

The Basic Model (Section 1)

This is an example of a collective (but not bargaining) model of the household. The household's problem is the following.

$$\begin{aligned} \max_x \quad & \theta u_f(x) + (1 - \theta) u_m(x) \\ \text{st} \quad & p \cdot x \leq Y, \end{aligned} \tag{1}$$

where x is a consumption vector for the household, $0 \leq \theta \leq 1$ is an index of the female's power (and $1 - \theta$ is the index of the male's power), u_f is the female's utility function, u_m is the male's utility function, $p \cdot x$ is the household's expenditure on goods, including leisure of the female and male, and Y is the potential income of the household, that income earned if the female and male work all the time.

It is also assumed that $\theta = \theta(z, x)$, i.e., the index of the female's power depends on consumption of the household, x , and cultural factors, z .

There is an *equilibrium* in the household when there is an x^* and a θ^* such that x^* solves the problem at (1) (where $\theta = \theta^*$) and $\theta^* = \theta(z, x^*)$.

Application to Women's Labor Supply (Section 3)

Now we look at a special case of the model in the paper. The household's problem is

$$\begin{aligned} \max_{x,e} \quad & \underbrace{U(x,e)}_{\text{household utility}} = \underbrace{x}_{\text{utility of consumption good}} - \underbrace{\left[\underbrace{\theta c_f(e)}_{\substack{\text{female's disutility for} \\ \text{her work, weighted} \\ \text{by her power index}}} + \underbrace{(1 - \theta) c_m(e)}_{\substack{\text{male's disutility for} \\ \text{female's work, weighted} \\ \text{by his power index}}} \right]}_{\text{household's disutility for female's work}} \end{aligned} \tag{2}$$

$$\text{st } px \leq ew + Y \text{ (constraint: expenditure doesn't exceed household income),}$$

where

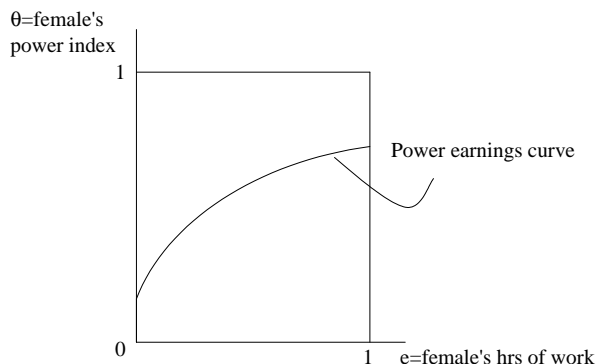
- x is the consumption good with price p
- e , where $0 \leq e \leq 1$, is the number of hours of paid labor for the female, the female's work effort
- θ , where $0 \leq \theta \leq 1$, is the female's power index (and $1 - \theta$ is the male's power index)
- w is the female's wage
- $c_f(e)$ is the disutility of the female for her labor
- $c_m(e)$ is the disutility of the male for the female's labor.

It is assumed that the male works the maximum number of hours possible, and his paid labor (but not the female's) is included in Y .

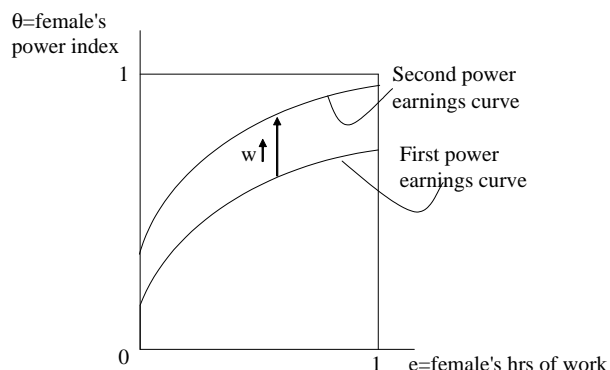
It is assumed that the female's power index depends on her earned income, i.e., $\theta = \theta(ew)$. It is also assumed that as the female's paid labor increases, her household power increases.

There is a household equilibrium when (x^*, e^*) solves (2) (where $\theta = \theta^*$) and $\theta^* = \theta(e^*w)$.

THE POWER EARNINGS CURVE This shows how the female's power index, θ , depends on her work effort, e . (Recall that in this model, it is assumed that the female's power index depends on her earned income, i.e., $\theta = \theta(ew)$; specifically, it is assumed that as the female's earned income increases, her power index increases.) It can be argued that as the female's work effort increases, her power index increases, as shown in the following.

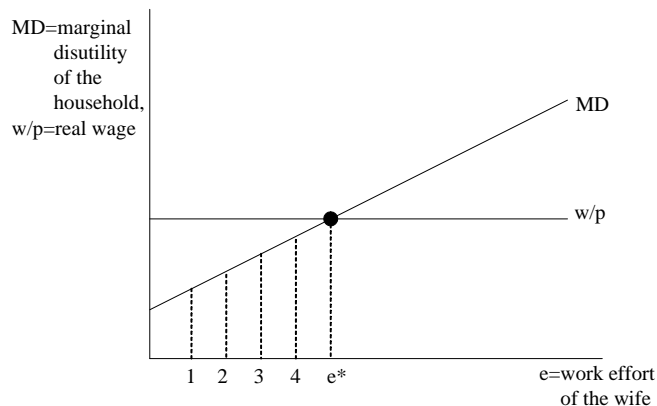


Shifts in the power earnings curve It can be argued that an increase in the female's wage, w , shifts the curve upward.

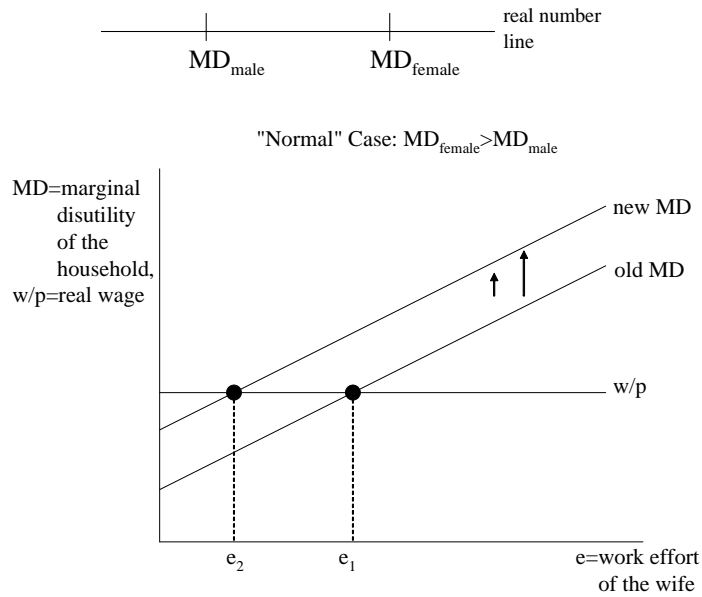


THE EFFORT SUPPLY CURVE This shows how the choice of the female's work effort, e , depends on her power index, θ . There are three possibilities, two of which are represented.

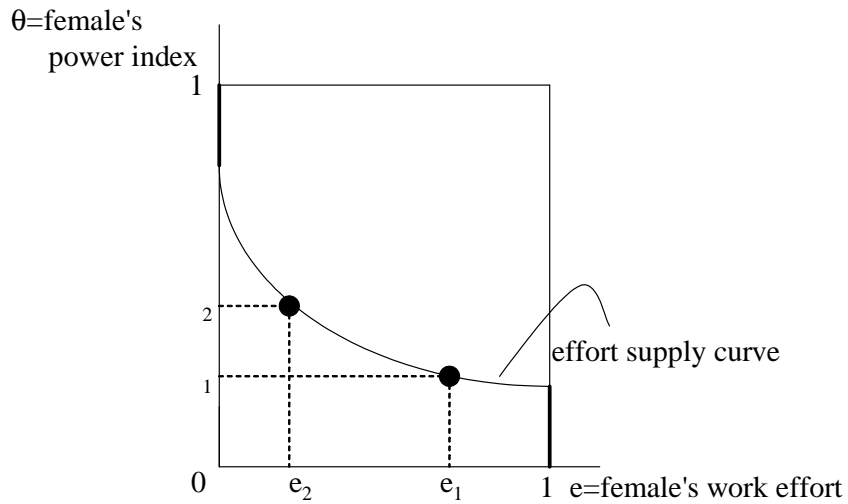
First, we indicate what level of the female's work effort, e , is chosen for a given level of her power, θ . In the following, MD , the marginal disutility of the household, is the increase in disutility of the household for the female's work when her work effort is increased by 1 unit.



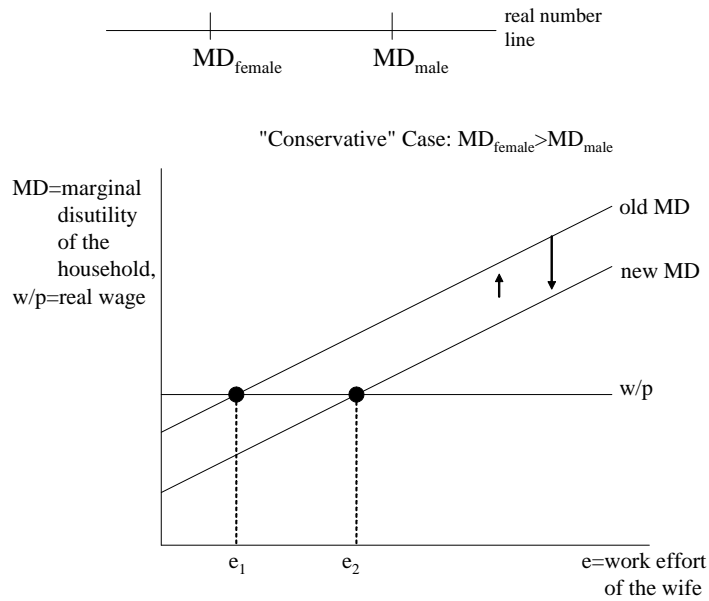
“Normal” Case The marginal disutility of the male for the female’s paid work is less than the marginal disutility of the female for her paid work.



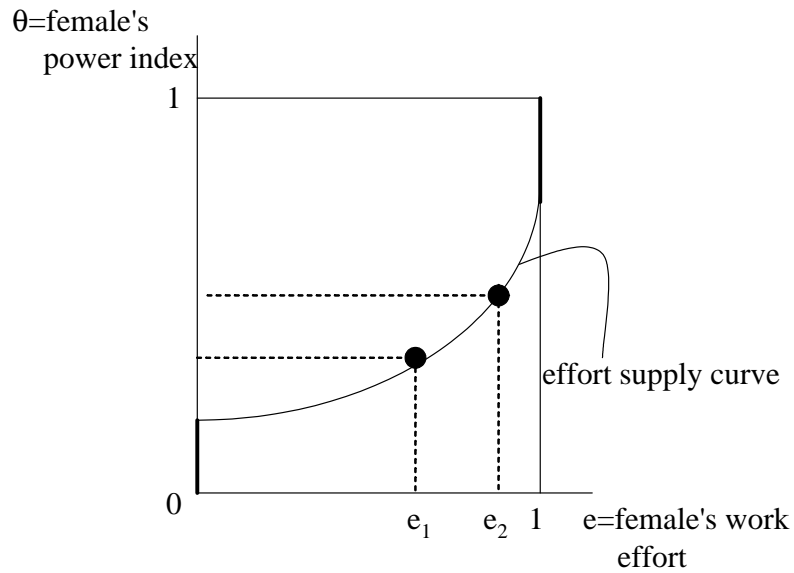
In this case the effort supply curve is downward sloping: as the power index of the female, θ , decreases, her work effort, e , increases.



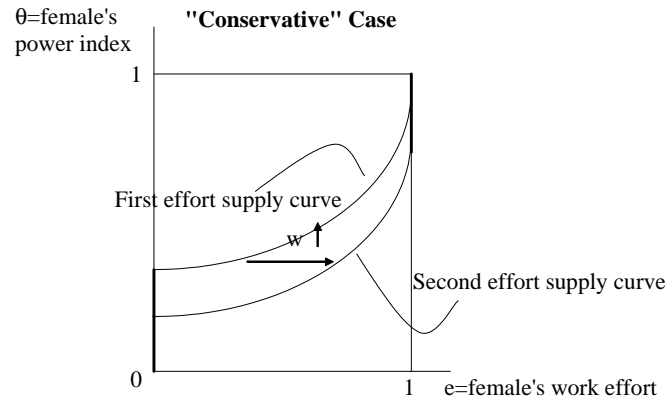
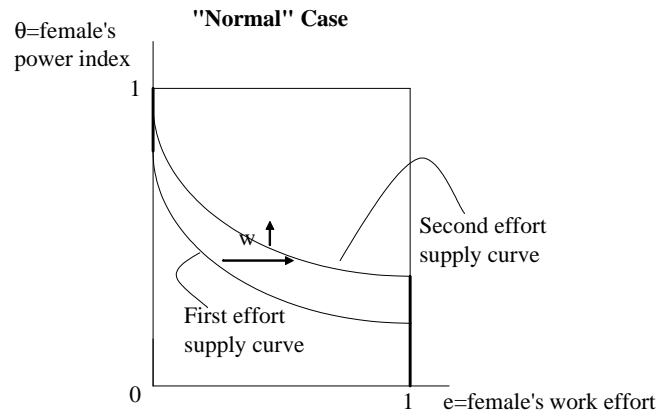
“Conservative” Case The marginal disutility of the male for the female’s paid work exceeds the marginal disutility of the female for her paid work.



In this case the effort supply curve is upward sloping: as the power index of the female, θ , increases, her work effort, e , increases.

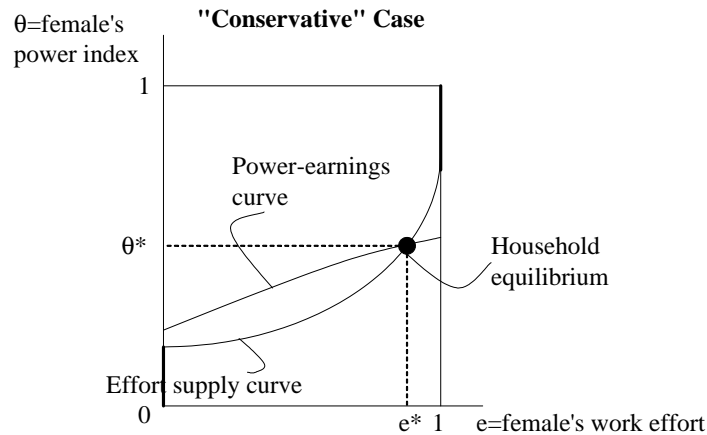
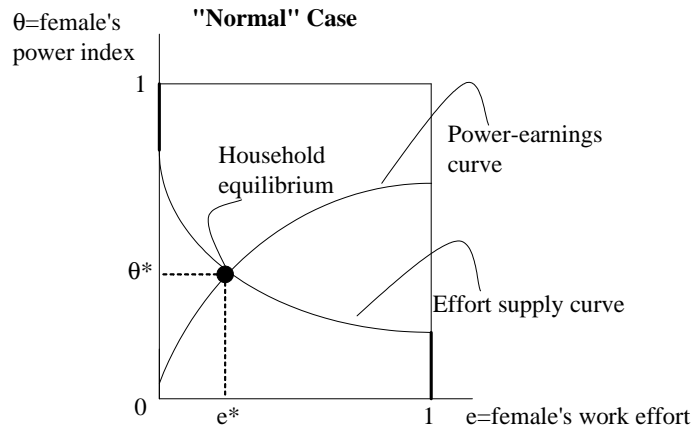


Shifts in the effort supply curve It can be argued that as the female's wage increases (or price of the consumption good decreases), the curve shifts to the right, as shown in each of the two cases we are considering.



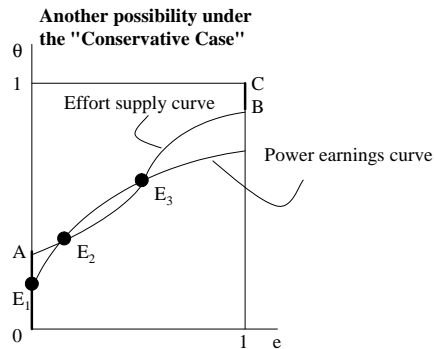
Household Equilibrium

There is a household equilibrium at (e^*, θ^*) when the household chooses e^* along the effort supply curve and θ^* is the power index given e^* . That is, there is a household equilibrium where the effort supply curve and power earnings curve intersect.



Another possibility under the "Conservative Case"

It is possible that for identical households, a female may work very little in paid labor or may work many hours in paid labor, i.e., this model allows for the possibility that a household has multiple equilibria in the decision of how many hours a female will devote to paid labor.



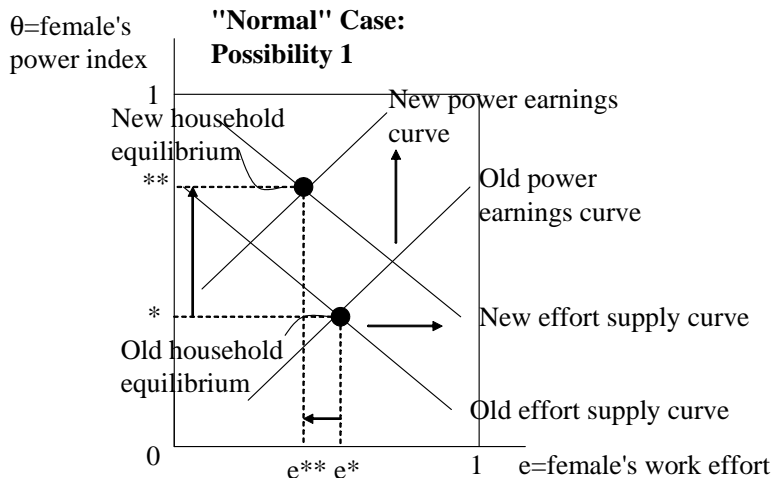
Comparative Statics

In all of the following situations, we allow w , the female's wage, to increase and examine the impact on the household's equilibrium female's work effort and power index.

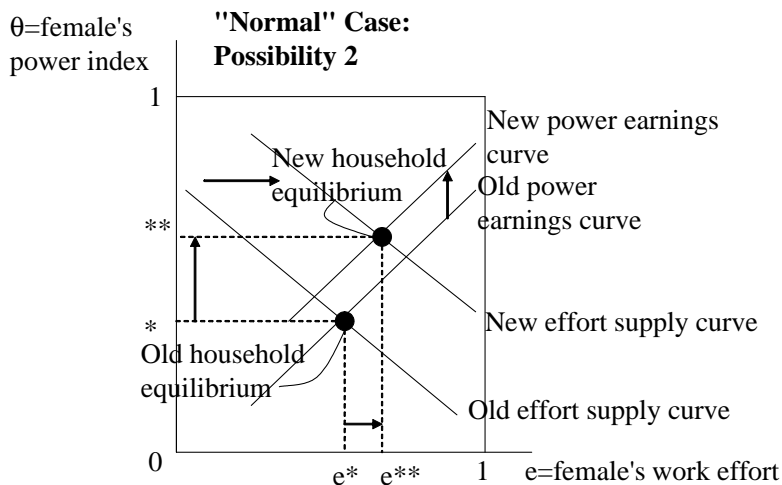
Normal Case

In this case, we find that the female's power index will increase for sure, but the effect on the female's work effort is ambiguous. There is a third possibility, not represented, where the female's work effort stays constant.

Work effort decreases



Work effort increases



Conservative Case

In contrast to the last case, in this case, we find that the female's power index and work effort will increase for sure.

