United States Department of Agriculture
Economic Research Service
https://www.ers.usda.gov

United States
Department of
Agriculture

Economic
Research
Service

**Agriculture
and Rural
Economy
Division**

Estimating Entry and Exit of U.S. Farms

Fred Gale
David Henderson

It's Easy To Order Another Copy!

Just dial 1-800-999-6779. Toll free in the United States and Canada. Other areas, please call 1-301-725-7937.

Ask for *Estimating Entry and Exit of U.S. Farms* (AGES 9119).

The cost is $4.00 per copy. Please add 25 percent extra for postage to non-U.S. addresses (including Canada). Charge your purchase to your VISA or MasterCard, or we can bill you. Or send a check or purchase order (made payable to ERS-NASS) to:

ERS-NASS
P.O. Box 1608
Rockville, MD 20849-1608.

We'll fill your order by first-class mail.

Estimating Entry and Exit of U.S. Farms. By Fred Gale and David Henderson, Agriculture and Rural Economy Division, U.S. Department of Agriculture, Staff Report AGES 9119.

Abstract

The number of farms declined substantially during the 1980's, mostly due to a reduction in new farm formation rather than an increase in the rate of operators leaving farming. Major causes for the decline were fewer farmers entering as farm economic conditions worsened. If this trend continues or remains stable, farm numbers will continue to decline, even if the rate of exit does not increase.

Keywords: Net farm numbers, entry, exit

Washington, DC 20005-4788

March 1991

Contents

Estimating Entry and Exit of U.S. Farms

Fred Gale
David Henderson

Introduction

Much of the popular interest surrounding farm entry and exit is concerned with gauging the influence that worsening economic conditions may have had on exit and entry during the 1980's (Murdock and Leistritz, Harrington and Carlin). Part of the decline in farm numbers during the mid-1980's was due to greater rates of exit resulting from the numerous farm bankruptcies, foreclosures, and forced liquidations that occurred during that period (Stam and others). Much of the recent focus has been on the influence of farm exits on the net number of farms, with little attention given to the importance of entry as a factor determining net farm numbers.

Several previous studies have estimated exit rates that varied from 2 to 7 percent per year, depending on the data source, methodology, and years covered. An opinion survey of rural bankers conducted by the American Bankers Association estimated that exiting farms varied from 2.2 to 6.2 percent per year between 1982 and 1988, peaking in 1986 during the worst of the farm financial crisis (Stam and others). Longitudinal studies of farms in Wisconsin, Texas, North Dakota, and Georgia found exit rates ranging from 3 to 5 percent per year (Bentley and Saupe, Bentley and others). National longitudinal databases compiled from the U.S. and Canadian agriculture censuses exit rates were estimated at 6-7 percent per year during 1978-82 and 1976-81, respectively (Gale and Peterson, Ehrensaft and others).

An increased rate of exit is not necessarily the only cause of net declines in farm numbers. Reduced entry by new farmers can also contribute to a decrease in the net number of farms. While exits are expected to increase during times of economic difficulties for the farm sector, entry can also be expected to decrease during such periods because potential farm operators may turn to more profitable industries.

Entry into farming is influenced by several factors. Economic conditions may influence the choice of alternative occupations and lead to decreased entry into commercial farming during unprosperous times in the farm sector. The declining farm population accompanied by the declining birth rate among farm families may also decrease entry

(Beale). The improving educational levels of farm children may also lead to increased nonfarm opportunities for children of farmers and, therefore, less entry into farming.

Reduced labor requirements of modern farms have led not only to an outmigration of labor from the farm sector but also to a proliferation of part-time farm operators. Part-time farming allows people who are primarily employed in a nonfarm occupation to enter farming and thus increase the pool of potential entrants. The availability of part-time farming as an option can offset the decline in entry resulting from reduced numbers of farm children, particularly in counties where more nonfarm employment opportunities exist.

State differences in the number and size of farms have also emerged in recent years and should be taken into consideration when interpreting changes in national exit and entry rates. The trend toward fewer and larger commercial farms has continued in the Midwest, Plains, and parts of the South. Farm numbers have stabilized in the Northeast and West where part-time farming is more prevalent in some counties.

In this report, we used data from the census of agriculture to approximate rates of entry and exit for U.S. farms in census years 1978, 1982, and 1987. The estimates indicate that entry of new farms fell substantially during the mid-1980's in most areas of the country, while exits rose in some areas and fell in others. The net decline in aggregate U.S. farm numbers during 1982-87 appears to be almost entirely due to less entry rather than more exit during the mid-1980's.

Measuring Entry and Exit into Farming

The measurement of entry and exit into farming has varied from study to study. Entry itself is a nebulous term of which there is little clarification in the literature regarding its measurement. Some studies have used landownership and the transfer of property to define entry and exit, while other studies have used a management criterion of who operates the farm to define entry and exit. The survey question or criteria used by researchers to measure entry has varied substantially as the following examples illustrate.

Example 1. The U.S. longitudinal file
Each farm included in an agricultural census is assigned a census file number (CFN). A farm operator is defined as a new entrant if the CFN in a later census had no match in an earlier census. The number of new entrants is adjusted by the nonresponse rate to the census questionnaire to reduce overestimation.

Example 2. A Wisconsin survey
Entry was estimated in Wisconsin by asking the question: We consider a farm operator to be a person who is responsible for the management of the farm and makes most of the day-to-day decisions. Before 1986, how many years had you been a farm operator?

Example 3. A Kentucky survey
Entry was estimated in Kentucky by asking the question: How many years has the operator been farming as an adult (since 18)?

Example 4. A Texas survey
Entry was estimated in Texas by asking the question: In what year did you begin farming as a career?

A common element in all of the questions used to obtain information about entry is a reference to the year of entry or years of experience on the farm. While not directly stated in the U.S. longitudinal criteria, it is implicit that a new CFN is assigned to operators who were not present in the last census. This implies that the operators' years of experience are less than the number of years between the two census dates.

We use a question from section 9 of the "Characteristics and Occupation of Operator" in the short form of the census of agriculture survey to approximate entry. The wording of the question is very similar to the wording used in the State-level surveys. The advantage of using the census question as an indicator of entry is that it covers the entire geographical span of the country and multiple census periods.

Example 5. This report
The query used was stated as follows: In what YEAR did the operator begin to operate any part of this place?

The published census volumes report the number of operators responding to the question by the following categories: 2 years or less, 3-4 years, 5-9 years, and 10 years or more. The number of operators entering farming during the 4 years prior to the 1982 or 1987 census years may be approximated by the number of operators reporting 0-4 years on the current farm. In 1982, there were 318,890 operators reporting 0-4 years on the current farm, and in 1987, there were 249,027.

Limitations of Using the Census Question as an Indicator of Entry

The limitations of using the census question as an indicator of entry are threefold. First, the question does not reflect total years of experience of those operators who changed the geographical location of their farming operation. Secondly, since the response rate to the question was less than 100 percent, the published numbers are based on a sample that may or may not reflect the population. Finally, the response rate to the question varies between the different cross-tabulations in the census.

The number of years reported in the census does not refer to the total years of farm experience. In the case of farm operator who moved from another farm, the years on his present farm represent only a part of his experience as a farmer. Likewise, a person who succeeds a parent as operator of a particular farm may have had considerable previous farm experience.

The response rate to the question was 78.6 percent in 1982 and 81.4 percent in 1987. We tested for differences in the nonresponse rate between the two censuses and found them to be statistically indiscernible from each other. The nonresponse rate in 1982 was 0.21364, with a standard deviation of 0.06053, and the nonresponse rate in 1987 was 0.18621, with a standard deviation of 0.05354 within the continental United States.

There were different response rates to the question by specific cross-tabulations, including operator age and farm size. This resulted because some respondents did not answer all of the questions in the agricultural census. Another related problem is movement between the categories in the cross-tabulations, although analysis of the U.S. longitudinal census file suggests the number moving up approximately equals the number moving down between categories so that the bias may be minimal (Peterson).

Adjustments to the Estimates

We made two major adjustments to the published data in our estimates of entry. The first was an adjustment to account for the less-than-100-percent response rate to the question. The second was an adjustment to account for the inconsistency of using a 0- to 4-year reported interval across the 5-year census period between 1982 and 1987.

In regard to the first adjustment, we assumed that the distribution of nonresponding operators across the reported intervals was the same as those who did respond to the question used to approximate entry. For example, in 1982, there were 319,641 operators who were reported in the 0- to 4-year interval. In 1982, there were a total of 2,239,300 farm operators, of whom 462,245 did not respond to the question. Of the 1,777,055 who did respond to the question, 18 percent were reported in the 0- to 4-year interval. We assumed that the same percentage of the nonrespondents would have been reported in the 0- to 4-year interval, if they had responded to the question. We added 83,204 (18 percent of 462,245 nonrespondents) to the 319,641 reported respondents to obtain an approximation of the total number of operators (402,845) in the 0- to 4-year interval for 1982.

With respect to the second adjustment, we made a similar assumption. To approximate the number of entrants between 1982 and 1987, we assumed that one-fifth of the operators in the reported 5- to 9-year interval began farming in 1983. The estimated number of operators with 5 years on the current farm was added to the number with 0- to 4-year interval to arrive at an approximation of total entry for the 1982-87 period.

Given our approximation of entry, the number of exiters was approximated as follows:

$$\text{Farms } \{1982\} = \{\text{Farms } 1978\} + \{\text{Entrants}\} - \{\text{Exiters}\},$$
$$\{2{,}240{,}976\} = \{2{,}257{,}775\} + \{402{,}845\} - \{419{,}644\}$$

where the number of exits between 1978 and 1982, based on the census question, was approximately 419,644 operators. Note that if our reported approximation of entry is underestimated, then our approximation of exit will be overestimated, and visa versa.

An Estimate of Entry and Exit for the Aggregate United States

The adjusted census data suggest that the greater net decline in farm numbers during the more recent period can be attributed mainly to reduced entry. Estimated entry fell from over 100,796 per year during 1978-82 to about 75,373 per year during 1982-87, a decrease of 25,423 per year, or 25 percent (table 1). The approximated annual number of exiting

Table 1--Estimated entry and exit of U.S. farms 1978-87

Item	1978-82	1982-87
	Number of farmers	
Entrants	403,185	376,866
Per year	100,796	75,373
Exits	419,984	530,083
Per year	104,996	106,017
Net change	-16,799	-153,217
	Ratio	
Entry/exit	.96	.71
	Percent	
Exit rate	18.6	23.7
Per year	4.7	4.7

farmers increased only slightly, from 104,996 per year during 1978-82 to 106,017 per year during 1982-87, an increase of 1,021, or only 1 percent.

The 104,996 farms estimated to have exited each year between 1978 and 1982 suggest an annual exit rate of 4.65 percent. The 106,017 exits per year between 1982 and 1987 suggest an annual exit rate of 4.74 percent. These rates are consistent with previous estimates of exit rates, which varied between 2 and 7 percent (Bentley and others) and indicate that this use of the census question provides a consistent measure of entry.

Estimated Entry by Principal Occupation and Age

We computed entry and exit rates for operators who reported farming as their principal occupation and for those who reported their principal occupation as something other than farming (table 2). The published cross-tabulation suggests similar changes between the two periods in entry by principal occupation. The estimated annual entry rates into farming decreased by 26 percent for those whose principal occupation was farming and by 23 percent for those whose principal occupation was not farming.

There is much concern in the farm community about the difficulties faced by young men and women in financing entry into farming given increasing average farm size and land prices. Table 2 shows that entry of young farmers whose primary occupation is farming declined substantially between 1978-82 and 1982-87. Decreases in entry of farmers less than 35 years old principally employed on the farm accounted for over 8,000, 76 percent of the total

Table 2--Change in entry by age and principal occupation, 1978-82 and 1982-87*

Age	Entry of new farms per year			
	1978-82	1982-87	Change	
	----------Number----------			Percent
Principal occupation, farming:				
Less than 25	7,920	3,997	-3,923	-50
25-34	14,175	9,946	-4,229	-30
35-44	7,851	6,538	-1,313	-17
45-54	5,169	4,141	-1,028	-20
55-64	4,345	3,881	-464	-11
65 or older	2,248	2,529	281	13
Principal occupation, not farming:				
Less than 25	4,262	2,790	-1,472	-35
25-34	16,028	11,757	-4,271	-27
35-44	17,473	13,650	-3,823	-22
45-54	11,191	8,969	-2,223	-20
55-64	6,163	4,907	-1,256	-20
65 or older	2,144	1,942	-203	-9

*Data may vary due to rounding.

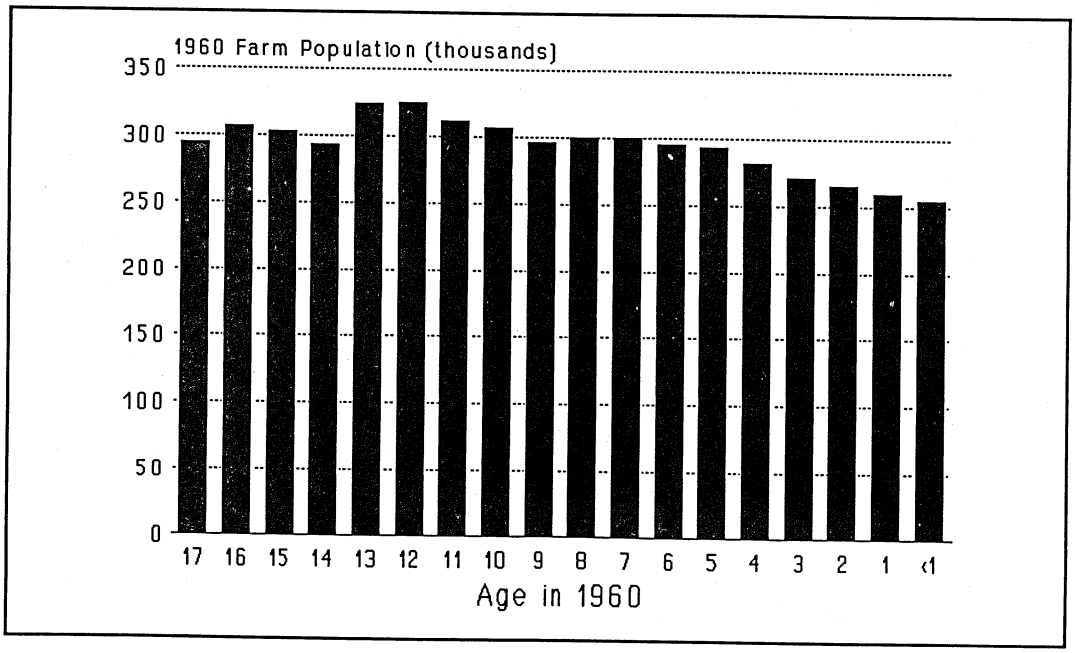
decrease. Entry of farmers less than 25 years old fell by 50 percent, and entry of farmers 25-34 years old, the most common age of entry, fell by 30 percent.

The decrease in entry of farmers whose principal occupation was not farming was more evenly spread among farmers of different ages, but still the percentage decrease in entry was highest for younger farmers. Farmers who reported their principal occupation other than farming appear to be somewhat older than those who report farming as their principal occupation. About half of the decline among part-time entrants was among 25-44 year olds, but the largest percentage decline, 35 percent, was for farmers less than 25.

The most striking pattern observed is the reduced entry of young full-time farmers. This could have been partly due to the shrinking pool of farm-born children from which most full-time farm entrants have been drawn traditionally. The decrease also may reflect reduced opportunities for young people to enter farming during the 1980's.

The data shown in figure 1 indicate that the number of males born on farms was falling steadily through the 1950's. Farm operators have historically been males. In 1987, 93.6 percent of all farm operators were male. In 1960, there were about 320,000 12-year-old males (born 1948, 32 years old in 1980) on farms and slightly more than 250,000 under 1-year-old males (born 1960, 20 years old in 1980). We used these data to estimate the

Figure 1. 1960 male farm population by age



number of farm-born 27- to 34-year-old males in 1977, 1982, and 1987 to assess how the pool of potential entrants may be shrinking.

Table 3 shows that the number of 27- to 34-year-old males shrank 1.5 percent between 1977 and 1982, and 8.5 percent between 1982 and 1987. The greater decrease between 1982 and 1987 could account for part of the decrease in young entrants, but the estimated 8.5-percent decrease in entrants is much less than the 30-percent decrease in full-time entrants age 25-34. It appears that demographic changes can account for only part of the decrease in young entrants.

Table 3--Number of 27- to 34-year-old farm born males has been shrinking

Year	Year born	Farm-born 27- to 34-year-old males[1]	Change
		Number	Percent
1977	1943-50	2,466,011	--
1982	1948-55	2,428,448	-1.5
1987	1953-60	2,221,055	-8.5

--Not applicable.
[1]The estimate is based on the number of male children on farms in the 1960 Census of Population.

Table 4--Entrants per year by acre class, 1978-82 and 1982-87[1]

Acres	Entrants per year, 1978-82	Entrants per year, 1982-87	Change	
		----------Number----------		Percent
1-9	16,081	12,293	-3,708	-26
10-49	28,450	20,146	-8,304	-29
50-99	16,726	12,112	-4,614	-28
100-219	19,825	14,332	-5,493	-28
220-499	12,736	9,211	-3,525	-28
500-999	4,769	4,263	-506	-11
1,000-1,999	2,027	1,942	-84	-4
2,000 +	1,335	1,385	49	4

[1]Totals may vary because of rounding.

Estimated Entrants by Farm Size

The structure of farming has been characterized by a shift toward larger farms and an increasing number of small part-time farms (Brooks and other). There is concern that mid sized farms are at a disadvantage compared with larger and smaller farms (Office of Technology Assessment). Much of the estimated entry is accounted for by small farms, with farms of less than 50 acres accounting for over 40 percent of entrants in both periods, and for nearly 12,092 of the total decrease in entry of 26,265 farms per year (table 4). The decrease in entry is between 24 and 29 percent for all size classes of less than 500 acres. For farms greater than 500 acres, entry decreased by less, and entry of the largest farms (2,000 or more acres) actually increased slightly by 49 farms per year.

Differences in Estimated Entry and Exit Among States

Farm structure differs substantially among the States, and the effects of the farm crisis were believed to differ in the different States. Entry and exit rates were computed for each of the 48 contiguous States and tabulated in table 5 to examine the differences.[1] Estimated entry of farmers declined considerably in each of the 48 States between the two periods. The decline in entry ranged from 9 percent in New Jersey to 48 percent in Wisconsin.

The small change in exit between 1978-82 and 1982-87 for the aggregate United States masks the considerable variation in exit changes across the States. Exits increased in all but two Northeastern States, in all Appalachian States except North Carolina, in two of three Delta States, in half of the eight Mountain States, and in all three Pacific States. In the Corn Belt,

[1] As with the aggregate data, there was little difference between those who reported their primary occupation to be farming and for those whose primary occupation was not farming.

Table 5--Estimated annual entry and exit of farms in 1978-82 and 1982-87, by State

State	Entrants per year[1]			Exits per year[2]			Ratio of entry to exit[3]	Net change[4]	
	1978-82	1982-87	Change	1978-82	1982-87	Change		1978-82	1982-87
	-----Number-----		Percent	----Number----		Percent	Ratio	---Percent---	
United States	100,796	75,373	-29	104,996	106,017	1	0.71	-0.7	-7.1
Northeast:									
CT	151	113	-29	93	148	47	.76	6.5	-4.7
DE	158	112	-34	173	187	8	.60	-1.8	-11.8
MA	246	219	-12	132	56	-86	3.91	8.8	14.1
MD	726	524	-33	565	805	35	.65	4.1	-9.1
ME	295	204	-37	238	351	39	.58	3.3	-11.1
NH	122	91	-30	60	139	84	.65	9.5	-9.2
NJ	361	329	-9	288	178	-48	1.85	3.6	8.7
NY	1,741	1,218	-36	1,958	2,111	7	.58	-2.0	-11.2
PA	2,161	1,681	-25	2,328	2,478	6	.68	-1.2	-7.4
RI	30	25	-19	17	31	59	.82	7.7	-3.8
VT	290	222	-27	174	310	58	.72	7.6	-7.2
Lake States:									
MI	2,314	1,542	-41	2,756	3,040	10	.51	-3.0	-13.7
MN	3,971	2,656	-40	5,043	4,516	-11	.59	-4.4	-10.4
WI	3,433	2,124	-48	4,510	3,538	-24	.60	-5.1	-9.0
Corn Belt:									
IA	4,580	3,344	-31	6,062	5,391	-12	.62	-5.0	-9.3
IL	3,696	2,753	-29	5,248	4,693	-11	.59	-6.1	-10.4
IN	2,777	2,264	-20	4,103	3,599	-13	.63	-6.6	-9.0
MO	4,772	3,586	-29	5,401	4,854	-11	.74	-2.2	-5.8
OH	3,312	2,523	-27	3,861	4,055	5	.62	-2.5	-9.2
Appalachian:									
KY	5,139	3,508	-38	5,295	5,346	1	.66	-.6	-9.5
NC	3,017	1,916	-45	5,246	4,618	-13	.41	-11.6	-20.5
TN	4,284	3,008	-35	3,370	5,179	43	.58	4.1	-12.8
VA	2,231	1,594	-34	1,750	3,006	54	.53	3.8	-14.6
WV	625	470	-29	308	771	92	.61	7.0	-8.4
Southeast:									
AL	2,227	1,753	-24	2,810	2,779	-1	.63	-4.7	-11.2
FL	2,050	1,680	-20	1,989	1,639	-19	1.02	.7	.6
GA	2,514	1,869	-30	2,957	3,085	4	.61	-3.5	-13.1
SC	1,068	732	-38	1,512	1,614	7	.45	-6.9	-19.5
Delta States:									
AR	2,440	2,059	-17	2,746	2,516	-9	.82	-2.4	-4.6
LA	1,594	1,191	-29	1,529	2,046	29	.58	.8	-14.5
MS	1,865	1,297	-36	2,288	2,966	26	.44	-3.9	-21.9
Southern Plains:									
OK	3,395	2,549	-29	3,323	3,008	-10	.85	.4	-3.2
TX	10,144	8,254	-21	7,738	7,501	-3	1.10	5.3	2.0
Northern Plains:									
KS	2,781	2,205	-23	2,995	3,153	5	.70	-1.2	-6.7
ND	1,419	1,060	-29	2,401	1,288	-62	.82	-10.2	-3.2
NE	2,440	2,193	-11	3,321	2,141	-44	1.02	-5.7	.4
SD	1,431	1,170	-20	1,829	1,324	-32	.88	-4.2	-2.1

Continued--

Table 5--Estimated annual entry and exit of farms in 1978-82 and 1982-87, by State--Continued

State	Entrants per year			Exits per year			Ratio of entry to exit[3]	Net change	
	1978-82	1982-87	Change	1978-82	1982-87	Change		1978-82	1982-87
	-- Number --		Percent	-- Number --		Percent	Ratio	-- Percent --	
Mountain States:									
AZ	524	450	-15	265	383	37	1.18	15.2	4.5
CO	1,376	1,116	-21	1,325	1,081	-20	1.03	.8	.6
ID	1,236	903	-31	1,120	1,018	-10	.89	1.9	-2.3
MT	976	846	-14	974	646	-41	1.31	0	4.1
NM	732	604	-19	438	451	3	1.34	9.1	5.5
NV	175	144	-19	95	83	-13	1.74	12.5	10.7
UT	647	460	-34	342	443	26	1.04	9.1	.6
WY	439	355	-21	234	286	20	1.24	9.7	3.8
Pacific:									
CA	4,888	3,743	-27	2,571	3,592	33	1.04	11.9	.9
OR	1,884	1,201	-45	488	1,616	120	.74	17.9	-6.3
WA	1,871	1,311	-36	597	1,815	111	.72	15.2	-7.2

[1]Estimated number of farms that entered between census years divided by the number of years between censuses.
[2]Estimated number of farms that exited between censuses divided by the number of years between censuses.
[3]Ratio of entrants to exits for 1982-87.
[4]Percent change in total number of farms between censuses experienced declines in entry exceeding 40 percent.

Lake States, and Plains States, where the farm crisis was believed to have had the most effect, only Michigan, Ohio, and Kansas experienced increased exit rates. In the Plains States of Nebraska and Texas, where the effects of the farm crisis were believed to be severe, farm numbers actually increased during the 1982-87 period, although there is some doubt about whether this is a real increase in the number of people in farming.

The estimates indicate that for every 100 operators leaving farming between 1982 and 1987 there were only about 71 new entrants to replace them. Most States in the Midwest and South had ratios of 0.6 to 0.7, and most Northeastern States had ratios slightly higher, 0.65 to 0.75. In the Plains States, the ratios varied from 0.75 to 0.9 and in most Mountain States, the ratio exceeded 1. The lowest ratios, less than 0.5, were in the Southern States of North Carolina, South Carolina, and Mississippi. The ratios exceeding 1 in the urban States of Massachusetts, New Jersey, Florida, and California may reflect increased entry of part-time farms.

Factors Influencing Entry and Exit Rates

The trend toward fewer and larger farms has been the dominant influence shaping farm structure for several decades. The gradual slowing of this trend in the Midwest, Plains, and parts of the South may be correlated with decreasing rates of voluntary exit from farming as the exodus from farming to nonfarm jobs has slowed. At the same time that voluntary exits were decreasing, involuntary exits may have increased but not enough to offset the decrease

in voluntary exits. This would account for the unexpected decreases in exit in many areas where the farm crisis was believed to have increased exits.

Many farmers who planned voluntary exits due to retirement or other reasons may have postponed their departure from farming due to the large losses in asset values and equity that took place during the 1980's. Many farmers who had planned to quit farming held their land and other assets off the market, waiting for prices to recover from the sharp drop of the mid-1980's, thus contributing to lower rates of voluntary exit during the 1980's.

Federal initiatives to help financially stressed farmers included direct payments through commodity programs, disaster payments, and legislative and discretionary measures that benefited farm borrowers. In some areas of the Northern Plains, farms received over 20 percent of net income in the form of government payments during the 1980's, and a number of States enacted legislation during the 1980's that prevented farm foreclosures (U.S. Department of Commerce). Favorable prices and income accompanied by increasing land values in farming during the late 1970's made farming an attractive investment and a hedge against inflation, leading to relatively large rates of entry and inflow of investment funds to agriculture. The crash in farm asset values, lower incomes, and very high real interest rates during the mid-1980's led to much lower entry as potential new farmers entered other occupations.

Another recent phenomenon has been the growing importance of California, Florida, and Texas in U.S. farm production. These States are able to produce some commodities not produced in other parts of the Nation and have experienced growth in commercial farms, while farming has declined in importance in many other regions. The increasingly important role of these States is reflected by the fact that they were among the 13 States to gain more farms through entry than they lost through exit during the 1980's.

The relatively rapid net decline in farm numbers in the Eastern, Southern, and Midwestern States reflects the continual net movement of people out of farming into more attractive nonfarm occupations that began in the 1950's and 1960's. The net gain in farm numbers in California, Florida, Massachusetts, New Jersey, and Texas may reflect the entry of part-time farmers who are employed in a nonfarm occupation.[2] The continued shift away from farming toward nonfarming industries in these regions is a continuation of a longer pattern.

Conclusions

Rates of farm entry and exit, as estimated here, suggest that the greater decline in farm numbers during the 1982-87 period was due mostly to reduced entry rather than increased exit. Declines in entry appear to be greater for farmers less than 35 years old. Entry of large farms was relatively stable, while entry of farms with less than 500 acres fell by 24-29 percent. While entry declined in all States, in many areas where the farm financial stress was most severe, exits were also lower during 1982-87 than during 1978-82. We conclude that lower exit rates in the Midwest, Plains, and South could be due in part to a combination

[2]Relatively small decreases in entry in Massachusetts and New Jersey may also be due to improved coverage in the 1987 census that increased farm counts in those States.

of the slowing of the voluntary exodus of labor out of farming, government programs, and policies that reduced involuntary exits due to farm bankruptcies, foreclosures, and liquidations.

The low ratio of entry to exit of 0.7 during 1982-87 and the 25-percent decrease in entry during 1982-87 compared with 1978-82 suggest continued changes in the structure of farming. If entries continue to fall in this manner, farm numbers will continue to decline even if the number of exits remains stable. The particularly large decline in entry of young farmers led to an older population of farm operators and could further contribute to future declines in farm numbers. While the effect of the 1980's farm crisis increased exits, it appears that the adverse economic conditions of the 1982-87 period may have had more effect on entry than exit.

References

Beale, Calvin L. "Demographic Aspects of Agricultural Structure," Structure Issues of American Agriculture. U.S. Dept. Agr., Econ., Stat., Coop. Serv., AER-438, Nov. 1979.

Bentley, S.E., P.F. Bartlett, F.L. Leistritz, S.H. Murdock, W.E. Saupe, D.E. Albrecht, B.L. Eckstrom, R.R. Hamm, A.G. Leholm, R.W. Rathge, and J.W. Wanzek. Involuntary Exits From Farming: Evidence From Four Studies. U.S. Dept. Agr., Econ. Res. Serv., AER-625, Nov. 1989.

Bentley, Susan E., and William E. Saupe. Exits from Farming in Southwestern Wisconsin, 1982-86. U.S. Dept. Agr., Econ. Res. Serv., AER-631, Feb. 1990.

Brooks, Nora L., Judith Z. Kalbacher, and Donn A. Reimund. Farm Structural Trends in the 1980's. U.S. Dept. Agr., Econ. Res. Serv., AIB-605, June 1990.

Ehrensaft, Philip, Pierre LaRamee, Ray D. Bollman, and Frederick H. Buttel. "The Microdynamics of Farm Structural Change in North America: The Canadian Experience and Canada-U.S.A. Comparisons," American Journal of Agricultural Economics. Vol. 66 (1984), pp. 823-828.

Gale, H.F., and R.N. Peterson. "Longitudinal Analysis of Entry, Exit, and Growth of U.S. Farms, 1978-82." U.S. Dept. Agr., Econ. Res. Serv., unpublished, 1990.

Harrington, David, and Thomas A. Carlin. The U.S. Farm Sector: How Is It Weathering the 1980's? U.S. Dept. Agr., Econ. Res. Serv., AIB-506, Apr. 1987.

Murdock, Steve, and F. Larry Leistritz. The Farm Financial Crisis: Socioeconomic Dimensions and Implications for Producers and Rural Areas. Boulder, CO: Westview Press, 1988.

Peterson, R. Neal. A Single Equation Approach to Estimating Nonstationary Markov Matrices: The Case of U.S. Agriculture, 1974-78. U.S. Dept. Agr., Econ. Res. Serv., TB-1781, Aug. 1990.

Stam, J.M., S.R. Koenig, S.E. Bentley, and H.F. Gale. An Analysis of Farm Financial Stress, Farm Exits, and Public Sector Assistance for the Farm Sector in the 1980's. U.S. Dept. Agr., Econ. Res. Serv., forthcoming.

U.S. Congress, Office of Technology Assessment. Technology, Public Policy, and the Changing Structure of American Agriculture. OTA-F-285, 1986.

U.S. Department of Commerce. Economic Information Series. 1988.

Rural Conditions and Trends. . .
Rural Development Perspectives. . .

Reports with a rural focus!

Keep up with the most current information on rural America with subscriptions to two of USDA's most incisive periodicals. These periodicals deal exclusively with the problems and potentials of rural America today.

Rural Conditions and Trends tracks rural developments on a variety of subjects: macroeconomic conditions, employment and underemployment, industrial structure, earnings and income, poverty, and population. Quick-read text and sharp graphics help you get the information you need efficiently, effectively. 4 issues.

Rural Development Perspectives brings you crisp, nontechnical articles about the results of new rural research and what those results mean. Shows practical meaning of research in rural banking, aging, industry, the labor force, poverty, and the relationship of farm policies to rural areas. 3 issues.

Start your subscription today. Or SAVE money by ordering a one-year subscription to both periodicals for one low price! It's easy to subscribe. Here's how:

Make your selection from the choices below.

For ***fastest*** service, call toll free, **1-800-999-6779**
in the United States and Canada; other areas, please call 301-725-7937

Rural periodicals—subscription form

❑ **Start my subscription** to *Rural Conditions and Trends* (#RCA)
___ 1 year, $14; ____ 2 years, $27; ____ 3 years, $39

❑ **Start my subscription** to *Rural Development Perspectives* (#RDP)
___ 1 year, $9; ____ 2 years, $17; ____ 3 years, $24

❑ **Yes! I want to save money** by subscribing to both! (#RCA *and* #RDP)
___ 1 year, $21; ____ 2 years, $41; ____ 3 years, $59

Payment method (add 25% postage for mailing to foreign addresses—includes Canada):

❑ Bill me ❑ Enclosed is $_____. ❑ MasterCard ❑ VISA Total charges $_____.

Use purchase order, checks drawn on U.S. banks, cashier's checks, or international money orders.
Make payable to ERS-NASS.

Credit card number: | | | | | | | | | | | | | | | | | **Expiration date:** | | | |
Month Year

Name _____

Address _____

_____

City, State, Zip _____

Daytime phone (_____)_____

Mail to:

ERS-NASS
P.O. Box 1608
Rockville, MD
20849-1608

Keep Up-To-Date on Agricultural Financial Developments.

Subscribe to the *Agricultural Income and Finance Situation and Outlook* report and receive timely analysis and forecasts directly from the Economic Research Service. Issues contain analysis of general economic conditions, the farm sector, agricultural lenders, and Federal income taxation for farmers plus selected special articles on a variety of finance topics. Subscription includes four issues. Save money by subscribing for more than 1 year.

Agricultural Income and Finance Situation and Outlook Subscription

	1 Year	*2 Years*	*3 Years*
Domestic	_____ $12.00	_____ $23.00	_____ $33.00
Foreign	_____ $15.00	_____ $28.75	_____ $41.25

For *fastest* service, call our order desk toll free, 1-800-999-6779
(8:30-5:00 ET in U.S. and Canada; other areas please call 301-725-7937)

☐ Bill me. ☐ Enclosed is $_____.

Use purchase orders, checks drawn on U.S. banks, cashier's checks, or international money orders.
Make payable to ERS-NASS.

Credit Card Orders:

☐ MasterCard ☐ VISA Total charges $_____.

Credit card number: ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐ **Expiration date:** ☐☐ Month/Year

Name _____

Address _____

_____

City, State, Zip _____

Daytime phone (_____)_____

Mail to:

ERS-NASS
P.O. Box 1608
Rockville, MD
20849-1608

☆ U.S. Government Printing Office : 1991 - 282-958/40173

UNITED STATES DEPARTMENT OF AGRICULTURE
ECONOMIC RESEARCH SERVICE
1301 NEW YORK AVENUE, NW.
WASHINGTON, DC 20005-4788