ONE

Marriage and the Economy

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The institution of marriage is found in nearly all human societies. This fact clearly reflects the importance of sexual and reproductive functions in human life. Marriage entails commitment between sexual partners. Why do societies develop marital institutions that encourage commitment between spouses? 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 macroeconomic perspective. Until recently it was standard practice to focus on monetized transactions when calculating the value of an economy, and to overlook the

[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).

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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 study of 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 microeconomics of marriage.

MICROECONOMIC 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. Most economic analyses of marriage have been part of applied microeconomics, and they have relied on the same theoretical tools that economists use in all microeconomic 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.[4]
- *Game theory* is a second theoretical tool that economists of marriage commonly use. 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 the-

[2] Market analysis is really a particular type of game theory.
[3] All three theoretical tools have been used in Gary S. Becker's seminal articles (Becker 1973, 1974).
[4] Such rational choice theories have become increasingly popular among sociologists.

ory is applicable.[5] If strategies differ by gender, economists can use game theories to model gender wars or cooperative behavior between husbands and wives.

- *Market analysis* applies whenever choices are available on a demand side or a supply side.[6] 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 if the workings of a market for mates are not so obvious to most observers. The process of competition for potential mates can be observed universally, but takes different forms from one culture to the next. In the West, it can be observed at bars, church socials, proms, and such. In India it is more likely to take the form of a list of available grooms and brides printed in the local newspaper. In Japan and Korea, the need to compete drives parents to circulate numerous copies of the resumé of their marriageable children.

Reactions to the Microeconomics of Marriage

Economists started paying more attention to the institution of marriage after Jacob Mincer and Gary S. Becker started the New Home Economics (NHE) 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.[7] In the 1970s, Becker pioneered

[5] Game-theoretical analyses of marriage were pioneered by Marilyn Manser and Murray Brown (1980) and Marjorie B. McElroy and Mary Jean Horney (1981). See also Elizabeth H. Peters (1986), McElroy (1990), Paul S. Carlin (1991), and Chapter 5 in this book.

[6] The insight that marriage market conditions influence many individual decisions follows from Becker's (1973) competitive market model, which 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 Amyra Grossbard (1976), Michael C. Keeley (1977), David M. Heer and Amyra Grossbard-Shechtman (1981), and Robert Cherry (1998). Economic analyses of marriage can also be found in Bertrand Lemennicier (1988), Alejandro Cigno (1991), Grossbard-Shechtman (1993), Yoram Weiss (1997), and Francisco Cabrillo (1999).

[7] 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 (2001b). Earlier economic analyses of household decisions include the work of Hazel Kyrk and Margaret Reid (see Andrea H. Beller and Elizabeth D. Kiss 1999 and Yun-Ae Yi 1996). The NHE was also enriched by the work of Robert A. Pollak (1985) emphasizing similarities between firms and households.

the economics of marriage.[8] 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 study of the economics of marriage, business and money institutions – not marriage and other family institutions – still frame most of the ideas that economists write about.[9]

The reasons why the economics of marriage is unpopular relative to other applications of economics include unpopular positions regarding gender, economists' tendency to focus on materialistic concerns, and resistance from other disciplines.

Gender. The economics of marriage as developed by Becker and other NHE economists assumed that men and women behave according to traditional gender roles.[10,11] The underlying assumption that homemaking is a woman's job has come under criticism by feminist economists such as those in the United States, Canada, and France.[12] In fact, it is a misconception to think that the economics of marriage depends on any particular assumptions regarding gender differences.

Materialism. 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. Throwing out economic analyses of marriage because of their emphasis on measurable and more materialistic dimensions of life is like throwing out the baby with the bath water. Economic analyses of marriage are applicable even if people approach marriage out of pure idealism. They will still be faced with some mating choices for themselves or their children.

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

[9] While most microeconomists ignore the institution of marriage, even power macroeconomists pay attention to marriage institutions.

[10] An instance of a NHE-based model making old-fashioned assumptions about gender roles is Reuben Gronau (1977). Consider for instance, Gronau's conclusion 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.

[11] Such reasoning is also found in Becker (1981).

[12] 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).

Even those who dream of romance or get elevated by ideas about holy matrimony cannot remain totally oblivious of the hard realities involved in breadwinning and housecleaning. As long as there is work involved, cost/benefit analysis taking account of opportunity costs applies. 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.

Biology and Sociology. A third possible objection to economic analyses of marriage could come from those who believe that biological theories matter more than economic theories. Economists have in fact incorporated many biological assumptions in their theories.[13] Traditionally, sociologists have been doing most of the research on marriage and divorce. 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 Maggie Gallagher (2000) and sociological studies of marriage markets.[14]

MARRIAGE MARKETS AND THE ECONOMY

Practically every idea in this book contains a macroeconomic 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 aggregate markets for all products and then analyze how these are connected to markets for monetized labor and capital. They occasionally recognize that a household economy exists side by side with the monetized economy, as is evident from Chapter 13.[15] However, macroeconomists typically ignore marriage markets.

The household economy is linked to the monetized economy due to the following connections: (1) Labor supply is jointly determined with the

[13] See, for example, Theodore C. Bergstrom's (1997) review article in the *Handbook of Population Economics* and a special issue of the *Journal of Bioeconomics*.

[14] 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 (2001a), Chapters 8 and 9.

[15] Some macroeconomic analyses that deal with fertility are found in William Lord (2002).

supply of work in household production; and (2) commercial consumption of goods and services (also savings) is jointly determined with the consumption of goods and services produced in the home. Given that most household production occurs in marriages, and that marriage markets affect not only decisions about marriage and divorce but also the allocation of time and income to household production, marriage markets play an important role in both of these connections between the monetized economy and the household economy.

The link between marriage markets and supply of labor is especially potent. This connection is based on an essential principle: Household production is time-intensive. If the household is a married household, time in household production may take the form of labor to the extent that household production time is not the individual's preferred activity. Let us call "Work-in-Marriage" the time in marital household production that is work in the sense of time that has an opportunity cost, that is, there is a more valuable activity that was forgone. Next, markets for Work-in-Marriage can be modeled along the lines used to model other labor markets.[16] The analysis starts with individual supply and demand.

Individual Supply of Work-in-Marriage

The supply of Work-in-Marriage is conceptually very similar to the supply of paid labor. In both cases, individuals make a decision about working for others – a firm in the case of labor, and a spouse in the case of Work-in-Marriage. In both the cases of labor and Work-in-Marriage, the opportunity cost of labor is the value of the most valuable foregone opportunity, and both labor and Work-in-Marriage are assumed to be less valuable activities than other forms of household production that are more self-satisfying.[17,18]

[16] 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.

[17] 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 Lionel Robbins (1930) model, which ignores household production. What activities actually are considered as Work-in-Marriage will vary from one individual to the next, although there are certain activities that most people consider to be chores.

[18] Individual supplies of work and of Work-in-Marriage are a function of an individual choice between three uses of time: work, production of self-consumed goods, and Work-in-Marriage. Three uses of time are also found in Gronau's (1977) labor supply model, but his definitions of leisure and household production time differ from mine.

Personnel economics teaches us that there are three kinds of incentives that possibly motivate workers to supply labor: threat, non-pecuniary reward, and compensation:

- *Threat.* Workers may be forced to work if the employer threatens to punish them, or if the threat is hunger or other undesirable results. This is a motive based on fear.
- *Non-pecuniary rewards*. Such rewards include the satisfaction from doing one's duty, loyalty, or the enjoyment out of supplying the product or doing the activity (the intrinsic reward).[19]
- *Compensation*. This incentive takes the form of barter or pay.

These incentives can apply to any kind of work, including Work-in-Marriage. When it comes to non-pecuniary rewards, work and Work-in-Marriage are similar. One can serve one's family out of love, which is reminiscent of loyal service to a firm and of military service motivated by patriotism. The two forms of work differ significantly in the degree to which people supply them for the other two incentives: expected compensation and threat.

In the case of Work-in-Marriage, compensation often takes the form of barter – for instance, an agreement whereby a husband washes dishes if his wife cooks. Such barters are also found in the labor force, as in the case of a barter deal between an accountant and a stockbroker within a firm. A major difference between the two forms of labor is that paid compensation in the form of wages is the norm in the case of work, whereas monetary compensation for Work-in-Marriage is a rare occurrence.

While there is no institutionally supported wage for Work-in-Marriage that is the equivalent of wages in the labor market, a closer look reveals some interesting parallels between monetary compensations for work and Work-in-Marriage.[20] Most workers in the labor force receive a pay

[19] Others, such as children, may also benefit from this work.

[20] In a historical perspective, the differences between work and Work-in-Marriage become even less obvious. Wages are a relatively new invention. Until a few centuries ago, most workers were agricultural workers who were trading goods for protection services offered by their feudal lord. I am struck by some of the parallels between this feudal system and the way that husbands have traditionally treated women supplying Work-in-Marriage in many parts of the world. This feudal system also characterized the way that industrialists often treated workers in the early stages of industrialization. In all these feudal-style systems, workers had very limited power relative to the power of those who benefited from their work and owned most productive resources. Under feudalism, fear of hunger and need for physical protection played an important role in motivating workers. Agricultural

package consisting of their wage earnings and pecuniary benefits – that is, benefits that have a clear monetary value, such as health insurance. Similarly, compensation for Work-in-Marriage suppliers 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.[21] Other possible benefits offered to suppliers of Work-in-Marriage 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). We can call *quasiwages* contemporaneous benefits that can be considered as compensation for Work-in-Marriage.

An individual labor supply is the willingness to work at different wage levels. Economists assume that a competitive labor market establishes wage levels, and they investigate how an individual responds to various wage levels. The law of supply applied to labor markets implies that the higher the wage, the more people are willing to work.[22] In the case of Work-in-Marriage, wages are not in evidence but we can model an individual supply of Work-in-Marriage as the willingness to supply Work-in-Marriage at various quasiwage levels. Both men and women can have such supply, and one expects the law of supply to apply here as well: The higher the quasiwage, the more people will supply Work-in-Marriage.

workers' power was limited by the lack of alternative opportunities for employment: lack of alternative professions and lack of alternative employers within their profession. Likewise, until recently, married women in the West could barely find employment outside the homemaking profession, and the lack of divorce opportunities led them to be stuck to their husband, even if he was abusive. Fear of hunger and need for protection from rape and other dangers were major reasons why women supplied Work-in-Marriage. This situation still exists in some segments of industrialized societies, and is found on a large scale in many of the world's agriculture-based societies.

[21] This quasiwage 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 (2001a, Chapter 8). Intramarriage allocation of goods can be analyzed as the result of a quasiwage payment for Work-in-Marriage. Alternative economic models of intramarriage allocation of goods assume that no goods are produced in marital household production and all goods are purchased from commercial firms (see, for instance, Pierre-Andre Chiappori 1992).

[22] There are rare exceptions to this law, as in the case of the backward-bending labor supply.

Individual Demand for Work-in-Marriage

Individual demand for Work-in-Marriage is similar to the demand for labor by firms and governments 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 Work-in-Marriage – that is, the beneficiary of Work-in-Marriage – 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 Work-in-Marriage. 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 Work-in-Marriage as opposed to household production that benefits only the self. Luckily, the usefulness of a market analysis of Work-in-Marriage does not depend on our ability to measure actual amounts of Work-in-Marriage, but on our ability to predict how factors influencing Work-in-Marriage markets influence the economy.

Demand for Work-in-Marriage varies with productivity, which is in turn a function of productive skills, or what economists call human capital. Factors influencing Work-in-Marriage productivity will therefore influence the demand for Work-in-Marriage. Some of these productive skills are spouse-specific – that is they benefit only one spouse and have zero value in case of divorce and remarriage. Other skills are forms of general marital human capital. One expects certain forms of education to contribute to marriage-general human capital – that is, human capital valuable in any marriage – embodied in an individual if the result is higher productivity in Work-in-Marriage.

Other factors that are likely to affect productivity in Work-in-Marriage and therefore demand for Work-in-Marriage include the amount of capital used in household production, and determinants of the value of the product. For instance, if Work-in-Marriage is work in parenting, the value of the children born to the marriage or of the quality of these children that is obtained with Work-in-Marriage will influence a provider's willingness to pay for a homemaker's Work-in-Marriage.[23]

[23] On the demand for women as baby producers, see, for example, Becker (1981) and Lena Edlund and Evelyn Korn (2002).

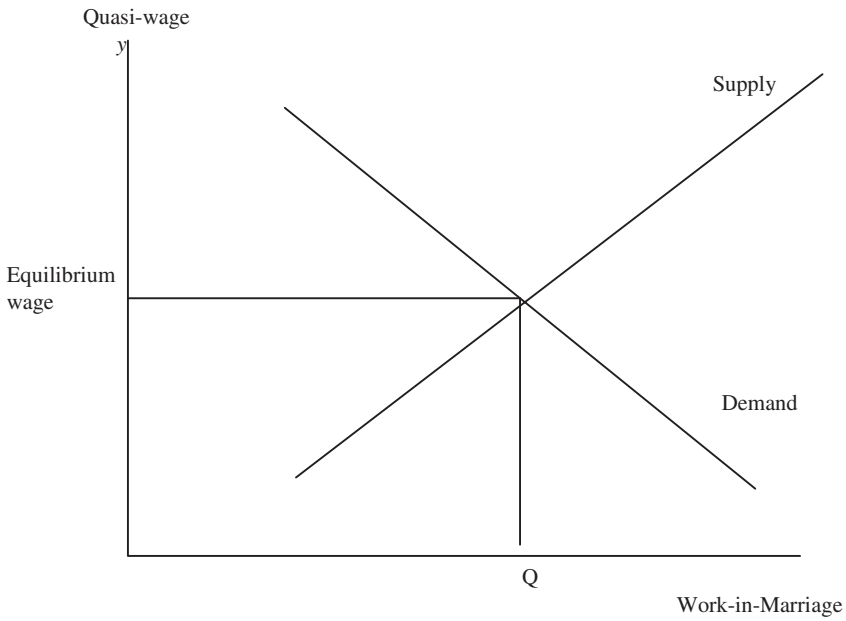

Figure 1.1. Market for Work-in-Marriage

The Market for Work-in-Marriage

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 Work-in-Marriage and will establish equilibrium conditions for Work-in-Marriage suppliers – including a quasiwage y – and an aggregate level of employment in Work-in-Marriage. A marriage market conceived as a market for Work-in-Marriage is shown in Figure 1.1. Employment in Work-in-Marriage and quasiwages 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.[24] Economists call that a general equilibrium.

As in most models of the economy, it is assumed that the market process operates and that there is competition.[25] Competition in this case

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

[25] 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;