10

The Economics of Marital Status

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GONE ARE THE DAYS when a female's marital credentials provided a barometer of her social and economic success. Whereas, previously, a divorcée or single female over 30 was regarded with misgivings, today in the United States she is often referred to as "liberated"—her status not only accepted but very much in vogue.

To what may we attribute the changed attitude toward the unattached female? Has there been a structural transformation within society leading to a growing number of females whose life-style negates such pejorative nomenclature as "spinster" or "divorcée"? Could it be that fewer women are interested in defining themselves via their husband's profession and income—rather they seek their own professional fulfillment and identity? If this is so, what factors have made this comparatively recent phenomenon both physically and psychologically possible?

As technological progess led to a rise in real wages at all levels of education, an increasing number of women were induced to enter the labor force. Furthermore, technological advances meant that the role of homemaker evolved into a far less specialized and time-consuming activity, since such equipment as dishwashers, washing machines, and pre-prepared foods provided good substitutes for home-produced goods. Thus the substantial increase in female labor force participation which occurred

between 1940 and 1970 (see Table 10.1) would imply that women are devoting fewer hours to production in the home and, furthermore, that the clearly defined productive association common to most marriages—breadwinner-homemakers—is on the wane.

Economic phenomena of this nature are bound to be accompanied by social repercussions, since, if the traditional male–female complementarity is declining, one important rationale for marrying is disappearing. With a decrease in the economic interdependency generally associated with marriage, it would not be surprising to observe a greater reluctance

TABLE 10.1   Labor Force Participation Rate

	1940	1950	1960	1970
All Females [a]	.27	.31	.35	.43
Married Females [b]	.17	.25	.32	.41

SOURCE: U.S. Census, *Statistical Abstract of the United States: 1972*, Table 346, p. 219.

NOTE: Rates, 1940 through 1960, refer to females 14 years old and over. For 1970, they refer to the age group 16 years old and over.

[a] Female labor force as a percentage of total female population.
[b] Married women in the labor force as a percentage of married women in the population.

to marry, remarry, or stay married on the part of females whose market potential has undergone a significant change. Indeed, an inverse relationship is apparent in the postwar period (1947 to 1971) between the relative market potential of married females (as measured by their wage relative to men's) and the proportion of the female population married. Figure 10.1 indicates that the relationship is strongest among prime-age females (between the ages of 20 and 34).

On the other hand, real family income has risen over time in the United States, making it possible for more young couples to afford the "set-up" costs of marriage. If a rise in real income reduces any proclivities toward "swinging" in favor of a march down the aisle, it could also be expected to lead to a decline in the age at first marriage and an expansion in the desired number of children per married couple as well as in expenditures per child. Furthermore, within a marriage more income makes a higher standard of living possible, which in itself would soothe any major conjugal difficulties. For example, individual privacy, independence, romance, and prestige could all be better maintained through such things as
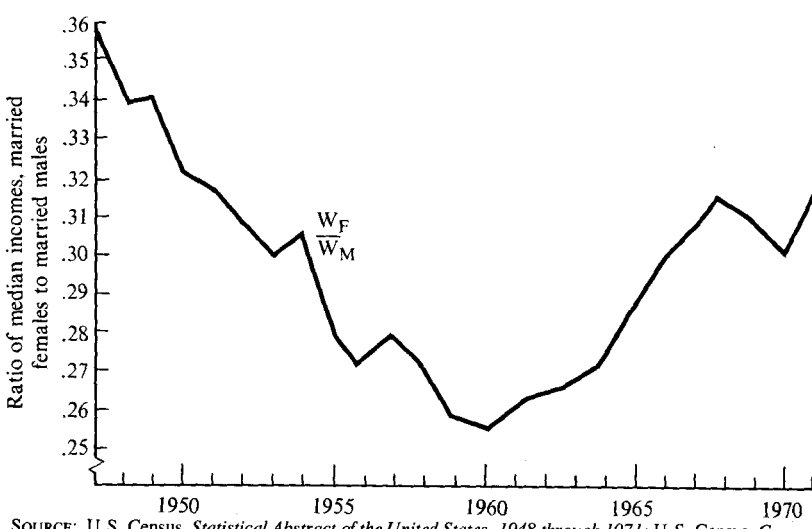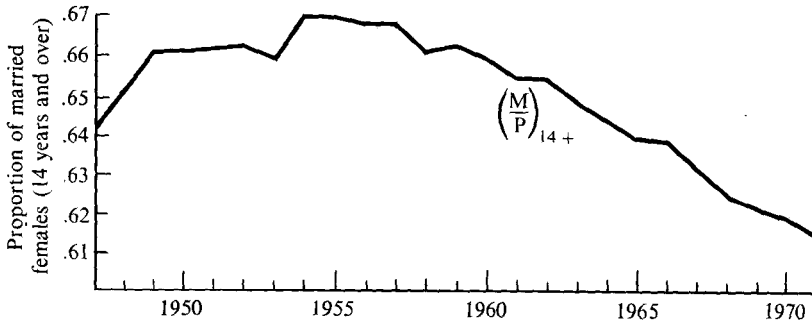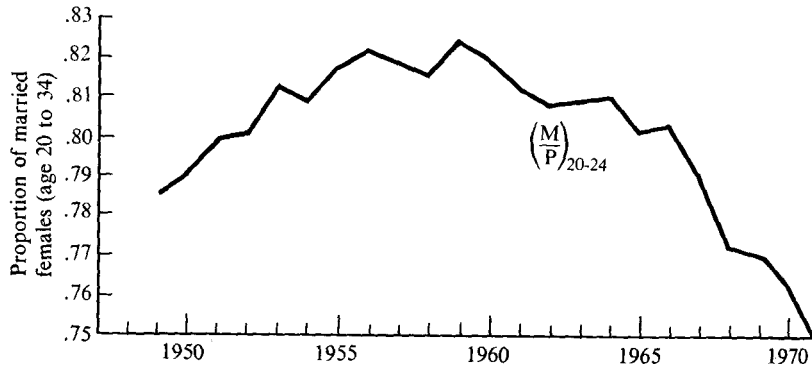
SOURCE: U.S. Census, *Statistical Abstract of the United States, 1948 through 1971*; U.S. Census, *Current Population Reports*, Series P-60, 1948 through 1971.

FIGURE 10.1. Proportion of Married Females (age 20 to 34); Proportion of Married Females (age 14 +); Ratio of Median Incomes, Married Females (spouse present) to Married Males (wife present), 1947–1971
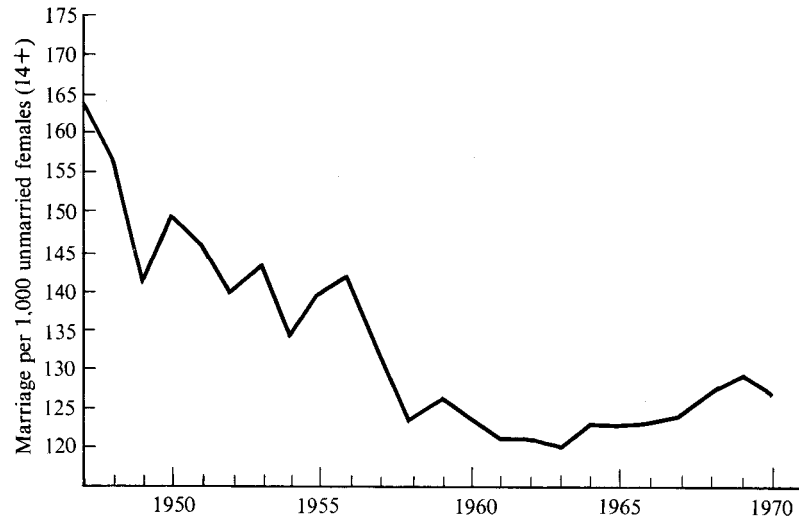
SOURCE: U.S. Census, *Statistical Abstract of the United States, 1948 through 1971.*

FIGURE 10.2. Marriages per 1,000 Unmarried Females,
14 Years and Older, 1947–1970

spacious living quarters, two cars in the garage, foreign travel, and fancy schools for the children.

Despite what might have been expected, the growth of real income in the United States has not been accompanied over time by a rising trend in marriage rates. On the contrary, Figure 10.2 indicates that marriages per thousand unmarried females (14 years old and over) have declined.[1] There is reason to believe that the marriage rate fell owing to a decrease in the number of eligible [2] males, since the ratio of eligible females (aged 14 to 24) to eligible males (aged 14 to 34), portrayed in Figure 10.3 indicates an inverse relationship to the relative number of marriages. However, these statistics provide estimates only for the *civilian* population. Therefore the number of eligible males would have been underestimated with the advent of the Korean and Vietnam wars, resulting in an exaggeration of the increase in the ratio of eligible females to males during the early 1950s and again in the late 1960s.

Expectations as to the age at first marriage and the birthrate are also not supported statistically. Table 10.2 reveals that the age at first marriage did decline for women until 1956, but then rose, exhibiting a U-shaped pattern. The opposite was true for birthrates. The number of births per

TABLE 10.2   Median Age at First Marriage for Females
and Births per Thousand Females
Aged 15 to 44, 1947–1970

Year	Median Age at First Marriage	Live Births per Thousand
1947	20.5	113.3
1948	20.4	107.3
1949	20.3	107.1
1950	20.3	106.2
1951	20.4	111.3
1952	20.2	113.5
1953	20.2	114.7
1954	20.3	117.6
1955	20.2	118.0
1956	20.1	120.8
1957	20.3	122.7
1958	20.2	120.1
1959	20.2	120.1
1960	20.3	118.0
1961	20.3	117.2
1962	20.3	112.1
1963	20.5	108.4
1964	20.5	105.0
1965	20.6	96.0
1966	20.5	91.3
1967	20.6	87.6
1968	20.8	85.7
1969	20.8	85.8
1970	20.8	87.6

SOURCE: U.S. Census, *Historical Statistics of the United States, Colonial Times to 1957;*
and U.S. Census, *Statistical Abstract of the United States: 1958 through 1972.*

thousand females (aged 15 to 44) rose until 1957 and then fell precipitously.

The dwindling interest in raising children is probably associated with the same forces that caused a decline in both the *proportion* married (Figure 10.1) and the *rate* of marriage (Figure 10.2). That is, the increase in female market capacity, tending to discourage matrimony, predominated over the positive effect of the rise in real family income. Had men become better substitutes in household activities, including child care, the effect of female market opportunities would probably not have been as strong.

Marital status has been described as the net result of two economic
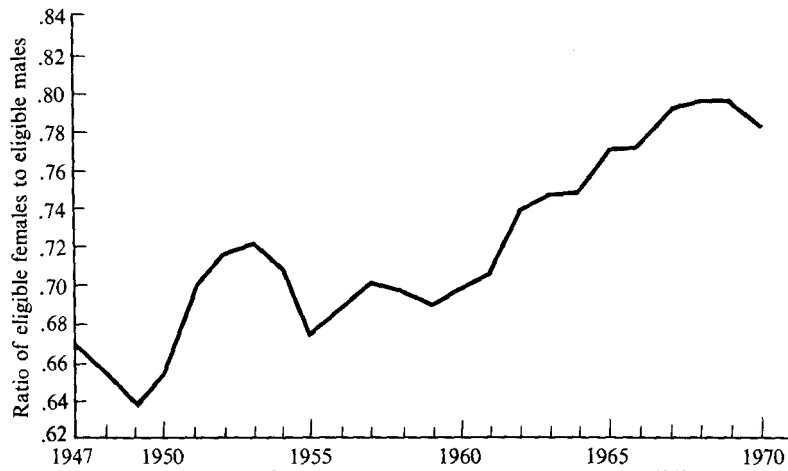
FIGURE 10.3. Ratio of Eligible Females (single, divorced, and widowed) Age 14 to 24, to Eligible Males (single, widowed, and divorced) Age 14 to 34, 1967–1970

forces: (1) female market potential, reflected in their rate of labor force participation; and (2) real family income. In the next section of the paper, these same forces will be analyzed within a more rigorous theoretical framework so as to provide a basis for investigating changes in marital status within the population.

Conceptual Framework

The efficiency with which an individual can produce in the home (for example, prepare a meal) or in the market (measured in terms of earnings) can be shown graphically. The shape and position of the production-possibility frontier (p–p) expresses the productive capacity of the individual, while the preference function (I) reflects personal tastes (see Figures 10.4 and 10.5). The individual operates optimally at the point where the two curves are tangent to one another. That is, we may say that the individual is in equilibrium at point X and allocates his or her time to producing M market goods and H home goods. The inclination at the point of tangency measures the individual's relative efficiency in the two areas of activity $\left(\dfrac{\text{efficiency in the market}}{\text{efficiency in the home}}\right)$. Generally, owing to biological and cultural cir-
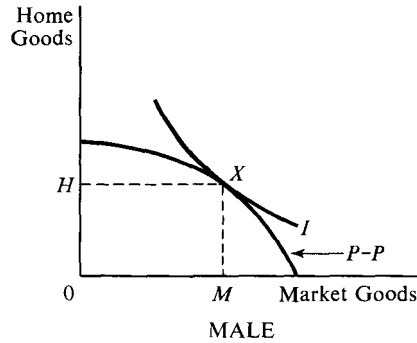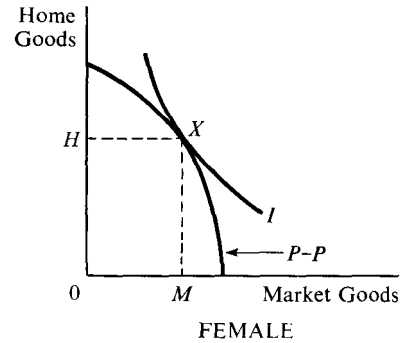
FIGURE 10.4. Male Production-
Possibility Frontier

FIGURE 10.5. Female Production-
Possibility Frontier

cumstances, the investment patterns of males and females in training and education have tended to differ, resulting in production-possibility frontiers differentiated by sex.

As marriage implies some degree of mutually beneficial specialization, the relative efficiencies of the partners entering the marital contract are an important consideration. If their equilibrium productivities were similar before marriage, indicating a duplication of training and ability, matrimony would not lead to greater allocative efficiency. However, if

$$\left(\frac{\text{his efficiency in the market}}{\text{his efficiency in the home}}\right) > \left(\frac{\text{her efficiency in the market}}{\text{her efficiency in the home}}\right),$$ and if

this inequality is the result of a greater market productivity (wage rate) and a smaller home productivity on the part of a male in comparison with his prospective mate, then marriage would provide a means of shifting time inputs so as to rearrange production and consumption to the advantage of both parties. The rewards to be expected from union, in terms of additional home and market goods produced, depend on the degree to which a couple's talents and resources differ. How effective the marriage has been in bringing about an optimal reallocation of time is measured by the extent to which the relative productivities equalize after marriage. That is, assuming diminishing marginal productivity, more time allocated to the market on the part of the male will lower his relative efficiency in the market. By the same token, the female's relative efficiency in the market will rise if she devotes more of her working hours to home production.

Similar tastes are an important consideration as well, since common backgrounds and experience are emphasized in the literature as important

criteria for marrying and staying married.[3] The preference functions (*I*) of two compatible individuals would tend to have the same shape, indicating a similar ordering of preferences. Thus, a marriage is viable to the extent that tastes coincide and productivities differ.[4]

If a wife earns a substantial proportion of the family income, complementarity between marriage partners tends to be minimal.[5] In such cases, the wife has less to lose financially from termination of the contract than if she were relatively more productive in the home. Similarly, a professionally capable single woman has less to gain materially from matrimony than if she were a debutante looking for a wealthy bachelor. Thus, it may be hypothesized that duplication of skills between the sexes is causally associated with becoming and/or remaining a "divorcée" or "spinster."

The effect of a change in market efficiency on male–female complementarity differs by sex. A rise in the market wage of a male, income held constant, implies a decrease for him in the price of market goods relative to the price of home-produced goods and leisure. Rationally, the male will increase time spent in the market and barter goods resulting from his market activities (that is, his earnings) in return for his desired level of home goods. Since from the cradle he has been led to expect that this is most easily accomplished through taking a wife, his natural predisposition is to marry, for, besides facilitating the identification of heirs, it avoids certain transaction costs. That is, a young man might simply live with his girl friend, in which case there is generally a cost imposed by society, or he might hire a servant, in which case an inconvenience cost is attached to the formal or informal contract stating that she is available for only a limited number of hours per week.[6] Thus, all other things being equal, a rise in the market efficiency of a male implies a greater incentive to specialize and find a wife who will produce effectively in the home.

The results of an increase in relative market productivity would tend to be quite different for females. The female is not preconditioned to seek a male who willingly would or effectively could substitute his time for hers in home activities. Furthermore, since she would, as a wife be under cultural pressure to discharge home-oriented duties, marriage would suggest the probability of a less-than-optimal allocation of her time. Thus, a rise in the female's relative market potential, tending to equalize male–female relative productivities, would, if anything, discourage matrimony. For

those females already married, an increase in market capacity would encourage a reallocation of time toward the market, implying greater economic independence and a declining interest in the role of "homemaker."

The effect of a change on the female's relative market efficiency was described holding real income constant. However, a rise in the wage rate of a female, assuming that she is working, usually means an increase in her real income as well. Thus, we have two economic effects in operation: the income effect, tending to increase the consumption of goods (like marriage) generally assumed to be positively associated with income; and a relative wage effect, which would tend to discourage matrimony. The net outcome of these two economic forces would determine female marital status, providing other factors affecting consumption and production were unchanged.

Obviously, however, other factors are not held constant. Individuals differ by age, education, race, religion, and other variables that influence marital status. In view of this, let us consider some of the more important of these.

Take, for instance, unemployment. Most men would find it difficult to assume or fulfill their role as "breadwinner" if they could not find and retain a job. Thus, it is not surprising that marital dissolution has been found to be more prevalent where the husband has experienced considerable unsteadiness of employment.[7]

Children provide a rationale not only for marrying[8] but for parental unity as well, in terms of both preferences and production. Representing an area of mutual concern, children and child-related activities would tend to figure prominently in the ordering of parental preferences. Furthermore, since good substitutes for a mother's care are not easily obtained, division of labor within the marriage becomes more of a necessity. Would marriages tend to dissolve more frequently if children were not present? Studies point in that direction,[9] but it is debatable whether children deter marital dissolution or whether the anticipation of disruption curtails procreation.

The age composition of the population is also relevant, since the prevalence of a particular marital status may result from a population being highly concentrated in a specific age category. For example, Table 10.3 indicates that in 1963 first marriages were more likely to occur among

TABLE 10.3 Percentage Distribution of
Brides and Grooms by Age According
to Previous Marital Status:
Marriage Registration Area, 1963

Previous Marital Status and Age	Bride	Groom
Single	Percentage distribution	
All ages	100.0	100.0
< 18 years	14.8	1.6
18–19	30.7	14.7
20–24	42.6	56.3
25–29	6.7	16.7
30–34	2.3	5.4
35–44	1.9	3.6
45 +	1.0	1.7
Previously married		
All ages	100.0	100.0
< 25 years	18.9	8.3
25–34	29.5	28.2
35–44	24.1	25.9
45–54	16.0	17.7
55–64	7.8	11.0
65 +	3.6	8.9

SOURCE: National Center for Health Statistics, *Marriage Statistics Analysis: United States, 1963*, Series 21, No. 16, Table K, p. 17.

persons 20 to 24 years old than in other age categories, while remarriages were more prevalent at slightly older ages. Marital instability, on the other hand, was most apparent at younger ages (see Table 10.4).

Besides the flow of marriages and divorces in a given year, the absolute number (or stock) of individuals who comprise a specific age and marital category should also be considered. Table 10.5 provides an estimate, but it can only be considered an imprecise approximation, since the data fails to exclude the flow of newlyweds and divorcées, a component which was shown above to differ in importance according to age category. Table 10.5 reveals that the proportion married is greatest in the age category 35 to 44, while the relative number divorced is greatest in the next age group, 45 to 54.

Black males may find particular difficulty in assuming their "masculine role," since it is probable that they encounter less favorable market

TABLE 10.4   Divorce Decrees per 1,000
Married Persons, by Age and Sex in 1962

	Divorce Rate	
Age at Divorce	*Men*	*Women*
Total	7.5	7.5
< 20 years	24.8	29.0
20–24	22.0	18.9
25–29	15.5	11.1
30–34	10.2	9.0
35–39	7.5	7.1
40–44	6.9	5.9
45–49	5.6	4.2
50 +	2.5	1.8

SOURCE: National Center for Health Statistics, *Divorce Statistics Analysis: United States, 1962,* Series 21, No. 7, Table 4.

TABLE 10.5   Percentage Distribution of the Population
Aged 14+ According to
Marital Status, 1962

Age and Sex	*Total*	*Single*	*Married*	*Widowed*	*Divorced*
Male	100.0	25.3	69.2	3.4	2.1
14–19 years	100.0	91.0	2.9	—	0.1
20–24	100.0	52.4	47.0	—	0.7
25–29	100.0	21.4	76.8	0.2	1.7
30–34	100.0	10.2	86.9	0.3	2.6
35–44	100.0	8.4	88.8	0.6	2.2
45–54	100.0	7.7	86.6	2.0	3.6
55–65	100.0	7.7	84.6	4.6	3.1
65–74	100.0	6.0	79.6	12.4	2.0
75+	100.0	7.0	59.4	32.4	1.2
Female	100.0	19.6	65.3	12.5	2.7
14–19 years	100.0	88.0	11.8	0.1	0.2
20–24	100.0	29.3	68.8	0.3	1.7
25–29	100.0	9.8	86.6	0.6	3.0
30–34	100.0	7.5	87.5	1.3	3.6
35–44	100.0	5.3	88.2	2.8	3.7
45–54	100.0	6.4	80.4	9.1	4.1
55–64	100.0	6.8	67.2	22.6	3.4
65–74	100.0	7.3	48.3	42.9	1.6
75+	100.0	7.0	20.8	71.6	0.7

SOURCE: U.S. Census, *Current Population Reports,* Series P-20, No. 122, cited in U.S. Census, *Statistical Abstract of the United States: 1963,* Table 32, p. 36.

opportunities relative to black females, especially at higher occupation levels.[10] Table 10.6 (column 4) reveals that the relative earnings capacity of black females rose with the education level of the husband, while the opposite was true for white wives. Furthermore, at all levels of education

TABLE 10.6 Family Income and Wife's Earnings
by Race, Home-Ownership, and Education of Husband,
1960

Race, Home-Ownership, Education of Husband (years) (1)	Family Income Minus Wife's Earnings (2)	Working Wife's Average Weekly Earnings (3)	Ratio of Wife's Earnings to column 2 [a] (4)
White homeowners			
0–4 years education	$5,242	$56.52	54
5–8	6,030	59.92	50
9–11	6,649	66.54	50
12	7,317	65.69	45
13–15	8,663	69.80	40
16+	11,410	75.07	33
White renters			
0–4	4,137	55.73	67
5–8	4,765	57.50	60
9–11	5,109	60.44	59
12	5,266	62.58	59
13–15	6,013	70.56	59
16+	7,064	76.80	54
Black homeowners			
0–4	3,538	39.97	56
5–8	4,092	44.48	54
9–11	4,465	53.89	60
12	4,727	55.03	58
13+	5,397	78.56	73
Black renters			
0–4	2,848	40.86	72
5–8	3,432	43.38	63
9–11	3,663	48.60	66
12	3,993	66.39	83
13+	4,085	82.59	101

SOURCE: See Glen Cain, *Married Women in the Labor Force* (Chicago, 1966), Table 30, Columns 5, 6, 7, p. 102.

NOTE: Based on summary statistics for U.S. Census, 1960, 1/1000 sample.

[a] Column 3 was first multiplied by 50 before division by column 2.

the earnings capacity of black wives relative to black family income was greater than that of their white counterparts. This suggests that, in the case of black couples, the market structure may tend to discourage the standard male–female division of labor, a situation conducive to the higher rate of marital instability among blacks of all occupation and education levels.[11]

Residential location can affect marital status. For example, a well-defined division of labor between husband and wife is essential to the joint productive effort characteristic of a farm. A comparison of ten different occupations reveals that, in 1960, farmers consistently had the lowest proportion of persons separated, divorced, or remarried.[12] On the other hand, Table 10.7 indicates that divorced and separated individuals

TABLE 10.7 Percentage of Marriages Disrupted
in the Population Aged 14+ by Residence, 1960

	Males	Females
Residence	Total marriage Disrupted (percent)	Total marriage Disrupted (percent)
Total	3.6	4.8
Urban	3.9	5.6
Rural	2.8	2.7

SOURCE: Computed from 1960 census data by Hugh Carter and Alexander Plateris, in "Trends in Divorce and Family Disruption," *Health, Education, and Welfare Indicators* (September 1963), p. xi.

abound in urban centers, where a joint economic enterprise involving a high degree of family cooperation is rare. However, since census statistics provide place of residence only at the time of census enumeration, it cannot be stated with certainty whether instability is actually more prevalent in cities or whether rural residents who divorce move to urban centers to avoid provincial censure. What can be said is that, owing to greater population density, the cost of searching for another mate tends to be less in urban centers.

Certain types of welfare payments, such as Aid to Families with Dependent Children, may actually foster family disruption, since such relief is more accessible if the husband has left the household. Indeed, the existence of the AFDC program has been shown to be a significant factor af-

fecting the desertion rate in the population.[13] One interpretation of this phenomenon suggests that welfare serves as a form of government-subsidized alimony, reducing the costs of marital disruption among low-income groups.[14]

Do marriage and divorce laws, which are under the separate jurisdiction of the states, create strong barriers to entrance into or exit from marriage? Marriage legislation generally seems to be characterized by poor enforcement, probably owing to the structure of county budgets, which are designed with the assumption that officials will receive a substantial part of their income from license fees.[15] Divorce legislation, on the other hand, has been more rigorously applied, so that migration to Nevada, for example, for the purpose of obtaining a "quickie," is quite common and reflects the short residence requirements and tractable grounds for divorce found in that state. Such a situation would tend to discriminate against low-income groups, making legal dissolution of marriage more accessible to wealthier couples. Increasing public pressure, however, has led to a modification of some of the strictest state laws, the 1966 liberalization of the New York State divorce law being a case in point. Thus, the inhibiting effect of divorce legislation appears to be diminishing in answer to public pressure for a lowering of the cost of a conjugal error.

Empirical Analysis

A supply function of married women may be most simply specified as follows:

$$M_F = \beta_1 Y + \beta_2 W_F + u, \tag{1}$$

where M_F provides an approximation of the number of married females, Y measures family income, W_F expresses the earnings capacity of wives, and u includes other relevant factors determining marital status.

The variables in equation (1) are expressed as long-run magnitudes, since we are seeking results useful in interpreting changes over time. Thus the sign of the income coefficient β_1 indicates in which direction (positive or negative) a change in long-run income would affect the relative number of married women, holding the earnings of married women constant. β_2 reflects the effect of the market productivity of married

females on the relative size of the married female population, keeping family income constant. Theoretically, we would expect β_1 to be positive and β_2 negative.

In view of the prevalence of the nuclear family in the United States, it may be argued that husband's income (W_M) is a reasonable approximation for total family income excluding the earnings of the wife. This simplification makes it possible to write equation (1) as follows:

$$M_F = \beta_1(W_M + W_F) + \beta_2 W_F + u$$
$$= \beta_1 W_M + \alpha W_F + u \tag{2}$$

Since $\alpha = \beta_1 + \beta_2$, equation (1) may be estimated statistically using the more readily available data required for equation (2).

It is certainly an oversimplification to formulate a female's productivity in terms of her market wage W_F, when what is relevant is marked efficiency in relation to home productivity $W_F/(MP_H)_F$. This variable, although more precise, presents a problem in estimation, since the opportunity cost of a woman's time spent in home production is not easily measured. However, if income is held constant (as it is in our equation), a change in the labor force participation of married females should approximate a change in relative productivity, since participation is a function of family income and relative efficiency, i.e., $LFP = f(Y, W_F/(MP_H)_F)$.

Equation (3) then provides the final version of our supply equation:

$$M_F = \beta_1 W_M + \gamma(LFP) + u. \tag{3}$$

The income coefficient in equation (3), when estimated using cross-sectional data, may be interpreted as the average effect of a change in husbands' income on the relative number of women who choose to be married, their market capacity being held constant. Thus a rise in husband's income, assuming marriage is positively associated with income, implies a greater tendency for adult females to be married, rather than single or divorced. In equation (3), γ is a relative price effect *uncompensated* by a change in income. A rise in the relative market potential of a wife would be conductive to her greater independence and would imply that the gains from marriage resulting from economic complementarity have declined. On the other hand, a rise in family income owing to an increase in the female's earning power would mean that the set-up and maintenance costs of marriage could be met with greater ease. The net ef-

fect resulting from these opposing forces—the price effect discouraging matrimony and the income effect favoring it—on the proportion of married females will be reflected in the sign of γ and is not predictable a priori.

By using aggregate cross-sectional data—that is, state statistics derived from the 1960 U.S. census of population—we are provided with averages which can be interpreted as approximations for long-run or permanent levels of the variables included in our model.[16] Since the average levels of these variables in a particular geographic area tend to be quite stable, census estimates of husbands' income or the labor force participation of wives at a point in time could be considered equivalent to trend-free averages over the life cycle. Statistics on a state basis provide the further advantage that differences in divorce legislation and religious affiliation can be taken into account.[17]

Although state averages do not reflect individual fluctuations in income, they do reflect deviations in income for the whole group attributable to sharp changes in economic conditions within the state. Both marriage and divorce rates have been found to respond positively and significantly to the business cycle.[18] It seems reasonable to suppose, therefore, that both rates would decline with increasing unemployment. That is, couples considering matrimony would be less able to confront the costs of marrying and setting up a household, while couples contemplating divorce would find even a relatively small attorney's fee and court costs a formidable barrier.

Regression analysis allows us to take into account area unemployment and provides a means of testing whether the relationship between marital status and the female's market capacity (as expressed in equation 3) is statistically significant. At the same time it permits us to include other factors in an effort to control for the relevant social and economic variables discussed above, which may influence marital status. The dependent variable used, the proportion of married females (14 years old and over), is essentially a stock concept, although it includes the inflow of new marriages in any given year. However the flow of new entrants, i.e., the marriage rate, cannot be employed as an additional variable, since those entering marriage are never classified by income, level of education, employment, race, etc.[19] Table 10.8 provides a summary of all theoretical variables and their empirical counterparts.

The weighted regression results,[20] presented in Table 10.9, indicate

TABLE 10.8   Variables Used in Regression Equation,
48 States, 1960

Theoretical Variable	*Empirical Counterpart*
Dependent Variable	
Number of married females	Proportion of married females (14 years old and over)
Independent Variables	
Relative market potential of married females, spouse present	Married females in the labor force, spouse present, divided by total married females, spouse present
Husband's income	Median income of married males, spouse present
Female education level	Median number of school years (females 25 years old and over)
Male education level	Median number of school years (males 25 years old and over)
Relative city size	Proportion of urban females (14 years old and over) living in central cities (population 50,000+)
Rural-farm population	Proportion of females (14 years old and over) living in rural-farm areas
Age composition	Proportion of the female population (14 years old and over) in the age group 20 to 34
Color composition	Proportion of the female population white
Female employment opportunities	Ratio of unemployed to employed females
Male employment opportunities	Ratio of unemployed to employed males
Welfare assistance	Proportion of families receiving AFDC payments
Aversion to divorce based on religious conviction	Proportion of the population Catholic
Divorce legislation	Dummy variable: strict legislation = 1, liberal legislation = 0
Family size	Proportion of families with no own children less than 18
Market demand	Net migration of females in the age group 15–24 during the period 1950–60. "Net migration" is defined as inmigration minus outmigration
Ratio of eligibles	Single, divorced, and widowed females (aged 15 to 44) divided by single, divorced, and widowed males (aged 15 to 44)

Table 10.8 (continued)

NOTES: Alaska and Hawaii were excluded in the interest of greater demographic homogeneity.

All variables are derived from the *U.S. Census of Population, 1960*, with the following exceptions: Proportion of families receiving AFDC payments—*Social Security Bulletin*, Vol. 24, No. 1 (January 1961); Percentage Catholic—*National Catholic Almanac, 1960*, pp. 443–45; Net migration of females aged 15–24—Gladys Bowles and James D. Tarver, *Net Migration of the Population, 1950–1960* (Washington, D.C., 1965); Divorce legislation—for a more detailed analysis of the determination of the dummy variable used, see Fredricka Pickford Santos, "Some Economic Determinants of Marital Status" (Ph.D. diss., Columbia University, 1972).

that the net effect of female market potential, as measured by the labor force participation of married females (spouse present), on the relative size of the married female population is negative and significant.[21] What is more, the effect of husband's income is positive and significant. Employment opportunities within a state appear to play a significant role in determining a female's decision as to her marital status; that is, the

TABLE 10.9 Weighted Regression Explaining the Proportion of Married Females, 48 States, 1960

Independent Variables [a]	Regression Coefficients	t Values
Labor force participation of married females, spouse present	−0.25	−3.61 *
Husband's income [b]	0.05	2.42 *
Ratio of eligible females to males	−0.15	−3.88 *
Female unemployment rate	0.75	2.71 *
Male unemployment rate	−0.43	−1.48
Female net migration (aged 15 to 24)	-10^{-6}	−2.24 *
Percentage Catholic	−0.06	−3.84 *
Proportion of female population (14+) aged 20 to 34	0.38	2.13 *
Adjusted R^2	0.78	

NOTE: Alaska and Hawaii were excluded in the interests of greater demographic homogeneity.

[a] All other variables listed in Table 10.8 (female education level, male education level, family size, divorce legislation, color composition, relative city size, rural-farm population, welfare assistance) were held constant. Although accompanied by the expected signs, they were not significant.

[b] Variable run in log form.

* Significant at the 5 percent level.

female unemployment rate has a positive sign and is significant. For males, the unemployment rate is accompanied by the expected negative sign but is not significant. The net migration variable is negative and significant, suggesting that if opportunities are abundant, so that inmigration into a state greatly exceeds outmigration, the proportion of the female population which is married tends to be relatively small. The variable approximating the age composition of the female population indicates that a larger concentration of females in the age group 20 to 34 results in a greater proportion married. The negative and significant sign associated with the variable "proportion Catholic" suggests that young Catholics spend more time in search of a mate and are more cautious about matrimony than non-Catholics, a reaction compatible with the well-known position of the Catholic Church on divorce. Finally, the ratio of eligible females to unattached males in a state appears to be a significant factor affecting the proportion of married women and suggests that female marital status is not always a matter of choice. Other variables included in the regression equation were accompanied by the theoretically expected sign but lacked statistical significance. According to the coefficient of determination (adjusted R^2), the variables in our equation explain 78 percent of the observed variation in the relative number of married females among states in 1960.

Conclusions

Findings, based on multiple regression analysis, suggest that the rise in female market potential is a significant factor explaining the decline in the proportion of married females which has occurred in the United States over time despite the rise in real family income over time. However, if female market capacity is a determining factor leading more women to select alternatives other than marriage, what are the social and economic implications of this phenomenon?

As was mentioned in the introduction, singles and divorcées, once social outcasts, have not only become acceptable; they have acquired an aura of glamour and adventure. They comprise a new and growing market which has enticed shrewd entrepreneurs to enter into such profitable ventures as singles' bars, apartments, country clubs, exotic vacations, etc.

Furthermore, owing to the large numbers of individuals involved in the process of disengaging themselves from unsatisfactory marriages, a strong pressure group has emerged capable of bringing about more liberal divorce legislation. Thus the cost accruing from a conjugal error is declining and ceases to be prohibitive in either social or economic terms.

One may question whether marriage represents an obsolete and dying institution in the United States. For the time being, it continues to be the statistical norm. But what the future holds depends very much on how the marital ground rules are modified in the light of increasingly similar male–female productive capacity. To the extent that the old institutional guidelines change, relaxing highly structured role concepts and emphasizing psychic rather than economic gains, marriage will certainly continue as a life-style, but one which is no longer so all-pervasive.

APPENDIX

An individual allocates his (or her) time optimally by maximizing his (or her) preference function, subject to his (or her) production-possibility frontier and a time constraint.[22] That is:

$$U = U(M, H, L);$$ (A1)

$$M = f_M(T_M),$$ (A2)

where f_M depends on the real wage rate.

$$H = f_H(T_H),$$ (A3)

where f_H depends on natural ability, formal and informal education, and capital inputs.

$$T_M + T_H = T_X;$$ (A4)

$$T_X + L = T_0,$$ (A5)

where L = leisure;

M = goods produced in the market (i.e., earnings);

H = goods produced in the home;

T_M = time spent working in the market;

T_H = time devoted to home production;

T_X = total time spent working; and

T_0 = total time available.

Given a limited amount of work time, the production possibility frontier of market and home goods may be described by the following function:

$$g(M, H; T_X) = 0.$$ (A6)

Maximize $U(M, H. L)$, subject to the following restrictions:

$$g(M, H; T_X) = 0;$$
$$T_X + L = T_O.$$

Thus,

$$U^* = U(M, H, L) - \lambda[g(M, H, T_O - L)];$$

$$\frac{\partial U^*}{\partial M} = \frac{\partial U}{\partial M} - \lambda \frac{\partial M}{\partial T_M} = 0;$$

$$\frac{\partial U^*}{\partial H} = \frac{\partial U}{\partial H} - \lambda \frac{\partial H}{\partial T_H} = 0;$$

$$\frac{\partial U^*}{\partial L} = \frac{\partial U}{\partial L} - \lambda \frac{\partial L}{\partial T_L} = 0.$$

Thus, the optimal allocation of time inputs for an individual occurs when:

$$\frac{\dfrac{\partial U}{\partial M}}{\dfrac{\partial M}{\partial T_M}} = \frac{\dfrac{\partial U}{\partial H}}{\dfrac{\partial H}{\partial T_H}} = \frac{\dfrac{\partial U}{\partial L}}{\dfrac{\partial L}{\partial T_L}}, \tag{A7}$$

or:

$$-\frac{\partial H}{\partial M} = \frac{\dfrac{\partial M}{\partial T_M}}{\dfrac{\partial H}{\partial T_H}} = \frac{\left(\dfrac{\partial M}{\partial I}\right)\left(\dfrac{\partial I}{\partial T_M}\right)}{\dfrac{\partial H}{\partial T_H}} = \frac{\dfrac{W}{\bar{p}}}{MP_H}, \tag{A8}$$

where $I = W \cdot T_M$, that is, earnings derived from time spent working in the
market;

$\dfrac{W}{\bar{p}} =$ Real wage, i.e., the market wage of the individual divided by
the average price of market goods; and

$MP_H =$ Marginal productivity in the production of home goods.

NOTES

[1] It would be both interesting and enlightening to observe marriage rates according to prime-age categories (e.g., 14 to 24 or 20 to 34). These are not available over time, however.

[2] "Eligible" is defined to include single, widowed, and divorced males.

[3] See Charles Ackerman, "Affiliations: Structural Determinants of Differential Divorce Rates," *American Journal of Sociology,* LXIX (July 1963): 12–20; Harvey J. Locke, *Predicting Adjustment in Marriage: A Comparison of a Divorced and a Happily Married Group* (New York, 1951).

[4] The individual is considered here as both a producer and a utility maximizer. A derivation of his or her equilibrium position is presented in the appendix.

[5] There exists a somewhat remote possibility that the husband is relatively more efficient in the home. This, however, is unlikely since the upbringing of the male continues to be geared toward stifling the possible development of talents related to home production.

[6] One might argue that several wives would provide additional rewards for the male and present no problems with respect to the identification of heirs. Gary Becker has pointed out, however, that in societies where the sex ratio is close to unity, and where men and women do not differ greatly in wealth and ability, and assuming diminishing returns to additional wives, monogamy is the most efficient marital form in terms of maximizing the community's total output. See Gary S. Becker, "A Theory of Marriage: Part I," *Journal of Political Economy,* LXXXI (July/August 1973): 820.

[7] See William J. Goode, *Women in Divorce* (Glencoe, Ill., 1956), p. 75.

[8] Gary Becker explains marriage in terms of the desire to raise one's own children. See his "A Theory of Marriage: Part I," p. 818.

[9] Paul H. Jacobson and Thomas P. Monahan made studies holding the duration of marriage constant, and showed some excess of divorce frequency among childless groups. See Paul H. Jacobson, "Differentials in Divorce by Duration of Marriage and Size of Family," *American Sociological Review,* V (April 1950): 235–44; Thomas P. Monahan, "Is Childlessness Related to Family Stability?" *American Sociological Review,* XX (August 1955): 446–56.

[10] This has been suggested by Glen Cain in his investigation of black and white married women in 1960. See Glen Cain, *Married Women in the Labor Force* (Chicago, 1966), pp. 102–5. However, it is possible that efforts in the past decade to create more favorable market conditions for blacks of both sexes have changed the relative earnings position of black males considerably.

[11] See Richard J. Udry, "Marital Instability by Race, Sex, Education, and Occupation Using 1960 Census Data," *American Journal of Sociology,* LXXII (September 1966): 205–9; Karen G. Hillman, "Marital Instability and Its Relation to Education, Income, and Occupation: An Analysis Based on Census Data," in Robert F. Winch, Robert McGinnis, and Hubert R. Barringer, eds., *Selected Studies in Marriage and the Family* (New York, 1962), pp. 602–8.

[12] See Hugh Carter and Paul C. Glick, *Marriage and Divorce: A Social and Economic Study* (Cambridge, Mass., 1970), Table 7.19, p. 209.

[13] See Marjorie H. Honig, "Work and Welfare: An Analysis of Consumer Choice" (Ph.D. diss., Columbia University, 1971).

[14] See Robert D. Reischauer, "The Impact of the Welfare System on Migration and Marital Stability" (Ph.D. diss., Columbia University, 1971).

[15] Hugh Carter provides evidence that local clerks even assist young applicants in circumventing the law in order to enable them to qualify for a marriage license; see H. Carter and P. Glick, *Marriage and Divorce* (Cambridge, 1970), pp. 362–63. See also Dale L. Womble, "Trends in Falsification of Age at Marriage in Ohio," *Journal of Marriage and the Family,* XXVIII (February 1966): 54–56.

[16] The term "permanent income" was conceived by Milton Friedman to express the normal income position of a family devoid of transitory variations. According to Friedman's theory, consumption varies with income only to the extent that income changes represent a change in permanent income. Friedman observed that permanent income results from such observable factors as age, level of education, occupation, etc. See Milton Friedman, *A Theory of the Consumption Function* (Princeton, N.J., 1957), pp. 215–16. For further discussions of the use of cross-sectional data to explain trends over time see Robert Eisner, "The Permanent Income Hypothesis: Comment," *American Economic Review,* XLVIII (December 1958): 972–80, and Jacob Mincer, "Labor Force Participation of Married Women: A Study of Labor Supply," in Universities-National Bureau Committee for Economic Research, *Aspects of Labor Economics* (Princeton, N.J., 1962), pp. 69–71.

[17] The National Catholic Almanac provides statistics as to number of Catholics on a state basis. Unfortunately, this statistic does not discriminate between practicing and nominal Catholics.

[18] For an empirical analysis of the cyclical response of marriage and divorce rates, see Morris Silver, "Births, Marriages, and Business Cycles in the United States," *Journal of Political Economy,* LXXIII (June 1965): 237–55, and Fredricka Pickford Santos, "Some Economic Determinants of Marital Status" (Ph.D. diss., Columbia University, 1972), pp. 154–57.

[19] Owing to the lack of appropriate independent variables, efforts on the part of the author to use the marriage rate as a dependent variable were in vain. See Santos, "Some Economic Determinants of Marital Status," pp. 49, 72–77.

[20] Since a large state contains a smaller amount of random variation than a small state, reliability varies according to state size. To take account of different reliability, weighted regressions were used. That is, each variable was multiplied by the square root of the female population (14 years old and over). Weighting the regression assured that the variance of the residual was the same for each observation, thus satisfying the homoscedasticity assumption.

[21] Our hypothesis is also confirmed using similar variables for 1950. See Santos, "Some Economic Determinants of Marital Status," pp. 57–58.

[22] Equations A1 through A7 are those developed by Ruben Gronau in his unpublished paper "The Allocation of Time between Work in the Market, Work at Home, and Leisure." See also Gary S. Becker, "A Theory of the Allocation of Time," *Economic Journal,* LXXV (September 1965): 493–517.