

CHANGES IN DAIRY FARM MILK MARKETINGS IN THE UPPER MIDWEST

2000 - 2016



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Prepared by:
Corey Freije

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Federal Milk Market Administrator's Office
1600 West 82nd Street, Suite 200
Minneapolis, MN 55431-1420

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I. INTRODUCTION

This paper looks at changes in milk marketings by dairy farms from 2000 to 2016. The farms are located in the Upper Midwest and divided into ten size categories based on farm marketings. Data are presented for all farms and for farms for which there were marketings in May of each of the 17 years. From May 2000 through May 2016 the number of dairy farms declined by 9,724 while total milk production of the remaining farms increased by 54 percent.

II. DATA AND METHODOLOGY

The data are based on information obtained from dairy farmer producer payrolls submitted to the Upper Midwest Market Administrator. The data used are for the month of May for each year, 2000-2016. The data include farms which are located within the states of Illinois, Iowa, Minnesota, North Dakota, South Dakota, Wisconsin, and the Upper Peninsula of Michigan. Both pooled and not pooled milk are included, however no attempt was made to incorporate farms in these geographic areas for which the Upper Midwest Market Administrator had no producer payroll information.

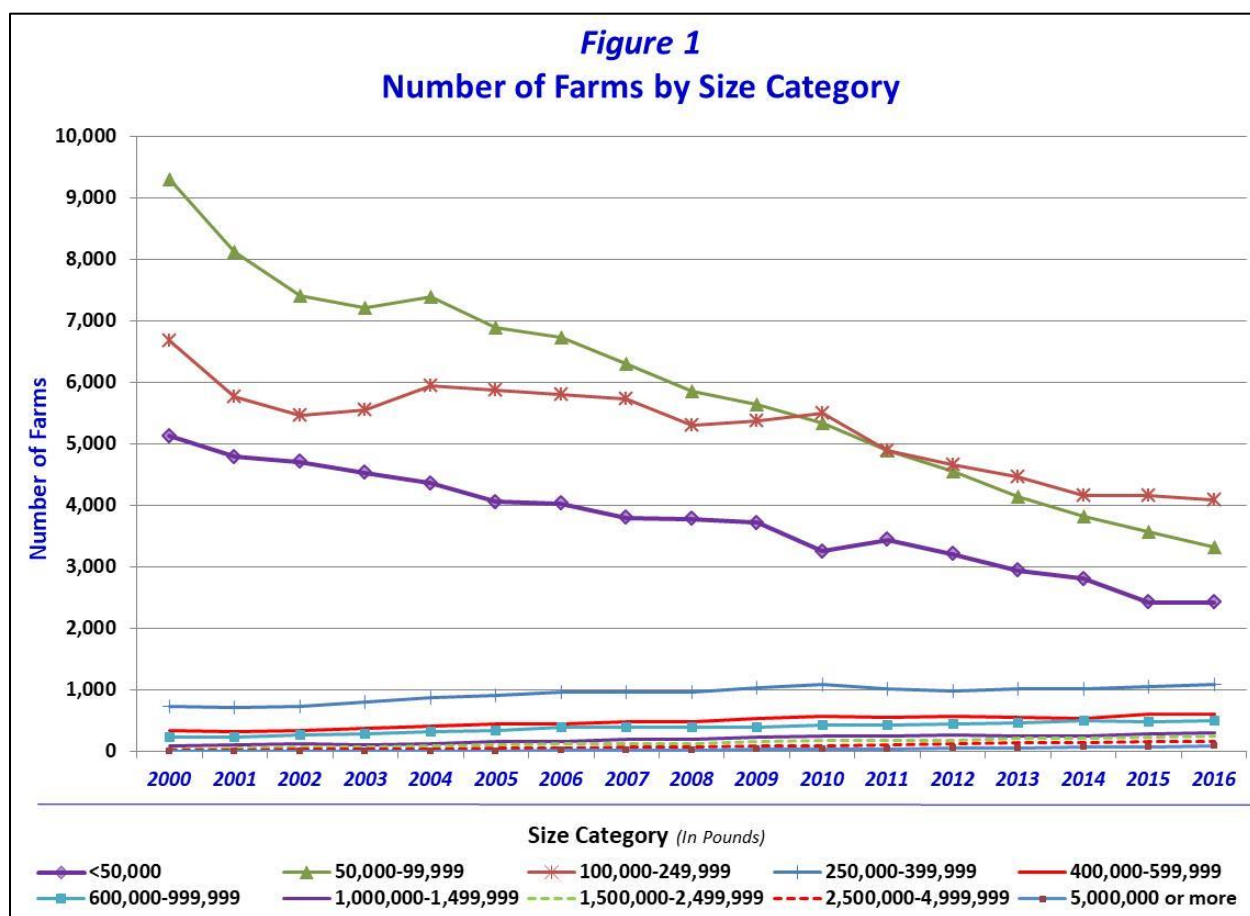
The data are milk sales to dairy processing plants by farms and, therefore, the quantities do not include on farm use or other sales from the farm. For farms which may have multiple milk checks to accommodate partners, etc., the data were accumulated to reflect the total production of the farm.

III. RESULTS

Over the time period covered in this study, the number of farms included declined from 22,537 in May 2000 to 12,813 in May of 2016, a 43 percent decline, a loss of 9,724 farms. This does not necessarily mean that all of these farms went out of business. This study did not attempt to determine why farm numbers declined over the 2000-2016 time period. One must keep in mind that the data used for this study were from information submitted to the

¹ Corey Freije, an Economist with the Market Administrator's Office, Minneapolis, Minnesota.

Upper Midwest Market Administrator. If plants elected to pool the milk on a different Federal order, the Upper Midwest Market Administrator would probably not receive the payroll information for that farm.



The three smallest size categories were the only size categories to show a net loss in farm numbers, with most of the loss of farms occurring in the two smallest categories. Each of the other seven size categories had a net increase in farm numbers.

The largest decline in farm numbers over the 2000-2016 time period was in the 50,000-99,999 pounds per month size category while the largest increase was in the 250,000-399,999 pound per month category (Fig. 1).

On a percentage basis (Fig. 2) the largest decline in farm numbers was in the 50,000-99,999 pounds per month category. The largest percentage increase in farm numbers was in the over 5,000,000 pound per month category, which increased from no farms in the category in 2000 to 37 farms in 2016.

Figure 2
Percentage of Total Farms by Size Category

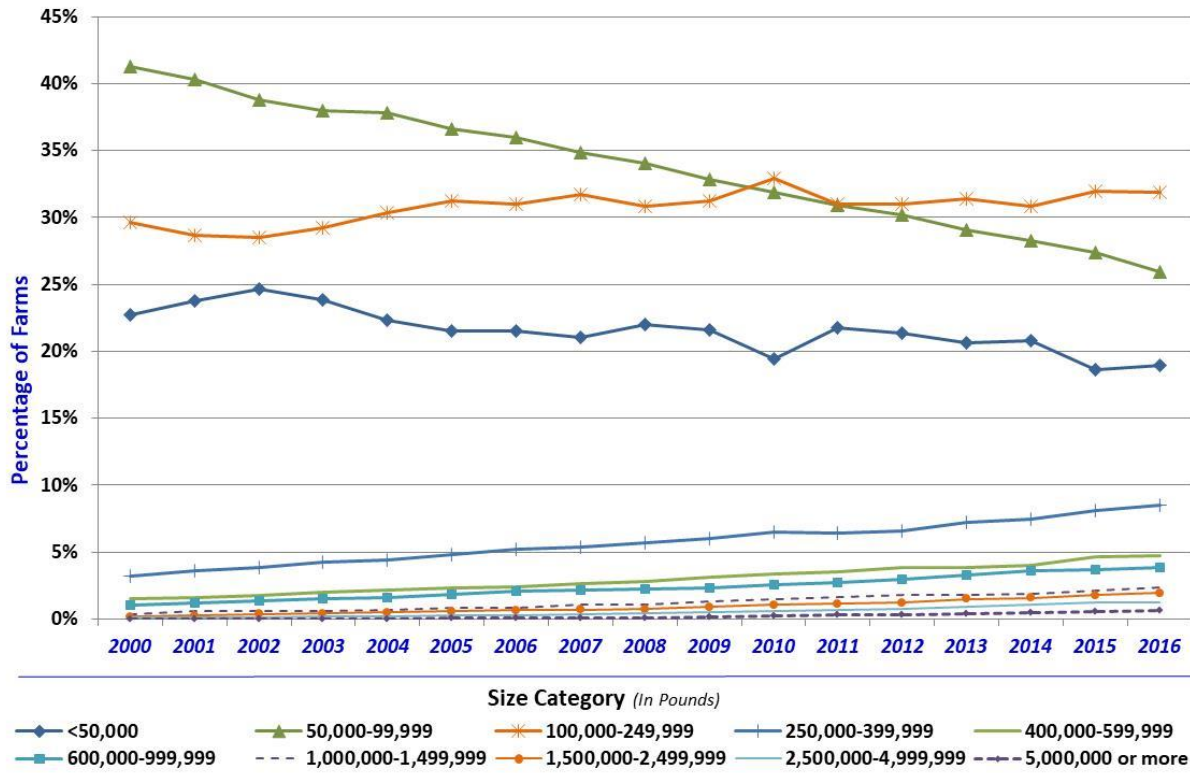
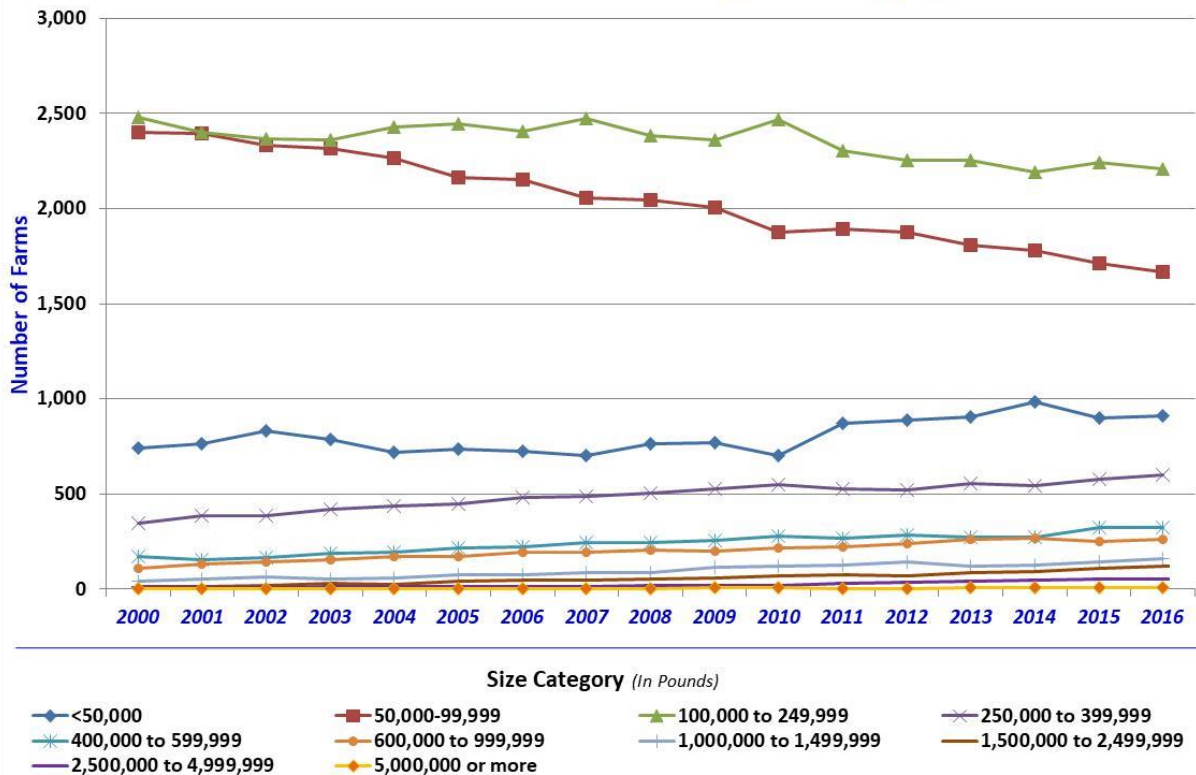
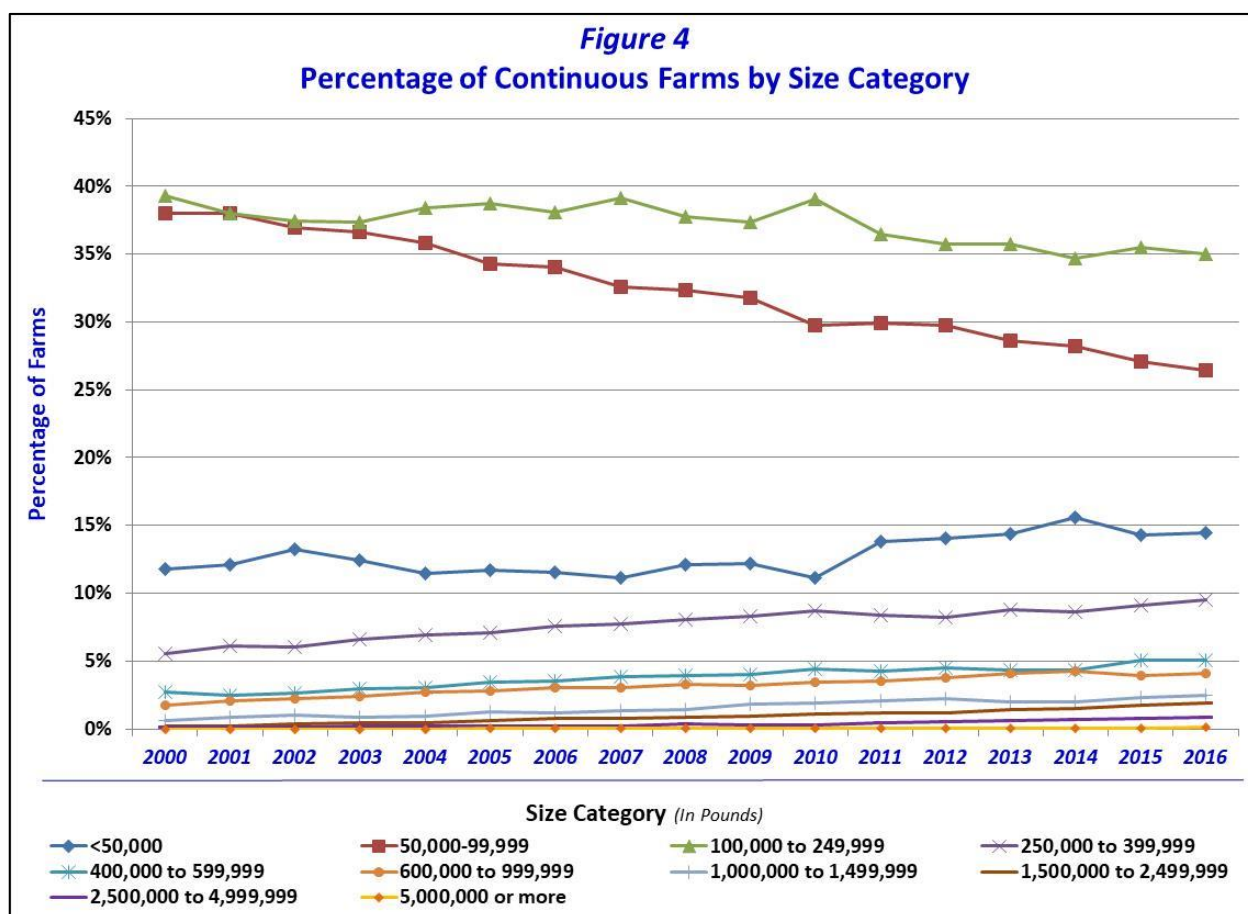


Figure 3
Number of Continuous Farms by Size Category



This same phenomenon occurs in the subset of continuous farms. Of the 22,537 farms included in this study, in May 2000, 6,313 of these farms had marketings, at least, in every month of May through 2016. If we look at the 6,313 farms for which there are continuous data over the 2000-2016 time period (Fig. 3 and 4), the largest decline in farm numbers is also in the 50,000-99,999 pounds per month category. The only other category losing farms is the 100,000-249,999 pounds per month category. All of the other categories had a gain in farm numbers.



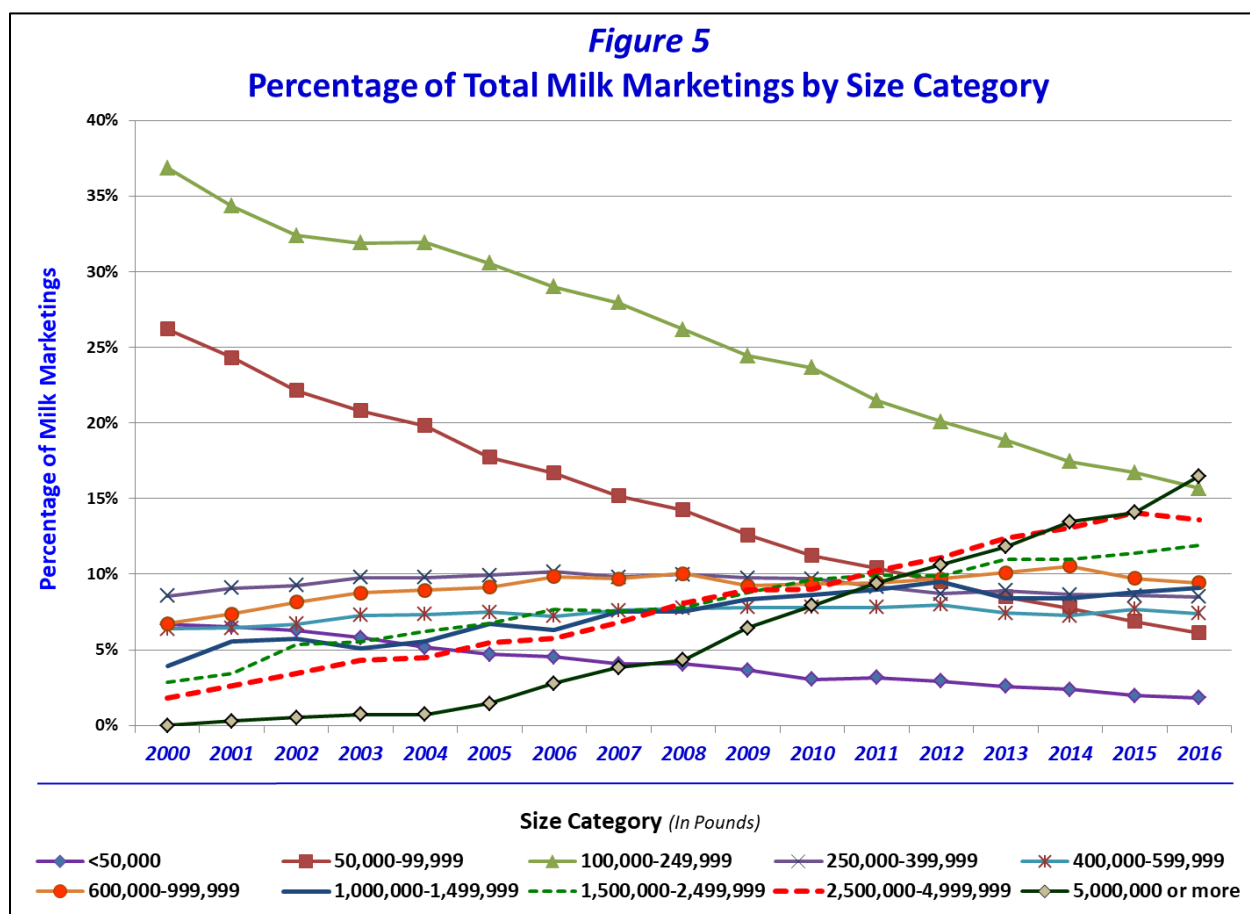
The largest category, over 5,000,000 pounds per month, went from zero farms to ten farms during this time period. Therefore, the majority of farms in this category are new farms. They may not, however, be operated by “new” dairy farmers but are likely expansions by existing dairy farmers to new locations.

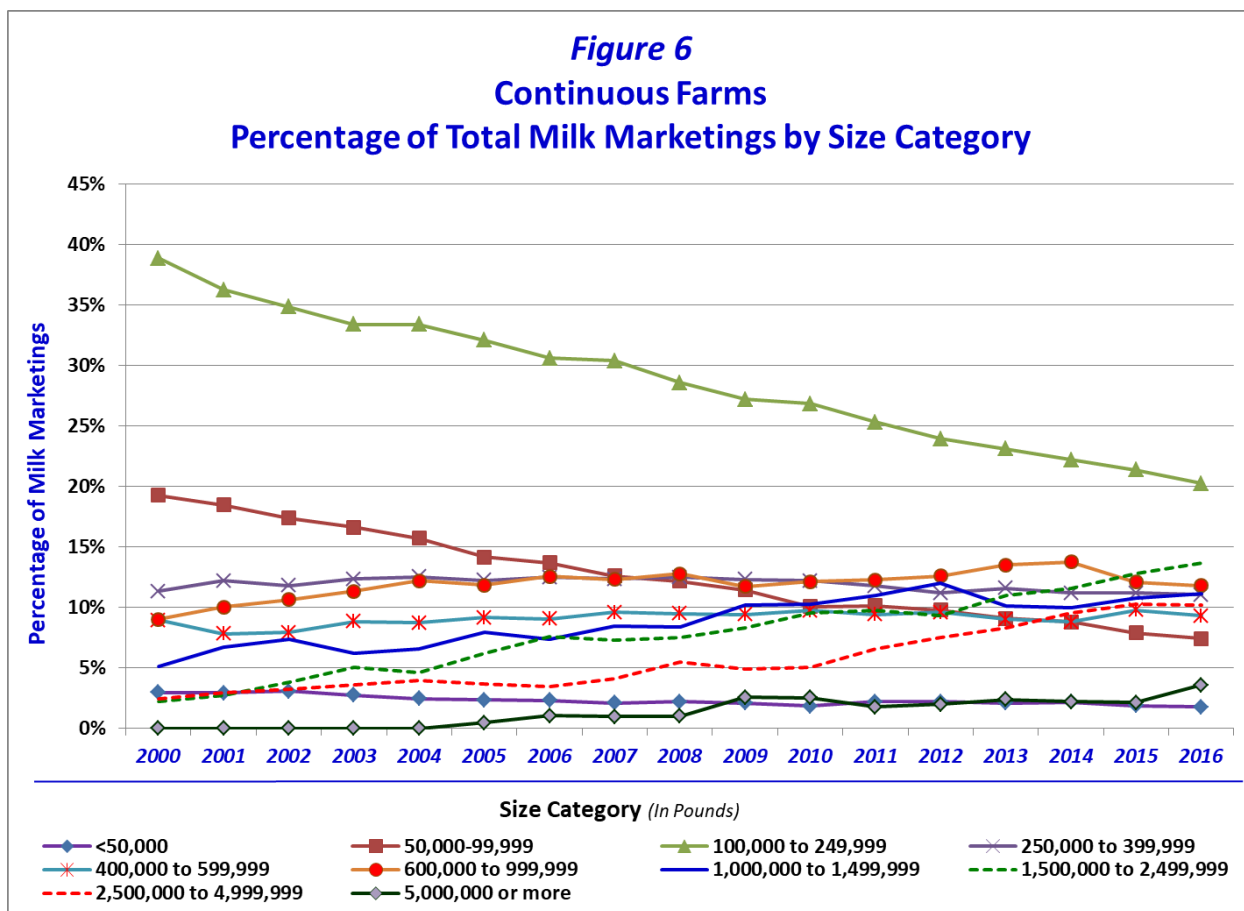
Since these farms all have continuous data over the time period of this study, changes in numbers between size categories would be caused by changes in farm production. The decrease in numbers in the smaller size categories and corresponding increases in the larger size categories would indicate that smaller producers are expanding production.

These farm expansions are driven by economies of scale and/or incorporation of additional family members into the farm business and thus the need for greater income.

In May 2000, 22,537 farms marketed 2.6 billion pounds of milk, while in May 2016 the 12,813 farms produced 4.0 billion pounds of milk, a 54 percent increase in milk production by 9,724 fewer farms.

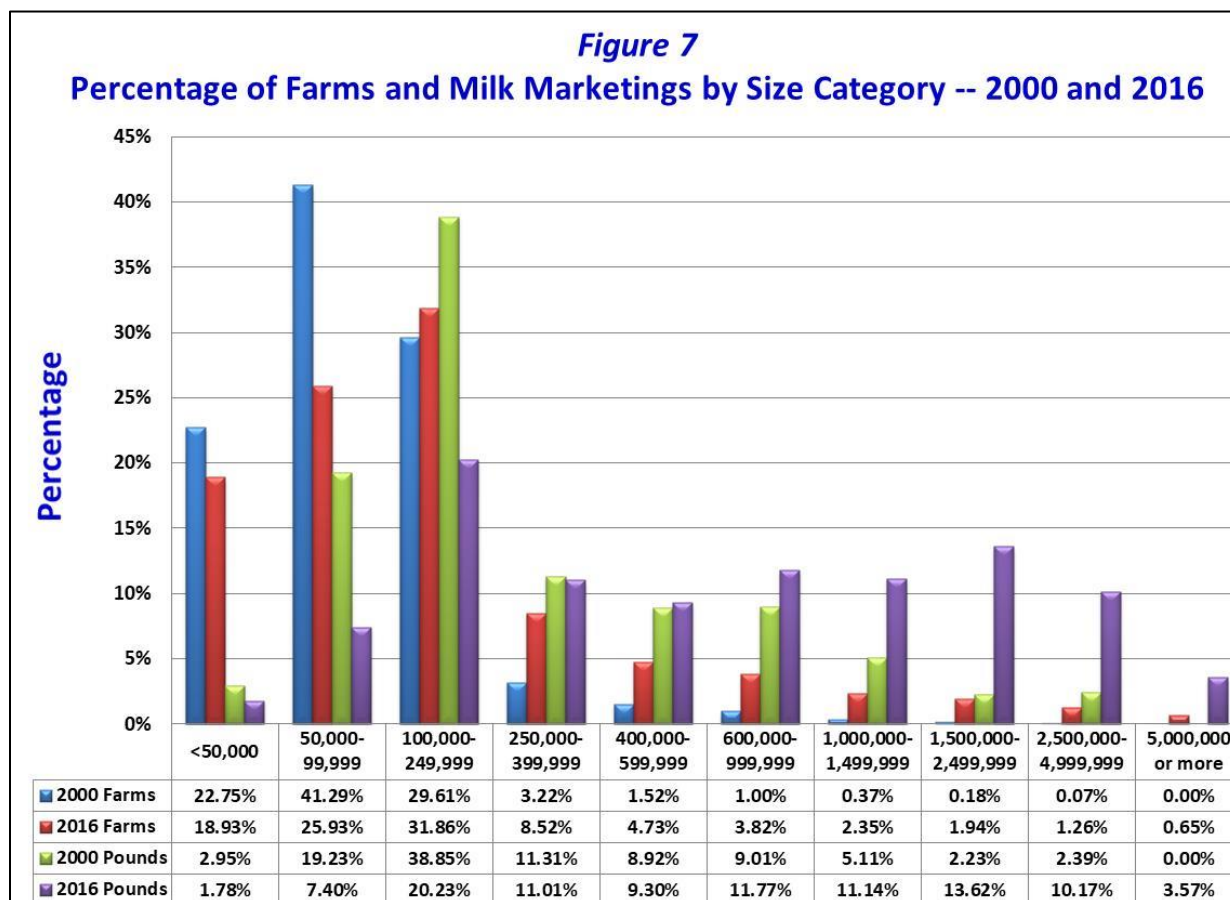
During the time period covered in this study, 2000-2016, the average production per farm increased from 115,145 pounds per farm to 313,101 pounds per farm, a 172 percent increase. Surprisingly not all of the size categories had an increase in the average production per farm. The 50,000-99,999 pounds per month category had a steady average production per farm over this time period while the less than 50,000 pounds per month category and the 600,000-999,999 pounds per month category had a decrease in the average per farm marketings. The remainder of the size categories had increasing average farm marketings. As a percent of total marketings, the three smallest size categories declined while the remainder of the size categories had an increasing share of total marketings (Fig. 5 and 6).





The continuous farms showed similar results, to all farms, with an increase of 79 percent in the per farm pounds of milk marketed from 2000 to 2016, from 149,765 pounds per farm to 268,204 pounds per farm. However the two smallest categories had percentage declines in monthly production of ten percent and one percent, respectively. All of the other categories were unchanged or had gains from one percent to nine percent.

Figure 7 shows both the percentage of farms and their milk marketings for the years 2000 and 2016 by size category. The first two bars in each size category are the percentage of farms in that size category for 2000 and 2016, respectively. The second pair of bars represents the percentage of total milk marketings by the farms in each category. In May 2000, 22,537 farms marketed 2.6 billion pounds of milk while in May 2016, 12,813 farms marketed 4.0 billion pounds of milk. It is interesting to note that six of the seven largest size categories, except the range of 5 million pounds or more, contributes approximately ten percent of the total production, with fewer and fewer farms, as shown in Figure 7.



IV. Summary

The Upper Midwest has shown a steady decline in farm numbers over the preceding 17 years. The majority of the decline in farm numbers has occurred by farms marketing under 100,000 pounds per month. The number of large farms has steadily increased during this same time period but not nearly enough to offset the decline in small farms. However, even with declining farm numbers, milk production by the remaining farms in the region has increased by 54 percent from 2000-2016.

APPENDIX

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Table A-1
Number of Farms and Average Farm Production, by Size Category
May 2000 - May 2016

Size Category	Statistic	Year					
		2000	2001	2002	2003	2004	2005
a. <50,000	Number of Farms	5,138	4,337	4,181	4,184	4,098	4,040
	Average Production	33,925	33,282	32,727	32,602	32,730	33,107
b. 50,000-99,999	Number of Farms	9,313	7,287	6,597	6,678	7,024	6,874
	Average Production	73,201	73,089	72,956	73,206	73,552	73,276
c. 100,000-249,999	Number of Farms	6,663	5,167	4,843	5,081	5,604	5,799
	Average Production	143,566	144,894	144,754	145,974	147,198	147,712
d. 250,000-399,999	Number of Farms	721	647	660	747	806	878
	Average Production	307,499	307,566	309,464	309,580	310,123	310,802
e. 400,000-599,999	Number of Farms	338	299	297	352	387	427
	Average Production	483,382	483,007	484,524	487,367	486,400	484,787
f. 600,000-999,999	Number of Farms	225	212	232	266	301	326
	Average Production	776,679	760,060	774,764	772,870	770,446	769,655
g. 1,000,000-1,499,999	Number of Farms	84	106	104	93	117	156
	Average Production	1,210,284	1,197,867	1,212,666	1,230,755	1,226,677	1,208,221
h. 1,500,000-2,499,999	Number of Farms	40	39	57	66	79	93
	Average Production	1,856,665	1,882,741	1,865,500	1,796,267	1,864,741	1,863,370
i. 2,500,000-4,999,999	Number of Farms	15	19	24	29	32	46
	Average Production	3,109,586	3,201,443	3,280,956	3,220,560	3,261,595	3,171,624
j. >=5,000,000	Number of Farms	0	1	2	3	3	6
	Average Production	0	7,404,980	6,489,666	6,095,527	6,683,457	6,921,223
Total	Number of Farms	22,537	18,114	16,997	17,499	18,451	18,645
	Average Production	115,145	121,386	127,742	132,582	138,801	148,781
Size Category	Statistic	Year					
		2006	2007	2008	2009	2010	2011
a. <50,000	Number of Farms	4,020	3,783	3,775	3,705	3,219	3,435
	Average Production	33,499	32,901	32,556	32,673	32,945	31,893
b. 50,000-99,999	Number of Farms	6,722	6,286	5,847	5,648	5,316	4,885
	Average Production	73,629	73,788	73,699	73,737	73,809	73,446
c. 100,000-249,999	Number of Farms	5,729	5,668	5,257	5,321	5,447	4,840
	Average Production	148,367	149,190	149,585	150,319	150,615	151,289
d. 250,000-399,999	Number of Farms	950	954	949	1,023	1,071	1,004
	Average Production	310,756	310,562	311,440	310,385	312,214	312,144
e. 400,000-599,999	Number of Farms	431	460	472	513	550	537
	Average Production	483,727	484,501	485,073	487,606	485,729	487,520
f. 600,000-999,999	Number of Farms	367	375	375	382	419	413
	Average Production	766,172	770,227	782,042	770,543	772,258	767,637
g. 1,000,000-1,499,999	Number of Farms	153	186	185	224	241	248
	Average Production	1,207,870	1,211,595	1,221,650	1,209,564	1,225,018	1,217,050
h. 1,500,000-2,499,999	Number of Farms	112	117	121	151	171	176
	Average Production	1,874,375	1,838,890	1,832,818	1,884,871	1,911,861	1,900,541
i. 2,500,000-4,999,999	Number of Farms	52	62	71	83	89	101
	Average Production	3,216,902	3,325,707	3,261,045	3,322,193	3,422,341	3,327,486
j. >=5,000,000	Number of Farms	11	16	16	27	30	37
	Average Production	6,891,747	7,328,277	7,760,384	7,309,095	7,953,525	7,974,646
Total	Number of Farms	18,547	17,907	17,068	17,077	16,553	15,676
	Average Production	156,484	167,858	173,508	189,028	205,961	214,357

Table A-1
Number of Farms and Average Farm Production, by Size Category
May 2000 - May 2016

Size Category	Statistic	Year				
		2012	2013	2014	2015	2016
a. <50,000	Number of Farms	3,212	2,945	2,809	2,423	2,425
	Average Production	32,270	31,443	30,929	31,231	30,457
b. 50,000-99,999	Number of Farms	4,546	4,151	3,818	3,567	3,323
	Average Production	73,511	73,638	73,723	73,934	74,072
c. 100,000-249,999	Number of Farms	4,665	4,473	4,168	4,168	4,082
	Average Production	151,715	151,759	152,088	153,481	153,943
d. 250,000-399,999	Number of Farms	986	1,025	1,009	1,050	1,092
	Average Production	311,080	312,973	310,975	313,363	312,233
e. 400,000-599,999	Number of Farms	577	546	542	601	606
	Average Production	487,541	489,436	486,229	490,233	489,812
f. 600,000-999,999	Number of Farms	442	470	491	479	490
	Average Production	773,479	773,670	779,161	776,866	771,421
g. 1,000,000-1,499,999	Number of Farms	274	250	254	280	301
	Average Production	1,219,932	1,211,622	1,204,649	1,207,491	1,212,736
h. 1,500,000-2,499,999	Number of Farms	183	211	213	229	249
	Average Production	1,901,962	1,875,915	1,871,778	1,902,214	1,915,536
i. 2,500,000-4,999,999	Number of Farms	117	134	146	164	162
	Average Production	3,336,003	3,328,998	3,257,799	3,286,347	3,361,591
j. >=5,000,000	Number of Farms	48	54	62	68	83
	Average Production	7,784,770	7,868,010	7,887,268	7,914,071	7,963,885
Total	Number of Farms	15,050	14,259	13,512	13,029	12,813
	Average Production	234,007	252,362	268,757	293,630	313,101

