

Marriage and the Economy*
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Marriage is nearly universal, a testimony to society's ever present need to regulate sexual relations and to the importance of biological factors. A fundamental question that this book addresses is "Why do societies develop marital institutions that encourage commitment between spouses?" As much as marital institutions vary over time and across the globe, these laws, rules, and customs all have something in common: they encourage commitment between sexual partners. That commitment may take many different forms: from an exchange of vows to a law requiring co-residence as an essential aspect of married status.

In her presidential address to the Population Association of America in 1995, Linda Waite, a professor of sociology at the University of Chicago, emphasized how commitment in marriage can benefit earnings. Married workers may earn more because they are more productive.¹ *Marriage and the Economy* extends the work by Waite and others by exploring more in depth how marriage possibly influences labor supply and workers' productivity and by presenting analyses of other channels by which marriage may have an impact on the economy: savings, consumption, and government programs such as welfare programs and social security.

This book is an economics book because it deals with 'the economy,' the part of society that centers around exchanges of goods and services. The 'economy' is an aggregate and involves a macro-economic perspective. Until recently it was standard practice to focus on monetized transactions when calculating the value of an economy, and to overlook the value of the non-monetary household economy. Marriage influences the household economy at least as much as it affects the monetized economy. *Marriage and the Economy* adds to our understanding of how marriage influences both the monetized economy and the household economy. Marriage institutions are to the household economy what business institutions are to the monetized economy.

The economics of marriage includes analyses of how marriage influences the economy (a macro perspective) as well as economic analyses of marriage, divorce, and behavior within marriages (a micro perspective). Let us start with an overlook of the micro-economics of marriage.

Micro-Economic Theoretical Tools

Economic theories of marriage can accommodate a wide range of assumptions and institutional constraints, including a variety of assumptions regarding the roles of men and women, ideals about love, and biological constraints. To better understand how these various dimensions can be incorporated into an economic analysis of marriage, let us look at the basic theoretical constructs that economists use when analyzing marriage.

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Most economic analyses of marriage have been part of applied micro-economics, and they have relied on the same theoretical tools that economists use in all micro-economic applications of economics: cost/benefit analysis, game theory and market analysis.²

- The most basic economic theory of marriage is *cost/benefit analysis*.³ Costs and benefits can be compared whether one searches for lasting romantic love, or for a companion who will replace the maid. Men and women may all perform such analyses, even if the factors that they consider as costs and benefits may differ somewhat. Cost/benefit theories of marriage are rational choice theories. Such rational choice theories have become increasingly popular among sociologists.
- *Game theory* is a second theoretical tool that is commonly used by economists of marriage. Game theories apply whenever behavior is strategic. Whether its goal is holy matrimony or the satisfaction of biological needs, marriage involves strategic behavior and therefore game theory is applicable.⁴ If gender is the focus, game theories can be used to model gender wars or cooperative behavior between spouses.
- *Market analysis* applies whenever choices are available on a demand side or a supply side.⁵ The existence of any possible substitute opens the door to potential competition. If there can be competition, there is a market, even if the competitive spirit is totally eradicated, and the workings of a market for mates are not strikingly obvious. In fact, the process of competition for potential mates is often obviously noticeable. In the West, it can be observed at bars, church socials, proms, etc. In India it is more likely to take the form of a list of available grooms and grooms printed in the local newspaper. In Japan and Korea, it is the need to compete that drives parents to circulate numerous copies of the resume of their marriageable children.

Even if people approach marriage out of pure idealism they will be faced with some mating choices for themselves or their children, and economic analyses of marriage are applicable. One can be dreaming of romance or get elevated by ideas about holy matrimony and these ideals may make one totally oblivious of the hard realities involved in bread-winning and house-cleaning. As long as there is a choice between two potential recipients of romantic love, or at least two potential soul mates, a market analysis applies.

Reactions to the Micro-Economics of Marriage

Economists started paying more attention to the institution of marriage after Jacob Mincer and Gary Becker started the NHE, the New Home Economics, in the early 1960s when they were both professors of economics at Columbia University. The NHE brought the analysis of household production into formal economic analysis.⁶ In the 1970s, Becker pioneered the economics of marriage.⁷ It is in part for his work in this area that he received the Nobel prize in economics in 1992. Thirty years after the start of the economics of marriage, it remains the case that business and money institutions--not marriage and other family institutions--frame most of the ideas that economists write about.⁸

There are at least three reasons why the economics of marriage is unpopular relative to other applications of economics: (1) the economics of marriage have been mistakenly associated with increasingly unpopular positions regarding gender politics; (2) most

economic analyses of marriage focus on materialistic concerns in marriage, in contradistinction to the idealism characterizing most Westerners' attitudes towards marriage; and (3) mating and marriage is typically considered a topic for study by biologists and sociologists, not economists.

Gender Politics. The economics of marriage as developed by Becker and other NHE economists assumed that men and women behave according to traditional gender roles.⁹ Consider for instance, an economic analysis by Reuben Gronau who concluded that the increase in the divorce rate in the United States followed the entry of women into the labor force. The reasoning goes like this: women are supposed to be homemakers; their homemaking creates stable marriages; if they enter into the labor force, less is produced in marriage and divorce increases.¹⁰

The underlying assumption that homemaking is a woman's job has come under criticism by feminist economists e.g. in the U.S., Canada, and France.¹¹ The perception that this assumption is an integral part of an economic analysis of marriage has led some feminists to ignore the economics of marriage. In fact, it is a misconception to think that the economics of marriage depends on any particular assumptions regarding gender differences.

Materialism vs. Idealism. A second major source of resistance to the economics of marriage derives from the fact that most existing economic analyses of marriage have emphasized the materialistic dimensions of marriage, in contradistinction with the idealistic beliefs leading most Westerners to want to marry: romantic love and holy matrimony.

It is data limitations that lead economists to focus on the mundane and the materialistic, not the essence of our theories. Matters of love, happiness, and soulfulness are difficult to measure, and therefore empirical economic research on the economics of marriage has to place an emphasis on measurable and more materialistic dimensions of life, such as work and consumption. Throwing out economic analyses of marriage because of their emphasis on materialism is like throwing out the baby with the water. We then remain with naïve theories that do not prepare us for building strong marriages.

When placing emphasis on romantic love, Western societies promote simplistic theories of marriage such as those behind the tale of Cinderella and Prince Charming. These simplistic theories foster the illusion that when it comes to marital love, there is no need to compete. People develop ideas that they are forever irreplaceable, that their foot is as unique as Cinderella's and that only one shoe will fit. People who erect such illusionary barriers to competition from alternative potential mates are more likely to fall apart if their spouse breaks fidelity vows and to underinvest in the skills that help marriages work, such as communication skills, a generous character, or a willingness to grow and listen. Furthermore, people become careless when choosing a mate, losing track of the qualities that really make a marriage work. As a result, marriages in the U.S. and most other Western countries break up with unnecessary easiness, often harming a couple's children.¹²

The same danger lurks behind lofty theories encouraged by religions, such as theories about soulmates that are uniquely meant for each other and nobody else. Again, the danger with such theory is that it may discourage a person from investing in the skills that make marriages work and help identify an optimal match. In contrast to Western societies, Eastern societies encourage an economic approach to marriage, a major reason

why the divorce rate is much lower in the East than in the West. People are extremely careful in choosing a mate, and they also prepare themselves more systematically for the competitive search process. This often requires major parental involvement. Parents actively help their children find mates in Japan, Korea, or India. This does not mean marriages are loveless in these countries. Comparing middle class married couples in the U.S. and India, for instance, it is not at all clear that the Western emphasis on everlasting love actually accomplishes its goal and that longlasting marriages in the U.S. involve more love between spouses than longlasting marriages in India.

Segments of Western societies behave more like people in the Far East than average Westerners. This includes natives from the Far East living in the West. It also includes segmented religious groups such as Torah-observant Jews in the U.S. The latter often rely on matchmaking services and parental help in choosing a mate, indicating a more economic approach, in contradistinction with secularized Jews.¹³ Reliance on an economic approach may help explain why Torah-observant Jews have a lower divorce rate than their secularized counterparts in the U.S., despite the low costs of religious Jewish divorce based on mutual agreement. Serious preparations for marriage and systematic marital search may contribute to both marital stability and happiness in marriage.

What helps explain why the economics of marriage is such a small field is that most economic theories are written by Western economists who have personally bought into the simplistic theories of marriage that prevail in their native lands. This does not apply solely to economists: Western legal scholars specializing in marriage and divorce also seem to have problems with the economics of marriage, as is the case with those legal scholars who deplore ‘opportunistic’ behavior in marriage.¹⁴ They consider it a problem if people respond to economic incentives in the case of household production, but not in the case of production occurring outside the home. Those who criticize opportunistic behavior in marriage ignore some powerful universal forces: people’s deep-seated desire to better their lives—the motivation of self-interest—and the forces of competition, another motor driving people to better themselves. Excessive idealization of feelings of marital love is an impediment to the rationalization of divorce laws (see Chapter 9).

Biology and Sociology vs. Economics. A third possible objection to economic analyses of marriage could come from those who believe that biology is destiny. Economists have in fact incorporated many biological assumptions in their theories.¹⁵ Traditionally, sociologists have been doing most of the research on marriage and divorce. Most researchers who publish research on marriage in first rate journals such as the *Journal of Marriage and the Family* and *Demography* are trained in sociology. Since the 1990s, Becker’s theory of marriage has become influential among sociologists of the family. Sociologists studying marriage do not bring an economic approach to their analyses to the same degree that economists do. Exceptions include Waite and Gallagher (2000) and sociological studies of marriage markets.¹⁶

Macro-Economic Analysis of Marriage

Practically every idea in this book contains a macro-economic side to it. In economics, one way to establish a connection between micro and macro is by way of market analysis. A market is basically an abstract concept that brings together many

small (micro) decision-makers by aggregating them into market demands and supplies, and recognizing that demand and supply interact.

Macroeconomists typically consider three aggregate markets: markets for products, labor, and capital. They occasionally recognize that a household economy exists side-by-side with the monetized economy, as is evident from Chapter 13.¹⁷ However, macroeconomic theory rarely includes the marriage markets that influence decisions about household production and therefore both the household economy and the monetized economy.

The household economy is linked to the monetized economy in at least two ways: (1) labor supply is jointly determined with the supply of work in household production; and (2) commercial consumption is jointly determined with the consumption of goods and services produced in the home.

Whether they are married or consider marriage, individuals making decisions regarding married household production will be influenced by conditions in the markets where those individuals who supply or demand household production are interacting. These include marriage markets. Marriage markets affect individual decisions about marriage, divorce, and choice of mate, and the allocation of time and income to household production. Consequently, marriage markets also affect the functioning of the household economy and the economy as a whole.

Time is involved in all household production. If the household is a single person, this time is considered leisure. But if the household is a married household, time in household production may take the form of labor to the extent that it is not the individual's preferred activity, and leisure can be defined more strictly as time in household production that only benefits the producer. If time in marital household production is work rather than leisure, I call such work Work-In-Marriage (WIM). Next, I model markets for WIM along the lines used to model other labor markets.¹⁸ Like in the case of other markets, to understand a market for WIM we need to start by considering individual willingness to buy (demand) or sell (supply). When a match actually occurs between a supplier of labor and a person on the demand side for labor, a contract is likely to be entered, as is the case with most labor markets.

Labor contracts help regulate labor relations in firms and specify wages and work benefits.¹⁹ Similarly, marriage contracts help regulate WIM and specify some of the terms of exchange for WIM, but they typically do not specify monetized wages. What I call the 'quasi-wage' for WIM is 'paid' during marriage and often includes benefits of a pecuniary nature, such as access to goods purchased with a spouse's income or access to a spouse's retirement benefits.²⁰ The quasi-wage may also include non-pecuniary benefits, such as non-reciprocated displays of affection. Other possible components of the total compensation for WIM include payments made prior to marriage (such as dowry or bridewealth) or after the marriage ends (such as alimony payments, transfers of assets after divorce, or cashing of a life insurance policy after the death of a provider).

A macro analysis that integrates WIM markets starts with individual demands and supplies of WIM.

Individual Supply

The supply of WIM is conceptually very similar to the supply of paid labor. In both cases individuals make a decision about working for others: in the case of paid labor the beneficiary of this labor is a firm, whereas in the case of WIM the beneficiary is a spouse

who enjoys the fruits of household production and is often willing to ‘pay’ for these benefits (not necessarily in pecuniary form). That the beneficiary includes the spouse does not need to prevent the WIM worker from enjoying the fruits of his or her own labor.²¹ In both the cases of labor and WIM, the opportunity cost of labor is the value of the most valuable foregone opportunity.²² Individual supplies of WIM are a function of an individual choice between three uses of time: work, leisure, and household production.²³

Personnel economics teaches us that there are three kinds of incentives that possibly motivate workers to supply their labor: the threat of punishment, a sense of duty, or other rewards such as pay. The same holds in the case of WIM. The dutiful housewife accepting the responsibility for house cleaning chores is not conceptually very different from the dutiful citizen accepting obligatory conscription to the army. Rewards include mutual benefits and compensation. For instance, an agreement whereby a husband washes dishes if his wife cooks is not very different from a barter deal between an accountant and a plumber.

Traditionally, marriage involved a female homemaker exchanging work in household production for access to goods purchased with a male breadwinner’s paid labor. Since the massive entry of women into the labor force, one increasingly observes intra-marriage exchanges between a male homemaker and a female breadwinner, and between spouses who both are homemakers and breadwinners. More and more men and women moonlight in the sense that they are active in both paid labor and WIM. WIM is thus supplied by both men and women, and it can be supplied part-time or full-time.

Individual Demand

Individual demand for WIM is similar to the demand for labor by firms and government in the sense that it is a derived demand based on the productivity of labor and the value of the products of that labor. The gains from marriage to the employer of WIM, i.e. the in-marriage provider, limit the amount that is likely to be transferred in return for work in this kind of household production. In the case of paid labor, it is easier to place a dollar value on labor than in the case of WIM. As is suggested by Chapters 9 and 13 in this book, it may not be easy, but there are some ways to estimate the value of labor in household production, including marital household production. It is an additional empirical challenge to estimate which portion of an individual’s time in household production is actually WIM as opposed to leisure. Luckily, the usefulness of a macro analysis of WIM markets does not depend on our ability to measure actual amounts of WIM, but on our ability to predict how factors influencing WIM markets influence the economy.

Productivity is a function of productive skills, what economists call human capital. Factors influencing WIM productivity will therefore influence the demand for WIM. Some of these productive skills are spouse-specific, i.e. they only benefit one spouse and have zero value in case of divorce and remarriage. Other skills are forms of general marital human capital.²⁴ One expects certain forms of education to contribute to general human capital embodied in an individual’s productivity in WIM.

Competitive markets for marriage establish a premium for the skills (human capital) that individuals can apply to marital household production and that are of a general nature, i.e. these skills will be valued by any substitutable partner who potentially participates in the same marriage market. In the case of labor demand, we know that

education adds to general capital and therefore leads to higher wages. How do we know if education raises quasi-wages for WIM? If we view job stability as a benefit the worker can get in return for his or her work effort, a provider's commitment to marriage stability can be viewed as a form of benefit available to WIM workers. If we recognize that women tend to be homemakers more than men, and that homemakers appreciate promises of stability more than providers, the finding that in the U.S. educated women are less likely to divorce, reported in Chapter 3, can be interpreted as an indication that education raises a woman's quasi-wage for WIM, and therefore suggests that educated women are more productive in household production than their less educated counterparts. The same conclusion can be derived for Guatemala women. In Guatemala it was found that years of schooling increased an unskilled woman's chances of being in a formal union (relative to an informal union). In the context of poor villages in Guatemala, where job opportunities for women are very limited, women prefer a formal union to an informal one, and a formal union can be viewed as an aspect of the compensation for WIM. Years of schooling thus seem to raise the quasi-wage for WIM in Guatemala as well as in the U.S.²⁵ In the context of a polygamous society, a woman's higher quasi-wage may take the form of exclusive access to a husband. A study of polygamy in Nigeria indicated that educated women are less likely to live in a polygamous household, again an indication that education tends to raise women's productivity in WIM (Work-In-Marriage).²⁶ One expects both men and women's productivity in WIM to benefit from education, although it is possible that not all levels of schooling equally contribute to productivity in WIM.

Other factors that are likely to affect productivity in WIM and therefore demand for WIM include the amount of capital used in household production, and determinants of the value of the product. For instance, if WIM is work in parenting, the value of the children born to the marriage or of the quality of these children that is obtained with WIM, will influence a provider's willingness to pay for a homemaker's WIM.

The Market for WIM and Macroeconomic Links

Supply and demand by individual men and women willing to supply or demand goods produced in marriage are at the basis of aggregate demands and supplies of WIM and will establish equilibrium conditions for WIM workers—including a quasi-wage y —and an aggregate level of employment in WIM. This marriage market conceived as a market for WIM is shown in Figure 1.1. Employment in WIM and quasi-wages for labor in married household production are determined simultaneously with other aspects of production, including quantity and price in markets for labor, capital, and goods and services.²⁷

As in most models of the economy, it is assumed that the market process operates and that there is competition.²⁸ Competition in this case is between various potential homemakers interested in marriage to the same provider, and between various potential providers interested in marriage to the same homemaker. A constraint not found in regular labor markets is that monogamy is often imposed, implying that in societies with specialized homemakers, there will be matches between one homemaker and one provider. Whenever aggregate supply or demand shifts in a market for WIM, the quasi-wage for WIM is likely to change too.

Marriage markets defined as markets for WIM can affect the economy via effects on the supply of paid labor or via effects on the demand for goods and services, including

savings. Better market conditions for WIM workers are expected to attract more people into marital household production, i.e. married homemaking. First, this implies that these people will engage less in paid labor in the labor market and that the aggregate supply of paid labor will shift to the left, thereby causing a decrease in the aggregate supply in the economy. Second, if more goods and services are produced within marriage, the aggregate demand for goods and services (which includes demand for substitutes for home produced goods) will decrease. A macro-economic model taking account of marriage markets can lead to a number of useful insights.

Even though we do not have statistics on amounts of WIM or quasi-wages for WIM, we can observe how factors that are expected to affect WIM labor markets affect the monetized economy. The following are a few examples of how factors related to WIM markets can affect the economy. They are illustrated with the help of Figure 1.1 and the monetized economy depicted in Figure 1.2, where Y is the aggregate production of goods and services and P the average price level.

Example 1: change in taste for parental childcare. Consider an autonomous increase in a society's standards for parental supervision. This will cause an increase in demand for parental supervision produced by a spouse, one form of WIM, thereby causing a shift in D in Figure 1.1. In turn, this will cause more employment in the household economy and an increase in the quasi-wage y . What that amounts to is that spouses who want to benefit from increased household production without putting the effort now need to pay more to obtain any level of household production. This result follows from the fact that the supply of WIM is upward-sloping.²⁹

Aggregate supply in the monetized economy is a function of the supply of labor. In turn, workers choosing between work in WIM and labor force participation react to an increase in y by reducing their paid labor supply. As a result, as shown in Figure 1.2, aggregate supply in the economy contracts. At the same time, the people who plan to use a spouse's household production work need to pay more for that work (higher y) and will have to work more in the monetized economy to afford to pay the higher y . Let us say that the net effect on the aggregate supply of paid labor and aggregate supply in Figure 1.2 is a decrease in supply, i.e. a shift to the left. Furthermore, increased taste for parental childcare in marriage causes a decrease in the demand for market substitutes for parental childcare, thus causing a decrease in demand for consumption and consequently a decrease in aggregate demand in Figure 1.2. It thus follows that the macro economy will contract as a result of higher standards for parental involvement in childcare. The net effect on prices in the monetized economy is ambiguous, as both demand and supply shift to the left in Figure 1.2.

What did a marriage market analysis accomplish that could not have been derived without such analysis? Not the conclusion that more taste for parental supervision causes a shrinking of the monetized economy, not the implication that more parents stay home with their kids: these are straightforward implications. What this analysis brings out are consequences related to the higher value of WIM, including lower labor supply (part-time or full-time) by WIM workers, redistribution of consumption towards items benefiting WIM workers rather than providers, and related changes in relative prices and incomes.

Example 2. Change in Sex Ratio. The sex ratio is the ratio of men to women interacting in the same marriage markets. In an economy with traditional roles where

only women are homemakers and men providers in marriage, an increase in the sex ratio (with no change in population size) causes an increase in demand for women's WIM and a decrease in the supply of women's WIM.³⁰ This also leads to a higher quasi-wage y for women interested in homemaking and therefore to a reduction in women's paid labor supply.³¹ At the same time, an increase in sex ratio causes providers to have to work harder to earn the income enabling them to pay the higher y , and this may lead to increased labor supply by providers (men in this traditional society).³² If the net effect is a decrease in aggregate hours of work in the monetized economy, the aggregate supply in Figure 1.2 will shift to the left. Furthermore, the increase in sex ratio causes a redistribution of income from men to women and this may also influence aggregate consumption.

If the net result is a decrease in aggregate supply, it follows that if two economies are the same (e.g. in terms of the same traditional roles in household production), but the economies differ in sex ratio, the economy with the higher sex ratio will have a smaller monetized sector. Household production will not necessarily be different. Female homemakers will receive a larger share of the pie relative to male providers. These implications of sex ratio effects on the economy are novel and only follow from the integration of marriage markets into macro-economic analysis.

Example 3. Imposition of Monogamy. Some societies prohibit polygamy whereas others do not. Comparing two traditional societies where women are homemakers and men are not, if polygamy is prohibited this will reduce the demand for women's WIM. Therefore the introduction of monogamy laws will reduce the quasi-wage for women's WIM.³³ This explains why in polygamous countries it is more common that men pay bridewealth to women's guardians than is the case in monogamous countries.³⁴ This does not mean that women are better off under polygamy, for the higher cost of women's WIM may lead men in polygamous societies to impose stricter limits on women's freedom.^{35, 36} In a society with traditional gender roles, the introduction of monogamy cuts the total employment of women in WIM and therefore pushes some women into the paid labor force. This will cause higher aggregate product and lower prices.

This third example of the usefulness of a marriage market analysis is also novel. In the past, macro-economics has not paid any attention to marital institutions that affect marriage markets, such as polygamy or divorce laws.

Towards an Institutional Economics of Marriage

Economists have become increasingly aware of the calculus involved in collective behavior, much of their research categorized as 'public choice economics'. As recognized by the New Institutional Economics (e.g Douglas North 1981), institutions--including political and legal institutions--are changed by people with interests in these institutions. Societal norms regarding (gendered) marital roles at home and at work evolve from individual decisions regarding the use of time and income in the household and monetized economies. More and more people opt out of the traditional marriages that often forced women into supplying WIM. Accordingly, the marriage institutions that framed such traditional marriages are being replaced by new marriage institutions. Eventually, some of these changes may take the form of new laws about divorce or age at marriage. Religious institutions may also change, including customs and religious regulations regarding divorce. Economic analysis of collective behavior can help us explain changes in marital roles and in the importance of marriage versus cohabitation.³⁷

Economic analysis can also help individuals navigate within existing institutions and can help intellectuals in designing institutions that better serve the interests of society.

How This Book is Organized

This book is organized according to four types of economic analyses of marriage: the economics of marriage formation and divorce, effects of marriage on spending, effects of marriage on work, and macro-level analyses.

The Economics of Marital Formation and Divorce

In Chapter 2, Michael Brien and Michelle Sheran describe some recent historical trends on marriage and divorce in the U.S. They then survey economic theories of marriage other than the WIM theory presented above. They also review some empirical models used primarily by economists to explain the decision to marry, and they examine how the decision to marry interacts with related decisions (e.g. childbearing, labor supply).

In Chapter 3, Evelyn Lehrer notes that both premarital cohabitation and early entry into first marriage raise the odds of marital breakup, which poses a dilemma as young men and women who delay their first marriage tend to enter informal unions. Lehrer also compares the stability of remarriages to that of first unions, and finds that some variables influence the probability of divorce very differently depending on whether the union is a first or a higher order marriage. She also discusses the importance for marital stability of certain factors that are specifically associated with remarriage, namely, the presence of stepchildren and non-transferable claims on assets accumulated during a previous union.

Another interesting conclusion of Lehrer is that, consistent with Becker et al.'s (1977) theory, prophecies of divorce tend to be self-fulfilling. Women who anticipate a high probability of divorce orient their efforts to labor force activities, thereby increasing the risk of an eventual breakup. Similarly, couples who have reasons to believe their marriage is unstable (such as inter-faith couples) limit their investments in spouse-specific human capital, a behavior that raises the probability of a subsequent dissolution.

Three paths through which government policies influence marital choices are examined by Leslie Whittington and James Alm in Chapter 4: cash transfers to the poor, income taxes, and divorce laws. It turns out that in the U.S. many public policies are some distance from a neutral treatment of marriage. This is mostly unintentional, as lawmakers clearly did not mean to discourage marriage when they enacted policies that increased taxes on married couples or that rewarded welfare mothers for the absence of a spouse.

Marriage and Spending

Marriage institutions can affect the economy because so many decisions regarding consumption and savings are made in marriages. This section of the book covers how people spend their income, how they accumulate wealth, and deals with one particular kind of government spending. Chapter 5 by Frances Woolley examines how marriage affects personal finances, her focus being a particular question: who in a marriage controls the money? The chapter also contains a useful survey of recent developments in the study of intra-household resource allocation. Using a new Canadian survey of families with children Woolley does not find a systematic pro-male or pro-female bias in household finances. However she does find that, as predicted by theory, partners with

greater incomes have greater control over money, younger spouses do better, and there is less income pooling when one partner, especially the man, has been married before.

Chapter 6, by Joseph Lupton and James Smith, explores the relationship between marital status and asset accumulation. The authors report large positive marital differentials in assets and savings. Married couples apparently save significantly more than other households, a fact that is not solely related to their higher incomes nor to the simple aggregation of two individuals' wealth. As a result, married couples have significantly more household wealth than all other household types. If marriage is related to household savings, the sharp decline in the fraction of American households who are married may be part of the reason for the secular fall in U.S. private savings rates.

If children are an important reason why people marry and stay married, it follows that divorce will have important consequences for household spending. In Chapter 7, Andrea Beller and John Graham write about the economic determinants and consequences of child support payments. This includes an analysis of child support payments as an income source over time, the underlying economic behavior of custodial and noncustodial parents that determines whether and how much child support is paid, and the economic consequences of receiving child support for the parents and children. Beller and Graham find that marriage dramatically increases the chances that a child support payment will be obtained in case of separation. This is one of the gains from marriage from the perspective of a prospective custodial parent. It is puzzling that even though only 17 percent of never-married mothers of one year olds received any child support, large numbers of never-married mothers are having children in the United States. Even though the proportion of out-of-wedlock births has recently decreased, it remains high by international standards.³⁸

At least one finding reported by Beller and Graham suggests that marriage market conditions influence the likelihood of receiving child support: custodial mothers who receive child support have higher incomes than mothers who do not have an award.³⁹ With respect to consequences of child support, Beller and Graham report that child support benefits children, especially their educational attainment, above and beyond its role as income.

Modern states invest in their children in many ways. Many government programs transfer funds directly to families with children. In recent decades, such cash welfare programs have primarily benefitted unmarried mothers. In Chapter 8, John Fitzgerald shows how in the U.S. women with better marriage prospects have spent less time on welfare, thereby providing evidence of a macro-level link between marriage markets and the macro economy. Marriage prospects are measured in terms of ratios of marriageable men and women (sex ratios). To the extent that it is negatively related to marriage prospects and likelihood of marriage, and that much household production occurs in marriage, government spending on welfare programs for single parents may discourage consumption of non-commercial home-produced goods. It is possible, however, that single parents spend more time in household production than some married parents, at least in Australia (see Chapter 13).

Marriage and Labor Markets

This part of the book examines effects of marriage on time uses: work and leisure, work being either WIM or work devoted to the production of market goods and services. Chapter 9 deals with household production, while Chapters 10 through 12 deal with paid

work. In Chapter 9, Joni Hersch examines labor market and legal issues associated with time spent on household production. Married women's willingness to incur an opportunity cost when performing household production is one of the indications that housework has real economic value.

Since economic loss in the event of disability or wrongful death includes the value of lost home services, valuing household production time is an essential component of personal injury litigation. Similarly, in many divorce cases, the main claim of wives to the assets accumulated during marriage is their contribution to household production. To demonstrate the salient legal issues involved in the impact of household production on divorce, Hersch discusses the *Wendt v. Wendt* divorce case, in which Lorna Wendt claimed that her role as a corporate wife entitled her to a larger share of the marital assets than conventionally awarded.

Three chapters--Chapters 10 to 12--deal with the link between household production, mostly by married women, and labor markets. This findings carry both policy implications and implications for business strategies regarding workers' recruitment. In Chapter 10, Shoshana Neuman and I present some recent facts on marriage and the labor force participation of men and women in the United States. We report on marital differentials in the labor force participation of men and women of childbearing age. Marital differentials tend to be negative for women, i.e. married women participate less in the paid labor force than their unmarried counterparts, whereas the opposite is true for men. Marital differentials are larger among those employed full time year round than among workers with less commitment to the labor force. Reinforcing the conclusions of Chapter 8 on exit and entry from and into welfare reciprocity, we also find that sex ratios affect women's labor supply: better marriage prospects discourage women's labor supply.

Chapter 10 also reports some recent findings on marriage and wages. Marital differentials in men's wages tend to be positive, and research indicates that at least some of those differentials result from the effects of marriage on earnings. Most research does not find marital differentials in women's wages.

Chapter 11 by Rachel Connelly and Jean Kimmel discusses marriage, labor supply, and childcare. Based on their analysis of the Survey of Income and Program Participation (SIPP) Connelly and Kimmel report important marital differentials in the propensity to use child care by relatives, the probability of working part-time, the amount paid for child care, and the sensitivity of employment to changes in the cost of child care.

In Chapter 12 Elizabeth Field-Hendrey and Linda Edwards present an economic analysis of marriage and home-based work. They analyze a subsample of the 1990 Census of Population of the United States and find that relative to unmarried women, married women are more likely to choose home-based paid work. The greater home responsibilities that married women often take upon themselves, creating more scope for combining the needs of the home and family with home-based work, may explain some of this marital differential, Field-Hendrey and Edwards also find that married women tend to have personal characteristics that are associated with high costs of working--small children, living in a rural area, living on a farm, and that these characteristics also correlate with the probability that they choose to work at home. Marriage does not raise the probability of home-based work for black women, possibly because black women face a less advantageous marriage market than white women. As a result, they have less

of an incentive to engage in married home production and to find home-based paid work compatible with such production.

Marriage and the Macro Economy

In Chapter 13, Duncan Ironmonger and Faye Soupourmas present national accounts of household production for Australia. They report that in Australia in the mid-1990s the un-monetized household economy produced about 20 per cent more valuable economic output than the monetized market economy, and that the imputed income resulting from household production was 67 per cent more than household disposable income. They show that married households contained 74 per cent of the adult population and produced 75 per cent of GHP (Gross Household Product). A very large contribution to GHP from single parent households explained the high proportion of GHP produced by unmarried households. Chapter 13 also discusses the comparative contributions of women and men at various stages of life – with and without children, younger and older, and married and unmarried. This chapter also contains an account of hours of paid work and work in household production for Australia in the mid-1990s. GHP is comparatively labor intensive relative to market production.

Given that in most countries traditional national accounting practices only include paid labor and ignore work devoted to household production, it follows that a switch from household labor to paid labor will be associated with an increase in national production. Had Western countries routinely taken account of the contribution of household production to their national product, less economic growth would have been observed as a result of the dramatic increase in the labor force participation of married women observed in recent decades.

Parental investments in children are an important reason why people save. Children are also a major motivator of people's household production and a major reason why people marry.⁴⁰ In Chapter 14, Shirley Burggraf explores some implications of parental investments for macroeconomic theory and policy. What if macroeconomic modelers focused as much on family investment as on business investment? This chapter presents an argument for taking the investment role of parental partnership very seriously and for economic policies that support marriage commensurately with its contribution to economic performance. The financial dimensions of parental investment are outlined in a way that highlights the family's role as a major institution regulating investments. The chapter highlights the enormous gap between macroeconomic consequences of parental investment vs. private economic signals to parents, a disconnection that helps account for the limited significance of family institutions in macroeconomics. The chapter discusses the role of marriage in facilitating parental investment and sketches some thoughts about modeling marital partnership into macroeconomic models.

Practical Implications

This book is unique in its emphasis on practical implications from economic analyses of marriage. Readers will find implications regarding taxes, savings, social security, employment, poverty, national accounting, and divorce laws. Guidelines for national accounting implications for business are also included.

Implications for Policy

Taxes. Chapter 4 shows how in the U.S. income taxation is not neutral with respect to marriage. Instead, they often create penalties or subsidies for marriage. Other chapters in

this book that contain implications for tax policy include Chapters 9, 13, and 14 on household production. Treated implicitly in Chapter 13 is the important question of whether we want to keep subsidizing household production by only taxing production in the monetized economy. From the chapters on labor supply we can also infer insights on the effect of tax laws that differentially target various forms of employment, such as taxes differentiating between full time and part time work (these forms of work are contrasted in Chapter 10), and between home-based and on-site work (forms of work covered in Chapter 12). Inferences on the advantages and disadvantages of tax deductions for at-home childcare can be derived from Chapter 11, a chapter that can also help policymakers decide whether child care subsidies are desirable, and if so, helps them decide the optimal form for such subsidies.

Government Programs. Many parts of this book are relevant to policy makers interested in alleviating poverty. The following are a few examples. The U.S. government has spent considerable effort to save welfare funds by getting non-custodial fathers to pay child support. Chapter 7 can help in assessing the effectiveness of this effort, designing new ways to encourage noncustodial parents to meet their support obligations, and establishing guidelines for child support payments that more closely approximate the true costs of raising a child.

Chapter 8 can help us conceive of ways to reduce welfare programs by encouraging marriage. It mentions two policy implications. First, it follows that one does not need to resort to purely cultural explanations to explain Black/White differences in welfare use: African American women face lower potential spouse availability and this helps explain why African American women tend to stay on welfare longer than white women. Second, since higher rates of low-income male employment improve the marriageable pool for low income women, policies that improve men's labor market prospects have the indirect effect of reducing welfare use by single and married mothers. As for Chapter 4, it reminds us that welfare policies involve not only direct fiscal costs but also indirect costs due to their effects on household production and marriage.

Savings and Investments. A strong economy needs investments. Personal savings are a major source of financing for such investments. Chapter 6 reports a generally overlooked positive effect of marriage on savings. If Lupton and Smith, the authors of Chapter 6, are right, it may be desirable to institute pro-marriage policies in order to encourage savings. A related policy recommendation is found in Chapter 14: it may be wise for a nation to promote marriage to the extent that relative to single parents, married couples invest more in their children and that such investments benefit the nation's human capital.

National Accounting. As stated in Ironmonger (1989), "Households work. Yet the work that they do and the very large volume of economic production that results from this work are consistently ignored in national statistics. Households employ more people for more hours in useful productive work than do business and government. However, the most commonly used national measures of employment and work exclude unpaid employment and work in households, not because it is without value, but merely because it is not paid." Chapter 13 presents plenty of ammunition to those who want to include household production in official measures of Gross National Product (GNP). That chapter presents estimates of Gross Household Product (GHP). It is estimated that in Australia in the mid-1990s, married households produced 75% of GHP. It is logical to

assume that Australia is not so different from other countries, and that much household production occurs in marriages in most of the world.⁴¹

Divorce and Marriage Laws. There is much concern with the high levels of divorce currently observed in the U.S. and many other countries. This concern is one of the factors explaining a growing interest in the study of divorce laws, principally by legal scholars. Chapters 3 and 4 report on some of the effects of divorce laws on divorce rates. Chapter 3 presents an impressive list of factors that influence divorce rates based on micro-level studies. Most of these studies do not explore the effects of divorce laws. In contrast, the macro level studies reported in Chapter 4 take account of variations in divorce laws but consider very few micro-level factors that may affect aggregate numbers and need to be controlled when assessing the impact of divorce laws. The comparison of divorce laws is mostly about the effect of passage to no-fault divorce in the U.S. Economic analysis can be applied to comparisons of other aspects of divorce laws, as well as to comparisons between countries.⁴²

Divorce laws need to consider possible implications for household production as argued in Chapter 9. Chapter 7 that deals with child support is also relevant to this issue.

The U.S. legal system currently regulates transactions in marriage very differently from the way it regulates other transactions with an economic content (as pointed out e.g. by Leonore Weitzman 1981, and Grossbard-Shechtman and Lemennicier 1999). One of the reasons why marital institutions are treated so differently from business institutions is that U.S. law assumes that production in marriage is motivated primarily by emotions rather than by economic forces. In contrast, this book emphasizes similarities between firms and marriages in the spirit of the New Home Economics. This leads one to question our current divorce laws beyond the specific issues raised in this book's individual chapters. It may be wise to approach the institutions regulating marriage and divorce in ways that are more similar to how laws regulate the business world.

Implications for Firms

Firms depend on what households decide with respect to consumption, labor supply, and investments, so they also have to gain from a better understanding of the effects of marriage institutions on individual behavior. Firms depend on households for the supply of labor and other factors of production, and for the purchase of their products. As far as labor supply is concerned, managers want to know how many workers with particular productivity-related characteristics can be expected to enter certain occupations or comply with certain job requirements. These supply factors influence both firms' ability to fill vacancies and the wages they can expect to pay. For instance, to the extent that certain categories of workers earn more when married due to a productivity-enhancing contribution of marriage (see Chapter 10), firms may be justified in preferring married workers for such jobs. Firms may want to pay more attention to the variety of arrangements their workers currently have regarding housework and other household production responsibilities.

One of the most important issues relating marriage to labor supply is the issue of childcare. The relative availability of childcare facilities and subsidies to married and unmarried parents is an important factor affecting not only individual parents and policy-makers, but also the firms who depend on the supply of workers with different characteristics. Chapter 11 reports that the employment of single mothers is more sensitive to the price of child care than that of married mothers. This implies that

personnel recruiting strategies such as the building of cheap day care centers may be more successful in attracting single mothers than in attracting married mothers. Depending on whether the type of worker the firm is recruiting is more likely to be married or single, a firm's childcare strategy will vary in effectiveness.

A strategy that may work better for firms trying to attract the labor supply of married women is a strategy encouraging home-based work, for relative to unmarried women married women are more likely choose home-based rather than on-site wage work (see Chapter 12). Businesses may want to calibrate their recruiting strategies not only based on marital status, but also on marriage market conditions. Home-based work is more compatible with the kind of married household labor that women provide in traditional marriages, and where such marriages are more common it is more likely that women will be interested in home-based work.

This book also offers interesting implications for the supply of capital. Readers interested in financial issues will be most interested in Chapter 6 dealing with savings.

More Implications

Marriage institutions also have a major impact on consumption patterns. If marriages involve extensive home cooking, for instance, restaurants can expect less business. The higher the quality of home-cooked meals, the more restaurants have to excel in order to attract customers. This book has only touched the surface of how marriage influences consumption patterns, the chapters most relevant to these concerns being Chapters 5, 6, 7, and 9.

If reading this book helps some firms, policy makers, or individual protagonists become more aware of how marriage decisions and institutions affect the economy, *Marriage and the Economy* accomplished one of its major goals.

Notes

¹ Waite also discussed the benefits of marriage from the perspective of health (including mental health), children's achievements, and sexual satisfaction. Space limitations led me to exclude the topic of health and marriage from this book (see Waite and Maggie Gallagher 2000).

² Market analysis is really a particular type of game theory.

³ All three theoretical tools have been used in Becker's seminal articles (Becker 1973, 1974).

⁴ Game-theoretical analyses of marriage were pioneered by Marilyn Manser and Murray Brown (1980) and Marjorie McElroy and Mary Jean Horney (1981). Marjorie McElroy did a post-doc at Chicago in 1977, where she regularly participated in Becker's workshop. See also Elizabeth Peters (1986), McElroy (1990), and Chapter 5 in this book.

⁵ The insight that marriage market conditions influence many individual decisions follows from Becker's (1973) competitive market model that originally appeared in the first part of his theory of marriage published by the *Journal of Political Economy*. Becker (1981) later reproduced this model in the second chapter of his *Treatise on the Family*, a chapter dealing with polygamy. Becker's (1973, 1974, 1981) explanations of marriage also contain a matching model that is very different from the competitive market model (see Chapter 2 in this book). Other market theories of marriage include Grossbard (1976), Michael Keeley (1977), David Heer and Grossbard-Shechtman (1981), and Robert Cherry (1998).

⁶ Mincer's econometric applications provided insights into the secular growth in women's participation in the labor force and into changes in fertility behavior. For more on the history of

the NHE see Grossbard-Shechtman (2001). Earlier economic analyses of household decisions include the work of Hazel Kyrk and Margaret Reid (see Andrea Beller and Elizabeth Kiss 1999 and Yun-Ae Yi 1996). The NHE was also enriched by the work of Robert Pollak (1985) emphasizing similarities between firms and households.

⁷ An earlier Marxist tradition also included economic analyses of gender roles (see Grossbard-Shechtman 1999).

⁸ While the institution of marriage is ignored by most micro-economists, it is even rarer to find macro-economists paying attention to marriage institutions.

⁹ An instance of a NHE-based model making old-fashioned assumptions about gender roles is Reuben Gronau (1977).

¹⁰ Such reasoning is also found in Becker (1981).

¹¹ An example of a U.S. economist who has been critical of Becker's work on marriage is Barbara Bergmann (1995). Canadian and French examples are Frances Woolley (1996) and Catherine Sofer (1985).

¹² See Waite and Gallagher (2000).

¹³ Traditional Judaism encourages exclusive monogamous marriage, and discourages extramarital relations, which places Judaism on the idealistic side of the cross-cultural spectrum, together with the other major religions. At the same time, traditional Judaism encourages investment in skills that make people more marriageable and that lead to more systematic search for a mate, two elements of an economic approach. Traditional Jewish sources call these two components of the process of marital preparation "hishtadlut", which means a time investment in Hebrew (see Yehudah Lebovits 1987).

¹⁴ see e.g. Lloyd Cohen (1987).

¹⁵ See e.g. Theodore Bergstrom's (1996) review article and a special issue of the *Journal of Bioeconomics*.

¹⁶ More on market theories of marriage by sociologists can be found in Grossbard-Shechtman (1993, Chapter 2). For a more comprehensive comparison between economic and sociological analyses of marriage, see Grossbard-Shechtman (2001), Chapters 8 and 9.

¹⁷ Some macro-economic analyses that deal with fertility are found in William Lord (2002).

¹⁸ This follows Grossbard-Shechtman (1984), which also includes a macroeconomic perspective. The idea of applying analyses from labor markets to the study of marriage can also be found in microeconomic analyses of marriage such as Grossbard (1976) and Keeley (1977). The marriage markets found in Becker's theory of marriage are quite different from labor markets.

¹⁹ More on the economics of marriage contracts can be found e.g. in Grossbard-Shechtman and Bertrand Lemennicier (1999).

²⁰ This quasi-wage can be related to Becker's concept of implicit price in marriage and can be defined as a share of the gain from marriage. The difference between the approach presented here and Becker's implicit price in marriage is that Becker's theory of marriage does not have a supply of work in married household production in the sense that economists define labor supply: a positive relationship between the amount of labor an individual supplies and the reward for that labor. For a similar and more recent theory in sociology, see Grossbard-Shechtman (2001, Chapter 8). Intra-marriage allocation of goods can be analyzed as the result of a quasi-wage payment for WIM. Alternative economic models of intra-marriage allocation of goods assume that no goods are produced in marital household production and all goods are purchased from commercial firms. (see, for instance, Chiappori 1992).

²¹ Others may also benefit from this work, children for instance.

²² The idea that husbands and wives may possibly negotiate their leisure in marriage does not fit in simple models of leisure and labor, such as the classical Robbins (1930) model, a model that ignores household production.

²³ These three uses of time are also found in Reuben Gronau's (1977) labor supply model, but our definitions of leisure are not exactly the same. I define leisure as an activity that solely satisfies the individual and can not be considered as work benefiting the spouse.

²⁴ Becker (1964) defines general human capital in contradistinction to firm-specific capital. Marital human capital—general or spouse-specific—was called marriage-specific human capital in Becker, Elizabeth Landes and Robert Michael (1977). The term spouse-specific is introduced in Chapter 3 by Evelyn Lehrer.

²⁵ See Grossbard-Shechtman (1982) and Olivia Ekert-Jaffe and Catherine Sofer (1996).

²⁶ Grossbard (1976) shows that each year of schooling increases a Nigerian woman's likelihood of being the only wife in her household, while it decreases a Nigerian man's likelihood of having only one wife. The latter effect may involve an income effect.

²⁷ This involves a general equilibrium process. For a general equilibrium model including markets for married household production, see Grossbard-Shechtman (1984).

²⁸ The assumption that a (possibly implicit) price mechanism functions in marriage markets has the advantage of connecting marriage market analysis to other useful economic models of marriage that assume a price mechanism, such as search models (Keeley 1977; see Chapter 2 in this book) and models about compensating differentials (see Grossbard-Shechtman 1984, 1993).

²⁹ The supply is expected to be upward-sloping for the same reasons that the supply of monetized labor is upward-sloping. These reasons include opportunity costs in terms of foregone leisure and a variety of entry points: some individuals are willing to work at very low compensation levels while others have higher reservation wages.

³⁰ It is assumed that the total population remains constant, so an increase in the number of men is accompanied by a decrease in the number of women.

³¹ This conclusion does not hold if success in marriage markets does not translate into more attractive conditions in household production in marriage relative to the opportunities available in the labor force. In Chapter 4, Shoshana Neuman and I examine some variations in women's labor supply that may be related to this factor.

³² Aggregate demand is not likely to change if the change in quasi-wage only causes a change in the composition of consumption, but not in total consumption. On the distribution of consumption within marriage is found in Chapter 7.

³³ See Becker's (1973, 1981), Grossbard (1978), and Grossbard-Shechtman (1993).

³⁴ See Grossbard (1978).

³⁵ Barbara Bergmann (1995) has criticized Becker for arguing that women are better off under polygamy. On the idea that polygamous societies are more likely to have men restricting the freedom of young people to marry with mates of their own choice, see Marcia Guttentag and Paul Secord (1983). To test economic models of marriage we need to compare societies giving their young the same freedom to choose a mate, or at least restricting that freedom to the same extent.

³⁶ Religions have much to say on these matters. Islam permits polygamy while Christianity does not.

³⁷ See Heer and Grossbard-Shechtman (1981) and Nancy Folbre (1994).

³⁸ See Grossbard, Olivia Ekert-Jaffe and Bertrand Lemennicier (2002).

³⁹ In terms of a marriage market theory this finding could indicate that women with higher incomes are also more likely to obtain a positive quasi-wage for their WIM if we interpret the actual payment of child support as compensation for childcare WIM paid after divorce.

⁴⁰ This is also widely recognized by economists writing on marriage, including Gary Becker (1973) and Richard Posner (1992).

⁴¹ As a country with a legal system based on Common Law, it is even possible that in Australia less household production is produced in marriage than in comparable countries with Community Property systems of division of assets at divorce (see Grossbard-Shechtman, Olivia Ekert, and Bertrand Lemennicier 2002).

⁴² See Yoram Weiss (1995) and Jeffrey Gray (1998) for comparisons of other aspects of divorce laws in the U.S. and Grossbard-Shechtman, Ekert, and Lemennicier (2002) for a preliminary comparison across countries.

References

- Becker, Gary S. *Human capital*. New York: Columbia University Press, 1964.
- _____. "A Theory of Marriage: Part I." *Journal of Political Economy*, 1973, 81, pp. 813-846.
- _____. "A Theory of Marriage: Part II." *Journal of Political Economy* 1974, 82, pp. 511-26.
- _____. "Altruism, Egoism, and Genetic Fitness: Economics and Sociobiology." *Journal of Economic Literature*, 1976, 14, pp.817-26.
- _____. *A treatise on the family* (first edition). Cambridge: Harvard University Press, 1981.
- Becker, Gary; Landes, Elizabeth M. and Michael, Robert T. "An Economic Analysis of Marital Instability," *Journal of Political Economy*, 1977, 85(6), 1141-87.
- Beller, Andrea H. and Kiss, D. Elizabeth. "On the Contribution of Hazel Kyrk to Family Economics." Paper presented at the meetings of the Society for the Advancement of Behavioral Economics, San Diego, June 1999.
- Bergmann, Barbara. "Becker's Theory of the Family: Preposterous Conclusions." *Feminist Economics*, 1995, 1, pp. 141-150.
- Cherry, Robert (1998), "Rational Choice and the Price of Marriage." *Feminist Economics* 4:27-49.
- Chiappori, Pierre-Andre (1992), "Collective Labor Supply and Welfare", *Journal of Political Economy* 100: 437-67.
- Chiswick, Carmel and Lehrer, Evelyn. "On Marriage-Specific Capital: Its Role as a Determinant of Remarriage," *Journal of Population Economics*, 1990, 3, 193-213.
- Cohen, Lloyd. "Marriage, Divorce, and Quasi Rents; or, 'I Gave Him the Best Years of My Life'". *Journal of Legal Studies*, 1987, 16, 267-303.
- Ekert-Jaffé, O. et Sofer, C. "Formal versus Informal Marriage: Explaining factors" in *Evolution or Revolution in European Population*, Actes du IXème Congrès de l'EAPS, 1996.
- Folbre, Nancy. *Who Pays for the Kids? Gender and the Structures of Constraint*. London, Routledge, 1994.
- Gray, Jeffrey S. "Divorce Law Changes, Household Bargaining, and Married Women's Labor Supply." *American Economic Review*, 1998, 88, pp. 628-642.
- Gronau, Reuben. "Leisure, Home Production, and Work--The Theory of the Allocation of Time Revisited." *Journal of Political Economy*, 1977, 85, pp. 1099-124.
- Grossbard, Amyra. "An Economic Analysis of Polygamy: The Case of Maiduguri." *Current Anthropology*, December 1976, 17, pp. 701-7.
- _____. "Towards a Marriage Between Economics and Anthropology and a General Theory of Marriage," *Papers and Proceedings, American Economic Review*, May 1978.
- Grossbard-Shechtman, Amyra. "A Theory of Allocation of Time in Markets for Labor and Marriage." *Economic Journal*, 1984, 94, pp. 863-82.
- Grossbard-Shechtman, Shoshana Amyra. *On the economics of marriage: a theory of marriage, labor, and divorce*. Boulder, Co., Westview Press. 1993.
- _____. "Marriage Market Models," in M. Tommasi and K. Ierulli (eds.) *The New Economics of Human Behavior*, Cambridge, U.K.: Cambridge University Press, 1995.
- _____. "Theories of Marriage." in Peterson, Janice, and Lewis, Margaret, eds., the *Elgar companion to feminist economics*. London: Edward Elgar, 1999.

- _____. "Economics and Sociology of Work and Marriage." in Grossbard-Shechtman, Shoshana, and Christopher Clague, eds., *The expansion of economics*. M.E. Sharpe, 2001a.
- _____. "The New Home Economics at Columbia and Chicago" *Feminist Economics*, forthcoming, 2001b.
- Grossbard-Shechtman, Shoshana, Olivia Ekert-Jaffe and Lemennicier, Bertrand. "Property Division at Divorce and Demographic Behavior: An Economic Analysis and International Comparison" Presented at the American Economic Meetings, Atlanta, January 2002.
- Grossbard-Shechtman, Shoshana and Lemennicier, Bertrand. "Marriage Contracts and the Law and Economics Movement: a Critical View from an Austrian Perspective." *Journal of Socio-Economics*, 1999, 28, pp. 665-690.
- Guttentag, Marcia and Secord, Paul F. *Too many women: The sex ratio question*. Beverly Hills: Sage Publications, 1983.
- Heer, David M. and Grossbard-Shechtman, Amyra. "The Impact of the Female Marriage Squeeze and the Contraceptive Revolution on Sex Roles and the Women's Liberation Movement in the United States, 1960 to 1975." *Journal of Marriage and the Family* 1981, 43, pp. 49-65.
- Iannaccone, Laurence R. "Introduction to the Economics of Religion." *Journal of Economic Literature*. September 1998, 36(3), pp. 1465-1495.
- Ironmonger, Duncan. "Preface." in Ironmonger, Duncan, ed., *Households work: productive activities, women and income in the household economy*. Sydney: Allen & Unwin, 1989.
- Keeley, Michael C. "The Economics of Family Formation." *Economic Inquiry* 1977, 15, pp.238-250.
- _____. "An Analysis of the Age Pattern of First Marriage." *International Economic Review* 1979, 20, pp.527-44.
- Lebovits, Yehudah. *Shidduchim and zivugim*. Spring Valley, N.Y.: Targum/Feldheim, 1987.
- Lord, William. *Household Dynamics: Economic Growth and Policy*. Oxford: Oxford University Press, 2002.
- Manser, Marilyn and Brown, Murray. "Marriage and Household Decision Making: a Bargaining Analysis." *International Economic Review*, February 1980, 21 (1), pp.31-44.
- McElroy, Marjorie B. "The Empirical Content of Nash-Bargained Household Behavior" *Journal of Human Resources*, 1990, 25, pp.559-83.
- McElroy, Marjorie B. and Horney, Mary Jean. "Nash Bargained Household Decisions: Toward a Generalization of the Theory of Demand." *International Economic Review*, June 1981, 22(2), pp. 333-49.
- North, Douglass C. *Structure and change in economic history*. New York: W. W. Norton, 1981.
- Pollak, Robert A. "A Transaction Cost Approach to Families and Households." *Journal of Economic Literature*, 1985, 23, 581-608.
- Posner, Richard A. *Sex and reason*. Cambridge, Mass.: Harvard University Press, 1992.
- Robbins, Lionel. "On The Elasticity of Demand for Income in Terms of Efforts." *Economica* 1930, 10, pp. 123-29.
- Silbaugh, Katharine. "Turning Labor into Love: Housework and the Law." *Northwestern University Law Review*, 1996, 91(1), pp. 1 - 86.
- Sofer, Catherine. *La division du travail entre hommes et femmes*. Paris: Economica, 1985.
- Waite, Linda J. and Maggie Gallagher. *The case for marriage*. New York: Doubleday, 2000.
- Weiss, Yoram, and Robert T. Willis .1993. "Transfers among Divorced Couples : Evidence and Interpretation", *Journal of Labor Economics* (October) pp 629-679
- Weitzman, Leonore *The marriage contract: spouses, lovers and the law*. New York, Free Press, 1981.
- Woolley, Frances. "Getting the Better of Becker." *Feminist Economics*, 1996, 2, pp.114-120

Yi, Yun-Ae. "Margaret G. Reid: Life and Achievements." *Feminist Economics*, 1996, 2, pp. 17-36.

Figures

Figure 1.2. The Economy

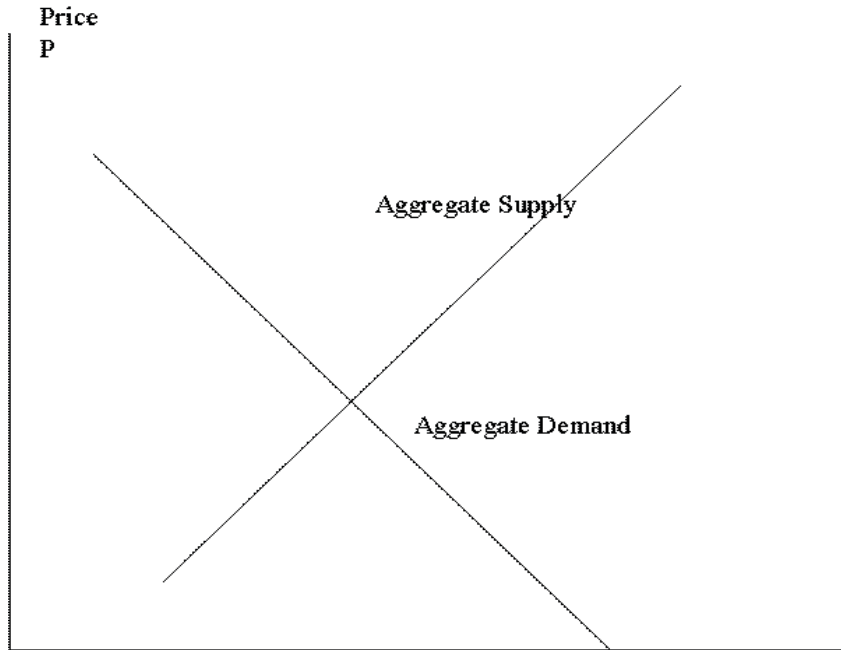


Figure 1.1 Market for Work-in-Marriage

