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Does FCS Association Size Affect Credit Availability?

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ABSTRACT

An analysis of the characteristics of farm businesses by size of FCS direct lending association suggests that further consolidation of FCS lending should have limited negative impacts on credit availability. Commercial-sized farm businesses with FCS real estate debt appeared similar to those who obtained credit from competing lenders, but smaller associations and those with fewer stockholders per branch appeared to serve larger and more wealthy commercial-sized farms.

Key Words: credit availability, direct lending association

Recent mergers and consolidations of commercial banks have created concerns over the concentration of market power and availability of credit to small businesses and farms. While commercial bank consolidation attracts most of the headlines, mergers are affecting the entire financial services industry. The number of FCS associations serving farmers has fallen from 870 in 1984 to 189 in 1998. A wave of association mergers occurred during the 1980s as the FCS attempted to consolidate capital and avoid the liquidation of some financially stressed associations. During the 1990s, mergers have mostly consisted of PCAs joining with FLBCs to form ACAs. Recently, several new multi-billion dollar associations have evolved, including the consolidation of associations in the Northeast to form First Pioneer ACA, the ongoing consolidation of institutions in Wisconsin to form Harvestland ACA, and creation of AgStar ACA which serves much of Minnesota. Consequently, large associations have become increasingly dominant in system lending with the largest five associations representing about one-third of all lending undertaken by associations. Smaller associations still represent a large share of total FCS lending institutions, but have become less important as a source of credit to farmers. In real terms, loan volume held by associations with over $100 million in loans has increased while the loan volume held by smaller associations decreased over the 1990–97 period.

As with banks, there are concerns that large FCS associations are less willing to lend to smaller or less creditworthy businesses. This concern has increased recently with the recent decision by the Farm Credit Administration to allow associations to compete across geographic boundaries.[1] These actions are intended to benefit farmers by increasing competition, improving service to certain groups, and reducing vulnerability to local economic or weather-related downturns. But greater consolidation could ensue as managers look to mergers as a method of improving efficiency.

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[1] See *Federal Register*, November 9,1998 (Volume 63, Number 216, page 60219-60222).

There is concern that larger associations with nationwide lending authority may thwart smaller associations. Less credit availability would result if large associations are less willing to lend to smaller or less creditworthy farm businesses. Also, there is concern that the larger associations will skim the best loans from throughout the country, leaving the less creditworthy borrowers to smaller associations.

Prior research has established a significant link between banking institution size and the supply of small business credit, with larger institutions devoting smaller proportions of their assets to small business lending than smaller institutions (Keeton, Levonian and Soller, Berger and Udell, Peek and Rosengren, Strahan and Weston). Previous studies have also shown that small businesses are more likely to report their credit needs as unsatisfied if located in markets dominated by large multi-office banks (Cole and Wolken). Yet other studies have shown that over the long-term, mergers and acquisitions either increased or had no effect on small business lending (Berger *et al.*). This increase is largely attributed to the actions of lenders not involved in the mergers who subsequently increased their small business lending when the larger merged institutions curtailed their small business lending.

There are several reasons to expect a link between FCS association size and the availability of credit to farm businesses. For one, large associations would not have to rely on loans to smaller farms to achieve a desired level of portfolio diversification. Likewise, smaller associations may be more likely to avoid large loans for diversification purposes since regulatory restrictions limit the amount they can lend to a single borrower. The ability to sell loan participations and utilize FSA loan guarantees increases the capacity for smaller associations to make larger farm loans. But associations have not made very significant use of loan participations in the past (Duncan and Dodson).

Larger associations may have more structured managerial control and less autonomy for local branch offices. Since it is less feasible for managers of large associations to review every lending decision, they are more likely to require that loans meet predetermined underwriting standards which large farm businesses may be more likely to meet.

Because of their expanded lending opportunities, large associations with multi-state lending territories may choose to avoid regions or groups of borrowers which are considered risky or more costly to service. This could be accentuated by management incentive plans which discourage risk-taking. For example, managers whose salary and bonus are determined largely by ROA and/or loan quality may be more likely to avoid riskier loans. Smaller associations which serve a small region may feel more pressure to make marginal loans because of their attachment to the community or desires to achieve growth objectives given geographic constraints. Thus consolidation or mergers of small associations into larger associations may reduce the availability of credit to farmers to the extent that some of the riskier loans are not renewed.

Lending to small, informationally opaque borrowers and lending to large, informationally transparent borrowers may require very different technologies and credit cultures. Lending to smaller farm businesses may require more "relationship" loans which require greater oversight and more detailed knowledge of the farm business than loans based on simple ratio analysis or credit-scoring models. Because of their presence in the community, smaller associations may have an advantage over larger associations in obtaining this information about the borrower. Likewise, larger multi-state associations may have an advantage in lending to larger farm businesses because they typically offer a wider array of products and services. Many of the modern financial products and services require new and expensive technologies which may require a large customer base over which to spread these costs.

On the other hand, larger associations may be more diversified and, consequently, less concerned about an economic downturn within a region or among farms producing a particular commodity. If these circumstances pre-

vailed, the consolidation of FCS institutions could actually increase the availability of credit to farmers.

The system of governance and credit cultures existing among FCS associations may have a greater influence than association size on the type of borrower served. Specifically, do associations throughout the country function as a unified system, or do associations function more like independent local lending institutions under the policy direction of their own boards of directors? If associations follow uniform practices and strategies, regardless of institution size or location, one would expect little relationship between association size and the availability of credit. Substantial differences in size, capitalization, and performance measures among associations suggest that FCS associations operate with a large measure of independence (Duncan and Dodson). On the other hand, there also appears to be a pervasive credit culture among all FCS institutions reflected by a greater tendency to lend to older and more established farmers (Dodson and Koenig).

Pursuant to the Agricultural Credit Act of 1987, most FCS lending has shifted from the district Farm Credit Banks (FCB) to direct lending associations or DLAs.[2] In this research, we examine the relationship between DLA size and farm operator characteristics such as farm size, net worth, operator age, loan size, and financial solvency.

The size of a DLA, as well as the characteristics of its borrowers, is likely influenced by farming structure within its lending territory. For example, large associations are more likely to evolve in regions characterized by larger farms and, hence, larger loan sizes. Therefore, characteristics of FCS borrowers for a given DLA size group are compared with the characteristics of farm businesses obtaining a majority of their credit from other competing lenders serving the same territory. Competing lenders were considered to include commercial banks, life insurance companies, and merchants and dealers. Since FCS does not typically compete with either the Farm Service Agency or individuals providing owner financing, these groups were not included in the competing lender group.

Data and Methods

Data on the financial characteristics of farm operators are obtained from USDA's ARMS (Agricultural Resource Management Study).[3] The ARMS is a nationwide multi-frame stratified survey which collects information on the farm business' income, assets, debt, as well as the county in which the farm business was located. Also collected are detailed data on the loans owed such as lender, term, balance, interest rate, and date of origination. Most FCS DLAs have served unique territories defined by groups of counties. Data on the counties served by each DLA were obtained from each association's annual stockholder report. By incorporating this data into the ARMS, we were able to determine a unique source of FCS real estate and nonreal estate financing for each farm business surveyed.

To increase sample size and improve statistical reliability, data were pooled from the 1996 and 1997 surveys. Using a simple t-test, comparisons are made between farms originating debt with FCS lenders with those originating debt with other competing lenders serving the same lending territory. Variances from the multi-frame stratified surveys were estimated using a jackknife procedure.

Development of mutually exclusive groups of farm businesses requires a separate analysis of farms with real estate debt and those with nonreal estate debt. This is because an association's charter has defined lending territories based on the provision of either real estate or nonreal estate credit. Consequently, a farm

[2] The DLAs are the retail lending arm of the Farm Credit System (FCS). They are organized as locally owned credit cooperatives who originate, service, and hold portfolios of agricultural loans. They include the Production Credit Associations (PCA), Agricultural Credit Associations (ACA), and Federal Land Credit Associations (FLCA). Federal Land Bank Associations (FLBA) are not considered a direct lending association since they do not hold portfolios of loans.

[3] For a complete description of the data see Sommer *et al.*, pp. 2–3 and pp. 62–63.

business may obtain real estate credit from one DLA and nonreal estate credit from a separate DLA. Also, real estate and nonreal estate loans have different origination and servicing requirements resulting in fairly substantial differences in costs. Mutually exclusive groups of farm businesses were attained by dividing farm businesses into sub-groups based on the amount of real estate[4] or nonreal estate debt[5] held by the DLA serving the county in which the farm business was located. Farmers could obtain both real estate and nonreal estate financing from one of two DLAs in five regions. These were included as a separate subgroups of over-chartered associations. To reflect the relationship between current FCS structure and lending policies, we considered only debt incurred during the 1990s which included about 75 percent of all year-end debt.

Mergers Enable Associations to Capture Economies of Size

Perhaps the greatest incentive for associations to merge is to increase cost efficiency. Despite the type of lending, larger DLAs have lower non-interest costs, though in some cases these savings are modest. Total non-interest costs for FLCAs with under $100 million in loans were more than 60 basis points greater than for FLCAs with over $250 million in loans (Figure 1). ACAs with under $100 million in loans had non-interests costs 44 basis points greater than ACAs with over $250 million in loans. The cost differential between the smallest and largest groups of PCAs was somewhat less, but still notable at 28 basis points.

FCS Serves Disproportionally Fewer Small Farms

Regardless of association size, FCS borrowers tend to be larger and more established than

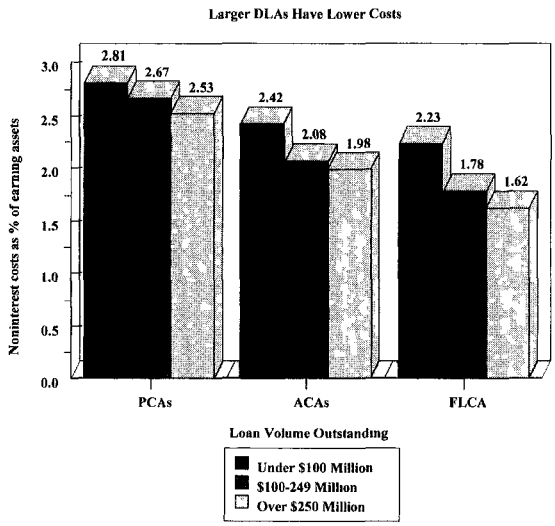

Figure 1. Noninterest costs for DLAs by volume of loans outstanding and type of institution

those obtaining credit from other competing lenders. When all farms are considered, the net worth of FCS borrowers was significantly greater than the net worth of those borrowers who obtained credit from competing lenders (at the 5-percent level of significance). This occurred regardless of association size or whether loans were real estate or nonreal estate purposes (Figures 2 and 3). Though not reported, similar results were found for farm assets owned, value of farm production, and acres operated. This result likely reflects a tendency among all sizes of FCS institutions to serve full-time or commercial agricultural producers. Regardless of association size, FCS's market share for noncommercial-sized farms, defined as those with less than $50,000 in annual sales, was significantly less than for commercial-sized farm businesses (Table 1). While there may be social benefits to FCS becoming more pro-active in providing credit to small farms, it does not appear to be an issue exclusively affected by association size.

Association Size and Credit Availability Among Commercial-Sized Farms

When considering only commercial-sized farms, the characteristics of FCS real estate

[4] Farms in counties served by either an ACA or FLCA with farm real estate loan volume of (1) under $100 million, (2) $100–$250 million, (3) $250–$500 million, (4) over $500 million, and (5) federal land bank associations, or (6) over-chartered associations.

[5] Farms in counties served by either an ACA or FLCA with farm non-real estate loan volume of (1) under $100 million, (2) $100–$250 million, (3) $250–$500 million, (4) over $500 million, and (5) over-chartered associations

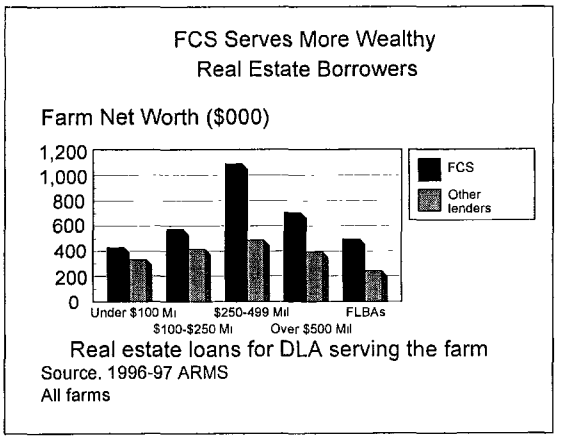

Figure 2. Average net worth for farms with most of their nonreal estate debt owed to FCS compared to farms with most of their nonreal estate debt owed to competing lenders, by amount of nonreal estate loans held by association serving that farm

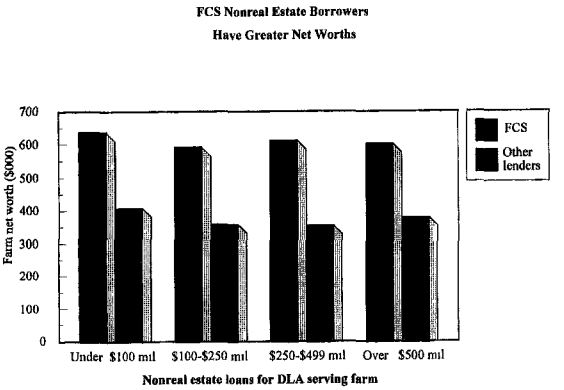

Figure 3. Average net worth for farms with most of their real estate debt owed to FCS compared to farms with most of their real estate debt owed to competing lenders, by amount of real estate loans held by the association serving that farm

Table 1. Farm debt market share for FCS and other competing lenders for commercial and noncommercial sized farms, by the amount of real estate/nonreal estate loans held by the association serving that farm

	Association Real Estate Loan Volume				
	Under $100 Mi	$100–$250 Million	$250–$500 Million	Over $500 million	All farms
Real estate debt	percent				
Commercial farms					
FCS	21	21	24	27	26
Other lenders	43	55	46	52	49
Noncommercial farms					
FCS	16	9	14	7	11
Other lenders	59	69	73	84	75
	Association Nonreal Estate Loan Volume				
	Under $100 Mi	$100–$250 Million	$250–$500 Million	Over $500 million	All farms
Nonreal estate debt					
Commercial farms					
FCS	20	23	22	16	20
Other lenders	59	59	58	69	61
Noncommercial farms					
FCS	9	9	3	2	8
Other lenders	70	70	68	74	70

Source: USDA 1996-97 ARMS.

Table 2. Characteristics of commercial-sized farms with real estate debt owed to FCS and other competing lenders, by amount of real estate loans held by the association serving that farm

	Under $100 Mi	$100–$250 Million	$250–$500 Million	Over $500 Million	FLBAs	Over-chartered[a]
No. of DLAs	31	38	9	4	NA	5
Farm assets	$ per farm					
FCS	1,172,835	1,059,514	1,701,013*	1,112,137	1,123,393**	679,032
Other lenders	958,614	923,693	1,248,366*	1,074,858	678,953**	1,210,788
Net worth						
FCS	869,620	731,076	1,102,417	836,913	732,699*	490,022
Other lenders	684,620	618,979	820,567	793,023	469,055*	679,122
Lender real estate debt						
FCS	234,551	195,710	345,952	176,096	238,904	103,298
Other lenders	174,828	185,568	339,271	163,223	140,320	176,192
Farm prod.						
FCS	496,481	388,738	637,484	275,647	371,497	324,828
Other lenders	431,188	358,717	479,495	347,887	310,187	584,059
Acres operated						
FCS	908	733	671	1,551	3,185**	730
Other lenders	716	762	456	1,187	1,381**	543
Debt-to-asset						
FCS	26	31	32	25	35	16
Other lenders	29	33	35	26	31	44
Operator age						
FCS	52.5	48.8	49.6	52.4*	50.2	44.8
Other lenders	47.8	47.7	48.0	47.4*	48.3	45.4

Source: USDA's 1996-97 ARMS.
[a] Farms in territories served by more one direct lending association.
NA—Not applicable.
* Difference between FCS and other lenders significant at the 0.05 level of confidence.
** Difference between FCS and other lenders significant at the 0.01 level of confidence.

borrowers were similar to farms which received mortgage credit from other competing lenders.[6] Commercial-sized farms obtaining a majority of their real estate credit from FCS reported greater values for farm assets owned, net worth, and acres operated than for those obtaining a majority of their real estate credit from competing lenders (Table 2), but in most cases these could not be considered statistically significant.

An exception was in regions served by FLBAs where FCS served farms which had more total assets and greater net worth than farms served by competing lenders (Table 2). These FLBAs function more like branch offices for the Texas and Wichita Farm Credit Banks (FCB) rather than as a direct lender. Since both of these FCBs hold over $1 billion in loans, the circumstances surrounding the delivery of credit in these regions may be similar to a large multi-state association. On the other hand, these regions are characterized by a large number of branches. Presumably, this would better enable them to pursue relation-

[6] Noncommercial-sized farms were defined as farms with under $50,000 in annual sales while commercial-sized farms reported $50,000 or more in annual sales.

ship lending increasing their presence among smaller farms. Thus it is difficult to ascertain the implications of this result (if any) for association size. This result could be a consequence of factors unrelated to association size such as the credit cultures within the Texas and Wichita districts.

Also, DLAs with between $250 and $500 million of real estate loans outstanding served farms which were larger than those served by other competing lenders (Table 2). This size group of DLAs reported larger loans and served larger farms than other groups. The average amount of real estate debt owed FCS averaged $350,000 which was significantly greater than the average FCS real estate debt owed within other groups. But other farms within these regions also reported large amounts of indebtedness. The average amount of real estate debt owed competing lenders averaged $340,000, suggesting that associations within this size group are located in regions characterized by larger farms. With only nine associations in this group accounting for 11 percent of total FCS real estate credit, this group of DLAs should not be considered very representative of overall FCS lending practices.

The characteristics of commercial-sized farms receiving credit from the associations with over $500 million of either real estate or nonreal estate loans outstanding were similar to the characteristics of farms borrowing from competing lenders (Table 2 and Table 3). Also, the average amount of nonreal estate debt farmers owed FCS among associations with over $500 million in loans was significantly less than owed among smaller associations. While only a few associations fall into the largest size category, they represent about one-fourth of total FCS lending. For regions served by associations with less than $500 million in nonreal estate loans; however, FCS borrowers operated larger farms and had greater net worth. One explanation for this result is that larger DLAs can more efficiently deliver credit to all size groups of farms by streamlining the delivery process. Also, larger associations may simply be more prepared to absorb the risk associated with lending to smaller commercial farms.

While FCS borrowers in areas served by over-chartered associations reported lower net worth and fewer farm assets for both real estate and nonreal estate credit, sample sizes were insufficient to indicate any statistical significance (Tables 2 and 3).

Does Branching Matter?

The degree of branching may have a greater influence than association size on the type of borrower served. Presumably, associations with fewer borrowers per branch would have a greater presence in the community and have an advantage in lending to smaller farm businesses which may require greater oversight and more detailed knowledge of the farm business. If mergers and consolidation of FCS associations resulted in fewer branches, credit availability could suffer.

With a few exceptions, larger associations reported fewer voting stockholders per branch than smaller associations.[7] An examination of the characteristics of commercial-sized farms by the average number of stockholders per branch for the association serving that farm showed no apparent relationship for real estate debt (Table 4). Regardless of the number of stockholders per branch, FCS borrowers appeared to operate larger farms and were more wealthy than those borrowing from competing lenders. But, as was the case with association size, few of these differences could be considered statistically significant. Thus we cannot conclude that greater consolidation, if it implies fewer branches, will have any impact on the supply of real estate credit to farmers.

When we examined FCS branching among commercial-sized farms with nonreal estate debt, we found associations with fewer stockholders per branch tended to serve larger and more established farmers. Specifically, commercial-sized farms in regions served by as-

[7] Voting stockholders are cooperative members of an association which have voting rights. It is a proxy for the number of borrowers since only individuals with loans outstanding have voting rights.

Table 3. Characteristics of farms with nonreal estate debt owed to FCS and other competing lenders, by amount of real estate loans held by the association serving that farm

	Under $100 Mi	$100–$250 Million	$250–$500 Million	Over $500 Million	Over-chartered[a]
# of institutions	68	38	9	4	5
Farm assets			$ per farm		
FCS	1,143,268*	1,100,610**	998,088**	837,024	756,695
Other lenders	905,598*	790,586**	743,928**	797,786	1,032,106
Net worth					
FCS	853,081*	825,899**	710,446*	671,172	584,515
Other lenders	685,652*	564,777**	535,070*	595,917	745,193
Lender nonreal estate debt					
FCS	139,663	155,908*	153,269*	82,285	89,025
Other lender	114,813	122,427*	104,887*	95,799	136,743
Farm prod.					
FCS	490,233**	475,847*	416,750	247,505	256,898
Other lenders	336,827**	380,724*	316,576	565,926	405,890
Acres operated					
FCS	2,059	971	665*	996*	587
Other lenders	1,827	870	541*	1,476*	816
Debt-to-asset					
FCS	24	25	29	20	23
Other lenders	24	29	28	25	28
Operator age					
FCS	45.8	47.2	47.7	50.2	48.9
Other lenders	51.2	48.5	46.6	48.5	49.8

Source: USDA's 1996-97 ARMS.
[a] Farms in territories served by more one direct lending association.
NS Estimate not statistically reliable.
* Difference between FCS and other lenders significant at the 0.05 level of confidence.
** Difference between FCS and other lenders significant at the 0.01 level of confidence.

sociations with less than 300 voting stockholders per branch operated larger farms, had greater net worth, and more farm production (Table 5). Conversely, there was no significant difference for these variables between FCS borrowers and those receiving a majority of their credit from competing lenders among associations with 300 or more stockholders per branch. Also, the average amount farmers owed FCS among associations with less than 300 stockholders was significantly greater than for associations with more stockholders.

The results for nonreal estate debt seem contrary to the theory that greater branching should result in more credit extended to smaller farm businesses. However, since larger farms rely more heavily on the income from the farm business for their livelihood, they may be more likely to benefit from relationship lending. Smaller farms, on the other hand, rely on non-farm income for their livelihood, and may be less likely to see any benefits from a closer relationship with their farm lender. Perhaps associations with fewer stockholders per branch may be serving groups of larger farms who may desire a closer working relationship with their lender. Another possibility is that associations with greater branching are less cost efficient. Maintaining a greater density of branches increases operating costs per dollar loaned. This is probably more likely to be true with nonreal estate because of the

Table 4. Characteristics of commercial-sized farms with real estate debt owed to FCS and other competing lenders, by voting stockholders per branch for associations(s) serving that farm

	Under 200	200–299	300–450	450 or more
# of institutions	31	27	28	28
Farm assets	$ per farm			
FCS	1,200,843	1,122,624	1,224,481	987,891
Other lenders	1,263,149	1,008,965	1,118,228	892,553
Net worth				
FCS	832,527	820,445	876,996	713,626
Other lenders	792,157	764,117	808,100	605,900
Lender real estate debt				
FCS	218,511*	191,150	229,081	164,205
Other lenders	380,812*	151,940	193,842	149,240
Farm prod.				
FCS	439,636	453,396	340,516	313,924
Other lenders	560,227	348,016	398,660	313,836
Acres operated				
FCS	772	494	1,099	1,579**
Other lenders	548	612	1,107	927**
Debt-to-asset				
FCS	31	27	28	28
Other lenders	37	24	28	32
Operator age				
FCS	46.9	51.0	47.3	54.6*
Other lenders	45.3	49.1	48.3	46.8*

Source: USDA's 1996-97 ARMS.
NS Estimate not statistically reliable.
Note: FLBAs were excluded from table.
* Difference between FCS and other lenders significant at the 0.05 level of confidence.
** Difference between FCS and other lenders significant at the 0.01 level of confidence.

greater cost involved in making these loans. Hence, in order to reduce costs, associations with greater numbers of branches may seek to reduce costs by focusing on larger average loans sizes, which are typically provided by larger farms.

Summary

This analysis compared the characteristics of FCS borrowers with those who borrowed from competing lenders. Farms were grouped by size of the DLA serving the county in which the farm business was located. We found that regardless of association size, FCS borrowers operated larger farms and had greater net worth than those who borrowed from competing lenders. However, this may reflect a pervasive culture among FCS institutions of serving full-time or commercial farms and was not a consequence of association size. It may also reflect a less efficient delivery system for small loans than that of competing lenders. Thus we cannot conclude that further consolidation or mergers of FCS associations will have any impact on the availability of credit to small or noncommercial farms, since they are not the current focus of FCS lending.

With the exception of those farms served by mid-sized real estate associations, commercial-sized FCS real estate borrowers appeared similar to those who received mortgage credit from other competing lenders. This was also true regardless of the degree of branching.

Table 5. Characteristics of commercial-sized farms with nonreal estate debt owed to FCS and other competing lenders, by voting stockholders per branch for association(s) serving that farm

	Under 200	200–299	300–450	450 or more
# of institutions				
Farm assets		$ per farm		
FCS	1,153,163*	1,232,791**	854,470	827,106
Other lenders	884,225*	804,599**	923,162	717,920
Net worth				
FCS	867,160*	967,514**	666,735	600,056
Other lenders	640,778*	605,466**	695,825	530,303
Lender nonreal estate debt				
FCS	164,448	143,036*	108,326	112,085
Other lender	134,213	106,617*	105,308	96,084
Farm prod.				
FCS	469,641*	480,532*	285,990	340,929
Other lenders	365,386*	373,043*	717,452	273,248
Acres operated				
FCS	1,916	747	938*	913
Other lenders	1,760	818	1,306*	1,116
Debt-asset ratio				
FCS	25	22	22	27
Other lenders	28	25	25	26
Operator age				
FCS	50.3	47.7	47.3	49.8
Other lenders	48.8	50.2	48.3	49.6

Source: USDA's 1996-97 ARMS.
NS Estimate not statistically reliable.
* Difference between FCS and other lenders significant at the 0.05 level of confidence.
** Difference between FCS and other lenders significant at the 0.01 level of confidence.

However, among commercial-sized farms with nonreal estate debt, smaller associations and those with fewer stockholders per branch served borrowers who operated larger farms and had higher net worth than those borrowing from competing lenders.

In regions served by associations with over $500 million of either real estate or nonreal estate loan volume, we could determine no significant difference between the characteristics of commercial-sized farms receiving credit from FCS and those receiving credit from competing lenders. These results provide little evidence that association mergers resulting in further consolidation of FCS lending will contribute toward less availability of credit to farmers. In fact, in regions served by smaller PCAs or ACAs, mergers could increase the availability of nonreal estate credit.

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