

Eliason, Marcus

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Lost jobs, broken marriages

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Lost jobs, broken marriages

Marcus Eliason

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Institute for Social and Economic Research

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Institute for Social and Economic Research
University of Essex
Wivenhoe Park
Colchester
Essex
CO4 3SQ UK
Telephone: +44 (0) 1206 872957
Fax: +44 (0) 1206 873151
E-mail: iser@essex.ac.uk
Website: <http://www.iser.essex.ac.uk>

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ABSTRACT

The objective of this paper is to examine the effect of a spouse's job loss on the probability that his/her marriage ends in divorce. Previous empirical studies on this matter are sparse, and the results inconclusive. Moreover, all previous studies focus on the short-term effects. A unique Swedish data set is used, containing all married couples where one of the spouses was displaced, due to an establishment closure, and an appropriate comparison group. I provide further evidence that the adverse consequences of a job loss cannot be measured in monetary terms alone, and extend the current literature on the impact of job loss (unemployment) on marital instability by also investigate the impact in the long run. The results suggest the existence of a destabilizing impact on marriages from both husbands', and wives', job losses, and both in the short and the longer run.

JEL Classification: J12, J65

Key Words: Job loss, divorce, plant closure

1 Introduction

Economists' interest in the individual consequences of job displacement and unemployment, have generated a substantial number of articles. The main part of this literature is, though, limited to a few specific consequences such as the duration of unemployment, wage/earnings losses, and if and how labour market policy can mitigate these adverse effects. However, those are not the only consequences of a job loss. There are others not normally recognized, in the economic literature (e.g., marital instability and dissolution, ill-health, etc). These consequences are not obviously economic in nature, but without incorporating them, it is not possible to get a complete picture of the overall welfare loss caused by job losses. Moreover, these non-pecuniary aspects of job loss cannot be regarded as of secondary importance. In fact, divorce is ranked as the most stressful of life events and personal injury or illness as the fifth, after the death of a family member (Miller and Rahe, 1997). Thus, they can hardly be neglected when you assess the negative consequences of job loss.

In this paper, I will focus on the impact of a job loss on divorce. Apart from the reasons mentioned above, there is an additional justification, pointed out by Charles and Stephens (2004) why an economist should be concerned about this topic. A study of the effect of job loss on, for example, family consumption or labour supply focusing on couples that remain married for the considered time interval may produce biased results. The reason is that we may expect the couples that remain married to be those who were forced to the least adjustments (e.g., consumption and labour supply adjustments) to the job loss. Thus, excluding the divorcing couples from such a study is likely to underestimate the true family adjustments to a job loss.

Previous studies on the impact of job loss or unemployment on marital instability or the risk of divorce are sparse. A recent study of unemployment on marital instability is Kraft (2001), who examines the impact of unemployment on married couples' decision to separate (i.e., moving apart). By looking at separations instead of divorces the author claims to circumvent the problem of causality induced by the fact that a divorce is not only an event but also a process, hence it is difficult to know whether unemployment occurred before the actual divorce decision (or the marital problems which caused the divorce) or *vice versa*. The study uses the German Socio-economic Panel for the years 1987 to 1996. The findings are that husbands' unemployment significantly increases the risk of separation in the following year and the impact increases with the duration of unemployment. Wives' unemployment on the other hand does not seem to have the same adverse effect.

Similar results are found in Jensen and Smith (1990), who analyze the effects of unemployment on marital dissolution, using Danish panel data, on married couples, covering the years 1979-1985. In addition, they also found that only current unemployment has an effect, and neither unemployment one or two years earlier, nor the change from the previous year to the current year has an effect. The latter finding is in contradiction to the findings in Starkey (1996) who, using a sample from PSID for the years 1968-1979, found support both for a shock and a hollow-out effect and conclude that financial stress, associated with unemployment, does not seem to be as important as the social-psychological or the psychological factors. Charles and Stephens (2004) also rules out the possibility that it is the information about the

couples' economic well-being after a job displacement that matters and concludes that it has more to do with what the job displacement suggests about the spouse's fitness as a mate. Also using PSID, but for the years 1968-1993, they came to this conclusion by examining how both job displacement and physical disability affects the probability of marital dissolution and also take into account the reason for the job displacement. They find that job loss, whether experienced by a husband or a wife increases the divorce hazard, and that the layoffs correspond to the full negative effect on the divorce risk. Job losses due to plant closures do not seem to affect marital stability at all.

Using a unique and large Swedish longitudinal data set, I will add further evidence to the sparse literature on the impact of job loss on marital instability and extend the existing literature by not only studying immediate effects but also the impact in the longer run. By identifying all job losers, due to establishment closures in Sweden in 1987, and linking them to their spouses, I am able to construct a sample of married couples that experienced a job loss in 1987, and also an appropriate comparison group. The focus on workers displaced due to establishment closures and not on unemployment has some implications for the interpretation of the results. A displaced worker does not necessarily need to experience a spell of unemployment. Because of advance notice, or an otherwise foreseen displacement, the worker may be able to find a new employment without any intervening unemployment. Likewise, an unemployed worker does not need to be a displaced worker. The set of unemployed workers will also contain workers who became unemployed because of voluntary quits, end of seasonal employment or studies. This type of unemployment may not require any adjustments, within the family, which could increase marital instability.¹ Moreover, displaced workers have seen to suffer long-lasting earnings losses (See Jacobson et al., 1993; Ruhm, 1991; Stevens, 1997; and Eliason and Storrie, 2004). Thus, it is not obvious that one would expect only an immediate increase in the risk of divorce. Instead, the long-run adjustments required to adapt to the lasting decrease in earning may undermine the stability of the marriage and even increase the divorce risk many years after the initial displacement.

The impact on the risk of divorce is estimated, non-parametrically, by propensity score matching and life table methods. The results suggest that a job loss increases the risk of divorce, both in the short and in the longer run, and that it is not only what the job displacement suggests about the spouse's fitness as a mate that matters. Moreover, not only the husband's job loss increases the risk of divorce, but also it seems that wives' job losses have the same impact.

The rest of the paper is organized as follows. In section 2, I will briefly discuss some theoretical aspects of the impact of a job loss on divorce. Section 3 presents the data and contains some descriptive statistics. In section 4, I will give a short introduction to propensity score matching and in particular how this method is applied in this study. The following section presents the results for females and males separately and finally section 6 concludes.

¹ See Stephens (2002) for a discussion of the difference between husbands' job displacement and unemployment and the added worker effect.

2 Theoretical perspectives

In this section, I will briefly go through the corner stones of two theoretical models, the basic neoclassical model of marriage and divorce and a family stress model, which could be used to explain the dissolution of marriages. These models will only serve the purpose of guidance in the choice of explanatory variables.

The economic literature capturing the economics of marriage and divorce goes back to Becker's seminal work (Becker, 1973, 1974 and Becker *et al.* 1977). This and most subsequent economic work are based on a neoclassical model with the family as an expected utility maximizing unit. In this framework, the couple will gain utility from marriage through specialisation and division of labour, investments in marriage specific capital, economies of scale, public goods, and positive externalities. The decision to divorce or remain married is based on the couple optimizing expected utility, and they divorce as soon as the expected utility of remaining married falls below the expected utility of divorce. The expected utility of remaining married includes the future divorce option, and analogously the expected utility of divorce includes the probability of remarriage as well as the direct costs of divorce. This divorce rule implies that the spouses, as long as they are married, maximize a joint utility function and that divorce will only be an option when the joint expected utility of being married is less than the sum of the individual expected utilities from divorce (i.e. it is not enough that one of the spouses gains from a dissolution, for the couple to actually divorce). This behaviour is motivated by an underlying assumption of freely transferable utility between the spouses. Other model specifications exist (See for example Lundberg and Pollak, 1994), but this model is the point of departure for much economic work in this area.

The economic model, suggests two general causes for divorce (see Weiss, 1997). First, since search for a partner is costly and meetings occur randomly, a matched person can meet a person who would be superior to the current match. Second, the entering into a marriage is based on expectations about the traits of the other spouse. These traits could change unexpectedly over time and cause the spouses to reconsider their initial decision. A job loss can certainly affect, for example, the earning capacity in such an unexpected way, and thus increase the risk of divorce.² However, a job loss will also change the expected utility from being divorced and perhaps decrease the probability of remarriage. Moreover, it is possible that the traits needed to keep a job, are partly the same as the traits that make a partner desirable, and thus the job loss may reveal new information about an initial bad match.³

The economic model of marriage and divorce does not give any *a priori* predictions about the effect of a job loss on marital stability. Furthermore, most marriages and divorces in contemporary societies are not a result of a utility maximizing behaviour in the economic sense (see Frey and Eichenberger, 1996), and as Weiss (1997) states

² See Weiss and Willis (1997) and Böheim and Ermisch (2001) for studies on the impact of unexpected changes in finances on the risk of divorce.

³ As this study only concerns job loss due to establishment closure this mechanism is unlikely, since an establishment closure affects all workers at the particular establishment and thus it is not reasonable to ascribe negative inferences about any of those workers, upon the information about the job loss.

“[...] economic considerations do not dominate the picture. A successful theory which is capable of explaining the data on marriage and divorce must incorporate ideas from sociology, biology and other fields.”

Thus, an auxiliary theory for explaining the impact of job loss on the likelihood of divorce might be family stress theory, the ABC-X model, first established by Hill (1949) and later elaborated by McCubbin and Patterson (1982). This model has also previously been used as a framework for the analysis of the effects of unemployment on marital instability, e.g. Starkey (1996) and Voydanoff (1983).

In the ABC-X model, A represents the stressor event (job loss), B the family's coping resources, C the family's perception of the stressor event, and X the crises. A stressor event will interact, with both the family's coping resources and the perception of the stressor event, and then produce a crises or a resolution. A job loss may work as a stressor through several different channels. Firstly, it may produce financial stress. The degree of financial stress will depend upon, for example, the re-employment possibilities, eligibility for unemployment insurance (as well as other benefits) and the level of these benefits, and the duration of unemployment. However, even if financial strain is not present, the job loss may produce psychological problems (such as depression or depressive symptoms) as the job aside from income also provide, for example, social networks, time structure and self-esteem.⁴ These psychological problems are not necessarily limited to the job loser, but might also be transmitted to the spouse.⁵ The loss of the non-pecuniary gains from labour work may generate or exacerbate marital stress. Furthermore, job loss has seen to be correlated with alcohol abuse (Catalano *et al.*, 1993; Dooley and Prause 1998) and domestic violence is also more prevalent among unemployed (Kyriacou *et al.*, 1999).

3 Data and descriptive statistics

3.1 The closing establishments and the displaced workers

The data used is a unique Swedish administrative data set, collected by Statistics Sweden, on job losers and with an appropriate control group. The data contain all workers who lost a job in 1987 due to an establishment closure and a large and representative sample of workers who did not lose a job due to an establishment closure or a large cutback during this year. Thus, the focus is on the effect of job loss, and not of unemployment, on the risk of divorce.

The identification of job losers takes advantage of the possibility to use administrative data resources to link establishment and employee data. In this paper, all establishment closures from 1987 and 1988 with at least ten employees are identified. A plant closure is identified, in short, by the disappearance of its identity number from the obligatory annual payroll tax returns. This could cause a number of establishments to be defined wrongly as closed, since the identity number could disappear due to mergers,

⁴ See Björklund and Eriksson (1998) for a review of the Nordic literature on the effect of unemployment on mental health.

⁵ See Jones (1992) for a review of the literature on wives' reactions to their husbands' unemployment.

dispersals or simply by mistakes. With the data used here, considerable effort has been taken by Statistics Sweden to reduce the occurrence of such “false deaths”.^{6,7}

By linking employee data to establishment data, it is possible to identify the workers on the closing establishments. An advantage with this procedure is that “early leavers” also can be identified, i.e. workers who start search for new jobs in advance and voluntarily quit the job due to the expectation of the impending closure or who were laid off early in the closing process. Thus, the displaced workers contain both those who were employed in November 1986 at an establishment no longer existing in November 1987 and also those who separated early (again between November 1986 and 1987), in the closing process, from an establishment closing one year later (i.e., between November 1987 and November 1988). The disadvantage is that one cannot be sure of the reason for the separation between the employee and the employer, thus any definition of “early leavers” will probably also include some voluntary quits unrelated to the impending closure. This problem has though been limited by careful inspection of the worker flows in each closing establishment up to three years prior to the actual closure.⁸

3.2 The married couples

The data were originally collected at individual level as described above, but at the same time, the same information was collected for every spouse at the base year. For those spouses the same information is available during the full observation period. Thus, it is not only possible to control for characteristics associated to the job loser, but also to the spouse.

The impact of job loss on the risk of divorce will be studied separately for males and females. Thus, two study populations are constructed containing all married couples where the husband (wife) lost a job in 1987 due to an establishment closure and a random sample of married couples where the husband (wife) were employed in 1987, but did not lose the job due to a establishment closure in that year.

3.3 The divorce⁹

Since 1973, Swedish law accepts unilateral and no-fault divorces. The marriage is seen as a voluntary union between a man and a woman and divorce as an individual right. Therefore, only one spouse’s desire to dissolve the marriage is a sufficient ground for divorce. The court must anyhow approve the divorce, but cannot refuse a divorce application. If both spouses agree to divorce, jointly request it, and none of them has the custody of an own child no older than fifteen years, or if they have lived apart for at least two years, the court can grant the divorce immediately. Otherwise, a

⁶ See Kuhn (2002) for a discussion about “false deaths” in administrative data.

⁷ See Eliason and Storrie (2004) for a detailed description of the identification of closed establishments.

⁸ See Eliason and Storrie (2003) for a more rigorous discussion on “early” leavers” and the inspection of worker flows to reduce the problem of voluntary quits unrelated to the impending closure.

⁹ For more details on the Swedish divorce legislation, see Chapter 5, 6 and 14 in The Marriage Code, Äktenskapsbalk (1987:230), or Jänträ-Jareborg (2002).

reconsideration period of at least six months must elapse before the divorce can be granted and then a new application must be submitted, no longer than one year after the first application had been submitted.

Upon the dissolution of the marriage, all economic ties between the spouses are terminated. Alimony is only granted under exceptional circumstances, but disagreements on ancillary questions (e.g., maintenance issues or custody of children) could prolong the divorce process. However, the court could, upon request, grant the divorce immediately and later decide on the ancillary questions.

In the data used here, a divorce is not registered or directly observed, but marital status, in every year, for both spouses is. A divorce will be defined to have occurred if at least one of the spouses is registered as divorced. This could underestimate the number of actual divorces if both spouses after the divorce remarry within the same calendar year, a situation that must be considered unlikely.

Table 1 Divorce rate in percentage and cumulative percentage.

Year	Married men				Married women				Total			
	Displaced %	Non-displaced Cum. %	Displaced %	Non-displaced Cum. %	Displaced %	Non-displaced Cum. %	Displaced %	Non-displaced Cum. %	Displaced %	Non-displaced Cum. %	Displaced %	Non-displaced Cum. %
1987	1.8	1.8	1.3	1.3	2.2	2.2	1.5	1.5	2.0	2.0	1.4	1.4
1988	1.5	3.4	1.2	2.6	1.7	3.9	1.3	2.8	1.6	3.6	1.3	2.7
1989	1.9	5.2	1.2	3.8	1.5	5.4	1.3	4.1	1.7	5.3	1.3	3.9
1990	0.8	6.1	1.2	5.0	1.5	6.8	1.1	5.2	1.1	6.4	1.2	5.1
1991	1.2	7.3	1.2	6.2	1.6	8.4	1.2	6.4	1.4	7.8	1.2	6.3
1992	1.5	8.8	1.1	7.3	1.2	9.7	1.0	7.5	1.4	9.2	1.1	7.4
1993	1.3	10.1	1.0	8.2	1.2	10.8	1.0	8.4	1.3	10.4	1.0	8.3
1994	0.6	10.7	0.8	9.1	1.6	12.4	0.9	9.3	1.0	11.4	0.9	9.2
1995	1.1	11.8	0.9	9.9	1.0	13.5	0.9	10.2	1.1	12.5	0.9	10.1
1996	0.8	12.6	0.8	10.7	1.2	14.6	0.8	11.0	1.0	13.5	0.8	10.8
1997	0.7	13.3	0.7	11.4	1.0	15.7	0.7	11.7	0.8	14.3	0.7	11.6
1998	0.6	13.8	0.6	12.0	0.8	16.4	0.6	12.3	0.6	15.0	0.6	12.2
1999	0.7	14.5	0.6	12.6	0.6	17.1	0.6	12.9	0.6	15.6	0.6	12.8

In Table 1, the divorce rates, in percentage, for marriages existing in 1986, are presented for each of the populations defined in the previous section and divided by couples that experienced a job loss and those who did not. From these raw figures, we can see that on average about 1 percent of the marriages are dissolved by divorce each year and that the risk decreases over time. The figures also indicate that those couples, experiencing a job loss, are more likely to divorce. The increased risk of divorce seems to exist irrespectively of whether it is the husband or the wife who lose the job, and is even somewhat higher if it is the wife. A final remark is that, in contrast to the findings in Jensen and Smith (1990), the increased likelihood of divorce among the couples experiencing a job loss in 1987 tends to last for many years.

3.4 The background variables

The data set contains annual information, from administrative registers, on both spouses prior to the job loss. Most of the time varying variables included in the analysis are measured in 1984 and 1985. No variables measured in 1987 (or later) are

included, since those obviously would be affected by the job loss. The same applies to variables measured in 1986, for two reasons: firstly, the job loss may have occurred between November 1986 and November 1987 and variables measured in 1986 might, for a few, been directly influenced by the job loss; and secondly, even if the job loss did not occur in 1986 individual behaviour could still have been influenced by the impending job loss if it was foreseen. The choice of variables included in the analysis is based upon both economic theory of marriage and divorce as well as family stress theory, and they are categorized in six groups and discussed in the following.¹⁰

Socio-demographics/-economics: This group contains variables such as age, indicators of whether the spouses are immigrants, and geographical region. Moreover, the data includes detailed information on the spouses' earnings and un-/employment histories, as well level of education, incidence of social benefits and firm ownership. Several studies have shown an inverse relation between measures of socio-economic status and divorce (see for example Jalovaara, 2001; 2003). On the other hand, higher earnings potential and labour force participation among wives have been regarded as contributing to marital instability.¹¹ Many explanations for this have been suggested such as less gain from marriage due to less specialization; economically independent wives have lower economic barriers to leave an unhappy marriage; lower demand for children; expectations about the division of labour, etc. The effect of previous unemployment or financial hardship is unclear. It could be hypothesized that unemployment has an accumulated adverse impact, but also that previous experience of unemployment decreases the couple's perception of the current job loss as a stressful event. Apart from the variables already mentioned, a set of variables indicating the industry sector where the spouses are employed is also included.

Health: Little attention has been devoted to the impact of spouses' health statuses and the direction of the effect is ambiguous. Some previous research have shown that husbands' ill-health increase the hazard of divorce (Jensen and Smith, 1990; and Svarer, 2002), whilst others have shown no effect at all from disability and no matter whether the husband or the wife is disabled (Charles and Stephens, 2004). Here, a set of health variables containing the incidence of insured sickness, hospital admission and disability pension is included, as well as the number of insured sickness days and days admitted to hospital.

Match quality: The information on match quality is rather sparse. Based on assortative mating two variables are included. The first measures differences in level of education between the spouses, and the second indicates whether the husband and the wife are born in the same country. A positive assortative mating among couples is found empirically (Weiss and Willis, 1997; and Mare, 1991) and Becker (1973) also shows theoretically that positive assortative mating is optimal for a large range of personal traits (earnings is an exception). Differences in ethnicity may also reflect incompatible socialization of gender roles (Dickson, 1993), as well as cultural barriers.

¹⁰ The descriptive statistics are given in Table B1.

¹¹ Note that in the sample of married women all women were employed in November 1986.

Marital investments: A set of variables indicating marital investments, such as presence and number of children and house ownership are included. Marital investments or marriage specific capital will in general reduce the risk of divorce, since its value is higher within the marriage. Empirical work has also shown that children, especially younger ones, reduce the probability of divorce (Andersson, 1997). A problem with the data is, though, that joint parenthood cannot be established. The data only has information on the number of own children of each spouse. Couples who own a house would also be expected to be less likely to dissolve their marriages because of the investment effect. The positive correlation between marital investment and marital stability could also be spurious, i.e., just because marital investments decrease in value when the marriage dissolves the anticipation or expectation of divorce may lead to cautious investment behaviour (Becker *et al.*, 1977).

Coping resources: How a job loss will be perceived by the couple, and how they will be able to adapt to it, depends upon their coping resources. The couple's financial assets will most likely influence the perception of severeness of the job loss. Thus, disposable family income and incidence of taxable wealth are included in the analysis. Even if the impact of ill-health on marital stability is ambiguous, current health problems, mental as well as physical, may reduce the couple's strength to cope with an additional stressful event such as a job loss. Female labour force participation has previously been said to increase marital instability, but this is not certainly true in Sweden where people are expected to be self-supporting even within marriage and where marriages are more egalitarian and with more flexible gender-role norms. Thus, the wife's labour force participation could instead decrease the financial hardship associated with a husband's job loss without resulting in psychological or family problems due to alteration of gender roles. As with female labour force participation, the presence and number of children could also have a reversed affect on the couple's perception of the job loss, since the more children the more dependents to support. The coping resources mentioned so far, are all internally, or within the family, but there are also external aspects. The family's definition of the job loss as a stressor will also depend on the perceived employment opportunities, which will be measured by the local labour market un-/employment rate. Since we only consider job losses due to establishment closures there is not expected to be any self-blame or shame associated to the job loss, but if the job loss is followed by long-term unemployment this is a natural response and then especially in good labour market times.¹² Moreover, a dummy variable indicating whether the spouses work at the same establishment is included. Both the likelihood that the couples define the job loss as a crises and the actual severeness of the job less will surely increase in case of multiple job losses within the family.

Spousal alternatives: This final category included in the analysis contains variables measuring spousal alternatives. Three variables are included, the first measuring the sex ratio within the establishment. A higher ratio of the opposite sex will increase the opportunity for new contacts besides the current spouse, and decreases the search costs, which could threatens the stability of the marriage (see Scott and Lloyd, 1995). The two other variables measure the share of married men and women, in the

¹² See Rantakeisu et al. (1999) on the relation between unemployment and shame.

municipality, respectively. Higher marriage ratios will probably imply less opportunity for search for a new spouse.

4 Empirical method and estimation

The impact of job loss on marital instability (i.e. divorce) will be estimated by propensity score matching. This method originates in statistics (Rosenbaum and Rubin, 1983, 1984) and has lately received increasing attention in economics (See Heckman *et al.*, 1997; Dehejia and Wahba, 1999, 2002; Sianesi, 2001, 2002; Lechner, 2002a, b; Larsson, 2003 and Smith and Todd, 2004). There are two main advantages of propensity score matching, over other non-experimental evaluation methods. Firstly, the treatment effect can be estimated non-parametrically, i.e. no assumptions on functional form on the outcome equation are required. Secondly, it highlights the common support problem, i.e. the problem of lack of overlap in the observed characteristics X between the treated and non-treated. The problem of common support is most often neglected in evaluations based on parametric estimators, but lack of common support or distributional differences within the common support may be an important source of bias. One major recommendation in Heckman *et al.* (1999) is that non-experimental comparison groups should be designed so that they have the same set of X values as the treatment group.

By matching one tries to *ex post* mimic the properties of the randomization of individuals into the treatment and non-treatment group in experimental studies. The major difference between randomization and matching is that randomization works for all characteristics, observed as well as unobserved. Matching on the other hand, only works for the set of observed characteristics X . Thus, the identification of the treatment effect, on the treated, by matching relies on a conditional independence assumption (CIA). The CIA requires that no variables other than X affect both the assignment to treatment, D , and the outcome if treatment is not received, Y^0 .¹³ In mathematical notation: $Y^0 \perp D | X$.

With only a few covariates, matching directly on these covariates is straightforward, but when the number increases (or are continuously distributed) it is extremely unlikely that matches will be found. Rosenbaum and Rubin (1983) shows that if a function $b(X)$, is a balancing score, i.e. $X \perp D | b(X)$, and if the CIA is valid for X , then the CIA is also valid for $b(X)$. Furthermore, Rosenbaum and Rubin (1983) shows that the propensity score, defined as $p(X) \equiv \Pr(D=1|X) = E[D|X]$, is a balancing score. Thus, this implies that matching on the full set of X is not necessary. It is sufficient to match on the scalar $p(X)$.

The propensity scores are not known but have to be estimated. Here a logit model with the probability of displacement due to establishment closure as the dependent variable is estimated. The estimation is performed separately for males and females. The set of variables included in the model specification is the same as described in Section 3.3. Higher-orders are also included to the extent that is required to balance the covariates.¹⁴

¹³ It is also assumed that $P(D=1|X) < 1$, implying that a match can be found for each treated individual.

¹⁴ What *balance* means in this application will be discussed more later on.

After estimation of the propensity scores, a comparison group is constructed by a nearest-neighbour (5-neighbours) method.¹⁵ This is one among several different methods of matching on propensity scores.¹⁶ With 5-nearest-neighbour matching, each treated unit is matched to the five nearest non-treated units with respect to the propensity score.¹⁷ Both Smith and Todd (2004) and Dehejia and Wahba (2004) show the importance of checking the sensitivity of the results to small changes in the specifications of the logit model. Such sensitivity checks have been performed and shown that if using one-to-one matching, the estimates are quite sensitive to changes in the model specification. With five or more neighbours, the results are robust to such changes.

Nearest-neighbour matching can also be performed with or without replacement. Allowing each comparison to be matched more than once could improve the matching quality, hence reduce bias, but will on the other hand increase the variance of the estimator. In this application, matching is performed with replacement, and consequently each individual in the control group is allowed to be used more than once. A common support requirement is also invoked, i.e. all treated units i such that $p_i(X) < \min p_k(X)$ or $p_i(X) > \max p_k(X)$, where k belongs to the set of non-treated units, are discarded. Imposing common support is inefficient but decreases bias, and also implies that what we really estimate is the treatment effect on the treated that falls within the common support.

Table 2 Sample size before and after matching for both married men and women.

	Unmatched sample	Matched sample
<i>Married men</i>		
Displaced	1,811	1,808 (1,808)
Non-displaced	45,592	9,040 (7,729)
<i>Married women</i>		
Displaced	1,448	1,446 (1,446)
Non-displaced	45,730	7,230 (6,288)

Table 3 Summary statistics of the log-odds ratio to be displaced.

	Unmatched sample			Matched sample		
	Mean	Min	Max	Mean	Min	Max
<i>Married men</i>						
Displaced	-2.993	-5.159	1.810	-2.999	-5.159	-0.064
Non-displaced	-3.436	-5.938	0.339	-2.999	-5.160	0.032
<i>Married women</i>						
Displaced	-3.182	-5.568	-0.610	-3.185	-5.568	-0.873
Non-displaced	-3.714	-7.099	-0.830	-3.185	-5.570	-0.830

¹⁵ The matching procedure is performed in Stata 7.0. The program used is a modification of *psmatch2.ado*. See Leuven and Sianesi (2003).

¹⁶ See Smith and Todd (2004) for an overview of different matching estimators.

¹⁷ In the application of this nearest-neighbour matching method matches are based on the logit of the propensity score instead of directly on the propensity score. The reason is that our sample is choice-based. With a choice-based sample the propensity score cannot be consistently estimated without re-weighting the sample. However, matching can still be performed but on the odds ratio or the log odds ratio (see Smith and Todd, 2004). Matching on the log-odds ratio should also generate better matches when the probability is close to zero or one (Lechner, 2001).

Table 2 presents the number of individuals in the displacement and non-displacement group, before and after matching. As can be seen from Table 2 invoking the common support requirement does not imply a large loss of observations. In fact, only five couples are discarded and they are as expected, and as seen in Table 3, all in the upper part of the distribution of the log-odds ratio.

The theory of propensity score matching outlined above assumes infinite sample sizes and perfect matches on $p(X)$, to imply balance in X . In practice, perfect matches will not be found for all the treated, but one has to allow for neighbourhood (imprecise) matching. Hence, the presence of any imbalance in covariates after matching must be tested. After the matching process, the sample has been divided into 10 quantiles based on the log-odds ratio. Within each quantile, a t -test of equality of means in log-odds ratio as well as Hotelling’s T-squared test of joint equality in means of the set of included covariates has been performed (see Table 4). If the test showed significant differences between the two groups, the logit model was re-specified by adding higher-order terms and/or interactions of the covariates. This procedure was repeated until balance was obtained.¹⁸ Focusing on the covariate means or the standardized difference in means is in line with several other applications of propensity score matching (see for example Smith and Todd, 2004; Sianesi, 2002; Dehejia and Wahba, 1999 and 2002; and Larsson, 2003). Previous literature does not give any guidance, when it comes to what levels of standardized absolute differences in means are acceptable. In Rosenbaum and Rubin (1985), a value of 20 is judged “substantial”. Therefore, the procedure described above is used as a test of the balancing property and the summary statistics of the (absolute) standardized differences in means are only presented as an additional assessment of the matching quality.¹⁹

Table 4 Hotelling’s T-squared test of joint equality in means of all the variables included in the matching between the treatment groups and the matched comparison groups.

Quantile	Married men		Married women	
	F-stat	p-value	F-stat	p-value
1	1.28	0.06	0.70	0.95
2	1.09	0.27	1.09	0.28
3	1.00	0.48	1.06	0.35
4	1.16	0.15	1.06	0.35
5	1.23	0.07	0.69	0.99
6	0.80	0.93	1.14	0.17
7	0.76	0.97	1.09	0.27
8	1.09	0.25	1.10	0.23
9	0.98	0.54	0.85	0.86
10	0.98	0.53	1.18	0.10

Table 5 Standardized absolute difference before and after matching for both time windows.

	Unmatched sample			Matched sample		
	Mean	Min	Max	Mean	Min	Max

¹⁸ The descriptive statistics for the matched sample and the standardized differences in covariate means can be found in the Appendix.

¹⁹ The standardized difference in means is calculated as $d = 100 \cdot (\bar{x}_{D=1} - \bar{x}_{D=0}) / \sqrt{(s_{D=1}^2 + s_{D=0}^2) / 2}$.

Married men	7.299	0.003	32.625	1.020	0.000	3.445
Married women	7.787	0.029	46.591	0.991	0.000	3.400

As can be seen from Table 5, the matching has considerably improved the covariate balance. In the unmatched samples the absolute standardized difference is, in the most almost 47, which should be compared to 3.4 in the matched samples. The average absolute standardized difference has been reduced from 7 to 1 for both the sample of married men and the sample of married women.

5 Results

The longitudinal structure and the use of matching allow the effect of a job loss on the risk of divorce, using the matched sample, to be estimated non-parametrically by the life table method. The non-parametric estimates have the advantage of being independent of any functional form. From the life table estimates of the survival rate a risk ratio (RR) is calculated at each year, defined as

$$RR(t)=[1-S_{D=1}(t)]/[1-S_{D=0}(t)],$$

where $S_i(t)$ is the life table survival estimator evaluated at time t for displaced ($D=1$) and non-displaced ($D=0$), respectively. The risk ratio can be somewhat misleading though, as a measure of the treatment effect. Firstly, it is not symmetric, resulting in that the impression of the size of the treatment effect will differ depending on how it is presented. Secondly, obviously a relative measure does not give any information about the real size of the effect and thus impossible to judge whether it is of any real importance, statistically significant or not. The easy approach, to overcome these drawbacks, which will be taken here, is to calculate a risk difference (RD) as well. Applying the same notation as previously the risk difference is defined as

$$RD(t)=[1-S_{D=1}(t)]-[1-S_{D=0}(t)]=S_{D=0}(t)-S_{D=1}(t).$$

The matching process has been performed separately for men and women and the results are presented in Figure 1 and 2, with 95 % BC bootstrapped confidence intervals (CI).²⁰ It is important to note that the point estimates represents the cumulative effect and not the incremental effect. However, the incremental effect can be derived from the slope of the graph of the risk difference. The results confirm what have been found in previous studies, in the sense that there is a positive impact on the risk of divorce from a job loss (e.g., Jensen and Smith, 1990; Starkey, 1996; Kraft, 2001; and Charles and Stephens, 2004). However, they are not in line with the results

²⁰ To present bootstrapped standard errors or confidence intervals is common practice when applying propensity score matching (Smith, 2000). When computing the bootstrapped confidence intervals, the whole matching process is replicated (1,000 replications). In principle, this requires that the logit model is re-specified at each replication, if the criterion of balanced covariates is not satisfied. In practice this is too time-consuming. Therefore, I assume that the model specification, obtained for the original sample, is appropriate for all replications. I have, though, checked the balance in each replication, and in average 99 percent of the covariates were balanced. As an informal test of whether this small imbalance may have any impact, confidence intervals have also been computed using only those replications for which the balance criterion were satisfied, but the differences are negligible.

found in Charles and Stephens (2004) suggesting that job losses due to plant closures do not have any effect. Thus, these results do not imply it is only what the job loss suggests about the spouse's fitness as a mate that matters. A job loss due to an establishment closure should not reveal any such information, and hence job losses seem to destabilize marriages through other channels as well.

Previous research is also inconclusive when it comes to whether both husbands' and wives' job loss (unemployment) increases the risk of marital dissolution. The results here suggest it is not only the husband's job loss that matters. There is an immediate increase, in the relative risk of divorce, of 18 percent (CI_M : 0.81-1.49, CI_W : 0.88-1.43) from both husbands' and wives' job losses. This effect decreases during the following couple of years but then there is yet another increase in the divorce risk in the first part of the 1990's. What is interesting is that this increase coincides with the most severe recession in Sweden since the 1930's (see Figure A1), and it has previously been shown that the workers displaced in 1987 were more likely to lose their jobs once again during this recession (see Eliason and Storrie, 2004). During these years, the excess risk of divorce is actually larger than in the years immediately after the initial job loss.

Figure 1 Risk ratio (RR) and risk difference (RD) for married men, with 95 percent BC bootstrapped confidence intervals.

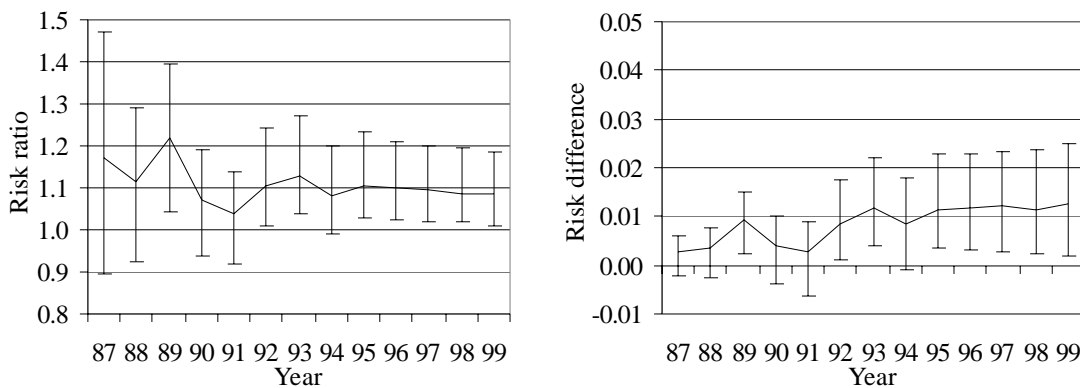
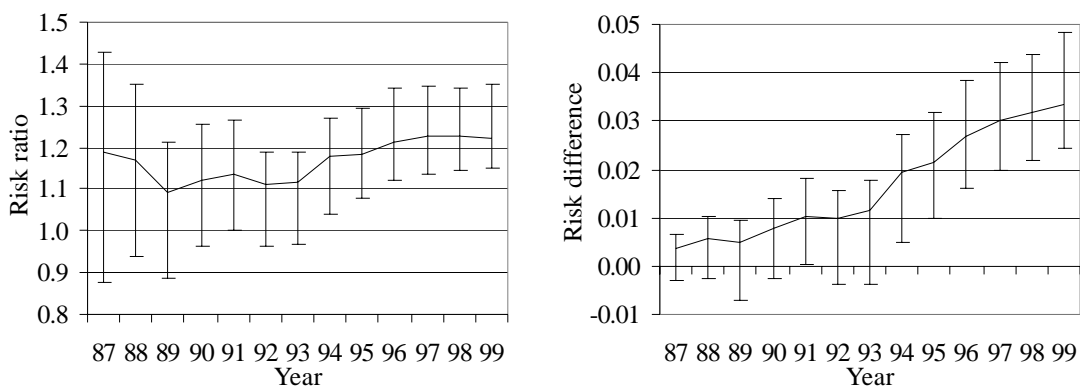


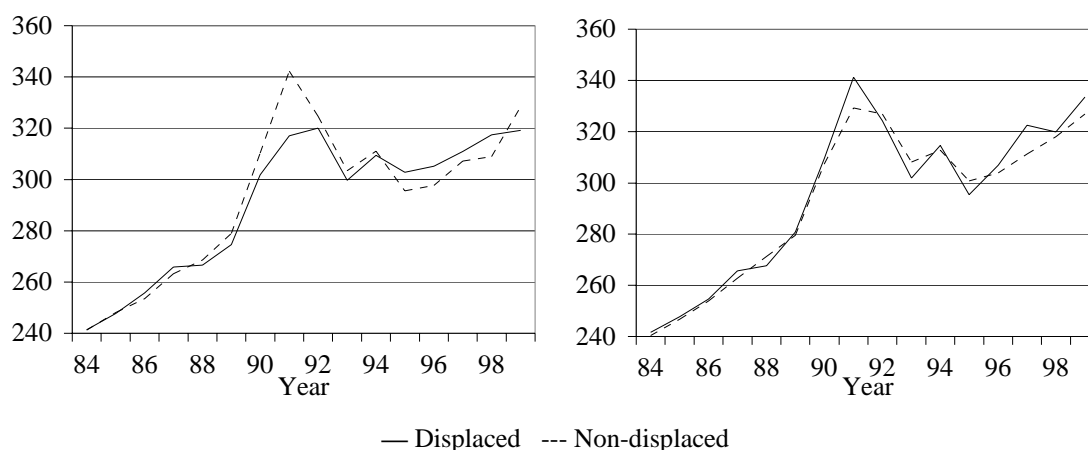
Figure 2 Risk ratio (RR) and risk difference (RD) for married women, with 95 percent BC bootstrapped confidence intervals.



The explanation of the relatively minor immediate impact and larger subsequent impact in the beginning of the 1990's might be that the labour market was very buoyant at the time of the job loss in 1987. Hence, the displaced workers had good

opportunities to find a new job quickly, and the job loss was not necessarily followed by a period of unemployment. If these workers experienced a higher risk of additional job losses during the following recession this would most likely required larger adjustments, within the family, at this time compared to in 1987. This is supported by Figure 3, which depicts the development of the disposable family income for the couples as long as they are still married. The difference in disposable family income immediately after the job loss in fact is very small, but a much larger difference is found in the beginning of the 1990's, at least for the married men. That the job loss does not seem to have any real financial impact is possible the explanation to the rather small impact found in this paper.

Figure 3 The development of disposable family income, (in 1,000 Swedish kronor and deflated using the Consumer Price Index with 1999 as base year) for displaced and non-displaced married men (right) and displaced and non-displaced married women (left), in intact marriages.



Despite the mentioned similarities of the impact of husbands' and wives' job loss, there are also some differences. For males, there is an initial increased risk of divorce that lasts for three years and then a new increase, during the recession, in 1992 and 1993. Both these periods of higher risk of divorce are followed by years when the divorce risk is actually much lower for the couples where the husband has been displaced. This could be interpreted as if a job loss, directly and perhaps also indirectly through new job losses in the beginning of the 1990's, only changes the timing of the divorce of marriages that anyway would have been dissolved. This hypothesis is not supported by the estimates for wives. For wives we observe an increased risk of divorce in almost every single year, although we also observe a sharp increase in the risk difference between 1993 and 1994 (from 0.011 to 0.019). The cumulative excess risk of divorce is also still significant in the end of the observation period 13 years after the job loss with RR= 1.22 (CI: 1.15-1.32) and RD= 0.034 (CI: 0.024-0.048). This is also true for husbands, but the estimates are much lower. In the end of the period the risk ratio is 1.09 (CI: 1.01-1.19) and the risk difference is 0.013 (CI: 0.001-0.026).

6 Summary and concluding remarks

This paper concerns the impact of involuntary job loss on the risk of divorce. A job loss could affect marital stability through various channels. Irrespectively of which those channels are we might expect that a job loss is likely to change the conditions of the marriage. These changes may result in financial or psychological problems, resulting in marital conflicts that increase the probability of divorce. Previous empirical work is however inconclusive regarding to which extent a job loss impact on the risk and timing of divorce and if both husbands' and wives' job loss matters.

I focus on both husbands' and wives' job loss and I extend previous literature by examining the impact over a longer period, i.e. up to 13 years after the job loss. Another major difference is that I only consider job losses due to establishment closures. The focus on establishment closures decreases the causality problem, i.e. that the job loss (or prolonged unemployment) is caused by the divorce (or the decision to divorce) and not *vice versa*. Moreover, it excludes one potential explanation to why a job loss could increase the risk of divorce, i.e. that the job loss reveals information about the spouse's fitness as a mate.

Using Swedish administrative data and propensity score matching I do find that a job loss increases the risk that the marriage ends in divorce. During the same year as the job loss, the risk of divorce is increased, by 18 percent both if the husband loses the job, and if the wife was the one to lose the job. This weakly confirms the existence of an immediate effect of job loss found in previous research and suggests it is not only the husband's job loss that matters. Whether also wives' job loss destabilize marriages is not clear from previous studies. One could speculate that the findings here are driven by the rather high labour force participation among women in Sweden and that self-supporting and employment is important for the Swedes even among women within the marriage. The results also suggest that a job loss not only has an immediate impact, but that the effects are long lasting. In the beginning of the 1990's when Sweden experienced the most severe recession since the 1930's, the risk of divorce tends to increase again for the married couples that experienced a job loss in 1987. In Stevens (1997), it is stressed that multiple job losses play an important role in the adverse long-run effects on employment and earnings. In a recent study using the same data as this study (Eliason and Storrie, 2004) it is also shown that workers displaced in 1987 do have a higher risk of unemployment when this recession hits the Swedish economy.²¹ The descriptive analysis, in this paper, of disposable family income also shows increasing differences in the beginning of the 1990's between displaced and non-displaced husbands, in intact marriages, which further support this hypothesis.

The job losses investigated in this paper occurred in a very good period in the labour market. The disposable family income did not seem to be largely affected by the job loss, probably due to that most of the displaced workers had good opportunities to find a new job without any intervening spell of unemployment. Those who anyway suffered from unemployment are most likely to have been eligible to generous benefits from the Swedish welfare state. That the results indicate that a job loss even under these very favourable circumstances does increase the risk of divorce, although only marginally, necessitate the need for more research on the non-pecuniary costs of displacements.

²¹ The sampling scheme in Eliason and Storrie (2003) differs though. The most important difference is that the empirical analyses is not limited to married persons.

My view is that these aspects of the consequences of job loss, which could be most severe for those who experience them, deserve more attention and should be included in the discussion of the cost or consequences of involuntary job loss.

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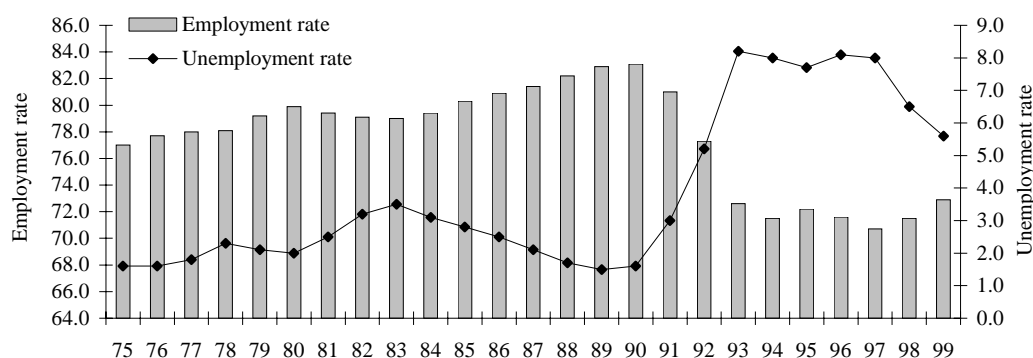
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Appendix

A The Swedish labour market

Figure A1 The employment and unemployment rate in Sweden, 1975-1999.



Source: Labour Force Surveys, Statistics Sweden.

B Descriptive statistics

Table B2 Descriptive statistics in the matched samples, for displaced ($D=1$) and non-displaced ($D=0$) respectively, including standardized differences in means (d).

	Married men		d	Married women		d
	$D=1$	$D=0$		$D=1$	$D=0$	
<i>Basic demographic variables (Husband)</i>						
Age in 1986	45.46	45.56	-1.0	44.46	44.42	0.3
Nordic immigrant	0.06	0.06	-0.3	0.07	0.07	1.7
Non-Nordic immigrant	0.08	0.08	-0.8	0.08	0.08	-0.5
<i>Basic demographic variables (Wife)</i>						
Age in 1986	42.75	42.84	-0.9	41.79	41.73	0.6
Nordic immigrant	0.08	0.08	-0.9	0.10	0.10	1.8
Non-Nordic immigrant	0.06	0.07	-0.9	0.08	0.08	-0.8
<i>Basic demographic variables (Couple)</i>						
Resident in larger city	0.23	0.22	2.7	0.27	0.27	0.2
Resident in a suburban municipality	0.17	0.17	-0.5	0.19	0.18	1.1
Resident in a sparsely populated municipality	0.01	0.01	-0.5	0.02	0.02	0.5
Resident in a countryside municipality	0.05	0.05	-0.6	0.03	0.04	-0.8
Resident in other small municipality	0.09	0.09	-1.7	0.06	0.06	2.1
Resident in medium-sized city	0.13	0.12	2.1	0.13	0.14	-1.1
Resident in industrial municipality	0.08	0.09	-2.1	0.04	0.04	-1.6
Resident in big city	0.17	0.18	-2.3	0.17	0.17	-0.4
Resident in other large municipality	0.08	0.08	0.9	0.09	0.09	0.0
<i>Socio-economic variables (Husband)</i>						
Employed in 1985	0.99	0.99	0.4	0.93	0.93	-0.7
Employed in 1984	0.97	0.97	-1.3	0.92	0.92	0.0
Firm owner in 1985	0.06	0.06	-1.4	0.09	0.10	-1.2
Firm owner in 1984	0.06	0.06	-1.4	0.09	0.10	-1.2
Unemployed in 1985	0.06	0.06	3.4	0.04	0.04	-0.1

Unemployed in 1984	0.06	0.06	1.3	0.06	0.06	1.0
Labour earnings in 1985	200.41	201.61	-1.1	182.11	183.34	-1.1
Labour earnings in 1984	199.78	201.10	-1.2	180.73	182.34	-1.4

Table B2 Continued

	Married men			Married women		
	<i>D</i> =1	<i>D</i> =0	<i>d</i>	<i>D</i> =1	<i>D</i> =0	<i>d</i>
<i>Socio-economic variables (Husband)</i>						
Business income in 1985	1.79	1.74	0.4	7.38	7.28	0.3
Business income in 1984	1.93	1.87	0.5	8.24	8.01	0.7
Income from UI in 1985	2.11	1.80	3.4	1.13	1.08	0.6
Income from UI in 1984	1.83	1.59	2.7	1.84	1.82	0.2
<i>Socio-economic variables (Wife)</i>						
Employed in 1985	0.88	0.88	-0.6	0.97	0.97	0.1
Employed in 1984	0.88	0.88	-0.6	1.00	1.00	1.0
Firm owner in 1985	0.03	0.03	0.9	0.02	0.02	-0.7
Firm owner in 1984	0.03	0.03	0.9	0.02	0.02	-0.7
Unemployed in 1985	0.06	0.06	0.5	0.08	0.07	3.4
Unemployed in 1984	0.07	0.07	-1.4	0.10	0.09	2.3
Labour earnings in 1985	94.77	94.32	0.7	105.83	105.98	-0.2
Labour earnings in 1984	94.88	94.59	0.4	103.85	103.08	1.2
Business income in 1985	1.29	1.31	-0.2	0.63	0.67	-0.6
Business income in 1984	1.39	1.41	-0.2	0.68	0.72	-0.6
Income from UI in 1985	1.72	1.68	0.4	2.09	1.94	1.6
Income from UI in 1984	1.71	1.75	-0.5	2.23	2.01	2.7
<i>Socio-economic variables (Couple)</i>						
Social welfare receiver in 1985	0.03	0.03	1.5	0.01	0.01	1.3
Social welfare receiver in 1984	0.04	0.04	1.8	0.02	0.01	2.0
Income from social welfare in 1985	1.21	1.06	1.7	0.71	0.59	1.8
Income from social welfare in 1984	1.37	1.31	0.8	0.72	0.67	0.9
<i>Industry sector in 1986 (Husband)</i>						
Industry not adequately defined	0.00	0.00	0.0	0.09	0.08	1.5
Agriculture, forestry, fishing and hunting	0.05	0.05	2.4	0.03	0.04	-2.9
Mining and quarrying	0.00	0.00	0.0	0.00	0.00	-0.4
Manufacturing	0.43	0.42	0.6	0.32	0.32	0.9
Electricity, gas, heating, and water supply	0.02	0.02	1.2	0.01	0.01	1.7
Construction	0.00	0.00	0.0	0.09	0.10	-1.8
Wholesale and retail trade, restaurants and hotels	0.15	0.15	0.1	0.11	0.11	1.0
Transport, storage, and communication	0.11	0.11	-0.5	0.08	0.09	-1.2
Financial intermediation, real estate, and insurances	0.13	0.13	-1.1	0.08	0.07	1.2
Public administration and services	0.12	0.12	-1.1	0.18	0.18	-0.8
<i>Industry sector in 1986 (Wife)</i>						
Industry not adequately defined	0.19	0.19	-1.4	0.00	0.00	0.0
Agriculture, forestry, fishing and hunting	0.01	0.01	2.5	0.02	0.02	-3.0
Mining and quarrying	0.00	0.00	1.2	0.00	0.00	0.0
Manufacturing	0.12	0.12	0.4	0.28	0.28	-0.3
Electricity, gas, heating, and water supply	0.00	0.00	1.4	0.01	0.01	-0.4
Construction	0.01	0.01	0.1	0.00	0.00	0.0
Wholesale and retail trade, restaurants and hotels	0.11	0.10	1.0	0.18	0.19	-2.4
Transport, storage, and communication	0.04	0.04	0.8	0.03	0.02	0.9
Financial intermediation, real estate, and insurances	0.06	0.07	-0.6	0.10	0.10	-0.2
Public administration and services	0.47	0.47	-0.4	0.39	0.38	2.5
<i>Health variables (Husband)</i>						

Disability in 1986	0.03	0.03	-0.8	0.04	0.04	0.9
Hospital admission in 1985	0.08	0.08	-2.0	0.07	0.07	0.5
Hospital admission in 1984	0.06	0.06	0.0	0.07	0.07	0.8

Table B2 Continued

	Married men			Married women		
	<i>D</i> =1	<i>D</i> =0	<i>d</i>	<i>D</i> =1	<i>D</i> =0	<i>d</i>
<i>Health variables (Husband)</i>						
Incidence of insured sickness in 1985	0.63	0.62	1.6	0.63	0.63	-1.0
Incidence of insured sickness in 1984	0.61	0.61	-0.2	0.57	0.57	0.2
Number of days at hospital in 1985	0.85	0.96	-2.0	0.87	0.72	1.7
Number of days at hospital in 1984	0.58	0.63	-1.1	1.04	0.90	1.8
Number of insured sickness days in 1985	20.03	20.12	-0.2	19.33	19.82	-1.0
Number of insured sickness days in 1984	15.67	16.34	-1.7	15.99	15.23	1.8
<i>Health variables (Wife)</i>						
Disability in 1986	0.04	0.04	-0.8	0.01	0.01	-1.3
Hospital admission in 1985	0.13	0.13	-0.4	0.12	0.12	0.2
Hospital admission in 1984	0.14	0.14	-1.1	0.13	0.12	1.4
Incidence of insured sickness in 1985	0.65	0.66	-1.4	0.70	0.70	0.4
Incidence of insured sickness in 1984	0.63	0.62	1.1	0.66	0.66	0.0
Number of days at hospital in 1985	1.45	1.37	0.9	0.99	0.98	0.3
Number of days at hospital in 1984	1.59	1.57	0.2	1.02	0.99	0.8
Number of insured sickness days in 1985	22.58	23.25	-1.3	23.83	23.78	0.1
Number of insured sickness days in 1984	21.01	21.55	-1.1	19.62	19.55	0.2
<i>Match quality in 1986</i>						
Spouses born in same region	0.89	0.89	0.3	0.87	0.88	-1.0
Husband low educ./Wife low educ.	0.29	0.30	-1.8	0.31	0.31	1.3
Husband low educ./Wife medium educ.	0.13	0.13	1.0	0.13	0.12	1.6
Husband low educ./Wife high educ.	0.03	0.03	-1.3	0.02	0.02	-0.8
Husband medium educ./Wife low educ.	0.14	0.12	3.2	0.15	0.15	-1.6
Husband medium educ./Wife medium educ.	0.18	0.17	2.2	0.17	0.18	-1.6
Husband medium educ./Wife high educ.	0.06	0.06	-1.1	0.04	0.04	0.0
Husband high educ./Wife low educ.	0.03	0.03	-0.7	0.03	0.03	0.6
Husband high educ./Wife medium educ.	0.07	0.07	-0.3	0.07	0.07	-0.3
Husband high educ./Wife high educ.	0.07	0.08	-2.3	0.09	0.09	1.0
<i>Marital investments in 1986</i>						
Had children aged 0-6	0.26	0.26	0.5	0.24	0.24	0.0
Had children aged 7-17	0.45	0.44	0.5	0.47	0.48	-1.3
Number of children aged 0-6	0.37	0.37	0.4	0.32	0.32	0.0
Number of children aged 7-17	0.69	0.68	0.5	0.73	0.74	-0.5
House owner	0.70	0.70	0.1	0.71	0.72	-1.4
Married 1 year	0.04	0.04	-1.4	0.04	0.04	0.4
Married 2 years	0.03	0.03	0.9	0.03	0.03	-0.2
Married 3 years	0.03	0.03	0.2	0.04	0.03	3.2
Married longer than 3 years	0.90	0.90	0.2	0.90	0.90	-1.7
<i>Coping resources</i>						
Disposable family income in 1985	243.13	242.70	0.6	240.46	240.69	-0.3
Disposable family income in 1984	232.08	232.18	-0.1	230.57	230.48	0.1
Had taxable wealth in 1986	0.11	0.10	1.7	0.10	0.10	-1.9
Local unemployment rate in 1986	0.04	0.04	-0.7	0.04	0.04	-0.2
Local employment rate in 1986	0.83	0.83	0.6	0.84	0.84	0.6
Both spouses had the same employer in 1986	0.06	0.06	0.1	0.07	0.08	-2.4
<i>Spousal alternatives and/or social norms (Husband)</i>						
Share of females at the workplace	0.30	0.31	-1.6	————	————	————

Share of married women in the municipality in 1986	0.43	0.43	-0.5	0.43	0.43	-0.1
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Table B2 Continued

	Married men			Married women		
	<i>D</i> =1	<i>D</i> =0	<i>d</i>	<i>D</i> =1	<i>D</i> =0	<i>d</i>
<i>Spousal alternatives and/or social norms (Wife)</i>						
Share of males at the workplace	—	—	—	0.35	0.35	1.3
Share of married men in the municipality in 1986	0.40	0.40	1.6	0.40	0.40	1.5

Note: All amounts are in 1,000 Swedish kronor and deflated by the Consumer Price Index with 1999 as the base year.