

5.0 TOWARD A MORE COMPREHENSIVE MODEL OF THE DIVISION OF LABOUR IN HOUSEHOLDS

The inputs of feminists and sociologists presented in the previous sections suggest that orthodox economic models of the family are inadequate in that these models fail to capture interdependence, society-prescribed constraints to women's choices and psycho-emotional factors in modeling a household's allocation decisions.

A step forward in improving economic models of the family would be to incorporate the elements of bargaining, fairness and reciprocity in the decision-making mechanism. Widmalm (1998) attempts to do this, modeling the division of labour decision on both the economic aspects of comparative advantage and the social content of a preference for fairness.

She ignores Becker's biological reductionist assumption that women are biologically wired to be more productive in domestic work. In her model, both husband and wife are equally productive in housework. However, she maintains the wage-differential argument of attributing gendered comparative advantage differences to the wage gap: since women earn lower wages on average compared to men, men have a comparative advantage in market work and women have comparative advantage in domestic work.

In determining the structure of her study, she notes that while the validity of the common household utility function has been challenged in several empirical studies, unitary models would still capture the behavioral patterns of couples who **do** agree on household allocation matters. She therefore employs both the unitary model and a bargaining model to depict behavioral patterns of both agreeing and non-agreeing couples.

This section sums Widmalm's work and draws on the arguments presented in earlier sections to highlight areas for improvement.

5.1 The Fairness Preference in a Unitary Model

Widmalm presents a Samuelson version of the unitary model, in which couples arrive at a common utility function based on consensus. She takes Gronau's (1977) approach in assuming decreasing returns in household production, as opposed to Becker's (1981) approach of linear or increasing returns, in order to arrive at a solution in which both spouses engage in paid and unpaid work, albeit to different degrees. She also assumes that the labour versus leisure choice is exogenous: spouses allocate total **labour** time T to both market work and housework.

H_i is used to denote the amount of hours spent on domestic work and M_i the hours spent on market work. $T = M_i + H_i$, $i = m, f$ where m is the husband and f the wife.

The wage differential is captured by $w_f < w_m$ and the production function of the household public good (the product of housework) is written $h = \tilde{h}(H_f) + \tilde{h}(H_m)$.

With decreasing returns to each partner's time in housework, $\frac{\partial \tilde{h}}{\partial H_i} > 0$, $\frac{\partial^2 \tilde{h}}{\partial H_i^2} < 0$

and $\frac{\partial^2 \tilde{h}}{\partial H_i \partial H_j} = 0$ for $i \neq j$.

The individual utility functions comprise utility from the consumption of both private goods, c and the household public good, h . In the unitary model, couples are assumed to have identical utility functions $U(c_i, h)$, and the preference for

fairness in the division of housework is captured by $V\left(\frac{H_m}{H_f}\right)$. Widmalm

acknowledges that the fairness preference may be stronger for some couples than for others, and she therefore uses the parameter β to weight the fairness preference relative to the importance placed on the availability of private and public goods for consumption. Normalizing prices of private goods to one, she arrives at the following household maximization problem:

$$u(c_m, h) + u(c_f, h) + \beta V\left(\frac{H_m}{H_f}\right) - \lambda[c_f + c_m - w_f(T - H_f) - w_m(T - H_m)] \quad 5.1$$

She then presents the first-order conditions for maximizing (5.1):-

$$u_{c_f} - \lambda = 0 \quad 5.2$$

$$u_{c_m} - \lambda = 0 \quad 5.3$$

$$2u_h \frac{\partial \tilde{h}}{\partial H_f} - \beta V'\left(\frac{H_m}{H_f}\right) - w_f \lambda = 0 \quad 5.4$$

$$2u_h \frac{\partial \tilde{h}}{\partial H_m} + \beta V'\left(\frac{1}{H_f}\right) - w_m \lambda = 0 \quad 5.5$$

$$c_f + c_m - w_f(T - H_f) - w_m(T - H_m) = 0 \quad 5.6$$

A comparison of outcomes for couples without the fairness preference against that of couples with a fairness preference follows.

5.1.1 The Case When There Is No Fairness Preference ($\beta = 0$)

Widmalm argues that since the product of housework is a public good, the same amount of the result of housework, h would be enjoyed by both spouses equally. Also, equations (5.2) and (5.3) imply that spouses consume equal amounts of the private consumption good, such that $c_f = c_m = c^*$.

Equations (5.4) and (5.5) are then used to depict the division of housework:

From (5.4):

$$2u_h \frac{\partial \tilde{h}}{\partial H_f} = w_f \lambda$$

From (5.5):

$$2u_h \frac{\partial \tilde{h}}{\partial H_m} = w_m \lambda$$

$$\Rightarrow \frac{\frac{\partial \tilde{h}}{\partial H_f}}{\frac{\partial \tilde{h}}{\partial H_m}} = \frac{w_f}{w_m} \quad 5.7a$$

Since $w_f < w_m$, thus $H_f^* > H_m^*$ which implies that $M_f^* < M_m^*$.

This is the gains from specialization result. With wage differentials, the wife has comparative advantage in housework and therefore optimally does more housework than her husband, and since the husband has comparative advantage in market work, he engages in more market work than his wife does.

Thus, the total amount of household public good provided is

$$h^* = \tilde{h}(H_f^*) + \tilde{h}(H_m^*)$$

5.1.2 The Case When a Preference for Fairness Exists ($\beta > 0$)

Both partners still consume equal amounts of the household public good and the private consumption good, but with a positive β , equations (5.4) and (5.5) generate shadow prices of housework:-

From (5.4):

$$2u_h \frac{\partial \tilde{h}}{\partial H_f} = \beta V' \left(\frac{H^m}{H^2_f} \right) + w_f \lambda$$

From (5.5):

$$2u_h \frac{\partial \tilde{h}}{\partial H_m} = -\beta V' \left(\frac{1}{H_f} \right) + w_m \lambda$$

$$\Rightarrow \frac{\frac{\partial \tilde{h}}{\partial H_f}}{\frac{\partial \tilde{h}}{\partial H_m}} = \frac{\beta V' \left(\frac{H_m}{H_f} \right) + w_f \lambda}{-\beta V' \left(\frac{1}{H_f} \right) + w_m \lambda}$$

Recalling that $u_{c_f} = u_{c_m} = \lambda$ from equations (5.2) and (5.3), and that $c_f = c_m = c^*$,

this means

$$\frac{\frac{\partial \tilde{h}}{\partial H_f}}{\frac{\partial \tilde{h}}{\partial H_m}} = \frac{w_f u_c + \beta V' \left(\frac{H_m}{H_f} \right)}{w_m u_c - \beta V' \left(\frac{1}{H_f} \right)} \quad 5.7b$$

Equation (5.7b) is clearly larger than (5.7a) due to the fairness preference, indicating a less specialized division of housework and market work. Widmalm concludes that the fairness preference results in a more equal division of labour, generating a cost in that comparative advantage is not fully exploited.

Widmalm also comments that recent trends of narrowing wage differentials imply a more equal division of housework, an increase in private consumption and an increase in husbands' involvement in domestic tasks. However, this runs contrary to observations by Baxter and Western (1996) and others who find that despite greater labour force participation among women, men's contribution to domestic work has changed little.

5.2 The Fairness Preference in a Bargaining Model

Widmalm constructs a bargaining model to study household arrangements when spouses do not agree on a common utility function. Each spouse maximizes his or her own utility based on the expected behaviour of partners. Widmalm comments that in such a household, the gains from marriage would be in joint consumption of the household public good, but since neither spouse takes account of their partner's utility in deciding how much housework to engage in, the public good would be underprovided.

The wife maximizes her own utility in choosing how much time to spend in housework, H_f subject to her own estimation of her husband's contribution of the same, H_m^e . The wife's maximization problem is therefore

$$u(c_f, h^e) + \beta V\left(\frac{H_m^e}{H_f}\right) - \lambda[c_f - w_f(T - H_f)] \quad 5.8$$

where $h^e = \tilde{h}(H_f) + \tilde{h}(H_m^e)$ is the wife's estimation of total household good provided, based on her own contribution and what she expects her spouse will provide.

The first order condition is then

$$w_f u_c - \frac{\partial \tilde{h}}{\partial H_f} u_h + \beta V' \frac{H_m^e}{H_f^2} = 0 \quad 5.9$$

The husband faces a similar maximization problem but without the fairness preference, and the first order condition for his maximization problem is

$$w_m u_c - \frac{\partial \tilde{h}}{\partial H_m} u_h = 0 \quad 5.10$$

5.2.1 The Case When There Is No Fairness Preference ($\beta = 0$)

Widmalm assumes that any substitution effect dominates any income effect such that wives, with a comparative advantage in domestic work, will work more at home and less in the market compared to their husbands:-

$$H_f^N > H_m^N \text{ and } M_f^N < M_m^N.$$

Since $w_f < w_m$, the wife gets less private consumption than her husband, thus

$$c_f^N < c_m^N.$$

Equations (5.9) and (5.10) under the condition of $\beta = 0$ imply the following:-

$$w_f u_c - \frac{\partial \tilde{h}}{\partial H_f} u_h = 0$$

$$w_m u_c - \frac{\partial \tilde{h}}{\partial H_m} u_h = 0$$

$$\Rightarrow \frac{w_f u_{c_f^N}}{w_m u_{c_m^N}} = \frac{\frac{\partial \tilde{h}}{\partial H_f}}{\frac{\partial \tilde{h}}{\partial H_m}} \quad 5.11$$

Comparing this division of housework with that of the unitary model as expressed

in (5.7a), we can see that since $c_f^N < c_m^N$, then $\frac{w_f u_{c_f^N}}{w_m u_{c_m^N}} < \frac{w_f}{w_m}$ implying that both

housework and market work would be more equally divided than in the unitary model, even without the fairness preference. The wife in the bargaining model works less in the home (and more in the market) than the wife in the unitary model: $H_f^N < H_f^*$. There is some specialization, but not to the extent that would be economically efficient.

Also, since neither spouse takes into account their partners' utility from the provision of the household public good, the public good would be underprovided:

$$h^N < h^*.$$

5.2.2 The Case When a Preference for Fairness Exists ($\beta' > 0$)

With a preference for fairness, the division of housework would be thus derived:

From 5.9,

$$w_f u_{c_f^N} - \frac{\partial \tilde{h}}{\partial H_f^N} u_h + \beta V' \frac{H_m^e}{H_f^2} = 0$$

$$\Rightarrow \frac{\partial \tilde{h}}{\partial H_f^N} u_h = w_f u_{c_f^N} + \beta V' \frac{H_m^e}{H_f^2} = 0$$

From 5.10,

$$w_m u_{c_m^N} - \frac{\partial \tilde{h}}{\partial H_m^N} u_h = 0$$

$$\Rightarrow \frac{\partial \tilde{h}}{\partial H_m^N} u_h = w_m u_{c_m^N}$$

$$\text{Thus, } \frac{\frac{\partial \tilde{h}}{\partial H_f^N}}{\frac{\partial \tilde{h}}{\partial H_m^N}} = \frac{w_f u_{c_f^N} + \beta V' \frac{H_m^e}{H_f^2}}{w_m u_{c_m^N}}$$

Widmalm shows that when wives' preference for fairness is stronger (as β increases), wives reduce their own contribution to housework, resulting in a lower provision of the household public good such that both spouses would end up consuming less public good. Husbands respond to this by increasing their contribution to housework, but not sufficiently to compensate for the decrease in wives' contribution. The total amount of household public good provided is therefore smaller than if there was no preference for fairness.

Widmalm also shows that the woman would end up with more private consumption and the husband less when β increases, but despite the increase in utility from greater consumption of the private good, the wife also experiences disutility from a less-than-equal distribution of housework such that she is still worse off compared to her husband.

5.3 The Validity of Widmalm's models vis-à-vis Sociologist and Feminist Theory

Widmalm's incorporation of the fairness preference in models of household decision-making do appear to bring the economic agent closer to the emotionally-connected self described by England. However, to what extent do Widmalm's models reflect the thoughts captured in sociologist and feminist literature?

Widmalm, in describing how economic policies may affect different types of households, draws parallels between her work and that of Bergmann's. She uses the parameters in her model to illustrate the different categories of households described by Bergmann (1986). Bergmann's classification of household arrangements, based on market involvement of wives and the division of domestic tasks within the marriage depicts five types of arrangements: *housewife* (domestic tasks performed by wife who does not engage in market work), *semi-housewife* (domestic tasks performed by wife who engages in part-time work), *drudge-wife* (domestic tasks performed by wife who engages in full-time work), *two-housekeepers* (both spouses employed and share domestic tasks about equally) and *cash-paying couples* (the household purchases household-related services from a third party).

Widmalm likens the two-housekeeper and cash-paying households to the case where the parameter β is very large (the preference for fairness is dominant). She also notes that these household arrangements suggest that some consensus regarding household allocation was reached.

Bergmann's drudge-wife arrangement is suggested to correspond with low- β households (wives have low preference for fairness) and a more equal wage rate (resulting in a smaller comparative advantage differential).

Sociologists' emphasis on the importance of reference groups in determining perceptions of fairness is also consistent with Widmalm's models. Where wives compare self to spouse, the weight parameter β takes a large value. When wives compare self to reference points along more traditional lines however, for example their own mothers, the value placed on an equal division of labour is small, and this is captured by a small β .

Similarly where wives react to inequity by psychological justification as suggested by equity theory, the parameter β becomes small. An unequal division of labour is rationalized as being less unfair or somewhat satisfactory, and does not create great disutility to wives. Whether a low β reflects deliberate indifference for fairness, as in the case of traditional-ideologied wives or psychological justification and resigned acceptance, as in the case of women trapped in inequitable relationships however, cannot be distinguished.

Similarly, while power and alternatives are not explicitly modeled by Widmalm, these elements do enter Widmalm's models, once again via the parameter β . Wives with more options outside the marriage and greater economic power are better able to influence decision making. If such "powerful" wives place value in more equal divisions of housework, the parameter β would be large and vice versa.

explained in terms of a low β and a small wage gap. In other words, households with dual-earners are assumed to exist purely due to a preference for fairness or small wage differentials when in fact financial pressures may be a more relevant explanatory variable. It is common for example, for urban families to be dual-income households, hiring market substitutes to domestic work in order to facilitate full-time employment on the part of both husband and wife. Such families may not be thinking in terms of "what is fair" so much as "what is financially viable".

In fact, Brinig (1994) and Brinig and Carbone (1988) criticize Becker (1985) for ignoring the possibility that hiring domestic help improves household efficiency. They argue that doing so excludes housework from the gains to specialization argument. Increased acceptance and availability of market alternatives to domestic work such as childcare and housekeeping services may create advantages for spouses who **both** specialize in market work and market capital.

In modeling household decision-making solely on wage differentials and a preference for fairness, Widmalm also fails to take into account social structure. Women who bear primary responsibility for domestic work are assumed to do so based on a conscious decision to exploit comparative advantage differentials. The significant influence of society-prescribed roles, as suggested in sociologist and feminist literature is not given due recognition. Surprisingly, Widmalm herself

herself mentions studies which suggest a decision order in which women are assigned household responsibilities first, and **then** choose how much paid work to engage in. Her models however, fail to explain how such a decision order came to be. By assuming this order as given, Widmalm has failed to highlight the magnitude of constraints imposed by society on women's choices.

Yet another issue with Widmalm's models is the fact that fairness is modeled on a time allocation basis. The preference for fairness variable $V\left(\frac{H_m}{H_f}\right)$ measures fairness in terms of the ratio of time men spend on domestic work to time women spend on the same. Despite acknowledging findings by Benin and Agostinelli (1988), Robinson and Spitze (1992) and Blair and Johnson (1992) that wives' perceptions of fairness has more to do with husbands' contribution to non-traditional tasks than to time spent on domestic work, her models capture fairness preference solely in terms of the latter.

Nevertheless, Widmalm's models **do** appear to address sociologist notions of the importance of perceptions of behaviour rather than behaviour itself, and the role of gender ideology in decision-making. Perceptions of behaviour are captured in the bargaining model by the reaction functions: fairness is viewed in terms of the wife's contribution to housework (H_f) relative to her estimation of her husband's contribution (H_m^e).

As for gender ideology, Widmalm uses the weight parameter β , assigned to the fairness preference variable $V\left(\frac{H_m}{H_f}\right)$, to capture each household's degree of gender equality orientation. An egalitarian couple would place a high value on a fair (in terms of equal) division of housework and would therefore have a large β . A traditional couple on the other hand, would more likely place a higher value on making more private and public goods available for the family as a whole, and would thus assign to β a low or zero value.

The degree to which specialization may reinforce traditional ideology and thereby create additional utility within the marriage is therefore also explicitly modeled in both the unitary and bargaining versions. This is clear when we recall the household's maximization problem in each model, as expressed in (5.1) and (5.8) respectively:

$$u(c_m, h) + u(c_f, h) + \beta V\left(\frac{H_m}{H_f}\right) - \lambda [c_f + c_m - w_f(T - H_f) - w_m(T - H_m)] \quad 5.1$$

$$u(c_f, h^e) + \beta V\left(\frac{H_m^e}{H_f}\right) - \lambda [c_f - w_f(T - H_f)] \quad 5.8$$

where the terms $\beta V\left(\frac{H_m}{H_f}\right)$ and $\beta V\left(\frac{H_m^e}{H_f}\right)$ denote utility from a division of labour which reinforces the couple's gender ideology. For a traditional couple, β equals

zero and the division of labour does not enter the maximization problem. Intuitively, traditional couples are likely to arrive at a traditional division of labour anyway, and would be unlikely to experience either utility or disutility from such an arrangement.

For egalitarian couples on the other hand, β is large. When the division of labour is more equal, the parameters measuring fairness take on a large positive value implying utility from a division of housework that is consistent with the couple's ideology. In short, Widmalm's models **do** capture the ideological context of marital relations, at least to some degree.

The fairness interpretation of sociologists in looking at the division of domestic work is also observable in Widmalm's models, in that she specifies the fairness preference variable V as negative when $\frac{H_m}{H_f} < 1$ **and** when $\frac{H_m}{H_f} > 1$. Widmalm notes that the only distribution of housework which does not create disutility for either spouse is where $H_f = H_m$. This appears consistent with Poortman and Kalmijn's (2001) findings that divorce risk falls when husbands' contribute more to domestic work but increases after the point of equal division. It is not unreasonable to draw a parallel here between higher utility within the marriage and lower divorce risk.

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6.0 CONCLUSION

Orthodox economic models of the family depict household allocation decisions as based on purely economic factors such as comparative advantage (whether biologically derived or generated from human capital investments as a response to wage differentials) and utility from consuming private and household public goods. These models have been criticized by feminists as being androcentric, using patriarchal families as the sole explanation for the many gender inequalities that occur both in the workplace and at home.

The fundamental assumption of the selfish and separative agent who bases all decisions on rational optimization has been refuted, and feminists have questioned neoclassical economists' treatment of women's choices as being purely voluntary. That the models employ circular reasoning has also been highlighted.

Unitary models in particular have drawn the ire of feminists, who question the assumption that households agree on common utility by consensus and worse, that the benevolent head of the household subsumes the individual needs of family members and altruistically distributes resources within the household. While some feminists criticize the altruistic head model as failing to recognize that it is power over resources rather than altruism that allows the head of the household to control the behaviour of family members, others point to evidence

of decidedly un-altruistic behaviour on the part of patriarchs. Sen (1984) for example, argues that patterns of domestic abuse and unequal food distribution within the family clearly suggest that family members are not always altruistic. Strassman (1993) also cites evidence by Kumar (1979) and Horton and Miller (1991) which show that children in poor countries are better off if government transfers are given to mothers rather than fathers. If it is true that power distribution rather than altruism drives decision-making within the family, then economic analyses based on the assumption of intra-family altruism would be questionable. Strassmann (1993:59) asserts that flawed assumptions such as these translate to inappropriate theories and policies which do nothing to advance the welfare of women, children and the family unit as a whole.

While bargaining models of the family in neoclassical economic literature has done much to capture the independent agency of men and women, sidestepping the consensus and altruism elements of unitary models and capturing the notions of power within marriage, these models have been accused of falling prey to the separative self, voluntary choice and circular reasoning flaws of unitary models. Sociologists have also noted that bargaining models tend to focus on behavioral components rather than perceptions of behavior.

Sociologists and feminists have also found issue with economic models of the family, which fail to recognize the agency of social structure, traditions, norms,

ideology and other socio-psychological factors. Olsen (1995), in a paper proposing further research into paid and unpaid labour in rural India, contends that economic practices and decisions are rooted in social structure. Where neoclassical economics views labour supply decisions as individual, voluntary, market-oriented and a product of rational optimization to maximize utility, Olsen sees people as located within social structures which greatly influence their attitudes and actions.

More recent developments in the literature of family economics have seen attempts to address some of these issues. Widmalm's unitary and bargaining models of the family for example, incorporate fairness preferences in an attempt to capture both the economic and social contexts of family.

While Widmalm's models maintain the circular reasoning and voluntary choice assumptions of orthodox economic theory, these models do appear to gel with many of the thoughts of sociologists and some of feminists. The ability of her models to capture to some extent the elements of ideology and perceptions, power and psychological justification and the utility from having a partner who shares domestic chores should be commended.

Widmalm's models are also devoid of the biological reductionist flaws of many neoclassical models. In this respect, Widmalm has succeeded in avoiding

essentialism, which is the misguided belief that particular traits are naturally male or female. Ferber and Nelson (1993:10) point to historical and cross-cultural variations in gender attribution patterns to suggest that the genderization of characteristics may be a matter of social belief rather than biological wiring. By modeling comparative advantage solely on factors generated by wage differentials and then including the fairness parameter in decision-making problems, Widmalm allows perception and ideology rather than biological wiring to determine the division of labour at home. This appears to be an improvement on Becker's model, which has been criticized for its assumption of the biologically-determined given-ness of skills of men and women.

Room for improvement however, can be found in modeling fairness in terms of perceived involvement in non-traditional tasks, as supported by sociologist literature, rather than the time-allocation measure of orthodox economics.

In addition, Widmalm models utility solely on the consumption of private and household public goods as well as the utility from a division of labour that is consistent with ideology. The psychological element of utility from self-realisation, social recognition and validation that follows market work, absent from her models, could play a significant role in determining women's choices, particularly in societies that embrace female involvement in the labour force.

Socio-feminist literature has also highlighted the possibility that women engage in paid work as a hedge against divorce risk. This suggests that there is a disutility-decreasing element in the choice of women to engage in market work. While it may be argued that such an effect may be offset by the disutility of facing divorce risk, further research in this area may prove valuable.

Yet another issue which may complicate analysis of division of labour decisions, particularly how women's labour force participation affects marital relations is highlighted by Breen and Cooke's (2003) observation that while divorce rates have increased in tandem with female labour force participation rates, so too have the rates of cohabitation and remarriage. They suggest that the increase in divorce rates may simply indicate that the particular partnering form of a legal marriage has fallen out of favour.

It is obvious then that we are still far from a comprehensive model of the family. Developments in the literature have however been encouraging, and the inputs of feminists, feminist economists and sociologists can only bring us closer to modelling the family in a more cohesive cross-disciplinary manner better able to address the internal dynamics of home and family.