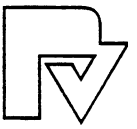
Bargaining over Time Allocation



Contributions to Economics

http://www.springer.de/cgi-bin/search_book.pl?series=1262

Sardar M.N. Islam
Mathematical Economics of Multi-Level Optimisation
1998. ISBN 3-7908-1050-9

Sven-Morten Mentzel
Real Exchange Rate Movements
1998. ISBN 3-7908-1081-9

Lei Delsen/Eelke de Jong (Eds.)
The German and Dutch Economies
1998. ISBN 3-7908-1064-9

Mark Weder
Business Cycle Models with Indeterminacy
1998. ISBN 3-7908-1078-9

Tor Rødseth (Ed.)
Models for Multispecies Management
1998. ISBN 3-7908-1001-0

Michael Carlberg
Intertemporal Macroeconomics
1998. ISBN 3-7908-1096-7

Sabine Spangenberg
The Institutionalised Transformation of the East German Economy
1998. ISBN 3-7908-1103-3

Hagen Bobzin
Indivisibilities
1998. ISBN 3-7908-1123-8

Helmut Wagner (Ed.)
Current Issues in Monetary Economics
1998. ISBN 3-7908-1127-0

Peter Michaelis/Frank Stähler (Eds.)
Recent Policy Issues in Environmental and Resource Economics
1998. ISBN 3-7908-1137-8

Jessica de Wolff
The Political Economy of Fiscal Decisions
1998. ISBN 3-7908-1130-0

Georg Bol/Gholamreza Nakhaeizadeh/Karl-Heinz Vollmer (Eds.)
Risk Measurements, Econometrics and Neural Networks
1998. ISBN 3-7908-1152-1

Joachim Winter
Investment and Exit Decisions at the Plant Level
1998. ISBN 3-7908-1154-8

Bernd Meyer
Intertemporal Asset Pricing
1999. ISBN 3-7908-1159-9

Uwe Walz
Dynamics of Regional Integration
1999. ISBN 3-7908-1185-8

Michael Carlberg
European Monetary Union
1999. ISBN 3-7908-1191-2

Giovanni Galizzi/
Luciano Venturini (Eds.)
Vertical Relationships and Coordination in the Food System
1999. ISBN 3-7908-1192-0

Gustav A. Horn/
Wolfgang Scheremet/
Rudolf Zwiener
Wages and the Euro
1999. ISBN 3-7908-1199-8

Dirk Willer
The Development of Equity Capital Markets in Transition Economies
1999. ISBN 3-7908-1198-X

Karl Matthias Weber
Innovation Diffusion and Political Control of Energy Technologies
1999. ISBN 3-7908-1205-6

Heike Link et al.
The Costs of Road Infrastructure and Congestion in Europe
1999. ISBN 3-7908-1201-3

Simon Duindam
Military Conscription
1999. ISBN 3-7908-1203-X

Bruno Jeitziner
Political Economy of the Swiss National Bank
1999. ISBN 3-7908-1209-9

Irene Ring et al. (Eds.)
Regional Sustainability
1999. ISBN 3-7908-1233-1

continued on page 140

Miriam Beblo

Bargaining over Time Allocation

Economic Modeling and Econometric Investigation of Time Use within Families

Springer-Verlag Berlin Heidelberg GmbH

Series Editors
Werner A. Müller
Martina Bihn

Author
Dr. Miriam Beblo
Zentrum für
Europäische Wirtschaftsforschung (ZEW)
Forschungsbereich Arbeitsmärkte, Personalmanagement
und Soziale Sicherung
L 7,1
68161 Mannheim
Deutschland
E-mail: beblo@zew.de

ISSN 1431-1933
ISBN 978-3-7908-1391-3

D188 (2000)

Cataloging-in-Publication Data applied for
Die Deutsche Bibliothek – CIP-Einheitsaufnahme
Beblo, Miriam: Bargaining over time allocation: economic modeling and econometric investigation of time use within families / Miriam Beblo. – Heidelberg; New York: Physica-Verl., 2001
(Contributions to economics)
Zugl.: Berlin, Freie Univ., Diss., 1999
ISBN 978-3-7908-1391-3 ISBN 978-3-642-57579-2 (eBook)
DOI 10.1007/978-3-642-57579-2

Originally published by Physica-Verlag Heidelberg New York in 2001

Softcover Design: Erich Kirchner, Heidelberg

SPIN 10797439 88/2202-5 4 3 2 1 0 – Printed on acid-free and non-aging paper

Acknowledgements

I have written this dissertational thesis while being a research and teaching assistant at the Institute of Public Finance and Social Policy at Freie Universität in Berlin. The thesis has been completed in December 1999. Having studied bargaining behavior in greater detail now, I must say that my work has benefitted from cooperation of those who accompanied my research during the past five years. First of all I would like to thank my advisors Irwin L. Collier and Notburga Ott for their constant encouragement and precious comments. In presentations and stimulating discussions I also received valuable input from my colleagues at Freie Universität Berlin as well as professors and fellow students at the graduate college "Applied Microeconomics". Most importantly, I am grateful to my husband Sven Ammerlahn for his inspiring and incredibly patient support.

Contents

1 Introduction

KARL MARX 1857:

Ökonomie der Zeit, darein löst sich schließlich alle Ökonomie auf.

(Economy of time, to this all economy ultimately reduces itself.)

GARY S. BECKER 1993:

Different constraints are decisive for different situations, but the most fundamental constraint is limited time.

1.1 Time allocation in a bargaining family

In modern economic theories of time allocation three major groups of time uses are generally distinguished: paid (market) labor, unpaid (household) labor and leisure. In modern economic theories of family decision making household behavior is typically modeled as the outcome of a bargaining process between family members who bargain over household resource allocation and the intrafamily distribution of welfare. In the chapters to follow both "approaches" will be emphasized to study time use behavior within households. Such bargaining models of family decision making will be seen to pose a challenge to traditional time allocation theory.

Four theoretical and empirical studies constitute the contribution of this dissertation to explain trends such as rising female employment, particularly that of women with small children, along with falling fertility rates and increasing divorce rates. My purpose is to shed light on the division of housework between spouses and the observed leisure differential between women and men. Bargaining models provide new insights into the internal organization and structure of the black box family. This is not merely a matter of methodology but facilitates goal-oriented policy recommendations. Where standard models of the household would offer misleading conclusions about the effects of public policy on the behavior of household members regarded individually

M. Beblo *Bargaining over Time Allocation*

due to an (over-)simplifying assumption that households act as welfare maximizing units, bargaining models allow us to focus on the relative advantages and disadvantages of members of a household.

We begin with the definition of distinct time uses as analyzed throughout the thesis. This is followed by a discussion of the notion of family from an economic perspective. In the third part of this introductory chapter the general structure of the dissertation and the research focuses of its four component studies will be stretched.

1.2 Time use

Time allocation theory models three major time uses: market labor, household labor and leisure. The general term labor refers to all activities that are inputs in the production of output which can be transferred between individuals. In other words, labor includes all activities that do not have to be performed by a particular individual. The difference between market labor and household labor relates to the nature of the transactions taking place. Whereas market transactions are typically direct bilateral exchange activities with money as the means of exchange, household transactions are characterized by a high number of goods and services that are typically exchanged between several family members (Ott 1999). Leisure or private time, on the contrary, does not yield any such outputs that could be traded in return for other services. It is defined as time spent on self-determined activities that involve production and consumption taking place at the same time. Since such activities are pursued for their own sake, for the benefit of the individual so to speak, they have to be exclusively performed by that same person. The output is consumed simultaneously and therefore cannot be delegated to anybody else and then transferred, as might be the case with housekeeping or child care. This concept of leisure is called the third person criterion (see Schäfer/Schwarz 1996 and Ott 1999). Sport activities, watching TV or eating and sleeping for instance, since they have to be performed by oneself, are considered leisure activities[1].

Each member of a family regards time as a scarce resource to be allocated among these competing uses. While each member is endowed with the same total amount of time per day or per week, it is the price at which each unit of time is valued that differs across family members. In the economic analysis of time allocation a monetary value reflecting the opportunity cost in terms of market work or household production can be assigned to each unit of time,

[1] This distinction is well illustrated by the following remark from the United Nations' *Human Development Report* (1995: 89): "No one else can eat your breakfast on your behalf or catch up on your sleep."

even if this unit is "spent" on leisure. This monetary value represents the scarcity of the disposable time which will depend on individual efficiency indicators such as hourly wage rates or household productivities. Given these prices, the optimization problem of the family is to determine the most efficient allocation of each member's time, i.e. the division of labor within the household and each individual's quantity of leisure time. We have no need to regard the economic approach to be an exclusive method for analyzing time use. Indeed economic explanations are complementary to those of other social sciences[2].

1.3 The family as an economic institution

The household or the family may be regarded as an institution for human reproduction and where such fundamental needs as love, safety and material security are met. While a family can take on various forms and does not necessarily require a common household, for economic analysis the terms family and household are often used synonymously. Since the focus of this dissertation will be on the production aspect of family time use we will also refer to both terms interchangeably.

Generally the phrase household may apply to any number of people who agree to living together. For simplicity I shall restrict my analysis of intrafamily time allocation to a bargaining process between two individuals assumed to be man and woman; a household setting that still represents the majority of two-adult-headed families. Some of the results can be meaningfully generalized to other household structures as well, be it that of mother and daughter, brother and sister, a homosexual couple or many other possible living arrangements. However, some results, especially those based on gender differences or driven by policy measures, only apply to the traditional family setting assumed here.

The economic institution family constitutes a place of economic production as well as of reproduction. We assume that through such a long-term internal relationship members of a family attain higher welfare levels than could be achieved through market relations alone. By forming a community of production, consumption and insurance the household can avoid transaction costs, that arise with the production and trade of market goods (Ben-Porath 1980, Pollak 1985 and Ott 1993). Transaction costs include information costs, negotiation costs as well as monitoring costs. The social contacts within a family and affections between family members provide informa-

[2] For a general discussion of the economic modeling of time see for instance Biervert/Held (1995b), Biesecker (1995) and other contributions to the book on "Zeit in der Ökonomik" edited by Biervert/Held (1995a).

tional and monitoring advantages that help to lower these costs. By marriage or by informal household formation individuals replace market relationships (e.g. with laundries, restaurants or nannies) with an economic organization that yields gains from long-term cooperation of its members. Through the joint consumption of public goods at the household level they can realize efficiency gains and benefit from economies of scale. As an insurance community the family provides insurance against such risks as illness, unemployment or old age of single household members. As a production cooperation it can exploit the family members' comparative production advantages through specialization in distinct activities or responsibilities. Economies of scope arise, for instance, from taking care of children and doing housework at the same time.

The division of labor and the distribution of resources among family members, however, may not only be the subject of cooperation but also of conflicts within households (Pollak 1985, Sen 1990a). On the one hand, family members cooperate in order to maximize the size of the pie, while on the other hand, they must necessarily compete with each other regarding their individual shares of this pie. Hence, they will negotiate over their respective time uses and the distribution of the gains from cooperation. The use of bargaining models of household behavior allows us to treat family members as distinct individuals with common as well as conflicting interests.

1.4 A reader's guide

The first two chapters of the dissertation provide a brief overview of the existing economic approaches to family decision making as well as of the empirical literature. Starting with the traditional time allocation theory (also called the unitary model) initiated by Becker (1965) and Gronau (1973, 1977) Chapter 2 introduces game theoretic approaches including cooperative, non-cooperative and dynamic bargaining models in a theoretical survey. The third chapter reviews a selection of empirical studies regarding the empirical evidence for hypotheses derived from theoretical models that attempt to explain the division of labor within households and the distribution of resources and returns among family members. The objective of this review is to consider the empirical support for the particular assumptions underlying the unitary approach and those that have been proposed in support of the various models of collective behavior. This review of the literature establishes the context for the chapters to follow. The core of the thesis are four studies of individual time use within a family context. All studies follow the same theoretical concept in which the bargaining framework is applied to different empirical aspects of family time use for employment, household production and leisure. Each study provides a theoretical discussion of the relevant economic approaches, a particular specification or an extension of an existing model and

in all but one of the chapters to follow an econometric analysis of the observed time use behavior of German households.

The first of these studies (Chapter 4) is devoted to the strategic aspect of the time use paid labor. It has been motivated by the interplay of the following two trends that have been observed in almost all developed Western countries over the past decades: increasing female labor force participation together with continuously rising divorce rates. Independent of whether the increasing risk of divorce has been caused by higher female labor force participation or whether married women now supply more labor as a consequence of a higher risk of divorce, the decision to work will be argued to involve an aspect of insurance that has been missed by traditional models of household labor supply. It is this insurance aspect that will be incorporated in the analysis of female labor supply in Chapter 4. A dynamic bargaining model of family time use is developed, followed by an investigation of the implications of the theoretical model that have been incorporated into an econometric analysis of female labor supply.

In the dynamic bargaining model time allocation is determined by intrafamily bargaining between two partners that takes place within a three-period life cycle. Whereas during the first pre-family period human capital investments are made non-cooperatively by each individual, in subsequent periods, i.e. the family phases, time use decisions (in particular time devoted to housework as opposed to time spent in the labor market) are determined by the partners' maximization of the product of their gains from cooperation, i.e. Nash bargaining with separation as the threat point. In this model rational individuals not only tend to overinvest in human capital during their first period of life but also have an incentive to choose suboptimal time patterns at the beginning of the family phase should this happen to improve their bargaining position in the last period. This result is due to an asymmetry of the learning effects from market work versus housework and to the asymmetry of the marketability of the different labor skills, i.e. devoting time to gainful employment is assumed to yield higher gains of marketable human capital than spending time on household production. Unless binding long-term contracts can be made between the partners, individually rational behavior can lead to inefficient time allocation regarding housework and market work with the latter simultaneously serving as an insurance against the risk of divorce.

In the econometric implementation and analysis this strategic aspect of female labor force participation is estimated in a three-step procedure using data from the German Socio-economic Panel (GSOEP). Making use of the panel structure of these data, conflict payoffs that represent the divorce option to family life are estimated. Together with the predicted probabilities of divorce these "virtual conflict payoffs" are included as instrumental variables in a labor force participation equation. The explicit inclusion of the individual outside option to explain labor supply allows for the insurance

aspects of intrafamily time allocation. The empirical results offer strong support to the bargaining argument based upon a strategic aspect of female employment.

The fifth chapter on household production casts light on the division of labor within German families, particularly the division of household tasks. The division of housework in Germany looks quite similar to what has been found with U.S. data. On average men perform 20% of a family's total housework and 30% of its child care, almost independent of specific household circumstances, i.e. in particular the employment status of their wives. In Chapter 5 the traditional time allocation theory is challenged by a non-cooperative approach to family bargaining that assumes a sequential structure of decision making within the household by means of a "dominance argument". Dominance is thereby defined as the ability to make irreversible decisions, particularly with regard to the use of time. The dominated partner has to take these decisions as given before making own decisions. The empirical evidence supporting the competing models is investigated using panel-econometric techniques. To investigate whether the division of housework among married German couples can be explained by factors identified in the competing theoretical approaches to intrafamily time allocation, a three-equation model is estimated using the GSOEP data. A mixed specification is applied that accounts for both effects of omitted individual-specific variables, fixed constants over time as well as random variables (fixed and random effects). The empirical results reveal that, even allowing for variables claimed by the traditional theory, gender-specific household activity is also influenced by the age difference between spouses. Age difference serves here as an indicator for a strategic advantage in family decision making for the older spouse. This finding supports the dominance argument that the "home chores gap" between husband and wife is greater the larger their age difference.

The third major time use, leisure, is the subject of Chapters 6 and 7. The question addressed is how leisure is distributed among family members and why generally men are observed to have more leisure time than women. In the German Time Budget Survey of 1991/92 for instance, the overall leisure gap between the sexes amounts to more than 20 minutes on an average day (Statistisches Bundesamt 1995). When it comes to working adults the gender-specific difference increases to over half an hour for full-timers. The greatest leisure gap, however, can be observed with households where both husband and wife hold a full-time employment and small children have to be looked after. For these couples the male partners have a full hour more per day than their spouses. Two explanations are proposed, one of a more general nature and one that particularly applies to couples with children. In Chapter 6, the only exclusively theoretical chapter, a non-cooperative bargaining model of intrafamily time allocation is developed that explains the leisure gap between

husband and wife by means of sequential decision making (dominance argument). This model extends the framework presented in the preceding chapter by considering paid and unpaid work as two family public goods and leisure as the only private consumption good in the household. A first-mover advantage in family decision making will results in a higher share of household leisure time for the dominating party, the Stackelberg leader, with the size of the leisure gap depending on relative wages of husband and wife. In this model the leisure gap and the wage gap form a stable equilibrium of gender inequality. Chapter 7 focuses on the time use of working parents. Here the leisure gap between fathers and mothers is regarded as the outcome of an alternating offers game between family members. That is, both partners make a series of alternating offers to each other as how to distribute leisure time between themselves. Leisure is again assumed to be the only private consumption good in the household. A sharing rule for leisure is derived that is determined by gender-specific rates of time preference. This sharing rule is tested empirically with time use data from a German time use survey for 1991/92 controlling also for additional bargaining factors such as each spouses' income potential. While the results for married couples do not unambiguously support the bargaining hypothesis, for cohabiting couples there is empirical evidence consistent with family bargaining over the individual share of leisure time.

Chapter 8 is an assessment of the proposed models on intrafamily time allocation and the empirical evidence presented. In this concluding chapter the principal findings of the four studies are summarized and implications of the bargaining framework with regard to public policy are discussed. Finally the idea of an extension of the formal bargaining approach towards a qualitative bargaining framework will be sketched out.

2 Theories on intrafamily time allocation

2.1 The unitary model

There have been a variety of economic approaches that have attempted to explain the individual's choice of time use as well as the division of labor within a household setting. It was labor economist Jacob Mincer (1962) who first pointed out the importance of distinguishing between the times uses of market work, non-market work and leisure. The first systematic approach to a general theory of the allocation of time was made by Gary S. Becker (1965) in his pioneering contribution to what is now regarded as the New Home Economics. Becker's model was limited to the two-way decision between household production and market work. This approach was later extended by Reuben Gronau (1973, 1977) who then took account of the third time use leisure as opposed to home time in general. Both derive individual time use, particularly labor supply, from the maximization of a household utility function subject to budget and time constraints. In the first section of this chapter the household's time allocation problem will be introduced following the Gronau model although he himself did not explicitly set up a formal theory for the multi-person (family) case. The model presented here will for the most part follow Petra Radke's (1996) interpretation[3].

Keeping matters simple we will consider a two-person-household with a joint utility function. The family members are designated *f(emale)* and *m(ale)*. We assume this utility function to be twice differentiable and quasi-concave, with household utility depending on total consumption X and the family members' respective amounts of leisure time (respectively consumption time) L_f and L_m.

[3] Time allocation models with three time uses have among others also been presented by Althammer/Wenzler (1996), Assenmacher (1990), Graham/Green (1984) and Zimmermann (1985).

M. Beblo *Bargaining over Time Allocation*

$$U = U(X, L_f, L_m)$$

Total consumption X is composed of goods and services that can either be purchased in the market (X_M) or produced at home (X_H). X_M and X_H are thereby assumed to be perfect substitutes for each other:

$$X = X_M + X_H$$

Male and female face time as well as budget constraints. Total available time, i.e. 24 hours per day deducting regeneration time, can be allocated among paid market work M, unpaid household work H and leisure L.

$$T = M_i + H_i + L_i \qquad i = m, f$$

In addition, total consumption is not to exceed the sum of individual labor incomes, the family's non-labor income and the amount of self-produced goods (the price of the market good is set to unity):

$$X \leq w_f M_f + w_m M_m + V + X_H$$

Home goods are produced using f's and m's time inputs (H_f and H_m). On the basis of the following household production function

$$X_H = Z(H_f + H_m),$$

that exhibits positive decreasing marginal productivity ($Z'>0$, $Z''<0$), and the assumption of non-satiation, the resulting budget restriction will have the form

$$w_f M_f + w_m M_m + V - X + Z(H_f + H_m) = 0.$$

That is, total household consumption must not exceed male's plus female's wage incomes, non-wage income and household production.

Hence, the "unitary" household maximizes the following Lagrangian:

$$L(X, L_f, L_m, \lambda) =$$
$$U(X, L_f, L_m) + \lambda(w_f M_f + w_m M_m + V - X + Z(H_f + H_m))$$

Reformulating the first order conditions for an interior solution then yields the optimization conditions for female and male:

$$w_f = Z'(H_f + H_m) = \frac{U_{L_f}}{U_X}$$

$$w_m = Z'(H_f + H_m) = \frac{U_{L_m}}{U_X}$$

with $M_f>0$, $M_m>0$, $H_f>0$, $H_m>0$, $L_f>0$, $L_m>0$.

These conditions are only satisfied if $w_f = w_m$. That is, only with equal wages for female and male does an interior solution to the family time use problem exist where female and male allocate their time to all three time uses according to the equality of individual wage rate, marginal household productivity and marginal rate of substitution between leisure and consumption. If wages are not equated, if e.g. $w_f < w_m$ instead, specialization will result where at least one of the partners chooses only one or two time uses. The empirically most relevant specialization equilibria will occur in the following three cases:

$$1. \quad w_f = \frac{U_{L_f}}{U_X} = Z' < \frac{U_{L_m}}{U_X} = w_m \quad \text{with } H_m = 0.$$

This case implies no male housework. That is, the man allocates his time among market work and leisure and supplies no housework, since his wage rate exceeds marginal household productivity. The woman performs all principal time uses.

$$2. \quad w_f < \frac{U_{L_f}}{U_X} = Z' = \frac{U_{L_m}}{U_X} = w_m \quad \text{with } M_f = 0.$$

Specialization now turns out differently: Whereas the man does market, non-market and no work, the wage the woman could receive outside is too low for her to participate in the labor market at all. She thus specializes on household production and spends the remaining time taking leisure.

$$3. \quad w_f < \frac{U_{L_f}}{U_X} = Z' < \frac{U_{L_m}}{U_X} = w_m \quad \text{with } H_m = 0 \text{ and } M_f = 0.$$

If the female wage rate falls short of and the male wage rate exceeds marginal household productivity the result will be complete specialization with solely female non-market work and male market work.

Further theoretical cases would include no household production performed by the household at all due to both female and male wages exceeding mar-

ginal productivity of housework, no (paid) labor supply by either family member due to low wages, or no leisure time.

Within this framework both spouses specialize according to their comparative advantages in the competing time uses. Analogous to trade theory the household serves as a market where the products are traded at prices that are determined by the partners' respective productivities in market work (wages) and in household production. Thus, a higher male wage rate automatically leads to the well-known gender-specific division of work. A wage differential in the labor market, as manifested in poorer promotion prospects or lower pay for women, will contribute to specialization, even with equal educational backgrounds of husband and wife. Furthermore, the mere ability of women to bear children as well as the complementarity between the bearing and rearing of children establishes a female comparative advantage in household activities, according to Becker (1981a: 21f). In this context the division of labor within families is seen as essentially biologically determined.

2.2 Under critique

If a family members' time use is derived from the maximization of a household utility function subject to pooled budget and time constraints, it still remains to be clarified just how such a joint utility function should come about; whether as a social welfare function of the sort proposed by Paul Samuelson (1956) or as the utility function of an altruistic "head of the household" as Becker suggested (in 1974b) or as some other aggregation of the individual utility functions of all family members. Samuelson was the first who postulated the existence of a household utility function based on distinct utilities of the family members. Since the members agree on a social welfare function, the family as a whole behaves as if it were maximizing this family welfare function. An optimal redistribution of income within the family would then occur according to the equality of all members' individual expenditures. Becker, on the contrary, proposed a model where the household utility function is that of an altruistic head of the household. As a benevolent dictator the head can thereby determine the intrafamily distribution of resources as long as he has the "last word" because he can then redistribute utility among family members according to his marginal utilities. This model of a paternal altruist is known as the "Rotten Kid Theorem"[4].

Apart from the question why individuals, who present themselves as egoistic and selfish decision making units in the outside market, should be driven by

[4] For a detailed discussion of the Rotten Kid Theorem see e.g. Hirshleifer (1977).

pure altruism within their families[5], the New Home Economics' break with the basic principle of methodological individualism seems critical, particularly from a neoclassical perspective (see among others McElroy/Horney 1981 and Chiappori 1988). By maximizing *one* household utility function the behavior of a whole family, represented by the head of the household, is optimized instead of that of an individual. Individuals are only characterized by distinct preferences as long as they are not married but household formation merges the family members' distinct preferences into a black box of a household utility function (Bourguignon/Chiappori 1992).

A second shortcoming concerns the disregard of the distributional aspects of time use decisions. According to Becker (1981a) the spouses-to-be anticipate all future household decisions when matching on the marriage market. Given complete information this implies that life-time-binding contracts on the distribution of marital gains are settled between matching partners at the moment of household formation. Consequently, distributional considerations will not play any role later. This requires not only the existence of binding contracts but also time-constant preferences that are not affected by changes in the family structure or other environmental circumstances. As Notburga Ott has noted (1998: 11) the Beckerian economic conception of the family does not provide a consistent theory, but rather a collection of single models that have been built for explaining quite distinct phenomena such as the occurrence of household formation and dissolution, intrahousehold time allocation, human capital investment or the timing of births.[6] Marriage and divorce are analyzed from the individual perspective, while during a marriage spouses' distinct preferences are merged into a joint household utility function. Distributional aspects are only considered when a household is formed or dissolved. Within a family, on the contrary, issues of distribution are ignored even when analyzing joint time use decisions.

A consequent application of the unitary framework results in a "vicious circle of economic rationality" that has been described by Ott (1993): Young women who are planning to have children eventually anticipate shorter and more discontinuous work lives as a consequence of the comparative advantages argument described above. As a result they decide to invest less in schooling and occupational training than similar young men. This leads to an observed wage differential between men and women according to their respective human capital endowments, again enhancing specialization gains from a gender-specific division of work within the household since it will now be the lower earning woman who interrupts gainful employment due to a baby break. Even if male and female applicants have the same educational

[5] For an elaboration of this point see Becker's "Altruism in the family and selfishness in the market place" (1981b).

[6] See Becker 1957, 1965, 1973, 1974a, 1974b, 1981a, 1981b and 1982.