Review of Income and Wealth
Series 36, No. 2, June 1990

MEASURING THE VALUE OF HOUSEHOLD OUTPUT: A COMPARISON OF DIRECT AND INDIRECT APPROACHES

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Economists have traditionally measured household production (HP) by multiplying hours spent by a wage rate. This practice tends to misstate HP by ignoring the contribution of capital and entrepreneurship and by making questionable marginal productivity assumptions. Quantifying the HP and multiplying by the market value per unit avoids these problems and yields a value estimated by the same method as GNP. We measure HP by this direct method and find HP to be 44 percent more than that obtained by the traditional approach. We further make average productivity comparisons between firms and households for typical HP items.

The contribution of household production (HP) to Gross National Product has become a well-established interest since Mitchell (1921) originally considered the problem. Current estimates of the value household unpaid household labor vary from one-third to one-half of GNP depending on the valuation method used. See Chadeau (1985) or Murphy (1982). If one is concerned with estimating the value added by households to GNP, then one should consider the household as a producing unit, combining labor and other inputs to produce output. The value added by all inputs, not household labor alone, is the conceptually correct measure. This paper presents estimates of the value added by households using an output approach: we directly measure household outputs in physical units and evaluate them at market prices. We compare this method with the more common indirect method based on labor inputs. Further, our output data allow us to compare the average productivity of labor between households and firms for specific activities (e.g. laundry).

Several authors have pointed out the desirability of obtaining household output data, but few have gathered it.[1] Two recent studies have attempted to evaluate household output by measuring output and market prices for this output. For Finland, Suviranta and Kiplio (1982) measured the value of three activities:

[1]For example, Chadeau (1985, p. 251) states that the amount and type of household production is at least as relevant as the amount of unpaid labor supplied. Further, she suggests that future time budget surveys collect data on the nature and volume of household output. Schettkat (1985, p. 310) clearly states "Without doubt the best way to account for household production would be to measure the output itself directly." He then notes a key difficulty: not all household outputs are sold on markets. We argue that most have good market substitutes.

the number of meals prepared, the weight of laundry washed, and the number of square meters cleaned. These outputs were measured by a household survey and valued at estimated market prices for the output. For France, Chadeau and Fouquet (1981) evaluate meal preparation at the price of the substitute market good "restaurant meals", and evaluate housecleaning and upkeep at the price of the substitute market good "hotel room." They further evaluate the other services produced by the household at appropriate service worker's wages.[2]

While these innovative studies address output measurement, both are limited in their application. Our study attempts to measure a large number of household outputs (54) in units which can be priced by market substitutes. We hope to demonstrate the feasibility of measuring nearly all relevant household production activities in meaningful output units, and of obtaining prices for market substitutes for these outputs. We at least provide a basis for comparison with other valuation methods, as well as some productivity comparisons. In Section II we discuss some conceptual issues concerning the comparison of direct and indirect measures. In Section III we discuss our methodology and survey design and in Section IV we show empirical results from our data. We present our conclusions in Section V of the paper.

II. Conceptual Issues and Hypotheses: Direct versus Indirect Measures

Many studies employ indirect measures of household production based on labor hours spent at household work.[3] The two commonly used indirect approaches are the opportunity costs (OC) approach and function cost (FC) approach. The function cost approach estimates household time spent at various functions (e.g. cooking) and multiplies these by function specific wages (e.g. cook's wages). The OC approach calculates total housework time (undifferentiated by function) and multiplies this by average wages (e.g. net-of-tax wages). Adler and Hawrylyshyn (1978) and Murphy (1978) find that the methods yield similar estimates, while Murphy (1982) finds the methods yield substantially different estimates.[4] Chadeau (1985) notes that the OC approach (based on wage of housekeeper) yields lower estimates than the FC approach, and that the direct output measurement approach (DO) should yield even higher estimates since the market prices used implicitly include returns to factors other than labor.

Gronau (1977, 1980) models the household production decision and points out that inadequacies of the labor value approach. He argues that use of the function cost approach will understate production if the person doing the home

[2]See Chadeau (1985) for a summary.

[3]Chadeau (1985) and Hawrylyshyn (1976) present surveys. Gauger and Walker (1980) and Walker and Woods (1976) are standard references. See Juster and Stafford (1985) for several studies concerning household use of time.

[4]Murphy (1978) argues that use of the factor cost approach represents the value of output to society more accurately than the opportunity cost method, which measures both output and net utility from an activity. Further, he argues that the opportunity cost method based on a person's actual wage will usually give larger estimates of HP. He uses the example of an hour spent cooking. For a household in equilibrium $W + U_W = W_c + U_c$ where W is the person's wage, W_c is the wage of a cook and U_w and U_c are the marginal utility of working and cooking at home respectively. For most people $U_c > U_w$ and thus, $W > W_c$.

production has higher marginal productivity at home than the average product of hired help. Alternatively the opportunity cost approach, using the person's own wage, is also inadequate because it ignores the contribution of other inputs, such as capital and entrepreneurship, that can make average product at home exceed marginal product.

Gronau (1980) estimates a home production function based on a condition of utility maximization where the wage is equated to marginal productivity. He computes the full value of home production by integrating the marginal product function. This method requires that the assumed functional form be correct and depends on the validity of the household maximizing condition: wage equals marginal product. If households divide chores for equity or traditional reasons, this latter condition may be violated for an individual within the household. Our DO approach captures the omitted inputs in a different way. It does not require that the productivity condition be satisfied by the household, nor does it rely on a particular functional form.

For purposes of measuring value added to output and illustrating the DO approach, we restrict ourselves to a comparison of the FC and DO approaches. We argue that the FC approach can over/or under-estimate the value added to GNP. If households and market producers are equally productive, the FC approach underestimates value added by ignoring the contribution of non-labor inputs (e.g. capital) as noted by Gronau. If, however, households and market producers (firms) have different labor productivities (average output per hour) due to differing quantities or qualities of capital or technology, then we must modify the result. If households are more productive, then the FC approach will further underestimate the DO value; using FC, each home hour is valued at a market wage less than its true productivity. If households are less productive, as we might expect if they have access to less capital, then the FC method could either over/or underestimate the market DO value.[5] The extra time used by the less productive home workers valued at the market wage tends to increase the FC estimate, while ignoring the cost of other inputs tends to decrease it. The DO method is always the conceptually correct measure of value added since it is based on output units and the same market prices as are used in GNP accounting.

Our approach allows us to test whether average productivities (output per hour) for specific activities differ between households and firms. As Suviranta and Kiplio (1985, p. 38) point out, measures of productivity based only on household labor use are inadequate, since they consider this input alone. Output measures are required. As noted by Shettkatt (1985), measured time use from time budget studies may not relate well to output. Data on outputs are needed to answer relative productivity questions. An additional problem with labor values approaches, as Hawrylyshyn (1977) points out, is that one labor hour may help produce several outputs. See Graham and Greene (1978). For our DO method, only measures of output are needed and this problem is avoided.

[5]From a neoclassical cost minimizing perspective, we would expect firms to be more capital intensive than households due to income taxes. Market firms must pay employees gross wages which result in net tax wages at least equal to the untaxed value of labor used at home. Thus firms face a higher price for labor than households and we expect them to use relatively more capital. To the degree that the tax code lowers the effective price of capital to firms but not households (e.g. investment tax credit), this effect is enhanced.

The DO approach is not without problems. This approach implicitly assumes that on the average the quality of household and firm output of an HP item is the same. *A priori*, is is not obvious whether firms or households produce the higher quality output. Firms by definition hire "professionals" to do their work. On the other hand, households consume their own HP and thus have direct incentive to maintain quality control.[6]

The main DO problem, of course, is the definition of meaningful output units. Many home activities produce outputs and services which are not directly sold on the market. Nevertheless, we argue that most relevant activities can be measured in meaningful units, provided that one is willing to undertake a fine dissaggregation of activities which entails a substantial survey effort. Increasing the disaggregation in unit definitions will generally increase both survey accuracy and effort. Since this is perhaps best illustrated by example, we consider our survey and methodology in the next section.

III. Methodology: Output Measurement and Survey Design

We gathered data on time use and household outputs from a survey administered by personal interview. We gathered data output prices and firm productivity from a separate survey of businesses.

A. *The household survey*: We sampled 480 households in the Missoula, Montana (population 55,000) urban area by dividing the city into 44 census tract neighborhoods and sampling every 49th household in each tract, according to a preset geographic pattern. Unavailable or non-cooperating households were replaced by nearby neighbors without disrupting the original pattern. Of households initially contacted 80 percent cooperated.

Household members completed a detailed questionnaire on household production activities in addition to some background questions on the households' composition, ages, employment, and income.

Activities were divided into frequently performed (e.g. bed-making or garbage takeout) and infrequently performed (e.g. washing windows or snow shoveling). For each activity we collected information on the frequency of the activity, who performed it, the time spent, and the amount accomplished in units we defined.

We asked the time spent and amount produced during the past week (or other time interval convenient to the respondent for infrequent activities) and whether the past week was typical or atypical. If the past week was atypical because, for example, the household was out of town, we found and used the "typical" amount. The period for which we gathered this information was the six months immediately prior to the interview. Multiplying the output per time period (e.g. week) by the number of such periods in six months yielded the time

[6]We are currently asking a sample of households to compare the quality of their HP with the quality of what they could alternatively purchase on the market. Very preliminary results suggest that the qualities do not differ substantially, but that for some output categories households rate their output higher. If latter is true, then DO measured output would tend to be understated.

spent and production amount for the six month sample period.[7] When more than one household member performed an activity, the time spent and production total were apportioned among the members according to the time spent by each reported by the respondent. Thus we measured output by individuals to the extent possible.

A key to this study is the meaningful definition of output units. Appendix A shows a list of the 57 activities we defined and the output units. We grouped the outputs into eight categories for later comparisons. The last category includes activities for which we could think of no units other than hours; it includes care of sick, care of elderly, and childcare. In our sample about 15 percent of total household production time was spent on these activities. To compute an output approach measure for these, we found the cost of hiring someone to come to a house to do the activity.[8]

B. *Labor Value Approach*: To estimate the value of household labor via the function cost approach, (hereafter the labor value approach) we determined a comparable market wage from detailed U.S. Bureau of the Census occupation and wage data. For each activity by each person we computed weekly amounts by multiplying the hours spent per week times an hourly market wage for a comparable activity. Appendix B gives some examples of the specific occupational categories were used; 27 different occupations were used for our 57 activities. We used the wages from the 1980 Census adjusted for inflation up to our sample year 1985 using estimates of wage inflation from U.S. Bureau of Labor Statistics (1979, 1985).[9]

C. *Direct Output Approach*: Once we have well-defined measures of output, we need to obtain market prices for those output units. We defined each HP output unit to describe what a typical household produces. Then we measured the prices which firms charged for the item as equivalent as possible to that HP unit.[10] For example, we priced the average meals sold by "family" restaurants and quick food establishments, since these types of full and light meals characterize the meals households usually prepare for themselves. To price loads of laundry, we contacted local laundry services. In the case of electrical repairs, we used

[7]An alternative to the recollection approach used here (recall of home production over six months) would be the time diary approach over a few days. We chose to use the former because we wanted to capture outputs from projects like home repairs and improvements that occur infrequently, but require work on and off over an extended period of time. The diary approach would have incomplete information about these activities, particularly the amount of output for a given day. For the recollection approach this output division is less of a problem. While the recollection approach is known to understate time devoted to repair and maintenance activities (Hill, 1985), both Hill and we argue that this short-coming does not preclude its use if the goal is to find out what is accomplished with the home production hours.

[8]This produces estimates nearly equal to the labor value approach, but not quite since the wage measure differs. A nursing home worker may have a different wage from the cost of hiring a day nurse to come directly to a household.

[9]We used Table 1 "Earnings and Detailed Occupation of Persons 18 years old and over..." from Department of Commerce (1980) for earnings data, and Bureau of Labor Statistics (1979-85) for inflation data.

[10]This means that certain items were omitted. While shopping, financial management, and record-keeping can be valued using a labor value approach, we could identify no market sources from which these services were readily available. This is not a large omission, the mean hours spent at these activities is 17 per adult and the mean labor value is $200 per adult.

repair firms' minimum charges. Talking with the firm's proprietors or managers convinced us that this is what a customer would have to pay for the vast majority of repair jobs that households do for themselves. Six businesses were surveyed for each price if there were at least that many vendors of the service in the Missoula area; otherwise all vendors were surveyed.

Firms do not separately price some of the study's output items, particularly the various aspects of housecleaning (e.g. vacuuming and bed linen changing). In these instances, we estimated the price charged for an output by multiplying the amount the firm charged for a job as it defined it (e.g. cleaning a house) by the percentage of the total time or effort spent on that job accounted for by that particular output. For instance, if a firm charged $40 to clean an average house and refrigerator defrosting required ten percent of the total cleaning time, the indicated price for defrosting would be $4.

From the price charged by the firm, we substracted the price of any items being resold by the firm (e.g. auto repair parts, food) to determine the appropriate price of the output produced by the firm. Additionally, we obtained the information on typical hours of labor used and average productivity. This latter information is used in our productivity comparisons.

To calculate the value of a person's output for an activity, we simply multiply the person's output by the market price of output for that activity. To calculate the value added by the person, we subtract the value of any intermediate goods (but not capital) used in the activity.[11]

IV. Results

Our major result is the direct output measure of household production substantially exceeds the labor value measure. In Table 1 we compare the two approaches for the adults in the sample. The last line shows that the output value measure is 44 percent higher than the labor value measure in aggregate. Existing labor value studies estimate HP to be 30 to 60 percent of GNP.[12] Following this logic, HP quantified by the output method would be correspondingly 43 to 86 percent of GNP. These figures imply that GNP inclusive of HP is 13 to 26 percent greater than the labor value would lead one to believe.

An alternative calculation suggests a 10 percent increment. Multiplying our direct output and labor value estimates of the average HP value for adults and children by the respective amounts of adults and children in our survey area yields estimates of $347 million and $241 million of HP in Missoula County during 1985, the year of our data. Dividing Missoula County personal income for that year, $883 million, by 0.829, personal income as a percentage of gross

[11]We did not attempt to subtract minor inputs such as electricity due to the difficulty of measuring them.

[12]Casual comparisons of our results with other studies suggest that our total time spent on home production is somewhat low. Several explanations occur to us. First, we use a recollection approach as mentioned earlier. Second, most previous studies use data from the 1970s and there is evidence of a decline in housework hours since then (Gershuny and Robinson, 1988). Third, the Missoula community contains a substantial portion of university students who, by our figures, do a below average amount of home production. These reasons would affect both the labor value and the output approach, and would not invalidate our comparison of the two.

national product nationally, would yield a hypothetical county GNP figure of $1,065 million. HP measured by the direct output approach would thus by 33 percent of GNP; measured by the labor value approach it would be 23 percent. These figures imply a 10 percent increment to GNP when using our method rather than labor value.

Clearly HP has a much larger relative role in the economy that previously thought. This larger role makes it worthwhile to look at the effect of HP on the composition of output. Even taking our most convervative estimate of HP as a portion of GNP—33 percent—as the basis for the following 1985 figures, this alteration is considerable. Services, which comprise about half of HP, would constitute about 30 rather than 23 percent of GNP. Government's relative role would be smaller. Purchases of goods and services by all levels of government would be only 15 rather than 20 percent of GNP. Taxes including federal social insurance contributions would be 20 rather than 26 percent of GNP.

The income distribution picture would also change by adding HP to personal income. The fact that we have household income data by only six broad income brackets for our sample precludes precise income distribution comparisons. Adding HP to an income as traditionally defined changes the standard for judging income as low, middle, or high. However, our results suggest that making the addition would show a larger portion of households at middle income levels and smaller percentage at low levels. In our sample, 30.3 percent of the households report money income of $15,000 or less, whereas 61.0 percent reported money income between $15,001 and $50,000. Adding HP to these figures change the respective percentage to 27.6 and 64.3. The portion of high income households would be virtually unchanged. HP constitutes a disproportionate share of total resources for low income households.[13]

In Table 1 we show that the direct output measure exceeds the labor value method for every category except one. A t test for difference in means shows the differences are statistically significant at a one percent level. The lone exception is that of home produced food. Perhaps households are willing to undertake activities such as berry picking for recreational value, even though productivity is low.

The second set of results concerns productivity comparisons between firms and households. Since these comparisons are made on an output by output basis, it is possible to compute the average products of labor by simply dividing directly measured units of output per time period by the hours of labor used. This procedure of comparing physical productivities avoids comparison problems which might arise when using prices to quantify output. In Table 2 we show median average product of labor for households and firms by activity.[14] A Mann Whitney test for difference in medians shows significant differences for many of

[13]Out of all our households, excluding roommates, who revealed their money incomes, 22 had income of $7,000 or less. (We exclude roommates because many were university students who are atypical in both income and home production.) Adding HP to these money incomes would add approximately 50 percent to the average income level.

[14]We used medians to prevent the most severe measurement errors from materially affecting the results. For example some households report accomplishing tasks in very small amounts of time; this distorts the mean much more than the median.

TABLE 1

MEAN ANNUAL VALUES OF HOUSEHOLD PRODUCTION ESTIMATED BY THE OUTPUT AND LABOR VALUE APPROACHES

	Output Category	Output Value	Labor Value	Output Divided by Labor Value	*T* Test of Difference Between Mean Value	Hours Devoted to Household Production
A.	Cleaning	$919	$840	1.1	2.1[b]	194
B.	Childcare	436	166	2.6	4.8[a]	46
C.	Meal preparation	2,756	1,666	1.7	7.9[a]	356
D.	Clothing care	718	416	1.7	7.4[a]	84
E.	Repairs	204	150	1.4	3.1[a]	20
F.	Home produced food	28	84	0.3	3.6[a]	10
G.	Miscellaneous	256	204	1.3	1.7	24
H.	Output measured by hours	598	584	1.0	—	134
	Total	5,915	4,110	1.4		868

Note: Sample of 896 adults in Missoula, Montana.
[a]Significantly different from zero at the 1 percent level.
[b]Significantly different from zero at the 5 percent level.

TABLE 2

COMPARISON OF HOUSEHOLD AND BUSINESS FIRM PRODUCTIVITY AT PRODUCING HOUSEHOLD PRODUCTION ITEMS

Output	Mean Quantity of Output (within 6 month period)	Median APL		Mann-Whitney *Z* Value for Difference	If Significant Difference, Which Entity More Productive
		Firms	Households		
1. Garbage disposal	82	40	19	−2.03[b]	firms
2. Vacuuming	125	6	6	—	—
3. General pick-up	306	23	8	−1.97[a]	firms
4. Kitchen floor mopping	29	5	4	—	—
5. Clean kitchen surface	101	8	6	—	—
6. Bathroom floor mopping	33	9	6	—	—
7. Bathroom surface clean	52	9	7	—	—
8. Basin, tub, tile, commode	48	5	2	—	—
9. Bedroom surface clean	47	11	6	−1.82[a]	firms
10. Bed making	197	19	14	—	—
11. Bed linen changing	35	14	6	—	—
12. Other room floor clean	31	5	6	—	—
13. Other room other surface	66	14	6	−2.60[b]	firms
14. Lawn mowing	12	1.3	0.8	−2.67[c]	firms
15. Window cleaning	18	13	4	−2.15[b]	firms
16. Refrigerator defrosting	4	1.5	1	—	—
17. Stove cleaning	5	1.2	2.0	—	—
18. Cupboard cleaning	15	3	4	—	—
19. Garage cleaning	4	0.3	1	—	—
20. Patio cleaning	12	1.3	3.0	−2.65[b]	firms
21. Snow shoveling	8	1.9	2.0	—	—
22. Lawn raking	2.6	0.4	1.0	−1.92[a]	firms

TABLE 2—continued

Output	Mean Quantity of Output (within 6 month period)	Median APL		Mann-Whitney Z Value for Difference	If Significant Difference, Which Entity More Productive
		Firms	Households		
23. Yard litter pick-up	23	12	6	−2.62[c]	firms
24. Child feeding	495	2	4	−1.87[a]	households
25. Child changing	564	12	12	—	—
26. Child bathing	156	2	3	—	—
28. Meal preparation and clean-up	464	6	3	−3.15[c]	firms
29. Clothes washing	116	6	3	−3.23[c]	firms
30. Ironing	186	12	9	—	—
31. Clothes mending	28	4	4	—	—
32. Clothers alteration	13	1.4	2	—	—
33. Chimney sweeping	1.4	1.6	1.0	−1.68[a]	households
34. Electrical repair	1.8	1.2	0.9	—	—
35. Plumbing repair	1.2	0.7	0.7	—	—
36. Interior painting	2	0.5	0.3	—	—
40. Vehicle cleaning	14	2	1.5	−1.74[a]	firms
41. Vehicle tun-up	2.4	1.0	—	—	
42. Vehicle lubrication	4	3	2	−2.32[b]	firms
43. Tire changing	5	12	4	−3.12[c]	firms
44. Other vehicle repair	5	0.9	0.9	—	—
45. Other repair	2	1.3	1.0	—	—
53. Tax preparation	1.1	3.0	0.4	−4.20[c]	firms

Note: Superscript a, b, c in the Mann Whitney test column indicate the medians are significantly different at a 10, 5, or 1 percent level, respectively.

the activities.[15] For those activities with statistically significant differences, firms are often more productive, but not always. Surprisingly, if one looks through the whole list, households are more productive than firms in about one quarter of the activities. These tend to be those that involve children or certain types of cleaning where household specific knowledge would increase productivity.[16]

V. Conclusion

Two major implications can be drawn from our results. First, the conceptually correct direct output measure of household production exceeds the standard labor value (function cost) approach by about 44 percent. Thus the value added

[15] AP_L is not computed for items in category G and items 38-39 since these categories already reflect some aggregation: for example, market value of quilts knitted added to market value of furniture made. AP_L is not meaningful for category H since output is in hours. Activity 27 and 37 had only one or two vendors in Missoula; thus a t test was impractical.

[16] Households might be more productive for other reasons. For example, a firm may incur overhead, such as marketing costs, to facilitate transactions. Households avoid this cost as long as they produce only for themselves and do not attempt to offer the service to others. Thus households avoid the added staff and have higher measured productivity.

by households to GNP substantially exceeds earlier estimates. Second, firm and household productivity differ. This implies that labor value approaches are inadequate since they assume that wages paid by firms (reflecting firm productivity) can be applied to household hours to compute estimates of production. If productivities differ, this procedure produces biased estimates with the sign of the bias depending on whether firms or households are more productive.

The direct output approach may shed light on other questions in the future. In particular, how does household or personal productivity differ by age, sex, employment status, and marital status? Can we directly estimate household production functions?

We believe that we have demonstrated the feasibility of the direct output approach, and have shown the usefulness of output data, particularly for productivity comparisons.

Appendix A

Types of Household Production

Activity	Unit Definition
A. Cleaning	
1. Garbage disposal	bag
2. Vacuuming	room (each time)
3. General pick-up	room
4. Kitchen floor mopping	floor
5. Other kitchen surfaces	kitchen
6. Bathroom floor mopping	bathroom
7. Bathroom, other surface cleaning	bathroom
8. Basin, tub, tile, commode cleaning	bathroom
9. Bedroom other surface cleaning	bedroom
10. Bedmaking	bed
11. Bed linen changing	bed
12. Other rooms floor cleaning	floor
13. Other rooms surface cleaning	room
14. Lawn mowing	lawn
15. Window cleaning	window
16. Refrigerator or freezer defrosting	refrigerator
17. Stove cleaning	stove
18. Cupboard cleaning	cupboard
19. Garage cleaning	garage
20. Patio cleaning	patio
21. Snow shoveling	sidewalk/driveway
22. Yard raking	yard
23. Yard litter pick-up	yard

APPENDIX A—continued

Activity	Unit Definition
B. Childcare	
24. Child feeding	child/each time
25. Child changing	child
26. Child bathing	child
27. Child transporting	mile
C. Meals	
28. Meal preparation and cleanup	meal for 1 person
D. Care of Clothing	
29. Washing and drying	machine load
30. Ironing	article of clothing
31. Mending	article
32. Alteration	article
E. Repair and Maintenance	
33. Chimney sweeping	chimney
34. Electrical repair	job
35. Plumbing repair	job
36. Interior painting	room
37. Exterior painting	house
38. Structural repair	value of job
39. Landscaping	job
40. Vehicle cleaning, washing	car
41. Vehicle tune-up	job
42. Vehicle lubrication	job
43. Vehicle tire changing	tire
44. Other vehicle repair	job
45. Other appliance and equipment repair	job
F. Food Production	
46. Homegrown food	market value
47. Livestock	market value
48. Hunting harvest	pounds
49. Fishing harvest	pounds
50. Berry gathering	pounds
G. Miscellaneous	
51. House upgrading	market value of particular job
52. Yard upgrading	job

APPENDIX A—continued

Activity	Unit Definition
53. Tax preparation	Federal/State return
54. Household furnishings and hobby production	market value of particular item
H. Activities for Which Output Is Hour	
55. Child sitting	hour
56. Care of elderly	hour
57. Care of sick	hour

APPENDIX B

Activity Examples

	Output Unit Definition	Comparable Census Occupation
I. Frequent		
A. Cleaning kitchen floor	1 floor cleaning	private household cleaner and servant
B. Washing clothing	1 load	launder and ironer
C. Childcare—cleaning	1 bathing	childcare worker, private household
D. Meals—cooking	1 meal for 1 person	cook, private household
II. Infrequent		
A. Cleaning kitchen	1 window cleaning	private household cleaner and servant
B. Painting interior rooms	1 room painting	painter, construction and maintenance
C. Yard raking	1 yard raking	groundskeeper and gardener except farm

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