HOUSEHOLD PRODUCTION AND NATIONAL PRODUCTION: AN IMPROVEMENT OF THE RECORD

BY MAURICE WEINROBE*

Man may work from sun to sun
But woman's work is never done.
Anon.

It has become almost a cliché that measured growth in the U.S. is being overstated. The classic on the subject is by Mishan [5], who argues persuasively that the (uncounted) externalities from production in industrialized economies are overtaking the production which these economies are counting. But externalities are not the only problems in measuring economic activity and economic growth. Two other problems of equal importance, but more amenable to measurement, are the distinction between final and intermediate production, and the quantification of nonmarket productive behavior. In this paper, we concentrate on one aspect of the measurement of nonmarket behavior—the value of production at home by housewives.[1]

Specifically, we will present estimates of the value of home based nonmarket production by housewives. These estimates will then be used to supplement various national product aggregates in order to calculate more accurate growth rates for the U.S. economy. We find that the value of nonmarket production by married women during the 1960's has averaged approximately thirty percent of the GNP and close to 40 percent of the national income. The inclusion of the nonmarket work of housewives in GNP would reduce the measured rate of growth of real GNP per potential worker by about ten percent, the exact amount depending on how the value of nonmarket work is estimated. Our estimates indicate a reduction in the absolute rate of growth of almost 0.25 percent.

HOUSEWIVES AND THE NATIONAL PRODUCT

Over the past decade there have been substantial changes in the market orientation of the work of married women: both the labor force participation rate of married women and the annual quantity of market work performed by the working wife have increased. [See Appendix Table 1.] Because there is no market transaction for work done around the house, such work is not included in the measured output. As women go to work outside the home, however, their market oriented work is included in the total measured output. Since work done outside the home ordinarily implies some sacrifice of work done at home (by the

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[1]By no means is the home based production of housewives the only or even the most important aspect of nonmarket production. The entire question of work *vs.* leisure, and the distinction between leisure and nonmarket oriented production, are currently under intensive scrutiny. See for instance the work of Nordhaus and Tobin [7, especially appendix section A.3], Gronau [2] and items cited in Gronau. The omission from the national income accounts of work performed at home by males, non-married females, and "working wives" is extremely important. This paper is concerned only with married females because (1) they are the subject of what must be one of the oldest jokes in the subject of social accounting, and (2) the relationship of production by housewives to total production has changed in the past ten years or so, and that deserves some attention even if it is not the most important thing which has been happening with respect to the GNP.

same person—i.e., the housewife), the act of taking a job and increasing the production of market goods could conceivably result in no increase in the actual output of the economy.

To the degree that production at home is not included in measured output, and to the degree that the omitted output changes over time in absolute amount and relative to actual output, both the quantity and the trend of output are mismeasured. Since market oriented production by wives has increased, and home production has presumably fallen off, we are overstating growth of total output during the period that women enter the market labor force. This is shown schematically in Figure 1. At time *a*, housewives begin to enter the labor force.

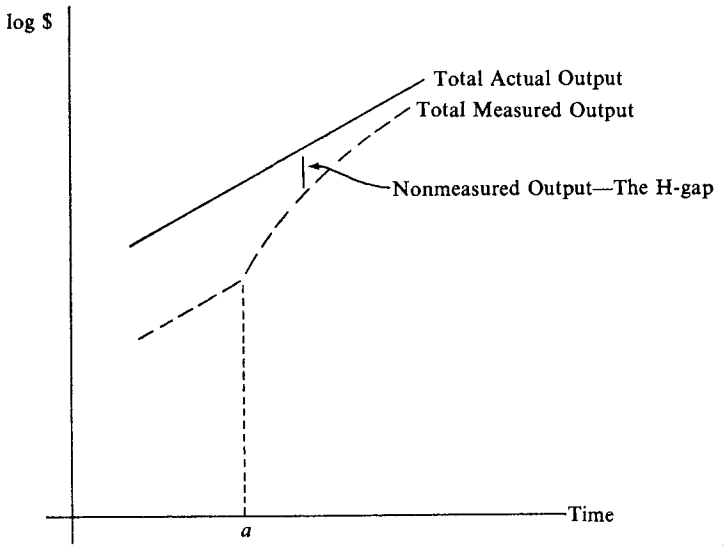

Figure 1

This changes the relationship of market to nonmarket work, and, consequently reduces the nonmeasured (i.e., nonmarket) component of total output. The magnitude of this nonmarket production of housewives can be conveniently called the H-gap. Thus, the growth rate (which can be seen as the slope of the output lines) of measured output is greater than the growth rate of actual output. At some time in the future when housewives cease to enter the labor force and the nonmeasured/measured ratio stabilizes, growth of measured and actual output thereafter would be the same. Further, after a return to equal measured and actual growth, a comparison of then current growth to past growth would result in an underestimate of current progress.

The problem confronting us is to measure the nonmarket work of wives. Two broad methods can be considered. First, one might attempt to estimate the value of services performed in the household by wives on a basis of the cost of hiring someone to perform the same set of tasks. Alternatively, one could assume that a wife's decision to remain outside the market labor force reveals that she

values her *time* at home at least as equal to what she could earn in the marketplace—her opportunity cost. With information about leisure the value of home work could then be estimated.

The first method requires knowledge of the amount of time housewives spend performing each of a wide variety of services, as well as the market price of the services. This is an extremely difficult matter to handle, particularly when one is trying to decide just which chores are given up when a wife enters the labor force.[2] Additionally, in many cases, the housewife might value her own performance differently from the market price for the same service. A good example would be the service of child care.

The second method of computation is barely less difficult. While one can reasonably assume that housewives value their time at their foregone earnings, how much of their time is spent in nonmarket work? The American myth is that women have more leisure time than do men: while the breadwinning male is slaving away at the office or factory the breadmaking female is relaxing at home watching the soap operas. At present, however, the availability of time series data on a housewife's division of labor is wishful thinking.[3] We will adopt the second of the two general methods of computation in estimating the H-gap. In doing so we will base our estimates on two, quite different, sets of assumptions, in order to see if the estimates of the effect of non-measured production on growth are robust.

[2]This has not deterred a number of home economists and economists from giving such estimation a try. For a typical sample survey which tries to allocate housework among different subcategories see Hall and Schroeder [3] or Walker [15]. A study which takes such sample survey data and then applies dollar estimates of the cost of having such work performed was done by Shamseddine [10]. The classification of household work into categories and the valuation of different tasks at prevailing wages for similar tasks performed in the market is only as good as the reliability of the classification and the relationship between the market wage for a task (such as housecleaning) and the value placed on her own time by a (housecleaning) wife. In this paper we prefer an indirect approach.

[3]Cross section evidence is, however, available. An important sample survey of Morgan, Sirageldin and Baerwaldt [6] revealed that for 1964, not only did wives do most of the housework for families (70 percent), but if the housework of wives was added to their market work their total number of hours worked exceeded the total number of hours worked by men (married or single). Wives reported regular housework consuming 40 hours per week, while married men reported regular housework consuming but 4 hours per week. *Ibid.*, pp. 102–5.

A second study contradicts this conclusion. de Grazia [1, pp. 444, 5] reports the results of a survey of the allocation of time by men and women, 20–59 years of age, for Spring 1954. On the average weekday women claimed leisure activity for 4.7 hours, men for 3.6 hours. If weekends were included in the average day then the average leisure for women was 5.1 hours, for men 4.5 hours. Note, however, the absence of information on marital status.

The best data on the allocation of time seems to be that reported by Robinson and Converse [9]. They collected data from a national urban sample comprising 1,244 interviews, from twenty-four hour diaries kept by males and females, married and unmarried, employed and unemployed. The amount of "free time" for all men was 5.0 hours per day. For all women the figure was 5.1 hours. For married women, employed respondents reported free time of 3.9 hours and unemployed 5.9 hours. Married employed men had free time of 4.8 hours (23 percent more than comparable women) and unemployed married men showed free time of 9.0 hours (over 50 percent more than comparable women). Thus, for all men and women there is not much to distinguish the two, but for married men as opposed to married women the differences in daily free time are substantial.

Finally, a recent sample survey of about 1,300 families in the Syracuse, New York area concluded that the average total work by husbands and wives was about equal. See Walker [15].

We have to now set about determining the magnitude of the nonmarket production of housewives, the H-gap.[4] The most desirable method of estimating the H-gap would involve the classification of all wives into groups by their potential earnings (market value) and then weighting each group by the proportion of time spent at work away from the market. The available data do not permit such an approach to be followed using time series. The numbers which are available led to two alternative approaches. (All estimation is done on an annual basis.)

The first method of calculating estimates of the H-gap begins with a simple set of assumptions: assume that a full-time working wife does no home production and that non-work time of house and working wives are equal. Then the time spent at home production for the full-time housewife is equal to the time spent at market work by a full-time working wife.[5] With this assumption the computation of nonmarket production by housewives requires knowledge only of the opportunity costs of the housewives and of the fraction of work time a wife chooses to remain a housewife.[6]

The population of "wives–husband present" was divided between those who worked at all (full or part-time, for the full year or a portion of the year) and

[4]There have, of course, been other attempts to measure the uncounted production. Three recent studies have been made. Kreps [4] estimated for the year 1960 the costs of foregone earnings by married women, stratified by age and education. Her married women are exclusively those not in the labor force and were without pre-school children. Nordhaus and Tobin [7] have done a major study of omissions from and corrections to the measurement of national welfare, part of which includes the estimation of the value of nonmarket activity (as well as leisure) for selected years from 1929 to 1965. Part of the nonmarket activity includes an estimation of the value of housework—although with no emphasis on the subject of this paper. Nordhaus and Tobin include a rough influence of labor force participation (by dividing the total population into categories of "Principal Occupation") but without any emphasis on females. Finally, the piece of work which is closest in spirit to this paper is by Shamseddine [10], who estimated the value of housewives' services for the years 1950, 1960, and 1964, by taking survey estimates of the number of hours spent at a variety of household tasks and valuing these hours at wages for female domestic workers.

[5]Thus, the important implication is that a shift from house to working wife implies a dollar for dollar sacrifice of home production for additional market production. This might seem a bit strong, but note the following points. First, as indicated in footnote 3, Robinson and Converse found the average free time of unemployed married women amounting to only two hours per day more than the average free time of employed married women. (Compare this to the average 5.2 hour differential for men). Therefore, when housewives go to work in the market place there is a limit to how much former free time can be devoted to household related work during nonwork hours. Secondly, suppose a wife goes to work, earns $8,000 per year at her job, but incurs work related costs of $3,000. That is, costs such as transportation, special clothing, prepared meals to take the place of home cooked meals, and so on. All of these costs are in the nature of intermediate expenditures, but all will of course be added to the GNP. While the problem of intermediate goods goes beyond the subject of this paper, these kinds of expenditures add to the overstatement of the total measured product and offer further reason for a wariness of adding very much to total product as a wife switches from home to market work.

Theory aside, Walker [15] found that the total amount of housework done by a wife declined with increases in the amount of market work performed, but not an hour for hour decline. This will be the basis for our second method of estimating the H-gap.

[6]A very interesting question is whether wives value their time much differently than does the market. Clearly, a rational housewife values her time above that value placed on her time by the market, or she would be in the market selling her services. Thus, to the degree that she values her time above the market valuation we are understating home-based production. On this matter see Pyun [8] and Gronau [2]. Note, however, the following footnote.

those who did not work. Those who did not work at all were assigned an opportunity cost of the median full-time female earnings.[7] Those who worked were divided into three groups. Wives who worked 50 to 52 weeks full-time were treated in this first method of estimation as having no home production.[8] This has the desirable effect of isolating the influence (on measured output) of the movement into the labor force of married women. It neglects concern with the actual level of output (including nonmarket production) in favor of a concern with change in output. Similar in treatment, married women who worked between 27 and 49 weeks full time were assumed to be full-time 38/52 of the year and were assigned an opportunity cost of $(1 - 38/52 = 14/52) \times$ (median full-time female earnings). Finally, those who worked from 1 to 26 weeks on a full-time basis or 1 to 52 weeks on a part-time basis were assigned an opportunity cost of $(1 - 13/52 = 3/4) \times$ (median full-time female earnings). This procedure was followed separately for white and nonwhite females.[9] The sum of these opportunity costs represents the H-gap. The estimates of the H-gap are shown in Table 1, and the data from which they are derived are included in the Appendix.

One can also construct a constant dollar series for the H-gap. There are any number of price indices which can be considered to deflate the current H-gap series. We desire a measure of real household production that best reflects what is happening to production at home, exclusive of any other changes in the

[7]The point was made in footnote 6 that opportunity cost only indicates the minimum value placed on her time by a housewife. On the other hand, the market wage rate that we observe may not reflect the potential earnings of all housewives. There are two aspects of this to be noted. First, the market earnings figure used in this paper is an average figure, so the market earnings for many women would simply fall below the average. Secondly, for some women their market productivity may be lower than prevailing market wages in their chosen occupation and as such they remain unemployed, and housewives, not so much by choice as by circumstance. This might be the case, for instance, with a minimum wage set above a person's value of marginal product.

Thus, there are reasons for average wages to be considered too low or too high when estimating the value of work performed by housewives. Using U.S. data for 1960, Gronau found that if one assumes that working wives are in the labor force because they are least skilled at home production, the average price of time for housewives is less than twenty percent above the average wage of working women. If, on the other hand, one assumes that working wives work because they are exceptionally skillful at market work, the price of time for housewives can be estimated as twenty to thirty per cent below average wages.

[8]Presumably, since they are employed full-time they are either hiring someone else to perform household services (generally true for such tasks as child care), nelecting certain tasks, which would otherwise be performed (such as doing less cleaning and elaborate cooking), or doing household work after returning home from market work. To the degree that housework is still performed by the working wife the measure we obtain for the H-gap is understated, but whether this affects the rate of change of actual output is not clear. That would depend on whether there has been a change in the relationship between household work and market work performed by a working wife. The conventional wisdom would have housework taking less time at present than formerly. Walker's survey did not support this contention. She found that the "time used for housework by urban home-makers" who were either full-time homemakers or who worked for 15 or more hours per week actually increased from 1952 to 1967–68 (7.4 to 8.0 hours per day and 4.1 and 5.3 hours per day respectively) [13, p. 622]. The referees to this paper inform me, though, that this increase is probably due to the much larger proportion of preschool children in Walker than in the comparable 1952 study. Hall and Schroeder [3] report conclusions similar to Walker's in comparison of their Seattle survey to the same 1952 study.

[9]All data on work experience of wives were obtained from annual Current Population Surveys, conducted and tabulated for the Bureau of Labor Statistics by the Bureau of the Census and reported in [12]. Data on median full-time female earnings were obtained from [12].

TABLE 1

ESTIMATES OF THE H-GAP: METHOD I
(ALL FIGURES IN $ BILLIONS)

Year	(1) White	(2) Nonwhite	(3) Total H-gap	(4) Total Real H-gap ($ 1958)
	$	$	$	$
1970	157.3	11.2	168.6	124.6
1969	146.4	9.1	155.6	121.3
1968	131.8	7.7	139.6	114.1
1967	122.2	7.4	129.6	110.2
1966	117.3	6.7	124.0	108.8
1965	113.5	6.6	120.1	108.3
1964	108.9	6.3	115.2	105.8
1963	105.8	5.4	111.2	103.7
1962	101.5	5.2	106.7	100.9
1961	98.0	5.2	103.2	98.7
1960	95.9	5.3	101.1	97.9

Source: Computed by the author.

components of measuring production. The variable being used as the basis of the estimation of the values of home production is the average wage. Since it is the average wage that must be adjusted for price changes to get the real value of home production, it is natural to use a comprehensive price index: the implicit deflator for GNP.[10] Estimates of the real or deflated H-gap are included in Table 1.

The most interesting use to which the figures in Table 1 can be put is to supplement the data we have on the U.S. national product. For instance, if we add the annual estimates of the H-gap to the GNP we get a broader measure of production than usual. Using this expanded measure of production we can compute the rate of growth of the U.S. economy with a built-in allowance for the shift in total production from outside the market to the market by married women. Various measures of total product are shown in Table 2.[11]

In measuring the fruits of economic growth we are interested not just in counting the total number of units produced, but in the total number of units produced per actual or potential worker. It is in this sense that we ordinarily

[10]Some have suggested that since home production is the production of home services the appropriate price index would be one such as the services component of the consumer price index. This would certainly be true if we valued the home production of housewives by the price of having such services performed in the market. But since our dollar values come from average wages for all kinds of work, the market value of home services is not significant information. Suppose home production remains constant but wages in the economy increase by 50 percent and the price of home services doubles. Then deflating the wage-based value of home services by an index of the price of home services would lead one to conclude there had been a decrease in real home production when it was unchanged.

[11]The GNP is far from a perfect measure of final production, on many counts other than the exclusion of production in the home. It is, however, the most reliable measure of production with which we have to work. Although NNP is theoretically more desirable, the measurement of depreciation is not very accurate. Thus we rely on GNP in Table 2. At least with respect to comparing growth rates this is not a serious matter. The rate of growth of NNP was just about the same as the rate of growth of GNP over the 1960–70 period (6.77 percent per year vs. 6.82 percent per year).

TABLE 2

AGGREGATE PRODUCTION INCLUDING THE METHOD I H-gap, 1960–70

(Columns (1)–(4), dollar figures in billions)

Year	(1) GNP	(2) Real GNP	(3) GNP + H-gap	(4) Real GNP + Real H-gap	(5) Noninstitutional Population (thousands of persons 16 years of age and older)	(6) (1)/(5)	(7) (2)/(5)	(8) (3)/(5)	(9) (4)/(5)
	$	$	$	$		$	$	$	$
1970	976.4	722.1	1,145.0	846.7	140,182	6,965	5,151	8,168	6,040
1969	930.3	725.6	1,085.9	846.9	137,841	6,749	5,264	7,878	6,144
1968	864.2	706.6	1,003.8	820.7	135,562	6,375	5,212	7,405	6,054
1967	793.9	675.2	923.5	785.4	133,319	5,955	5,065	6,927	5,891
1966	749.9	658.1	873.9	766.9	131,180	5,717	5,017	6,662	5,846
1965	684.9	617.8	805.0	726.1	129,236	5,300	4,780	6,229	5,618
1964	632.4	581.1	747.6	686.9	127,224	4,971	4,568	5,876	5,399
1963	590.5	551.0	701.7	654.7	125,154	4,718	4,403	5,607	5,231
1962	560.3	529.8	667.0	630.7	122,981	4,556	4,308	5,424	5,128
1961	520.1	497.2	623.3	595.9	121,343	4,286	4,097	5,137	4,911
1960	503.7	487.7	604.8	585.6	119,759	4,206	4,072	5,050	4,890
Percentage rate of growth 1960–70	6.84	4.00	6.59	3.76	1.59	5.17	2.38	4.93	2.13

Source: Table 1 and *Economic Report of the President*, 1973.

concentrate on such a measure as GNP *per capita*. With this in mind, the various production series were adjusted to eliminate the influence of changes in population. Instead of simply taking the entire population as the relevant variable, the noninstitutional population of persons 16 years of age and older was selected. This was done in order to concentrate on the population of potential workers and to exclude therefore any bias resulting from the changes in the labor force as a portion of total population. An example of such a change would be the baby boom of the late 1940's and subsequent entry into the labor force of this jump in population.[12]

The conclusion one draws from Table 2 is clear. The increased participation rate of married women over the 1960–70 period which led to a reduced quantity of work performed at home has overshadowed the increase in the value put on women's work done at home. As a result, the growth rate of measured GNP has, indeed, been larger than the growth rate of the broader measures of total output In all cases, by increasing the measured product by our estimate of the H-gap, the rate of growth of the measure of national product is reduced by approximately 0.24 percent. Whether this absolute percentage reduction in growth rate is considered substantial depends on which national product aggregate is under consideration. For example, if one focuses on the relative rates of growth of nominal GNP and nominal GNP + H-gap, the difference is not too impressive. GNP grew at an annual rate of 6.82 percent over the 1960–70 period, and the 6.59 percent annual growth rate of GNP + H-gap was only 3.7 percent (0.25/6.84) less. If one eliminates the mutual importance of the changing price level, however, the H-gap becomes relatively more significant. Real GNP grew at an annual rate of 4.0 percent but the annual rate of growth of real GNP + real H-gap of 3.76 percent was 6.0 percent smaller. Finally, if one also eliminates growth attributable to changes in the population, then the difference in growth rates does look important—the annual growth rate of real (GNP + H-gap) per member of the noninstitutional population (2.13 percent) was some 10.5 percent less than the rate of growth of the real GNP per member (2.38 percent).

The major problems with the first method of estimating the H-gap are that it assumes that no home work is performed by employed wives and that there is an hour decline in a wife's nonmarket work for each additional hour of market work. Our second method tries to remedy these faults, but at the cost of having to rely heavily on a small sample survey of the allocation of time. This will, however, allow us to compare the effects of the two estimates on growth. Since it also eliminates the problem of deriving an H-gap which is useful only in showing the importance of changes in the size of the H-gap (as was true of our first method) we will now be able to compare the size of the H-gap to measured output.

In Walker's survey of Syracuse families [15, p. 5] the matter of housework by working and nonworking wives was included. The respondents indicated that wives who have no paid employment spend an average of 56.7 hours per week at household work, those having 1–14 hours a week of paid employment spend 51.1 hours/week at household work, those with paid employment of 15–29

[12]It is necessary to use GNP per potential rather than actual worker since the women not involved in market work are excluded from the measurement of "actual" workers.

hours/week showed household work of 44.1 hours/week, and wives with paid employment of 30 or more hours/week spend 33.6 hours/week at household work. These figures were used to recalculate the H-gap.

Married women who worked "full-time" 50–52 weeks per year were assumed to do 33.6 hours/week of household work. The data used to translate the hours of housework into earnings were the same as in the first method (see Appendix Table 2) but it was necessary to convert the annual earnings into hourly earnings. This was done by assuming full-time earnings to be for a 40 hour week, 52 weeks per year.[13] Wives who had no paid employment during the year were assigned weekly household work of 56.7 hours; those who worked 27–49 weeks full time were treated as full-time for 38/52 of the year and without paid employment for the remaining 14/52; and finally, that portion of wives who worked 1–26 weeks full-time or 1–52 weeks part time were treated as being without paid employment for half the year and for the other half were assumed to do housework of 47.6 hours per week. The results of this second method of estimation are shown in Table 3.

The most interesting aspect of Table 3 is to be observed in the summary percentage rates of growth. The figures using the second method of estimation are very similar to those obtained from the first method. Using the method I H-gap the rate of growth of national product fell by approximately 0.24 percent. Using the method II H-gap, the rate of growth falls by approximately 0.23 percent. It follows that the effect of the H-gap on the measured rate of growth of the economy is similar. It was shown above that the addition of the method I H-gap to GNP reduced the ten year annual rate of growth by 3.7 percent. Recalculating using the method II H-gap, the rate of growth of the national product is reduced by 3.4 percent. The rate of growth of real GNP was reduced by 6.0 percent using method I, while the use of method II reduces the rate of growth of real national product by 5.8 percent. Lastly, the reduction in the rate of growth of real GNP per member of the noninstitutional population was 10.5 percent using the method I H-gap, but is 9.7 percent with the method II H-gap.

The emphasis thus far has been entirely on the effect of the H-gap on the measurement of economic growth. But now that we have an estimate of how much production takes place in the home it is interesting to put this estimate to further use. The calculations of the H-gap by the second method can be used to estimate the importance of the production at home by married women relative to national production. In column 7 of Table 3, the H-gap as a percent of current GNP is shown. This is for purposes of comparison with other recent estimates of the same ratio.

It is not true, however, that the relevant production–income aggregate for such purposes is GNP, but rather the national income. Housework is almost indisputably "final production." Thus, it certainly is correct to delete capital consumption in selecting the income base for comparison. Furthermore, as was discussed above, the H–gap is estimated by a method using factor rewards as the sole measure of value. Thus it is an income (net of indirect taxes) measure that is

[13]Thus, the contribution to the H-gap of white married women working full time for the year 1970 would be: 33.6 × $5490/40 × 41,272,000 × 0.199.

TABLE 3

AGGREGATE PRODUCTION INCLUDING THE METHOD II H-gap, 1960–70

(Columns (1)–(4), dollar figures in billions)

Year	(1) Total H-gap	(2) Total Real H-gap	(3) GNP + H-gap	(4) Real GNP + Real H-gap	(5) (3) per Member of Noninstitutional Population	(6) (4) per Member of Noninstitutional Population	(7) (1)/GNP	(8) (1)/NI
	$	$	$	$	$	$	%	%
1970	303.8	224.5	1,280.2	946.6	9,132	6,753	31.1	38.0
1969	281.4	219.5	1,211.7	945.1	8,791	6,856	30.2	36.7
1968	252.4	206.3	1,116.6	912.9	8,237	6,734	29.2	35.5
1967	232.3	197.5	1,026.2	872.2	7,697	6,546	29.3	35.5
1966	215.3	189.0	965.2	847.1	7,358	6,458	28.7	34.7
1965	208.9	188.4	893.8	806.2	6,916	6,238	30.5	37.0
1964	200.2	183.9	832.6	765.0	6,544	6,013	31.7	38.6
1963	191.7	178.9	782.2	729.9	6,250	5,832	32.5	39.8
1962	183.4	173.4	743.7	703.2	6,047	5,718	32.7	40.1
1961	174.0	166.3	694.1	663.5	5,720	5,468	33.5	40.7
1960	171.6	166.1	675.3	653.8	5,639	5,459	34.1	41.4
Percentage rate of growth 1960–70			6.61	3.77	4.94	2.15		

Source: Computed by the author.

most appropriate. In column 8 of Table 3 we show the H-gap as a percent of current national income.

As can be seen, the GNP percentage has fallen during the 1960's, but has averaged over thirty percent. The NI percentage has averaged almost forty percent. These estimates are higher than many previous point estimates of the value of home production of married women.[14]

The figures of columns (7) and (8) are helpful from another perspective. To this point our attention has been directed almost entirely to the trend of a decade. Columns (7) and (8) reveal something about that trend. It seems to have been interrupted at about 1966. Though 1966, the size of the H-gap relative to national product or income was shrinking, but in the 1967–70 period things reversed. Although the participation rate of married women continued to increase there was something else occurring which led to a rise in the relative size of the H-gap.

Appendix Tables 1 and 2 contain information which is quite valuable in discerning why this trend reversal should have taken place. While the labor force participation rate of married women continued to climb in the 1967–70 period, clearly it was not a rise of equal magnitude in all types of work. White married women, who are numerically of great importance in determining the size of the H-gap, were coming into the labor force chiefly as part-time workers. The data used to estimate the housework of wives, from Walker, indicated that full-time workers cut their housework by considerably more than do part-time workers. At the same time, median wages were rising at an unusually rapid rate relative to the national product. Over the six year period, 1960–66, wages of white women rose 21.8 percent, wages of nonwhites rose 24.3 percent. Over the four years 1966–70, the wages of white women rose 32.2 percent while the wages of nonwhite women rose 37.8 percent. [See Appendix Table 2.] By comparison during the 1966–70 period the total GNP rose 20.2 percent, while during the 1960–66 period, GNP rose 48.9 percent. So the growth of women's wages changed from a falling proportion of GNP to a rising portion.

Thus, in the late sixties, one factor which was working to decrease the size of the H-gap ceased to be very important (the work experience factor) while the other factor (the wage rate) worked to increase the size of the H-gap—even relative to GNP. And as a result the H-gap began growing. Whether this will continue into the 1970's is a very interesting question.

Conclusion

The attempt in this paper has been to show the importance during the 1960's of the household production of married women. It is an old game to show that quite a bit of the production that takes place in our economy is not included in our national statistics. In this study the home production of married women was estimated at about 30 percent of GNP and as something less than 40 percent of NI. But it is equally well accepted that as long as this uncounted production keeps pace with measured output the measured figures are a good index of total production. The argument in this paper has been that because of a fundamental change in the relationship of market to nonmarket work of married women, the

[14]See for example the familiar estimates cited in Kreps [4, pp. 66–73], and the less familiar estimates cited in Shamseddine [10] and in Studenski [11, p. 17].

measured output statistics have been misleading. The economic growth of the country as reflected in the annual rate of change of the measured national output has been overstated. On an absolute level (regardless of the measure of growth), the measured rate of growth has been some 0.20 percent to 0.25 percent too large. On the basis of real output per potential worker, the growth rate has been overstated by something in the neighborhood of ten percent.

The problem which this fact entails is obvious. The rate of growth of measured output has been and continues to be a policy target. If the administrators of our economic society are going to guide their policy on a basis of such statistics then it is important that the statistics give good signals, and if the constituents of the society are going to judge the success or failure of economic policies then it is also vital that good information be available as the basis for such judgments.[15] Our present information is less good than it might be.

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[15]This paper has focused in large part on the trend of a decade. The divergence, however, between growth of measured output and output + H-gap on a year to year basis is even sharper, and not always in the same direction. For example from 1965 to 1966, the rate of growth of real GNP per member of the noninstitutional population was 4.96 percent, while the rate of growth of real GNP + H-gap (*per capita*) was 3.53 percent. From 1968 to 1969 real GNP (*per capita*) grew at 1.00 percent while real GNP + H-gap (*per capita*) grew at a 1.49 percent rate. It is difficult to make terribly much of these annual figures without subjecting the measurement of the H-gap to considerably more scrutiny.

APPENDIX TABLE 1

WORK EXPERIENCE OF NON-FARM WIVES (HUSBANDS PRESENT)
(Percentage of population)

Year	Worked at All During Year			50–52 Weeks Full Time*			27–49 Weeks Full Time*			1–26 Weeks Full Time* or 1–52 Weeks Part Time†		
	Total	Nonwhite	White	Total	Nonwhite	White	Total	Nonwhite	White	Total	Nonwhite	White
1970	50.4	61.9	49.3	20.6	27.9	19.9	7.1	10.0	6.9	22.7	24.0	22.5
1969	50.0	63.4	48.8	20.5	26.2	20.0	7.3	10.3	7.0	22.2	26.8	21.8
1968	49.8	63.5	48.6	20.6	28.1	19.9	7.3	9.7	7.1	21.9	25.7	21.6
1967	48.1	62.5	46.9	20.3	26.1	19.7	6.8	10.2	6.5	21.1	26.3	20.6
1966	46.6	60.0	45.3	18.3	23.0	17.8	7.0	10.0	6.7	21.3	26.9	20.7
1965	44.5	57.9	43.3	16.9	20.1	16.6	7.3	9.6	7.1	20.3	28.2	19.6
1964	44.6	59.1	43.3	16.3	18.8	16.1	8.0	12.2	7.6	20.3	28.1	19.6
1963	43.7	54.8	42.7	16.0	18.7	15.7	7.3	9.8	7.1	20.5	26.2	19.9
1962	43.2	53.5	42.3	15.4	18.9	15.1	7.7	9.1	7.6	20.0	25.6	19.6
1961	41.5	58.0	40.1	14.8	18.6	14.4	7.3	10.7	7.0	19.5	28.8	18.7
1960	41.8	55.2	40.6	14.4	18.3	14.0	7.0	8.5	6.8	20.5	28.4	19.8

*Worked 35 hours or more per week during a majority of the weeks worked.

†Worked less than 35 hours/week during a majority of the weeks worked.

Source: "Marital and Family Characteristics of Workers," various issues published as *Special Labor Force Reports*.

APPENDIX TABLE 2

MEDIAN WAGE OR SALARY INCOME OF YEAR-ROUND FULL-TIME FEMALE WORKERS

Year	Nonwhite	White
	$	$
1970	4,674	5,490
1969	4,231	5,168
1968	3,677	4,700
1967	3,363	4,394
1966	2,949	4,152
1965	2,816	3,991
1964	2,674	3,859
1963	2,368	3,723
1962	2,278	3,601
1961	2,325	3,480
1960	2,372	3,410

Source: U.S. Bureau of the Census. *Current Population Reports, Series P–60,* annual issues of "Income of Families and Persons in the United States."

APPENDIX TABLE 3

MARRIED WOMEN—HUSBAND PRESENT IN POPULATION

(All figures in thousands)

Year (March)	Total	Nonwhite	White
1970	45,055	3,783	41,272
1969	44,440	3,631	40,809
1968	43,947	3,593	40,354
1967	43,225	3,666	39,559
1966	42,826	3,604	39,222
1965	42,367	3,586	38,781
1964	42,045	3,627	38,418
1963	41,705	3,385	38,320
1962	41,218	3,362	37,856
1961	40,524	3,375	37,149
1960	40,205	3,254	36,951

Source: U.S. Bureau of the Census. *Current Population Reports, Series P–20,* various issues of "Marital Status and Family Status."