The U.S. banking system and associations of the Farm Credit System (FCS) are the primary suppliers of credit to U.S. farm operators. Based on data collected in USDA's 1999 Agricultural Resource Management Study (ARMS), commercial banks had a 47 percent market share and the Farm Credit System had a 20 percent market share of total farm operator debt at the end of 1999.

The share of farm operator debt supplied by these two lenders has been relatively stable during the past few years. The broadly defined

Lender Market Shares and the Financial Condition of Indebted Farm Operators

by James T. Ryan and Steven R. Koenig

individuals and others group, consisting of farmland sellers, merchants, dealers, input suppliers, cooperatives, contractors and others, provided 27 percent of farm operator debt at the end of 1999. The Farm Service Agency (FSA), through its direct lending programs, had a 5 percent share, which has been steadily declining for the last 15 years. FSA direct loan programs have been largely replaced by guaranteed farm loan programs in providing credit for operating expenses and farm ownership. FSA guaranteed about 4 percent of farm operator debt, with most of this volume originated by commercial banks and the FCS.

This analysis explores the distribution of farm debt among different classes of operators and their creditors. Data collected in the 1999 ARMS are used to examine farm operator debt burdens as of December 31, 1999. Because ARMS surveys farm operators, this analysis excludes debt owed by contractors and non-operator landlords. Farm business debt in the USDA farm sector accounts is based on debt levels reported by lenders and may include debt owed by non-operator landlords and contractors. Sector farm business debt stood at $176.4

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billion at the end of 1999, while farm operators reported $108 billion in the 1999 ARMS. This research applies only to that portion of farm debt that was reported by farm operators in the 1999 ARMS, and expands on a previous analysis of 1997 ARMS data[1]. Debt in farm sector accounts rose gradually over the 1997-99 period, but farm operator debt reported in ARMS held roughly constant. Particular attention is focused on the farm loan portfolios of two of the largest groups of farm lenders – commercial banks and the FCS.

Debt is Concentrated in Larger Farms

Not all farm operators report loan balances at the end of the calendar year. Some operators annually obtain and repay loans to finance seasonal production expenses, but many farms, particularly small farms, do not incur debt in their normal operations. ARMS survey results indicate that only 42 percent of U.S. farm operators carried farm business debt from 1999 into 2000. For larger farm operations, borrowing needs are more substantial. About 77 percent of farms with at least $250,000 in sales reported loan balances on December 31, 1999. Farms reporting no debt balances tend to be smaller in size, with gross cash farm incomes averaging just $34,200.

Most operators carry debt levels that appear to be manageable, relative to the value of the assets owned by their farm operations.

[1] Ryan, J. and S. Koenig. "Who Holds Farm Operator Debt" in *Agricultural Income and Finance Report*, AIS-71. Economic Research Service (Feb. 1999) pp. 47-52.

Indebted farm operators owned assets valued at $560,000 and reported an average loan balance of $118,000 at the end of 1999. Balance sheets of indebted operators have improved, on average, since the end of 1997, as the value of assets increased from $530,000 in 1997, while the average 1999 debt level was similar to that at the end of 1997. As a result of asset growth and stable debt levels, indebted operations reported an average net worth gain of more than $30,000. Balance sheet gains are also reflected in improved average debt-to-asset ratios, which fell to 20.4 percent in 1999 from 22.4 in 1997.

Larger farms have much greater capital needs and account for a large share of total farm debt. Even so, debt levels do not appear burdensome for larger operations. Farms with more than $250,000 in sales represent 6 percent of all farm operators (11.5 percent of all indebted farm operators) and owed 37 percent of all farm operator debt. In contrast, farms reporting less than $250,000 in sales and having operators who consider farming to be their primary occupation account for 31 percent of all farms (35 percent of indebted farm operators) and owe 32 percent of all farm operator debt.

As might be expected, average debt levels are much higher for larger farms. Very large family farms (more than $500,000 in sales) reported $549,000 in debt on $2.2 million in assets. With a debt-to-asset ratio of 26 percent, these farms are more highly leveraged than other sales classes of indebted farms.

On average, farms with at least $100,000 in sales reported adequate ability to make their 1999 debt service payments.

Farmers with under $100,000 in sales who considered farming to be their primary occupation had less than 15 percent of their outstanding debt provided by FCS, and loans to these operations accounted for less than 11 percent of FCS lending volume.

These farms appear to have the ability to service the higher debt burdens, as evidenced by their average term debt coverage ratio of 4, the highest for any farm sales class. On average, farms with at least $100,000 in sales reported adequate ability to make their 1999 debt service payments.

Overall, financial performance can be measured by combining measures of solvency and income for individual farm operators. Farms reporting positive net farm income and debt-to-asset ratios of less than 0.40 are classified as having favorable financial performance, while farms considered vulnerable to failure are those reporting negative net farm incomes and debt-to-asset ratios greater than 0.40. In 1999, about 51 percent of all indebted farms were classified as having favorable financial performance. About two-thirds of farms with sales of $100,000 to $500,000 were in the favorable class. About 54 percent of very large family farms were classified as favorable, and fewer than 5 percent of these farms were considered vulnerable to financial stress because of higher debt burdens and negative farm incomes.

FCS More Likely To Lend to Larger Farms

The FCS and banks supplied 66 percent of total farm operator debt at the end of 1999, and, in general, served a broad segment of the farm credit market. The policies of these two lenders toward their farm customers are very important to overall credit delivery. Life insurance companies and FSA focus on lending to more targeted farm operators, and many operations utilize favorable terms provided by merchants, dealers, input suppliers, and land sellers and other individuals for part of their financing needs.

ARMS data have consistently shown that FCS loans are more likely to go to larger farm operations[2]. While the Farm Credit System had a 20 percent market share of total farm opera-

[2] Koenig, S. and C. Dodson. "Comparing Bank and FCS Farm Customers," *Journal of Agricultural Lending*. Vol. 8 Issue 2 (Winter 1995) pp. 24-29.

tor debt at the end of 1999, it had over a 30 percent market share of the debt owed by very large farms. (See table, pages 28-29.) Nearly 36 percent of total FCS lending to farm operators went to this largest group of family farms. In contrast, farmers with under $100,000 in sales who considered farming to be their primary occupation had less than 15 percent of their outstanding debt provided by FCS, and loans to these operations accounted for less than 11 percent of FCS lending volume.

Commercial banks provided 47 percent of all outstanding farm operator debt at the end of 1999, and had the largest market share within each sales class. However, compared with FCS loans, bank lending was spread more evenly among different sales classes. Commercial bank market share of total farm debt ranged from 43 percent for very large family farms to 49 percent for the smallest primary occupation farming group. The share of total bank lending going to these five classes closely matched the share of all farm lending going to these groups. About 33 percent of bank loan balances were held by residential/life-style, retirement, limited resource, and non-family farm operations, a group that accounted for 21 percent of FCS debt.

Banks and the FCS together supply nearly 74 percent of the credit to very large family farms, while life insurance companies also lend heavily to this group of farm operations. Nearly half of all 1999 life insurance farm debt was to very large family farms. Because life insurance companies' total farm lending is relatively small, their loans accounted for only 5 percent of debt owed by these farms.

FSA direct lending is primarily to smaller and midsize farms, with 42 percent of FSA debt owed by primary occupation farming operations with sales less than $250,000. Despite their importance as a constituency for FSA direct loans, this sales class relies more heavily on other lenders for the bulk of their financing needs. Banks and the FCS supply about 65 percent of credit to this group, and these loans account for 32 percent of bank debt and 28 percent of FCS debt.

Most Indebted Operators Not Highly Leveraged

About 79 percent of all indebted operators reported debt-to-asset ratios below 0.40 at the end of 1999. A ratio above 0.40 is considered to be an indicator of potential financial stress. Only 5 percent of indebted operations had debt-to-asset ratios above 0.70, a level above which operations lacking strong cash flow generation capability may face impending repayment difficulty. About the same proportion of operations reported ratios above 0.40 in 1997, but 6 percent then had ratios exceeding 0.70.

While the distribution of farm operators by debt-to-asset ratio suggests that only a small share of indebted farm operators are overextended, these numbers can be misleading from the lender's viewpoint. Because farms with higher debt-to-asset ratios owe larger amounts of debt, creditors face

Distribution of debt by lender,

	Value of S		
	Primary occupation farming		
	Under $100,000	$100,000-$250,000	$250,000-$500,000
Number reporting debt	194,544	126,287	58,895
			Percent
Share of all farms reporting debt 40.5	72.0	76.2	77.8
Distribution of total:			
Indebted borrowers	21.4	13.9	6.5
Debt	14.3	17.2	14.0
Lender share of debt within sales class:			
Farm Credit System	14.7	19.3	22.1
Commercial banks	49.2	46.1	45.9
Life insurance companies	0.2#	3.0*	2.5*
Farm Service Agency	5.6	7.0	5.3
Individuals and others	30.3	24.5	24.3
All lenders	100	100	100
Sales class share of total debt owed to:			
Farm Credit System	10.7	16.9	15.7
Commercial banks	15.1	17.1	13.8
Life insurance companies	1.6*	23.2	15.4
Farm Service Agency	16.8	25.2	15.5
Individuals and others	16.3	15.9	12.8
All lenders	14.3	17.2	14.0

[1] Includes nonfamily operations, limited resource, retirement, and residential/
CV=(Standard Error/Estimate)*100. *=CV is between 25 and 50. #=CV is
Values with a CV<=25 are unmarked.

Source: 1999 Agricultural Resource Management Study, Economic Research Service, USDA.

der, by farm sales volume, 1999

Value of Sales

000- 000	Over $500,000	All others[1]	All indebted
5	45,458	483,722	908,907
ent			
7.8	35.7		42.3
6.5	5.0	53.2	100
4.0	23.2	31.2	100
2.1	30.4	13.1	19.7
5.9	43.1	48.7	46.6
5*	4.7	0.8#	2.2
5.3	5.5#	2.5	4.8
4.3	16.4	34.9	26.7
00	100	100	100
5.7	35.8	20.8	100
3.8	21.4	32.6	100
5.4	48.8	11.0*	100
5.5	26.3c	16.2	100
2.8	14.2	40.8	100
4.0	23.2	31.2	100

residential/lifestyle farms.
0. #=CV is between 50 and 75. c=CV is greater than 75.

e, USDA.

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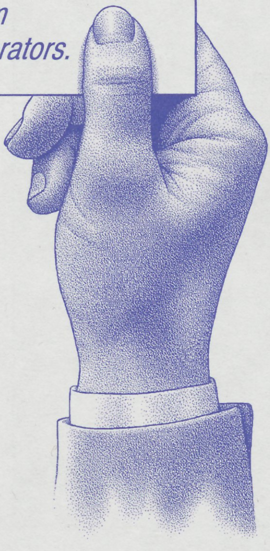
greater risk exposure than the distribution of borrowers would indicate. However, lenders have also benefited from improving operator balance sheets since 1997. Operations with debt-to-asset ratios over 0.40 owed about 40 percent of total farm operator debt at the end of 1999, down from 43 percent in 1997. Those with 1999 debt-to-asset ratios above 0.70 owed about 10 percent of debt. This highly leveraged group owed 12 percent of all debt in 1997.

Operators indebted to FCS institutions appear to be the least leveraged, with about two-thirds of FCS debt owed by lower risk borrowers, those reporting debt-to-asset ratios less than 0.40. With 8 percent of debt owed by farms with ratios greater than 0.70, the FCS also had the smallest share of higher risk debt. About 59 percent of bank debt was owed by operations with ratios less than 0.40, while 10 percent was owed by those reporting ratios greater than 0.70. FSA debt faces a less favorable risk profile, on average, with only 40 percent of debt owed by lower risk producers, and 14 percent was owed by those with ratios greater than 0.70.

The FCS was the primary source of credit for 15 percent of indebted farm operators.



Most Farms Have One Primary Lender

Most farms have the bulk of their credit needs provided by a primary lender – a lender or related group of lenders that supply more than 50 percent of the borrower's total debt. Only about 1 percent of indebted farms did not report a primary lender. Commercial banks are the most common primary lender for indebted farm operators. At the end of 1999, banks were the primary lender for half of all indebted farm operators. The FCS was the primary source of credit for 15 percent of indebted farm operators. Other institutional lenders were reported as primary lenders for smaller shares of indebted farmers. FSA was the primary lender for 3 percent of indebted operations, while life insurance companies were primary lenders for less than 1 percent.

The individuals and others group was the primary lender for 30 percent of farm operators. This group largely consists of merchants, dealers and other credit suppliers for whom the provision of financing is incidental to the primary transaction. Non-real estate financing activities of these nontraditional lenders have increased in recent years, driven mainly by favorable credit terms offered by machinery manufacturers and input suppliers. Anecdotal evidence suggests that these units are expanding the range of products offered, as they attempt to become more complete providers of farm credit.

Farm operators appear to be extremely loyal to their primary lenders, relying on them almost exclusively for their financing needs. For each primary lender, farm operators owed 85 to 92 percent of their total reported debt to that primary lender group. FSA and life insurance company borrowers are more likely to get credit from additional sources. Life insurance companies primarily lend against real estate, so their borrowers' operating credit must come from other sources, most often banks.

Farm operators appear to be extremely loyal to their primary lenders, relying on them almost exclusively for their financing needs.

FCS Portfolio Concentrated, but Borrowers More Financially Secure

The average gross cash incomes of indebted operators relying on FCS as their primary lender increased from 1997 to 1999, while the average gross incomes of bank borrowers declined. Average gross cash income of FCS borrowers rose from about $173,000 in 1997 to $185,500 in 1999, while average gross cash income for bank borrowers slipped from about $108,000 to less than $101,700. Life insurance borrowers reported 1999 gross cash income of about $260,000, the largest of any specified lender group. Borrowers relying on individuals and others for credit reported less than $78,000 in gross cash income, the smallest of any primary lender group.

Because FCS credit is concentrated in fewer and larger farm operations, the overall quality of its farm loan portfolio will be affected by the financial performance of fewer farm operations than that of the commercial banking industry. This suggests that the more highly concentrated FCS portfolio may carry higher relative risk than the more diversified farm debt portfolio of commercial banks.

However, because FCS debt is more concentrated in larger operations, its borrowers on average tend to be more financially secure, compared to indebted farm operators relying on other creditors as their primary lender. Indebted farms borrowing primarily from the FCS had higher net worth and somewhat lower leverage ratios than all indebted borrowers. FCS borrowers had an average net worth exceeding $650,000, based on their reporting of owned assets valued at almost $810,000 and about $156,600 in debt. Bank borrowers had an average net worth of less than $415,000 based on ownership of assets valued at about $525,000 and debt of less than $110,000. Among the major primary lender categories, the average debt-to-asset ratio for FCS borrowers is among the lowest at 0.195. FSA borrowers and those with no primary lender are the most highly leveraged, with average debt-to-asset ratios in excess of 0.29.

Comparison of indebted operations by financial performance measure lends support to the contention that FCS borrowers are more financially secure than are farmers relying on banks or other creditors as their primary lenders. About 51 percent of all indebted farms were classified as being in a favorable financial position for 1999, indicating positive net farm income and a debt-to-asset ratio less than 0.40, while nearly 10 percent of all indebted farms were classified as vulnerable. Among indebted farms with a primary lender, more than 58 percent of FCS borrowers were considered favorable, the highest share for any lender, and only 5 percent were classified as vulnerable, the lowest for any lender. In contrast, only 50 percent of bank borrowers were classified as favorable, while almost 11 percent were considered vulnerable.

Comparison of indebted operations by financial performance measure lends support to the contention that FCS borrowers are more financially secure than are farmers relying on banks or other creditors as their primary lenders.

Borrowers' Use of Debt Repayment Capacity Differs

While the previous sections focused on the financial condition of indebted farm operators at the end of 1999, analysis of farmers' use of debt repayment capacity provides additional insight concerning the ability of indebted farm operators to service their current debt loads. Debt repayment capacity utilization (DRCU) for the farm sector, as presented previously in this publication, is expected to rise from 60 percent in 2000 to 65 percent in 2001. DRCU is defined as the ratio of actual farm debt to the maximum feasible debt that could be supported by the current farm income of the sector[3]. As described elsewhere, DRCU provides an historical overview of farm operators' use of credit capacity from 1970 through 2001.

Data collected in the 1999 ARMS provide for a more detailed analysis of DRCU, allowing the influence of off-farm income, family withdrawals (living expenses), and payment of estimated income taxes to be included in the calculation of income available for debt coverage. The maximum principal and interest payment that a farmer could make based on total household income, and the maximum loan that the payment could service, can be estimated more precisely for farmers borrowing from each primary lender. Comparison of actual total liabilities with maximum debt supportable by income from all sources gives a more comprehensive measure of each respondent's individual DRCU. This analysis does not include any nonfarm debt owed by the farm operator's household.

ARMS data indicate that DRCU averaged 42 percent for all indebted farms in 1999, an improvement from its 1997 level of 56 percent. This was largely due to improving levels of income, especially off-farm income, coupled with stable debt loads. Operators identifying banks as their primary lender owed about 40 percent of the debt that they could service with current income from all sources, while DRCU for FSA borrowers approached 53 percent. FCS borrowers were using about 44 percent of available credit lines.

Farmers can often meet temporary income shortfalls with savings and liquidation of assets. However, if DRCU exceeds 1.2, meaning that the operation owes 20 percent more debt than can be serviced with current income, savings and inventory liquidation may be insufficient to cover this shortfall, and this debt may be at risk of default. About 20 percent of operations reporting debt outstanding at the end of 1999 had DRCU greater than 1.2, but these farms owed 32 percent of all debt. This is an improvement from 1997, when 35 percent of indebted farm operators had DRCU greater than 1.2 and these operations owed 48 percent of all debt.

Among indebted operators with a primary lender, FCS borrowers appear, on average, to have the least difficulty in generating sufficient cash flow to service current debt loads. Only 17 percent of FCS borrowers were classified as high DRCU, and these operators owed 30 percent of FCS debt. About 20 percent of bank borrowers were in the high DRCU group, and these farms accounted for 32 percent of debt owed to banks.

Conclusion

The farm sector balance sheet shows a modest amount of leverage

[3] Ryan, James T. "Farm Operators' Utilization of Debt Repayment Capacity: A Leading Indicator of Farm Financial Stress." Lence, Sergio (ed.). *Financing Agriculture and Rural America: Issues of Policy, Structure, and Technical Change: Proceedings of NC-221*, Ames: Dept of Agr. Econ., Iowa State University (Apr. 1999) pp.175-185.

ARMS data indicate that 58 percent of farms did not report any debt outstanding at the end of 1999.

Significant numbers of highly leveraged farms could experience deteriorating financial conditions in an environment of continuing low commodity prices.

with a debt-to-asset ratio of 16 percent at the end of 1999. However, ARMS data indicate that 58 percent of farms did not report any debt outstanding at the end of 1999. When these operations are excluded, the debt-to-asset ratio climbs to over 20 percent for indebted farm operators. Debt is concentrated in larger farms and more leveraged farms. The 21 percent of indebted farms with debt-to-asset ratios exceeding 0.40 owe over 40 percent of all farm debt. Many of these are large farms with large debt burdens that had favorable financial performance measures through the end of 1999.

While most financial performance measures for indebted farm operations have shown improvement since 1997, significant numbers of highly leveraged farms could experience deteriorating financial conditions in an environment of continuing low commodity prices. Of greatest concern is the 10 percent of farm debt owed by operations with debt-to-asset ratios exceeding 0.70. This high-risk group is most likely to default in the event of a downturn in farm economic conditions. Farm debt is also highly concentrated in certain lender groups, with commercial banks and the Farm Credit System being the primary creditors for 65 percent of farm operators. Borrowers of the FCS were found to be more financial secure than those of other identified lender groups. **jal**

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