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What is Farm Income and Who Gets It?

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What is Farm Income and Who Gets It?

In 1972 the AAEA Committee on Economic Statistics issued a warning that the conceptual basis for U.S. agricultural statistics was obsolete. The specific problem given most attention was the unsuitability of the farm as the basic unit of observation (AAEA, p. 868). During the succeeding 23 years some notable improvements in the statistical basis for agricultural data have been made, among the most important of which is the Farm Costs and Return Survey (FCRS) conducted annually by USDA. Still, in the FCRS and elsewhere, the farm remains the basic unit of observation.

The farm as a unit of observation has proved resilient because the investments in new information that the AAEA Committee and others have recommended have been most efficiently, implemented in that framework. However, the obsolescence of the farm as the basic unit of observation has now been made manifest in the single most politically sensitive statistic about U.S. agriculture: farm income.

USDA's Agriculture Outlook in September 1995 provides the following information for 1993:

1.	net farm income per farm	\$20,865
2.	farm income per operator household	\$4,815
3.	farm operator household income (including off-farm income)	\$40,223

The \$20,865 of item 1 is the only number not directly published on page 51 of Agriculture Outlook (Tables 29 and 30). It is the published \$43.4 billion sector-wide net farm income

divided by 2.08 million U.S. farms. This is perhaps the figure that most economists would use if asked how much net income the average U.S. farm generates; the net income of all farm operations divided by the number of operators. It is therefore puzzling if not shocking to see USDA's FCRS survey-based measure of farm income per household, item 2, at a level of \$4,815. How could two measures of what would be expected to be roughly the same concept be so different? And, how could the substantial effort and capital that the average farmer commits generate only \$4,815 annually?¹

A widely recognized complicating factor is income farmers receive from non-farm activities (work, investments, and other services). According to Table 30 of the cited Agricultural Outlook, off-farm income amounts to \$35,408 per farm in 1993, which added to item 2 gives the \$40,223 reported in item 3. But one could also justify adding \$35,408 to the \$20,865 of item 1, obtaining \$56,273 total income per farm. This was the approach used by USDA until the new FCRS data were introduced in 1993. In short, one can think of the average farm as economically disadvantaged — earning income from farming well below the poverty line and forced to take off-farm work to survive — or rich, with about 1½ times the average nonfarm household's income. It all depends on the data used.

The key data issue is whether the \$4,815 of item 2 or the \$20,865 of item 1 is more appropriate. USDA has firmly opted for the former.² But aggregate net farm income corresponding to item 1 is still reported. What does it mean? Why are the two figures so

¹USDA's "Natural Financial Summary, 1993," (p. 19) gives an average owned asset value of \$430,000 per farm for 1993. \$4,815 would provide a 1 percent rate of return on these assets, not allocating any returns to the farm operator's labor and management.

²The September 1995, Agricultural Output says "it is no longer appropriate to divide sector estimates of net income by the number of farmers to estimate the income of operator households." (p. 3).

different? In tracking down the differences it becomes clear how conceptual difficulties with the farm as a unit of observation have landed us in a statistical quagmire.

Measuring Income Categories

A farmer's income, like the income of anyone who does not receive a contractually determined wage or other compensation, is a residual between receipts and expenses. So an income accounting scheme is required, and is at the heart of net income measurement.³ On both the receipt and expense sides it is difficult to measure some items. And it is difficult to determine whether some items should be included in the accounting scheme or not.

Such determinations cannot reasonably be made in the absence of a clear idea of the income concept being measured. First, what is its purpose? From the uses which economists, policymakers, and the general public make of income data, two uses stand out: (a) income as a measure of standard of living — an indicator of the household's ability to purchase goods and services for consumption; (b) income as a measure of returns to resources committed to the farm. These two uses have direct analogs in national income accounts: GDP as national spending on final output, and net national income as aggregate factor receipts. Most items in a net farm income accounting scheme have a place in both uses, but some are questionable for one purpose or the other.

³One could of course directly ask for the farmer's own estimate of the farm's net income. This was the approach taken by the Bureau of the Census in its periodic Current Population Survey (CPS) that reported the income of farm residents. For 1989 (the latest published estimate I could find) the median family income of the 1.6 million estimated farm households was \$28,800, compared to \$28,900 for nonfarm households (Bureau of the Census, 1990, Table 1, p.9). The farm category has been eliminated in this survey since January 1993. The explanation given by Census is that the "item identifying farm and nonfarm residence was no longer asked in CPS because of discontinued funding by the Department of Agriculture" (Bureau of the Census, 1993, p. ix).

Home-produced goods and services

Nonmarket goods are very important in agriculture in developing countries, and historically have been in the United States. Just 100 years ago many farm and ranch households lived quite substantially independently of the market economy. Discussions of farm income measurement in the 1950s and 1960s paid careful attention to the value of home-produced food and fuel (Reid, 1951; Randall and Masucci, 1960). However, by 1990 estimated home consumption of these items had fallen from 15 percent of net farm income in 1950 to 1.8 percent in 1990 (USDA, 1991, p. 17). Nonetheless, another category of home-produced income of farm households increased rapidly, namely the rental value of farmers' dwellings. Table 1 shows both categories of home-produced income for 1950-90. The estimated gross rental value of farmers' dwellings increased from 10.7 percent of net farm income in 1950 to more than half of farm income in the early 1980s.⁴ Overall, noncash income in total remained about as important until the mid-1980s as it was in 1950.

The shift in composition of home production from food and fuel to housing is important in farm/nonfarm income comparisons. Nonmarket income has traditionally been included by USDA in net farm income, and is included (after subtracting associated costs) in the \$20,865 of 1992 net farm income per farm cited above. But nonmarket income is not included in the income figures usually cited for nonfarm households. This omission may not be important for home-produced food and fuel, which is likely to be negligible for nonfarm people today; but it is important for housing, where nonfarm households are likely to have rental values of owner-occupied housing that are quite substantial.

⁴Presumably because imputed dwelling rental became so important that a data problem was indicated, the method of estimating rental values was changed in 1984; but the pre-1984 data have not been revised.

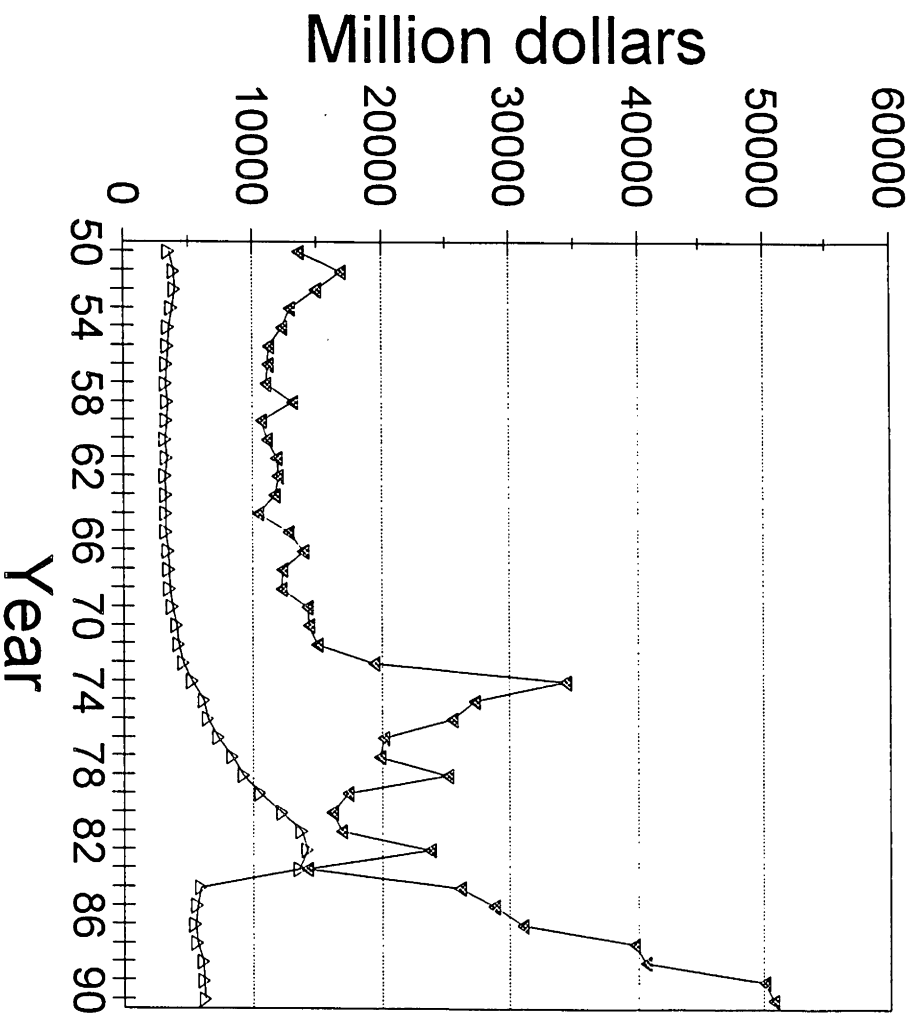
Table 1. USDA Data on Nonmarket Income

Year	Home Consumption of Farm Products	Rental Value of Farm Dwellings	Total Nonmarket Income	Percent of Net Farm Income
	Million dollars			
1950	2,063	1,464	3,527	26
1951	2,304	1,608	3,912	23
1952	2,220	1,736	3,956	26
1953	2,007	1,765	3,772	29
1954	1,789	1,711	3,500	28
1955	1,678	1,741	3,419	30
1956	1,585	1,734	3,319	29
1957	1,484	1,787	3,271	30
1958	1,505	1,861	3,366	26
1959	1,289	2,031	3,320	31
1960	1,135	2,098	3,233	29
1961	1,110	2,202	3,312	28
1962	993	2,258	3,251	27
1963	921	2,360	3,281	28
1964	835	2,443	3,278	31
1965	811	2,481	3,292	26
1966	824	2,599	3,423	25
1967	736	2,747	3,483	28
1968	719	2,838	3,557	29
1969	730	3,046	3,776	26
1970	776	3,268	4,044	28
1971	744	3,475	4,219	28
1972	889	3,713	4,602	24
1973	1,115	4,147	5,262	15
1974	1,190	4,942	6,132	22
1975	1,129	5,355	6,484	25
1976	1,182	6,115	7,297	36
1977	1,161	7,250	8,411	42
1978	1,215	8,057	9,272	37
1979	1,346	9,256	10,602	61
1980	1,233	11,045	12,278	76
1981	1,214	12,597	13,811	82
1982	1,129	13,121	14,250	60
1983	1,049	12,593	13,642	96
1984	1,017	4,881 ¹	5,898	23
1985	926	4,689	5,615	20
1986	896	4,579	5,475	18
1987	743	4,901	5,644	14
1988	731	5,373	6,104	15
1989	666	5,470	6,136	12
1990	693	5,563	6,256	12

¹Estimation method changed.

Source: USDA, 1991, p. 19.

Net Farm Income and Imputed Dwelling Rental Value



—△—
Rental value of dwellings
—□—
Net farm income

The FCRS-based estimate of farm income per household — the \$4,815 cited earlier for 1993 — excludes nonmarket income. Given the large share of nonmarket income attributable to housing and the small amount attributable to agricultural products consumed directly on the farm, the FCRS approach seems appropriate for consideration of either the farm household's standard of living or farmers' returns from resources committed to agriculture. The standard of living of farm households is admittedly increased through on-farm consumption, but especially for purposes of comparison with nonfarm households it may well be more misleading to include than to exclude nonmarket income for farmers, since nonmarket income is not included for nonfarmers.

Land rental. The income a farmer earns from land owned and farmed by the operator is straightforwardly counted as farm income, being part of the residual between farm receipts and expenses. What about land that is rented for cash or shares? The convention followed by USDA is that rents paid out by a farmers are an expense, and rents received by a farm are income (from another farm enterprise), so average farm income is unaffected by the level of these payments. But land rents paid to landowners who are not farm operators — often retired farmers or their nonfarming heirs — are not part of farm income. This is an important accounting decision because it firmly fixes the concept that farm income has an establishment rather than a product basic. That is, farm income is not all earnings generated by the production of agricultural products — which would include earnings from farmland owned by nonfarm landlords — but is rather income accruing to establishments that meet the definition of a farm.

In 1975 a joint AAEA/ERS task force on farm income estimates issued a report that discussed the reporting unit in detail.⁵ They recommended abandoning the concept of "net income of farm operators." They stated: "The farm should be viewed as a business enterprise or establishment, not as a family or consuming unit" (AAEA/ERS, 1975, p. 17). The concept they were looking for appears similar to what ERS now publishes as "net business income." However, USDA continues to place its main emphasis on the operator household concept. Net business income is reported annually in the National Financial Summary but not in the monthly Agricultural Outlook.

The Commerce Department uses a product basis in its sectoral GDP accounts, including returns to all land and labor devoted to farming, whether supplied by farm operators, nonfarm landlords, or hired farm workers. USDA has not followed the product approach for its farm income statistics, but has developed estimates of returns to farm assets which include all farmland, and hence are placed on a product basis (Erickson, 1988).

A striking result of recent USDA farm income estimates is that nonfarm landlords receive about the same income in land rentals as farm operators do from their land, labor, capital equipment, and management. Net rents to nonfarm landlords are estimated at \$8.9 billion in 1991 (National Financial Summary, 1993, p. 18) while the net farm income of farm operator households in 1991 is \$12.5 billion. Farm operators own an estimated 59 percent of U.S. land in farms.⁶ If the \$8.9 billion in nonfarm landlord rents amounts to 41 percent of all land returns

⁵The Task Force members were George Brandow and Edward Budd, Penn State University, Paul Farris, Purdue University, R. J. Hildreth, Farm Foundation, M.L. Upchurch, University of Florida, J.R. Grant and Richard Haidacher, USDA.

⁶The 1987 U.S. Census of Agriculture's Agricultural Economics and Land Ownership survey found 465 million acres owned by the farm's operator and 38 million acres owned by farm operators and rented to other farmers. This (465 + 38 =) 503 million acres amounts to 59

(that is, the return to land per acre is the same for farm operators and nonfarm landlords) then farm operators earn $(8.9/41 \times .59 \Rightarrow)$ \$12.8 billion in returns to land. This implies that farm operators earn about zero from their capital investment, labor, and management.

Contractors and Big Corporations. The most complete published accounting of the relationship between sector-wide and FCRS individual enterprise data is in ERS's "Agricultural Income and Finance" report of September 1993 (pp. 23-25). A key table in that report is reprinted as table 2. It show \$12.5 billion in total farm income of farm operator households, and \$15.1 billion in income of "contractors" (\$12.9 billion) and "non-family corporations and cooperatives" (\$2.2 billion). It is not clear from the ERS presentation whether these latter figures are a "cash income" concept or exclude depreciation. Judging from appendix table 3 of the ERS report, \$16 billion of depreciation is a sector-wide figure, so that the \$15.1 billion is a net-of-depreciation value. With nonmarket income of \$5.9 billion included in net farm income but not cash income, we can account for most of ERS net farm income of \$40 billion for 1991 as:

farmer operator households	\$12.5 billion
contractors and corporations	15.1 "
nonmoney income	<u>5.9 "</u>
	\$33.5 billion

[Where is the other \$6.5 billion?]

With respect to the contractor portion, ERS says: "This result should not be too surprising when it is recognized that nearly 48,000 farms had livestock production contracts and another 10,000 had crop production contracts." USDA, 1993, (p. 25). To me this makes the income data all the more surprising, because dividing the \$12.9 billion by 48,000 amounts to about \$270,000 per farm having a contract. This means, as I understand it, the average

percent of the 1987 estimate of 852 million acres in farms (U.S. Dept. of Commerce, 1987, Tables 2 and 3).

Table 2.

Deriving 1991 Farm Operator Household Income from the National Farm Income Accounts and the Farm Costs and Returns Survey

53.3 net cash
 15.7 deprec.
 37.6 net business income

**Aggregate Farm Sector
Net Cash Income, 1991
\$53.3 billion**

Most Income Goes to:

**Farm Proprietorships, Partnerships,
and Family Corporations
\$32.6 billion 1/**

Other Income Goes to:

**Contractors
\$12.9 billion**

- and -

**Non-family Corporations
and Cooperatives
\$2.2 billion**

Of this income, more than half is for depreciation, wages paid to operators, and net income earned from other farm businesses
\$18.2 billion

15.7

and

Crop and livestock commodities for which receipts were deferred
\$3 billion

Leaving:

**Farm Business Income from Self-Employment
\$11.4 billion**

Almost 3/4ths of this income
(\$8.1 billion) goes to farm
operator households

- and -

The rest goes to partners
and other households
\$3.3 billion

Plus Other Farm Related Income
\$4.4 billion 2/

**Equals Total Farm Income of
Operator Households
\$12.5 billion**

- Yields -

**Average Farm Income per
Operator Household of
\$8,009 3/**

Plus Off-Farm Income
\$65.8 billion

**Equals Total Farm Operator
Household Income
\$78.3 billion**

- Yields -

**Average Total Farm Operator
Household Income of
\$37,644**

**Farm Operator Household Income
Estimate from the
Farm Costs and Returns Survey**

**Average Farm Income per
Operator Household:
\$4,397**

**Average Total Farm Operator
Household Income:
\$36,035**

1/ The sector estimate of net cash income is adjusted for comparability with the FCRS prior to distribution to farm businesses.

2/ Income from land rents, wages paid to the operator and family, and net income from other farm business.

3/ The number of senior farm operator households was 2,080,132 in 1991.

contracting farm in 1991 generated \$270,000 in net income for someone who was not a member of a farm operator household. Since most contractors have arrangements with several farms, the contractors appear to be earning very high incomes. This makes it the more important to learn what portion of sector-level sales and input provision these contractors account for.

What is needed is an accounting system that traces receipts from sales of farm products to establishments, farm and others, and matches these receipts with costs borne by these establishments. Table 3 gives an outline.

Farms and the Farm Sector

It is possible that the Farm Cost and Returns Survey cannot be made to provide a meaningful estimate of income from farming. There are two reasons for this doubt. First, the establishment-basis approach may have reached the end of its rope. A product basis would instead consider at an aggregate (national) level the value of agricultural output, the cost of purchased inputs, and land and capital stocks, to impute a net return to producers of agricultural products. The FCRS is missing too many of the relevant landowner, capital providers unpriced service suppliers, and residual claimants to provide the necessary information to estimate net income from farming. Second, it is possible that interviewers cannot, in the FCRS context, get accurate answers to the questions necessary to estimate net farm income. Persons available at the locations defined as farms either do not have all the information necessary or cannot be relied upon to convey it accurately to the interviewer. Thus, the AAEEA committee's 1972 warning that our conceptual ship had sprung leaks has now sunk the vessel with all hands in the case of USDA's farm income measurements.

Table 3. Agricultural Sector Receipts and Costs by Type of Establishment, 1993

	USDA Sector Total ¹	Farm Households	Non-family Corporations	Contractors
----- \$ billions -----				
1. Sales	175.1			
2. Government payments	13.4			
3. Receipts from other establishments	8.8			
4. Inventory accumulation	-3.6			
5. Gross farm income (1 + 2 + 3 + 4)	197.2			
6. Input expenditures	127.8			
7. Rents paid	9.6			
8. Depreciation	16.3			
9. Net business income (5 - 6 - 7 - 8) (Return to household's labor and capital)	43.6	10.0 ² (?)	2.0(?)	13.0(?)

¹Source: USDA, December 1994, p. 18.

²Source: USDA, Agricultural Outlook, September 1995, p. 51, \$4,815 per farm times 2.08 million farms.

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