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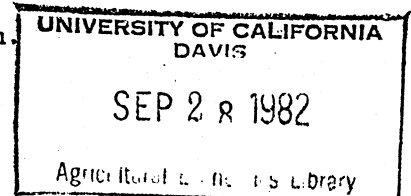
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I. Introduction

The older conventional economic perspective of the household accorded little in the way of economic functions to the household itself. National income accounting methods in economics, however, have implicitly and sometime explicitly acknowledged that a great deal of economic activity takes place in the confines of the home. For example, the earnings of paid household servants engaged in cooking, food preparation, house cleaning and the like are considered to be part of national income, but when the same activities are undertaken by unpaid family workers the convention is not to treat them as income. Similarly, when food is processed and prepared by commercial firms, from meat packers to fast food franchises, it is considered economic in nature and part of national income. When the same activities are undertaken in the household they are not considered to be economic.

This tradition regarding income measurement, which is basically an accounting convention, has had some very fundamental implications for broadly held perspectives on women and economic activity. It reinforces the view that such tasks as food processing and preparation, care of children and cleaning and maintaining household goods is not "work" in the broadly accepted sense, or at least that it is not as intensive and strenuous as say the transplanting and harvesting of rice. It further reinforces the notion that since these activities are not genuine work there isn't much resource "management" or production "technology" associated with them. The view that these activities are governed by culturally determined patterns and roles and habits prevails.

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I have suggested elsewhere (Evenson, Food Policy, 1981), that there is a parallel between the dominant perspective toward farm enterprises in developing countries three decades ago and the dominant perspective toward activities within the household today. Farmers were then regarded as unresponsive to prices and concerned with community roles and relationships at the expense of efficient resource allocation. Farm management human capital was not considered to be very important and farmers were considered to be unaware or uninterested in what was thought to be an abundant shelfful of useful technology. This is pretty much the perspective toward household management and household technology today in many countries.

Our perspective towards farmers has changed quite dramatically as evidence that farmers did respond to prices and did experiment with and adopt improved technology when it paid to do so accumulated. This evidence did not indicate that farmers were perfectly efficient, indeed it showed that considerable variation in economic efficiency among farmers existed and that this variation was related to schooling investments and investments in extension. It further showed that the presumed shelfful of useful technology was more fiction than fact because the soil, climate and economic conditions of farmers in developing countries rendered it uneconomic.

I wish to argue in this note that the current perception of household activities in developing countries bears about the same relationship to reality that the perception towards farm activities three decades ago did. I will

discuss some evidence in support of the following statements regarding rural households in most developing countries:

a) The real economic value of activities undertaken within the household is roughly equal to household income as conventionally measured.

b) The qualitative importance of household production is at least as great as its quantitative importance.

c) Household management skills are important. This is particularly true regarding the purchase and processing of food and of general health care activities. It does not follow, however, that easy gains from improvement in these skills can be made. Just as the poorest farms are "efficient by necessity" in many countries, the poorest households are similarly efficient by necessity.

d) New household technology has been important in the health area and is often embodied in health services. Many improvements in household technology widely in use in developed countries are irrelevant in poor countries.

e) Women specialize in household production and in household (and farm) management for good economic reasons and they probably are as responsive to changes in economic conditions as are men who generally specialize in farm and labor market production.

f) Removing impediments or restrictions to the opportunity for any household members to engage in productive activity in the household or the farm or in labor markets generally produces improvements in household welfare. In practice these impediments and restrictions are often most serious for women and the prospects for policy induced welfare gains from their is great.

I am not attempting to portray the household as an individualistic unit carefully calculating all of the relevant marginal products and not caring for the community or for relatives. I have already noted that skills differ greatly between households. The economic perspective on households

is also not inconsistent with community participation, strong kinship relationships or family instability.

In section II and III of the paper I will attempt to document the statements just presented and to discuss their rationale. In section IV I will attempt to draw out a few of the implications for at least some types of policy intervention.

II. Women, Work and Income

A. The (Quantitative) Economic Importance of Household Activities

Since household production activities play such an important part of this discussion it will be useful to first establish whether they are important enough to matter. To proceed let us define full income.

Full income has two definitions just as conventional income does. From the goods and services perspective it is the sum of the value of goods and services consumed or invested by the household. From the factor perspective it is the sum of the value of the resources, time, goods and capital services, required to produce the goods and services consumed and invested. For practical purposes the second definition is most relevant.

One of the strengths of modern household economic analysis is that it can be used to analyze the consumption (investment) of goods and services that are not traded in markets. Child services, prepared meals, clean surroundings, child health and the like are usually not traded in markets hence do not have price-tags per se. Nonetheless they are economic in nature because they cost something. Put another way, they compete for scarce full income - more prepared meals mean less of something else. The modern household model emphasizes the cost ride by noting that most goods on services are in fact produced by a value-added process in the household. This process entails the addition of real economic value to goods and services purchased in markets by utilizing time and

household capital services in the home. Further, there may be a high degree of substitutability between home resources and purchased goods and services in this production process.

This can be illustrated quite readily by noting that households may purchase foods on the market (say raw vegetables, fresh fish, etc.) which then must be further processed and cleaned and then cooked and integrated into a finished meal. The time of household members and the services of household capital goods (utensils, stoves, possibly refrigerators) plus cooking fuel are required in home production. These resources all have economic value. It is also readily clear that households can easily substitute market resources for home resources by purchasing food items with different degrees of processing embodied in them. We often observe that in households where the alternative cost or value of time is high, households purchase food with higher degrees of processing. Thus in the process of economic development as the value of time rises many activities are transferred from the household to the market because industries are less labor intensive than households.

Essentially full income can be defined as the value of goods and services purchased on markets (or produced on the farm or in handicraft enterprises) plus the value of the household time, household capital services and fuel, etc., used in home production. The relevant value of time in this context is its "shadow price" since it does not receive a wage rate. The shadow price of time is defined to be the goods and services given up because time was used in home production rather than in some alternative use (e.g., harvesting rice, caring for livestock or working for a wage).

The allocation of time to market activities, and specifically to participation in formal labor markets has long attracted the research interest of economists. Recent studies by Durand (1975) and Youssef (1974) report international comparisons of labor force participation by women and bibliographies of the relevant literature. The allocation of time by women to those activities which can be roughly described as home production activities, in contrast, has only recently attracted major research attention by economists. Home production activities include food processing and meal preparation, child care and household maintenance work.

B. Data on Time Allocation

A summary and review of data from a number of studies which have measured both labor force (or market) time and household activity time is presented below. The major study under review is the 1972 report of a 12 country study, The Use of Time (Szalai, 1972). Some 20 additional studies are included in this review. Appendix 1 provides a more detailed discussion of data collection methods.

The reader will readily appreciate the fact that a comparison of more

than 40 time allocation surveys undertaken in 19 countries cannot be made without some discussion of the methods utilized to collect the data and of the general quality of the data. The studies chosen for inclusion in this review have one important characteristic in common. All attempted a full accounting of time and explicitly recognized three broad categories of time use: 1) work in market activities (for a wage or in self employment), 2) work in the household and 3) leisure. In all cases a detailed set of activity definitions was drawn up to account for work activities and the general rule that work is an activity that a household would pay a hired person to undertake was used to distinguish between work and leisure. Thus, an activity, "playing with children" is considered leisure, while caring for children at a time when some alternative activity could be undertaken is considered household work. Leisure activities included sleep, personal care, eating and other activities, some of which might not be considered to be leisure per-se. The data were collected by interview, diary and observation methods. Many of the samples are for cities or regions which cannot be said to be fully representative of the country. The reader will have to invest considerable effort in reading the original sources to document all of the data questions. My own reading of these sources leads me to conclude that most of the studies are carefully done and that the definition of terms is quite standardized in them. Obviously one must be careful in any attempt to make comparisons utilizing even fully representative data across countries. Added caution is warranted here.

Table 1 summarizes the data for these studies where comparable data for adult men and women were available. The data for market work includes work for wage self-employment in activities which produce products which

Table 1: Market Work, Household Work and Leisure: An Intercountry Comparison

Country - year	Market Work		Household Work		Leisure		
	Men	Women	Men	Women	Men	Women	Men/Women
<u>Developed Market</u>							
U S A - 1954 (deGrazia, 1962)	8.6	2.6	2.1	7.1	13.3	14.3	.93
U S A - 1969 (Gronau, 1977)	7.6	2.7	1.9	6.2	14.5	15.1	.96
Belgium - 1965-6 (Szalai, 1972)	9.3	3.6	.7	5.7	14.0	14.7	.95
France - (Six cities)(Szalai, 1972)	9.7	4.1	1.1	6.0	13.2	13.9	.95
- West Germany (100 Elec. Dist.) (Szalai, 1972)	10.0	2.9	.9	7.0	13.1	14.1	.93
- West Germany - Osnabrück (Szalai, 1972)	9.4	3.4	.9	6.2	13.7	14.4	.95
- U.S.A. - 44 Cities (Szalai, 1972)	9.4	3.8	.9	5.5	13.7	14.7	.93
- U.S.A. - Jackson, Mich. (Szalai, 1972)	9.5	3.4	1.0	5.7	13.5	14.9	.91
<u>Developed - Centrally Planned</u>							
- Bulgaria - Kanzaslik (Szalai, 1972)	9.3	8.0	1.3	3.3	13.4	12.7	1.05
- Czechoslovakia - Olomouc (Szalai, 1972)	9.0	6.0	1.6	5.5	13.4	12.4	1.08
- East Germany - Hoyerswerda (Szalai, 1972)	10.3	5.7	1.6	5.9	12.1	12.4	.98
- Hungary - Győr (Szalai, 1972)	10.0	6.4	1.6	5.8	12.5	11.8	1.05
- Poland - Torun (Szalai, 1972)	9.4	5.8	1.5	5.4	13.2	12.8	1.02
- USSR - Pskov (Szalai, 1972)	8.4	7.6	1.6	4.0	14.0	12.4	1.13
- Yugoslavia - Kragujevac (Szalai, 1972)	8.5	3.5	1.2	5.8	14.4	14.7	.98
- Yugoslavia - Maribor (Szalai, 1972)	9.3	5.9	1.8	6.5	12.9	11.7	1.10
USSR - 1924 - Hawrylyshyn, 1976	10.2	9.0	1.9	5.0	11.9	10.0	1.19
USSR - 1959 - Hawrylyshyn, 1976	8.9	9.1	2.0	4.7	12.1	10.2	1.18
USSR - 1969 - Hawrylyshyn, 1976	7.7	6.1	2.3	5.3	14.0	12.6	1.11
<u>Developing</u>							
Peru - Lima - 1965-6 (Szalai, 1972)	9.3	3.0	.6	5.8	14.1	15.2	.94
Philippines - 1975 (Evenson, et al, 1979)	8.2	2.8	.6	8.3	15.2	13.4	1.10
Philippines - 1976 (Evenson, et al, 1979)	6.9	2.6	1.3	7.5	15.8	13.9	1.14
Philippines - 1977 (Evenson, et al, 1979)	6.8	2.9	1.2	6.0	16.0	15.1	1.06
Nepal - 1976 (White, et al, 1978)	8.2	7.2	2.1	5.1	13.7	11.7	1.17
Indonesia - Java - 1975 (White et al, 1978)	7.9	5.7	.7	5.0	15.4	13.3	1.16
Indonesia - Java - 1976 (Hart, 1980)							
Poor I	8.2	2.6	.3	4.6	15.5	16.8	.93
Poor II	7.7	4.0	.3	4.7	16.0	15.3	1.05
Poor III	7.9	4.9	.4	4.5	15.7	14.6	1.07
Bangladesh - 1973 (Farouk, 1975)							
Urban slum	7.8	.5	1.3	9.4	14.9	14.1	1.06
Factory worker	8.2	.1	1.5	11.5	14.3	12.4	1.15
Large farms	8.3	.9	1.1	9.3	14.6	13.8	1.06
Trad. farms	9.8	1.4	.6	9.6	13.6	13.0	1.05
Tribal	9.1	6.1	.9	5.1	14.0	12.8	1.09
Bangladesh - 1976 (Cain, 1977)							
Large farms	7.0	1.1	1.2	8.6	15.8	14.3	1.10
Small farms	8.0	1.4	1.0	7.5	15.0	15.1	.99
Landless	9.6	2.8	1.2	6.8	13.2	14.4	.92

are sold in markets (farm products and handicrafts) and travel time associated with these activities. Household work includes child care activities, food preparation, household maintenance and home gardening activities.

The countries are grouped into 3 broad categories: 1) Developed Market Economies; 2) Developed Centrally Planned Economies and 3) Developing Economies. This particular grouping could also be seen as a grouping by high, medium and low per capita income levels.

We observed in Table 1 that, in general, men do relatively little household work. Interestingly, it appears that men in the centrally planned economies do more household work and as much market work as men in the developed market economies; hence they tend to have less leisure. In contrast, men in the developing countries included here appear to have the lowest levels of market work and the highest levels of leisure.

The focus of this paper is, however, on women's time allocation. The data show great variation in the average market time of women across countries with the centrally planned economies exhibiting substantially higher levels of market time by women than either developing or developed economies. In general, when market work is high, household work is low but not sufficiently low to prevent a reduction in leisure. (We will explore this further in Table 2). Leisure of women in the planned economies is considerably lower than in either the developed or developing market economies.

Interestingly, the ratio of the leisure of men to the leisure of women shows a rather clear pattern. It is high in both the developing countries and in the planned economies. Women have less leisure than men. In the developed market economies they have more leisure than men.

Table 2 affords a more complete picture of the time allocation of

Table 2: Household Work and Leisure: Adult Women

Employed Women

Developing Countries and Developed Market Economies

	Israel ^a 1968	Philippines ^b 1976	Lima- ^c Callao Peru	Belguim ^c	Six ^c Cities France	100 Elect. Dists. West ^c Germany	Osnabrück ^c West Germany	44 ^c Cities U.S.A.	Jackson ^c U.S.A.	U.S.A. & Westchester County 1935
Number of Women		99	118	330	536	171	142	220	108	
Child Care		.68	0.23	0.23	0.40	0.47	0.38	0.30	0.53	
Food Prep.		1.30	0.90	0.82	0.75	1.02	0.85	0.68	0.70	
H.H. Maint.		1.32	1.50	1.90	2.13	2.88	2.45	1.98	2.03	
Total Household Production	4.40	3.30	2.63	2.95	3.28	4.37	3.68	2.96	3.26	2.4
Market Labor	4.30	8.93	7.23	7.56	8.20	7.05	7.08	8.00	8.03	9.5
Leisure	15.30	11.77	14.14	13.48	12.52	12.58	13.24	13.04	12.71	12.1
<u>Housewives</u>										
Number of Women		99	174	390	533	260	167	253	151	
Child Care		2.72	0.93	0.82	1.73	1.07	1.10	1.35	1.37	
Food Prep.		2.00	2.75	2.03	1.70	2.17	1.85	1.65	1.83	
H.H. Maint.		3.65	4.28	5.18	5.23	5.52	5.47	4.75	4.43	
Total Household Production	7.18	8.38	7.96	8.03	8.66	8.76	8.42	7.75	7.63	5.2
Market Labor	.11		0.08	0.28	0.07	0.20	0.17	0.10	0.13	.1
Leisure	16.71	15.64	15.96	15.69	15.27	15.04	15.41	16.15	16.24	18.7

Table 2 - continued

Employed WomenDeveloped Countries Centrally Planned Economies

	^c Kazanlik <u>Bulgaria</u>	^c Olomouc Czecko- <u>slovakia</u>	^c Hoyerswerda <u>East Germany</u>	^c Győr <u>Hungary</u>	^c Torun <u>Poland</u>	^c Pskov <u>USSR</u>	^c Kragujevac <u>Yugoslavia</u>	^c Maribor <u>Yugoslavia</u>	^d USSR <u>1924</u>	^d USSR <u>1959</u>
Number of Women	440	497	376	517	740	1129	400	553		
Child care	0.35	0.50	0.55	0.43	0.45	0.50	0.40	0.43	.53	.65
Food Prep.	0.93	1.32	1.05	1.10	1.12	1.23	1.20	1.40	2.56	1.41
H.H. Maint.	1.55	2.93	2.62	2.52	2.22	2.05	2.37	2.73	1.71	1.85
Total Household Production	2.83	4.75	4.22	4.05	3.79	3.78	3.97	4.56	4.80	3.91
Market Labor	8.70	7.27	8.45	8.78	8.17	7.97	7.15	8.37	9.0	9.1
Leisure	12.47	11.98	11.33	11.17	12.04	12.25	12.88	11.07	10.2	12.6
<u>Housewives</u>										
Number of Women	40	107	185	230	308	50	432	247		
Child Care	1.03	1.68	1.77	0.87	1.23	0.98	0.57	0.78		
Food Prep.	2.58	2.50	1.95	2.58	2.48	2.55	2.68	2.88		
H.H. Maint.	5.10	5.00	5.70	6.33	5.48	5.32	4.15	7.07		
Total Household Production	8.70	9.18	9.42	9.78	9.19	8.85	7.40	10.73		
Market Labor	0.02	0.40	0.12	0.92	0.05	0.07	0.20	0.22		
Leisure	15.28	14.42	14.46	13.30	14.76	15.08	16.40	13.53		

a. Gronau, 1977

b. Popkin, 1978

c. Szalai, 1972

d. Hawrylyshyn, 1976

women. For 20 of the studies under review, the data were reported according to whether the wife had significant market employment (generally for wages) or not. The table makes a distinction between "employed women" and "housewives." It also reports data for the three major categories of household work: child care, food preparation and household maintenance. We note that a significant difference in leisure exists between the two groups. Housewives generally spend 8 to 9 hours per day on household work. Employed women spend only 3 to 4 or so hours on household work, but they generally spend 7 to 8 hours per day on market work. Hence their leisure is markedly lower.

Table 3 reports further data for rural and urban women. No distinction is made according to employment status in this Table. Most of these women are not in formal labor markets. (Furthermore, the rural data tend to be for women in low income countries while the urban data are primarily from developed countries):

The data in Tables 2 and 3 allow us to examine the major components of household work. In Table 2 we observe that in every case, employed women devote less time to all 3 components than housewives. Employed women spend an average of .45 hours on child care, housewives an average of 1.26 hours. Employed women spend 1.13 hours on food preparation, housewives spend 2.30. Employed women spend 2.08 hours on household maintenance, housewives spend 5.23 hours.

Table 3 shows that in rural Java and Nepal leisure increased for women over 40.

Table 4 shows that for the Philippine sample women (and men) working in the market more than 6 hours per day have significantly lower levels of household work and less leisure than women (and men) working fewer hours

Table 3: Work and Leisure: Adult Women Rural - Urban

Rural

	Java (by age group) ^a				Nepal (by age group) ^a				Philippines ^b			Finland ^c	U.S. ^c
	20-29	30-39	40-49	50+	20-29	30-39	40-49	50+	1975	1976	1977	1935	Oregon 1926
Child care	1.0	1.7	.4	.1	.7	2.9	1.3	.4	1.7	2.1	1.6	.9	
Food Prep.	2.3	3.5	3.0	2.6	1.8	2.8	3.1	3.2	3.6	2.1	1.7	3.7	
H.H. Maint.	1.6	1.5	1.1	1.1	1.2	1.2	1.2	.8	3.0	2.3	2.8	3.1	
Total H.H. Prod.	4.9	6.7	4.5	3.8	3.7	6.9	5.6	4.4	8.3	7.5	6.0	7.7	10.6
Market Work	7.1	5.2	6.0	4.6	8.4	7.2	7.1	6.3	2.8	2.6	3.0	5.1	.3
Leisure	12.0	12.1	13.5	15.6	11.9	9.9	11.3	13.3	12.9	14.1	15.0	11.2	13.1

Urban

	Finland ^c		USSR ^c		Midwest ^c	U.S.A. ^c		Halifax ^c
	1935	1924	1959	Town 1917	Auburn New York 1952	Syracuse New York 1967-8	Nova Scotia 1973	
Child care	1.2	.53	.65		1.1	1.8	1.6	
Food Prep.	3.2	2.56	1.41	3.3	2.6	2.3	2.3	
H.H. Maint.	3.3	1.71	1.85	3.9	3.7	3.9	2.8	
Total H.H. Prod.	7.7	4.8	3.9	7.2	7.4	8.0	6.7	
Market Work	3.5	9.0	9.1	n.a.	n.a.	n.a.	n.a.	
Leisure	12.9	10.0	10.2	n.a.	n.a.	n.a.	n.a.	

- a. White, et al, 1978
- b. Evenson, et al, 1978
- c. Hawrylshyn, 1976

TABLE 4
 TIME ALLOCATION OF MEN AND WOMEN
 IN LAGUNA HOUSEHOLDS BY WORK STATUS
 (In hours per day)

ACTIVITY	Men, by hours of work				:	Women, by hours of work			
	0	-4	4-6	6+	:	0	-4	4-6	6+
MARKET PRODUCTION	0.00	1.80	4.99	10.62***		0.00	1.30	5.21	8.93***
Wage employment	0.00	0.26	0.69	5.06***		0.00	0.34	1.77	4.90***
Farming	0.00	0.68	2.62	3.84***		0.00	0.32	1.46	2.48***
Livestock raising	0.00	0.35	1.08	0.47**		0.00	0.27	0.94	0.22**
Others	0.00	0.42	0.60	1.25***		0.00	0.37	1.04	1.32**
HOME PRODUCTION	1.90	2.41	1.98	0.65***		8.38	7.62	5.15	3.30***
Child care	0.13	0.63	0.72	0.19***		2.72	2.02	0.84	0.68***
Food preparation	0.31	0.88	0.47	0.16*		2.00	2.10	2.17	1.30***
Others	1.46	0.90	0.78	0.29***		3.65	3.51	2.15	1.32***
LEISURE	21.51	19.15	16.52	12.72***		15.64	15.21	13.37	11.82***
Personal care	13.24	11.43	10.39	9.38***		11.15	10.35	10.16	9.76**
Recreation	5.85	6.34	5.68	3.02***		3.71	4.02	3.09	1.80***
Others	2.41	1.38	0.44	0.32**		0.78	0.84	0.12	0.26

*** Difference between means is significant at the 1% level.

** Difference between means is significant at the 5% level.

* Difference between means is significant at the 10% level.

Source: Evenson, et al, 1979

in the market. Table 5 shows that the number of children in the home is not associated with increased child care time except during the period of infancy. This reflects the fact that older siblings do much of the child care for children beyond infancy. The Philippine data, of course, are not necessarily representative of other cultures.

Table 6 reports descriptive statistics for the data in Tables 1, 2 and 3. Means of time allocation for the three groups of countries, developing, centrally planned and developed market economies, are reported. Statistical tests of differences between means are also reported. The reader should interpret these with caution, however, in view of the nature of the data.

We note in Table 6 that employed women have much lower levels of measured leisure than housewives in all three sets of countries. The high proportions of employed women in the planned economies is thus partially responsible for the relatively low level of leisure for all women in the planned economies. It is of interest to note that men appear to have more leisure than all women in the developing and the planned economies. In all economies men have less leisure than housewives and more leisure than employed women.

Housewives in the planned economies appear to undertake more household work than their contemporaries in other economies. The same is true for employed women.

When we compare women in the developing countries with women in both the planned and market economies we observe that women in developing countries spend more time on child care and food preparation and less on household maintenance.

TABLE 5
 TIME ALLOCATION OF MEN AND WOMEN
 IN LAGUNA HOUSEHOLDS BY NUMBER OF CHILDREN AT HOME
 (In hours per day)

ACTIVITY	Men			:	Women			Without infants	With infants
	1-3	4-6	7+		1-3	4-6	7+		
MARKET PRODUCTION	6.66	6.12	6.20	2.30	2.16	3.45**	2.96	2.10**	
Wage employment	2.33	2.52	2.68	1.08	0.91	1.78	1.35	1.06	
Farming	2.78	2.54	1.91	0.53	0.64	0.83	0.79	0.59	
Livestock raising	0.33	0.41	0.42	0.22	0.16	0.34	0.28	0.10	
Others	1.22	0.65	0.98	0.46	0.45	0.60	0.54	0.35	
HOME PRODUCTION	1.33	1.12	1.17	7.44	6.30	5.63**	5.93	8.97***	
Child care	0.88	0.27	0.16**	2.10	2.04	1.26**	1.04	3.96***	
Food preparation	0.55	0.38	0.26	1.95	1.71	1.71	1.92	1.89	
Others	1.45	0.61	0.71	3.39	2.54	2.66	2.97	3.12	
LEISURE	14.33	14.96	17.10**	14.26	15.51	14.93*	14.32	13.00***	
Personal care	8.97	11.50	12.06**	9.73	12.46	10.74**	10.38	10.70	
Recreation	5.23	3.10	4.32*	4.10	2.64	3.52	3.83	2.30***	
Others	0.13	0.36	0.72*	0.43	0.41	0.67	0.11	0.0 **	

*** Difference between means is significant at the 1% level.

** Difference between means is significant at the 5% level.

* Difference between means is significant at the 10% level.

Source: Evenson, et al, 1979

Table 6: Means of Time Allocation

	All Countries	Developing	Planned	Market
Leisure of Men	14.07	14.94**	13.20	13.53
Leisure of Women	13.58	14.55	12.44**	14.45
Ratio Men/Women	1.05	1.03**	1.06**	.94
Leisure of Employed Women	12.40	12.95	11.89**	13.03
Leisure of Housewives	15.43	15.78	14.59**	15.67
Employed Women: Market Work	7.93	8.08	8.11*	7.60
Child Care	.44	.46	.45	.39
Food Prep.	1.13	1.10**	1.17**	.82
H.H. Maint.	2.13	1.41**	2.37	2.16
Total H.H. Work	3.68	2.97	3.99**	3.36
Housewives: Market Work	.17	.05	.25	.13
Child Care	1.26	1.81	1.11	1.25
Food Prep.	2.31	2.37	2.52**	1.99
H.H. Maintenance	5.23	4.96	5.54	4.94
Total H.H. Work	8.40	8.16	9.14**	8.19
All Women: Market Work	4.15	2.80	6.12**	3.53
Child Care	.94	1.37*	.61	.86
Food Prep.	2.03	2.04**	1.51	1.46
H.H. Maintenance	2.93	2.73*	3.15	3.68
Total H.H. Work	6.37	6.64	5.45	6.02

*Significantly different from market economy level at .05 to .15 level

**Significantly different from market economy level at .05 level or less

D. Full Income Measures

Tables 7 and 8 report the estimated value of home production in the Laguna Rural Household Survey conducted by the author in the Philippines. In Table 7 the value of home production for the father, mother and children is based on the home production time data (see Appendix 1). Valuing home production time is subject to three basic problems. The first is that home time activities may differ in a qualitative sense from market work activities. We observe in labor markets that onerous, dangerous and strenuous work brings a wage premium over normal work while attractive and comfortable working conditions bring a wage discount. Clearly we should not be valuing home production time at the same wage rates earned by trans-planters. In the Laguna survey we have been able to obtain wage data for a broad range of household tasks performed by servants and these wages have been used to value home production time.

A second problem emerges because most home production tasks are more basic to the household than market work tasks. A household member first undertakes these essential tasks before engaging in market work. This means that the product of home production time is actually higher than the value of market time (corrected for differences in type of work). Gronau, 1977 reports a method for dealing with this problem and this method has been used to adjust these data.

The third problem emerges because there are often job-related costs of searching for and maintaining market jobs. Household members will generally not engage in market work unless these costs are covered. This affects the value of home production time because some household members not currently working may value their home time below market wages even though they are not working for wages because of these costs.

For practical purposes, the latter two effects effectively cancel each other out. The data in Tables 7 and 8 are therefore approximately value at wages

Table 7

Estimated Value of Home Production in Laguna Rural Household by
Types of Households — Laguna Intensive Survey (in ₱ per year)

Types of Household	Father	Mother	Children*	Total
Farm	631	3342	2820	6793
Non-farm	710	3280	1757	5947
Mother Employed	396	3067	2275	5738
0 — 3 children	460	3274	1009	4742
4 — 6 children	354	2833	3057	6244
7 + children	288	2967	4869	8124
Mother Nonemployed	661	3954	1217	5832
0 — 3 children	788	3874	541	5203
4 — 6 children	511	3862	1481	5855
7 + children	783	4169	4658	9610
Mother Employed with infant	396	3067	2275	5738
with infant	630	4864	845	6339
without infant	331	2554	2038	5523
Mother Nonemployed with infant	661	3954	1217	5832
with infant	884	5368	1381	7633
without infant	578	3359	1162	5099
Mother with 0 — 6 years of schooling	463	3338	2212	6014
7 + years of schooling	507	2955	1062	4524

Note: *Excluding the value of school time.

Source: King (1977).

Table 8

Value of Market Production, Home Production and Full Income
Based on Laguna Intensive Data (regression estimate method)

	Pesos per year
Market income	
Father	3334
Mother	1148
Children	1301
Total	5783
Value of home production	
Father	668
Mother	3287
Children (excluding school time)	2061
Total	6016
Children (including school time)	3599
Total (including school time)	7554
Full income	
Father	4002
Mother	4435
Children excluding school time	3362
Total	11799
Children including school time	4900
Total	13337

Source: King (1977).

observed for household accounts. Even if these values were to be reduced by 25 or even 50 percent, they would not change the clear evidence that household production is important. In Table 8 the value of home production is 6016 pesos for the mean household while conventional income is 5783 pesos. This excludes the production time by children in school which is also part of full income (and an important part of family capital investment). (No attempt was made here to value the services of home capital).

Table 7 shows that home production is slightly more valuable for farm households and that it clearly rises with family size (being higher if an infant is present). It is also higher for families where the mother has least schooling.

A little reflection will show that this is as it should be. Families with more children do have much more home production and much more full income than families with few children. Children are important, and investment in child health and schooling are types of income as well as savings and investment.

Would the computation and reporting of full income be feasible and if so of policy relevance? I would suggest that the answer is that it is feasible and that it would change the policy view toward families in the long run.

The computations in Tables 7 and 8 (and in the other tables as well) demonstrate feasibility. Surveys of time allocation are not difficult to make. Indeed given the difficulty with measuring conventional income in households (see Appendix 1 for a discussion of the problems of measuring livestock and other income), I would go so far as to suggest that one can obtain more reliable estimate of the value of home production than we normally have of income. Low cost recall methods can be used along with efficient sampling measures and with a little experience government statistical offices could acquire the competence to produce full income measures.

I would suggest that such measures would provide us with a more realistic

view of the dimensions of poverty and of real income growth. In spite of rhetoric criticism of GND and GNP growth, there is little doubt that these measures are of great importance to policymakers. Changes in the rate of growth provides strong signals for changes in policy.

It is true that policy advocates who rely on the "bad news" effect will have to adjust to the new measures because full income is clearly more equitably distributed than conventional income and large families do not appear to be as impoverished. The advantages of education will also appear to be lessened. I would agree, however, that a more realistic measure of poverty will, in the long run, lead to better policy. (The "bad news" types will still have plenty of grist for their mills in any case).

E. The Qualitative Importance of Home Production

The previous section illustrated the quantitative importance of home production. In this section I will attempt to show that to the degree that we put developmental or distributional weights on certain consumption and investment goods we are implicitly placing these weights on household production activities. Indeed some, perhaps most, of the goods seen as part of the "basic needs" such as good health and nutritive status, minimal shelter, stable emotional environment, minimal skills and the like, must be produced in the household. You cannot purchase good child health in the market. You can purchase foods, supplementary vitamins, health services and clean water. all of which contribute to good health and low morbidity and mortality but children live in households and are cared for by household members. Household production is important to the production of health.

Of course, it is not only the specific activities in household production which matter, but their sequencing, intensity and timing. In addition, the mix of purchased food items and the proportion of processing embedded in them matters. Poor households have only so much in the way of resources to work with. They have to allocate their time and limited household capital in such a way as to achieve the best result possible (from their perspective). If the health of their children is important (and it is), and if the nutrition content of foods is important to health, they will purchase foods with relatively high nutrition content per dollar expended. If anyone doubts that poor households are aware of nutrition they need only look at their diets. In virtually all dietary surveys covering really poor households we observe that the poorest households purchase foods with high nutrition content per dollar expended. In fact in many Asian countries the poor consumers' diets are not much more costly than the "minimum cost" diet.

The poorest households in cost dietary surveys consume a mix of foods with proportionately more of the nutrition

cost-efficient foods e.g., cereals. Most economists have treated these expenditure patterns as part of the "taste" structure, noting that cereals have low income elasticities while meats and other luxury foods have high income elasticities. The modern household economics perspective views this phenomena as more than a matter of taste structure. The poor are consciously aware of the value of energy and proteins, vitamins and minerals (particularly of energy) and they purchase foods which are nutrient-efficient not because they have a basic preference for these foods per se, but because they have a preference for the nutrients.

Indeed, evidence from really poor households suggests that nutrient content almost completely dominates the choice of foods. Even so, these households have other wants and generally do not consume the recommended levels of nutrients simply because they are poor. The point is that they are efficient by necessity and there is little scope for obtaining more nutrients per dollar expended on food. At income levels somewhat above the extreme poverty level we observe much more scope for efficient gains of this sort and for high income households we observe that they spend enough to buy several minimum cost diets. This is why we tend to find the differences in purchasing patterns for educated and non-educated household managers (generally women) diverging as income levels rise. When women have more education they purchase more efficient diets - in a recent study in Brazil at the sample mean, women with primary schooling or more obtained roughly 8 percent more nutrients per cruzeiro expended than women with less than

primary schooling. This difference increased with income level.

Household activities are not only essential to the maintenance of health among children, but household managers also determine the resources and the productivity of those resources directed toward achieving health. Households have many wants, child health must compete with other wants. The efficient household manager knows, not only how to purchase food and prepare meals to achieve the best health results per dollar expended but also how to achieve meals which are satisfying to the taste. This requires skills in cooking and menu development in addition to allocative decision skills.

III. Women, Household Management and Technology

A. Management Skills

The discussion of the purchase and processing of nutritious foods illustrates the importance of efficient household management and technical skills. It also illustrates the principle of "efficiency by necessity". The poor could not survive if they were not efficient.

Data on household efficiency and the factors which influence it, however, are far from abundant. The nutrition and food data are best in this regard and they suggest that one cannot explain poverty simply in terms of inefficiency in the household to any greater extent than one can with inefficiency in farming. The poor farmer and the poor household are poor because they have few income producing assets other than their own labor time. This labor is abundant and brings a low wage. The poor also lack specialized skills which may be valued more highly.

This is not to say, however, that programs designed to produce better efficiency will not have a high pay-off. For households in the near-poor category educational programs may have a large effect. Further, adult education programs designed specifically to provide nutrition and health education may have

a large effect, but logic tells us that this effect will be larger the lower the formal education level and the higher is basic income.

Studies of agricultural extension and adult education programs generally conclude that these programs are substitutes for formal education. They also conclude that such programs may have a "once-for-all" effect on efficiency when implemented in a traditional setting but that long-run sustained effects are dependent on the production of improved technology.

B. New Technology in the Household

Has any appreciable new technology become available to poor households in the past three decades? In order to answer this we have to understand the economics of technology relevance. Many improvements in labor saving technology have been made for the home in recent years - improvements in dishwashers, garbage disposals - washing machines - detergents and the like. These, however, are no more relevant to low wage households than the improvements in machine harvesting technology are to farmers in these households. When the value of time is low, most tasks in the household and on the farm are undertaken at least cost by hand.

It would appear that some new technology has some relevance to poor low wage households, however. Some storage and refrigeration technology, including canning and packaging technology has been relevant. It would seem, however, that certain medical technologies, some employed at a community level, and contraceptive technologies have probably been the most important new technologies in recent years for households. Vaccines and community sanitation programs have had a large effect where employed effectively and have generally been more important for the poor than for higher income households.

Some of the effectiveness of technology has been due not to new technology per se but to a lowering of the price of existing technology. The establishment of a rural health center effectively lowers the cost of obtaining

modern, but not necessarily new, medical technology. Formal education and informal adult education can be quite important in the development of the household management skills required to take advantage of this technology. We have relatively few good studies of the value of these skills (at least in economics).

The use of contraceptive technology by poor households is an important topic. It has been the subject of much study and I will not review those studies here. I will note, however, that the dominant family planning policy school has presumed for years that a strong demand for contraceptives exists among almost all households. This school has concentrated almost all of its efforts on the supply side, i.e., providing low-cost contraceptives and instruction for contraceptive use (I believe this is popularly known as the "pill-pushing" approach).

Economists and other social scientists have been concerned with understanding the demand for contraceptives and have not automatically presumed that a strong demand exists. They have also noted that households have strong motivations for what they do and should not be presumed to be pliable or passively receptive to family planning propaganda.

I raise these points not to suggest conclusions regarding optimal policy but simply to note that the economists' perception of the household's manager motivated to achieve the best outcomes for her family does not imply that family planning programs based entirely on the supply side are misplaced. Lowering the supply costs of contraception and providing low cost technical extension education are the main policy avenues.

I have been discussing the household as acting in its best interests given its resources, its economic environment and its technology. When we appreciate the meagerness of resources, the low wages and limited technology, one can hold to this view even while observing rather dismal outcomes such as

high infant mortality.

C. Womens "Roles" and the Economics of Specialization

Any observer of activities by members of household can readily conclude that specialization by sex and age takes place. Women, children and the elderly specialize in household production activities while adult men specialize in market activities either as self-employed or wage workers. This specialization is observed in almost all societies throughout recorded history. It has implications for social and political status and community standing.

This specialization is often seen as culturally determined and insensitive to economic conditions. In this section I want to indicate that the observed specialization is economic in nature and that the time allocation of women is quite sensitive to economic and policy factors.

Consider first the economics of specialization. A household gains from specialization as long as members differ in their basic capacity to undertake different types of work or the market values there types of work differently for whatever reason. In spite of recent claims to the contrary it seems clear that women have a comparative advantage over men in at least some household production tasks, particularly in the case of young children. It also seems clear that an average man has a comparative advantage in performing certain types of market tasks such as land preparation and other tasks such as land preparation and other tasks requiring a high degree of strength. (In saying this I am not suggesting that women cannot perform these tasks well - indeed some women can outperform most men at these tasks).

More importantly, as a practical matter the wages that (explicit and implicit) that men earn in certain tasks are higher than those offered women for the same tasks. The reverse is also true for other tasks - transplanting of rice and harvesting of rice in some countries. As long as this is true

there are gains to be had from specialization. Households that do not specialize suffer losses.

In some sense the specialization patterns observed in some of the poorest households reveal best the economics of specialization because these households cannot afford to indulge in the luxury of cultural and religious conventions regarding roles. When incomes are higher we find that these factors do matter and that they then alter work patterns. These cultural and religious tastes vary considerably from society to society and over time. This paper is not directly addressed to the economic implications of these factors and I do not wish to attempt an analysis. I would make two points, however. The first is that economic pressures for specialization do explain part of human behavior even when cultural and religious factors are strong. The second is that economic pressures shape cultural and religious factors in the long run.

I have already noted several cases where the actual outcomes produced by a policy action (e.g., Food Aid) will differ from the expected outcomes according to whether the expected behavior of the household was economic or not. I also noted that a dilemma exists with respect to many aid programs (particularly international aid) in that donors are willing to support specific programs (often with a basic needs interest) but are not willing to provide general income transfers to the target population. In other words the flow of aid to specific programs is greater than it would be to simple income distribution programs. Donors implicitly believe (1) that aid which produces specific outcomes (e.g., higher protein intakes) is more valuable than an income supplement and (2) that programs actually can achieve these specific outcomes efficiently.

The economic perspective discussed in this note would challenge the presumption that poor households will not spend an income transfer wisely. There isn't much evidence that poor households are terribly inefficient. Further it would suggest that many programs will not, in fact, achieve the desired or expected outcomes. The food aid case, for example, illustrates how specific food aid may end up being an income supplement and effecting nutrition only through income effects. Most economists in fact are quite happy with these programs because the misconception on the part of the donors produces more aid which turns out to be efficiently utilized by the household.

The major issue with this type of program is efficiency. A clearer understanding of household response could produce large income transfers for a given level of aid.

Programs which are designed to supply services in an unlimited amount at lower cost by public sector enterprises or by subsidies to the private sector have both price and income effects on household behavior.

Implications for Policy and Future Study

How much difference does it make that households, including the poorest households in the developing world are responsive to prices and to changed technology and that they have managerial skills? How much more do we need to know about this responsiveness to be able to design programs which can take advantage of this responsiveness rather than being thwarted by it?

Policy measures to increase the welfare of the poor can be divided into two classes. The first class of policy actions is directed toward prices and incomes and has an indirect impact on the welfare of poor households. The second class of policy actions is designed to have a more direct impact. It includes rural health and family planning program, nutritional supplement and education programs, and other community development programs. If policy-makers perceive households to be unresponsive to economic incentives and government by cultural factors the second class of policy actions appears to be more attractive. On the other hand the economic view of the household, while holding that households are responsive to economic incentives also recognize that this response is complex. A decline in the price of rice, for example, has both income and substitution effects which will lead to a number of responses in consumption and fertility behavior. Some effects are still controversial, such as the effect of improved employment opportunities for women. A rise in the effective value of women's time produces more income for the household but it also produces a change in the time allocation and activities of women away from time-intensive activities such as breast-feeding and child care, toward market work activities. In the short-run this could have deleterious effects on child health (depending on whether the added income effects offset the reduced time effects on child health), although in the longer run it is pretty clear from both theory and empirical evidence that contraceptive

effort is increased and births averted by an improvement in women's work opportunities.

The second class of policy actions has tended to be the dominant set of policy action concerns in many developing countries over the past three decades. The three broad classes of these are a) contraception programs b) nutrition programs and c) health service programs. In addition there are a number of traditional home economics extension programs, community development programs and, of course, formal education programs. It is clear that some of these programs have achieved effects quite different from the intended or expected effects. The clearest case of this is in the food aid program where many policy-makers presumed that a food grant would be almost entirely a net addition to the food consumption of families or individuals within the family. The economic perspective of such food grants is that unless such grants are in excess of the quantity of the specific food consumed before the grant (and the food cannot be resold) the grant will simply have an income effect. Even in cases where the grant is targeted to individuals (children or lactating mothers) is in excess of normal consumption and not subject to resale, most of the impact is still in the form of added income.

Much has been learned over the past 3 decades about techniques for more effectively targeting food aid, but policy-makers do not fully appreciate the fact that households are as responsive as they appear to be. On the whole this failure to understand the economics of the household has produced a great deal of waste and ineffective aid. A given amount of food aid could be far more effective than it has been. Many economists, generally view most food aid programs as simply "disguised income transfers". They also conclude that the myopia regarding their real effect probably generates more total aid from donors

than they would provide if they really understood what was going on.

They are thus reluctant to educate the donars.

The situation with respect to family planning and rural health programs is quite different because these programs are often implemented in regions where such services are practically unavailable (i.e., available only at high cost). They generally lower the cost of services drastically but seldom reduce it to zero because of travel and related costs by household members. They generally find that the households who benefitted most are the higher income households. This is because the really poor households spend their meager incomes on food and minimal shelter. Many community services are luxury goods even at low prices. Unless a concerted effort to provide these services at lower cost to the poor these programs will usually worsen distributional effects.

In general it appears that contraceptive programs and rural health programs have probably been quite effective - though in most cases they do more for the rich than the poor. The presumption that there is a strong demand for contraceptives - sometimes expressed only after a sales program - appears to be borne out by the evidence that birth rates decline in response to these programs (as well as to economic factors). Indeed the evidence that family planning programs - even those designed with total disregard for the economies of the family - are effective is quite impressive.

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