

ECONOMICS OF ALIMONY

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THE first half of this decade has been a period active in divorce reform. Rapidly rising divorce rates, coupled with increased public tolerance of private behavior, have brought into question the state's role in regulating divorce. At this writing, at least thirty states permit divorce on grounds of "marital breakdown" or incompatibility.¹

The aspect of divorce law of particular interest in this paper is the provision of alimony. The great majority of states provide for alimony payments in the event of separation or divorce,² and although most jurisdictions authorize alimony to either spouse under appropriate circumstances, alimony is almost exclusively awarded to wives. In addition, the amount of the award tends to vary with the length of marriage, the number of children, and the husband's and wife's relative assets and earning power.

In the first part of this paper, I develop a simple model of household production to illuminate the relevance of the length of marriage, number of children, and the wife's earning ability to an efficient determination of alimony. I show that if all marital income were perfectly divisible (*i.e.*, no public goods) and if spouses could negotiate with each other and transfer income between themselves costlessly, a legal rule requiring mutual consent for divorce would be equivalent (in most respects) to one permitting unilateral divorce by either spouse.

In the absence of these conditions, alimony serves as an efficient means of redistributing the property rights and assets of the marriage partnership between the spouses, enabling them to reach an "optimal" end—the dissolution of their marriage. I argue that the role of alimony is to compensate the wife for the opportunity costs she incurs by entering and investing in the marriage. As such, the award and enforcement of alimony payments by the

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¹ California was the first state (1969) to make breakdown the exclusive ground for divorce.

² Only Texas, Delaware, and Pennsylvania do not permit the courts to award alimony in the event of divorce. The theory is that alimony is part of the duty to support and hence is contingent on the existence of the marriage. See Henry H. Foster & Doris Jonas Freed, *Divorce Reform: Brakes on Breakdown*, 13 J. Fam. L. 443 (1973-74).

courts encourage optimal resource allocation within marriage, increase the gain from marriage, and encourage the formation, productivity, and stability of marriage.

In the second part of the paper, I first analyze a small sample data set of alimony awards. The size of alimony awards is found to vary directly with measures of the gain from marriage and of the wife's household specialization (such as duration of marriage, number of children, and the husband's earnings) and with the wife's forgone market opportunities, measured indirectly by her relative earnings. Secondly, the choice of periodic alimony over lump-sum alimony and the size of the premium required for lump-sum awards are found to vary directly with measures of the variance in expected loss incurred by the wife as a result of the dissolution.

Finally, in a cross-section analysis using 1970 census data, I find that states which exclude alimony in the event of divorce have a significantly lower percentage ever-married among women aged 25-34 and lower marital fertility among those who do marry, *ceteris paribus*. Hence, both the incentive to marry and marital-specific investment are reduced by the prohibition on alimony.

I. THE MODEL

A. *When Is Divorce Optimal?*

In this section, it is assumed that: (1) marriage is a two-party partnership in which there are no third-party interests,³ and (2) that marital income is completely divisible and spouses can costlessly transfer that income between themselves. Under these assumptions, a couple will decide to dissolve their marriage if and only if their combined income from remaining married falls short of their combined expected income from dissolution.⁴ This point is illustrated by considering the net gain to each party from remaining married:

³ This assumption may be extreme, given the importance of children in marriage and the emphasis placed on the welfare of children in family law. An alternative assumption is that at least one parent loves the children, so that the welfare of the children affects his welfare. The loving parent would then take fully into account the effect of his actions on the children and would not engage in any activity which diminished their welfare unless it increased his own welfare even more. Moreover, he would fully compensate the children for any action of his that did diminish their welfare. See Gary S. Becker, *A Theory of Social Interactions*, 82 J. Pol. Econ. 1063 (1974).

⁴ This result is a direct implication of the "Coase Theorem." See R. H. Coase, *The Problem of Social Cost*, 3 J. Law & Econ. 1 (1960). See Gary S. Becker, Elisabeth M. Landes, & Robert T. Michael, *An Economic Analysis of Marital Instability*, 85 J. Pol. Econ. 1141 (1977). [hereinafter cited as Becker, Landes, & Michael], where these assumptions are employed directly in a theory of marital dissolution. It is important to emphasize that the use of the term income here does not correspond to the common notion of money income but includes all flows of satisfaction from the marriage, and hence is a measure of "full income."

$$G_F = \gamma_F M - D_F,$$

$$G_M = \gamma_M M - D_M.$$
(1)

G_F and G_M represent the gains to the wife and husband, respectively, from honoring the marriage contract; γ_F and γ_M are their respective shares in the income of the marriage, M ; ⁵ and D_F and D_M are their expected incomes (net of divorce costs) outside the marriage. D_F and D_M include the spouses' incomes while actually divorced as well as their expected incomes from possible remarriage. Clearly, if both G_F and G_M are positive, the marriage is satisfactory to both parties and neither spouse can be made better off by dissolving the marriage. Similarly, if both G_F and G_M are negative, both parties would be willing to break the marriage contract without requiring any redistribution of property, since each would have a higher expected income by divorcing than by remaining married. At first glance, the only distribution of gains that is ambiguous in its prediction for divorce is where the gain from honoring the contract is positive for one party and negative for the other; for example,

$$G_F = \gamma_F M - D_F < 0,$$

$$G_M = \gamma_M M - D_M > 0.$$
(2)

The key to whether the optimal solution is to divorce or remain married in this situation is the sign of the combined gain from honoring the contract:

$$G = G_F + G_M = M - D_M - D_F.$$
(3)

If G is positive, there exists a transfer, through a change in the marital shares γ_M and γ_F , such that the husband can compensate the wife to remain in the marriage; *i.e.*, there exist γ_M^1 and γ_F^1 such that

$$G_F^1 = \gamma_F^1 M - D_F > 0,$$

and

$$G_M^1 = \gamma_M^1 M - D_M > 0.$$

After the redistribution of income, both spouses prefer remaining married to divorcing. If the combined gain, G , from marriage is negative, any transfer sufficient to compensate the wife for remaining in the marriage would necessarily leave the husband as a net loser; thus, there would be no transfer which could lead to continuation of the marriage.⁶

⁵ See Gary S. Becker, A Theory of Marriage, in *Economics of the Family* 299 (Theodore W. Schultz ed., [Univ.] Nat'l Bur. Econ. Res., 1974), for an analysis of the marriage market and the factors determining the spouse's shares in marital income.

⁶ Note that this analysis eliminates the distinction between the "deserter" and the "deserted,"

Consider now two alternative rules under which divorce would be permitted: (1) a requirement of mutual consent of the spouses to the divorce and (2) unilateral divorce of either spouse by the other.

Under the first rule it is clear that if the combined gains of the spouses were negative, and yet one would lose by the divorce, that spouse would have to be compensated for the loss before the divorce could take place. Moreover, the increased income that the dissatisfied spouse (the wife in the above example) would receive in the divorce state would be sufficient to permit a transfer B to the satisfied spouse such that both spouses would gain from the divorce; *i.e.*, such that

$$G_M = \gamma_M M - (D_M + B) < 0,$$

and

$$G_F = \gamma_F M - (D_F - B) < 0.$$

After the redistribution, both spouses would prefer divorcing to remaining married. Therefore, under the assumption of costless transfers, a mutual consent rule would ensure that a couple will dissolve their marriage if and only if both spouses benefit by so doing.

Under such a rule, however, it might be possible for one spouse to enforce a "unilateral" marriage upon the other. Assume that one spouse would gain substantially from divorce while the other would lose. The dissatisfied marriage partner would not be able to compensate the other for divorce as long as the *combined* gains from the marriage were positive. Hence, assuming desertion as an infeasible (too costly) alternative to divorce, a rule requiring mutual consent for divorce could permit one spouse to benefit from the marriage at the expense of the other.

The second rule, permitting unilateral divorce by either party, would insure that *remaining married* was an act of mutual consent. Marriages in which the combined gain of the spouses was negative would still dissolve under such a rule; however, the *divorce* would not necessarily benefit both spouses as it does under a rule requiring mutual consent.

Of course, other forms of compensatory transfers could and presumably would arise under a system that permitted unilateral divorce. In Islamic countries, where husbands are permitted to unilaterally divorce their wives, substantial bride-prices are paid to the wife and her family upon marriage. Presumably, part of these transfers is made as insurance against possible

since any transfer sufficient to compensate the dissatisfied spouse would necessarily cause the other spouse to be dissatisfied. For further development of this point, see Becker, Landes, & Michael, *supra* note 4, at 1143-45. Also see M. Hashimoto, Wage Reduction, Unemployment and Specific Human Capital 13 *Econ. Inquiry* 485 (1975), in which the distinction between quits and layoffs in the labor market is brought into question.

divorce; in fact, it is not uncommon for the husband to retain a fraction of the agreed upon bride-price, which is paid only in the event of divorce.⁷

Under the assumption that both spouses have equal and unbiased information about the probability of divorce and that all transfers between spouses are feasible and costless, both rules would result in the same distribution of divorces. Moreover, if the probability of being "trapped" into an unhappy marriage were positive under a mutual consent rule, transfers prior to marriage would be arranged to compensate spouses for their possible loss, just as transfers before marriage exist in countries in which at least one spouse faces the possibility of unilateral divorce. Hence, under these assumptions, the state should be indifferent in a choice between these two rules.

*B. Indivisibilities, Costs of Negotiating and Transferring
Income, and the Role of Alimony*

Indivisibilities in marital income, caused perhaps by the "public-goods" aspects of marital income, may make the appropriate redistribution costly or infeasible. For example, if a large component of marital income for both spouses comes from enjoyment of children, it would be impossible to transfer this income from one spouse to the other. This may help to explain the commonly held notion that poor families tend to experience a greater rate of desertion than middle and upper income families. The smaller the amount of money wealth held by a couple, the greater may be the proportion of total marital wealth that is derived from public goods such as children. Since transfers would be more difficult under these conditions, one would expect to find a greater incidence of desertion among low income families, unrelated to the legal costs of obtaining a divorce.⁸ In some cases, marriages ended by desertion would not have ended if transfers had taken place (*i.e.*, if the combined gain to the spouses from their marriage would have been positive). Similarly, marriages which should optimally dissolve (*i.e.*, the combined gain to the spouses is negative) may remain intact because the dissatisfied partner cannot compensate the satisfied partner.

In addition to indivisibilities in marital income, there may be costs of redistributing income or wealth from one spouse to the other in any period, so that in order to transfer a net amount T , a greater amount T^1 must be expended. Although the combined gain to the spouses from remaining mar-

⁷ See William J. Goode, *World Revolution and Family Patterns* 92 (1963). He states that among middle and upper income families, it was customary for the bridegroom to keep between one-third and one-half of the contracted bride-price, to be paid only in the event of divorce.

⁸ George Stigler has suggested in a comment on a previous draft that a more powerful explanation of the higher desertion rates among low income families is that the cost of the desertion (relative to divorce) is a positive function of income.

ried may be negative, the cost of transferring income could prohibit them from separating; *i.e.*, for any T such that $\gamma_M M - (D_M + T) < 0$, the necessary T^1 expended implies that $\gamma_F M - (D_F - T^1) > 0$. If the costs of transferring income in a period rise with an increase in the amount to be transferred, it may be cheaper to effect a given real redistribution over several periods than in one. Alimony increases the flexibility of the contractual agreement, by substituting an enforceable claim to future transfers for a current transfer, and reduces the cost of redistributing income. Therefore, a legally enforceable alimony arrangement may permit the couple to achieve a privately optimal end—divorce.

C. *The Household*

In order to understand the effect of alimony on the marital transaction, it is helpful to develop a simple model of a married household. Marriages are again assumed to be husband-wife partnerships in which both parties desire to maximize their joint expected income. The income of marriage is comprised of household commodities H , which are consumption or investment goods specific to the marriage, and the earnings of family members W_M and W_F . "Household production" includes such diverse activities as child care and development, meal preparation, home repair, and activities that contribute generally to the health and welfare of the family. Some of these activities would be just as valuable outside the marriage as within it; others, particularly those involving investments in children, will be less valuable if the marriage were to dissolve, *i.e.*, they are marital specific. It is assumed here that: (1) household production is completely marital specific and would be valueless in the event of divorce; (2) household commodities and the wife's earnings are produced by the wife's time alone; and (3) the husband's earnings are produced by his time and the time his wife devotes to household production. This characterization of the husband's earning capacity incorporates the observed effects of marriage on the lifetime earnings of men: married men have both higher earnings and longer, healthier lives than their unmarried counterparts. By spending more time in household production, a wife directly frees some of her husband's time to the market, increasing both his current market earnings and his incentive to invest in earnings-augmenting skills. In addition, her activities may augment the productivity of this time: wives may be efficient producers of household commodities affecting the health and earnings of their husbands.⁹

Assume that the income of the marriage is produced and consumed over

⁹ See, for example, Lee Benham, Benefits of Women's Education Within Marriage, in *Economics of the Family*, *supra* note 5, at 375.

two periods. The present value of the combined income stream in marriage can then be expressed as

$$M = H_1(t_{f1}^h) + W_{f1}t_{f1}^l + W_{m1}t_{m1}^l + \frac{1}{1+r} [H_2(t_{f2}^h) + W_{f2}t_{f2}^l + W_{m2}t_{m2}^l], \quad (4)$$

where t_f^h and t_f^l measure the wife's time in household production and market activities, respectively, and t_m^l is the husband's market time. To simplify, assume that the husband devotes all his time to the market in both periods; *i.e.*, $t_{m1}^l = T_{m1}$ and $t_{m2}^l = T_{m2}$. The wife's productive time in each period, T_{f1} and T_{f2} , is allocated between home time t_f^h , and market time t_f^l . Normalizing $T_{f1} = T_{f2} = T_{m1} = T_{m2} = 1$ and expressing the wife's home time in each period as a fraction Θ of total time, expression (4) can be restated as

$$M = H_1(\Theta_1) + (1 - \Theta_1)W_{f1} + W_{m1} + \frac{1}{1+r} [H(\Theta_2) + (1 - \Theta_2)W_{f2} + W_{m2}], \quad (5)$$

where $\frac{\partial H_1}{\partial \Theta_1}, \frac{\partial H_2}{\partial \Theta_2} > 0$, $\frac{\partial W_{f2}}{\partial \Theta_1} = -k_f W_{f2} < 0$, and $\frac{\partial W_{m2}}{\partial \Theta_1} = k_m W_{f2} > 0$.

The household specialization decision in the first period, characterized by Θ_1 , affects the level of household production in the first period and the subsequent earning capacity of both the husband and the wife in the second period. The couple will choose Θ_1 and Θ_2 so as to maximize the present value of total marital income. The optimal degree of household specialization in the two periods will satisfy the first-order conditions

$$\frac{\partial M}{\partial \Theta_1} = \frac{\partial H_1}{\partial \Theta_1} - W_{f1} + \frac{1}{1+r} [-(1 - \Theta_2)k_f W_{f2} + k_m W_{m2}] = 0, \quad (6)$$

$$\frac{\partial M}{\partial \Theta_2} = \frac{1}{1+r} \left[\frac{\partial H_2}{\partial \Theta_2} - W_{f2} \right] = 0.$$

The wife's time in the home in the first period will increase until at the margin the gain in current household production and the husband's future earnings from further specialization is just offset by the reduction in the wife's current earnings and future earning capacity. It is important to emphasize that the cost to the family in terms of the wife's earnings includes not only current forgone earnings but also loss of market earning power, through depreciation of market skills previously acquired, and forgone opportunities to invest in market skills.¹⁰ In the second period, the wife will

¹⁰ See Jacob Mincer & Solomon Polachek, Family Investments in Human Capital, in *Economics of the Family*, *supra* note 5, at 397.

specialize until at the margin the increase in current household production is just offset by the loss in current earnings.

It is clear that the greater the negative impact of time spent in the home (out of the market) on the future earning capacity of the wife, the lower will be her optimal degree of specialization in both periods; the greater the positive impact of her time on her husband's earning capacity, the greater will be her degree of specialization in both periods.¹¹

When the possibility of divorce is introduced into the optimization problem, the marriage partners face two states of the world in the second period: the marriage state, in which the second-period income is the same as in expression (5), and the divorce state, in which the household-commodity income vanishes and both partners specialize in the market.¹² It is assumed

¹¹ Total differentiation of the first-order conditions and use of Cramer's rule permit derivation of the following results:

$$d\Theta_1 = (1 - \Theta_2)H''_2 dk_f / (1+r)^2 \Delta - H''_2 dk_m / (1+r)^2 \Delta$$

$$d\Theta_2 = -(1 - \Theta_2)k_f W_f dk_f / (1+r)^2 \Delta + k_f W_f dk_m / (1+r)^2 \Delta,$$

where

$$\Delta = [H''_1 + [(1 - \Theta_2)k_f^2 W_f^2 + k_m^2 W_m^2] / (1+r)] [H''_2 / (1+r)] - k_f^2 W_f^2 / (1+r)^2,$$

and

$$H''_i = \frac{\partial^2 H_i}{\partial \Theta_i^2} < 0, \quad i = 1, 2$$

$$\frac{d\Theta_2}{d\Theta_1} = \frac{-k_f W_f}{H''_2} > 0.$$

¹² Divorced women, of course, do not necessarily specialize in the market after divorce. Many remarry and specialize in home production in a second marriage. Of white women, aged 50-65 in 1967, whose first marriage had ended in divorce, 43% had remarried within five years after divorce. (See Becker, Landes, & Michael, *supra* note 4).

Nevertheless, labor force participation rates of divorced women are very high. The table below presents labor force participation rates and expected work life of ever-married women and of divorced women (assuming they never remarry).

LABOR FORCE PARTICIPATION RATES, LIFE EXPECTANCY, AND EXPECTED REMAINING WORK LIFE OF WOMEN, BY AGE AND MARITAL STATUS, 1970

| Age | Ever-Married | | | Currently Divorced or Separated | |
|-------|-------------------------|--------------------------------|------------------------------|---------------------------------|------------------------------|
| | Remaining Years of Life | Labor Force Participation Rate | Expected Work Life Remaining | Labor Force Participation Rate | Expected Work Life Remaining |
| 35-39 | 42.4 | 46.3 | 26.8 | 63.8 | 27.8 |
| 40-44 | 37.8 | 53.7 | 21.2 | 66.5 | 23.0 |
| 45-49 | 33.3 | 56.5 | 16.3 | 68.9 | 18.3 |
| 50-54 | 28.9 | 53.5 | 11.9 | 69.9 | 13.6 |
| 55-59 | 24.8 | 45.5 | 8.2 | 61.4 | 9.0 |
| 60-64 | 20.8 | 26.4 | 5.0 | 39.3 | 6.7 |

Source: U.S. Dep't of Labor, Special Labor Force Report 187, Length of Working Life for Men and Women, 1970. Tabs. A-4 & A-5 (1977).

here that the couple's decision with respect to specialization does not itself affect the probability of divorce.¹³ The couple will choose the wife's degree of household specialization and investment in both periods to maximize the present value of their expected income \bar{M} from the two states of the world:¹⁴

$$\begin{aligned}\bar{M} &= H_1(\Theta_1) + (1 - \Theta_1)W_{f1} + W_{m1} \\ &+ \frac{1}{1 + r} [p_m[H_2(\Theta_2) + (1 - \Theta_2)W_{f2} + W_{m2}] + p_d[W_{f2} + W_{m2}]] \\ &= H_1(\Theta_1) + (1 - \Theta_1)W_{f1} + W_{m1} \\ &+ \frac{1}{1 + r} [p_m[H_2(\Theta_2) - \Theta_2W_{f2}] + W_{f2} + W_{m2}],\end{aligned}\tag{7}$$

where p_m and p_d are the probabilities of the marriage or divorce state prevailing, respectively, and $p_m + p_d = 1$.

If the impact of the first-period specialization on the second-period earning capacity is independent of the state of the world prevailing in the second period, the present value of expected marital income is maximized when

$$\frac{\partial \bar{M}}{\partial \Theta_1} = \frac{\partial H_1}{\partial \Theta_1} - W_{f1} + \frac{1}{1 + r} [-(1 - p_m \Theta_2)k_f W_{f2} + k_m W_{m2}] = 0,$$

and (8)

$$\frac{\partial \bar{M}}{\partial \Theta_2} = \frac{1}{1 + r} p_m \left[\frac{\partial H_2}{\partial \Theta_2} - W_{f2} \right] = 0.$$

In the first period, specialization will increase until the gain in current

¹³ This assumption is relaxed later in discussing how alimony may affect marital stability.

¹⁴ Clearly, a better statement of the problem would be to generalize to many periods and assume that at each period the spouses can revise their estimates of the prospective probabilities of divorce as they acquire information about the productivity of their marriage. In each period, spouses will choose Θ to maximize the present value of expected marital income over their remaining lifetime. The present value of expected marital income at any point in time j equals

$$\bar{M}(j) = \sum_j^T \frac{1}{(1+r)^j} [p_{mt}(j)[H(\Theta_t) + (1 - \Theta_t)W_{ft} + W_{mt} + u_t] + (1 - p_{mt}(j))[W_{ft} + W_{mt}]]dt,$$

where u_t is a random variable which represents unexpected (at the time of marriage) positive or negative deviations in marital income ($E u_t = 0$).

$V_j = \sum_0^{j-1} u_t dt$ is the stock of information the couple has acquired as of j about the previously unperceived productive aspects of their marriage, and

$$p_{mt}(j) = p_{mt}^0 + g(V_j); p_{mt}(j) \geq 0 \text{ if } p_{mt}^0 + g(V_j) \geq 0, = 0 \text{ if } p_{mt}^0 + g(V_j) < 0.$$

At j , the perceived probability of being married in period $t > j$ is a function of the probability of being married in period t as perceived initially plus accumulated information about the marriage. Clearly, if the accumulated information is sufficiently adverse, the perceived probability of being married in period t (and after) will be zero. A divorce would take place at j if $p_{mt}(j) = 0$ and $p_{mt}(j) = 0$ for all $t > j$. See Becker, Landes, & Michael, *supra* note 4.

household production and the husband's future earning capacity are just offset by the loss in the current earnings of the wife and her future earning capacity, discounted by the probability of divorce.¹⁵ Clearly, the higher the perceived probability of divorce in the second period, the less time the wife will be willing to spend in the home in the first period. Specialization in the second period will directly depend on the realized value of p_m ; if p_m equals zero, the wife will spend no time in household production in the second period by definition. However, even if the realized outcome of p_m is unity, the amount of time the wife will be willing to spend in the home in the second period will be inversely related to the probability of divorce as perceived in the first period. The reason for this is clear: the higher the probability of divorce as perceived in the first period, the greater will be the fraction of the wife's time devoted to market activities in that period and, hence, the higher will be her second-period wage rate. Therefore, even if the marriage state prevails in the second period, the loss in current earnings in that period for any increment in time spent in the home will be directly related to the initially perceived probability of divorce, and the optimal degree of specialization will be inversely related to that probability.

The higher the probability that the marriage will dissolve, the lower will be the optimal degree of household specialization in both periods. This result is consistent with at least two pieces of evidence: (1) greater divorce probabilities are associated with fewer children in marriage,¹⁶ and (2) black women, who experience—and therefore probably expect—a higher incidence of marital disruption, spend more time in the market while married than do white women.

D. *The Distribution of Costs and Returns: The Economic Role of Alimony*

In the model presented above, the family was assumed to maximize joint expected marital income, given the risk of divorce, without regard to which spouse would bear the greater loss in the event that the risk materialized. If the marriage were to fail, both spouses would lose the returns from investments made when these returns were specific to the marriage. The major cost of such investments, however, is in the wife's forgone income oppor-

¹⁵ I don't deal with corner solutions here, although in 1976, 50% of married couples were at the corner characterized by $\frac{\partial \bar{M}}{\partial \Theta_1} > 0$, $\Theta_1 = 1$. The other possible corner solution, $\frac{\partial \bar{M}}{\partial \Theta_1} < 0$, $\Theta_1 = 0$ is assumed here to be incompatible with marriage, since the combined married income of the spouses would equal the sum of their single incomes, and they would have no incentive to marry. See Gary S. Becker, *supra* note 5, at 301-08.

¹⁶ See Becker, Landes, & Michael, *supra* note 4, at 1170-72. Intact couples with characteristics associated with high divorce probabilities are found to have fewer children.

tunities in the labor market.¹⁷ Under the assumption of fully divisible marital income that can be transferred between spouses costlessly, it is easily shown that if both the husband and wife have the same knowledge of the risk of divorce, the optimal degree of specialization and investment in the household is independent of the assignment of liability; *i.e.*, no matter who initially faces the greater risk, the couple will act as though they are jointly maximizing.¹⁸ The intuitive economic explanation of this result is straightforward: if the woman must bear the risk of the market loss herself (*i.e.*, zero alimony), she will have to be compensated by the husband for this risk, in order to induce her to the optimal degree of specialization. Similarly, if the husband is fully liable for her market loss, he will demand a greater share of marital income until the wife is again induced to the optimal degree of specialization. Unless differences in the spouse's knowledge of or ability to protect against the risk of divorce are postulated, the assignment of liability does not affect the optimal amount of specialization.

However, positive transaction costs of negotiating and executing the necessary transfers may prevent the couple from reaching the level of household production that would be optimal in the absence of such costs. For example, investment undertaken in a given period (assumed to be generally proportional to the amount of time spent in the household) need not generate immediate returns; hence, the compensation necessary to induce the wife to specialize optimally during a period might exceed that period's income. Unless the husband were able to sell shares in his marriage, this constraint could result in an inefficient allocation of resources. Similarly, one of the returns from the wife's investments in household production incorporated in the model is the augmentation of the husband's earning capacity. The marriage contract transforms a purely general investment, the productivity of which is independent of the marital state, into marriage-specific capital. The wife is willing to invest in her husband's earning capacity at cost to herself only because he directly compensates her during the period of investment or because she has a claim to future earnings generated by her investment. Although the total value of the husband's earnings is not at risk by divorce, the wife's claim is at risk and her incentive to invest is directly affected by this risk. The existence of capital market limitations on borrowing against future earnings might restrict the amount that could be transferred during

¹⁷ And perhaps her opportunities in the remarriage market. Becker, Landes, & Michael, *supra* note 4, at 1174, 1180, find that women with children from the first marriage are less likely to have remarried by fifteen years after their marriage ended, and are more likely to divorce a second time if they do remarry.

¹⁸ This result, like the result that couples will divorce only when their combined wealth is increased by the action, is an application of the Coase Theorem, *supra* note 4, which states that in the absence of transaction costs, the assignment of liability does not affect resource allocation.

the investment period and hence lead to less than optimal household specialization by the wife.

At the extreme, in the absence of any transfers, the wife's desired level of home production would fall substantially short of the couple's unconstrained optimum. To see this, let \bar{I}_f be the wife's expected income from entering the marriage, where γ_f is her share in marital income:

$$\bar{I}_f = \gamma_f[H_1(\Theta_1) + (1 - \Theta_1)W_{f1} + W_{m1}] + \gamma_{f2}p_m[H_2(\Theta_2) + (1 - \Theta_2)W_{f2} + W_{m2}] + p_dW_{f2}. \quad (9)$$

In the absence of transfers the wife would be willing to devote only Θ'_1 of her time to home production in the first period, where Θ'_1 maximizes the wife's expected income in expression (9). Both Θ'_1 and, therefore, Θ'_2 (if the marriage remains intact) will be lower than the jointly optimal values of Θ^*_1 and Θ^*_2 . Moreover, at (Θ'_1, Θ'_2) the husband's income, and indeed the spouses' combined income, would continue to increase until (Θ^*_1, Θ^*_2) , the jointly optimal level of household specialization in both periods. The position of Θ'_1 relative to Θ^*_1 is illustrated in Figure 1.¹⁹

Alimony can be interpreted as a contingency claim, payable to the wife in the event of divorce, that permits the couple to arrive at Θ^*_1 (and Θ^*_2) without making transfers in the marriage state. The husband would be willing to increase the contingency claim A as specialization increased until at the margin the additional A required to induce an increase in the wife's time at home just equalled the benefit to him from this additional time, *i.e.*, until their combined income was maximized.

An efficient award of alimony under this interpretation would equal the value of opportunities the wife forgoes by increasing the level of home production in the first period from Θ'_1 , the level she would choose in the absence of transfers, to Θ^*_1 , the jointly optimal level, less her expected share in the income generated by the additional home production. In other words, alimony awarded in the event of divorce should equal the shaded area in panel (b) of Figure 1.²⁰ Such an award would be efficient for two reasons. First, optimal resource allocation within marriage would be encouraged since household production would be at Θ^*_1 . Second, the dissolution of

¹⁹ In order to express \bar{I}_f and \bar{M} as functions of Θ_1 only, it is assumed that $\Theta_2 = g(\Theta_1)$, where $dg/d\Theta_1 = -k_fW_{f2}/H'_2$. See note 11 *supra*.

²⁰ An award of this amount would correspond to the wife's "reliance" interest in the contract, that is, to direct expenditures plus opportunities forgone because of actions taken to promote the contract.

To see that this is an efficient amount, assume that the wife's marital income in period 2 is the same at Θ'_1, Θ'_2 as at Θ^*_1, Θ^*_2 if the marriage continues. Then at the optimum, for the wife to be willing to specialize at Θ^*_1, Θ^*_2 , the following must hold:

$$-p_d k_f W_{f2} + p_d A'(\Theta_1) = 0, \text{ or } \int_{\Theta'}^{\Theta^*_1} A'(\Theta_1) d\Theta_1 = \int_{\Theta'}^{\Theta^*_1} k_f W_{f2} d\Theta_1.$$

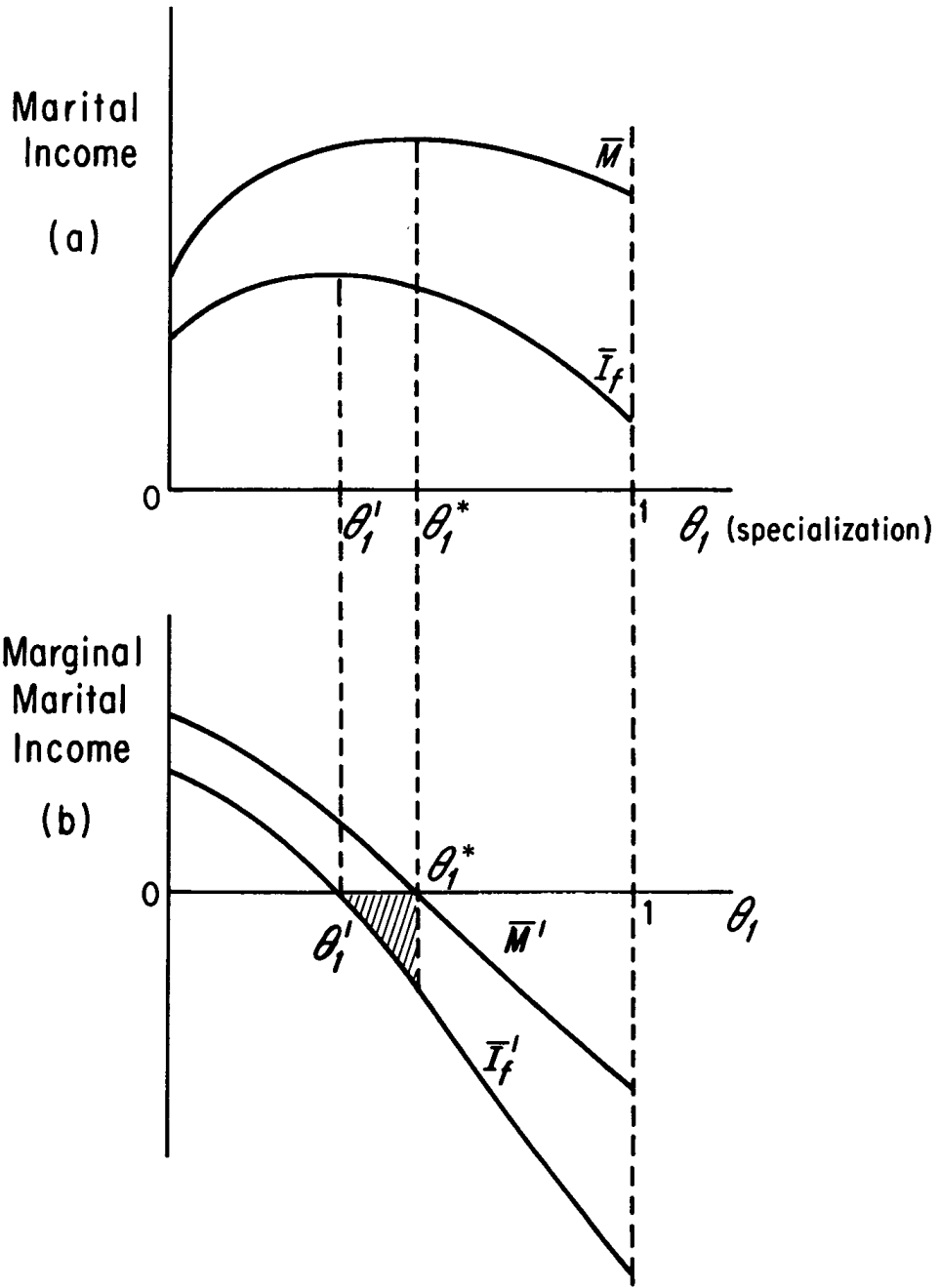


FIGURE 1

“suboptimal” marriages would be facilitated without adversely affecting the incentives for parties to enter marriage.²¹

The discussion up to this point has implicitly assumed costless enforcement of the optimal investment in marriage and of marital shares. Under this assumption, divorce is an exogenous event, unrelated to the actions of either spouse. However, if enforcement is not costless, it might be possible for one spouse to “cheat” the other without being detected, at least initially, either through appropriating a greater share of marital income than originally negotiated or by investing less than the optimal resource input into the marriage. If detected, this action would cause the other spouse to respond by adjusting his own resource input, and both actions would cause the spouses’ combined expected income from the marriage to fall below the level obtainable without cheating (since this is by definition their *maximum* combined expected income). If their combined expected income were sufficiently affected by the cheating, the marriage would dissolve. However, the cheating spouse could still be made better off than had he not cheated. The “innocent” spouse is clearly made worse off whether or not the marriage dissolves.²²

Given the possibility of cheating within marriage—some might even argue the prevalence of cheating within marriage—an efficient alimony system would penalize the party more at fault in contributing to a divorce. Such a penalty would reduce the incentive of both spouses to cheat within marriage,

²¹ See ch. 3 on contracts in Richard A. Posner, *Economic Analysis of Law* (1972), especially at 55-59, for an economic analysis of damages for breach of contract. Posner argues that the damages system should encourage breaches when they are “value-maximizing,” that is, when the costs of completion to the breaching party are greater than the loss from noncompletion to the other. He also states that the victim should be fully compensated for the loss from such a breach of contract, so that people will not be deterred from entering contracts in the future.

²² A common example of marital misconduct is infidelity, which could be considered a form of shirking. A more general definition of fault would be the failure to meet expected standards of performance. Alcoholism, impotence, excessive gambling, and refusal to have children would all be obvious examples of behavior considered to contribute to marital breakdown. The general definition might also encompass behavior such as too many nights out with the boys or even too many tunafish casseroles.

Among divorces granted in the United States in the twenty-year period between 1867 and 1886, the following cases were cited as examples of behavior contributing to marital breakdown:

1. “The defendant (husband) does not come home until 10 o’clock at night and when he does return he keeps plaintiff (wife) awake talking.”
2. “Plaintiff alleges that defendant does not wash himself.”
3. “Plaintiff says she is subject to sick headaches, that grow worse when she smells tobacco. Defendant uses tobacco, and thus aggravates her headaches.”
4. “Defendant refused to let plaintiff or her children go to church.”
5. “Defendant struck plaintiff a violent blow with her bustle.”
6. “Defendant has been guilty of extreme cruelty in this: She has habitually neglected and refused to cook for plaintiff . . .”
7. “Plaintiff says there is no offspring of their marriage, thus rendering home dreary and life burdensome.” (Carroll D. Wright, *A Report on Marriage and Divorce in the United States, 1867-1886*, at 172-78 (U.S. Dep’t of Labor, rev. ed. 1891)).

since the gain from cheating would be reduced by the expected alimony penalty should the marriage dissolve. Hence, penalizing the party more at fault in contributing to a divorce economizes on the costs of enforcing the terms of the marriage contract within the marriage and increases the expected gain from investment in the marriage.

It was shown above that the lower the probability of divorce a couple faces, the greater will be the level of household production and specific investment in the marriage. Greater specialization and specific investment in marriage also reduce the probability of divorce,²³ since they increase marital income relative to income the spouses could receive outside the marriage. Hence, by encouraging efficient resource allocation within marriage, an efficient system of alimony promotes both the initial formation and continued stability of marriages.

E. *The Economic Determinants of Alimony*

In this section the relationships between an efficient determination of alimony and such often-cited factors as duration of marriage, number of children, and labor-market experience of the wife are explored.²⁴

Two functions of alimony have been stressed in this paper. In Part I.D alimony was analyzed as a means of promoting efficient resource allocation within marriage, which conserves on costs of negotiating and transferring income at each period. Under this interpretation, an efficient award of alimony will approximate the value of the wife's forgone opportunities from entering the marriage. In Part I.B alimony was analyzed as a transfer, from either spouse to the other, in compensation for dissolution of the marriage at the time of divorce under a legal rule requiring mutual consent. Hence, alimony will be positively related to the expected gains from the marriage, since one spouse must be compensated for the loss of these gains. These two functions of alimony are not inconsistent because investment in marital-specific capital (and the wife's forgone opportunities) will be positively related to the expected gain from marriage.²⁵

The value of a housewife's forgone opportunities is of interest not only in determining alimony but also in estimating damages accruing to a husband from the loss of his wife's time in the household because of accidental death or disability. In consideration of the latter problem, Komesar suggests that

²³ See Becker, Landes, & Michael, *supra* note 4, at 1166.

²⁴ In two studies of alimony awarded between 1946 and 1964, it was stated that "[i]n addition to the economic circumstances of the parties, such factors as fault, the wife's contribution to her husband's accumulations, [and] the duration of marriage . . . have been stressed . . . as affecting the adequacy of a permanent alimony award." Annot., 1 A.L.R.3d, 123, 139-40 (1965). A similar statement is made in Annot., 1 A.L.R.3d, 6, 19 (1965).

²⁵ See Becker, Landes, & Michael, *supra* note 4, at 1152.

the lower bound of such an estimate is the earnings of married women who worked continuously while married.²⁶ Similarly, it could be argued that this is the relevant estimate for awarding alimony. However, women who have worked continuously while married may have done so precisely because the wages they receive are higher than the average wages offered to married women. Hence, their earnings would significantly overstate the value of opportunities forgone by women who chose not to work.²⁷

Setting aside this fundamental problem, it is still possible to identify variables which reflect the value of the wife's contribution to the marriage and her opportunity costs. Clearly, specialization in the home (and therefore the wife's forgone opportunities for investment in market skills) would vary directly with the number of children²⁸ born of the marriage and indirectly with the amount of time she has spent in the labor market during marriage. Therefore, the earning capacity of wives relative to their husbands is relevant to the determination of alimony not only as an indication of "need" but also as an inverse measure of the loss in earning capacity incurred as a result of investments made in the home. Duration of marriage reflects both the total contribution of the wife to the marriage and the total amount she has forgone in terms of opportunities for investment and development of market skills.²⁹

Similarly, the relative earning capacity of wives is an inverse measure of the gains from marriage, and duration and number of children are positively related to these gains. The husband's income and wealth are positively related to the gains from marriage and should, therefore, also be positively related to alimony.³⁰

²⁶ See Neil K. Komisar, *Toward a General Theory of Personal Injury Loss*, 3 J. Leg. Studies 457, 481 (1974).

²⁷ Reuben Gronau, *The Intrafamily Allocation of Time: The Value of Housewives' Time*, 63 Am. Econ. Rev. 634 (1973), found that under extreme alternative assumptions, the housewife's average price of time could exceed or fall short of the average wage of working women by about 18%. These results are based on a sample of white, married, spouse-present women. James Heckman, *Shadow Prices, Market Wages and Labor Supply*, 42 *Econometrica* 679 (1974) has developed a more sophisticated technique for estimating the value of a wife's time in the household than used by Gronau. He finds evidence of a strong correlation between market wage and household productivity.

²⁸ Both James Heckman, *supra* note 27, and Reuben Gronau, *The Effect of Children on the Housewife's Value of Time, in Economics of the Family*, *supra* note 5, at 457, found that young children significantly increase the value of housewives' time. Holding everything else constant, including potential wage rates, women with young children are more likely, therefore, to specialize in home production.

²⁹ Jacob Mincer & Solomon Polachek, *supra* note 10, estimate earnings depreciation for women who remain out of the labor market for a period after the birth of their first child to be an average 1.5% per year. They also find that the depreciation rate varies with educational level, being lowest for women with elementary school education or less and highest for women with at least some college training.

³⁰ See Gary S. Becker, *supra* note 5, at 301-08.

The discussion up to this point has assumed that the wife's only alternative employment is in the labor market. However, remarriage presents an important form of alternative "employment" for divorced women: in the 1967 Survey of Economic Opportunity almost 74 percent of white women 15-65 years of age whose first marriage had ended in divorce had remarried, and the average duration between divorce and remarriage for those who remarried was about four years.

The size of the wife's loss from the failure of her first marriage then will depend in part, perhaps in major part, on her probability of remarriage. Some of the skills acquired by the wife in home production are transferable across marriages rather than wholly specific to a particular marriage. The specificity of the wife's marital skills would be greater—and hence her probability of remarriage would be lower—the longer the duration of the first marriage, the more children born of it, and the younger the children at the time of divorce.

It is difficult to ascertain directly whether or not these factors are an important consideration in judicial determination of alimony awards.³¹ Large sample data sets containing information on both the outcomes of alimony decisions and the characteristics of marriages and spouses are unavailable. However, results presented in the next section of an analysis of a small sample of alimony awards between 1946 and 1964 are generally confirmatory of their importance.

³¹ Three quotations spanning more than thirty years indicate that these factors have not been totally irrelevant in judicial determination of alimony:

"The marital relation has been likened to a partnership." "The economic relations of the wife to the husband can be expressed in terms of debts, dividends and wages. . . . If she brings to the marriage money or property . . . her rights in it may be defined as those of a creditor. If she contributes to the social or economic improvement of the family . . . a dividend could reward her. . . . But for her ordinary services wages would seem a businesslike return." "As long as the family remains a going concern the wife's wages ordinarily would be a matter of domestic adjustment. But when the family disintegrates, the wife's rights might be protected by something like unemployment insurance." (John S. Bradway, *Why Pay Alimony?*, 32 Ill. L. Rev., 295, 301-06 (1937).)

"If a woman has contributed however indirectly to her husband's career and helped to increase his substance she may rightfully be regarded as entitled to a share in his gain. A woman who has devoted the greater part of her time to caring for a home and children has had little opportunity to learn the skills necessary to earn a living in our competitive society." *Doyle v. Doyle* 5 Misc. 2d 4, 7 158 N.Y.S. 2d 909, 912 (Sup. Ct. 1957).

"The division of property of the divorced parties rests upon the concept of marriage as a shared . . . partnership, although a partnership in which the contributions and equities of the partners may and do differ from individual case to individual case . . . [R]elevant factors certainly include the length of marriage, the age and health of the parties, their ability to support themselves, liability for debts or support of children, general circumstances, including grievous misconduct, although a division is not a penalty imposed for fault." *Lacey v. Lacey*, 45 Wis. 2d 378, 382, 384, 173 N.W.2d 142, 144-145 (1970).

II. EMPIRICAL ANALYSIS

A small sample data set was obtained from the appendices to two articles in the *American Law Reports*.³² The sample contains information on the alimony awards for 195 divorces, of which 106 were periodic alimony awards and 89 were lump-sum awards. In addition, it contains information on the number of children born, length of marriage, husband's income and assets, property and child support settlements associated with each divorce, and some fragmentary information on the earnings and income of the wife and whether she had been previously married. The party obtaining the divorce is also given, and the husband's obtaining the divorce is construed as a measure of the wife's "fault" in the empirical work below. According to this crude measure, the wife was at fault in 20 percent of the cases. Definitions of the variables used in the empirical analysis are presented in Table 1 along with their mean values.³³

³² The cases were taken from two small sample surveys reported in Annot., 1 A.L.R.3d, *supra* note 24.

³³ Since the sample I analyze in this paper is constructed from two samples of *alimony* awards taken from modification proceedings, it is clear that it is not representative of *divorces* in general. The major loss from such a sample is the absence of observations in which alimony is not awarded. It is worthwhile then to compare the mean values of variables in this sample to those of a more representative sample of divorces in the United States to adjudge the selectivity bias. In particular, I expect to find those marital characteristics associated with a higher alimony award also to be associated with a greater likelihood of receiving alimony. For example, I expect the mean duration of marriage for divorces in which alimony is awarded to be greater than the mean duration of all marriages ending in divorce.

Using data from Alexander A. Plateris, *One Hundred Years of Marriage and Divorce Statistics: United States, 1867-1967* (U.S. Dep't of Health, Ed. & Welfare, 1973), I am able to compare the mean values of the following variables in the alimony sample to the mean values of the same variables for the United States as a whole during roughly the same period in time: 1) percentage of divorces awarded to wives; 2) mean duration of marriage prior to divorce; 3) mean number of children per divorce where children are reported.

1) *Percentage of divorces awarded to wives.* Between 1950 and 1965 about 72% of all divorces in the United States were awarded to wives. In the sample of alimony awards between 1946 and 1964 analyzed here, almost 80% were awarded to wives. I interpret a husband's obtaining the divorce as a crude measure of his wife's marital misconduct or relative fault in contributing to the divorce. The underrepresentation in the alimony sample of cases in which the divorce was awarded to the husband is consistent with the expectation that a wife's misconduct will reduce the likelihood that alimony will be awarded as well as the amount of alimony she would receive in the event it is awarded.

2) *Mean duration of marriage prior to divorce.* Mean duration of marriage prior to divorce in the years 1950, 1960, and 1967 was approximately 8.4, 9.4, and 9.4 years respectively as compared to a mean duration of almost 14 years in the sample analyzed here. Again, this difference is consistent with the expectation that longer duration of marriage prior to divorce increases both the likelihood that alimony will be awarded and the amount of the award.

3) *Mean number of children per divorce where children are reported.* For the period 1950 to 1964, I estimate the mean number of children per divorce with children reported to be 1.92. This estimate is derived by weighting the mean number of children per divorce with children reported in each year by the total number of divorces in that year divided by the total number of divorces in the entire period. (The number of divorces reporting children is not reported.) This estimate falls slightly below the alimony sample mean of 2.20, again as would be expected.

VARIABLE NAMES AND DEFINITIONS

| Name | Definition | Periodic Alimony Sample | | Lump-Sum Alimony Sample | |
|---------------|---|----------------------------|-----------|----------------------------|-----------|
| | | M | S.D. | M | S.D. |
| <i>ALIM</i> | Alimony award | \$2,323 | \$2,999 | \$10,416 | \$18,227 |
| <i>INC</i> | Husband's income | \$13,190 | \$15,758 | \$9,292 | \$12,318 |
| <i>FASS</i> | Family assets | \$71,549 | \$205,174 | \$56,984 | \$142,485 |
| <i>K1</i> | Number of children less than 18 years of age | 1.05 | 1.17 | .73 | 1.01 |
| <i>K2</i> | Number of children between 19 and 21 years of age | .12 | .33 | .13 | .34 |
| <i>DUR</i> | Duration of marriage (years) | 15.33 | 8.93 | 12.21 | 9.86 |
| <i>PM</i> | Wife previously married, with children | .076 | .265 | .135 | .34 |
| <i>RE RN</i> | Wife's earnings relative to husband's income | .021 | 0.056 | .014 | .062 |
| <i>RINC</i> | Wife's unearned income relative to husband's income | .077 | .210 | .281 | .412 |
| <i>F</i> | Husband obtained divorce = 1 | .17 | .38 | .25 | .43 |
| <i>NOKIDS</i> | No children born of marriage | .26 | .44 | .44 | .50 |
| <i>ZERN</i> | Wife has no earnings | .85 | .36 | .93 | .25 |
| <i>ZINC</i> | Wife has no unearned income | .84 | .37 | .53 | .50 |
| <i>SUPP</i> | Annual child support payments | | | | |
| <i>PROP</i> | Property settlement | \$1,193 | \$1,693 | \$481 | \$884 |
| <i>T</i> | Time (1946 = 0) | \$10,395 | \$21,656 | \$4,603 | \$12,249 |
| <i>SUPP</i> | Annual child support in cases involving children | 8.8 | 5.7 | 8.7 | 5.3 |
| <i>RE RN</i> | Wife's unearned income | \$1,601 | | \$856 | |
| <i>RINC</i> | Wife's unearned income if wife had unearned income | .140 | | .213 | |
| <i>N</i> | Sample size | .478 | | .595 | |
| | | 106 | | 89 | |

Source: Annot., 1 A.L.R.3d 6 (1965) and *id.* at 123.

Although the discussion in Part I implicitly assumes the wife's loss from divorce is known with certainty, it is clear that both the labor market and the remarriage "market" are characterized by uncertainty and that, therefore, the expected loss borne by the wife is associated with a large variance in possible actual outcomes. Periodic alimony payments, which can usually be modified in the event of significant changes in the relative situations of the spouses after divorce (significant differences between the actual and the expected loss) and which are usually terminated upon the wife's remarriage, are an efficient means of monitoring the size of the loss. This suggests that periodic alimony payments would be more likely when the wife's expected loss from dissolution is associated with a large variance in possible outcomes. Therefore, factors which are expected to affect the magnitude of the loss would not necessarily affect the magnitude of periodic payments, but instead may affect the length of the period over which the payments are made. Hence, periodic alimony will be less responsive to the factors discussed in Part I.E than lump-sum alimony, which reflects the capitalized value of the wife's loss from dissolution.³⁴ For this reason, the discussion in this Part focuses on the results for lump-sum alimony, although two sets of results are shown.

A. *Alimony Regressions*

Table 2 presents ordinary least squares regression results for both the lump-sum and periodic alimony samples. The dependent variable in the regressions is alimony and the independent variables are defined in Table 1. All dollar values have been converted to 1957 dollars and are measured in natural logarithms in the regressions.

Income and wealth are positively related to the gains from marriage and hence should also be positively related to alimony. In fact, the husband's income is the most important variable in all regressions in Table 2. Holding income and assets constant, the number of minor children and the duration of marriage are positively associated with lump-sum alimony. The magnitude of these effects is not small in economic terms: an additional child under 18 years of age increases lump-sum alimony by more than 11 percent and every additional year of marriage is associated with a 2.3 percent increase in alimony.

Surprisingly, the existence of a previous marriage does not have a significant effect on alimony, although it is negative. Since most investment in marital-specific skills and depreciation in market skills will occur early in

³⁴ Of course there would be some conversion factor between lump-sum and periodic alimony at which both spouses would be indifferent between a lump-sum and a periodic scheme. Presumably, the decision to engage in one scheme rather than the other implies that both spouses are better off with that scheme. Combinations of these schemes are common, periodic payments being combined with an initial lump-sum transfer.

TABLE 2
OLS REGRESSIONS DEPENDENT VARIABLE: ALIMONY

| Independent Variables | Lump-Sum Alimony | | | Periodic Alimony | | |
|-----------------------|------------------|------------------|------------------|------------------|-----------------|------------------|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| <i>INC</i> | 1.14 (9.13) | 1.18 (8.38) | 1.20 (8.30) | .66 (5.33) | .65 (5.12) | .63 (5.12) |
| <i>FASS</i> | .039 (1.80) | .038 (1.77) | .047 (2.14) | .07 (3.42) | .07 (3.23) | .10 (4.32) |
| <i>PM</i> | -15.55 (.51) | -16.43 (.54) | -12.54 (.41) | -4.58 (.11) | -4.73 (.12) | -19.57 (.50) |
| <i>K1</i> | 12.46 (1.25) | 12.63 (1.25) | 3.43 (.24) | -3.76 (.37) | -4.02 (.39) | 15.97 (1.11) |
| <i>K2</i> | -9.31 (.29) | -.12 (.00) | -11.65 (.33) | 15.51 (.48) | 15.58 (.48) | 29.72 (.87) |
| <i>DUR</i> | 2.34 (2.03) | 2.12 (1.72) | 2.29 (2.18) | .36 (.28) | .36 (.27) | .94 (.70) |
| <i>F</i> | -63.31 (2.73) | -62.02 (2.60) | -55.00 (2.29) | -22.87 (.83) | -22.87 (.83) | -28.23 (1.02) |
| <i>RERN</i> | | -.644 (.40) | -.367 (.23) | | -.006 (.00) | -.92 (.46) |
| <i>RINC</i> | | .196 (.69) | .176 (.62) | | -.10 (.19) | -.18 (.35) |
| <i>SUPP</i> | | | .040 (.90) | | | -.06 (1.28) |
| <i>PROP</i> | | | -.035 (1.36) | | | -.07 (2.90) |
| Constant | -2.00 | -2.40 | -2.64 | .87 | .92 | 1.29 |
| \bar{r}^2 | .542 | .534 | .541 | .376 | .363 | .416 |
| <i>F</i> | 15.88 | 12.23 | 10.44 | 10.03 | 7.65 | 7.80 |
| <i>N</i> | 89 | 89 | 89 | 106 | 106 | 106 |

Note: Numbers in parentheses are *t*-scores.

marriage, most of the wife's loss in terms of market earning power will be associated with the first marriage, especially if there are children of that marriage. The loss associated with a second marriage should be substantially smaller. The insignificance of *PM* is partly explained by the inclusion of children and duration of current marriage in the regression; when they are omitted from the regression, the *t*-value of the coefficient on *PM* is 1.55. I suspect that the fragmentary nature of the information on previous marriages is primarily responsible for the variable's weak effect; by necessity the marriage was assumed to be the wife's first if there was no mention of a previous marriage in the case.

In Part I.D it was suggested that consideration of fault in determining alimony serves two purposes: (1) penalizing guilty parties economizes on enforcement costs within the marriage, and (2) transfers from the "guilty" to the "innocent" spouse compensate the innocent spouse for the loss in expected gains from the marriage. Even given the crude measure of fault

employed in these equations, fault has a sizable effect on the amount of alimony awarded: if the divorce is obtained by the husband, lump-sum alimony is reduced by almost 50 percent!

About 50 percent of the wives in the lump-sum sample reported unearned income, while only 7 percent reported earned income. Since the relative earning capacity of wives is an inverse measure of both specialization and the expected gains from the marriage, it should be inversely related to alimony. Relative unearned income, however, should be positively related to both specialization and the gains from marriage, and hence to alimony. These expectations receive only weak confirmation when the wife's relative earned income and relative unearned income are introduced into the regression in Table 2, columns (2) and (5). Both coefficients take the predicted signs in the lump-sum sample, although neither is significantly different from zero.

The data also permit inspection of the trade-off between the property and child support settlements and the alimony settlement. Property and child support are entered as independent variables in Table 2, columns (3) and (6). The only statistically significant trade-off effect is found in the periodic alimony sample. The trade-off between property and periodic alimony is statistically significant at a .01 confidence level; however, the size of the trade-off is minimal. A one percent increase in the value of the property settlement is associated with a .07 percent decrease in alimony.

Because the sample is quite small and, more importantly, because of the substantial measurement errors in the data, not much importance can be attached to the point estimates found in these equations nor to their statistical significance. However, the direction of the relationships indicates that such factors as duration of marriage, number of children, fault, and even wife's earning capacity affect the amount of the alimony when the husband's income and assets are held constant.

B. *Lump-Sum versus Periodic Alimony*

Table 1 suggests that the periodic alimony versus lump-sum alimony division is not random with respect to the variables in the analysis. On average, the marriages resolved by lump-sum awards were both shorter in duration and more likely to be childless than those resolved by periodic alimony settlements. In addition, the husband was more likely to have obtained the divorce in the lump-sum alimony sample.

Lump-sum payments represent the capitalized value of the wife's loss from marital dissolution (the shaded area in panel (b) of Figure 1). In Part II.A, periodic alimony was discussed as an efficient means of monitoring the size of this loss. Since both young children and older age at divorce tend to

inhibit remarriage³⁵ (and increase the variance of the wife's expected loss from dissolution), both are more likely to be associated with a periodic award than a lump-sum award. OLS regression results, presented in column (1) of Table 3, suggest that childless marriages are almost 28 percent more likely to be resolved by a lump-sum award than marriages with children, *ceteris paribus*. (The dependent variable in the regression takes the value 1 if the award is lump-sum, zero if it is periodic.) Marriages of both very short and very long duration are also more likely to be resolved by a lump-sum award than are marriages in the middle range. (The maximum frequency of periodic awards indicated by the regression is in the neighborhood of twenty years of marriage.) Low marital duration implies a low stock of marital- or spouse-specific skills and a small associated depreciation of skills in alternative employment—either in the labor market or remarriage. Depreciation in the value of the wife's skills is relatively easy to measure. Hence, monitoring the loss through periodic payments would be relatively less efficient in these divorces. Similarly, marriages of very long duration, *ceteris paribus*, imply an easily measured loss since the probability of the wife's being reemployed either in the labor market or the remarriage market is quite low.

Nevertheless, there should be a conversion factor at which the couples would be indifferent between a periodic scheme and a lump-sum payment. Presumably, if wives are risk averse, they would demand a higher premium

TABLE 3
OLS REGRESSIONS

| Variable | (1) Dependent Variable = <i>DUM</i> (= 1 if Lump-Sum Award, 0 if Periodic Award) | | (2) Dependent Variable = \log_e (Lump-Sum Award/ Periodic Award) | |
|-------------------------|---|------------------|---|------------------|
| | Coefficient | <i>t</i> - score | Coefficient | <i>t</i> - score |
| <i>NOKIDS</i> | 24.54 | 2.34 | -45.61 | 2.79 |
| <i>DUR</i> | -3.46 | 2.20 | 6.38 | 2.09 |
| <i>DUR</i> ² | .075 | 1.41 | -.18 | 1.92 |
| <i>F</i> | 15.51 | 1.80 | | |
| <i>K1</i> | 2.30 | .51 | | |
| <i>K2</i> | 22.12 | 1.97 | | |
| <i>K3</i> | 4.33 | .95 | | |
| <i>INC</i> | -.001 | 2.11 | | |
| <i>FASS</i> | .000 | .99 | | |
| CONSTANT | 61.6 | | 1.24 | |
| \bar{r}^2 | | .097 | | .059 |
| <i>N</i> | | 196 | | 196 |

Note: Coefficients are multiplied by 100 (where necessary) to reflect percentage effects.

³⁵ Becker, Landes & Michael, *supra* note 4, at 1174, find that both older age at divorce and the presence of young children inhibit remarriage for women.

for receiving lump-sum rather than periodic alimony the greater the perceived variance in their expected loss from dissolution. Similarly, husbands would be more willing to offer a higher premium to their wives for accepting a lump-sum the greater the perceived variance in expected loss. The regression results presented in column (1) of Table 3 suggests that the ratio of lump-sum to periodic alimony required would be lower in childless marriages and in marriages of very long or very short duration, since the expected loss in these marriages is easier to measure (is associated with a lower variance) and they are more likely to be resolved by a lump-sum award.³⁶

A regression of the ratio of lump-sum to periodic alimony on the duration of marriage, duration squared, and a dummy variable indicating a childless marriage confirms this prediction. The results are presented in column (2) of Table 3. The dependent variable is the log difference between lump-sum and periodic alimony for each wife in the sample. (For individuals in the lump-sum sample, periodic alimony is predicted from the regression equation in column (1) of Table 2; for individuals in the periodic sample, lump-sum alimony is predicted from the regression equation in column (4) of Table 2.) In childless marriages, the ratio of lump-sum to periodic alimony is almost 56 percent lower than in marriages with children, holding duration constant. Similarly the ratio of lump-sum to periodic alimony is lowest for marriages of very brief duration, increases with duration up to 17.5 years of marriage, and declines continuously thereafter.

C. *The Effect of Alimony on Marital Behavior*

In Part I.D it was argued that an efficient award of alimony should reflect the value of the wife's opportunity cost from entering and investing in the marriage. Under this interpretation, alimony will encourage efficient resource allocation within marriage and will therefore promote the initial formation of marriages and the level of marital-specific investment. This argument suggests that legal restrictions on alimony will affect both the incentive to marry and the optimal level of specific capital investment within marriage.

State laws vary considerably with respect to both the ease of divorce and provisions for alimony. For example, some states exclude marital conduct, or fault, as a relevant consideration in the determination of alimony. But in I.D it was suggested that the consideration of fault in the determination of

³⁶ The log of the ratio of lump-sum to periodic alimony is significantly negatively related to the dummy variable *DUM*, which takes the value 1 if the award was lump-sum and 0 if the award was periodic ($r = -.167$), further suggesting that the greater the variance in expected loss from dissolution, the less likely will the divorce be resolved by a lump-sum alimony award.

alimony economizes on enforcement costs within marriage. Hence, by making the enforcement of the marriage contract more costly, the exclusion of fault in alimony reduces the gains from marriage.

More directly, three states, Texas, Delaware, and Pennsylvania, prohibit alimony in the event of divorce. To be sure, some of the functions of alimony will be taken over by property settlements in these states; however, to the extent that a property settlement is not equivalent to alimony, the incentive to specialize will be adversely affected and the gains from marriage will be reduced.³⁷

These hypotheses can be tested by investigating the impact of differences in laws regarding alimony on the incentive to marry and on marital investment across states. In Table 4, I present the results of regressions on the percentage of white women 25-34 years old in each state who have ever been

TABLE 4
PERCENTAGE EVER-MARRIED AND MARITAL FERTILITY, BY STATES;
WHITE WOMEN, 25-34 YEARS OF AGE

| Variable | A. Regression Results | | | |
|----------------|---------------------------|-----------|--------------------------|-----------|
| | (1) Percentage Married | | (2) Marital Fertility | |
| | Coefficient | t - score | Coefficient | t - score |
| <i>MEDUC</i> | 9.21 | 3.83 | .59 | 1.99 |
| <i>FEDUC</i> | -18.04 | 5.89 | -.90 | 2.42 |
| <i>SXRAT</i> | 21.05 | 2.43 | | |
| <i>RLWAGE</i> | -6.42 | 1.94 | <i>FWAGE</i> -.18 | 2.23 |
| <i>FAMINC</i> | -.04 | .15 | .03 | .67 |
| <i>%URB</i> | -.07 | 2.41 | -.00 | .99 |
| <i>BRKONLY</i> | 2.75 | 3.44 | .15 | 1.34 |
| <i>INCOMP</i> | 1.92 | 2.59 | .05 | .53 |
| <i>BRKPLUS</i> | 1.58 | 2.08 | .00 | .03 |
| <i>SEPPLUS</i> | .86 | 1.37 | -.02 | .26 |
| <i>NOALIM</i> | -2.29 | 2.26 | -.15 | 1.22 |
| <i>FAULT 1</i> | 1.27 | 1.56 | .07 | .64 |
| <i>FAULT 2</i> | -2.35 | 3.78 | -.15 | 1.86 |
| CONSTANT | 232.16 | | 6.80 | |
| \bar{r}^2 | .94 | | .59 | |
| N | 49 | | 49 | |

³⁷ Clearly, a division of property at the time of divorce cannot be fully equivalent to alimony. A couple can be "poor" in physical assets at the time of divorce, yet not be poor in a life-cycle sense. Consider the example of a marriage in which the wife has abandoned her own career to invest in the home, while her husband pursues a professional education. Let the marriage dissolve upon the husband's graduation. The couple may possess no physical assets to divide, yet the husband has acquired a substantial human capital asset in his education, at least partly as a result of the wife's behavior. A division of physical property at the time of divorce would leave the wife uncompensated.

*B. Percentage Ever-Married and Marital Fertility, by States;
White Women, 25-34 Years of Age*

| <u>Variable Name</u> | <u>Definition</u> | <u>Mean</u> | <u>S.D.</u> |
|----------------------|--|-------------|-------------|
| <i>MEDUC</i> | Mean level of education, white males, age 25-34, in 1969. | 12.77 | .60 |
| <i>FEDUC</i> | Mean level of education, white females age 25-34 in 1969. | 12.62 | .52 |
| <i>SXRAT</i> | Ratio of white females, 25-34 years old, to white males, 35-39 years old in 1969. | 1.13 | .04 |
| <i>RLWAGE</i> | Ratio of median earnings of white women who worked 50-52 weeks in 1969 to median earnings of white men who worked 50-52 weeks in 1969. | .57 | .08 |
| <i>FWAGE</i> | Median earnings of white females who worked 50-52 weeks in 1969. (000) | 4.57 | .73 |
| <i>FAMINC</i> | Mean income of families with white male head in 1969. (000) | 11.23 | 2.09 |
| <i>%URB</i> | Percentage of state population living in urban areas in 1969. | 66.46 | 15.04 |
| <i>BRKONLY</i> | Dummy variable = 1 if marital breakdown is exclusive ground for divorce. | .20 | .41 |
| <i>BRKPLUS</i> | Dummy variable = 1 if state lists breakdown among grounds for divorce. | .12 | .33 |
| <i>INCOMP</i> | Dummy variable = 1 if state lists incompatibility among grounds for divorce. | .14 | .35 |
| <i>SEPPLUS</i> | Dummy = 1 if state lists separation among grounds for divorce. | .37 | .49 |
| <i>FLTONLY</i> | Dummy = 1 if state lists only fault grounds for divorce. | .16 | .37 |
| <i>NOALIM</i> | Dummy = 1 if permanent alimony prohibited | .06 | .24 |
| <i>FAULT 1</i> | Dummy = 1 if fault expressly excluded as relevant to alimony award. | .12 | .33 |
| <i>FAULT 2</i> | Dummy = 1 if fault expressly excluded as relevant to division of property. | .22 | .42 |
| <i>PM</i> | Percentage of white women 25-34 years old ever-married in 1969. | 91.60 | 5.55 |
| <i>KIDS</i> | Number of children born per ever-married white woman, 25-34 years old in 1969. | 2.35 | .26 |

Source: All legal variables are constructed from information in Henry H. Foster & Doris Jones Freed, *Economic Effects of Divorce* 7 *Fam. Law Q.* 280 (1973).

All other variables are based on data by state, available in U.S. Bureau of the Census, *Census of the Population: 1970*.

married and on their marital fertility. Data are from the 1970 U.S. Census of Population.³⁸

In the percentage-ever-married regression, the independent variables are similar to those used by Frieden³⁸ in his analysis of the United States marriage market. The major exception is that I employ a series of dummy variables to represent the permissible legal causes of divorce for each state rather than the single measure of ease of divorce that he employed. The marital fertility regression also borrows many of the explanatory variables from the economic literature on fertility. In addition, this regression includes the set of dummy variables representing permissible legal causes of divorce. In both regressions, I introduce a set of dummy variables indicating whether alimony is prohibited in that state (*NOALIM*), and whether fault is a relevant consideration in the determination of alimony (*FAULT 1*) and property settlements (*FAULT 2*).

In both regressions, the effect of the variables I have borrowed from the economic literature on marriage and fertility are consistent with the results found in that literature. Across states, the level of urbanization, the level of female education, the relative wage of women, and the number of women relative to men are negatively related to the percentage of young women who are ever-married. Similarly, urbanization, female education and wage rates are negatively related to marital fertility. The level of male education has a positive impact on both the percentage married and on marital fertility.

Even holding all these variables constant, the legal variables have a measurable impact on the percentage of young women who marry across states and their marital fertility. States which prohibit alimony have on average a sizably higher percentage of women aged 25-34 who have never married, *ceteris paribus*. The effect on fertility of those who do marry is somewhat lower and not as significant. However, this is to be expected, since the gain from marriage will not be lowered as much on average for those who do marry as for the population as a whole.

The effect of the dummy variables representing the consideration of fault in the alimony and property settlements is mixed, but generally confirms the hypotheses. The exclusion of fault as a relevant consideration in the property settlement substantially reduces both the percentage ever-married and their marital fertility. States which exclude consideration of fault in the determination of property settlements have, *ceteris paribus*, 2.35 percent fewer young women married (equivalent to a 28 percent larger stock of unmarried young women, at the mean) than states which do not exclude fault. Furthermore, young women who do marry in these states have .15 fewer chil-

³⁸ The analysis is for young women only, since this group will be most sensitive to the *current* status of the laws.

³⁹ See Alan Frieden, *The U. S. Marriage Market*, in *Economics of the Family*, *supra* note 5.

dren on average (equivalent to 7.2 percent fewer children, at the mean) than in states which do not exclude fault in the determination of property settlements. The exclusion of fault in alimony determination appears to have no significant effect.

The dummy variables representing permissible legal causes for divorce suggest that the less costly it is to obtain a divorce, the greater the percentage married. This is similar to the effect found by Frieden, although he used a single variable to measure the cost of divorce. No consistent effect of these variables is apparent in the fertility regression.

III. SUMMARY AND CONCLUSION

In this paper I suggest that alimony performs two economic functions: (1) alimony compensates wives, given dissolution, for their opportunity costs from entering and investing in marriage, and (2) alimony compensates satisfied partners for the loss in expected gain from marriage imposed on them by the dissolution. These two functions of alimony are not inconsistent, since investment in the marriage (and the wife's forgone opportunities) will be positively related to the gains from marriage.

Under this interpretation, alimony awards should be positively related to the expected gains from marriage and to the wife's level of household specialization. The evidence derived from a small sample data set on alimony awards generally confirms these predictions: alimony awards are directly related to measures of the wife's household specialization, such as children and (inversely) the wife's earning capacity, and to measures of the gain from marriage such as the husband's income and duration of marriage prior to divorce. In addition, a measure of the wife's fault in contributing to the marital breakdown is negatively related to her alimony award.

Moreover, the choice of lump-sum over periodic alimony awards is found to be affected by the variance in the wife's expected loss from the dissolution. I argue that periodic alimony is an efficient means of monitoring the wife's loss from dissolution when the loss is difficult to measure *ex ante* (has a high variance), and hence periodic awards will be less likely when the wife's expected loss is associated with a small variance. This prediction is confirmed in the small data set of alimony awards I analyze: periodic alimony is less likely to be chosen in marriages with no children and in marriages of either very brief or very long duration, *i.e.*, in marriages with a small variance in expected loss. Similarly, the premium demanded for accepting a lump-sum award (measured by the ratio of lump-sum to periodic alimony for marriages of the same characteristics) is found to be significantly lower in these marriages than in marriages with a high variance in expected loss.

Finally, I find that a legal prohibition on alimony reduces the gains from

marriage. In states which prohibit alimony, I find both a lower proportion of young women marrying and reduced marital fertility among those who do, even when the variables found to be important in the economic literature on marriage and fertility are held constant. Moreover, the exclusion of marital conduct (fault) as a relevant consideration in the determination of property settlements also reduces the number of young women who marry and their marital fertility across states. Since consideration of fault reduces enforcement costs within marriage, it is expected to increase the gains from marriage, and this expectation is confirmed by the empirical findings.

The empirical results in this paper suggest that the alimony system, as administered, acts to compensate wives for their opportunity costs incurred by entering and investing in marriage. This interpretation of the economic function of alimony is directly opposed to the common allegation that alimony is an "anachronistic" manifestation of the wife's dependency upon her husband. Nevertheless, increasing participation of married women in the labor force and declining marital fertility suggest that the importance of alimony will diminish over time with decreasing levels of household specialization.

