Married Women's Labor Force Participation as Divorce Insurance

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If married women view participation in the labor force as providing insurance against the negative economic consequences of divorce, then married women with higher expectations of divorce will be more likely to be employed. The Panel Study of Income Dynamics, 1968-1983, is used to estimate the effect of the expectation of divorce on the labor force participation decision of married women. The longitudinal nature of the data is used to estimate the probability of divorce for each married woman in the sample. Labor force participation is then modelled as dependent on the individual's expectation of future divorce. The empirical results confirm that expectation of divorce increases labor force participation of married women.

KEY WORDS: insurance, divorce, labor force participation

The incidence of divorce in the United States has rapidly increased over the past four decades. In 1960, the divorce rate per 1,000 population was 2.2. The divorce rate increased rapidly between 1970 and 1980, from 3.5 to 5.2 per 1,000 population. During the 1980s the rate declined slightly, and then stabilized. In 1991 the divorce rate was 4.7 per 1,000 population (U.S. Bureau of the Census, 1993b, p. 103). The risk of divorce remains high today, with some experts estimating that at least half of all new marriages in the United States will end in divorce (Bergmann, 1986, p. 52; Martin and Bumpass, 1989, p. 39). Even if the projected divorce risk is somewhat lower than 50% for most cohorts of women (U.S. Bureau of the Census, 1993a, p. 5), it is clear that the risk is very high.

Divorce affects the financial status of both men and women. Prior to divorce, economic resources of the household are pooled and shared. After divorce, this "sharing" of resources ceases. Each spouse now has access to only his or her individual income. Since married men are more likely than married women to be employed and, if employed, to
have higher earnings, the financial consequences of divorce are much more severe for married women. Access to financial resources by married women, either through their own earnings or other non-labor sources, can mitigate the negative economic consequences of divorce. Therefore, married women's participation in the labor force can provide a type of divorce insurance. If married women view labor force participation as a type of divorce insurance, we would expect labor force participation to be positively associated with their expectation of divorce.

This article discusses the role of labor force participation of married women as insurance against the negative economic consequences of divorce. Data from the Panel Study of Income Dynamics are used to analyze the effect of the expectation of divorce on the labor force participation decision of married women.

Divorce as an Uninsurable Risk

Insurance provides protection against loss. More specifically, insurance protects one against financial loss resulting from the occurrence of certain events (Arrow, 1971, p. 134). For example, social security survivors' insurance provides protection against loss of the husband's income due to death or disability. Similar private insurance against loss of the husband's income due to divorce is not available. Divorce is an "uninsurable risk" through the private market because of the degree of adverse selection and moral hazard (Borch, 1990, p. 317).

Adverse selection results when those persons most likely to have claims are those most likely to seek insurance coverage. With respect to divorce, adverse selection occurs due to the difficulty of accurately rating the risk of divorce for an individual. If a private insurer could accurately rate each individual's risk of divorce, the insurance premium could reflect the variation in this risk, with high risk individuals paying higher premiums. However, in the absence of this ability, private insurers set a standard premium representing the average risk. As a result, individuals at low risk find the premium based on the average too high, and choose not to insure. As these low risk individuals leave the pool of insured persons, the average risk of the remaining pool increases, leading to an increase in the insurance premium, causing
others with relatively low risk to forego insurance. This chain reaction of events results in divorce being viewed as an uninsurable risk.

Moral hazard exists when an insured person wants and causes the occurrence of the "insured against" event, resulting in financial payment from the insurance company. In order for moral hazard to occur, the insured individual must be able to cause the occurrence of the "insured against" event without being discovered. With respect to divorce, moral hazard exists if the insured party, knowing that divorce insurance will provide financial support in the event of a divorce, engages in behavior resulting in disruption of the marriage.

Since insurance against loss of the spouse's income due to divorce is not available through the private market, individuals desiring protection against the risk of divorce in the future need to investigate other mechanisms for providing this protection. In the absence of divorce insurance through the private market, individuals need to make appropriate pre-divorce arrangements to minimize the post divorce impact on financial status. The negative economic consequences of divorce for married women can be mitigated through behaviors which enhance their economic resources.

**Labor Force Participation as Divorce Insurance**

From the viewpoint of an individual, uncertainty surrounds the decision of whether or not divorce insurance is needed. While high divorce rates in the United States may be interpreted as increasing everyone's risk of divorce, other factors influence the importance of divorce insurance for an individual. For example, if an individual knew with certainty that his or her marriage would not end in divorce, or if the probability of divorce were very, very low then there would be no need for divorce insurance. The financial status of the current marriage also influences the need for this insurance. If the husband has a very high income, then in the event of divorce, alimony and child support payment levels may be sufficient to eliminate many of negative economic consequences of divorce. At the other extreme, if the husband has a very low income and the wife is likely to qualify for welfare upon divorce, the cash and in-kind benefits through the welfare program may offset some of the negative economic consequences of divorce.
However, if there is uncertainty regarding the risk of divorce, and if it is unlikely that either private transfers (through alimony and child support) or public transfers (through the welfare system) will provide adequate economic support for divorced women, then married women may choose to participate in the labor force as insurance against the negative economic consequences of divorce. With respect to private transfers, while child support may be awarded to custodial mothers in the event of divorce, collection is not guaranteed and award levels may be insufficient making child support ineffective in protecting against the loss of the husband's income due to divorce. With respect to public transfers, since cash and in-kind benefits through the welfare system are intended to supplement the income of low-income families with children, the level of these benefits is not sufficient alone to raise the majority of recipient families out of poverty.

Participation in the labor market, or employment, produces a stream of "own income" and reduces one's dependence on others for financial support. In addition, through employment one gains work experience, and develops marketable skills and abilities which increase one's earnings potential. Thus, married women may participate in the labor force in order to earn income directly as well as enhance (or guard against erosion of) their human capital, viewing this labor market investment as a type of divorce insurance. In the event of divorce, women who are employed will have access to income through their own earnings as well as marketable human capital which will lessen the economic hardship of divorce relative to married women who are not employed. If labor force participation is perceived by married women as a credible type of divorce insurance then married women with higher expectations of divorce would be more likely to participate in the labor force.

However, labor force participation by married women is not costless. For some married women the costs of labor market participation may exceed the benefits, resulting in a rational choice of nonparticipation. Market work necessitates time tradeoffs -- time devoted to market work reduces time available for home production activities and/or leisure. If young children are present, acceptable child care must be available and affordable. If the supply of child care is inadequate, or if a woman's earning power is low relative to the cost of child care, again a woman may make a rationale choice not to participate in the labor force. Presence of young children in the household also raises the
value of a married woman's time at home, thus decreasing the probability of labor force participation.

Review of Literature

Economic Consequences of Divorce for Women

The decline in the economic status of women upon divorce is well documented (Hoffman, 1977; Duncan and Hoffman, 1985). Upon divorce a woman loses the "sharing" of her former husband's income, and must rely upon her own financial resources. If she has no financial income of her own, either labor income or other nonlabor income, the economic consequences of divorce are severe. These negative economic consequences of divorce for married women can be mitigated through behaviors which enhance their economic resources. Peterson (1989) found that women who did little market work during marriage experienced significantly more economic hardship after divorce compared to women with relatively continuous or even intermittent work experience.

Important gender differences in the economic consequences of divorce have also been confirmed. While women experience a decline in economic status, men on average experience an improvement in economic status (adjusting for family size) after divorce (Hoffman, 1977; Duncan and Hoffman, 1985; Burkhauser, Duncan, Hauser, and Berntsen, 1991). Women fare more poorly due to their lower earning power relative to their husband, and the reality that women are usually the primary caretaker of children, regardless of marital status. This responsibility for children may reduce labor force participation, as well as investments in human capital among these women. In contrast, upon divorce men retain most of their own income since child support and alimony payments are usually not large, and their economic need declines with the decrease in post divorce family size.

The economic consequences of divorce for children are also severe, since children usually remain with their mother after divorce (U.S. Bureau of the Census, 1991). Even when child support is awarded, low award levels and lack of compliance with payment make child support ineffective in alleviating the negative economic consequences of divorce. Part of the problem is inherent in the economies of scale of living in a family -- even with the most equitable division of resources after a divorce, each post divorce household will be worse off than the
intact family was due to loss of the economies of scale. This can be seen in the following simple example. Assume that a family of four has an annual income of $38,436 in 1991, which was three times the poverty threshold for a family of four (U. S. Bureau of the Census, 1993b, p. 474), and that upon divorce the wife obtains custody of the two children. Assuming that total family income remains constant, ignoring tax consequences, and applying Rettig, Christensen and Dahl's (1990) proposal of allocating total income between the two post divorce households so that the ratio of income to the poverty threshold based on post divorce family size is the same, the wife's household with income of $23,259 and the husband's household with income of $15,177 would each be at a level of living only 2.3 times the poverty threshold, rather than the previous multiple of three.

Clearly, divorce is a serious financial risk even with ideal settlements and payments of child support, etc. Despite the importance of the topic, however, there is little coverage of the topic in basic financial management textbooks. Garman and Forgue (1994) do not list the word "divorce" in their index. Kapoor, Dlabay and Hughes (1994) list the term in the index, but only in relation to medical insurance, wills and retirement planning.

**Divorce and Women's Labor Force Participation**

Hoffman (1977), using the Panel Study of Income Dynamics (PSID), finds a much higher proportion of women employed post divorce relative to prior to divorce. However, to the extent that divorce can be anticipated or predicted, this increase in labor force participation is likely to occur prior to as well as after the actual divorce. Empirical research using both the PSID and the National Longitudinal Survey documents changes in labor force behavior of married women which occurs both prior to and following divorce.

Using the National Longitudinal Survey of Work Experience of Young Women, Mott and Moore (1982) find increases in labor force participation and in hours of work prior to as well as immediately after divorce. Johnson and Skinner (1986, 1988) find evidence from the Panel Study of Income Dynamics that much of the total increase in labor supply associated with divorce for women occurs before the separation occurs. Gerner, Montalto and Bryant (1990) using the Panel Study of Income Dynamics find that most of the labor supply changes for women who became divorced occurred in hours of work.
for those who work, with only small increases in labor force participation.

Greene and Quester (1982) investigated the effects of variations in perceived divorce probabilities on labor force behavior of married women. Their divorce probability variable was calculated from a probability regression based on work by Orcutt, Caldwell and Wertheimer (cited in Greene and Quester, 1982). They find that labor force behavior of married women is affected by the risk of marital dissolution.

Other Factors Associated with Labor Force Participation of Married Women

Labor force participation of women in the United States has been extensively studied (Smith, 1979; Killingsworth and Heckman, 1986). Studies confirm the importance of wage rates and the level of non-labor income in influencing the labor force participation decisions of women, consistent with the findings for men. In addition, marital status and family composition have been found to be important correlates of women's labor supply (Nakamura and Nakamura, 1994).

Empirical studies corroborate the positive association between labor force participation and the market wage rate and the negative association with the level of non-labor income (i.e. income other than own earnings). Since market wage rates increase with educational attainment and work experience, labor force participation of women is also positively associated with years of education and years of work experience. For women under the age of 65, labor force participation increases with age. With respect to marital status, married women have a lower participation probability than either never married women or women who are divorced or separated. Among married women living with their spouse, the presence of children (particularly children under the age of six) reduces the probability of participation.

Methodology

Data

The Panel Study of Income Dynamics (PSID) for the years 1968 to 1983 provides the data for this analysis. (For more information on the dataset, see Gerner, Montalto and Bryant, (1990)). The results presented are based on a subsample of observations of married
women. The longitudinal data provides information on these married women over many years, and provides information on changes in marital status, as well as labor force behavior surrounding these changes in marital status.

Estimation of the Expectation of Divorce
Divorce occurs after a period of discord, possibly after attempts at reconciliation, and is seldom a complete surprise. To the extent that married women can predict a pending divorce, this expectation of divorce is likely to result in changes in labor force participation prior to as well as after the actual divorce. There is no empirical data regarding how many periods into the future divorce can be predicted. In this research we consider one, two and three years into the future as possible future moments when a married woman could reasonably estimate her expectation of divorce. As might be expected, the ability to predict a divorce in the future improves as the future period to which divorce is predicted is closer, although the effects of the explanatory variables are generally consistent regardless of the time period to which divorce is predicted. In this paper, results are reported for two years into the future for illustration. The data are treated as person-year observations. Since the data span fifteen years and we look at three-year time periods (time t to time t+2), a given married woman can contribute as many as thirteen observations (each observations covering three years) to the sample.

The probability of divorce two years in the future is estimated using a sample of observations (each observation covering three years) of married women. The sample includes all women who are married in year t and divorced in year t+2 (two years in the future), as well as a 6% random sample of all women who were married in year t and remained married through year t+2. Observations with missing relevant data were deleted, yielding a sample of 1,711 observations of married women (965 distinct women contributing one or more observations each).

In this sample the mean ages of the married women and their husbands were 34.8 and 37.5 years respectively. The wives and husbands had similar levels of education (12.7 and 12.9 years respectively). Sixty-five percent of the wives and 88% of the husbands were employed. The average family size was 3.6 persons, and the average age of the youngest child was 4.1 years. Mean earned incomes (in 1968 dollars) of the wives and husbands were $1,952 and
$7,223 respectively, and mean non-labor income of the household was $2,596.

The dependent variable in the analysis was a dichotomous variable equal to one if the married woman was divorced in time t+2, and equal to zero if she was still married. A probit regression (appropriately weighted for the probability of being selected into the sample) was used to estimate the probability of divorce in t+2 as a function of observable variables following ideas about determinants of divorce suggested by Becker, Landes and Michael (1977). Since a given individual can appear in the sample more than once, it cannot be assumed that the disturbance terms from the regression analysis are uncorrelated with one another. Accordingly, the standard errors of the estimated coefficients are corrected for this person-specific correlation imposing no assumptions on the structure of the error term. This procedure yields coefficients which are unbiased and consistent, though they may not be fully efficient.

The specific variables used in the probit regression were age, employment status, education, and earned income of the wife and of the husband, non-wage household income, family size, and age of the youngest child.\(^1\) Since there is a time related change in the probability of divorce in the panel data, dummy variables indicating the year of the observation were included as explanatory variables. The values of these explanatory variables in the reference year, time t, were used to estimate the probability of divorce two years into the future, time t+2.\(^2\)

**Results from the Estimation of the Probability of Divorce**

The probit estimates of the probability of divorce for married women are shown in Table 1. The probability of divorce for married women decreases with her age as well as with the age of the husband, but only the effect of the husband's age is statistically different from zero. Since the length of the marriage is not controlled for in the probit analysis, the age of the wife and the husband may be capturing the effect of marriage length on the probability of divorce. Years of education of the wife and of the husband in time t reduce the probability of divorce in time t+2. Having an employed husband in time t reduces the probability of being divorced in time t+2. However, being employed oneself increases the probability of being divorced in time t+2. Own earned income has little effect on the probability of being divorced in time t+2, but husband's earned income has a positive impact on the probability of being divorced in time t+2. The effect of family size and
age of the youngest child on the probability of divorce in time t+2 were not statistically different from zero. The year dummy variables capture the time related change in the panel data in the probability of divorce.

*Estimation of Labor Force Participation*

A labor force participation equation for married women was estimated on the full sample of 13,351 observations (each observation covering three years) of married women. The dependent variable was a dichotomous variable equal to one if the married woman was employed in time t, and equal to zero if she was not employed. Probit regression was used to estimate the probability of labor force participation in time t as a function of observable variables capturing measures of human capital, financial resources, family structure, and the expectation of divorce. Since some individuals contribute multiple observations, the standard errors of the coefficients from the probit regression are adjusted for the person-specific correlation using the same approach as was taken to the probit estimates of the probability of divorce.
Table 1. Probit Estimates of the Probability of Divorce for Married Women

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age of the wife</td>
<td>-0.013</td>
</tr>
<tr>
<td>Age of the husband</td>
<td>-0.025*</td>
</tr>
<tr>
<td>Wife's years of education</td>
<td>-0.486***</td>
</tr>
<tr>
<td>Husband's years of education</td>
<td>-0.274***</td>
</tr>
<tr>
<td>Wife is employed</td>
<td>0.390***</td>
</tr>
<tr>
<td>Husband is employed</td>
<td>-0.454***</td>
</tr>
<tr>
<td>Wife's real taxable earned income ($10,000s)</td>
<td>0.146</td>
</tr>
<tr>
<td>Husband's real taxable earned income ($10,000s)</td>
<td>0.147*</td>
</tr>
<tr>
<td>Household real taxable non-labor income ($10,000s)</td>
<td>-0.021</td>
</tr>
<tr>
<td>Family size</td>
<td>-0.040</td>
</tr>
<tr>
<td>Age of the youngest child</td>
<td>0.006</td>
</tr>
<tr>
<td>Year=1970</td>
<td>-0.395</td>
</tr>
<tr>
<td>Year=1971</td>
<td>-1.353***</td>
</tr>
<tr>
<td>Year=1972</td>
<td>-0.873***</td>
</tr>
<tr>
<td>Year=1973</td>
<td>-0.937***</td>
</tr>
<tr>
<td>Year=1974</td>
<td>-0.662**</td>
</tr>
<tr>
<td>Year=1975</td>
<td>-0.610**</td>
</tr>
<tr>
<td>Year=1976</td>
<td>-0.632**</td>
</tr>
<tr>
<td>Year=1977</td>
<td>-0.685**</td>
</tr>
<tr>
<td>Year=1978</td>
<td>-0.873***</td>
</tr>
<tr>
<td>Year=1979</td>
<td>-0.703**</td>
</tr>
<tr>
<td>Year=1980</td>
<td>-0.562**</td>
</tr>
<tr>
<td>Constant</td>
<td>1.196**</td>
</tr>
</tbody>
</table>

Equation Log Likelihood=-255.488  \( \chi^2 = 77.75 \)  Number of observations=1,711

* Significant at .05 level.  **Significant at .01 level.  ***Significant at .001 level or better.

An explanatory variable of particular interest is the individual's expectation of future divorce. This variable is calculated for each married woman in the sample using the coefficients from the probit estimate of the probability of divorce. The computed probability of divorce (measured as a percentage) ranged from 0 to 32% with a mean of 3.6% and a median of 2.1% (Table 2).

The other explanatory variables used to explain the labor force participation of married women were the wife's age, years of education and years worked full time (human capital variables); real total family income in the previous year (financial resources); and the number of children under age 18 and the age of the youngest child (family structure variables).
Table 2.
Probability of Divorce for Married Women Computed from the Expectation Functions

<table>
<thead>
<tr>
<th>Computed probability of divorce</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
</tr>
<tr>
<td>Standard Deviation</td>
</tr>
<tr>
<td>Median</td>
</tr>
<tr>
<td>Minimum</td>
</tr>
<tr>
<td>Maximum</td>
</tr>
</tbody>
</table>

Married women in this sample were on average 41.5 years old, with 12.6 years of education and had 8.8 years of full time work experience. Fifty-five percent (N=7,374) of the sample was employed. The average number of children under age 18 was 1.3, and the average age of the youngest child was 4.5 years. Mean real total family income in the previous year (in 1968 dollars) was $11,781.

Results from the Estimation of Labor Force Participation

The probit estimates of the probability of labor force participation are shown in Table 3. All coefficients are statistically different from zero at the 5% level. As expected, the variables capturing human capital, own age, years of education and years worked full time, are all positively related to the probability of labor force participation among married women. Labor force participation and real total family income in the previous year are also positively correlated. The probability of labor force participation declines with the number of children under 18, but increases with the age of the youngest child.

The primary objective of this research was to assess the impact of the expectation of divorce on the labor force participation decision of married women. The probit results indicate that, as expected, the expectation of divorce increases the probability of labor force participation among married women. In order to quantify the magnitude of this effect, the marginal effect was calculated at the sample mean value of all independent variables. For married women, an increase of one percentage point in the probability of divorce in time t+2 increases the probability of labor force participation in time t by 16%. In an analysis of hours worked in the labor market (results not shown here), the expectation of divorce was also found to increase hours worked for married women.
Table 3.
Probit Estimates for Labor Force Participation Equation for Married Women

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expectation of divorce (measured as a percentage)</td>
<td>0.2976***</td>
</tr>
<tr>
<td>Age of the wife</td>
<td>0.0098**</td>
</tr>
<tr>
<td>Wife’s years of education</td>
<td>0.1253***</td>
</tr>
<tr>
<td>Years worked full time by the wife</td>
<td>0.4768***</td>
</tr>
<tr>
<td>Real total family income in t-1 ($10,000s)</td>
<td>0.2251***</td>
</tr>
<tr>
<td>Number of children under 18</td>
<td>-0.1867***</td>
</tr>
<tr>
<td>Age of the youngest child</td>
<td>0.0683***</td>
</tr>
<tr>
<td>Constant</td>
<td>-3.5378***</td>
</tr>
</tbody>
</table>

Equation Log Likelihood=-6482.183  \( \chi^2=5408.7260 \)  Number of observations=13,351
**Significant at .01 level.  ***Significant at .001 level or better

These results are consistent with a view of labor force participation as insurance against the negative economic consequences of divorce. For married women, divorce decreases financial resources resulting in a lower standard of living than that enjoyed prior to the divorce. Married women who anticipate divorce and the associated drop in living standard have an increased need for divorce insurance. Thus the anticipation of divorce raises the probability of labor force participation and increases hours worked among married women.

Implications

Implications for Counselors
The results of this research suggest, as we might expect, that the probability of divorce varies across individuals. This probability was as low as zero for some married women in the sample, and as high as 32% for others (see Table 2 on page 201.) Previous research confirms the risk of divorce is higher for women who marry before age 20, women with lower education levels, and women who began marriage with a child (Martin and Bumpass, 1989; U.S. Bureau of the Census, 1992). In addition, the risk of divorce declines with the presence of children, especially young children (Lillard and Waite, 1993), and with duration of the marriage. Given the empirical evidence regarding the dire economic consequences of divorce for women, married women with high risks of divorce need to take steps to mitigate the potential negative economic consequences of divorce.

Counselors should help married women understand both the risk of divorce today, and the resulting economic consequences for women,
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particularly for women with no financial income of their own. in the absence of divorce insurance through the private market, individuals at high risk of divorce need to make appropriate pre-divorce arrangements to minimize the post divorce impact on financial status. labor force participation, or employment, produces a stream of "own income" and reduces one's dependence on either private or public transfers for financial support. labor force participation may therefore provide a credible type of insurance against the negative economic consequences of divorce for married women.

implications for financial management education

comprehensive textbooks about financial management should include more discussion of one of the more serious financial risks. educational programs which prepare financial planners should introduce labor force participation as a type of insurance against the negative economic consequences of divorce for married women. in the event of divorce, women who are employed have access to income through their own earnings as well as marketable human capital which will lessen the economic hardship of divorce relative to married women who are not employed.

endnotes

1. the variables available for use were restricted to those which were consistent across all fifteen years of the psid. this posed some limitations. the most important limitation is that marital histories for observations in the psid were not collected and available at the time these data for 1968 to 1983 were generated.

2. the probability of divorce in the future is modelled as dependent upon current labor force participation (i.e. current labor force participation is endogenous to the probability of divorce in the future). however, the probability of divorce in the future also affects current labor force participation (i.e. the probability of divorce itself is endogenous to current labor force participation). therefore, a simultaneous casual relationship exists between wife's employment and the probability of divorce. from a statistical standpoint, endogenous variables used as regressors are correlated with the disturbance term in the equation, and result in biased estimated regression coefficients.

3. the simultaneous relationship between wife's employment and the probability of divorce does not affect our estimation of labor force participation, because the "expectation of divorce" variable is calculated for each married woman using the coefficients from our probability of divorce probit. thus the expectation variable should not be correlated with the disturbance term for the equation.
References


