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Appendix: Sources of Data

Most of the data in this report are from the Agricultural Resource Management Study (ARMS). ARMS collects financial data on U.S. farm businesses and information about farm operators and their households. The ARMS is designed and conducted each year by the Economic Research Service (ERS) and the National Agricultural Statistics Service (NASS), both agencies of the U.S. Department of Agriculture. ARMS was formerly called the Farm Costs and Returns Survey (FCRS). For information about the ARMS sample design, see the *Survey Administration Manual* (USDA, Nat'l. Stat. Serv., 1999a).

Both 1998 and 1996 ARMS data are used extensively in this report. ARMS data for 1998 are used to depict structural and financial conditions. These data were the most current available when the report was being completed in mid-2000. Slightly older 1996 ARMS data are used to reflect the most current ARMS data available when research began on the more specialized topics in this report. In addition, 1994 FCRS data are used to examine the reasons for working off the farm, how income from off-farm jobs was spent, and spouse involvement in specific farm management decisions. The 1994 data are the most recent information available on these topics.

The target population of the ARMS is all farming units in the 48 contiguous States that sell or normally would sell at least \$1,000 of agricultural products during the calendar year covered by the survey.¹ The annual survey collects financial data on farm businesses and basic information on the farm operator and the operator household.

The relative standard error (RSE), a measure of sampling variability, is available from survey results. The RSE is the standard error of the estimate expressed as a percentage of the estimate. Any estimate with an RSE greater than 25 percent is identified in the figures and tables. Standard errors can also be used to evaluate the statistical differences between ARMS-based estimates. Differences are stressed in the text only when estimates are significantly different at the 95-percent confidence level or higher.

Different versions of the ARMS questionnaire are used each year, and each version collects information useful for a specific purpose. Most of the information in this report came from version 1, which contained data necessary to calculate operator household income. Version 1 of the 1998 ARMS had 8,400 observations.

The ARMS collects detailed information about one operator per surveyed farm. In the case of farms with more than one operator, detailed information is collected about the primary operator and limited information is collected about secondary operators. Similarly, the survey collects detailed information about one, primary household per farm and limited information about households of secondary operators.

In this report, the terms “household” and “family” are used interchangeably, although the ARMS actually collects household data. There is a technical difference between a family and a household. A family is made up of two or more people who live together and who are related by blood, marriage, or adoption. A household consists of all the people (related and unrelated) who live together in a housing unit. The ARMS also includes people dependent on the household who live elsewhere, such as college students living away from home.

Data sources other than ARMS are also used in this report. The section on tax policy uses data from the Internal Revenue Service (IRS) in addition to ARMS data. Census of agriculture data are used throughout the report to provide historical perspective. The census of agriculture began in 1840 (U.S. Dept. Agr., Nat'l. Agr. Stat. Serv., 1999c, p. vii), which allows following trends over long periods of time. In contrast, ARMS (or FCRS) is a relatively new survey, beginning in 1985 when data were collected for the 1984 calendar year.

Data from the ERS Economic Indicators of the Farm Sector (EIFS), which go back to 1910, are also used to provide historic perspective. Note that financial information from EIFS and ARMS differ conceptually. ARMS financial data relate strictly to the farm business, while the official EIFS sector estimates include all participants in the farm sector, not just the farm business. For example, the income of farm businesses estimated from ARMS includes the income of those with ownership interest in the operation—farm operators, partners, and shareholders. In addition to these participants, EIFS's sector estimates include others, such as contractors and landlords, who share the risks of production.

¹Both ARMS and FCRS (its predecessor) exclude Alaska and Hawaii, largely for cost reasons.

Appendix Tables: Government Payments by Typology, Specialization, and Region

Appendix table 1—Number of farms, average program payments, and payments' contribution to gross cash farm income, by program and farm typology, 1998

Item	Small family farms ¹				
	Limited-resource ²	Retire-ment ³	Residential/lifestyle ³	Farming-occupation ³	
				Low-sales	High-sales
All farms	150,268	290,938	834,321	422,205	171,469
Average gross cash farm income (\$)	7,361	12,255	13,780	35,800	161,036
Average government payment (\$)	*722	1,566	993	2,833	12,870
Percent of gross cash farm income (%)	*9.8	12.8	7.2	7.9	8.0
Average transition payment per farm (\$)	*172	178	370	1,489	7,137
Average loan deficiency payment per farm(\$)	**68	*114	149	430	2,865
Average CRP payment per farm(\$)	*355	1,179	348	491	781
Average disaster payment per farm (\$)	*36	27	57	254	1,466
Farms receiving government payments	30,022	81,684	197,692	186,787	129,644
Percent of all farms (%)	20.0	28.1	23.7	44.2	75.6
Average gross cash farm income (\$)	13,350	17,308	30,404	49,264	163,785
Average government payment (\$)	*3,615	5,578	4,189	6,403	17,022
Percent of gross cash income (%)	*27.1	32.2	13.8	13.0	10.4
Average transition payment (\$)	*859	633	1,560	3,365	9,439
Average loan deficiency payment per farm (\$)	*339	*406	631	973	3,790
Average CRP payment per farm (\$)	*1,779	4,200	1,470	1,109	1,033
Average disaster payment per farm (\$)	*181	97	240	575	1,939
Farms receiving loan deficiency payments	*3,204	14,544	60,664	70,107	76,420
Percent of all farms (%)	*2.1	5.0	7.3	16.6	44.6
Average gross cash farm income (\$)	*50,071	40,108	48,276	53,511	163,284
Average government payment (\$)	*8,747	5,293	5,821	8,639	20,628
Percent of gross cash income (%)	17.5	*13.2	12.1	16.1	12.6
Average loan deficiency payment per farm (\$)	*3,177	2,279	2,056	2,591	6,429
Farms receiving transition payments	16,756	33,118	121,900	127,648	106,454
Percent of all farms (%)	11.2	11.4	14.6	30.2	62.1
Average gross cash farm income (\$)	16,193	19,823	36,310	53,749	163,670
Average government payment (\$)	*3,978	5,031	4,538	7,384	18,058
Percent of gross cash income (%)	*24.6	25.4	12.5	13.7	11.0
Average transition payment per farm (\$)	*1,539	1,562	2,530	4,924	11,495
Farms receiving CRP payments	*16,224	47,407	59,947	36,683	20,581
Percent of all farms (%)	*10.8	16.3	7.2	8.7	12.0
Average gross cash farm income (\$)	5,927	13,735	18,897	44,735	175,576
Average government payment (\$)	*4,290	7,928	5,763	10,449	24,253
Percent of gross cash income (%)	*72.4	57.7	30.5	23.4	13.8
Average CRP payment per farm (\$)	*3,293	7,237	4,849	5,647	6,510
Farms receiving disaster payments	**4,976	*10,180	25,955	39,197	41,449
Percent of all farms (%)	**3.3	*3.5	3.1	9.3	24.2
Average gross cash farm income (\$)	*23,955	*18,419	52,544	59,136	167,004
Average government payment (\$)	**2,576	*5,053	6,244	9,280	22,000
Percent of gross cash income (%)	*10.8	27.4	11.9	15.7	13.2
Average disaster payment per farm (\$)	**1,089	780	1,827	2,738	6,064
Farms with no government payments	120,246	209,254	636,629	235,418	41,825
Percent of all farms (%)	80.0	71.9	76.3	55.8	24.4
Average gross cash farm income (\$)	*5,866	*10,283	8,618	25,118	152,517

See footnotes at end of table.

Continued—

Appendix table 1—Number of farms, average program payments, and payments' contribution to gross cash farm income, by program and farm typology, 1998 (continued)

Item	Large family farms ¹	Very large family farms ¹	Nonfamily-farms ⁴	All farms
Total farms	91,939	61,273	42,296	2,064,709
Average gross cash farm income (\$)	348,769	977,037	566,289	84,651
Average government payment (\$)	24,539	29,971	8,970	4,488
Percent of gross cash farm income (%)	7.0	3.1	1.6	5.3
Average transition payment per farm (\$)	13,714	17,141	4,738	2,300
Average loan deficiency payment per farm (\$)	5,436	7,082	1,860	898
Average CRP payment per farm (\$)	961	*850	*925	585
Average disaster payment per farm (\$)	*3,277	2,778	*692	446
Farms receiving government payments	70,096	35,597	19,255	750,777
Percent of all farms (%)	76.2	58.1	45.5	36.4
Average gross cash farm income (\$)	362,918	964,596	414,763	141,217
Average government payment (\$)	32,185	51,589	19,704	12,343
Percent of gross cash income (%)	8.9	5.3	4.8	8.7
Average transition payment per farm (\$)	17,988	29,505	10,407	6,326
Average loan deficiency payment per farm (\$)	7,130	12,191	4,086	2,469
Average CRP payment per farm (\$)	1,260	*1,463	*2,032	1,609
Average disaster payment per farm (\$)	*4,299	4,782	*1,521	1,226
Farms receiving loan deficiency payments	48,134	20,408	7,084	300,565
Percent of all farms (%)	52.4	33.3	16.7	14.6
Average gross cash farm income (\$)	352,394	888,137	387,710	192,091
Average government payment (\$)	36,657	66,661	31,629	19,926
Percent of gross cash income (%)	10.4	7.5	8.2	10.4
Average loan deficiency payment per farm (\$)	10,383	21,264	11,105	6,166
Farms receiving transition payments	61,514	25,756	10,361	503,508
Percent of all farms (%)	66.9	42.0	24.5	24.4
Average gross cash farm income (\$)	362,594	972,301	595,683	165,156
Average government payment (\$)	33,986	61,630	28,857	15,150
Percent of gross cash income (%)	9.4	6.3	4.8	9.2
Average transition payment per farm (\$)	20,497	40,779	19,339	9,433
Farms receiving CRP payments	12,063	5,666	*7,238	205,807
Percent of all farms (%)	13.1	9.2	*17.1	10.0
Average gross cash farm income (\$)	383,123	924,415	**228,869	90,620
Average government payment (\$)	39,422	61,316	*14,692	12,646
Percent of gross cash income (%)	10.3	6.6	d	14.0
Average CRP payment per farm (\$)	7,323	*9,192	*5,405	5,869
Farms receiving disaster payments	23,874	8,956	*3,094	157,682
Percent of all farms (%)	26.0	14.6	7.3	7.6
Average gross cash farm income (\$)	334,860	1,023,169	375,839	185,382
Average government payment (\$)	39,982	67,419	28,599	19,969
Percent of gross cash income (%)	11.9	6.6	7.6	10.8
Average disaster payment per farm (\$)	12,621	19,007	*9,467	5,836
Farms with no government payments	21,843	25,676	23,041	1,313,932
Percent of all farms	23.8	41.9	54.5	63.6
Average gross cash farm income (\$)	303,365	994,287	692,915	52,329

d = Data suppressed because the standard error is greater than 75 percent of the estimate. * = Standard error is between 25 and 50 percent of the estimate. ** = Standard error is between 51 and 75 percent of the estimate. ¹Small family farms have sales less than \$250,000. Large family farms have sales between \$250,000 and \$499,999. Very large family farms have sales of \$50,000 or more. ²Limited-resource farms have household income less than \$20,000, farm assets less than \$150,000, and sales less than \$100,000. ³Small farms other than limited resource farms are classified according to the major occupation of their operators. Operators of retirement farms are retired. Operators of residential/lifestyle farms report a nonfarm occupation. Operators of farming-occupation farms report farming as their major occupation. Farming-occupation farms are further divided into low-sales (sales less than \$100,000) and high-sales (sales between \$100,000 and \$249,999). ⁴Nonfamily farms include nonfamily corporations or cooperatives, as well as farms operated by a hired manager. Source: USDA, Economic Research Service, 1998 Agricultural Resource Management Study, version 1.

Appendix table 2—Number of farms, average program payments, and payments' contribution to farm income, by program and farm specialization, 1998

Item	Cash grain	General crop	High value crops ¹	Livestock	All farms
Total farms	386,026	442,970	159,275	1,076,438	2,064,709
Average gross cash farm income (\$)	121,027	49,990	234,197	63,742	84,651
Average government payment (\$)	14,443	4,464	994	1,445	4,488
Percent of gross cash farm income (%)	11.9	8.9	0.4	2.3	5.3
Average transition payment (\$)	8,082	1,790	*451	711	2,300
Average loan deficiency payment per farm (\$)	3,327	643	*217	232	898
Average CRP payment per farm (\$)	796	1,447	**46	234	585
Average disaster payment per farm (\$)	1,577	352	*122	127	446
Farms receiving government payments	318,798	187,580	11,534	232,865	750,777
Percent of all farms (%)	82.6	42.3	7.2	21.6	36.4
Average gross cash farm income (\$)	138,780	94,369	678,860	155,663	141,217
Average government payment (\$)	17,489	10,542	13,722	6,681	12,343
Percent of gross cash income (%)	12.6	11.2	2.0	4.3	8.7
Average transition payment per farm (\$)	9,786	4,228	*6,227	3,285	6,326
Average loan deficiency payment per farm (\$)	4,028	1,518	*2,993	1,074	2,469
Average CRP payment per farm (\$)	964	3,418	**642	1,083	1,609
Average disaster payment per farm (\$)	1,909	832	**1,685	585	1,226
Farms receiving loan deficiency payments	196,957	34,730	*2,182	66,695	300,565
Percent of all farms (%)	51.0	7.8	*1.4	6.2	14.6
Average gross cash farm income (\$)	165,517	243,061	*1,041,660	216,226	192,091
Average government payment (\$)	21,548	24,344	39,625	12,192	19,926
Percent of gross cash income (%)	13.0	10.0	*3.8	5.6	10.4
Average loan deficiency payment per farm (\$)	6,520	8,197	15,820	3,749	6,166
Farms receiving transition payments	266,499	86,532	4,650	145,827	503,508
Percent of all farms (%)	69.0	19.5	*2.9	13.5	24.4
Average gross cash farm income (\$)	145,397	149,910	*916,750	186,346	165,156
Average government payment (\$)	18,756	15,101	*22,332	8,360	15,150
Percent of gross cash income (%)	12.9	10.1	*2.4	4.5	9.2
Average transition payment per farm (\$)	11,706	9,165	*15,445	5,246	9,433
Farms receiving CRP payments	47,585	103,293	*3,617	51,313	205,807
Percent of all farms (%)	12.3	23.3	*2.3	4.8	10.0
Average gross cash farm income (\$)	162,179	27,654	*97,082	150,555	90,620
Average government payment (\$)	25,269	8,663	**2,739	9,657	12,646
Percent of gross cash income (%)	15.6	31.3	**2.8	6.4	14.0
Average CRP payment per farm (\$)	6,455	6,208	**2,047	4,913	5,869
Farms receiving disaster payments	82,482	22,403	*2,273	50,524	157,682
Percent of all farms (%)	21.4	5.1	*1.4	4.7	7.6
Average gross cash farm income (\$)	170,565	222,442	**690,257	170,430	185,382
Average government payment (\$)	25,609	24,582	**19,335	8,746	19,969
Percent of gross cash income (%)	15.0	11.1	*2.8	5.1	10.8
Average disaster payment per farm (\$)	7,380	6,963	*8,554	2,695	5,836
Farms with no government payments	67,228	255,390	147,741	843,573	1,313,932
Percent of all farms (%)	17.4	57.7	92.8	78.4	63.6
Average gross cash farm income (\$)	36,844	17,394	199,482	38,368	52,329

* = Standard error is between 25 and 50 percent of the estimate. ** = Standard error is between 51 and 75 percent of the estimate.

¹Vegetables, fruits, tree nuts, and horticultural specialties.

Source: USDA, Economic Research Service, 1998 Agricultural Resource Management Study, version 1.

Appendix table 3—Number of farms participating in government programs, average program payments, and payments' contribution to farm income, by program and resource region,¹ 1998

Item	Heartland	Northern Crescent	Northern Great Plains	Prairie Gateway	Eastern Uplands
Total farms	453,900	320,576	88,238	280,066	288,840
Average gross cash farm income (\$)	92,281	80,737	146,279	77,236	23,807
Average government payment (\$)	7,223	2,249	14,870	6,796	404
Percent of gross cash farm income (%)	7.8	2.8	10.2	8.8	1.7
Average transition payment per farm (\$)	4,111	1,096	6,672	3,462	160
Average loan deficiency payment per farm (\$)	1,434	392	2,803	1,279	*106
Average CRP payment per farm (\$)	818	314	3,047	959	*49
Average disaster payment per farm (\$)	488	167	1,690	*930	**32
Farms receiving government payments	294,822	118,104	67,069	115,449	34,408
Percent of all farms (%)	65.0	36.8	76.0	41.2	11.9
Average gross cash farm income (\$)	120,412	118,380	163,829	143,708	67,112
Average government payment (\$)	11,120	6,104	19,563	16,486	3,391
Percent of gross cash income (%)	9.2	5.2	11.9	11.5	5.1
Average transition payment per farm (\$)	6,329	2,975	8,778	8,398	1,343
Average loan deficiency payment per farm (\$)	2,208	1,064	3,688	3,102	*890
Average CRP payment per farm (\$)	1,259	852	4,009	2,326	*414
Average disaster payment per farm (\$)	751	453	2,224	*2,257	**266
Farms receiving loan deficiency payments	140,459	30,604	38,051	50,452	5,399
Percent of all farms (%)	30.9	9.5	43.1	18.0	1.9
Average gross cash farm income (\$)	164,997	181,146	184,886	220,828	139,729
Average government payment (\$)	15,464	11,597	25,948	26,095	11,897
Percent of gross cash income (%)	9.4	6.4	14.0	11.8	8.5
Average loan deficiency payment per farm (\$)	4,635	4,107	6,501	7,099	5,673
Farms receiving transition payments	223,690	70,228	49,287	84,529	14,941
Percent of all farms (%)	49.3	21.9	55.9	30.2	5.2
Average gross cash farm income (\$)	142,037	140,144	203,568	166,613	86,024
Average government payment (\$)	12,788	7,513	23,137	19,361	4,972
Percent of gross cash income (%)	9.0	5.4	11.4	11.6	5.8
Average transition payment per farm (\$)	8,341	5,004	11,945	11,470	3,094
Farms receiving CRP payments	72,471	33,978	27,802	30,221	6,936
Percent of all farms (%)	16.0	10.6	31.5	10.8	2.4
Average gross cash farm income (\$)	91,179	48,422	*148,920	122,259	44,173
Average government payment (\$)	11,725	4,711	21,551	19,475	*2,642
Percent of gross cash income (%)	12.9	9.7	*14.5	15.9	*6.0
Average CRP payment per farm (\$)	5,121	2,963	9,671	8,886	2,054
Farms receiving disaster payments	59,077	16,018	24,053	34,347	1,954
Percent farms receiving disaster payments (%)	13.0	5.0	27.3	12.3	0.7
Average gross cash farm income (\$)	148,485	158,471	203,171	167,352	200,682
Average government payment (\$)	14,857	10,099	26,861	22,270	*10,371
Percent of gross cash income (%)	10.0	6.4	13.2	13.3	*5.2
Average disaster payment per farm (\$)	3,748	3,343	6,201	*7,587	**4,674
Farms with no government payments	159,078	202,472	21,168	164,617	254,432
Percent with no government payments (%)	35.0	63.2	24.0	58.8	88.1
Average gross cash farm income (\$)	40,144	58,779	*90,675	30,617	17,951

See footnotes at end of table.

Continued—

Appendix table 3—Number of farms participating in government programs, average program payments, and payments' contribution to farm income, by program and resource region,¹ 1998 (continued)

Item	Southern Seaboard	Fruitful Rim	Basin and Range	Mississippi Portal	All farms
Total farms	214,363	233,338	98,661	86,728	2,064,709
Average gross cash farm income (\$)	55,268	179,186	57,682	72,032	84,651
Average government payment (\$)	1,337	3,127	2,990	7,199	4,488
Percent of gross cash farm income (%)	2.4	1.7	5.2	10.0	5.3
Average transition payment per farm (\$)	653	1,481	1,172	3,769	2,300
Average loan deficiency payment per farm (\$)	257	693	765	1,711	898
Average CRP payment per farm (\$)	148	*299	*501	*386	585
Average disaster payment per farm (\$)	126	420	402	711	446
Farms receiving government payments	43,637	35,621	14,048	27,620	750,777
Percent of all farms (%)	20.4	15.3	14.2	31.8	36.4
Average gross cash farm income (\$)	142,394	374,839	153,066	178,760	141,217
Average government payment (\$)	6,566	20,485	21,002	22,604	12,343
Percent of gross cash income (%)	4.6	5.5	13.7	12.6	8.7
Average transition payment per farm (\$)	3,206	9,698	8,231	11,836	6,326
Average loan deficiency payment per farm (\$)	1,263	*4,538	5,372	5,372	2,469
Average CRP payment per farm (\$)	726	*1,960	*3,518	*1,212	1,609
Average disaster payment per farm (\$)	*620	2,752	2,824	2,233	1,226
Farms receiving loan deficiency payments	5,970	*12,172	7,139	10,319	300,565
Percent of all farms (%)	2.8	*5.2	7.2	11.9	14.6
Average gross cash farm income (\$)	356,330	**281,685	199,094	301,264	192,091
Average government payment (\$)	22,219	*28,186	30,074	39,111	19,926
Percent of gross cash income (%)	6.2	10.0	15.1	13.0	10.4
Average loan deficiency payment per farm (\$)	9,234	*13,280	10,571	14,377	6,166
Farms receiving transition payments	19,907	22,052	6,879	11,995	503,508
Percent of all farms (%)	9.3	9.5	7.0	13.8	24.4
Average gross cash farm income (\$)	202,098	338,090	209,288	268,673	165,156
Average government payment (\$)	10,235	22,931	34,388	36,926	15,150
Percent of gross cash income (%)	5.1	6.8	16.4	13.7	9.2
Average transition payment per farm (\$)	7,028	15,666	16,808	27,254	9,433
Farms receiving CRP payments	16,657	*4,278	3,933	*9,532	205,807
Percent of all farms (%)	7.8	*1.8	*4.0	*11.0	10.0
Average gross cash farm income (\$)	52,239	*134,763	89,120	48,113	90,620
Average government payment (\$)	4,178	29,464	*28,405	8,340	12,646
Percent of gross cash income (%)	8.0	*21.9	31.9	17.3	14.0
Average CRP payment per farm (\$)	1,903	16,325	12,567	*3,511	5,869
Farms receiving disaster payments	4,783	8,893	3,775	4,781	157,682
Percent of all farms (%)	2.2	3.8	3.8	5.5	7.6
Average gross cash farm income (\$)	*262,468	418,192	191,580	250,187	185,382
Average government payment (\$)	*13,300	29,321	45,642	37,942	19,969
Percent of gross cash income (%)	*5.1	7.0	23.8	15.2	10.8
Average disaster payment per farm (\$)	*5,661	11,021	10,511	12,899	5,836
Farms with no government payments	170,727	197,717	84,613	59,108	1,313,932
Percent of all farms (%)	79.6	84.7	85.8	68.2	63.6
Average gross cash farm income (\$)	33,000	143,937	41,845	22,161	52,329

* = Standard error is between 25 and 50 percent of the estimate. ** = Standard error is between 51 and 75 percent of the estimate.

¹See the section "Attributes of Small and Large Farms" for definitions of the resource regions.

Source: USDA, Economic Research Service, 1998 Agricultural Resource Management Study, version 1.