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ARE REPORT NO. 5

AUGUST 1993

ENTRY AND EXIT FROM FARMING IN NORTH CAROLINA, 1978-87

R. A. Schrimper

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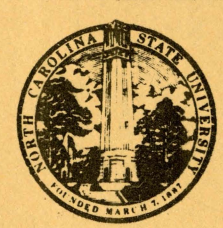

DEPARTMENT OF AGRICULTURAL AND RESOURCE ECONOMICS
NORTH CAROLINA STATE UNIVERSITY
RALEIGH, NORTH CAROLINA

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ARE Report No. 5 - August 1993
Department of Agricultural and Resource Economics
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ENTRY AND EXIT FROM FARMING IN NORTH CAROLINA, 1978-1987*

Summary

This report provides estimates of the annual number of entrants and exits from farming for each county in North Carolina during 1978-1982 and 1982-1987. Also, characteristics of the entrants into farming are compared to those with continuing operations to learn more about the nature of the 21,700 farms that began operating in North Carolina between 1978 and 1987.

Even though the annual decrease in the total number of farms in North Carolina between 1982 to 1987 was 24.4 percent greater than between 1978 and 1982, the annual number of exits from farming was greater during the earlier period. Thus, more of the farms going out of business in 1978-1982 were replaced by new entrants than between 1982 and 1987. This suggests that more consolidation of farming operations occurred between 1982 and 1987 than in the earlier period.

Between 1978 and 1982, the number of new farming operations was sufficient to result in a net increase in the total number of farms in twenty-four counties in North Carolina. However, for 1982-1987 all counties in the state had a decrease in total number of farms, as exits exceeded entrants. Variation in the pattern of change in farm numbers among counties for each period is consistent with the diversity of North Carolina's agriculture and rural economy. Comparisons of more recent changes with these historical patterns will be possible as soon as data from the 1992 Census of Agriculture become available.

The 21,700 farms that began operating in North Carolina between 1978 and 1987 represent a little over one-third of the total farms in North Carolina as reported by the 1987 Census of Agriculture. Approximately 40 percent of the new entrants listed farming as their principal occupation and reported sales of farm products of $10,000 or more per year. Larger shares of new entrants with sales above $10,000 were classified as tenants

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*The author acknowledges the excellent assistance of John Logie, who assembled the basic data set and developed the spreadsheet applications required for the computations. Also, special thanks are extended to Dr. Steve Lilley in the Department of Sociology and Anthropology at North Carolina State University, who provided access to a CD-ROM version of the Census information that greatly facilitated the analysis. Editorial suggestions and comments by G. Benson, D. Hoag and C. Moore about earlier versions of the manuscript are appreciated.

than was the case for farms that had operated for longer periods. Nevertheless, over 75 percent of the new farms reported owning some or all of their land. Around 60 percent of the new operators were on farms with less than 50 acres. New farms were involved in all kinds of agricultural enterprises consistent with the diversity of North Carolina's rural economy. The proportion of new farms that were livestock oriented or producing horticultural specialities was a little greater in 1982-1987 than in the earlier period, but almost half of all new farms obtained most of their income from cash grain or other field crops, especially tobacco.

The large number of new farms indicated substantial opportunities for new entrepreneurs replacing those retiring or leaving farming for other reasons. New operators may be potential clients for economic and technical information required for successful management of agricultural enterprises.

Introduction

A continuing decrease in the total number of farms in North Carolina and throughout the United States has been occurring for many years. These changes have occurred as part of the adjustment process associated with a steady stream of new agricultural technology that has increased productivity and reduced costs of production. Consolidation of farming operations has resulted in each farmer, on average, managing an increasing number of acres and/or more animal units. Simultaneously, an increased quantity of marketing services that transform agricultural products into higher valued products desired by consumers has resulted in an expanding agribusiness sector. Also, there has been a continuing increase in nonfarm economic activities providing valuable inputs and services like feed, fertilizer and financial services purchased by farmers. Farm families also have been earning increasing amounts of money from off-farm employment opportunities to supplement farm income.

Comparing changes in the number of farms over time can be a little misleading and confusing because there have been nine changes since 1850 in the definition of what constitutes a farm for purposes of the Census of Agriculture. The latest definition, used since 1974, considers a farm to be any place from which $1,000 or more of agricultural products are produced or sold (or normally would have been sold) during the survey year. The current definition, unlike some of the earlier definitions, does not involve any minimum physical size or acreage requirement.

In North Carolina, the total number of farms declined from approximately 82,000 in 1978 to 59,000 in 1987 (Perrin and Sappie). The decline in farm numbers in North Carolina averaged about 2,250 per year

between 1978 and 1982, and accelerated to about 2,800 per year for the 1982 to 1987 period. The loss in the number of farms per year in North Carolina between 1978 and 1982 occurred at approximately the same rate as during 1974 and 1978, when total farm numbers declined from 91,000 to 82,000.

A more current estimate of total farm numbers will be available to analyze changes since 1987 as soon as data from the 1992 Census of Agriculture are available. The N.C. Department of Agriculture estimates that farm numbers decreased an additional 14.3% between 1987 and 1991, with no further decline between 1991 and 1992 (1990 and 1992 N.C. Agricultural Statistics).[1]

Although the total number of farms has decreased substantially over time for the United States as well as for North Carolina, changes in the total number of farms do not reveal all of the significant aspects of what has occurred. For example, the total number of farms actually increased in twelve states between 1982 and 1987 (Gale and Henderson). Seven of these twelve states were in the Pacific or Western regions of the United States. Texas and Florida were the only two states in the South that had an increase in number of farms between 1982 and 1987. Increases in farm numbers also occurred in Maine, New Jersey, and Nebraska. Decreases in the number of farms in 38 states, however, more than offset the increase in farm numbers for the above set of 12 states.

Gale and Henderson also reported that approximately 75,000 new farming operations in the United States were initiated each year between 1982 and 1987. Many of the new farms likely replaced some of the over 106,000 farms that ceased operations each year during the same period. Gale and Henderson's estimated annual rates of entry and exit into farming are based on combining information from the Census of Agriculture regarding changes in total number of farms and the the number of years respondents reported operating any part of their current farm. According to their estimating procedures, anyone who changed location of farming operations was considered an entrant as well as an exit. Therefore, their estimated entry and exit rates overstate, to a degree, rates at which operators initiated and terminated farming operations. Similarly, a change in ownership of an existing farm that maintained continuous operations would be considered an exit as well as an entry. Thus, the entry and exit

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[1]Annual estimates for North Carolina for intracensural years are prepared by the N. C. Department of Agriculture based on sample surveys. Differences in the total number of farms based on sample surveys and those identified through Census data have existed in the past, even though both use the same definition of what constitutes a farm.

rates include changes in the number and composition of farming operations as well as in the number initiating and terminating entirely separate farming operations.

The purpose of this study is to present and analyze estimated rates of entry and exit from farming for each county in North Carolina between 1978 and 1982 as well as between 1982 and 1987. Entry and exit rates provide useful information about the changing structure of agricultural production. Entry and exit estimates are based on Census of Agriculture data using procedures similar to those used by Gale and Henderson to calculate entry and exit rates for each state. The procedures used to compute entry and exit rates are described in the following section of this report. Annual estimates of entry and exit for North Carolina counties for each of the two periods are presented after the section describing the procedures. Similarities and contrasts in entry and exit rates from farming between 1978-1982 and 1982-1987 and among geographical areas of North Carolina are noted. A subsequent section compares characteristics of entrants with those who had been farming for longer periods of time. A final section of the report contains some conclusions and implications.

Comparing changes in entry and exit from farming in North Carolina between 1978 and 1987 is especially relevant because of substantial differences in real income trends of farm families that occurred during these years. Between 1978 and 1982 total farm income (in 1982-84 dollars) generally declined, continuing a trend that began in 1973 (Table 1 and Figure 1). Most of the decline in income of farmers during this period resulted from decreases in farm income, although off-farm income also decreased slightly. Between 1982 and 1987, real net farm income as well as off-farm income in North Carolina generally increased. Net farm income reached a very low level in 1983 but has been substantially higher since then. Real off-farm income for 1985-1987 averaged 15.3 percent higher than for 1982-1984. The general increase in farm income during the latter period and the continuing decrease in total number of farms produced dramatic increases in average real income per farm (Figure 2). In 1987, average income per farm (in 1982-1984 dollars) was at almost the same level as in 1973 before agricultural incomes began declining.[2]

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[2]Caution must be exercised in interpreting changes in net farm income and average income per farm, however, because the value of farm marketings and total costs of production are not adjusted to account for changes over time in production arrangements such as vertical integration or production contracts. For example, the total net value of poultry and livestock production is included as part of net farm income even if producers are paid on a contractual basis instead of receiving the total value of live animals and paying all costs of production.

Table 1. Income sources for North Carolina farms, 1970-1990.[a]

Year	Nominal dollars			1982-1984 dollars[b]			Average income per farm in 1982-1984 dollars[c]
	Off farm income	Net farm income	Total	Off-farm income	Net farm income	Total	
	(million $)			(million $)			(thousand $)
1970	567	577	1,144	1,461	1,487	2,948	26.0
1971	598	549	1,147	1,477	1,356	2,833	26.3
1972	648	696	1,344	1,550	1,665	3,215	31.5
1973	732	1,133	1,865	1,649	2,552	4,201	43.5
1974	801	1,042	1,843	1,624	2,114	3,738	41.1
1975	690	997	1,687	1,283	1,853	3,136	35.3
1976	774	1,019	1,793	1,360	1,791	3,151	36.4
1977	761	720	1,481	1,255	1,188	2,443	29.0
1978	869	1,033	1,902	1,333	1,584	2,917	35.6
1979	994	622	1,616	1,369	857	2,226	27.9
1980	1,019	516	1,635	1,237	626	1,863	24.0
1981	1,051	1,008	2,059	1,156	1,109	2,265	30.1
1982	1,028	927	1,955	1,065	961	2,026	27.8
1983	1,045	472	1,517	1,049	474	1,523	22.0
1984	1,099	1,315	2,414	1,058	1,266	2,324	34.5
1985	1,424	988	2,412	1,323	918	2,241	34.7
1986	1,387	1,048	2,435	1,266	956	2,222	36.0
1987	1,409	1,434	2,843	1,240	1,262	2,502	42.4
1988	1,407	1,636	3,043	1,189	1,383	2,572	44.9
1989	1,411	1,810	3,221	1,138	1,460	2,598	47.4
1990	1,649	1,968	3,617	1,262	1,506	2,768	53.0

[a]Sources of Data: 1970-1984 data from R. K. Perrin and G. P. Sappie, North Carolina Farm Income and Production, 1950-1989, EIR No. 83, Department of Agricultural and Resource Economics, N. C. State University, November 1990. 1985-1990 data from 1989 and 1990 issues of Farm Income Indicators.

[b]CPI values used for calculations obtained from 1991 Statistical Abstract.

[c]Previous column divided by total number of farms. Number of farms interpolated linearly between values reported in 1969, 1974, 1978, 1982 and 1987, Census of Agriculture, Perrin and Sappie (1990) and percentage changes from 1987 reported in 1990 and 1992 N. C. Agricultural Statistics.

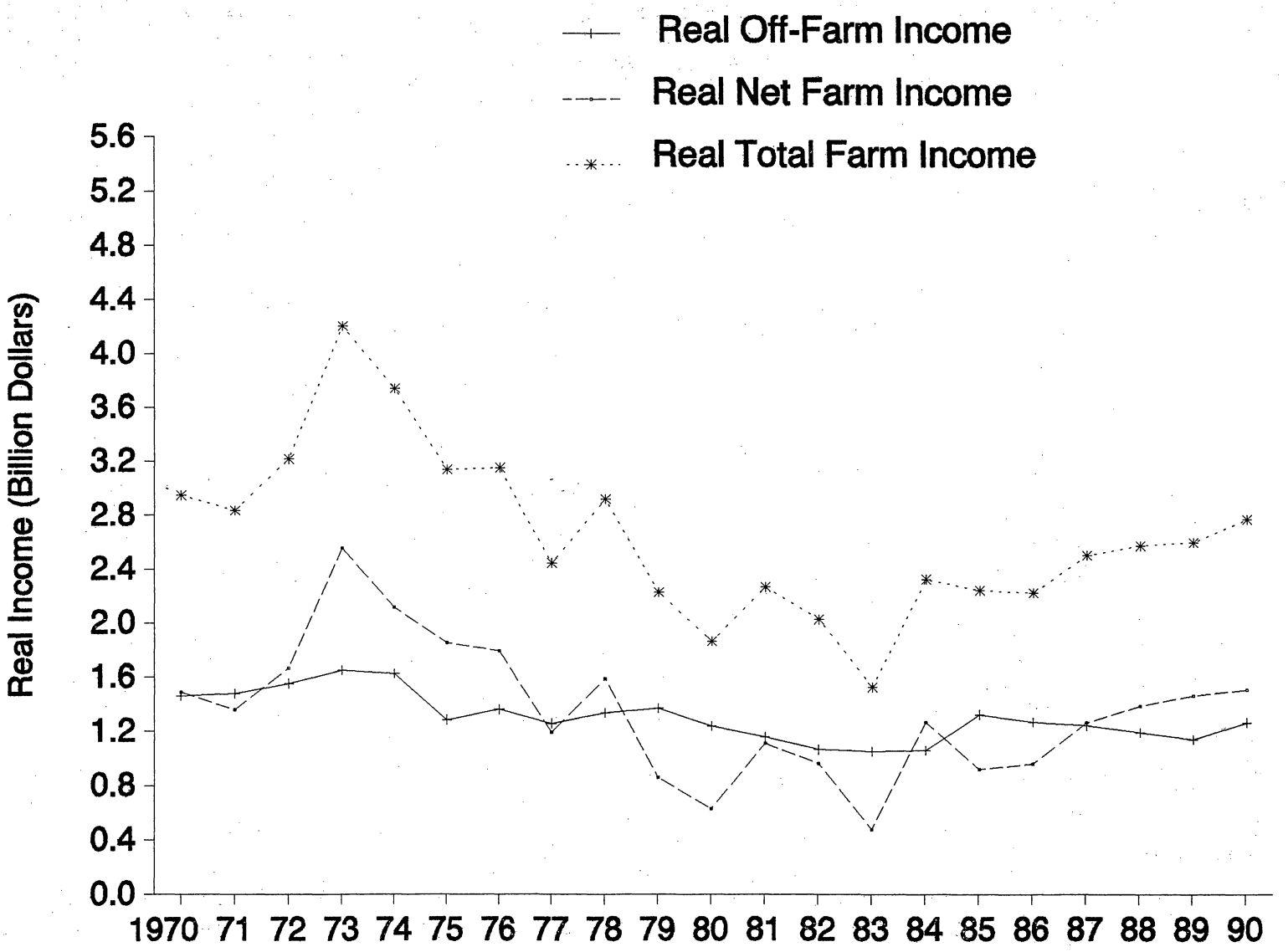

Figure 1. Trends in sources of income for farmers in N. C., 1970-90.

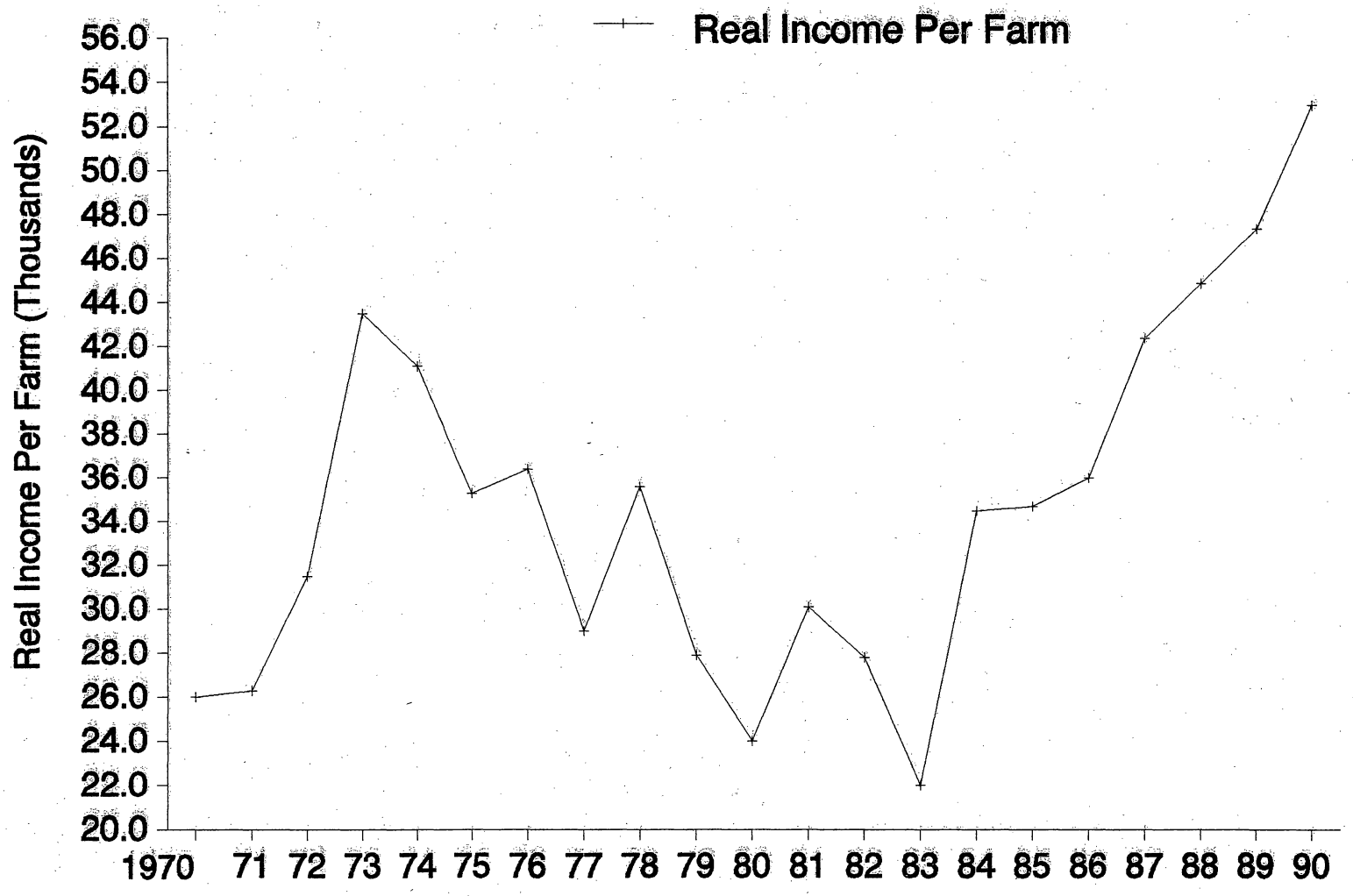

Figure 2. Average real income per farm in N. C., 1970-90.

Estimated entry and exit rates between 1978 and 1987 will provide a base for analyzing how changes during the late 1980s and early 1990s compare to those of earlier periods when 1992 Census of Agriculture data become available. As noted above, annual entry and exit rates for various geographical areas of the state indicate the extent of turnover in farming operations that are not obvious when considering only changes in the total number of farms. Entry rates into farming may be especially useful in identifying the locations of potential clients for economic and technical information required for successful management of agricultural enterprises. Comparing the rate of entry to exit also provides information about the relative stability in the number and size of farming operations in a given area. The extent to which operators leaving agricultural production are not replaced by new entrants indicates that resources have been consolidated into other farms or removed from agricultural production.

Methodology

The estimates presented in this paper are calculated from Census of Agriculture data for the years 1978, 1982 and 1987. As noted above, two kinds of information from the Census were used to estimate the number of entries into and exits out of farming for each county in North Carolina. The average number of entrants per year for each county was based on the number of farmers who reported that they had not operated any part of their farm prior to the previous census. Exits from farming were estimated by subtracting the number of farms in the latest census from the combined total of new entrants and number of farms reported in the previous census. This procedure excludes any farm that started operating after one census but did not survive until the next census. To some extent this omission would offset some of the overestimation of entrance and exit rates attributed to farmers changing locations that was noted earlier.

Two kinds of data adjustments were required before making the above calculations. The first adjustment was necessary because of the less than 100 percent response rate to the question about what year farmers began operations. It was assumed that nonrespondents to this question would have answered similarly to respondents. For example, in 1982, 21,041 out of the 72,792 total number of farm operators did not respond to the question about the number of years they had operated their current farm. There were 8,580 operators in North Carolina who indicated they had 0 to 4 years of experience operating their farms. Consequently, the total estimated entrants between 1978 and 1982 was calculated by adding a fraction of the

nonrespondents based on the proportion of new entrants among those who responded to the question as follows:

$$8{,}580 + 21{,}041 * 8{,}580 / (72{,}792 - 21{,}041) = 12{,}084$$

The total number of exits from farming in North Carolina between 1978 and 1982 was then calculated as follows:

{Total number of farms, 1978}	+	{Estimated number of new entrants}	-	total number of farms, 1982}	=	{Estimated number of exits from farming}
81,706	+	12,084	-	72,792	=	20,998

The average number of exits per year between 1978 and 1982 was therefore estimated to be 20,998/4 = 5,250.

A second adjustment was necessary for the 1982-1987 data because responses to the question about the number of years of farming experience at a given location were reported by 0-4 and 5-9 year intervals. Consequently, it was assumed that after adjusting for nonrespondents, one-fifth of the operators with 5-9 years on the present farm began farming in 1983. That number was added to the estimated entrants with 0-4 years of experience to estimate the total number of new entrants between 1982 and 1987.

The same procedures were applied to data for each county in the state. Some of the totals of county data reported in the tables in the following sections differ slightly from the above numbers because of rounding involved in the adjustment procedures applied to the county data. To facilitate comparisons among major subareas of the state, individual county statistics are listed alphabetically within crop-reporting regions of the state.

Statewide data presented in Tables 4 and 9 were corrected for nonresponse rates and years of experience in the same manner as described above.

Changes During 1978-1982

Between 1978 and 1982 the average number of exits from farming per year in North Carolina exceeded the number of new entrants by approximately 74 percent (Table 2). During this period, the number of exits from farming averaged a little more than 100 per week. On the other hand, the estimated number of new farms averaged 3,021 per year during this period, or about 58 per week. Thus, the ratio of entrants to exits averaged .58

Table 2. Estimated annual entry and exit of farms in North Carolina for 1978-1982.

Region and county	No. of entrants per year	No. of exits per year	Ratio of entry to exit	Percent[a]		
				Entrants	Exits	Change
Central Coastal						
Beaufort	33	91	0.37	14	39	-25
Carteret	9	14	0.64	21	33	-12
Craven	30	65	0.47	19	41	-22
Greene	25	56	0.45	14	31	-17
Hyde	8	14	0.59	16	28	-12
Johnston	76	210	0.36	12	33	-21
Jones	14	40	0.34	15	44	-29
Lenoir	38	83	0.46	16	37	-20
Pamlico	6	16	0.41	16	41	-25
Pitt	42	110	0.39	14	36	-23
Wayne	51	128	0.40	14	34	-20
Wilson	30	82	0.36	12	32	-20
Total	362	909	0.40	14	35	-21
North Coastal						
Bertie	40	96	0.41	19	46	-27
Camden	4	13	0.32	11	35	-24
Chowan	13	26	0.49	18	36	-18
Currituck	5	6	0.82	14	17	- 3
Dare	1	0[b]	NA[c]	73	0	73
Edgecombe	22	58	0.39	13	34	-21
Gates	6	32	0.20	7	38	-31
Halifax	24	64	0.38	15	40	-25
Hertford	16	38	0.42	16	39	-23
Martin	28	64	0.43	14	32	-18
Nash	53	107	0.50	19	39	-20
Northampton	21	59	0.35	14	40	-26
Pasquotank	12	21	0.56	18	31	-13
Perquimans	7	21	0.36	8	23	-15
Tyrrell	10	18	0.55	26	46	-20
Washington	14	24	0.60	15	26	-11
Total	276	647	0.43	15	36	-21
South Coastal						
Bladen	41	130	0.32	15	47	-32
Brunswick	15	64	0.23	11	45	-34
Columbus	70	189	0.37	15	39	-24
Cumberland	37	71	0.52	21	40	-19
Duplin	73	170	0.43	14	33	-19
Harnett	46	101	0.46	15	32	-17
Hoke	13	29	0.44	22	48	-26
New Hanover	4	5	0.84	20	25	- 5
Onslow	26	66	0.39	16	40	-24
Pender	24	59	0.41	17	41	-24
Robeson	93	190	0.49	17	36	-19
Sampson	72	196	0.37	14	38	-24
Scotland	4	12	0.35	10	30	-20
Total	518	1282	0.40	15	38	-23
North Mountain						
Alleghany	22	29	0.74	15	20	- 5

Table 2 (continued)

Region and county	No. of entrants per year	No. of exits per year	Ratio of entry to exit	Percent[a]		
				Entrants	Exits	Change
Ashe	54	57	0.96	14	15	- 1
Avery	12	17	0.74	15	20	- 5
Caldwell	15	9	1.66	13	8	5
Surry	65	124	0.53	15	29	-14
Watauga	45	43	1.06	21	20	1
Wilkes	48	52	0.92	14	16	- 2
Yadkin	51	89	0.57	15	26	-11
Total	312	420	0.74	15	21	- 6
West Mountain						
Buncombe	70	30	2.31	19	8	11
Burke	20	19	1.01	20	19	1
Cherokee	15	7	2.22	20	9	11
Clay	9	8	1.17	16	15	1
Graham	7	8	0.85	14	16	- 2
Haywood	53	38	1.40	21	15	6
Henderson	26	36	0.73	17	23	- 6
Jackson	11	7	1.73	17	11	6
McDowell	13	0[b]	NA[c]	22	0	27
Macon	18	5	3.38	18	5	13
Madison	75	87	0.87	20	23	- 3
Mitchell	18	9	1.95	17	8	9
Polk	11	7	1.68	22	14	8
Rutherford	22	23	0.97	14	15	- 1
Swain	5	2	2.07	24	10	14
Transylvania	8	4	2.30	17	8	9
Yancey	51	43	1.17	24	20	4
Total	432	333	1.30	19	15	4
Central Piedmont						
Alexander	23	18	1.27	14	11	3
Catawba	27	18	1.49	17	11	6
Chatham	40	56	0.72	15	21	- 6
Davidson	39	52	0.74	13	17	- 4
Davie	26	22	1.21	16	13	3
Iredell	49	59	0.83	15	18	- 3
Lee	16	28	0.58	13	23	-10
Randolph	68	76	0.89	18	20	- 2
Rowan	36	20	1.78	16	9	7
Wake	59	106	0.55	17	31	-14
Total	383	455	0.84	15	18	- 3
North Piedmont						
Alamance	38	48	0.79	15	19	- 4
Caswell	37	65	0.58	16	28	-12
Durham	13	24	0.52	16	29	-13
Forsyth	42	51	0.82	18	22	- 4
Franklin	35	87	0.41	14	35	-21
Granville	44	81	0.54	16	29	-13
Guilford	59	81	0.72	17	23	- 6
Orange	22	13	1.67	15	9	6
Person	30	74	0.41	14	35	-21
Rockingham	52	109	0.48	15	31	-16

Table 2 (continued)

Region and county	No. of entrants per year	No. of exits per year	Ratio of entry to exit	Percent[a]		
				Entrants	Exits	Change
Stokes	81	122	0.66	20	30	-10
Vance	23	62	0.37	16	43	-27
Warren	15	45	0.33	11	34	-23
Total	491	862	0.57	16	28	-12
South Piedmont						
Anson	17	29	0.60	17	28	-11
Cabarrus	22	13	1.68	16	9	7
Cleveland	33	34	0.98	14	15	- 1
Gaston	12	19	0.62	12	19	- 7
Lincoln	23	25	0.91	16	18	- 2
Mecklenburg	13	10	1.25	12	9	3
Montgomery	11	19	0.57	15	25	-10
Moore	29	53	0.55	13	23	-11
Richmond	6	19	0.29	8	25	-17
Stanly	28	35	0.81	16	20	- 4
Union	51	89	0.58	15	27	-12
Total	246	346	0.71	14	20	- 6
North Carolina[d]	3,019	5,254	0.58	16	27	-11

[a]Percentages were calculated using the total number of entrants and total exits for the entire period relative to the average number of farms for each census period.

[b]Estimated entrants were less than the increase in total number of farms and consequently estimated exits were set to zero.

[c]NA = Not Applicable.

[d]Regional and state totals may vary because of rounding.

over the four-year period, indicating that approximately 6 of every 10 farmers who went out of business were replaced by new operators.

The number of exits exceeded the number of entrants in 76 of the 100 counties in North Carolina and in all regions except the West Mountain area. Thirteen of the 17 counties in the latter region had a net increase in the number of farms between 1978 and 1982. Many of the other eleven counties for which the number of entrants into farming exceeded exits were located in the Northern Mountain and Central Piedmont areas. Cabarrus, Mecklenburg, Orange, and Dare were the only counties outside one of the two Mountain and Central Piedmont areas of the state that had a net increase in number of farms between 1978 and 1982.

The greatest number of exits from farming relative to entrants occurred in the Eastern part of the state. The number of exits for all three of the Coastal Plain areas of North Carolina were approximately 2 1/2 times greater than the number of entrants.[3] These three areas had decreases in total number of farms of over 20 percent between 1978 and 1982.

The largest percentage decline in total number of farms between 1978 and 1982 occurred in Brunswick County with a 34 percent decline. The county with the greatest number of exits from farming during this period, however, was Johnston county, which averaged 210 per year. A little more than one-third of these farms appeared to have been replaced by new farming operations, as suggested by a ratio of entry to exits of .36. Eight counties had even lower entry-to-exit ratios than Johnston county. Gates and Brunswick counties had the lowest ratios of entrants to exits in the state, with .20 and .23, respectively. The latter values indicated these counties had approximately only one new farm for every five that ceased operations between 1978 and 1982.

The relatively larger decrease in number of exits relative to entrants during this period likely reflects the continuing response to income changes and other forces leading to a smaller number of larger sized farming operations. In some of the western parts of the state, however, there were more new entrants than exits during this period, indicating that factors affecting changes in farm numbers did not operate uniformly across the state.

Changes During 1982-1987

The average number of exits per year from farming between 1982 and 1987 in North Carolina was substantially lower than between 1978 and 1982. The rate of entry into farming between 1982 and 1987, however, decreased even more rapidly, thereby resulting in the larger annual decline in the total number of farms noted earlier. The average number of exits from farming in North Carolina between 1982 and 1987 averaged 4,618 per year, or about 89 per week, Table 3. This was approximately 11 percent less than what occurred during the late 1970s and early 1980s. On the

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[3]Percent changes in Tables 2 and 3 were calculated using the mean value of the total number of farms for the period being compared as a base reflecting an average rate of change over the entire period. For example, the percent change in farms for North Carolina between 1978 and 1982 was calculated as follows:

(72,792 - 81,706) / ((72,792 + 81,706)/2) x 100 = -12

Table 3. Estimated annual entry and exit of farms in North Carolina for 1982-1987.

Region and county	No. of entrants per year	No. of exits per year	Ratio of entry to exit	Percent[a]		
				Entrants	Exits	Change
Central Coastal						
Beaufort	23	60	0.38	16	42	-26
Carteret	3	11	0.29	11	39	-28
Craven	11	42	0.26	11	43	-32
Greene	14	46	0.30	12	39	-27
Hyde	6	11	0.52	17	31	-14
Johnston	52	160	0.32	13	40	-27
Jones	10	24	0.44	18	43	-25
Lenoir	24	58	0.41	16	39	-23
Pamlico	2	12	0.15	9	54	-45
Pitt	27	90	0.30	15	49	-34
Wayne	36	91	0.40	15	38	-23
Wilson	26	75	0.35	17	48	-31
Total	234	680	0.34	14	42	-28
North Coastal						
Bertie	23	55	0.42	18	43	-25
Camden	5	11	0.48	22	47	-25
Chowan	7	15	0.46	15	31	-16
Currituck	4	11	0.34	16	44	-28
Dare	0	0	NA[b]	0	0	NA[b]
Edgecombe	16	49	0.32	15	46	-31
Gates	9	15	0.59	17	28	-11
Halifax	13	40	0.32	13	40	-27
Hertford	8	23	0.33	13	37	-24
Martin	21	48	0.43	16	36	-20
Nash	26	87	0.30	15	52	-37
Northampton	18	30	0.59	19	31	-12
Pasquotank	6	11	0.50	13	23	-10
Perquimans	10	24	0.41	16	39	-23
Tyrrell	4	8	0.50	15	31	-16
Washington	11	26	0.41	18	42	-24
Total	181	453	0.39	16	40	-24
South Coastal						
Bladen	21	61	0.35	13	37	-24
Brunswick	11	43	0.25	14	55	-41
Columbus	43	114	0.38	14	38	-24
Cumberland	20	44	0.46	17	38	-21
Duplin	55	120	0.46	16	35	-19
Harnett	32	90	0.36	16	44	-28
Hoke	9	12	0.74	22	30	- 8
New Hanover	3	6	0.48	21	41	-20
Onslow	18	46	0.39	18	45	-27
Pender	13	37	0.35	14	41	-27
Robeson	65	158	0.41	19	46	-27
Sampson	61	129	0.47	19	39	-20
Scotland	6	10	0.61	23	38	-15
Total	357	870	0.41	17	40	-23
North Mountain						
Alleghany	15	26	0.58	14	24	-10

Table 3. (continued)

Region and county	No. of entrants per year	No. of exits per year	Ratio of entry to exit	Percent[a]		
				Entrants	Exits	Change
Ashe	26	90	0.29	10	34	-24
Avery	7	9	0.77	12	16	- 4
Caldwell	12	30	0.39	15	36	-21
Surry	43	101	0.43	15	35	-20
Watauga	24	51	0.46	15	31	-16
Wilkes	37	62	0.59	15	25	-10
Yadkin	29	80	0.36	12	34	-22
Total	193	449	0.43	13	31	-18
West Mountain						
Buncombe	41	106	0.38	15	39	-24
Burke	11	20	0.56	14	26	-12
Cherokee	8	19	0.42	14	32	-18
Clay	7	15	0.46	17	37	-20
Graham	4	14	0.26	12	41	-29
Haywood	25	51	0.49	13	26	-13
Henderson	19	22	0.86	16	18	- 2
Jackson	9	18	0.54	18	35	-17
McDowell	7	16	0.47	14	32	-18
Macon	8	30	0.27	11	40	-29
Madison	41	77	0.54	15	28	-13
Mitchell	9	30	0.30	11	37	-26
Polk	6	10	0.62	15	25	-10
Rutherford	13	35	0.37	12	31	-19
Swain	2	4	0.54	12	24	-12
Transylvania	8	10	0.84	20	25	- 5
Yancey	24	52	0.47	15	33	-18
Total	242	529	0.46	14	31	-17
Central Piedmont						
Alexander	16	29	0.55	13	23	-10
Catawba	14	34	0.40	11	28	-17
Chatham	28	41	0.67	14	21	- 7
Davidson	25	59	0.42	11	26	-15
Davie	22	34	0.66	17	26	- 9
Iredell	35	55	0.64	14	22	- 8
Lee	14	36	0.38	18	45	-27
Randolph	41	76	0.53	14	26	-12
Rowan	21	47	0.44	12	26	-14
Wake	34	92	0.37	15	40	-25
Total	250	503	0.49	14	27	-13
North Piedmont						
Alamance	26	57	0.47	15	32	-17
Caswell	22	55	0.41	14	35	-21
Durham	10	24	0.40	19	45	-26
Forsyth	20	52	0.39	12	32	-20
Franklin	20	62	0.32	13	40	-27
Granville	34	73	0.47	18	39	-21
Guilford	32	74	0.43	13	30	-17
Orange	16	32	0.52	15	29	-15
Person	17	56	0.30	13	43	-30
Rockingham	36	82	0.44	14	35	-20

Table 3. (continued)

Region and county	No. of entrants per year	No. of exits per year	Ratio of entry to exit	Percent[a]		
				Entrants	Exits	Change
Stokes	40	123	0.33	15	45	-30
Vance	11	41	0.27	13	48	-35
Warren	10	37	0.27	12	46	-34
Total	294	768	0.38	14	37	-23
South Piedmont						
Anson	11	25	0.42	16	35	-19
Cabarrus	14	32	0.43	13	30	-17
Cleveland	25	46	0.55	14	26	-12
Gaston	10	20	0.49	14	28	-14
Lincoln	12	28	0.43	12	27	-15
Mecklenburg	11	28	0.41	14	36	-22
Montgomery	7	16	0.41	13	30	-17
Moore	21	42	0.51	13	26	-13
Richmond	7	19	0.38	14	39	-25
Stanly	17	40	0.42	14	32	-18
Union	33	68	0.48	14	29	-15
Total	168	364	0.46	14	30	-16
North Carolina[c]	1,919	4,615	0.41	15	35	-20

[a]Percentages were calculated using the total number of entrants and total exits for the entire period relative to the average number of farms for each census period.

[b]NA = Not Applicable.

[c]Regional and state totals may vary because of rounding.

other hand, the number of new farms decreased to 1,917 per year, or less than 37 per week between 1982 and 1987. This was less than two-thirds of the rate of entry into farming experienced during 1978 to 1982. These changes resulted in a net decrease in the total number of farms of 20 percent for the entire five-year period, or around 4 percent per year. This compares to an overall decrease of 12 percent for the 1978 to 1982 period, or approximately 3 percent per year.

Another significant contrast in changes in the number of farms for the two time periods is that the number of exits exceeded the number of entrants in every county in the state for 1982-1987. There also was more similarity in percentage changes in total farm numbers among all regions of the state in 1982-1987 than in 1978-1982. However, the three Coastal Plains areas again had the largest relative decreases. The rate of decline in total farm numbers between 1982 and 1987 exceeded 10 percent for all

but eight counties. Seven of the eight counties with the smallest rates of decline in total farm numbers were located in the central or western parts of the state.

Johnston County again had the largest number of annual exits from farming for 1982-1987, with 160 per year. Robeson county was not far behind with 158 per year. A little over 30 or 40 percent of the exits in these two counties respectively were offset by new farming operations. Ratios of entrants to exits were less than 30 percent in nine counties even though all those counties had smaller numbers of exits per year than Johnston or Robeson counties.

The average number of entrants per year during 1982-87 exceeded the average number of new farming operations that occurred during the previous four years in only five counties. In all of these cases, however, the changes were rather small (10 or less in each period).

Even though the average number of exits per year for the entire state was smaller during 1982-1987 than 1978-1982, this was not the case in every county. In forty counties the average number of exits from farming during 1982-1987 exceeded the average number of exits during the previous four years. Most of these counties were located in the central or western parts of the state. Nineteen of the twenty-five counties in the two mountain regions had a higher average number of exits in 1982-1987 then during 1978-1982. The same situation occurred in half the 34 counties in the three Piedmont areas of the state. This pattern suggests that some of the new entrants in some of the counties responsible for increases in total farm numbers during 1978-1982 may not have survived through the mid-1980s. Only four of the counties in the Coastal Plains regions had increases in numbers of exits per year during the mid-1980s compared to 1978-1982. Thus, the composition of changes in total farm numbers appears to be quite different for various parts of the state as well as for the two time periods examined.

The decrease in number of exits between 1982 and 1987 relative to 1978 and 1982 is consistent with having a smaller base number of farms in 1982 than in 1978 and with the improvement in farm income conditions during the 1980s. The larger decrease in number of entrants into farming between 1982 and 1987 despite improving income conditions may reflect a degree of uncertainty about continuing income prospects after a decade of generally declining farm incomes. The extent to which continuing improvements in incomes of farm families in recent years has affected farm numbers will become clearer when the 1992 Census of Agriculture data become available.

Characteristics of New Farms, 1978-1987

Based on the estimates presented above, approximately 21,700 new farming operations were initiated in North Carolina between 1978 and 1987, while an even higher number of farming operations ceased operating. Additional data from the Census of Agriculture permitted some comparisons of the characteristics of the new entrants with those who had been farming for longer periods of time. Characteristics of the latter group were obtained by eliminating the characteristics of new entrants for each period from the characteristics of all farms in 1982 and 1987.[4]

One of the most significant differences about the new farms in each period was that a much higher fraction were operated by tenants compared to farms that had operated for longer periods of time (Table 4). Part of this difference may reflect how measurement of new farms is affected by mobility of tenants among locations, as discussed earlier. Nevertheless, 75 to nearly 80 percent of all new farm operators reported owning some or all of their land at the time of the 1982 or 1987 Census of Agriculture. Ownership (either full or part) tendencies were higher among farms with less than $10,000 of sales than among farms with greater sales. Nearly all of the decrease in the number of new farms with sales of $10,000 or more between 1978-1982 and 1982-1987 was attributed to farms operated by tenants. The number of new farms with sales under $10,000 decreased among all three ownership categories but especially in the case of part owners, where a 50 percent decrease occurred.

Data in Table 4 also indicate that most of the total number of new entrants into farming in each period had sales of less than $10,000. Approximately 60 percent of the entrants in each period reported sales of less than $10,000 in 1982 and 1987. This proportion is only a little larger than that observed for farmers who had been in business for longer periods of time.

Distributions of new entrants by type of business organization were very similar for both 1978-1982 and 1982-1987 (Table 5). Individual or family-owned businesses accounted for 86 or more percent of all new farming enterprises in each period, with partnerships being the second most popular kind of business organization. Distributions of new entrants by type of business organization were also quite similar to the relative frequencies observed for continuing farming operations for both periods. The number of new farms per year organized as corporations was

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[4]Minor differences in the total number of entrants for 1978-1982 and 1982-1987 in Tables 4 through 9 result from adjusting for varying response rates to different questions in the Census of Agriculture.

Table 4. Tenure characteristics of entrants and continuing farming operations in North Carolina, 1978-1987.

Tenure status	1978-1982 Entrants	1978-1982 Continuing operations	1982-1987 Entrants	1982-1987 Continuing operations
		Percent		
All farms				
Full owners	49.8	57.5	55.8	59.0
Part owners	25.9	33.0	23.3	33.5
Tenants	24.3	9.5	20.9	7.5
Total	100.0	100.0	100.0	100.0
Farms with sales of $10,000 or more				
Full owners	36.6	37.9	40.5	40.3
Part owners	31.4	48.8	36.1	49.0
Tenants	32.0	13.3	23.4	10.7
Total	100.0	100.0	100.0	100.0
Farms with sales of less than $10,000				
Full owners	58.2	74.8	66.5	73.6
Part owners	22.5	19.1	14.4	21.4
Tenants	19.3	6.1	19.1	5.0
Total	100.0	100.0	100.0	100.0
		Number of Farms		
All farms				
Full owners	5,988	34,898	5,445	29,219
Part owners	3,116	20,058	2,275	16,599
Tenants	2,912	5,779	2,035	3,711
Total	12,016	60,735	9,755	49,529
Farms with sales of $10,000 or more				
Full owners	1,708	10,841	1,625	8,745
Part owners	1,464	13,926	1,450	10,635
Tenants	1,492	3,797	940	2,326
Total	4,664	28,564	4,015	21,706
Farms with sales of less than $10,000				
Full Owners	4,280	24,057	3,820	20,474
Part Owners	1,652	6,132	825	5,964
Tenants	1,420	1,982	1,095	1,385
Total	7,352	32,171	5,740	27,823

Table 5. Type of business organization of entrants and continuing farming operations in North Carolina, 1978-1987.

Type of business organization	1978-1982		1982-1987	
	Entrants	Continuing operations	Entrants	Continuing operations
	Percent			
Individual or family	86.3	88.5	86.0	88.8
Partnerships	11.1	9.5	10.3	8.5
Corporations[a]	1.9	1.7	3.0	2.2
Others	.7	.3	.7	.5
Total	100.0	100.0	100.0	100.0
	Number of Farms			
Individual or family	10,392	53,758	8,235	44,163
Partnerships	1,340	5,752	990	4,248
Corporations	224	1,001	285	1,070
Others	84	200	65	228
Total	12,040	60,711	9,575	49,709

[a]Includes cooperatives, estate, trust, institutions, etc.

fairly stable between the two periods but accounted for a slightly larger fraction of the new entrants in 1982-1987 than in the earlier period.

Smaller proportions of the entrants into farming in each period relative to continuing farming operations reported spending the majority of their time working on farm enterprises (Table 6). Around 40 percent of the new entrants in each period reported spending 50 percent or more of their time working on the farms, whereas more than half the continuing operations reported farming as their principal occupation. New entrants into farming also tended to be more highly concentrated among younger age groups. This was especially true for entrants during 1978 to 1982. The proportion of young entrants in 1982-1987 decreased slightly relative to that for the previous period, while many of the older groups accounted for increased proportions of new entrants. In both periods, however, a higher proportion of entrants with farming as their principal occupation were under 35 years of age or 55 and older compared to those who spent more of their time on nonfarm jobs. In 1978-1982, 45.7 percent of new entrants primarily engaged in farming were under 35 years of age. Similarly, 18.4 percent of the new entrants were 55 or older. In 1978-1982, the same two age groups accounted for 30.8 and 14.9 percent respectively of the new entrants who were not primarily engaged in farming.

Table 6. Principal occupations and ages of entrants and continuing farming operations in North Carolina, 1978-1987.

Principal occupation and age	1978-1982 Entrants	1978-1982 Continuing operations	1982-1987 Entrants	1982-1987 Continuing operations
		Percent		
Farming				
< 25	15.7	.8	8.8	.3
25-34	30.0	9.2	27.1	6.8
35-44	20.5	14.5	22.8	13.9
45-54	14.4	20.9	17.1	17.9
55-64	13.9	28.6	15.0	27.4
65 and older	5.5	26.0	9.0	33.7
Total	100.0	100.0	100.0	100.0
Nonfarming				
< 25	5.8	.5	4.1	.2
25-34	25.0	8.1	23.1	6.5
35-44	29.0	20.6	32.9	20.3
45-54	25.2	25.0	22.2	27.1
55-64	10.9	27.3	12.1	27.3
65 and older	4.1	18.5	5.6	18.6
Total	100.0	100.0	100.0	100.0
		Number of farms		
Farming				
< 25	804	279	340	89
25-34	1,536	3,183	1,045	1,813
35-44	1,048	5,017	880	3,730
45-54	740	7,257	660	4,797
55-64	712	9,904	580	7,350
65 and older	280	9,005	345	9,058
Total	5,120	34,645	3,850	26,837
Nonfarming				
< 25	408	144	225	46
25-34	1,748	2,097	1,270	1,493
35-44	2,028	5,345	1,810	4,693
45-54	1,764	6,489	1,220	6,266
55-64	760	7,097	665	6,300
65 and older	284	4,822	310	4,299
Total	6,992	25,994	5,500	23,097

A detailed breakdown of the number of new farms and continuing operations by value of sales for the two time periods indicates that a slightly higher fraction of the new entrants in 1982-1987 had sales either less than $5,000 or greater than $250,000 compared to those who entered farming during 1978-1982 (Table 7). The numbers of new entrants per year

Table 7. Value of sales of farm products by entrants and continuing farming operations in North Carolina, 1978-1987.

Value of sales	1978-1982 Entrants	1978-1982 Continuing operations	1982-1987 Entrants	1982-1987 Continuing operations
		Percent		
$500,000 or more	.8	1.1	1.3	1.9
$250,000 to 499,999	1.8	2.9	2.9	3.8
$100,000 to 249,999	5.6	9.2	5.3	8.7
$40,000 to 99,999	9.2	12.0	8.0	10.0
$20,000 to 39,999	9.4	10.1	8.1	8.9
$10,000 to 19,999	12.2	11.7	10.7	11.4
$5,000 to 9,999	15.2	13.0	14.2	14.1
$2,500 to 4,999	14.7	13.5	16.4	13.9
< 2,500	31.1	26.5	33.1	27.3
Total	100.0	100.0	100.0	100.0
		Number of Farms		
$500,000 or more	96	645	130	954
$250,000 to 499,999	212	1,786	280	1,897
$100,000 to 249,999	672	5,567	520	4,337
$40,000 to 99,999	1,096	7,302	775	4,951
$20,000 to 39,999	1,128	6,169	785	4,428
$10,000 to 19,999	1,460	7,095	1,040	5,624
$5,000 to 9,999	1,812	7,908	1,375	6,969
$2,500 to 4,999	1,756	8,202	1,595	6,866
< 2,500	3,705	16,141	3,215	13,543
Total	11,936	60,815	9,715	49,569

with sales greater than $250,000 were very similar for the two periods despite the decrease in total number of all new entrants discussed earlier. Proportions for nearly all categories of sales over $10,000 were smaller for new entrants than for continuing farming operations.

Comparing the distributions of entrants and continuing farming operations by acreage supports many of the differences noted earlier even though acreage does not accurately reflect the scope of all farming operations (Table 8). Basically, larger fractions of new entrants tended to have fewer acres and their farms tended to be smaller than those for continuing operations. For example, approximately 60 percent of all new entrants in 1978-1982 or 1982-1987 had less than 50 acres. This compares to less than 40 percent of all continuing farming operations in the state in 1982 and 1987 that reported less than 50 acres. On the other hand, only 2 to 3 percent of new entrants reported farming 500 or more acres. These proportions are less than 40 percent of the proportions of continuing

Table 8. Farm size by entrants and continuing farming operations in North Carolina, 1978-1987.

Value of sales	1978-1982 Entrants	1978-1982 Continuing operations	1982-1987 Entrants	1982-1987 Continuing operations
		Percent		
1-9	19.2	7.1	18.4	7.0
10-49	41.3	30.0	39.3	28.7
50-99	18.8	23.4	19.6	22.9
100-219	13.7	21.5	13.3	21.6
220-499	5.1	12.0	6.3	12.4
500-999	1.4	4.2	2.1	5.0
1,000 or more	.5	1.8	1.0	2.4
Total	100.0	100.0	100.0	100.0
		Number of farms		
1-9	2,380	4,302	1,810	3,443
10-49	5,140	18,146	3,870	14,218
50-99	2,340	14,137	1,930	11,326
100-219	1,704	12,974	1,310	10,705
220-499	636	7,243	615	6,131
500-999	172	2,518	210	2,466
1,000 or more	64	1,065	100	1,185
Total	12,436	60,385	9,845	49,474

farms of this size in 1982 and 1987. There was also a decrease between 1982 and 1987 relative to the previous period in the absolute number of continuing farm operations for each category less than 1,000 acres. The decreases in numbers were much larger among farms with 10 to 100 acres than among other groups.

New entrants into farming in North Carolina were distributed among all kinds of agricultural enterprises and this pattern of distribution was quite similar to that of continuing farming operations (Table 9). Only two kinds of farms had a higher average annual entry rate in 1982-1987 than 1978-1982. These were horticultural specialities and animal specialities. Decreases in annual entry rates were somewhat greater for farms specializing in cash grains or other field crops than for many of the other categories. This trend was consistent with the changing nature of agricultural production in North Carolina. Cash grains and other field crops, however, accounted for nearly 47 percent of all new farms in 1982-1987. Among the various livestock classifications, dairy farms had the sharpest decline in entry rates between 1978-1982 and 1982-1987.

Table 9. Type of farm by entrants and continuing farming operations in North Carolina, 1978-1987.

Value of sales	1978-1982 Entrants	1978-1982 Continuing operations	1982-1987 Entrants	1982-1987 Continuing operations
		Percent		
Cash grain	20.1	17.7	14.5	11.4
Field crops, other than cash grain	36.4	38.8	32.2	35.9
Vegetables & melons	2.9	1.6		2.81.8
Fruits & tree nuts	1.4	1.3	1.9	1.8
Hort. specialties	1.9	1.3	3.9	1.9
General farms, primarily crop	4.5	3.6	4.1	4.8
Livestock, other than dairy, poultry, etc.	23.0	26.8	26.2	31.6
Dairy	1.4	2.1	1.1	2.1
Poultry & eggs	5.2	5.0	6.9	6.2
Animal specialties	2.7	1.1	5.9	2.0
General farms, principally livestock	.5	.7	.5	.5
Total	100.0	100.0	100.0	100.0
		Number of farms		
Cash grain	2,468	10,712	1,395	5,656
Field crops, other than cash grain	4,456	23,465	3,105	17,838
Vegetables & melons	352	996	275	898
Fruits & tree nuts	132	810	180	884
Hort. specialties	228	783	365	945
General farms, primarily crop	556	2,176	400	2,371
Livestock, other than dairy, poultry, etc.	2,812	16,224	2,520	15,715
Dairy	172	1,287	110	1,022
Poultry & eggs	632	2,996	665	3,097
Animal specialties	332	685	565	992
General farms, principally livestock	60	417	45	241
Total	12,200	60,551	9,625	49,659

Conclusions and Implications

The above results indicate considerable similarities as well as differences between the rates of entry into and exit out of farming in North Carolina that affect changes in the total number of farms. The estimates confirm that changes in total farm numbers often may conceal the extent of turnover in farm operators. As soon as more recent data from the 1992 Census of Agriculture become available, additional comparisons with

the earlier periods and analysis of the changes in North Carolina over a longer time period will be possible.

New entrants into farming between 1978 and 1987 differed in many ways from those who had been farming for longer periods of time. For example, around 40 percent of the new entrants listed farming as their principal occupation and reported sales of farm products of $10,000 or more per year. Among farms with continuing operations, nearly 60 percent listed farming as their principal occupation and closer to 50 percent had sales of $10,000 or more per year. Also, among the entrants listing farming as their principal occupation for both periods, a higher proportion was under 35 years of age or 55 and older than among those who spent more time on nonfarm jobs.

A large number of new farmers may be important potential clients for economic and technical information required for successful management of agricultural enterprises. Often the dynamic and continuing transfer of ownership and management of resources in agriculture because of finite life cycles is overlooked, especially when the total number of farms decreases over time. Opportunities for new managers taking the places of those retiring or leaving farming for other reasons are not readily reflected by changes in aggregate farm numbers or average size of operations. The need for training young people to be prepared to take advantage of farming and other agribusiness opportunities therefore is a continuing challenge for land grant institutions and other educational agencies offering various kinds of agricultural training.

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