AN INITIAL CALCULATION OF

GROSS HOUSEHOLD PRODUCTION (GHP)

by

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Very interesting, I wish workup for publication

-But 1) There is some confusion between growth & Production

2) it isn't clear to me how some of the tables are made.

Growth or Production

- graph explanation

An Initial Calculation of Gross Household Production (GHP)

The purpose of this research was to generate an initial estimate of the cost equivalent of present (1970) household duties which are not now shown as part of the Gross National Product (GNP).

Since the advent of national production measurements and the establishment of the National Income Acoounts economists have neglected to examine many aspects of what Kenneth E. Boulding calls the "Grants Economy".

> Then, we find that households are by far the most important agent in the 'grants' economy. The grants economy is the economy of one-way transfers. In exchange I give you something and you give me something; in a transfer, I give you some economic good and you do not give me any economic good in exchange for it. This is an increasing and highly significant element in the economy. Without it, society would not survive very long because all children would die." [1]

These economic goods represent the functions such as child rearing, cleaning and maintaining the house, etc. which are provided by one family member for the benefit of another but which are not recorded anywhere within our national income accounting structure.

There are many reasons why it is important to both gain an initial estimate of the value of these efforts as well as to design and implement a system for the continued collection and utilization of this information.

These reasons fall into two categories, reasons valuable

to the individual household, and reasons relating to analytical

work done at various levels of government and business.

The household reaons for knowing the cost of performing

household duties include the use of this information to

(1) decide whther your family wants another wage earner or

a change in work hours for present earners; (2) to under-

stand more clearly what the loss of the homemakers service

would cost the family; (3) to decide how to allocate your

time more satisfactorily between paid employment, nonpaid

work and leisure; (4) to discern the truth or deception behind

the common belief that technology "saved time" by the invention

of the trash masher, etc. [2]

> Once we learn what household work is worth, we can
> also come to understand better what it costs to raise
> a family. How will the number of children affect
> household work costs? How do children contribute to
> helping with work at home". [3]

Knowing the cost of household work also helps us to

better account for the actual production functions within

the national economy. The absence of a measure on the pre-

sent work of contributed services within the household sector

understates the total Gross National Product. The absence

of such a measure over the past forty years has probably tended

to cause us to overstate the growth in Gross National Product.

This would occur since we will only record the new wages of the working spouse and ignore the loss in household duties which had previously been provided by the spouse.

The absence of information on the cost of household duties relates primarily with a concept which we could call Gross National Wealth, (GNW). Gross National Worth would be the present value of the goods and services of a nation. Thus we fail to state properly the present value of the national wealth by ignoring the loss in this transfer payment while only recording the gain in GNP when some of the services previously provided by the unacknoledged grants economy is now recorded under other names within the National Income Accounts.

An ability to know the contribution of household duties to a national product is very important for comparative economic purposes. We have been concerned with the degree to which a developing economy progresses under various conditions. However, with this major segament of Gross National Production being ignored we cannot track the differences which occur as spouses move into the formal working force and household tasks are either transferred to other persons, or ignored.

The purpose of this paper then is to make an initial calculation of the value of presently contributed household

duties, activities which are presently unrecorded in the

National Accounting system as well as unknown to the

average household.

METHODOLOGY:

The need to account for household duties has been

recognized for some time but a recent experiement by Drs.

Walker and Gauger have made possible this first attempt at

accounting for household duties. Drs. Walker and Gauger

conducted an experiment with over 1400 families to record

the amount of time which each family member spent at various

household tasks. They then assigned a dollar value to each

task based on the current rate of payment for performing

these tasks commercially. A copy of their paper is attached

as Appendix A.

The result of their work is shown in table one on the

following page. The reader will note that Walker and Gauger

have provided the annual cost of contributed time for the

total of vaious household tasds. This information was collected

and is displayed by the number of children, age of wife, and

age of children for both employed and unemployed wives.

Assumptions:

In order to relate their information to national population

figures the 1970 census information was used. The task was

Table 4.   Average <u>Annual</u> Dollar Value of Time Contributed
by Various Members in All Household Tasks.
(All Values Expressed to Nearest $100)

Number of Children	Age in Years	Employed-Wife Households			Nonemployed-Wife Households		
	Wife	Wife	Husband		Wife	Husband	
No children	under 25	$2600	$1100		$3900	$ 700	
	25-39	2800	1100		4500	900	
	40-54	3200	600		4600	1200	
	55-55+	3200	900		4100	1600	
	Youngest Child	Wife	Husband	12-17 Year-Olds	Wife	Husband	12-17 Year-Olds
1	12-17	$3700	$1400	$ 800	$5300	$1600	$ 900
	6-11	4400	900	-	5200	1200	-
	2-5	3600	1200	-	5200	1400	-
	1	5000	400	-	5900	1400	-
	under 1	*	*	-	6600	1300	-
2	12-17	3600	1300	900	5600	1300	700
	6-11	4100	1200	700	5600	1300	600
	2-5	4800	1400	900	6400	1300	600
	1	4900	2800	*	6900	1300	*
	under 1	6200	1300	*	7600	1200	*
3	12-17	2800	1200	800	5000	800	800
	6-11	4800	1200	1000	5600	1300	900
	2-5	5900	1700	*	6200	1100	900
	1	5800	2000	*	6900	1300	1200
	under 1	5200	1700	*	8000.	1200	*
4	12-17	4600	1000	1000	4700	800	700
	6-11	4100	700	600	6100	1100	800
	2-5	*	*	*	7000	1200	600
	1	*	*	*	6800	1500	800
	under 1	*	*	*	8400	1700	*
5-6	12-17	*	*	*	*	*	*
	6-11	*	*	*	6600	1600	1100
	2-5	*	*	*	6900	1200	800
	1	*	*	*	5800	900	*
	under 1	*	*	*	8100	1700	900
7-9	12-17	*	*	*	*	*	*
	6-11	*	*	*	*	*	*
	2-5	*	*	*	6800	1800	900
	1	*	*	*	*	*	*
	under 1	*	*	*	9400	1500	*

* Averages not calculated because there were fewer than 4 cases.
- No cases.

* From table 4 of Walker and Gauger 1972

complicated since Walker's age and number of children dis-
tributions, as well as the breakdown for employed versus
unemployed wife, meant that many assumptions had to be made.
These assumptions were:

1. In order to complete the Walker table on contributions the

    assumptions made were:

    a. The trend established between employed and non-employed

       wives was stable enough to use as a basis to complete

       the missing data where non-employed wives data existed

    and employed wife data did not exist.

    b. That where information was not available on the

       annual cost by certain age groups a linear extrapolation

    of the last number would suffice for this first estimate.

2. To indicate the number of persons whihin an age group and

    family composition were analogous to the Walker table

    the following assumptions were necessasy:

    a. Only husband and wife families were counted.

    b. the ratio of employed to non-employed housewife

       was constant over the range of number of children within

       an household. (this is probably not true but data on

    the percentages employed versus non-employed by family

    size and age of child is simply not available).

    c. The age groupings used by Walker and Gaugos were

       analogous to census figures for table 11 of census

(attached), within the rage of accuracy appropriate to this trial estimate.

   d. That the 1970 census numbers were collected at roughly the same time as the information which was the basis for the Walker tables.

Calculations:

Table one shows the Walker numbers, whereas table five does shows the same table after applying the stated assumptions. to be used for forecasting. Table five will be used to multiply against the population numbers already collected.

Two primary types of data had to be collected for use on this project, (1) the number of persons by age of wife, employed versus unemployed, where theøre are no children; and (2) the number of families with children.

Table two shows the number of families without children by the age of wife. This table was taken from table one of the Census tables and then a percentage for employed veruss unemployed wife as assigned based on percentages by age derived from table three and totals by age group whown by Walker.

Table four-B part I shows the number of families by wife's age who were either part of the employed wife or non-employed wife households. The total number of families by age of wife shown in table two was multiplied by the percen-

TABLE FIVE – Average Annual Dollar Value of Time Contributed by All members in all Household Tasks – All numbers expressed in hondreds of dollars.

Number of Children	Age in Years	Employed-Wife Households	Nonemployed-Wife Households
	Wife	Hundreds of $	hundreds of $
No children	under 25	37	46
	25-39	39	54
	40-54	38	58
	55-55+	41	57
	Youngest Child		
1	12-17	59	78
	6-11	53	64
	2-5	48	66
	1	54	73
	under 1	58	79
2	12-17	58	76
	6-11	60	75
	2-5	71	83
	1	77 +9 = 86	82 + 6 = 88
	under 1	75 +9 = 84	88 + 6 = 94
3	12-17	48	58
	6-11	70	78
	2-5	76 + 10= 86	82
	1	78 + 10= 88	94
	under 1	69+10 = 79	92 + 12 = 104
4	12-17	66	62
	6-11	54	80
	2-5	54 *	88
	1	54 *	91
	under 1	54 *	101 + 8 = 109
5-6	12-17	54 *	93
	6-11	54 *	93
	2-5	54 *	89
	1	54 *	67 + 8 = 75
	under 1	54 *	907 +10 = 107
7-9	12-17	54 *	93 *
	6-11	54 *	93 *
	2-5	54 *	93 *
	1	54 *	93 *
	under 1	54 *	118

* indicates that this is an assumed value

NOTE: This table is Table 4 of Walker and Gauger with interpolation and assumptions used to complete the areas for which they had insufficient data.

TABLE TWO

Number of Families without Children by Age of Wife

AGE	A. PERCENT CHILDLESS	B. Total Number of Families *	C. Number of childless families *	
15-19	49	1033	506	
20-24	34.5	5186	1789	
under 25				2295
25-29	14	5838	817	
30-34	7.1	5304	377	
35-39 C	7.2	5436	391	
25-39				1585
40-44	8	5944	476	
45-49	10.5	5922	622	
40-49				1097
50-59	15.8	10139	1602	1602
Total	14.8			6579

* number of thousands

A - from Table one U.S. Census Series P020

B - from table one U.S. Census Series P-20

C -(A * B) / 100

TABLE THREE - Statistics on Married Women

1970 Census

Total married women, 16 years old & older, husband present: 44,441,778
  With children under 6 years 12,151,389
      in labor force 3,424,197
  With children 6-17 years 12,619,538
      in labor force 5,949,590
  No children under 18 years 19,640,851
      in labor force 8,043,778

Age of woman	no. married	no. married, spouse present
14-17	272,539	206,608
18-19	822,618	683,629
20-21	1,638,069	1,429,300
22-24	3,416,252	3,113,758
25-29	5,616,300	5,242,673
30-34	5,055,678	4,730,613
35-39	7,944,969	4,639,467
40-44	5,242,784	4,939,106
45-49	5,207,386	4,932,125
50-54	4,520,709	4,288,196
55-59	3,776,995	3,582,919
60-64	2,026,280 ?	~~1,912,992~~ 2,746,981
65-69	2,026,280	1,912,992
70-74	1,244,819	1,164,105
75-79	636,342	580,634
80-84	240,526	207,143
80-84	240,526	207,143
85+	103,305	81,594

Age	no. of employed married women, spouse present	Percent	spouse absent
14-24	2,223,203	36.0	124,261+190,084
25-34	3,617,949	33.9	224,255+115,281
35-44	4,211,341	31.9	233,655+101,269
45-54	4,235,427	43.5	199,533+ 90,837
55-64	2,124,467	36.6	105,247+ 54,908
65+	299,736	0.6	20,944+ 14,549

Source: Rosemberg, Harry Michael, The Influence of Fertility
        Strategies on the Labor Force Status of American
        Wives. Dec. 1972 Public Documents no. PB-213-743

TABLE FOUR - Number of Families by 1970 Census

A - Total number according to table 11 series P-20

Number of Children	Youngest Child	TOTAL (in thousands)	
1	12-17	107	
	6-11	950	
	2-5	1644	
	1	3543	
	under 1	2810	
2	12-17	2016	
	6-11	2947	
	2-5	2684	
	1	1051	
	under 1	29	
3	12-17	2303	
	6-11	2550	
	2-5	724	
	1	60	
	under 1	—	
4	12-17	1595	
	6-11	1152	
	2-5	140	
	1	1	
	under 1	0	
5-6	12-17	811	
	6-11	308	
	2-5	115	
	1	23	
	under 1	—	
7-9	12-17	954	
	6-11	220	
	2-5	1	
	1	—	
	under 1	—	

NOTE: Interpolation was made between table 11 and
this table to move the categories to match the
divisions used by Walker and Gauger in their paper.

tage of working wife households by age group derived from table three. Table four - B shows the resultant number of families within each age group.

Futher, table four - A shows the total number of families which have the number of children by age of youngest child which is comparable to the Walker tables in categorization. The reader should note that a series of assumptions identified earlier had to be made in order to complete this column. Table four-A was then multiplied by the percentage of working wives versus unemployed wives, namely 37.6 percent working, derived from table three and the result is shown by table four-B part II. This is a major assumption necessatated by a lack of data on the percentage of working wife families which can be categorized in the way Walker has made their calcu- lations. Using the "gross" percentage was consistent and does give an initial calculation.

At this point table six shows the number of families within each cell according to the Walker categorization scheme. Columns d and g show the dollar amount of wife, husband, and older children's contribution to household tasks. Columns d and g were multiplied against the number of families within each cell from table four to display the total dollar contribution, by cell of household members contri- bution to household tasks, the unaccounted for sector of our national economy.

TABLE FOUR – Number of Families by 1970 Census

B – Households divided by Employed versus unemployed wife.

Number of Children	Age in Years	Employed-Wife Households		Nonemployed-Wife Households
I	Wife	Percent employed	Number	Number
No children	under 25	36	826,200	1,468,800
	25-39	32	507,292	1,077,997
	40-54	35	384,065	713,265
	55-55+	10	160,196	1,441,766

		Employed-Wife Households	Non-employed-Wife Households
II	Youngest Child		
1	12-17	40,232	66,768
	6-11	357,200	592,800
	2-5	618,144	1025,856
	1	1332,168	2210,832
	under 1	105,656	2704,344
2	12-17	758,016	1257,984
	6-11	1108,070	2836,192
	2-5	1009,184	1674,816
	1	395,176	1011,482
	under 1	10,904	18,096
3	12-17	865,920	2216,407
	6-11	958,800	2454,120
	2-5	272,224	451,776
	1	22,560	37,440
	under 1	–	–
4	12-17	599,720	995,280
	6-11	433,152	718,848
	2-5	52,640	87,360
	1	376	624
	under 1	–	–
5-6	12-17	304,936	506,064
	6-11	115,808	192,192
	2-5	43,240	71,760
	1	8,648	14,352
	under 1		
7-9	12-17	358,704	595,296
	6-11	85,720	137,280
	2-5	376	624
	1	–	–
	under 1	–	–

Note: Difference between employed and un-employed wife
is based on the gross percentages of 37.6%
employed, and 62.4% unemployed

TABLE SIX - Calculation of Gross Household Production

Number of Children	Age in Years Wife	Employed-Wife Households			Nonemployed-Wife Households		
		A	B	Total $ millions	A	B	Total $ millions
No children	under 25	826	37	3056.2	1469	46	6757.4
	25-39	507	39	1977.3	1078	54	5821.2
	40-54	384	38	1459.2	714	58	4141.2
	55-55+	160	41	656.0	1442	57	8219.4
	Youngest Child						
1	12-17	40	59	236.0	67	78	522.6
	6-11	357	53	1892.1	593	64	3795.2
	2-5	618	48	2966.4	1026	66	6771.6
	1	1332	54	7192.8	2211	73	17466.9
	under 1	106	58	614.8	2704	79	21361.6
2	12-17	758	58	4396.4	1258	76	9560.8
	6-11	1108	60	6648.0	2836	75	21270.0
	2-5	1009	71	7163.9	1675	83	13902.5
	1	395	86	3397.0	1012	88	8905.6
	under 1	11	84	92.4	18	94	169.2
3	12-17	866	48	4156.8	2217	58	12858.6
	6-11	959	70	6713.0	2455	78	19149.0
	2-5	272	86	2339.2	452	82	3706.4
	1	23	88	202.4	38	94	357.2
	under 1	10*	79	79.0	10*	104	104.0
4	12-17	600	66	3960.0	996	62	6175.2
	6-11	434	54	2343.6	719	80	5742.0
	2-5	53	54	286.2	88	88	774.4
	1	38	54	205.2	6	91	54.6
	under 1	10*	54	54.0	10	*109	109.0
5-6	12-17	305	54	1647.0	506	93	4705.8
	6-11	116	54	626.4	193	93	1794.9
	2-5	43	54	232.2	72	89	640.8
	1	9	54	48.6	14	75	105.0
	under 1	10*	44	54.0	10*	107	107.0
7-9	12-17	359	54	1938.6	596	93	5542.8
	6-11	86	54	464.4	138	93	1283.4
	2-5	4	54	21.6	6	93	55.8
	1	4	54	21.6	6	93	55.8
	under 1	4	54	21.6	6	118	70.8

A - Thousands of families   (from table four)
B - Houndred of Dollars   (from table five)
* indicates that this is an assumed value.

<u>Results:</u>

Table seven displays the summary information showing the dollar contribution to household tasks, totaling $67.163 billion for familes with employed wives and $192.057 billion for familes with unemployed wives in 1970. This $259.221 billion dollars is presently ignored within our national income accounting system.

One quick ratio can be derived which shows the importance of being able to generate this type of information more accurately and maintain it over time. While 37.6% of the families have an employed wife only 26 % of the dollars attributed to household tasks are generated by this segment. Thus there is an 11.6 % difference existing between the values of household tasks performed by nonemployed wife households and employed wife households. One can see that given a range of error this still is at least 10% in difference which becomes an overstated increse in Gross National Product when the wife takes outside "accounted for" employment.

In our present economy we are experiencing a rapid growth in the number of households in which both spouses work. We thus record an increase in the Gross National Product which is generated by this activity of the second members effortss within the "normal" economy. In most cases this second member is the working wife. We have been experiencing a growth in GNP

TABLE SEVEN - GROSS HOUSEHOLD PRODUCTION (GHP)

Summary Statistics

Number of Children	Millions of Dollars in 1970	
	Employed Wife	Unemployed Wife
None	7,148.7	24,939.2
1	12,902.1	49,917.9
2	21,697.7	53,808.1
3	13,490.4	36,175.2
4	6,849.0	12,855.2
5-6	2,608.2	7,353.5
7 +	2,467.8	7,008.6
Total	$67,163.9	$192,057.7
Grand Total GHP	$259,221,600,000.00	

37.6 % of all familées have an employed wife

26.0 % of all GHP dollars from households with unemployed wife.

11.6 % decrease in household work load.

which is overstated by the roughly 10% of decline in household

tasks which accompaned the entrance of the wife into the

recorded economy and fails to note the decline in household

tasks completed.

We may even by overstating GNP by a much larger percentage

since we also have seen an increase in the use of household

cleaning services, more convenient foods, more eating out

by families, greater use of hired help around the house, etc.

In each case where the hired service is employed to perform

a household task we record the addition to the Gross National

Product of the commercial firms while failing to off-set this

with the loss of household duties which were performed within

the grants economy of the family.

CONCLUSION

The purpose of this paper was to show the dollar contri-

bution to household duties which are not presently accounted

for within our system of National Income Accounting. The

cause for the oversight is immaterial but the effect is quite

important. We may be deceiving ourselves in how we state

our increases in Gross National Product.

The accurate accounting for this segment of our economy

is also important for all the reasons which established and

contines to maintain the National Income Accounting System.

The inability to account for what is about one quarter of our

true Gross National Product may cause us to make national

policy decisions which are based on an inaccurate perception

of our Gross National Product due to an inability to account

for our Gross Household Production, and to utilize the relation-

ships between various countries economies witout knowledge

of the effects of differences in Gross Household Production.

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