consensual) and region.

[13]   The choice of living arrangement may be endogenous with the effect of union dissolution on economic well-being. For instance, it may be argued that choice of living arrangements after separation is, at least partially, driven by the economic situation. However, we may reasonably assume, on the basis of the relatively high social acceptance of co-residence with parents even at 30+ ages, that choice of living arrangements in Italy is actually driven by the possibility of moving to parental home: if men can go back to their parents, they will probably do so, regardless of their economic situation, thus avoiding a difficult search for a new dwelling. If they cannot, then they have little choice, as alternatives to moving into a single-person household after union dissolution are rare in Italy. Women with children are somehow forced to remain in the conjugal home they are assigned, if they want to keep it. So they are very unlikely to move to their parental home, regardless of their economic situation. On the basis of these arguments, we are confident that living arrangement taken after union dissolution are poorly related with economic well-being of spouses.

significantly lower. However, the situation of separated women is still worse, and there is also a significant effect of treatment on perceptions of the ability to make ends meet, to keep the house adequately warm, and to save money during the year. In addition, we still find an effect on labor market entry rate – separated women being more likely to enter the job market than the control group. Therefore, excluding men returning to their parents' home after separation we find a significant impact of union dissolution on men's well-being, or at least on their subjective perception of the quality of their life-style. This is also confirmed by conducting the same analysis but considering only fathers returning to the parental home (results not shown): for this group, the effect of the union split is negligible.

Table 6. *Effects of separation on several outcomes. Estimates with propensity score matching (1 neighbor, 500 replications).*

	Men			Women		
	Effect	St. Err.	N	Effect	St. Err.	N
Total monthly net household income	1157,4	415,12***	45	-317,52	166,872*	102
Income situation compared with previous year[1]	-0,441	0,170**	45	-0,530	0,127***	102
Ability to make ends meet	-0,089	0,263	45	-0,451	0,172**	102
Ability to afford payments related to life-style	-0,467	0,235*	45	-0,337	0,156**	101
Ability to keep home adequately warm	-0,057	0,056	45	-0,085	0,046*	102
Inability to pay scheduled rent	0,044	0,045	45	0,039	0,030	102
Inability to pay scheduled mortgage payments	-0,022	0,018	45	-0,010	0,022	102
Inability to pay scheduled utility bills	-0,060	0,030**	45	-0,046	0,033	102
Inability to pay loan repayment	-0,044	0,058	45	-0,020	0,033	102
Some money left for savings (+=worse)	-0,106	0,082	44	-0,161	0,054***	102
Exit from the job market (workers only)	0,004	0,025	38	0,012	0,039	57
Entry in the job market (inactives only)	-	-	-	0,100	0,053*	45

Signif. codes: `***' 0.01 `**' 0.05 `*' 0.1
[1] The variable is coded a five-point scale: the highest values means "clearly deteriorated" and the lowest "clearly improved". Therefore a positive value associated to this item means a worsening of household income situation, due to separation.

6. Conclusion

The aim of this work was to provide an initial comprehensive, robust assessment of the economic impact of union dissolution in Italy, considering that until now – partly because of its low frequency – few empirical data were available to study the phenomenon.
Our analyses, carried out on data representative at a national level and using methods that take into account possible disturbing factors, indicate that union dissolution in Italy produces differentiated economic effects for men and women, at least in the short term.
Even after controlling for several conditions preceding separation, women find themselves in a weaker position than men. Monetary and subjective measures of economic well-being both indicate a worsening of women's status in the year after separation with respect to the last year of union. This happens even though union dissolution forced some of them to increase their personal income by taking a job after the event. Single mothers in particular suffer the heaviest penalties in living standards. Separation has mixed effects among men, suggesting that here the event may produce different economic consequences according to the subsequent living conditions. In general, men do not undergo negative economic consequences after separation but when our analysis is concentrated

on non-custodial fathers living alone, we find that men too may experience a decrease in their standard of living, even though their household income increases. The scarcity of cases does not allow deeper analysis on this point (models for all subgroups of separated men and women, classified according to the different living arrangements after separation, could not be run), but the results reported here empirically support our hypothesis: the better economic position of Italian men depend on two factors: personal income, and the opportunity, provided by the strong family network of returning – at least in the first period after separation - to their parental home.

Two other important and more general results of this study must be stressed. First, household income, even when equivalised and net of taxes must be used with caution as a proxy of changes in economic well-being for separated people. The present empirical analysis demonstrates that individuals may suffer statistically significant economic penalties in their living standards, even with a significant increase in equivalised household income.

Second, separation may have opposite economic consequences in different subgroups of separated people, and that they do not depend only on the conditions preceding separation, but also on those subsequent to the event. Considering that, at least for those who are parents, post-separation living arrangements are gender differentiated, this work indicates that a correct interpretation of the gender differences in the economic impact of union dissolution should take into account the living arrangements after separation of both men and women. The same result also indicates caution in interpreting the effects of union dissolution across different countries. Indeed, results may be influenced by country-differences in the distributions of living arrangements after separation.

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