
'Til Death or Taxes Do Us Part

The Effect of Income Taxation on Divorce

Leslie A. Whittington
James Alm

ABSTRACT

The effect of taxes on divorce has not been considered in previous empirical work on divorce. In this paper we examine the impact of the individual income tax on the likelihood of divorce. Using data from the Panel Study on Income Dynamics, we estimate a discrete-time hazard model of the probability of divorce from the first marriage. We find that couples respond to tax incentives in their decision to divorce, although these responses are typically small. We also estimate the impact of taxes on the separate divorce decisions of men and women. These results indicate that women clearly respond to tax incentives in their divorce decisions; the results for men are not always statistically significant.

Divorce is probably of nearly the same date as marriage. I believe, however, that marriage is some weeks the more ancient.

Voltaire (1694–1778)

I. Introduction

Divorce rates in the United States have been on an upward path since the mid-nineteenth century. More recently, the annual rate of divorce rose sharply in the 1960s, and it is now estimated that roughly half of all recent first

Leslie A. Whittington is a visiting associate professor in the Graduate Public Policy Program at Georgetown University, and James Alm is a professor of economics at the University of Colorado at Boulder. The authors are grateful for helpful discussions with Elizabeth Peters and useful comments from Laura Argys, Stacy Dickert-Conlin, V. Jeffrey Evans, Cordelia Reimers, Harvey Rosen, and two anonymous reviewers. Lien Trieu provided valuable word processing assistance. The data used in this article can be obtained beginning in August 1997 through July 2000 from Leslie A. Whittington, Graduate Public Policy Program, Georgetown University, 3600 N St., NW, Suite 200, Washington, D.C. 20007.

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marriages will likely end in divorce (Cherlin 1992; Norton and Miller 1992). This dramatic change in family stability has generated widespread concern, in part due to the potentially dire income consequences of divorce on women and children. Vocal campaigns on the importance of "family values," specifically the concept of a stable marriage, are a common occurrence.

Perhaps in response to these developments, there is now a growing economic literature on the determinants of divorce. Much of this work stems from the Becker (1974) analysis of marriage as an economic decision, in which individuals are assumed to evaluate the costs and benefits of marriage relative to single status. The premise underlying economic models of divorce is identical: an individual evaluates the utility of remaining married relative to that of getting divorced, and the individual divorces if utility is perceived to be greater as divorced than as married. Economic incentives can therefore play a role in the divorce decision if they influence the benefits or costs of single versus married status. Empirical work based on this framework has generally demonstrated the important role of economic factors in divorce (Becker, Landes, and Michael 1977; Menken, et al. 1981; Peters 1986, 1993; Teachman and Polonko 1990; Lillard and Waite 1993).

One economic variable that may play a role in marital decisions in the United States is the individual income tax. Until 1948, the income tax was largely marriage neutral because the basic unit of taxation was the individual. With the introduction of income splitting in 1948, the income tax favored married couples, generally giving a "marriage subsidy" to couples because their joint tax liability fell with marriage. In 1969 a new income tax schedule was adopted, however, that decreased the tax liability of single individuals. Although there was no real change in the tax burden imposed on married persons, their relative position worsened. This change therefore created a "marriage tax" in many cases; that is, two single individuals' combined tax liability could increase upon marriage, especially in those marriages in which the incomes of the two individuals were similar. Numerous modifications to the income tax law since 1969 have changed the magnitude of the marriage penalty, and have also maintained the possibility of a marriage subsidy in many cases. These tax effects can be quite large, and their magnitudes—both positive and negative—have varied substantially and increased somewhat erratically over time (Rosen 1987; Feenberg and Rosen 1995; Alm and Whittington 1996a).

The role of the individual income tax in the *marriage* decision has received some attention from economists, who have speculated that the differential tax treatment of married versus single individuals may affect the rate and timing of marriage (Feenberg and Rosen 1983; Espenshade and Minarik 1987). These suggestions have received confirmation by the empirical work of Alm and Whittington (1995a, 1995b, 1996b) and Sjoquist and Walker (1995).

The potential impact of the individual income tax on the *divorce* decision has received little attention, however, in the large theoretical and empirical literature on the determinants of divorce.¹ We find this neglect puzzling. If the income tax

1. Note, however, that there is a sizeable literature on the impact of welfare programs on marital dissolution among welfare recipients. See, for example, Ellwood and Bane (1985) and Hoffman and Duncan (1995).

affects the benefits and costs of marriage, then it is obvious that the tax also affects the economic calculus of divorce. Given that the tax consequences of divorce can be as sizable as those of marriage, their potential impact on the divorce decision merits investigation.

This paper examines the impact of the U.S. federal individual income tax on the likelihood of divorce. We use longitudinal data from the Panel Study of Income Dynamics (PSID) to estimate a discrete-time hazard model of the probability of divorce from the first marriage. We find across numerous specifications that the marriage penalty increases the probability of divorce for couples, although the magnitude of the tax impact is generally small. We also estimate separately the individual responses of men and women, and again find that the divorce decision is often influenced by income taxes, although the impact differs somewhat by gender. Other economic variables like income and education affect the probability of divorce, with some differential impacts for men and women.

In the next section, we briefly discuss the potential effects of income taxation on divorce. Data, methods, variables, and results for couples are discussed in Section III, and these are discussed in Section IV for individuals. Conclusions are in Section V.

II. Income Tax Incentives for Divorce

The economic analysis of marriage developed by Becker (1974) assumes that individuals maximize utility by their choice of commodities produced within the household, using time and goods inputs. Individuals will marry when consumption is greater when married than when single.²

This same framework can be applied to a mutual-consent divorce. As suggested by Becker, Landes, and Michael (1977), the probability of divorce depends on two basic phenomena: divorce is positively related to unexpected outcomes in the marriage, while it is negatively related to the expected gains from marriage. It is primarily through the latter factor that income taxes affect divorce probabilities, and it is this element that we emphasize. As noted earlier, the tax consequences of marriage—positive and negative—can be quite large. By affecting the expected gains from marriage and divorce, income taxes can alter household consumption as married versus divorced, and so change the probability of divorce.

To illustrate, assume for simplicity that the income tax consists of a constant marginal tax rate and a lump sum guarantee. Taxes will affect household consumption via two channels, comparable to income and substitution effects. First, taxes will affect the income of the individual or the couple via the *total taxes*

2. These commodities are typically expressed as a single aggregate commodity, defined for individual i as $Z_i = w_i T_i / (a_i p + b_i w_i)$, where w_i is the market wage rate of individual i , T_i is the time endowment, p is the price of the market good, a_i is the fixed amount of the market good required by individual i to produce one unit of Z_i , and b_i is the fixed amount of time required to produce one unit of Z_i . This definition is modified for a married couple to reflect the joint time and market good constraints facing a couple. Individuals will marry when their share of Z in a married household is greater than their consumption in a single household.

paid. Second, taxes will affect the price of household consumption because the *marginal tax rate* reduces the after-tax wage rate and so the price of the time input in household production.

In considering divorce, each partner must therefore weigh both the total taxes and the marginal tax rates for couples versus singles.³ On balance, if the existence of taxes decreases the amount of household consumption that the individual receives from married relative to divorced status, then the probability of divorce will increase. Conversely, higher consumption with marriage than with divorce decreases the probability of divorce, a result more likely if there is only one earner in the family.

The precise impact of total taxes and of marginal tax rates on household consumption and therefore on divorce can be somewhat complicated. Suppose that the total tax burden falls at divorce without altering the marginal tax rate. In this case, the gains to divorce unambiguously increase. If divorce also reduces the marginal tax rates, however, then there are competing effects. A lower marginal tax rate on a divorced individual relative to the couple is likely to decrease the total taxes paid by the individual, thereby increasing the benefits of divorce. A lower marginal tax rate will also raise the after-tax cost of time as a divorced individual and therefore raise the cost of household production in divorce, and this will decrease the benefits of divorce. The overall effect of a change in the marginal tax rate is ambiguous, and depends on the relative magnitudes of the total tax effect and the household production effect.

We therefore hypothesize that divorce will be more likely if marriage increases the total amount of taxes. We also suggest that divorce may be either positively or negatively related to changes in the marginal tax rates generated by changes in marital status. In the following two sections we discuss the empirical models and the data used to explore the relationship between individual income taxes and divorce.

III. Data, Methods, Variables, and Results: Couple Sample

We employ an event history (or hazard model) framework to analyze the determinants of the time to divorce, and estimate the model using data from the PSID. The probability of divorce is determined by a range of variables, including the tax consequences of divorce. We use two different samples to estimate the effect of the marriage tax/subsidy on the likelihood of divorce. In the first sample, the *couple* is the primary unit of observation; in the second sample, the *individual* is the focus. This section examines data, estimation methods, vari-

3. Note that taxes would not affect the relative size of marital versus single consumption if the unit of taxation was the individual rather than the couple. In the United States, however, the unit of taxation for married persons is the couple. Because the tax provisions are different for married persons than for single individuals, divorce can change the relative size of married and single consumption and thereby change the probability of divorce. Note also that, although married individuals can file separate returns, the tax schedule that each must use is not identical to that of single individuals. In most cases, there is no gain from separate filings for married couples.

able construction, and empirical results for the couple sample. The individual sample is discussed in Section IV.

A. Data

Our data cover the 25 PSID interview years from 1968 to 1992. In 1985, the PSID collected a retrospective marital history from all respondents, and this has been updated in subsequent years. These data give specific information about the timing of the first marriage and the outcome of that marriage.

The basic observations in the couple sample data set are couple years, beginning with the second year of the marriage and continuing throughout the interview years or until divorce or separation occurs. We limit the sample to couples over the age of 16 in a first marriage, and only one couple per PSID family unit is included.⁴ The couple may enter and exit the sample during the years under observation, and some remain in the sample throughout the entire period. We exclude all marriages prior to 1969 because, as Hoffman and Duncan (1995) suggest, only the most durable marriages would be observed still in progress in 1969. We also exclude all couples who marry and divorce within the same year because we lack income information on both spouses. Because we eliminate divorces that occur within one year of marriage, we exclude observations in the first year of marriage; we therefore follow couples from the second year of marriage. After the year of divorce the couple is no longer at risk of first divorce, and so no subsequent observations on that couple are included in the sample.

It is useful to distinguish between "permanent" and "transitory" periods of nonmarriage. Some divorces may be considered "permanent," meaning that one or both of the partners do not remarry quickly following the divorce. Alternatively, some divorces might be considered "transitory" in that one or both of the ex-spouses move rapidly into a new marriage; with a quick remarriage, the tax regime at remarriage is often quite similar to the one prevailing at divorce. We examine both types of divorces. We classify a "transitory divorce" as one in which either partner remarries in the two years following the divorce year, and we estimate the model both for the entire couple sample and for a couple sample in which such transitory divorces are eliminated.⁵ Note that the last marital history was collected by the PSID in mid-year 1992, so that the last full year of data is 1991. We can thus determine up until the year 1989 whether a remarriage occurred within two years of the divorce. For example, divorces in 1991 might be followed by a remarriage in 1993, which we do not yet observe. We therefore use couple years only up to and including 1989, but we use the subsequent years of data to determine marital activity in that period. This procedure gives us a

4. Very young marriages are rare, and are excluded.

5. We have also explored other definitions of transitory versus permanent divorces, by changing the number of years in the definition from one to five. As the cutoff increases beyond two years, the number of observations drops significantly. For example, if we exclude men who remarry within five years from the male individual sample, we are left with only 54 divorces; because of this small sample size, most variables lose statistical significance in our empirical models. We have therefore chosen two years as the cutoff. We are grateful to an anonymous referee for suggesting that we separately examine permanent divorces.

maximum of 21 years of data per couple, for the period 1969 to 1989. There are 13,516 couple-year observations on 1,344 couples for the years 1969 to 1989 in the full couple sample. Descriptive statistics, weighted to make these samples representative of the entire population, are in Table 1.⁶

B. Estimation Method

We estimate a discrete time approximation to a continuous hazard by using a logit model on the observation years (Allison 1984). A reduced form model of the probability of observing a first divorce for couple i is estimated as

$$(1) \text{ Prob}(D_{it}) = f(dX_i + eX_{i,t-n}),$$

where D_{it} equals 1 if couple i divorces in period t and equals 0 if couple i remains married in period t . Like most studies of marital disruption, we consider either an actual divorce or a separation as equal to 1. The tax status of a person changes upon divorce, and, although separated individuals are often still considered married under the federal income tax, there are relatively liberal conditions under which a separated person can file as single or head-of-household. Time-invariant characteristics of couple i are measured by X_i with coefficient vector d . Time-varying covariates are indicated by $X_{i,t-n}$ with coefficient vector e .

We lag income and the tax variables by two years and the remaining time-varying covariates by one year. We lag these covariates for several reasons. The divorce process requires some time, so that the decision to divorce precedes the observed divorce. Further, many divorces occur at the beginning or the middle of the year, meaning that income from that year would be a combination of marital and post-marital income. Income is lagged two years because the PSID records income as the value obtained in the previous year. For example, if a couple divorces in 1970, then income recorded in the 1970 interview would be the 1969 income, but this information would not include the former partner because that person is no longer part of the household. Therefore, 1968 income would be the last complete year of income for both spouses. Finally, variables are lagged because the head of household or wife may change in the divorce year, making the determination of the source of some variables problematic. The time-varying covariates are measured from 1967 to 1988.

Because the dependent variable is binary, we estimate a logit transformation of the linear probability function

$$(2) \log(P(D_{it})/(1 - P(D_{it}))) = c + dX_i + eX_{i,t-n},$$

where $P(\cdot)$ is the probability of divorce and c is the intercept. The standard logistic likelihood function

$$(3) L = \prod_{i=1}^N P_i^{D_{it}} (1 - P_i)^{(1-D_{it})},$$

is maximized for all N observations.

6. We do not use weighted values in the estimation of the hazard models.

C. *Dependent and Independent Variables*

The dependent variable is whether a couple divorced or permanently separated during the year.⁷ There are 310 divorces and separations among the 1,344 couples, for a divorce rate among couples of 23 percent; the divorce rate per couple-year is 2 percent. Note that these rates cannot be interpreted as overall divorce rates because we do not have complete information on whether the couples ever divorce.⁸

Of primary interest is the impact of income taxation on divorce. As suggested earlier, we use two measures of the tax burden of being married relative to being divorced and single: the difference in *total taxes* and the difference in *marginal tax rates*.

Calculation of the tax effects of divorce is considerably more complicated than might appear. Traditionally, the marriage tax/subsidy has been viewed as the difference between the total tax burden on the couple and the combined tax burdens that the partners would incur were they single and divorced, and it is this notion that we apply in our marriage tax calculations. However, there are several difficulties in these calculations. A first complication is the determination of tax deductions. The PSID has only recently asked respondents whether they itemize on their tax returns; even for years in which it is known that respondents itemize, the magnitude and composition of these deductions is unknown. As discussed below, we make two alternative assumptions on deductions, one in which we assume that the standard deduction is used and one in which we estimate the amount of itemized deductions.

A second complication is the allocation of the various tax preferences between the individuals in the event of a divorce. The taxes of divorced, single members depend upon the precise way in which the various tax preferences are divided between the two individuals if they were to divorce, as well as upon the tax schedule that the individuals elect (or are allowed) to use; that is, the single tax liabilities are determined by which partner gets, say, the child exemptions, the deductions, or the head-of-household rates upon divorce. Because this "divorce" may never occur and so may be purely hypothetical, the information needed to determine the single tax liabilities cannot be known with certainty. Again, we make two assumptions on the allocation of tax preferences between the partners, by allocating the tax preferences to the woman and, alternatively, to the higher earner.

A last complication is that we do not know how the husband and wife might

7. We have estimated models in which the dependent variable does not consider separations, but rather equals one only in cases of divorce. In these models, years in which couples were separated but not divorced were considered equivalent to years in which they were married. The principal estimation results do not change substantially with this more limited definition of marital dissolution, largely because most couples who separated eventually did divorce.

8. These percentages of divorce are higher than those found by Becker, Landes, and Michael (1977). This finding is consistent with the increase in divorce probabilities of more recent marriage cohorts. There are divorces in 4.8 percent of the full sample of person years in Hoffman and Duncan (1995), and almost 32 percent of the individuals in their sample divorce or separate. Lillard and Waite (1995) also use PSID data, and find that 17.7 percent of the men and 16.7 percent of the women who were reported as married in 1968 were divorced by 1985.

change their allocation of time to the labor market and household activities upon a hypothetical divorce. Changes in the mix of market and nonmarket work are likely, and will affect incomes and tax burdens. A substantial number of the wives in our sample do not report any labor income while married. Calculating their income and taxes at divorce based on zero earnings could be quite misleading, however, because they are likely to enter the labor force upon divorce. We therefore calculate a predicted (or imputed) income for all women using the familiar Heckman (1980) two-stage procedure. We then use this imputed income to calculate the woman's tax burden if she was to divorce. We do not use the same procedure for men because most men are observed working and those not in the labor force often report substantial asset income. We test the sensitivity of our findings to this income calculation by also estimating models using actual income for women; our results are not substantively changed, and we report only those results with imputed income.⁹

We calculate the difference in total taxes on married versus unmarried couples in several steps. First, we calculate the couple's total marital income tax liability if they remain married. In the absence of information on itemized deductions, we assume that the couple uses the standard deduction (or the zero-bracket amount) and the appropriate number of personal exemptions; we call this the "standard deduction assumption." Other features of the tax system (for example, the two-earner deduction, the Earned Income Tax Credit) are included where applicable. Recall that we examine the sensitivity of our results to the standard deduction assumption by estimating the amount of itemized deductions and then using these estimates in the tax calculations. These results are discussed below.

Second, we calculate the income tax liability of each married individual if he or she was to divorce. We assume that the income of the single individual equals the sum of his or her own earnings plus one-half of the couple's asset income. We also assume that members of childless couples each file as single upon divorce. For couples with children, we do not know about custody or support issues upon divorce if they never divorce. However, about 90 percent of single-parent households are currently headed by women (Folbre 1994). Because mothers are most likely to become household heads upon divorce, we allocate all children to the woman, who can then file as head-of-household and, if eligible, take the Earned Income Tax Credit; the man files as a single taxpayer. We call this method the "female head of household assumption." As with the standard deduction assumption, we examine the sensitivity of our results to this allocation method by instead assuming that the higher-income spouse claims the children in the event of divorce. These results are also discussed below.

Finally, we calculate the marriage tax/subsidy as the taxes of the married couple less the combined tax obligations of the two partners as single and divorced individuals. This procedure also allows calculation of the change in marginal tax rates with divorce, as the difference between the top marginal tax rate of the married couple and the top rate on the combined single incomes of the two partners.

9. Results from models estimated using actual income rather than imputed income are available upon request, as are all other results discussed in this paper but not shown.

Table 1 gives summary information on the magnitude of the marriage tax/subsidy and the marginal tax rate difference for couples based on the assumptions discussed above. All financial variables are in real 1982–84 dollars. On average the income tax gives a real marriage *subsidy* of \$49, but there is enormous variation in its magnitude across couples and years. The maximum marriage penalty reaches \$9,043, while the maximum subsidy is \$31,158, and there is a tendency for the penalty and subsidy to rise over time.¹⁰ The difference in marginal tax rates is also very small at the mean, but ranges from –30 to +40 percentage points. As discussed earlier, divorce is more likely to occur the greater is the marriage penalty, and is less likely if there is a large marriage subsidy. The effect of the marginal tax rate difference on the probability of divorce is ambiguous.

Models of divorce typically include other variables that capture the gains to marriage and divorce. Income of the spouse is one benefit of marriage, while own income is often considered a benefit of divorce. However, the relationship between income and the probability of divorce is complex. Becker (1974) suggests that income increases the gains to marriage and thus decreases the probability of divorce. Becker, Landes, and Michael (1977) conclude, however, that, while an increase in the expected income of men will decrease divorce probabilities, an increase in the expected earnings of women will have the opposite effect because it increases their single opportunities. They also suggest that any unexpected change in income, favorable or not, will increase the probability of divorce. The impact of income on divorce will hinge on how close marital income is to expected income, on whether income is labor or property income, and on whether it is permanent or transitory. We include total combined after-tax real income as a determinant of divorce probabilities.

Although several studies find a significant negative relationship between education and divorce (Peters 1986; Teachman and Polonko 1990; Lillard and Waite 1993), the channels through which education may affect marital status are, like income, numerous and complex. Education may lower the gains to marriage by discouraging specialization and increasing single opportunities, particularly for women (Keeley 1979). Education may also increase the gains to marriage because of the higher level of market and nonmarket skills educated partners may possess (Becker, Landes, and Michael 1977). We include years of education of the head of household as a regressor, but there is no theoretical conclusion as to the direction of influence. Because the effect of education may be nonlinear, we also include education squared in the model.

Couples make investments in marriage-specific capital. These investments increase the gains to marriage relative to those of being single because they are non-transferable to the single state, and so they decrease the probability of divorce. We include two measures of marriage-specific capital in our estimated model: years of marriage and number of children. We expect both to have a negative effect on the probability of divorce.

Marriage at a young age is thought to be a major determinant of divorce because it implies a relatively short search process for a spouse, which will likely result

10. See Alm and Whittington (1996a) for a discussion of trends in the marriage tax over the past 25 years.

Table 1
Couples: Selected Weighted Sample Characteristics

Variable Name	Variable Definition	Couple Years, Mean (Standard Deviation)
Marriage penalty—standard deduction and female head assumptions	Difference between total tax on couple's combined income and combined tax burdens of both partners as single persons, in 1982-84 dollars, using standard deduction and female head assumptions	-48.99 (1,461.07)
Marriage penalty—itemized deduction and female head assumptions	Difference between total tax on couple's combined income and combined tax burdens of both partners as single persons, in 1982-84 dollars, using itemized deduction and female head assumptions	-31.83 (1,208.52)
Marginal tax rate difference—standard deduction and female head assumptions	Difference between top marginal tax rate of married couple and top marginal tax rate of combined single incomes of both partners, using standard deduction and female head assumptions	-0.52 (7.44)
Marginal tax rate difference—itemized deduction and female head assumptions	Difference between top marginal tax rate of married couple and top marginal tax rate of combined single incomes of both partners, using itemized deduction and female head assumptions	0.05 (8.39)
Combined after-tax income	Labor and asset income of husband and wife, in after-tax 1982-84 dollars	22,591 (12,903)
Education ^a	Years of education of household head	12.81 (1.99)
Children	Number of children reported by couple	1.23 (1.10)
Age at marriage	Age of respondent at marriage, in years	22.32 (3.98)
Years married	Number of years since commencement of marriage	7.41 (5.03)
Black	Variable = 1 if head of household is black; 0 otherwise	0.08
Race neither black nor white	Variable = 1 if head of household is neither black nor white; 0 otherwise	0.01
Divorce	Variable = 1 if divorce or separation occurred; 0 otherwise	0.04
Sample size	Number of couple years (not weighted)	13,516
Couples	Number of couples contributing 1 to 21 years (not weighted)	1,344

a. In cases of missing values, education is set equal to the mean.

in a greater number of mismatches due to greater uncertainty about marital outcomes. We expect that age at marriage (for the respondent) will have a negative effect on the probability of divorce. We also include dummy variables for the race of the household head.

An important issue in the estimation is identification of the separate effect of taxes on divorce, as distinct from the effect of income. Identification is achieved through several channels. First, there have been substantial changes in federal tax policy over the years that we explore, so that the marriage penalty or subsidy has changed independently of income in many of those years. For example, the introduction in 1971 of a new rate schedule for single persons (Tax Reform Act of 1969) dramatically changed the relative tax cost of marriage. Similarly, the Earned Income Tax Credit was introduced in 1975, the standard deduction (or zero bracket amount) was substantially increased in 1977, and the secondary earner deduction was adopted as part of the Economic Recovery Tax Act of 1981. Major changes in federal income taxes resulted from the Tax Reform Act of 1986. In addition, rate schedules have changed frequently.

A second means of identification arises because the marriage penalty or subsidy is affected both by the absolute level of single and marital income but more importantly by the relative incomes of the husband and wife; that is, the marriage penalty does not simply increase with income. In fact, the penalty often decreases (or the subsidy increases) with income when there is only one earner in a household, but the penalty typically increases with income when both partners work. In general, the more similar are the incomes of the partners, the greater is the penalty.

D. Estimation Results

We estimate logit models using maximum likelihood methods for the probability of observing a first divorce among couples. In Table 2 we present full estimation results for two different couple specifications under our various assumptions. The coefficients are presented as the partial derivatives estimated at the mean probability of divorce. The first model uses observations on all married couples from 1969 until 1989 (the "Full Divorce Sample"). In order to focus on permanent rather than on transitory divorces, the second model eliminates all couples in which either partner remarried within two years after the divorce (the "Permanent Divorce Sample"). Tax calculations are based on the standard deduction and female head allocation assumptions.

As shown in Table 2, the marriage penalty has a positive and statistically significant impact on the probability of divorce for both the full and permanent divorce samples, as predicted by the economic theory of divorce. However, the magnitude of the tax effect is small in both cases. The elasticity of divorce with respect to the marriage penalty is only 0.005 evaluated at mean values of the variables. A doubling of the marriage penalty therefore increases the overall probability of divorce by only one-half percent in the period following the change.

The marginal tax rate difference is never statistically significant in the couple models. This result reflects the competing effects of the marginal tax rate on the divorce decision: a higher marginal tax rate on the couple relative to the individual

Table 2
Couples: Maximum Likelihood Estimates of Hazard Models for Probability of Divorce^a (Chi-Square in Parentheses)

Variable	Full Divorce Sample	Permanent Divorce Sample
Marriage penalty ^b	.004** (6.69)	.004* (5.50)
Marginal tax rate difference	-.0001 (0.60)	-.0003 (1.56)
Combined after-tax income ^b	-.001*** (89.39)	-.001*** (65.80)
Education of household head	.002 (1.95)	.004* (4.69)
Education squared	-.0001 (2.25)	-.0002** (6.00)
Age at marriage	-.001*** (16.02)	-.001** (6.82)
Years married	.003*** (12.15)	.003** (9.43)
Years married squared	-.0001** (9.22)	-.0002** (9.71)
Number of children	-.002 (2.42)	-.001 (0.41)
Black	.003 (2.09)	.006* (5.29)
Race neither black nor white	-.024 (1.88)	-.018 (1.08)
Intercept	-.042** (9.84)	-.062*** (17.41)
χ^2 for covariates (11 df)	169.42	138.63

*** $P \leq .001$; ** $P \leq .01$; * $P \leq .05$.

a. The coefficients are presented as $\partial P / \partial X = \beta \bar{P} (1 - \bar{P})$.

b. Dollar amounts are measured in thousands of dollars.

increases the total taxes paid by the couple, but it also lowers the cost of household production for the couple.

Given the statistically significant but small impact of the marriage penalty, other factors must play a more important role in the divorce decision. The combined income of the couple has a very significant negative impact on the probability of divorce. Education has a positive influence on the divorce probability among the permanent divorce sample. This latter result is similar to that of Becker, Landes, and Michael (1977) and Peters (1993), but it differs from Peters (1986), Teachman and Polonko (1990), and Lillard and Waite (1993), who find

education to be a significant negative predictor of divorce. However, many of these latter studies do not include a precise measure of income, and there is likely to be a strong correlation between income and education. Further, these studies do not consider the nonlinearity of the impact of education. The significance of the negative coefficient on the education squared term in our regression on the permanent divorce sample indicates that the positive effect diminishes with greater education, reaching a maximum at ten years of formal education.

Age at marriage is a significant negative predictor of divorce probability, a result consistent with virtually all previous work. Duration of marriage has generally been found by others to be a strong predictor of stable marriage (Menken, et al. 1981). We find that divorce probability rises at a diminishing rate for eight to ten years, and then falls. Surprisingly, the number of children, another measure of marriage-specific capital, is significant (and negative) at only the 12 percent level, and only for the full sample. Consistent with some other evidence (Da Vanzo and Rahman 1993), the divorce rate for the permanent sample appears higher for black couples than for white couples.

E. Alternative Tax Assumptions

Recall that the results in Table 2 are based upon a number of assumptions used to calculate married versus single taxes. We assumed that taxpayers take the standard deduction, and we also assumed that the woman is allocated any tax preferences at divorce. In order to examine the sensitivity of our calculations to these assumptions, we calculate a version of the marriage penalty by estimating the amount of itemized deductions for the couple and the individuals. We call this method the "itemized deduction assumption." We also calculate the marriage penalty when the higher earner is given all tax preferences (the "high earner assumption").

Consider first deductions. Using the basic approach employed by Feldstein and Clotfelter (1976), we assume that all homeowners in the PSID (or roughly 60 percent of the sample in any given year) are eligible to itemize deductions on their federal tax returns. We then calculate the amount of itemized deductions using averages of itemized deductions by income groups drawn from the Statistics of Income for the relevant year. If itemized deductions exceed the standard deduction, then homeowners are assumed to itemize; they take the standard deduction if it is larger. Of course, we do not know how couples divide their property upon divorce because most couples do not divorce, and so this method also requires assumptions about post-marriage home ownership to determine the amount of deductions for divorced singles. We assume that in the event of divorce both individuals are homeowners and both are therefore eligible to itemize. In all other aspects the itemized deduction version of the marriage penalty is calculated in the same way as the standard deduction version.

The itemized deduction assumption (with the female head allocation assumption) generates a negative mean marriage penalty, so that on average couples are subsidized by the tax system. The average subsidy with itemization is \$32, somewhat smaller than that under the standard deduction assumption. The range of values under itemization is roughly the same as under the standard deduction

assumption, with a maximum penalty of \$7,499 and a maximum subsidy of \$30,848. The mean marginal tax rate difference is positive with itemization, and, although quite small at the mean, it ranges from -21 to +48 percentage points.

As for the allocation method, we follow Feenberg and Rosen (1995) in allocating the children and thereby the tax preferences to the higher earner upon divorce. The male is the higher earner in over 80 percent of our sample years. In nine percent of the cases, members of the couple have equal income, and in those cases we arbitrarily call the male the high earner. The resulting estimates of the marriage penalty and the marginal tax rate difference are broadly similar to those generated from the female head allocation assumption.

In Table 3, we present the coefficients on the marriage penalty and marginal tax rate difference estimated in models using these different assumptions; in all cases the full couple sample is used. Column 2 reports the results for the itemized deduction and the female head of household assumptions. Compared to Table 2 results, the coefficient on the marriage penalty is now somewhat larger, and is again statistically significant. The marginal tax rate difference appears to have no impact on divorce probabilities. Column 3 uses the standard deduction and high earner assumptions. The coefficient on the marriage penalty remains statistically significant and increases still more than the previous results. However, when we assume itemized deductions in combination with the high earner scenario (Column 4), the coefficient on the marriage penalty is significant at only the 18 percent level.

IV. Data, Methods, Variables, and Results: Individual Sample

In the couple sample, we defined the unit of observation as the couple, and we calculated the tax consequences on the couple of marriage versus divorce. It is also possible to think about the individual income tax in terms of its impact on each individual in the family unit. When an individual marries, his or her income is typically taxed differently than when he or she is single. This difference in individual taxation between marriage and divorce is also a way of evaluating the tax effect of marital status, and it is this notion that is applied in our second estimation approach, the individual approach.

An individual approach to viewing the impact of the marriage penalty on the divorce decision of individuals is consistent with the McElroy and Horney (1988) framework of Nash-bargained household behavior. In this framework the members of the household have individual utility functions rather than the single family utility function used in the neoclassical approach. Anything that influences the single opportunities of a member changes his or her "threat point," or the point at which the member threatens to leave the household, and it is likely that taxes influence threat points. In fact, McElroy (1990, p.579) argues that "[W]ith a progressive income tax and a husband earning income, the marginal wage rates of many women decrease upon marriage and increase upon divorce, systematically deterring labor force participation while married as well as deterring marriage itself." The higher-earning man, on the other hand, may find that his marginal

Table 3

Couples: Tax Variable Coefficients from Models with Different Assumptions about Deductions and Tax Preference Allocations^a (Chi-Square in Parentheses)

Variable	Itemized Deduction, Female Head of Household Assumptions	Standard Deduction, High Earner Assumptions	Itemized Deduction, High Earner Assumptions
Marriage penalty ^b	.005** (6.54)	.006** (7.09)	.003 (1.82)
Marginal tax rate difference	-.0000 (0.04)	-.0001 (0.23)	-.0000 (0.09)
χ^2 for covariates (11 df)	169.98	169.42	162.80

** $P \leq .01$.

a. The coefficients are presented as $\partial P/\partial X = \beta \bar{P} (1 - \bar{P})$.

b. Dollar amounts are measured in thousands of dollars.

wage increases with marriage and decreases upon divorce, although the magnitude of the change in percentage terms might be quite different than what his wife experiences.

It is therefore useful to examine the impact of taxes on the individual decisions of a couple. This section examines data, estimation methods, variables, and empirical results for the individuals, with men and women treated separately. Most of the basic procedures are identical for the couple and individual approaches. The calculation of the tax effects of divorce is, however, complicated by a focus on the individual.

The data set for individuals is organized as person years, again beginning with the second year of marriage and continuing throughout the interview years either until 1989 or until divorce or separation. We use only one male and one female over age 16 from each household so that the unobserved family-specific characteristics of large households do not disproportionately influence the results. Our sample exclusions parallel those employed in creating the couple sample (namely, marriage and divorces in the same year are excluded and the first year of marriage is not included in the sample). We estimate this model separately for men and women using person years as the unit of observation, meaning that each year that an individual is in the risk set is treated as a separate unit of observation. Observations on the individual are not included in the sample after the year of divorce or separation. As with the couple sample, the standard logistic likelihood function, or Equation (3), is estimated.

There are 10,586 person years on 1,143 women for the years 1969 to 1989, and 9,650 person years for 1,007 males over the same period.¹¹ Recall that individuals

11. In order to be in this sample, each individual has to be a respondent to the PSID for at least one year in which a retrospective marital history was taken. Some couples divorced prior to the retrospective

are allowed to enter the sample at any time they meet the risk set requirements, so that there are 21 years of information on some individuals and only one year on others. Descriptive statistics for the individual sample are given in Table 4.

The dependent variable is whether or not an individual divorced during the year. There are 256 divorces among women and 151 among men, so that the divorce rate (unweighted) per person year is higher among the women than the men (2.4 percent versus 1.6 percent). Again, these numbers cannot be construed as overall divorce rates. Just over 22 percent of the female subsample members divorce in the years that we observe them, and 15 percent of the men divorce.

We continue to use two measures of the tax effects of divorce: the difference in total taxes and the difference in marginal tax rates. We calculate the difference in total taxes as the difference between the individual's share of the couple's tax burden and his or her tax burden as single and divorced, and the difference in marginal tax rates as the difference between the tax rates as married and as single.

Calculation of these tax effects is considerably more involved when the individual is the unit of observation than when the couple is the unit. As with the couple sample, we must determine the amount of deductions; we calculate deductions under the standard and itemized deduction assumptions. We must also allocate tax preferences, and we use the female head and the high earner allocation schemes. Finally, we must now determine the individual's share of the tax liability of the married couple, and there are a number of ways of determining this individual share of the married tax liability.

We focus here on one method. To calculate the individual's taxes as married, we designate one member of the couple as the "primary earner" and the other as the "secondary earner." Recall that we have information on the characteristics of the family, and so we know the incomes both of the individual and of his or her spouse. We can therefore determine whether the individual is the person who makes the most income in the household and so can be considered the primary earner; the individual is considered the secondary earner if the spouse earns more. We assume that the primary earner's income is in some sense taxed first, so that his or her income is taxed at the lower marginal tax rates in the progressive tax schedule. This calculation gives the primary earner's share of the marital tax liability. Note that the income of the spouse does not affect the primary earner's tax liability (although marital status clearly does). For the person who is the secondary earner in the couple, we calculate the tax liability by adding his or her income to the primary earner's income and taxing it at the resulting higher rates as this person moves through the higher tax brackets. Unlike the primary earner, the secondary earner's tax liability is affected both by the income of his or her spouse as well as by marital status.

We follow the same procedures as in the couple sample to determine the tax burden of each individual if unmarried. The marriage penalty for each individual is then found by subtracting the individual's tax obligation as a single individual

marital history, and one of the partners may have become a non-respondent. Any individual who remained in a respondent household would be a sample member provided there is information on all relevant variables in the years that the person is at risk of first divorce. This procedure results in our samples having uneven numbers of men and women.

Table 4
Individuals: Selected Weighted Sample Characteristics

Variable Name	Variable Definition	Female Person Years, Mean (Standard Deviation)	Male Person Years, Mean (Standard Deviation)
Marriage penalty—standard deduction and female head assumptions	Difference between tax on individual's income as married and as single, in 1982-84 dollars, using the standard deduction and female head assumptions	1431.44 (1,408.53)	-1,316.42 (1,844.07)
Marriage penalty—itemized deduction and female head assumption	Difference between tax on individual's income as married and as single, in 1982-84 dollars, using the itemized deductions and female head assumptions	1,465.86 (1,420.14)	-734.44 (1,560.64)
Marginal tax rate difference—standard deduction and female head assumption	Difference between married and single marginal tax rates of the individual, using the standard deduction and female head assumptions	8.27 (8.99)	-3.94 (5.33)
Marginal tax rate difference—itemized deduction and female head assumption	Differences between married and single marginal tax rates of the individual, using the itemized deduction and female head assumptions	10.94 (11.26)	-3.46 (5.29)

Own after-tax income	Labor and asset income of individual, after-tax, in 1982-84 dollars	7,494.72 (3,208.49)	19,212.27 (13,751.56)
Spouse after-tax income	Labor and asset income of spouse, after-tax, in 1982-84 dollars	18,459.99 (13,582.69)	5,322.32 (6,032.07)
Education ^a	Years of education	12.82 (2.19)	12.92 (2.04)
Children	Number of children of the individual	1.32 (1.15)	1.32 (1.14)
Age at marriage	Age at marriage, in years	22.24 (6.29)	23.40 (5.20)
Years married	Number of years since commencement of marriage	7.25 (4.91)	7.34 (4.93)
Black	Variable = 1 if head of household is black; 0 otherwise	0.08	0.06
Race neither black nor white	Variable = 1 if head of household is neither black nor white; 0 otherwise	0.02	0.006
Divorce	Variable = 1 if divorced occurred; 0 otherwise	0.03	0.021
Sample size	Number of person years (not weighted)	10,586	9,650
Individuals	Number of people contributing 1 to 21 years (not weighted)	1,143	1,007

a. In cases of missing values, education is set equal to the mean value.

from the individual's share of the marital tax burden. As for the marginal tax rate difference for individuals, this difference is found by subtracting the top marginal tax rate of the individual as a single filer from the appropriate marginal tax rate of the individual as a married person, depending upon his or her status as primary or secondary earner.

Note that these impacts of marriage versus divorce may well differ for the husband and wife in the same married couple. A wife could experience an increase in the taxes on her income as a result of marriage, while her husband might actually pay less tax on his income than if he were single. In fact, as shown in Table 4, the average marriage penalty (or subsidy) is generally quite large, and there is a marked difference between the penalty for men and women. Using the standard deduction and the female head of household assumptions, women incur an average *penalty* of \$1,431, while men incur an average *subsidy* of \$1,316, for a net difference of \$2,747. With itemized deductions and the female head of household assumptions, there is again a large difference in the average penalty incurred by women versus men; the net difference in this case is \$2,200. There is substantial variation over time and across gender. For example, the value of the marriage penalty/subsidy for women ranges from $-\$2,412$ to $\$30,360$; for men it ranges from $-\$53,214$ to $\$7,114$.

There are also dramatic differences in the marginal tax rate consequences of marriage for the male and female subsamples. Marriage raises the average marginal tax rate of women by over eight percentage points. On the other hand, marriage lowers the average marginal tax rate for men by almost four percentage points. The range of variation is also large.

Of course, there are other methods of determining the individual's share of the marital tax burdens. For example, we could calculate the individual's share of the marital tax liability simply by assigning each spouse one-half of the total tax burden on the combined marital income.¹² Another method is to concentrate on the total tax burden of the couple relative to their combined potential single burdens, measuring the marriage penalty as the total marital tax obligation of the married couple less the combined tax obligations of the two partners as single individuals. This measure is obviously the one used in the couple approach, but the hazard model estimation for individuals uses observations on individuals, not on couples.¹³ Our estimation results from models with these alternative calculations of the marriage penalty are quite similar to those that we report.

We present in Table 5 results from two different model specifications for the samples of women and men. The models use the full sample, the female head of household assumption, and both the itemized and standard deduction assumptions; results from models using the high earner assumption and the permanent divorce sample are not presented but are briefly discussed.

12. If an individual has very low earnings relative to the spouse, then this method will increase his or her assigned share of tax liability, and will decrease the share for the spouse, as compared to the primary-secondary earner method that we employ in the paper. For individuals with earnings only slightly less than their spouse, this method will decrease their tax share while increasing that of their spouse.

13. Relative to the other measures, this measure increases the marriage penalty of primary earners and decreases that of secondary earners.

Table 5

Individuals: Maximum Likelihood Estimates of Hazard Models for Probability of Divorce^a (Chi-Square in Parentheses)

Variable	Females		Males	
	Itemized	Standard	Itemized	Standard
Marriage penalty ^b	.015*** (36.77)	.022*** (71.61)	.003 (1.29)	.006* (4.63)
Marginal tax rate difference	-.0001 (0.33)	-.001** (9.18)	-.001 + (3.27)	-.001** (6.05)
Own after-tax income ^b	-.0002 (0.37)	.0007 + (3.41)	-.001 + (2.63)	-.0004 (1.08)
Spouse after-tax income ^b	-.004*** (94.77)	-.006*** (153.69)	-.001*** (11.23)	-.002*** (12.83)
Education	.004* (5.83)	.004* (4.70)	.001 (0.28)	.001 (0.23)
Education squared	-.0002* (4.65)	-.0001* (3.72)	-.0001 (0.66)	-.0001 (0.55)
Age at marriage	-.0001 (0.64)	-.0002 (0.96)	-.001* (5.00)	-.001* (5.23)
Years married	.001 (0.55)	.0004 (0.14)	.002 + (3.50)	.002 + (3.15)
Years married squared	.0000 (0.06)	-.0000 (0.03)	-.0001 (1.56)	.0001 (1.33)
Children	-.002* (4.26)	-.003** (8.79)	-.007** (19.37)	-.007*** (17.35)
Black	-.002 (0.62)	-.003 (1.67)	.007* (4.47)	.007* (4.78)
Race neither black nor white	-.007 (0.41)	-.007 (0.47)	.008 (0.57)	.008 (0.35)
Intercept	-.055*** (17.87)	-.048*** (12.86)	-.049** (7.19)	-.049** (7.01)
χ^2 for covariance (12 df)	302.30	348.75	78.65	83.40

*** $P \leq .001$; ** $P \leq .01$; * $P \leq .05$; + $P \leq .10$.

a. The coefficients are presented as $\partial P / \partial X = \beta \bar{P} (1 - \bar{P})$.

b. Dollar amounts are measured in thousands of dollars.

The marriage penalty is a significant predictor of divorce for women. In both the standard and itemized deduction models, the coefficient on the marriage penalty is positive and statistically significant. Married women who are burdened by taxes have a strong incentive to divorce, regardless of the penalty or subsidy that their spouses incur. The marriage penalty coefficient is larger when we assume standard deductions are taken, and, in fact, the coefficient is substantially larger than

that found for the couple sample. Recall that women are classified as the secondary earner in nearly 90 percent of the cases, and our method of calculating the tax effects of divorce creates a large marriage penalty for many women, as shown by the means in Table 4. Women who experience these large penalties require substantial transfers of resources from their husbands in order to remain married; the larger the penalty, the less likely it is that the husband will be able to compensate fully his wife.

Although the marriage penalty is a statistically significant determinant of divorce for women, it is important to note that the magnitude of the effect is still not large. The tax treatment of marriage influences divorce probabilities at the margin, but it does not seem to be the principle reason that people choose to divorce. The elasticities of divorce with respect to the marriage penalty are, however, much larger for women than for couples. Evaluated at the mean these elasticities are 0.73 (itemized deductions) and 1.05 (standard deductions).

The estimation results for men are also presented in Table 4. The marriage penalty has the expected positive impact on male divorce probabilities, but its coefficient is only statistically significant when we use the standard deduction assumption. The magnitude of the coefficient in this case remains relatively small, with an elasticity at the mean of 0.38.

The difference between the marginal tax rate when married versus single has, in three of the four cases presented, a negative and statistically significant effect on divorce, so that divorce is therefore less likely when the marginal tax rate of either a man or a woman increases with marriage.

Several other variables also affect the probability of divorce among these individuals. We find that spouse income has a very significant negative impact on divorce probabilities for both women and men. On the other hand, own income is only marginally significant in two of the models. Education is a significant positive determinant of divorce for women, but does not affect the probability of divorce for men. There is some evidence that age at first marriage decreases the risk of first divorce for men but not women. We also find that years of marriage has a positive and marginally significant effect on divorce for men.¹⁴

Children are a significant deterrent to divorce for both men and women, but the coefficient is much larger in absolute value for men than women. One possible explanation for this finding is that fear of losing contact with the children may influence divorce probabilities more heavily for men than women, since women are still more likely to be the custodial parent upon divorce. The impact of children on divorce may be quite different depending on the age of the children (Becker, Landes and Michael 1977; Cherlin 1977) and on their conception in or out of marriage (Lehrer and Chiswick 1993; Lillard and Waite 1993).

There is no significant difference in the probability of divorce between black and white females, a result that seems counter to some observed data that blacks experience a higher rate of marital disruption than whites (Da Vanzo and Rahman 1993). Our results are consistent with those of Peters (1986, 1993), who finds that in most cases race does not influence divorce probabilities and, in the one case

14. These findings are likely related to the way in which our sample is constructed, since all marriages of one year or less are eliminated and the longest possible marital span is 21 years.

in which race matters, the divorce rate is higher for whites than for blacks. As noted earlier, black women have an overall higher rate of divorce, but at younger ages the divorce rate among young black women is lower than that among young white women (Norton and Miller 1992). We find that black men are more likely to divorce than white men.

In other results not presented here, we test the sensitivity of our findings to the female head of household assumption; these results are almost identical to those shown in Table 5. We also estimate all individual models using a permanent (versus transitory) divorce sample. The results for the marriage penalty for women are almost identical to those in Table 5; the marriage penalty only significantly affects male divorce probabilities when we assume that standard deductions are taken.

V. Conclusions

Our research finds that federal individual income taxes in the United States play some role in the divorce decisions of men and women, a result that is robust across numerous specifications. We wish to emphasize that we do not believe that income taxes are the sole reason for changes in the divorce rate over the past 25 years. Indeed, our various estimated elasticities of divorce with respect to the marriage penalty indicate that the response of divorce to income taxes is quite small, and our results clearly indicate the importance, indeed the dominance, of other economic factors. We also believe, however, that at the margin taxes influence divorce probabilities and, given the magnitude of many actual tax changes, we believe that the tax impact can be noticeable. To our knowledge, this finding is the first to demonstrate the potential role of taxes in the divorce decision.

A particularly striking result is the relative impact of taxes on women versus men. Because women are more often the "secondary" earner in households, they are more likely to face a tax penalty upon marriage. This tax impact has frequently been discussed in the context of female labor supply, where an increase in marginal tax rates at marriage has been shown to make work less attractive for the secondary earner (Feenberg and Rosen 1983). Our results suggest that taxes may also alter family structure. Women in our sample pay higher taxes as married than as single individuals, and this difference creates an obvious incentive to divorce. On the other hand, men generally benefit from marriage because of their frequent status as a primary worker.

The idea that government policy might influence marital decisions is not novel. The magnitude of the marriage tax is known and substantial, and there is much anecdotal evidence that people respond to tax incentives in their decisions to marry and divorce (Cook 1981). Also, there has been much debate over whether divorce law in the states has had an impact on the probability of divorce (Peters 1986; Allen 1990). Nevertheless, the potential impacts of taxation on family structure are often ignored in policy discussions. To cite a recent example, it is well-documented that the Omnibus Budget Reconciliation Act of 1993 exacerbated the marriage penalty for many couples (Feenberg and Rosen 1995; Alm and Whitting-

ton 1996a). The potential impacts of this change on families, such as an increase in cohabitation or, as suggested by our results, an increase in divorce, are surely not those intended by Congress, where debate about government's role in reestablishing "family values" has become commonplace.

A more marriage neutral income tax may also have unexpected and perverse effects on family structure. To illustrate, suppose that Congress is able to move the individual income tax towards greater marriage neutrality by reducing marriage penalties *and* subsidies by 50 percent. In Table 6 we demonstrate the potential impact of such a policy on the probability of divorce for couples. We hold all characteristics constant at the mean across all income groups except the average penalty/subsidy and Adjusted Gross Income (AGI), and we use the 1994 average marriage penalties or subsidies from Feenberg and Rosen (1995). Because of the limited number of PSID households reporting AGI exceeding \$200,000, we do not include very high income couples in these calculations. We then generate estimates of the divorce probability by income class under the 50 percent reduction scenario, holding all other characteristics constant.

Our results suggest that this policy would result in changes in divorce probabilities that are of different sizes and even different directions across income classes. For couples who pay a marriage penalty, the divorce probability would obviously fall. It must be remembered that many couples receive a marriage subsidy, however, and for these couples a move toward greater marriage neutrality would actually increase the probability of divorce. As shown in Columns 3 and 4 of Table 6, the divorce probability would increase for those couples whose AGI is less than \$10,000, from 4.84 percent to 4.90 percent, a percentage change of 1.2 percent; the divorce probability would also increase for several middle income groups, or those couples whose AGI is between \$40,000 and \$50,000 and also between \$50,000 and \$75,000, by 3.3 and 3.5 percent, respectively. The divorce

Table 6
Estimated Impact of Marriage Penalty on Divorce Probabilities

AGI	1994 Average Marriage Penalty or Subsidy	Probability of Divorce Under Current Income Tax System	Probability of Divorce with 50% Decrease in Penalty or Subsidy	Percent Change in Aggregate Divorce Rate (Weighted by Number of Tax Returns)
<\$10,000	-\$59	4.840%	4.900%	0.41%
10-20,000	46	2.520%	2.510%	-0.09%
20-30,000	217	1.310%	1.280%	-0.34%
30-40,000	149	0.650%	0.640%	-0.15%
40-50,000	-225	0.300%	0.310%	0.21%
50-75,000	-336	0.086%	0.089%	0.23%
75-100,000	73	0.016%	0.016%	0.00%
100-200,000	657	0.0002%	0.0002%	0.00%
				TOTAL 0.27%

probability would remain essentially unchanged for couples whose AGI is greater than \$75,000. For all other groups, the divorce probability would fall by 0.3 to 2.3 percent.

In order to determine the effects of this policy on the overall divorce rate, we multiply the estimated average change in the probability of divorce by the percentage of taxpayers in each income class, based on the 1991 Statistics of Income. These results are shown in Column 5 of Table 6. Surprisingly, a 50 percent reduction in marriage penalties and subsidies would slightly increase the aggregate divorce probability by 0.27 percent. Thus, a major move toward marriage neutrality would result in a very small increase in the overall divorce rate. This policy would also have quite different impacts on different income groups. Of particular interest is the likelihood that divorce probabilities would rise for many low and middle income couples and leave upper income couples virtually unaffected.

In short, this paper demonstrates that the income tax treatment of the family affects family structure in noticeable if not dramatic ways. If the government is serious about its expressed concern for family issues, then the tax consequences for marital status need to be carefully considered.

References

- Allen, Douglas W. 1990. "An Inquiry into the State's Role in Marriage." *Journal of Economic Behavior and Organization* 13(2):171-91.
- Allison, Paul D. 1984. *Event History Analysis*. Beverly Hills, Cal.: Sage Publications.
- Alm, James, and Leslie A. Whittington. 1995a. "Income Taxes and the Marriage Decision." *Applied Economics* 27(1):25-31.
- . 1995b. "Does the Income Tax Affect Marital Decisions?" *National Tax Journal* 48(4):565-72.
- . 1996a. "The Rise and Fall and Rise . . . of the Marriage Tax." *National Tax Journal* 49(4):571-89.
- . 1996b. "Income Taxes and the Timing of Marital Decisions." *Journal of Public Economics*. Forthcoming.
- Becker, Gary S. 1974. "A Theory of Marriage." In *Economics of the Family: Marriage, Divorce, and Human Capital*, ed. T. W. Schultz, 299-344. Chicago, Ill.: University of Chicago Press.
- Becker, Gary S., Elisabeth M. Landes, and Robert T. Michael. 1977. "An Economic Analysis of Marital Instability." *The Journal of Political Economy* 85(6):1141-87.
- Cherlin, Andrew. 1977. "The Effect of Children on Marital Disruption." *Demography* 14(3):265-72.
- . 1992. *Marriage, Divorce, Remarriage*. Cambridge: Harvard University Press.
- Cook, Peter. 1981. "The Frustrations of the Marriage Tax." *Tax Notes*, August 10: 265-72.
- Da Vanzo, Julie, and M. Omar Rahman. 1993. "American Families: Trends and Correlates." *Population Index* 59(3):350-86.
- Ellwood, David, and Mary Jo Bane. 1985. "The Impact of AFDC on Family Structure and Living Arrangements." In *Research in Labor Economics*, Vol. 7, ed. Ronald Ehrenberg, 137-207. Greenwich, Conn.: JAI Press.
- Espenshade, Thomas J., and Joseph J. Minarik. 1987. "Demographic Implications of the 1986 U.S. Tax Reform." *Population and Development Review* 13(1):115-27.
- Feenberg, Daniel R., and Harvey S. Rosen. 1983. "Alternative Tax Treatments of the

- Family: Simulation Methodology and Results." In *Behavioral Simulation Methods in Tax Policy Analysis*, ed. Harvey S. Rosen, 7-41. Chicago, Ill.: University of Chicago Press.
- . 1995. "Recent Developments in the Marriage Tax." *National Tax Journal* 48(1): 91-101.
- Feldstein, Martin S., and Charles T. Clotfelter. 1976. "Tax Incentives and Charitable Contributions in the United States: A Microeconomic Analysis." *Journal of Public Economics* 5(1):1-26.
- Folbre, Nancy. 1994. *Who Pays for the Kids?* London, UK: Routledge.
- Heckman, James. 1980. "Sample Selection Bias as a Specification Error with an Application to the Estimation of Female Labor Supply Functions." In *Female Labor Supply*, ed. James P. Smith, 206-48. Princeton, NJ: Princeton University Press.
- Hoffman, Saul D., and Greg J. Duncan. 1995. "The Effect of Incomes, Wages, and AFDC Benefits on Marital Disruption." *The Journal of Human Resources* 30(1):19-41.
- Keeley, Michael C. 1979. "An Analysis of the Age Pattern of First Marriage." *International Economic Review* 20(2):527-45.
- Lehrer, Evelyn L., and Carmel U. Chiswick. 1993. "Religion as a Determinant of Marital Stability." *Demography* 30(3):385-404.
- Lillard, Lee A., and Linda J. Waite. 1993. "A Joint Model of Marital Childbearing and Marital Disruption." *Demography* 30(4):653-81.
- . 1995. "'Til Death Do Us Part: Marital Disruption and Mortality." *American Journal of Sociology* 100(5):1131-56.
- McElroy, Marjorie B. 1990. "The Empirical Content of Nash-Bargained Household Behavior." *Journal of Human Resources* 25(4):559-83.
- McElroy, Marjorie B., and Mary Jean Horney. 1981. "Nash Bargained Household Decisions: Toward a Generalization of the Theory of Demand." *International Economic Review* 31(1):333-49.
- Menken, Jane, James Trussell, Debra Stempel, and Ozer Babkol. 1981. "Proportional Hazards Life Table Models: An Illustrative Analysis of Socio-Demographic Influences on Marriage Dissolution in the United States." *Demography* 18(2):181-200.
- Norton, Arthur J., and Louisa F. Miller. 1992. *Marriage, Divorce, and Remarriage in the 1990s*. U.S. Bureau of the Census, Current Population Reports, P23-180. Washington, D.C.: GPO.
- Peters, H. Elizabeth. 1986. "Marriage and Divorce: Informational Constraints and Private Contracting." *The American Economic Review* 76(3):437-54.
- . 1993. "The Importance of Financial Considerations in Divorce Decisions." *Economic Inquiry* 31(1):71-86.
- Rosen, Harvey S. 1987. "The Marriage Tax is Down But Not Out." *National Tax Journal* 40(4):567-75.
- Sjoquist, David L., and Mary Beth Walker. 1995. "The Marriage Tax and the Rate and Timing of Marriage." *National Tax Journal* 48(4):550-64.
- Teachman, Jay D., and Karen A. Polonko. 1990. "Cohabitation and Marital Stability in the United States." *Social Forces* 69(1):207-20.

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