

The impact of job loss on family dissolution

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Abstract

The objective of this paper is to examine the impact of job loss on the probability of family dissolution. The negative income shock due to job loss can cause stress on the partnership; also, a partner's job displacement may convey new information about him. The analysis is based on the sample of all married/cohabitating couples from the British Household Panel Survey (BHPS). In order to correct for the possible endogeneity of job loss we use data from the employment histories and link all the job losses with the reasons for terminating the employment spell. Our model analyses the impact of different types of job changes on marriage stability. Adding the information about the industry workforce growth rate, we can identify redundancies (different from dismissals) in declining industries, and use this as an indicator of exogenous job loss. Results to date show evidence that couples in which the husband experiences a job loss are more likely to dissolve in the following year and the negative effect is found from both exogenous redundancy and from dismissals. Hence there is evidence of multiple transmission channels through which displacements affects family composition.

1. Introduction

The aim of this paper is to further our understanding of the relationship between job loss and family well-being. Specifically, we focus on the impact of job loss on family dissolution. Job loss leads to lower earnings and the stress from this negative income shock may increase the probability of family dissolution. Alternatively, job loss may signal an individual trait that impacts negatively on future earnings or on the quality of the match more generally. Again this suggests a positive relationship between divorce and job displacements. While policies aimed at reducing the earnings' shock from job losses may alleviate the former problem, they will be less effective if the latter impact is the main one.

The economic literature has traditionally considered the impact of earnings' shocks on family well-being, focusing on the consumption or production side and mostly analysing couples that remain together after these shocks (see for example Browning and Crossley, 2001 and Collen and Gruber, 2000). One important source of earnings' shocks is job loss and the subsequent unemployment. There is now a well-established body of work showing the effects of job displacement on re-employment probabilities and future earning. Displaced workers tend to experience reduced employment possibilities, increased job instability, as well as lower earnings' profiles (Ruhm, 1991; Jacobsen, Lalonde and Sullivan, 1993; and Chan and Stevens, 2001).

There are also a growing number of studies on the effects of job loss on other members of the family. For example see Stephens (2001) for an analysis of family consumption changes after the husband's job loss; also Ercolani and Jenkins (1999) and Stephens (2004) for studies of wives' labour supply changes in response to the husband's job loss. Most of these studies

analyse responses in the family's choice of consumption of both leisure and market-produced goods. Models of family utility maximization suggest that reduced family income due to the earnings losses of one family member may be offset by increases in the labour supply of others. These studies show a significant impact of job losses on families' behaviours, both in terms of consumption and labour supply.

Changes in family labour supply and consumption form only part of the impact of job loss and the shocks in earnings' levels. These events are also important in affecting the level of health and subjective well-being of the family. Recent work shows substantial impacts of unemployment on mental and physical health and well-being generally. There is a large empirical psychological literature¹ investigating the impact of unemployment on the incidence of low life satisfaction, depression, low self-esteem, unhappiness, and even suicide. The negative income shock is but one source of these effects as employment is also a provider of social relationships, identity in society and individual self esteem (Winkelmann and Winkelmann, 1998).

A British study by Clark and Oswald (1994) uses cross sectional data from the first wave of the BHPS to test whether unemployed people are relatively happy or unhappy. Their results show that unemployed people have much lower levels of mental well being (measured through the GHQ) than those in work. Moreover, a recent study from Sullivan and von Watcher (2006) investigates the impact of mass layoffs on mortality. Their results show that the relationship between job loss and mortality follows a U shape; mortality rates are particularly high in the years following a job loss and after a prolonged period of time. This is

¹ See Darity and Goldsmith (1996) for a review.

consistent with an initial increase in mortality from acute stress and a longer term rise from the chronic stress resulting from permanently lower average earnings.

There is also evidence of negative effects from unemployment levels on the general population. Di Tella et al (2001) specify and estimate a social welfare function representing the tradeoffs citizens' make over inflation and unemployment. They find that self reported well being is affected by both unemployment and inflation rates. Joblessness reduces reported life satisfaction even after controlling for the personal characteristics of the respondents, country fixed effects, year effects, time trends and lagged dependent variables. Moreover, unemployment depresses reported well-being more than does inflation.

Yet another dimension of the impact of job losses and earnings' shocks generally is the potential adjustment in terms of family composition. Number of children and presence of a partner are generally treated as exogenous family characteristics in studies of consumption and labour supply but serious shocks such as involuntary job losses could affect decisions regarding fertility and marriage. These non-pecuniary adjustments cannot be regarded as being of secondary importance; divorce is ranked as the most stressful of life events except for death of a family member.² Nevertheless, there are but a few studies to date on this aspect of the costs of negative earnings' shocks and job displacements.

Weiss and Willis (1997) use US data from the National Longitudinal Study of the High School Class of 1972 to study the effects of earnings shocks on the probability of divorce. Shocks or "surprises" are defined as the difference between realized and predicted earnings estimated from earning regressions. They show that a positive surprise to a husband's

² See Miller and Rahe (1997).

earnings lowers the probability of marriage dissolution, while a positive shock in wife's earnings raises the chance of divorce. These results are robust to the inclusion of several controls for match quality.

More recent studies use more direct measures of earnings' shocks. For example, based on the German Socio-economic Panel data, Kraft (2001) analyses the impact of unemployment on married couples' decision to separate. The husband's unemployment is found to increase the risk of separation in the following year and this impact increases with the duration of unemployment. Wives' unemployment does not seem to have the same effect.

The finding of significant effects of job loss on the probability of divorce has important consequences for the modelling of the impacts of displacement on families generally. Studies of the effect of job loss on family consumption or labour supply that only consider couples who remain married will produce biased results since those couples who remain married are those who had to face the fewest adjustments as a consequence of job loss. Excluding divorced couples is likely to lead to an underestimate of the impact of job displacement³.

Identifying the causal effect of job displacement on family dissolution is complicated by the possible endogeneity of job loss. Reverse causality (the increased likelihood of job loss due to the imminent breakdown of the partnership) could be reduced by controlling for the relative timing of the events. For example, Jensen and Smith (1990) analyse separately the effects of job losses occurring in the recent past from those occurring earlier. The results based on Danish panel data suggest that the only significant effect on divorce is from current unemployment and job losses occurring one or two years earlier have no impact. These

³ See Charles and Stephens (2004).

findings raise concerns that reverse causality may be driving the earlier findings of significant effects of job losses. A second source of endogeneity bias is the omission of important variables; the probability of job loss and divorce could be correlated due to a common trait of the individual or family not observed in the data. This relates back to the channels of transmission mentioned earlier⁴ and is a serious concern for this topic. Furthermore, panel data techniques are unlikely to resolve this problem through the modelling of individual-specific unobserved effects since events considered here (divorce and job loss) occur fairly rarely. Estimating or controlling for unobserved characteristics which make some individuals more prone to job loss and divorce is not feasible with standard models and datasets when the events happen very rarely.

To identify exogenous variations in the occurrence of job loss, recent studies have made use of information on the type of displacement. While one would expect a dismissal to be correlated with individual attributes that also influence the probability of divorce, a job loss due to a plant closure is unlikely to suffer from this problem. This approach follows earlier studies analysing the effects of job displacements on future earnings (for example see Gibbons and Katz (1991) for US data and Doiron (1995) for Canadian evidence).

Using the Panel Study of Income Dynamics, Charles and Stephens (2004) find an increase in the probability of divorce following a spouse's job displacement but this increase is found only for layoffs and not for plant closures. As Charles and Stephens (2004) state "[...] This suggests that information conveyed about a partner's non-economic suitability as a mate due to a job loss may be more important than the financial losses in precipitating a divorce." In comparison, Eliason (2004) finds a significant negative impact on the marriage's stability

⁴ We discuss theories of divorce in the following section.

caused by the husband's or the wife's job displacement due to a factory closure in Sweden. Hence existing results are few, and to date, contradictory.

In this paper we use data from the British Household Panel Study (BHPS) to analyse the causal effect of job loss on the probability of divorce. Marriage is defined broadly to include cohabitation and divorce includes separation. Panel data allow the inclusion of controls for match quality (years of marriage and age at marriage date). Panel data models are used to control for match specific and time invariant unobserved effects. Information on reasons for terminating the employment spell is used to distinguish between different types of job changes. While dismissals are more likely to be correlated with relevant omitted variables, redundancies are based on the characteristics and the environment of the employer. Furthermore, using information on the workforce growth rate by industry, we identify redundancies occurring in declining industries. These are treated as exogenous job losses. Lastly, we control for a large set of individual and family characteristics and we restrict attention to job losses experienced by the husband.

We find evidence that a husband's job loss has a significant positive impact on the probability of divorce in the following year. Both types of job losses considered - redundancies in declining industries and dismissals - have significant and positive effects on marriage dissolution however the effect from redundancies is smaller. The effect from redundancies captures the negative income shock while dismissals will represent both a current income shock as well as information on the partner's future earning capabilities and quality.

The paper is organized as follows. In Section 2 we present theoretical frameworks underlying the economic analyses of marriage and divorce. Section 3 includes a description of the data

construction and descriptive characteristics of the analysis sample. Section 4 discusses the empirical model and Section 5 presents the empirical results. Finally Section 6 contains concluding comments.

2. Economic models of marriage and marriage stability

In this section, we briefly discuss the main theoretical frameworks used in the economic analysis of marriage and marriage stability. Although we focus on economic models, it is clear that economic considerations form but part of the picture and as stated by Weiss and Willis (1997): “A successful theory which is capable of explaining the data on marriage and divorce must incorporate ideas from sociology, biology and other fields”. Nonetheless, as summarized below, economic factors have been shown to play a significant role in the decisions to form and dissolve households.

Nearly three decades have passed since Becker’s first seminal work (1973, 1974) on the economics of marriage and divorce. Becker’s work is based on a neoclassical model where the family is an expected utility maximising unit. In this framework, two individuals marry when there is a positive surplus from their union relative to the two remaining single. The utility gain comes from specialisation in home and market production, the division of labour, economies of scale, investment in marriage specific capital, risk sharing and other positive externalities⁵.

Similarly, the decision to divorce is based on the expected utility maximisation process and two individuals divorce when the expected utility of remaining married is less than the

⁵ See Weiss (2000) for a review of the economic reasons for marriage.

expected utility of divorce. The expected utility of divorce includes the probability of remarriage as well as the costs of divorce and the expected utility of remaining married includes the future option of divorce. As long as they are married, the two individuals maximise a joint utility function, whose arguments are the income or labour earnings received by each spouse⁶. In every period each partner has an alternative utility option, which he or she can receive when not married. The couple divorces when the joint expected utility of being married is less than the sum of the individual expected utility from divorce. This means that it is not enough that one of the two spouses gains from the family dissolution for the couple's decision to divorce.

The economic approach to the analysis of partnership dissolution suggests two general causes for marital instability and for a marriage to end in a divorce⁷. First, although the search for a partner is costly, meetings do occur on a random basis. As a consequence, a union may become unacceptable if one of the two partners meets a person who would be superior to the current match. Second, people enter a marriage based on expectations about the traits of the other spouse. These characteristics, which influence the gain from a union, may change over time unexpectedly and cause the spouses to reconsider their initial decision⁸. Thus "surprises", such as unexpectedly high or low income, may affect marriage dissolution. A job loss may be considered as an economic "surprise" about the partner's future earning ability. It could also be a significant indicator of characteristics of the partner that affect his/her suitability as a mate such as reliability or sense of responsibility. Therefore, it is new information regarding a couple's match that can be taken into account in evaluating the union stability. Eliason (2004) underlines that the traits needed to keep a job are partly the same as

⁶ See Charles and Stephens (2004) for a more formal description.

⁷ See Weiss and Willis (1997).

⁸ See Boheim and Ermish (2001) for studies on the role of economic circumstances in family dissolution.

the traits that make a partner desirable, and a job loss may reveal new information about the match quality.

An alternative theory of divorce is the family stress theory, the ABC-X model, first elaborated by Hill (1949) and later by McCubbin and Patterson (1982)⁹. In this model, A is a stressor event, B the family's coping resources, C the family's perception of the event and X the crisis. The stressor event will have an impact both on the family's coping resources and on the family's perception and can result in a crisis or a resolution. A job displacement can be considered as a stressor event. It may cause financial and psychological stress and have broad implications on health and social networks for both the person experiencing the job loss and the other members of the family¹⁰.

In a recent study, Matouschek and Rasul (2004) develop stylised models of marriage as an exclusive contract. At the beginning of the first period each man is matched with one woman and each couple receives a signal about the future gains from being together. After observing the signal, each couple then decides whether to break up, cohabit or get married. If the couple decides to get married each partner immediately realizes an exogenous 'marriage bonus', that represents the extra utility that the partners gain from publicly demonstrating their commitment to each other. In some variations of this approach, couples are involved in an infinitely repeated prisoner's dilemma. After learning about the potential benefits that can be realised in the relationship, the partners decide simultaneously whether to cooperate or not. Marriage is a commitment device that fosters cooperation.

⁹ See Eliason (2004) for a more detailed explanation of this model.

¹⁰ For example job loss is found to be correlated with alcohol abuse (Catalano et al, 1993) and domestic violence (Kyriacou et al, 1999).

In this setting, job loss can be interpreted as a factor that modifies the signal received by the partners. A partner's job loss reduces the benefits of remaining together and may eventually cause the benefits from marriage to be lower than the expected payoffs of returning to the single pool. Moreover, the partner's job loss may modify the information or beliefs about his/her true commitment in the relationship.

In all these models, job displacement plays a natural role in explaining marriage dissolution. Furthermore, several channels of transmission are expected. A job loss can create an immediate earnings' shock that reduces the relative benefits of marriage/cohabitation and imposes pecuniary and non-pecuniary stress on the relationship. It also has longer-term effects both in terms of the future monetary benefits of the relationship and as an indicator of other determinants of the expected value of the match.

3. Data construction and descriptive statistics

This analysis uses data collected in all 14 waves of the British Household Panel Study (BHPS), which is a nationally representative sample recruited in September 1991. The survey contained approximately 10,000 persons (5,500 households) when it was constituted¹¹. The BHPS is an indefinite life panel survey and the longitudinal sample consists of members of original households and their natural descendants. If the original members split off from their household to form a new family, all the adult members (older than 16) of the new households are included in the survey and interviewed. In order to analyse the possible impact of job loss on family dissolution, we firstly construct a sample of all married or cohabitating couples in the BHPS. Couples in which the man is younger than 20 or older than 65 years are dropped.

¹¹ Additional samples of 1,500 households in each of Scotland and Wales were added in 1999, and in 2001 a sample of 2,000 households was added in Northern Ireland, making the panel suitable for UK-wide research.

A complete dataset, containing all family histories in the BHPS is available together with the BHPS original data. This dataset contains a consolidated marital, cohabitation and fertility history for 29,065 adults, interviewed at least once during the survey. This dataset allows us to distinguish marriage and cohabitations, and also provides the starting and end date of each union. If the union is a marriage, either partner can die, they can get divorced, separated or they can live together. If the union is a cohabitation, the partners can split, get married or they can continue cohabitating.

In this analysis, we do not distinguish between marriages and cohabitations. If the two partners cohabit before marriage, we consider the cohabitation starting date as the union starting date. If there is a separation before the divorce, the date of separation is considered as the union end date.

We define a divorce binary variable, that is equal to 1 when the end date from the family data set indicates a separation, a divorce or a split (for cohabitating partners) and when this is the last time the couple is observed being together in the survey. If a union ends, the partners are subsequently dropped from the analysis sample.

Information on labour market behaviour and periods of unemployment is collected in different sources within the BHPS. At each interview, the individual is asked about his/her current employment situation¹², and whether he/she did any paid work or was away from a job in the week prior to the interview. Retrospective information about labour force behaviour and all employment spells over the previous year is also collected. G. Paull has compiled a special data set containing labour forces spells (defined in terms of spell state, start date and

¹² The proposed alternatives are: self employed, in-paid employment (full time or part time), unemployed, retired from paid work, on maternity leave, looking after family or home, full time student/at school, long term sick or disabled, on a government training scheme, something else.

end date) for each individual after leaving fulltime education until the time of the interview¹³. This data set is complete for the first 11 waves of the BHPS and reconciles multiple sources of information on employment spells. Information on the reason for leaving an employment spell is not included in the Paull data set and was derived from the job history files. When providing the reason for leaving a job, individuals can choose among the following alternatives: promoted, left for better job, made redundant, dismissed or sacked, temporary job ended, took retirement, stopped for health reasons, left to have a baby, children/home care, care of other person, and other reasons. In this paper we focus on the involuntary displacements: dismissals, redundancies and temporary job endings.

In this paper, we focus on job changes experienced by the male partner only. Also, we consider only those job changes due to the following reasons: temporary job ended, redundancy, and dismissal. Dismissals are more likely to incorporate signals on the future benefits of the match. Temporary jobs as well but perhaps to a lesser extent. UK redundancy law allows three reasons for redundancy: total cessation of the employer's business (whether permanently or temporarily), cessation of business at the employee's workplace and reduction in the number of workers required to do a particular job. Moreover, the employment law clearly specifies that, in a redundancy situation, the employer should select workers fairly and should consider any alternatives to redundancy (this includes offering alternative work). Therefore, the legislation is quite explicit and the term redundancy should not refer to a dismissal caused by individual worker's behaviour. Nevertheless, redundancy is a commonly accepted term for involuntary separation and respondents may be willing to report redundancies in cases of dismissals¹⁴.

¹³ See Paull (1997) and Paul (2002).

¹⁴ See Borland et al. (1999).

Consequently, a more stringent definition of redundancy is constructed using information on the industry of the job just ended. Specifically, data on industry-specific workforce growth rates was collected from published UK government statistics and a three years moving average growth rate for each industry was constructed. Redundancies from jobs in industries with declining employment are treated separately and are considered as exogenous job displacements¹⁵.

The final sample contains about 7,500 couples and 37,000 observations. Tables 1 and 2 present the number of job losses in the analysis sample and the limited incidence of repeated job loss in the same year. Table 3 presents the divorce/separation rate in percentage, for couples who are in the analysis sample. From these raw figures, we can see that on average about 2% of the marriages and cohabitations are dissolved by divorce or separation each year and the incidence of dissolution trends downwards over the length of the union. Moreover, couples who experience job losses are on average more likely to divorce.

Table 4 presents differences in continuous variables among couples with and without job loss experience. Couples without any job loss experience are slightly older on average and at the time of marriage. However, these differences are fairly small as is the difference in the number of children. A more noticeable difference is found in education levels¹⁶. Table 5 shows that there is a significantly greater percentage of people with higher qualifications among couples with no job losses. This is true for both men and women. Nearly 44% of men without any job loss experience hold a high degree, compared to 39% in the sample with displacements. Table 5 also presents differences in income. In order to avoid the problem of

¹⁵Unfortunately, information on plant closure is not available in BHPS.

¹⁶ Educational qualifications are grouped into four categories: high qualifications (including higher degree, first degree, teaching qualification, other higher qualification), high school (including gcse and nursing qualification), other qualifications (including commercial qualification, apprenticeship and other qualification) and no qualifications.

reverse causality (where a marriage dissolution causes an income shock), we use the husband's monthly pay recorded in September of the previous year and annual investment income. Overall, the percentage of people with low monthly pay (less than £1,000) is higher in the sample with a job loss. Moreover, average investment income is significantly higher among families without any job losses.

The economic literature related to marriage and divorce underlines the importance of “good matches” among partners. Couples are characterised by their “match quality” at the start of the relationship and this is an important predictor of the future stability of their union. Factors such as similar life experiences and goals can affect the intensity of the initial connection and hence help determine the probability of a stable marriage. Table 6 summarizes the similarities in the education level across partners. The husband's education is listed first. Overall, 41% of partners among couples who experience a job loss have the same level of educational qualifications. This proportion increases to 45% among couples without any job losses. The education patterns generally are quite different for the two groups of couples. There is a smaller proportion of couples in which both husband and wife have a high degree among the set of people who experienced a job loss (18% versus 21%). On the other hand, the match “no qualification” is more frequent among job losers (9% versus 8%).

4. Estimation methods

In this paper panel data methods are used in order to control for match specific unobserved heterogeneity as well as the observed heterogeneity captured by the explanatory factors. Specifically, a random effects probit model is used:

$$Y^*_{it} = \alpha_i + x_{it}\beta + \varepsilon_{it} \quad \text{and} \quad Y_{it} = 1[Y^*_{it} > 0] \quad \text{for} \quad i=1, \dots, N, \quad t=1, \dots, T_i$$

where Y_{it} -the dependent variable- is a binary variable with a value of 1 indicating family dissolution; Y^*_{it} is a latent variable measuring the net benefits of family dissolution; x is a vector of explanatory variables; N is the number of couples and T is the couple specific number of time periods in the survey. The random effects probit splits the non-deterministic component into a time invariant couple-specific term α_i and an idiosyncratic error term ε_{it} assumed to be i.i.d. according to $N(0,1)$.

The maintained assumptions on the match quality term α_i are that $\alpha_i|x_i \sim N(0, \sigma_\alpha^2)$, σ_α^2 is independent of x , and $E(\alpha_i|x_i) = E(\alpha_i) = 0$; that is, the unobserved individual effect is assumed to be independent of x_i and normally distributed. (The assumption of a zero mean is innocuous as long as x includes a constant.) The assumption of independence between the observed and the unobserved determinants of match quality is restrictive but in the case of a probit, unrestricted match-specific effects cannot be estimated consistently nor can they be cancelled out¹⁷. One way of relaxing the independence assumption is to model the relationship between x_i and α_i ; this is the approach taken in the Chamberlain model. For example let $\alpha_i = \gamma z_i + v_i$ where γ measures the partial correlation between the observed characteristics in z and the individual-specific effect; $v|z$ is $N(0, \sigma_v^2)$ and independent of x . The vector z can be a subset (or all) of the x variables and can include transformations of the x variables such as means. In our case the match quality variables (see below) are more appropriately interpreted as components of this z vector since they are time-invariant and match-specific. Finally, various alternative specifications are estimated in order to investigate the sensitivity of the results.

The vector x is alternatively specified to include the following information on job loss:

¹⁷ A similar approach is taken by Willis and Weiss (1997) and by Charles and Stephens (2004).

- a set of binary variables equal to 1 if the individual has a job loss experience by type of displacement; or
- a set of continuous variables, indicating the total number of job losses within a year by type of displacement.

Regressors also include individual and family characteristics (i.e. age, age at marriage, length of marriage, education level, number of children); two exogenous income variables (the husband's net monthly pay in the year prior to the interview and investment income); and two match quality characteristics (a binary variable indicating whether the two partners have more than 8 years difference in age and a binary variable indicating whether the two partners have the same education level).

5. Results

The estimation results from the random effects probit model are presented in Table 7. Both the coefficients and the marginal effects are provided¹⁸. All specifications include indicator variables for the presence of a redundancy, a temporary job ending and a dismissal. As explained above, the redundancy variable refers only to redundancies in declining industries. In the first most parsimonious model, we also control for the length of marriage and for observable “match quality” characteristics. More general specifications include the number of children in the household, education dummy variables, partners' age at marriage and income.

In all regressions, we find strong evidence of duration dependence in marital stability; the longer partners have been together, the smaller the divorce probability. This result is

¹⁸ For continuous variables, the marginal effect is given by the derivative of the probability of dissolution with respect to the variable under consideration. For categorical variables, the difference in the probability of dissolution when placing the observation in the category under consideration versus the reference group is calculated. Marginal effects are evaluated at the mean of the data. Standard errors are calculated using the delta method.

consistent with the traditional theoretical framework of marriage analysis: the longer people have been married (or cohabitating), the more time they have had to familiarize themselves with their partners' characteristics and the more time they have had to evolve strategies for dealing with them¹⁹. (Note that the time invariant couple specific match quality will be captured in the match quality variables and the unobserved fixed component.) With respect to the controls for observable match quality, we find that sharing the same education level does not have a significant effect on the probability of divorce. Nevertheless, the observed sign is negative and this suggests that similarity in schooling may reduce the probability of divorce.

We turn now to a discussion of the results involving the husband's job loss indicators, our main variables of interest. The results generally confirm previous findings of the existence of a positive relationship between job loss and the probability of family dissolution. Contrary to the findings of Charles and Stephens, we find an effect from all types of job losses considered here but the impact of exogenous displacements (redundancies in declining industries) is smaller than that from dismissals. This is as expected since dismissals will incorporate more of a signal of future income and match quality. In the most parsimonious model, men who have been made redundant are 0.6% more likely to divorce in the following year than those without any redundancy experience. The dismissal effect is higher: couples who suffer dismissals of the husband are 2.2% more likely to divorce in the following year.

The interpretation of the impact of a temporary job ended is less clear: on the one hand, this seems more similar to a redundancy, as the job loss is due to the precise nature of the contract irrespective of individual characteristics. On the other hand, it may convey a signal about the individual as somebody with only marginal attachment to the labour market. Also, it may be

¹⁹ See Charles and Stephens (2004).

that the contract is not renewed because of the personal characteristics of the worker. The effect of the ending of a temporary job is less than a dismissal and greater than a redundancy. The probability of divorce increases by 1.2% following the end of a temporary job.

The last four columns of Table 7 show an extended version of the first model, including the number of children in the household, education dummy variables, and both partners' age at marriage. In the last version of the model, we also control for the husband's monthly pay (recorded in September of the previous year) and annual investment income. How a job loss is perceived by the family, and how they will adapt to this shock depends on their "coping resources"²⁰. The level of income before the shock is likely to influence the perception of the severity of the income shock. A higher income could indicate more savings and a greater ability to deal with the income loss, but it could also represent greater expectations of future income and hence greater income loss from the job displacement.

The signs and levels of significance of the coefficients on the job loss variables are virtually unchanged in the expanded models; the only exception is in the second specification where the coefficient on the redundancy variable has the expected sign but is not significant. Hence the effects of job displacements are unaffected by the addition of the socio-economic variables and age at marriage.

Although not significant, the income variables have a negative sign a suggestion that increasing family wealth reduces the probability of divorce after a job loss. The level of education and the number of children also do not have a significant effect on the probability of divorce. The age at marriage of the female partner strongly and negatively affects the

²⁰ See Eliason (2004).

probability of divorce. This is consistent with the traditional argument in the theoretical literature on marital search. People who spent more time searching for a spouse are more likely to have a match of better quality. It is interesting that the coefficient on the age of marriage of the male partner although also negative is small and insignificant. The extra time spent searching does not seem to benefit male partners.

Table 8 shows the results from a random effect probit model, including the number of job changes as continuous variables. The purpose of these specifications is to capture the impact of multiple job changes in one year on the probability of divorce in the following year. The results are similar to those described above for redundancies and dismissals. Perhaps the number of cases with multiple losses of these types is too small to cause a shift in the estimates. For the case of temporary job losses, the effects are now weaker possibly an indication that the major impact is found for the first temporary job end. More investigation on the proper specification of the displacement variables is underway.

6. Conclusion

In this paper we have examined the effect of job loss on partnership dissolution using data from the British Household Panel Study. Using information from employment histories, we distinguish different job changes (dismissal, redundancy and temporary job ended) and we analyze the impact of these types of job losses the probability of divorce in the year following the displacement. In this paper, we focus on the effects of a job loss experienced by the husband. (A further development will be the consideration of the effects of the wife's job losses.) Redundancies measure exogenous job losses and hence capture effects from the income shock rather than new information on the quality of the partner.

Job losses can affect marital stability through various channels. Previous empirical work on this issue is sparse and show contradictory results. A job loss can create an immediate earnings' shock that reduces the relative benefits of marriage/cohabitation and imposes pecuniary and non-pecuniary stress on the relationship. It also could be providing information on the expected future quality of the partner and the match generally. Our results to date show that job losses raise the probability of divorce in the following year by a statistically significant degree. Although the effects are generally significant for all three types of displacement, the magnitude of the effects varies. The largest effect is found for dismissals (a one to two percentage point increase in the probability of divorce) followed by temporary jobs ending and finally redundancies (0.4 to 0.7 percentage point increases in divorce). Our results suggest that both channels of transmission - income shocks and the informational content of the job loss episode – affect the probability of family dissolution. This supports results by Eliason (2004) for Sweden rather than those of Charles and Stephens (2004) based on US data.

This analysis could be expanded in several directions. The role of social supports could be investigated by distinguishing the impact of job loss in high unemployment areas. A further development will consider and compare the impact of the wife's job losses. Information about the partners' characteristics (other than age) at the time of marriage is not collected in BHPS. In order to include such information a restricted sample of couples whose union started after the beginning of BHPS survey could be used. Finally, the role of expectations on job changes can be investigated. Individuals who expect to loose their jobs may be paid compensating wage differentials and these may partially protect the families from high distress and other negative outcomes.

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Table 1: Job loss in the analysis sample

Number of job losses	Reason
1306	Redundancy
213	Dismissal
595	Temporary job ended
2114	Total

Note: Data is based on the question: please tell me which alternative best describes why you stopped doing that job. The data is based on the pooled sample, with an unbalanced panel.

Table 2: Repeated job loss (in the same year)

Redundancy	Number of people
2	85
3	12
Dismissal	
2	8
Temporary job ended	
2	91
3	21
4	8

Table 3: Divorce rate in percentage, by job loss experience and year - Couples married in 1991.

Year	Couples with job losses	Couples without job losses
	%	%
1991	1.90	1.95
1992	3.51	2.22
1993	2.75	2.38
1994	1.91	2.15
1995	2.34	2.64
1996	2.68	2.97
1997	2.67	2.50
1998	2.38	2.33
1999	2.24	1.88
2000	2.81	2.58
2001	3.16	1.85
2002	2.75	1.01
2003	0.36	0.39
2004	0.40	0.42

Table 4: Means of continuous variables for married/cohabitating couples, by experience of job loss (standard deviations in parentheses)

Variable	Couples with job loss	Couples without job loss
Age - Husband	42.06 (11.21)	43.4 (11.63)
Age - Wife	39.86 (11.24)	41.26 (11.62)
Age at marriage - Husband	28.44 (8.69)	31.81 (11.18)
Age at marriage - Wife	26.21 (8.74)	29.63 (11.09)
Number of children	0.89 (1.11)	0.84 (1.08)
Years of marriage	13.69 (11.67)	11.69 (11.68)

Table 5: Other characteristics of married/cohabitating couples, by experience of job loss

Variable	Couples with job losses (%)	Couples without job losses (%)
Education - Husband		
High qualification	39.52	43.88
High school - gcse	32.42	29.59
Other qualification	8.69	8.10
No qualification	19.37	18.43
Education - Wife		
High qualification	30.79	33.40
High school – gcse	35.99	36.33
Other qualification	9.82	10.06
No qualification	23.41	20.21
Monthly pay - Husband		
Less than £500	6.38	6.80
Between £ 500 and £ 1000	42.01	33.02
Between £ 1000 and £ 2000	35.93	40.54
Between £ 2000 and £ 4000	6.56	8.82
Greater than £ 4000	9.12	10.82
Mean annual investment income	£ 382.75	£ 587.97

Table 6: Distribution of education levels within couples

Same education level (husband/wife)	(a) Couples with job losses (%)	Couples without job losses (%)
HQ/HQ	18.18	21.27
HS/HS	12.78	13.70
OQ/OQ	1.31	1.39
NQ/NQ	9.11	8.44
Different education levels		
HQ/HS	13.61	14.65
HQ/OQ	2.41	3.45
HQ/NQ	5.32	4.31
HS/HQ	8.83	8.24
HS/OQ	4.12	3.16
HS/NQ	6.71	4.59
OQ/HQ	1.57	1.36
OQ/HS	3.72	3.02
OQ/NQ	2.07	2.44
NQ/HQ	2.20	2.81
NQ/HS	6.04	5.04
NQ/OQ	2.04	2.15

Notes. The education levels are defined as:

HQ: higher degree, first degree, teaching qualification, other higher qualification

HS: nursing qualification, gcse a level, gcse o level or equivalent

OQ: commercial qualification, apprenticeship, other qualification

NQ : no qualification

Table 7 – Random effects probit model – Estimated coefficients and marginal effects (ME) on probability of divorce (standard errors in parenthesis). Incidence of job loss is used.

	Model 1	ME1	Model 2	ME2	Model 3	ME3
	Divorce		Divorce		Divorce	
Years of marriage	-0.019225	-0.00041	-0.032808	-0.000579	-0.032248	-0.0005763
	(0.002210)**	(0.00007)	(0.002640)**	(0.00008)	(0.003008)**	(0.0001)
Dismissal	0.530841	0.0218496	0.394785	0.014492	0.334335	0.0090736
	(0.159318)**	(0.01085)	(0.162099)*	(0.00715)	(0.179017)+	(0.00698)
Exogenous redundancy	0.228923	0.0065144	0.175253	0.003838	0.257016	0.0062871
	(0.129784)+	(0.00472)	(0.132626)	(0.00355)	(0.134991)+	(0.0044)
Temporary job ended	0.366076	0.0122493	0.316305	0.0082395	0.327311	0.0087404
	(0.110656)**	(0.0054)	(0.112643)**	(0.00417)	(0.129219)*	(0.00491)
Difference in age >8 years	0.097511	0.0023323	0.064495	0.0012178	0.125543	0.0025596
	(0.065403)	(0.00175)	(0.093991)	(0.0019)	(0.102750)	(0.00241)
Same education level	-0.008238	-0.000178				
	(0.041806)	(0.00091)				
Man: HS			-0.002081	-0.000036	-0.037945	-0.0006665
			(0.069985)	(0.00123)	(0.079479)	(0.00138)
Man: OQ			-0.100859	-0.001607	-0.139457	-0.0021601
			(0.099055)	(0.00143)	(0.112183)	(0.00153)
Man: HQ			0.005179	0.000091	0.001153	0.0000206
			(0.069362)	(0.00123)	(0.079079)	(0.00141)
Woman: HQ			-0.049486	-0.000856	-0.029283	-0.0005176
			(0.074411)	(0.00127)	(0.085575)	(0.0015)
Woman: HS			-0.011101	-0.000195	-0.006607	-0.0001178
			(0.070888)	(0.00124)	(0.082178)	(0.00146)
Woman: OQ			0.142657	0.0029131	0.155905	0.0032617
			(0.085840)+	(0.00202)	(0.097551)	(0.00237)
Number of children			-0.015130	-0.000267	-0.013294	-0.0002376
			(0.019400)	(0.00035)	(0.021451)	(0.00039)
Man's age at marriage			-0.005037	-0.000089	-0.006203	-0.0001108
			(0.006412)	(0.00011)	(0.007235)	(0.00013)
Woman's age at marriage			-0.032161	-0.000568	-0.035594	-0.0006361
			(0.006330)**	0.00013	(0.007138)**	(0.00015)
Man's monthly pay					-0.010598	-0.0001894
(September last year)					(0.021088)	(0.00038)
Investment income					-0.214325	-0.00383
					(0.190019)	(0.00342)
Constant	-2.184088		-1.009158		-0.894681	
	(0.060590)**		(0.135846)**		(0.157178)**	
Observations	30944		30944		25884	
Number of couples	6428		6428		5655	

Note: Standard errors in parentheses

+ significant at 10%; * significant at 5%; ** significant at 1%

Table 8 – Random effects probit model – Estimated coefficients and marginal effects (ME) on probability of divorce (standard errors in parenthesis). Number of job losses is used.

	Model 1	ME1	Model 2	ME2	Model 3	ME3
	Divorce		Divorce		Divorce	
Years of marriage	-0.019262	-0.00041	-0.032890	- 0.0005783	-0.032332	-0.0005769
	(0.002213)**	(0.00007)	(0.002643)**	(0.00008)	(0.003010)**	(0.0001)
Number of exogenous redundancy	0.223062	0.0048207	0.185626	0.003264	0.259718	0.0046341
	(0.112344)*	(0.00247)	(0.115070)	(0.00206)	(0.116956)*	(0.00217)
Number of dismissals	0.513104	0.011088	0.379365	0.0066706	0.326975	0.0058342
	(0.147617)**	(0.00342)	(0.149751)*	(0.00277)	(0.162973)*	(0.00302)
Number of temporary job ends	0.224424	0.0048501	0.200625	0.0035277	0.187545	0.0033464
	(0.076090)**	(0.00172)	(0.077329)**	(0.00142)	(0.092508)*	(0.0017)
Difference in age > 8 years	0.097324	0.002317	0.064557	0.0012129	0.125507	0.0025549
	(0.065506)	(0.00175)	(0.094168)	(0.0019)	(0.102859)	(0.00241)
Same education level	-0.008668	-0.000187				
	(0.041865)	(0.0009)				
Number of children			-0.014907	- 0.0002621	-0.013015	-0.0002322
			(0.019414)	(0.00035)	(0.021450)	(0.00039)
Man: HQ			0.004959	0.0000873	0.000107	0.000001
			(0.069448)	(0.00122)	(0.079088)	(0.00141)
Man: HS			-0.003294	- 0.0000578	-0.039949	-0.0007
			(0.070076)	(0.00123)	(0.079482)	(0.00137)
Man: OQ			-0.100492	-0.001594	-0.140431	-0.0021697
			(0.099174)	(0.00142)	(0.112237)	(0.00152)
Woman: HQ			-0.050201	- 0.0008642	-0.029450	-0.0005197
			(0.074488)	(0.00127)	(0.085595)	(0.0015)
Woman: HS			-0.011860	- 0.0002077	-0.006862	0.0001222
			(0.070957)	(0.00124)	(0.082185)	(0.00146)
Woman: OQ			0.144117	0.0029327	0.158244	0.0033137
			(0.085931)+	(0.00202)	(0.097586)	(0.00238)
Man's age at marriage			-0.005050	-0.000088	-0.006167	-0.00011
			(0.006428)	(0.0011)	(0.007248)	(0.00013)
Woman's age at marriage			-0.032279	- 0.0005676	-0.035750	-0.0006379
			(0.006348)**	(0.00013)	(0.007152)**	(0.00015)
Man monthly pay (September last year)					-0.010971	-0.0001957
					(0.021215)	(0.00038)
Investment income					-0.214243	-0.0038227
					(0.189927)	(0.00341)
Constant	-2.183993		-1.005103		-0.888438	
	(0.060759)**		(0.135941)**		(0.157183)**	

Observations	30944		30944		25884	
Number of couples	6428		6428		5655	

Note: Standard errors in parentheses
+ significant at 10%; * significant at 5%; ** significant at 1%