

ACCOUNTING FOR DIFFERENCES IN AGGREGATE ESTIMATES AND SIZE DISTRIBUTIONS OF
FARM PROPRIETORS' INCOME

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This paper explores some of the reasons for differences in the reporting of net income from farm self-employment (FSE) in the Bureau of the Census's Current Population Survey (CPS) and farm proprietors' (Schedule F) plus partnership income from tax returns, as estimated in the Statistics of Income (SOI) by the Internal Revenue Service (IRS). These are revealed by differences in both aggregate income estimates and in their size distribution. In general, estimates of farm income derived from the SOI are only a third to a half of the CPS, and the SOI distributions show considerably more inequality than the CPS, particularly in the number and proportion of farm units reporting a break-even (zero income) or a loss. Previous work on farm income estimates has focused on the SOI and the U.S. Department of Agriculture's (USDA) estimates of the net income of farm operators, particularly on the estimates of gross receipts and expenses available from those sources [1]. After adjusting for differences in the coverage of the CPS and IRS income concepts we find that the two estimates are much closer than fractions of 1/3 or 1/2 would suggest, a finding implied in other studies [2]. The USDA estimate, on the other hand, substantially exceeds the other two, even after adjustments to align it more closely with the population coverage and income concept of the CPS or IRS.

The paper is divided into five sections. Section 1 presents a reconciliation of IRS and CPS farm income aggregates. The year-to-year variability in the aggregates is examined briefly in Section 2. Section 3 compares the IRS and CPS farm income size distributions for 1972 and suggests reasons for their differences. Limited evidence on the consistency of reporting in the CPS and on tax returns by individual consumer units is presented in Section 4. A brief summary is given in Section 5.

1. COMPARISONS OF IRS AND CPS AGGREGATES

The IRS farm income estimate derived from the SOI consists of the net income reported by farm sole proprietorships on Schedule F of Form 1040 and by farm partnerships on Form 1065, plus payments to farm partners, which, together with the partner's share of the net income also reported by Form 1040 on Schedule E. The CPS estimate, on the other hand, is a combination of amounts reported in personal interviews by household members (about 80 to 90% of the total) and amounts imputed or allocated to nonreporters whose longest employment that year was farm self-employment (the remaining 10 to 20 percent). Only net FSE income is obtained in the interview.

The left-hand panel of Table 1 compares aggregate farm income estimates for the two sources. SOI farm income averages only 42.4 percent of the

TABLE 1 - CPS AND SOI ESTIMATES OF NET
SELF-EMPLOYMENT INCOMES, 1966-1978
(Billions of Dollars)

Year	Farm			Nonfarm		
	CPS	SOI	SOI/ CPS (Pct.)	CPS	SOI	SOI/ CPS (Pct.)
1966	7.8	4.8	61.5	35.0	33.6	96.0
1967	9.8	3.9	39.8	38.3	38.9	101.6
1968	7.7	3.7	48.1	43.8	41.1	93.8
1969	8.5	4.2	49.4	43.6	41.9	96.1
1970	7.9	3.3	41.8	45.3	41.5	91.6
1971	8.4	2.7	32.1	49.7	42.6	85.7
1972	10.6	4.8	45.3	54.2	45.4	83.8
1973	15.7	8.5	54.1	55.8	48.3	86.6
1974	12.8	6.1	47.7	59.5	49.4	83.0
1975	11.9	4.4	37.0	61.5	49.1	79.8
1976	12.6	4.6	36.5	68.0	56.8	83.5
1977	10.2	1.2	11.8	78.3	65.0	83.0
1978	14.6	6.8	46.6	88.6	70.2	79.2

Source: CPS: Bureau of the Census
SOI: Statistics of Income, Business
Income Tax Returns, various issues.

CPS from 1966 to 1978; only twice is it over half of the CPS in this 13 year period.

The same kind of discrepancy, on the other hand, is not apparent in the reporting of nonfarm self-employment (NFSE) income on tax returns and in the CPS. The right-hand panel of Table 1 shows a similar comparison between the SOI and the CPS for NFSE income. In no year is the SOI as low as 79 percent of the CPS, and averages 88 percent of the CPS over the 13 year period.

These differences raise the question as to whether CPS farm income is too high or the SOI figure is too low relative to each other. While the concept of farm income collected in the CPS appears to be quite similar to that reported on tax returns, judging, at least, by the CPS enumerators' instructions, most of the differences in the left-hand part of Table 1 may well be accounted for by differences in the coverage of the two estimates. The CPS defines FSE income only in rather general terms, and the concept is subject to rather broad interpretation by the respondent, whereas farm income in the IRS has been defined and interpreted more precisely in tax statutes and in both IRS and court decisions. Accordingly, we identify and measure farm-related income in the IRS or other sources which is likely to have been reported in the CPS, but not on farm proprietorship or partnership returns.

Table 2 shows a step-by-step reconciliation procedure for the years 1966 through 1978. Line (1) is the net income of farm sole proprietors and partners (FSP&P), plus payments to partners, as shown in Table 1.

CPS enumerators' instructions state that the net cash (fixed) rent of farm landlords should be entered as net rental income, while landlords' net share (variable) rent is to be reported as FSE income. For tax return purposes, landlords who receive share rent report it either on Schedule F or on Form 4835 (and ultimately on Schedule E), depending on whether they actively participate in the operation of the farm. Not until 1971 were nonparticipating landlords who receive a share rent required to file Form 4835, which is similar to Schedule F in receipt and expense detail; before that date, they were expected to report net rental income on Schedule E. Because time series on the number of Schedule F and Form 4835 returns filed, as well as comparisons with other recipient series, suggest that most such landlords were filing Schedule F's prior to 1971, no adjustment is shown on line (2) for years prior to 1971.

Periodically, IRS conducts an intensive audit study, known as the Taxpayers' Compliance Measurement Program (TCMP), with a sample of tax returns. In both the 1973 and 1976 studies, net farm income from Schedule F of Form 1040 showed an increase of approximately 40 percent, with gross receipts increased and expenses reduced. It seems more likely that CPS respondents report net income amounts that are closer to what they would have reported to IRS had their returns been selected for audit rather than the amounts they actually reported on their returns. For example, SOI NFSE income adjusted for audit is very close to the CPS, averaging only four percent more than the CPS over the same time period. Since a separate audit adjustment is not available for farm partnerships, we assume that the adjustment ratio for sole proprietorships applies to partnerships as well. Line (4), consequently, is 40 percent of line (3).

Receipts from sales of livestock held for draft, breeding, dairy or sporting (DBDS) purposes are reported, not on Schedule F, but on Form 4797, and the net gain from such sales is reported either as a capital gain on Schedule D or an ordinary gain on Form 4797. Since all expenses associated with maintaining the livestock, including depreciation, are reported on Schedule F, the amount of such livestock receipts, minus original cost of purchases (less accumulated depreciation), represents an addition to farmers' net income.

Direct estimates of such gains on livestock sales are available from SOI supplemental reports only for 1962 (\$0.718 billion) and 1973 (\$1.672 billion). Net gains were 70.6 percent of livestock receipts in 1962 and 81.5 percent in 1973; over half of the returns reported no cost basis for computing the gain. Gains for intervening years were estimated by interpolation, based on the movement in the value of USDA livestock sales. For years subsequent to 1973, the 1973 estimate was extrapolated forward by USDA livestock sales

based on the ratio of DBDS livestock gains to USDA livestock sales in 1973. Gains on sales of DBDS livestock from Form 4797 are shown on line (6) of Table 2.

A small amount of farm income is received by persons who for various reasons, legal or illegal, do not file individual tax returns. The only evidence available on nonfilers' income is from the CPS-IRS-SSA 1973 Exact Match (EM) file, which indicates that in 1972 the CPS FSE income of nonfilers was 4.5 percent of total CPS FSE income. In the absence of estimates for any other year, we have used the 1972 percentage to estimate nonfiler income for other years. The estimated net FSE income of nonfilers is shown on line (8).

The adjusted IRS estimate of net farm income is given on line (9) of Table 2. FSE income from the CPS, on line (10), is from Census Bureau tabulations. Line (11) shows the percent the adjusted IRS estimate is of the CPS estimate.

It can be seen from Table 2 that our reconciliation procedure accounts for much, if not most, of the difference between the initial, unadjusted SOI and the CPS. In 1973, the one year for which interpolations or extrapolations of the adjustments were not necessary (except for the nonfiler adjustment), the estimates for the adjusted SOI and the CPS virtually coincide. In 9 of the 13 years, 1966-1978, the adjusted SOI averages 91 percent of the CPS, with no year falling below 83 percent. For the other four--1967, 1970, 1971, and 1977--the ratio of the adjusted SOI to the CPS averages only 67.6 percent, with a low of 58 percent in 1977.

2. ANNUAL VARIABILITY OF FARM INCOME

Another aspect of the difference in the reporting of farm income is the greater year-to-year variability in aggregate income reported on tax returns than in the CPS. Annual percentage changes in the CPS and in the unadjusted and adjusted SOI are given in Table 3. In only three years are the percentage changes in the CPS greater than in either of the two SOI series; in two of these years they move in opposite directions.

One possible explanation for this phenomenon is that some of the respondents in the CPS may be reporting their incomes gross of certain fixed expenses, such as depreciation, interest, and taxes, whereas taxpayers have an incentive to deduct all allowable expenses in reporting net income to IRS. Another, more plausible, hypothesis explaining the relative instability of the SOI estimates compared to the CPS is that farmers are reporting in the CPS their "permanent" incomes, interpreted as some average of incomes realized over immediate past years and the current year, and incomes expected in future years. This latter interpretation is consistent with data on the size distribution of farm income in sections 3 and 4.

3. SIZE DISTRIBUTION OF FARM PROPRIETORS' INCOME

A further problem in the comparison of CPS and IRS farm income estimates is the lack of comparability in their distributions by size of income. In

TABLE 2 - RECONCILIATION OF SOI AND CPS ESTIMATES OF NET INCOME FROM FARM SELF-EMPLOYMENT, 1966-1978
(Dollars in Billions)

Item	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978
(1) Net Income of Farm Proprietors and Partners, SOI	4.783	3.929	3.712	4.155	3.293	2.657	4.828	8.485	6.123	4.448	4.550	1.199	NA
(2) Net Share Rent, Nonparticipating Landlords	NA	NA	NA	NA	NA	0.225	0.594	1.381	1.851	1.413	1.528	1.467	NA
(3) Farm Income Before Audit [(1) + (2)]	4.783	3.929	3.712	4.155	3.293	2.882	5.422	9.866	7.974	5.861	6.078	2.666	6.797
(4) Unreported Farm Income, per Audit	1.913	1.572	1.485	1.662	1.317	1.153	2.169	3.946	3.190	2.344	2.431	1.066	2.719
(5) Farm Income After Audit [(3) + (4)]	6.696	5.501	5.197	5.817	4.610	4.035	7.591	13.812	11.164	8.205	8.509	3.732	9.516
(6) Livestock Gains Reported on Form 4797	0.898	0.875	0.918	1.031	1.067	1.107	1.295	1.672	1.505	1.567	1.678	1.726	2.149
(7) Net Farm Income, SOI Sources [(5) + (6)]	7.594	6.376	6.115	6.848	5.677	5.142	8.886	15.848	12.669	9.972	10.187	5.458	11.665
(8) Net Farm Income, Nonfilers	0.349	0.439	0.349	0.380	0.356	0.376	0.479	0.706	0.574	0.536	0.565	0.458	0.659
(9) Net Farm Income, Adjusted, SOI [(7) + (8)]	7.943	6.815	6.464	7.228	6.033	5.518	9.365	16.190	13.243	10.308	10.752	5.916	12.324
(10) CPS FSE Income	7.760	9.756	7.748	8.455	7.908	8.351	10.645	15.680	12.753	11.906	12.564	10.170	14.647
(11) Adjusted SOI/CPS [(9) ÷ (10)] x 100	102.4	69.9	83.4	85.5	76.3	66.1	88.0	103.3	103.8	86.6	85.6	58.2	84.1

NA = not applicable or not available.
Sources: see text

TABLE 4 - DISTRIBUTION OF FARM INCOME (GAINS AND LOSSES), BY VIGESILES OF CONSUMER UNITS: MEAN INCOME, RELATIVE MEAN INCOME, AND UPPER INCOME BOUND OF VIGESILE, FOR CURRENT POPULATION SURVEY AND STATISTICS OF INCOME, BEFORE AND AFTER AUDIT, 1972

Percentiles of Consumer Units	Current Population Survey			Statistics of Income					
	Mean Income	Relative Mean Income	Upper Income Bound	Before Audit			After Audit		
				Mean Income	Relative Mean Income	Upper Income Bound	Mean Income	Relative Mean Income	Upper Income Bound
1 - 5	\$-4,505	-1.36	\$-1,530	\$-14,250	-8.59	\$-4,600	\$-11,970	-4.65	\$-3,657
6 - 10	880	-0.27	- 330	- 3,682	-2.22	-2,600	- 2,696	-1.05	-1,636
11 - 15	144	-0.04	1	- 1,970	-1.19	-1,436	- 1,146	-0.45	- 639
16 - 20	1	0.00	1	- 1,138	-0.69	- 883	- 411	-0.16	- 200
21 - 25	41	0.01	190	- 673	-0.41	- 500	- 67	-0.03	- 36
26 - 30	194	0.06	275	- 379	-0.23	- 243	4	a	50
31 - 35	341	0.10	401	- 149	-0.09	- 61	105	0.04	176
36 - 40	522	0.16	600	7	a	60	258	0.10	333
41 - 45	809	0.24	1,000	134	0.08	222	438	0.17	541
46 - 50	1,095	0.33	1,246	298	0.17	352	612	0.24	703
51 - 55	1,532	0.46	1,825	459	0.28	579	875	0.34	1,040
56 - 60	2,039	0.62	2,300	758	0.46	1,000	1,291	0.50	1,514
61 - 65	2,692	0.82	3,000	1,201	0.72	1,414	1,847	0.72	2,123
66 - 70	3,340	1.01	3,900	1,681	1.01	1,974	2,436	0.95	2,880
71 - 75	4,393	1.33	5,000	2,340	1.41	2,840	3,316	1.29	3,736
76 - 80	5,446	1.65	6,239	3,340	2.01	3,917	4,273	1.66	4,839
81 - 85	7,160	2.17	8,000	4,796	2.89	6,001	5,957	2.32	7,208
86 - 90	8,882	2.69	10,000	7,130	4.30	8,743	8,391	3.26	10,158
91 - 95	11,436	3.46	14,000	10,968	6.61	13,979	12,583	4.89	16,037
96 - 100	21,660	6.56	99,000	22,323	13.45	1,131,976	25,340	9.85	1,315,129
96 - 99	17,049	5.16	--	17,771	10.70	--	20,241	7.86	--
100	40,103	12.14	--	40,531	24.43	--	45,735	17.78	--
All units	\$3,303	1.00	--	\$1,659	1.00	--	\$2,572	1.00	--

a = less than 0.005

Source: Bureau of Economic Analysis. Based on tabulations from 1972 Benchmark Income Size Distribution File.

TABLE 3 - PERCENT CHANGE FROM PRECEDING YEAR
IN CPS AND SOI FARM INCOME CONCEPTS, 1967-1978

Year	CPS	Unadjusted	Adjusted
1967	+25.7	- 17.9	- 14.2
1968	-20.6	- 6.5	- 4.7
1969	+ 9.1	+ 13.5	+ 11.8
1970	- 6.5	- 21.4	- 15.5
1971	+ 5.6	- 18.2	- 7.8
1972	+27.5	+ 77.8	+ 65.8
1973	+47.3	+ 77.1	+ 67.9
1974	-18.7	- 28.1	- 18.0
1975	- 6.6	- 27.9	- 21.5
1976	+ 5.5	+ 4.6	+ 4.4
1977	-19.1	- 73.9	- 43.3
1978	+44.0	+155.0	+108.3

Source: Calculated from lines (1), (9) and (10) of Table 2.

general, IRS distributions of self-employment incomes, farm or nonfarm, show considerably more relative inequality than CPS distributions. Size distributions of farm income based on CPS and IRS data for 1972 are shown in Table 4.

In order to increase the comparability of these and succeeding distributions, each distribution has been tabulated from BEA's benchmark microdata file of the size distribution of total money income for 1972 [3]. This file is based on the Exact Match (EM) File, which was prepared jointly by the Bureau of the Census and the Office of Research and Statistics (ORS) of the Social Security Administration (SSA); it is the result of an exact match of the CPS with SSA's earnings and beneficiary records and the limited tax information contained in the Individual Master File of IRS. In order to increase the amount and detail of tax return information available, e.g., the size of Schedule F income, the EM was statistically matched by ORS with a subsample of the SOI; the resulting file will hereafter be referred to as the EM-SM file. All the distributions are based on the same recipient unit concept: consumer units (the sum of families and unrelated individuals) rather than tax return units. (There are about 200,000 more tax return units with farm income than consumer units in the EM-SM file.) Comparability among the SOI and CPS distributions has been further increased by including in the SOI distributions the CPS incomes of those CPS units who did not file tax returns, or so-called non-filers.

Tables 4 and 6 show the dollar mean income and the relative mean income, i.e., the dollar mean divided by the mean of the distribution as a whole, for vigesiles of consumer units (intervals five percentiles wide), as well as a break-out of the top vigesile between the top one percent and the remaining four percentiles. Looked at another way, the relative mean is simply the income share of an interval divided by the size of the interval (in percentiles). It is a convenient way of abstracting from apparent differences in two distributions, occasioned by differences in their dollar means. Finally, the upper income bound is simply the income which separates the given interval from the

one immediately above it.

As can be seen in Table 4, the SOI before audit distribution is substantially more unequal than the CPS. In the upper tail of the distribution, for example, the dollar mean incomes of those in the top five percent of the SOI distribution exceed those in the CPS, despite the fact that the overall SOI mean is only half that of the CPS. This fact alone suggests that the problem is not one of farmers' reporting gross income in the CPS and net income to IRS. The major difference between the two distributions is clearly in the number and size of loss incomes (Table 5), with 36 percent showing a loss in the SOI compared with only 14 percent in the CPS--21 percent if CPS break-evens are counted as losses rather than gains. (In the CPS, the respondent has the option of reporting "broke even"; such break-even incomes, which are coded as \$1, were reported by seven percent of the CPS recipients of farm income. No comparable category exists in the SOI, since net income is the difference between stated receipts and expenses and could only come out to exactly zero or \$1 by coincidence. While we suspect that reporting a break-even is a short-cut way of reporting a loss in the CPS without having to report its amount, there is no way of knowing whether the income of the respondent would be positive or negative if he or she were required to make a specific calculation.)

Part of the difference between the two distributions, as well as in the aggregates, can undoubtedly be attributed to the fact that the returns in the SOI sample are unaudited. The effect on the SOI size distribution of correcting each return in the SOI for the results of audit is shown in the right hand panel of Table 4. Space is lacking to describe in detail the methods used to correct the EM-SM file for audit. Based on the relationships shown by the 1973 TCMP between the income reported by the taxpayer and income as corrected by the auditor, gains were increased and losses reduced by selected ratios for most returns. In addition, as can be seen in Table 5, a net of 266,000 consumer units with IRS farm income were changed from a loss to a gain, and for another 69,000 with a loss, the loss was changed to a zero. The final result was a 20 percent increase in gain and a 28 percent reduction in loss income [4].

The effect of the audit adjustment in raising the mean income of and the reducing the degree of inequality in the SOI distribution is evident in Table 4. It is now those in the top 10 percent of the after audit distribution whose incomes exceed those in the identical part of the CPS distribution, rather than those in the top 5 percent. Most of the effect on the relative distribution comes from the reduction in the number and size of losses, with the proportion of those with a loss being reduced from 36 to 27 percent.

One way of determining whether the major difference between the CPS and the SOI distributions is due to the number and size of loss incomes is to exclude loss incomes from the size distributions. The results are presented in Table 6. Because of the uncertainty as to whether break-evens in the CPS should be interpreted as gains or as losses,

TABLE 5 - CONSUMER UNITS WITH FARM INCOME GAIN, BREAK-EVEN, OR LOSS
AND AGGREGATE GAIN AND LOSS, CPS AND SOI, BEFORE AND AFTER AUDIT, 1972

Consumer Units (thousands)	Current Population Survey		Statistics of Income			
			Before Audit		After Audit	
	Number	Pct.	Number	Pct.	Number	Pct.
With Gains	2,530	78.7%	2,100	62.2	2,366	71.6
Break-even	231	7.2	54 ^a	1.6	54 ^a	1.6
With Losses	453	14.1	1,220	36.2	885	26.8
Total Units	3,214	100.0	3,374	100.0	3,305	100.0

Aggregate Income (millions)	Amount	Amount	Amount
Gains	\$11,503	\$9,351	\$11,194
Losses	- 889	-3,753	- 2,693
Total	\$10,614	\$5,598	\$ 8,501

^aThe number of break-even incomes of CPS nonfilers included in the SOI before and after audit distributions.

Source: Bureau of Economic Analysis. Based on tabulations from 1972 Benchmark Income Size Distribution File.

TABLE 6 - DISTRIBUTION OF FARM INCOME EXCLUDING LOSSES: MEAN INCOMES AND RELATIVE MEAN INCOMES
FOR CURRENT POPULATION SURVEY AND STATISTICS OF INCOME, BEFORE AND AFTER AUDIT, 1972

Percentiles of Consumer Units	Current Population Survey				Statistics of Income ¹			
	Gains Only		Gains Plus Breakevens		Before Audit		After Audit	
	Mean Income	Relative Mean	Mean Income	Relative Mean	Mean Income	Relative Mean	Mean Income	Relative Mean
1 - 5	\$ 58	0.01	\$ 1	a	\$ 43	0.01	\$ 51	0.01
6 - 10	184	0.04	6	a	130	0.03	138	0.03
11 - 15	299	0.07	106	0.03	232	0.05	253	0.05
16 - 20	433	0.10	248	0.06	318	0.07	372	0.08
21 - 25	582	0.13	368	0.09	431	0.10	518	0.11
26 - 30	842	0.19	531	0.13	568	0.13	631	0.13
31 - 35	1,059	0.23	768	0.18	789	0.18	814	0.17
36 - 40	1,355	0.30	1,033	0.25	1,085	0.24	1,084	0.23
41 - 45	1,806	0.40	1,340	0.32	1,345	0.30	1,426	0.30
46 - 50	2,118	0.47	1,819	0.44	1,650	0.37	1,840	0.39
51 - 55	2,717	0.60	2,185	0.52	2,052	0.46	2,224	0.47
56 - 60	3,195	0.70	2,825	0.68	2,494	0.56	2,798	0.59
61 - 65	3,883	0.85	3,383	0.81	3,155	0.71	3,417	0.72
66 - 70	4,830	1.06	4,278	1.03	3,854	0.87	4,119	0.87
71 - 75	5,676	1.25	5,162	1.24	4,912	1.10	4,973	1.05
76 - 80	7,076	1.56	6,511	1.56	6,340	1.42	6,663	1.41
81 - 85	8,312	1.83	7,878	1.89	8,126	1.83	8,287	1.75
86 - 90	10,079	2.22	9,677	2.32	10,623	2.39	11,087	2.34
91 - 95	12,884	2.83	12,362	2.97	14,096	3.17	15,210	3.22
96 - 100	23,559	5.18	22,841	5.48	26,811	6.02	28,702	6.07
96 - 99	18,371	4.04	17,879	4.29	21,712	4.88	23,180	4.90
100	44,308	9.74	42,689	10.25	47,206	10.60	50,792	10.74
All Units	\$4,547	1.00	\$4,166	1.00	\$4,453	1.00	\$4,730	1.00

a = less than 0.005.

¹Excludes CPS break-even incomes of CPS nonfilers

Source: Bureau of Economic Analysis. Based on tabulations from 1972 Benchmark Income Size Distribution File.

we have included two distributions for the CPS: one for gains only in the first two columns, and one for the sum of gains and break-evens (each break-even being tabulated as \$1) in the second two columns; in both SOI distributions, on the other hand, CPS nonfilers of tax returns who reported a break-even in the CPS have been excluded.

The results are of considerable interest. One result is the much closer correspondence among the overall dollar means, when based on positive incomes only. For example, the CPS mean exceeds the before audit SOI mean by only two percent and falls short of the after audit SOI mean by only four percent when the calculations are restricted to those consumer units reporting a gain. Another result is the considerable narrowing of the rather large differences previously noted in the three relative size distributions--before audit SOI, after audit SOI, and the CPS--when the comparisons are restricted to the recipients of positive, or positive and break-even, incomes. The similarity between the two SOI distributions is not surprising, since, as previously noted, the major effect of the audit correction was on the size and proportion of loss incomes. On the other hand, small but important differences remain between the SOI and CPS relative distributions. As one would expect, the SOI distributions still show more inequality than the CPS, with the relative mean incomes in the SOI exceeding those in either of the two CPS distribution for the highest four or five vigesiles, and lying below those in the CPS for the other vigesiles, except the very lowest. In the lower part of the distribution the SOI distributions are closer to the CPS distribution that includes the break-evens than the one that omits them.

The results support an interpretation of the reporting of farm income in the CPS in terms of some form of a permanent or normal income hypothesis. CPS respondents are not as likely to regard a loss as a normal state of affairs and hence tend to report either a small gain or a break-even for the preceding year to the CPS enumerator in March, even though they may be in the process of preparing a tax return to be filed in April that more accurately reflects their actual income (e.g., a loss) for the same year.

4. CONSISTENCY OF REPORTING IN THE CPS AND TO IRS

The foregoing comparisons suggest only that the reporting of positive incomes is more nearly similar in the two sources than is the reporting of losses and possibly break-evens. The distributions compared are, in effect, the row and column totals of a joint distribution or cross-tabulation of CPS and IRS incomes; they tell us little about the degree of consistency in reporting the presence of farm income in either of the two sources, or, if reported in both, the degree of consistency in the amount reported and in its sign.

The extent of consistency in reporting can only be determined from an exact match of CPS respondents with their corresponding tax returns. Unfortunately,

the 1972 EM is far from adequate for this purpose. First, the tax return information included in the EM (which is based on the Individual Master File (IMF), not the SOI) is limited to the amount of adjusted gross income (AGI), wages, interest, and dividends in AGI, and to the presence of such tax schedules as E and F, but not the amount of income reported on them. Second, more than half of the "flags" indicating the presence of a Schedule F were lost in the matching process which created the file.

Certain limited tests with the EM file can, however, be made. Out of 698 tax return units with a Schedule F indicator or "flag," 613, or 88 percent of the persons filing them, reported farm income in the CPS, suggesting a rather high degree of consistency between the filing of a Schedule F and the reporting of CPS farm income. Unfortunately, because of the missing farm flags, no conclusions can be drawn about the converse case: the frequency with which those reporting CPS farm income filed a schedule F.

The only possible test of consistency in the reporting of amounts in the two sources in the 1972 EM file is admittedly crude and indirect. It is a matter of arithmetic that the difference between AGI and the sum of wages, interest, and dividends in the IMF must be equal to the algebraic sum of net incomes reported on the various Schedules (C, D, E, and F), other reported income, and adjustments to AGI. If we restrict ourselves to those EM tax filing units who reported the receipt of farm income in the CPS and who did not file Schedules C, D, and E with their tax return and we assume that other income and the various adjustments to AGI are zero or at least small, we can take the difference between AGI and the sum of wages, interest, and dividends as an indicator of, or "proxy" for, the size of schedule F income. The resulting cross-tabulation for these units is shown in Table 7.

TABLE 7 - RELATIONSHIP BETWEEN IMF PROXY AND CPS FSE INCOME FOR TAX FILING UNITS REPORTING RECEIPT OF FSE INCOME IN THE CPS, 1972

Size of IMF Sched. F Proxy	Units with CPS FSE Income (000)	Mean CPS Amount	Mean IMF Proxy Amount	Relative Mean for Gain Incomes:	
				CPS	IMF
Loss	275.4	\$ 229	\$-1,283	--	--
Zero	39.2	92	0	--	--
750	230.5	816	264	0.21	0.07
750 - 4,249	279.9	2,763	2,178	0.73	0.57
4,250 - 8,249	92.3	5,427	6,012	1.43	1.58
8,250 - 13,249	52.5	8,960	10,456	2.35	2.74
13,250 - 27,249	33.4	14,763	16,919	3.88	4.43
27,250 or more	10.3	22,857	31,956	6.01	8.37
All Units	1,013.5	\$2,691	\$2,283	--	--
Units with positive IMF Proxy	698.9	3,806	3,816	1.00	1.00

Source: Bureau of Economic Analysis. Tabulated from 1972 CPS-SSA-IRS Exact Match File. See text.

Perhaps the most interesting part of the table is the 275,400 recipient units--over 27 percent of the total--whose tax returns indicate a farm loss. While the average loss reported is in the neighborhood of \$1,300, the units filing these returns reported net gains averaging \$229 in the CPS! When the loss and zero brackets are excluded from both distributions, the overall means are virtually identical: \$3,806 for the CPS and \$3,816 for the IMF. When the distributions are limited to those with positive incomes in the IMF, the IMF shows more inequality than the CPS, with the two relative mean income functions intersecting in the neighborhood of the 70th to 75th percentiles, compared with an intersection between the 81st and 85 percentiles for the CPS gains only and the before audit SOI distributions in Table 6. Given the "noise" in the data underlying Table 7, resulting from the absence of farm flags in the EM and the crude nature of the estimate of schedule F income in the IMF, it is indeed surprising that the results of this last test approximate so closely our previous findings on the size distribution of farm proprietors' income.

5. SUMMARY

In this paper we find that much, if not most, of the difference between the aggregate amount of farm proprietors' income reported in the CPS and that reported on tax returns can be accounted for by apparent differences in the coverage of the two estimates; in particular, the omission in schedule F and partnership returns of the net share rent of nonparticipating farm landlords, gains on DBDS livestock and the farm income of persons not filing tax returns, and by the fact that the SOI estimates are not corrected for audit. The greater variability of IRS compared to CPS farm income is more likely the result of farmers' reporting an estimate of their permanent or normal incomes in the CPS, rather than failing to take account of certain fixed expenses in reporting their incomes in the CPS. The former, but not the latter, hypothesis is also consistent with the cross-section data for 1972 on the size distribution of farm proprietors' income.

In general, the IRS farm income distributions show considerably more inequality than the CPS distributions. Despite the lower overall mean income in the IRS as compared with the CPS, the dollar incomes of those in the upper tail of the IRS distributions, whether before or after audit, actually exceed those in the upper tail of the CPS distributions. Differences between the two sets of distributions can be accounted for primarily by the larger proportion and greater size of losses in the various IRS distributions as compared with the CPS. The overall mean incomes and the corresponding size distributions from the two sources resemble each other much more closely when restricted to those recipient units with positive, or positive plus break-even, incomes, although

the IRS still shows somewhat more inequality than the CPS when positive incomes alone are considered. The relative mean incomes of those in the top quintile of the IRS distribution appear to lie above those in the top quintile of the CPS, with those in the bottom 75 or 80 percent of the IRS distributions having relative mean incomes lower than those in the corresponding parts of the CPS distributions. These findings are in agreement with the limited tests of the consistency of reporting of farm income based on the 1972 Exact Match File.

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NOTES AND REFERENCES

- [1] Stocker, F. D., and Ellickson, J. C., "How Fully Do Farmers Report Their Incomes?" National Tax Journal, June 1959, pp. 116-126; Houthakker, H. S., "The Great Farm Tax Mystery," Challenge Magazine, Jan.-Feb. 1967, pp. 12-13, 38-39; Reinsel, E. J., Farm and Off-Farm Income Reported on Federal Tax Returns, Economic Research Service, U.S.D.A., August 1968, pp. 27-33.
- [2] E.g., Peach, R. W., "Recommendations for the Content and Design of Income Survey Questions Relating to Farm Self-Employment Income," U.S. Department of Commerce, Bureau of Economic Analysis, unpublished, November 1979.
- [3] For a description of this file and the methodology used in its creation, see Budd, E. C., and Salter, J. K., "Supplementing Household Survey Estimates of Income Distribution with Data from Other Sources: The U.S. Distribution of Total Money Income for 1972," paper presented at the 17th General Conference of the International Association for Research in Income and Wealth, Gouvieux, France, August 1981.
- [4] The implied overall correction ratio from the 40 percent used in Section 1, since the audit corrections to the size distributions were made on an individual return basis, not by applying an aggregate correction to all returns. See J. K. Salter, Improving the Quality of Income Data Reported on Field Surveys and on Individual Tax Returns, unpublished Ph.D. dissertation, The Pennsylvania State University, 1980, for a more complete discussion of audit correction methods applied to the 1972 EM-SM file.