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FARM SERVICE AGENCY CREDIT DELIVERY TO DIFFERENT CLASSES OF BORROWERS

Charles B. Dodson and Steven R. Koenig

**Proceedings of 46th Agricultural Finance Conference
“The Changing Nature of Agricultural Risks”
Delta Meadowvale Resort & Conference Centre
Mississauga, Ontario, Canada
October 4-6, 1999**

University of Guelph

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Farm Service Agency Credit Delivery to Different Classes of Borrowers

by Charles B. Dodson and Steven R. Koenig¹

The Farm Service Agency's (FSA) farm loan programs are intended to increase the availability of credit to family farmers unable to obtain credit from conventional sources at reasonable rates and terms.² FSA programs are also targeted to specific groups of individuals considered to be under served by private sector creditors. Congress began targeting FSA credit programs to subgroups within the broad family farm definition with the signing of the Agricultural Credit Act of 1987 (P.L. 100-233). That Act defined socially disadvantaged (SDA) applicants and reserved annual funding for those borrowers. Subsequent amendments expanded the scope of targeting and the definition of SDA. Legislation in 1992 directed FSA to begin targeting its annual lending authority to beginning farmers.

In this paper we examine the effectiveness of FSA programs in targeting annual lending resources to small family-size farms, racial minorities and women, and beginning farmers. Data from Farm Service Agency loan program databases are analyzed, as well as data from the 1997 Census of Agriculture and USDA's Agricultural Resource Management Study, (ARMS).

Targeting Family Farmers

Congress provided no definition of a family farm, but FSA guidelines for determining a family farm stipulate that the farming operation compare to similar farming operations in the community and that the family provides most day-to-day labor and makes all the day-to-day management and operational decisions. Labor exceptions are made for high value or labor intensive crops, but FSA's farm loan programs are not supposed to serve large nonfamily farms.

Caps on the amount of program indebtedness that a single borrowing entity can receive are the primary means that ensure family farms have primary access to FSA credit. Over time loan caps have been adjusted upward by Congress to accommodate changes in family farm credit needs, due to inflation or financial stress. Total borrower indebtedness caps have remained unchanged at \$200,000 since 1978 for direct farm ownership loans (FO) and since 1984 for direct operating loans (OL). In terms of 1978 land prices, the FO cap now equals just \$109,000 because of inflation. Since caps have been declining in real terms, the loan programs have increasingly serviced smaller farms.

¹Agricultural Economist and Senior Economist with the Economic Policy & Analysis Staff of USDA's Farm Service Agency and Economic Research Service, respectively.

² FSA makes direct loans through county and state offices and guarantees loans originated, funded, and serviced by private sector lenders.

Data on the distribution of loans by loan amount suggests that the direct program is serving a smaller farm than the guaranteed program. Analysis of loans made since 1993 shows that the majority of FSA direct loans are made for amounts far under the \$200,000 caps (figure 1; figure 2). This is particularly true of the direct OL program, where over 60 percent of the loans have been for amounts under \$50,000. In contrast, only about one-fourth of all guaranteed OL loans have been for amounts less than \$50,000. Most of the guaranteed FO loan demand is for amounts in excess of the \$200,000 cap for direct loans.

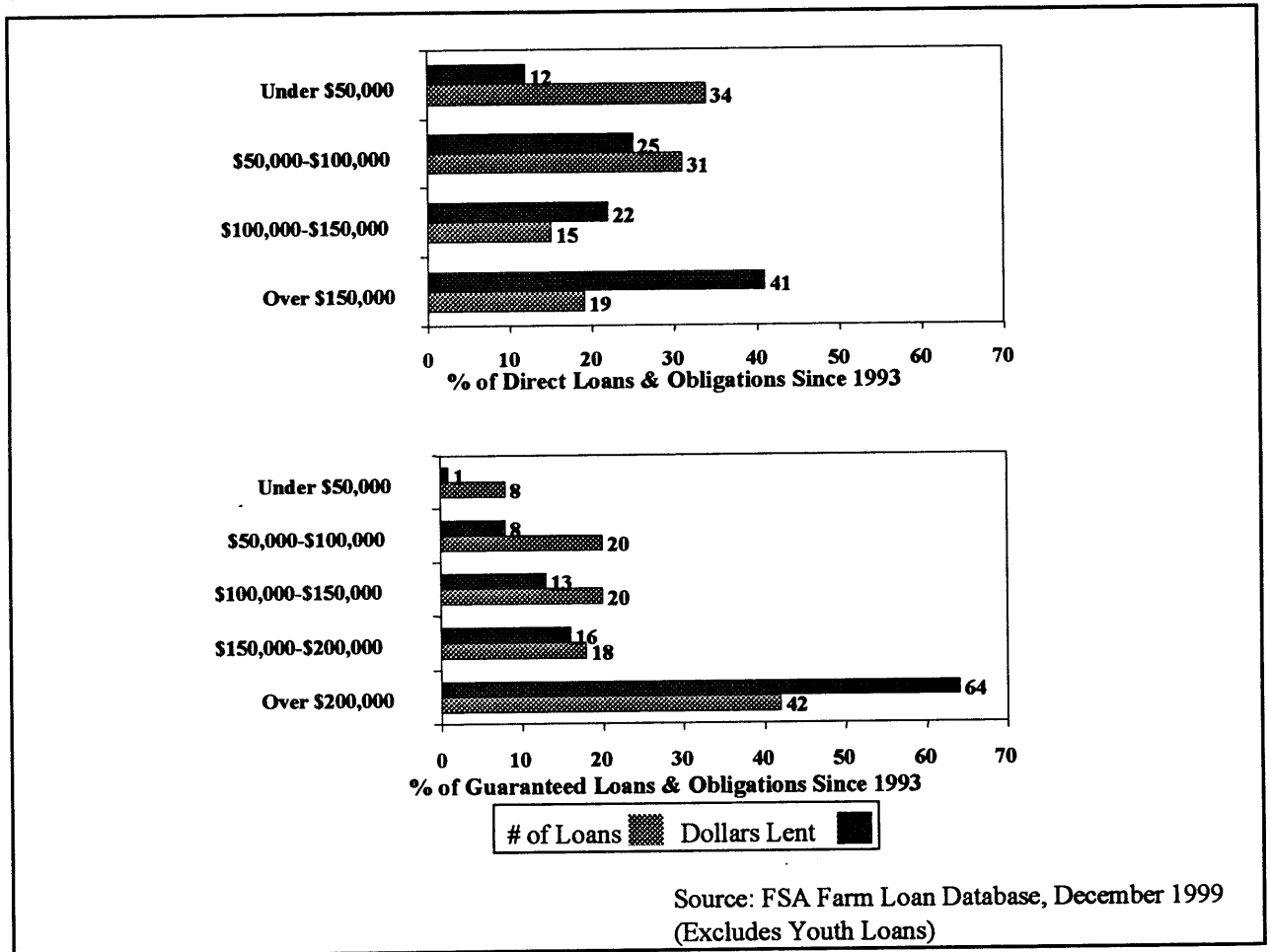


Figure 1. Most Direct FO Direct Loans Are for Small Amounts While Guaranteed FO Loans Tend to be for Amounts Over \$200,000.

While the USDA does not have an official definition of what constitutes a family farm, the National Commission on Small Farms provides some guidance. It defined a small farm as any farm, excluding nonfamily corporate farms, with less than \$250,000 in total annual farm sales. Most US farms would be considered small family farms with 92 percent of the 1.9 million U.S. farms meeting this definition in 1997. Data from 1997 ARMS survey indicates that 89 percent of FSA direct program borrowers would be small farms under this definition (figure 3). Therefore, direct programs appear well targeted to family farms, particularly smaller family farms. Relative to the overall farm population, far fewer FSA borrowers reported sales under \$10,000. This is consistent with the

Impact of 1999 Commodity Prices on Commercial Farm Operators' Use of Debt Repayment Capacity

James T. Ryan *

The potential impact of low agricultural commodity prices on the financial well-being of the U.S. farm sector has been a prevailing theme in agricultural finance and farm policy discussions throughout much of 1999. Low prices were expected to reduce cash receipts, intensify cash flow problems, and impair farmers' ability to service debt. Concern for the farm income reducing effects of low prices led Congress to provide an emergency financial assistance package for farmers in November 1999. With the infusion of government payments, gross cash income of the farm sector reached record levels in 1999. Farmers now appear to have sufficient 1999 income to avert widespread debt repayment difficulties.

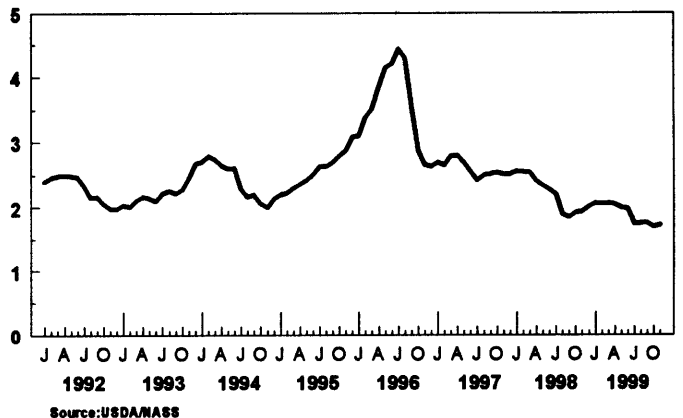
Preliminary USDA farm income projections for 1999 reflect the cumulative effects of 4 consecutive years of bumper crops in major agricultural producing countries. By historical standards, this period has been unusually favorable for crop production. Not only has there been little adverse weather, rainfall has been generally abundant and timely. In late 1997 and 1998, rising world commodity supplies in the face of weak international demand put downward pressure on farm prices and reduced the value of U.S. agricultural exports.

Commodity prices are low...

Monthly corn prices illustrate the changing agricultural commodity price environment of the 1990's (figure 1). After rising dramatically from early 1995 through mid 1996, corn prices dropped sharply in late 1996, and have continued in a downward trend through late 1999.

Throughout 1999, supplies of most agricultural commodities have remained abundant, as stocks carried over from 1998 have been further augmented by large 1999 crop harvests around the world. Since the outlook for farm product demand suggests little or no growth in the near term, commodity prices are unlikely to improve without widespread adverse weather to curtail global production and reduce supplies. In 1998 and 1999, the U.S.

Figure 1—Corn prices spiked in mid 1996, but have since fallen below the levels of the early 1990's \$/bu



* Agricultural Economist, Resource Economics Division, Economic Research Service, U.S. Department of Agriculture, Washington, D.C. Data presented in this paper have been updated since the conference presentation, and reflect revisions through December 21, 1999. The views expressed here are not necessarily those of the Economic Research Service or the U.S. Department of Agriculture.

government enacted legislation to provide emergency assistance to farmers, which has helped maintain farm income and temper financial hardship for many producers.

...cash receipts are down, but income measures hold firm...

The decline in commodity prices has more than offset increases in production, reducing cash receipts for many commodities (table 1). In 1999, total cash receipts are expected to be 7.5 percent below 1997 levels. Crop producers are bearing the brunt of the anticipated fall in commodity receipts. Crop cash receipts are projected down over 14 percent, while livestock receipts are expected to be up slightly.

	1995	1996	1997	1998	1999F
	Bil \$				
Gross Cash Income	205.9	217.4	227.5	222.8	229.1
Cash Receipts	188.1	199.1	207.6	196.8	191.9
Crop Receipts	101.0	106.2	111.1	102.2	95.1
Livestock Receipts	87.1	93.0	96.5	94.5	96.9
Government Payments	7.3	7.3	7.5	12.2	22.7
Cash Expenses	153.2	159.9	169.0	167.8	170.0
Net Cash Income	52.6	57.5	58.5	55.0	59.1
Net Farm Income	37.2	54.9	48.6	44.1	48.1

Source: USDA/ERS

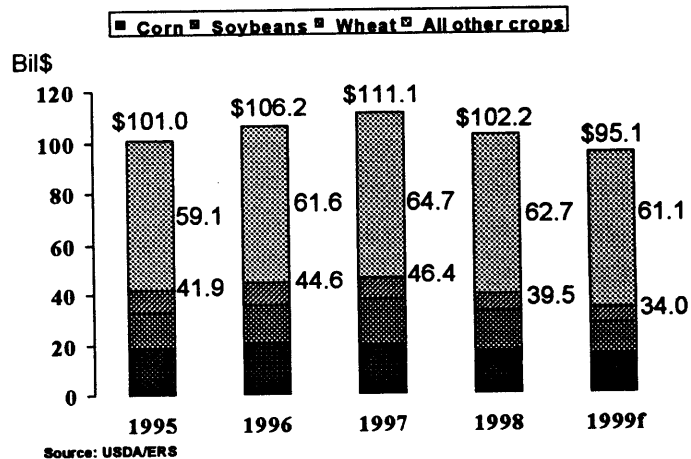
Despite the decline in commodity cash receipts, gross cash income is expected to reach record levels in 1999, as the rise in government payments has compensated for the decrease in cash receipts. Government payments more than tripled over the last three years, rising from \$7.5 billion in 1997 to an expected \$22.7 billion in 1999. Government payments, as a share of gross cash income, have increased from 3.3 percent in 1997 to almost 10 percent in 1999.

Due mainly to the infusion of additional government payments in the form of emergency assistance, farmers' net incomes have remained near earlier levels. In 1999, net cash income is expected to surpass the 1997 record. While net farm income is expected to rise to \$48.1 billion, it remains below its 1996 and 1997 highs.

Not all producers have been equally affected by the decline in crop receipts, which have dropped 14 percent since 1997 (figure 2).

While lower prices have meant reduced cash receipts for many major commodities, cash receipts for corn, soybeans, and wheat have been particularly affected, falling from more than \$46 billion

Figure 2--Crop cash receipts--1999 cash receipts for corn, soybeans, and wheat are expected to be almost 27 percent below 1997 levels

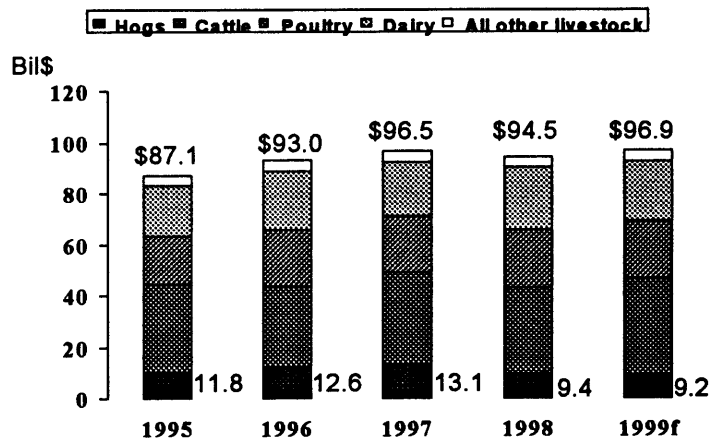


in 1997 to \$34 billion in 1999, a decline of almost 27 percent. Excluding these three commodities, cash receipts for all other crops have fallen by less than 6 percent.

While 1999 livestock receipts are expected to be slightly above 1997 levels, hog cash receipts are anticipated to be about 30 percent lower (figure 3). In 1999, cash receipts for all other livestock, excluding hogs, are expected to be more than 4 percent higher than 1997.

In addition to relatively favorable product prices, livestock producers have generally benefited from low crop prices through reduced feed costs. USDA cost of production estimates indicate that feed accounted for 58 percent of total cash expenses in 1998 hog production, and 55 percent of total cash expenses incurred in producing milk.

Figure 3--Livestock cash receipts--1999 cash receipts for hogs are expected to be about 30 percent below 1997



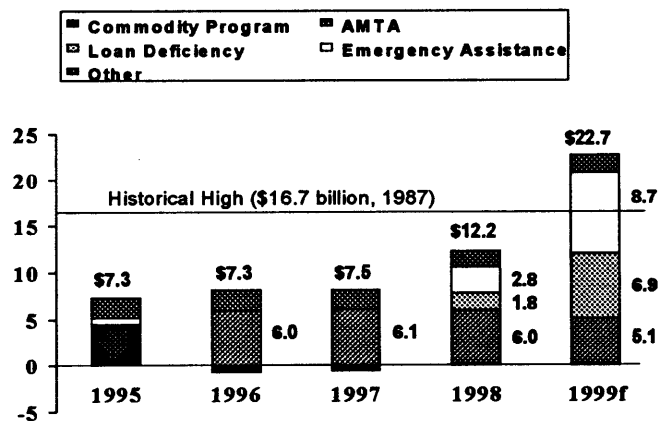
Source: USDA/ERS

...as government payments offset lower cash receipts...

Despite lower commodity cash receipts in 1998 and 1999, government payments, supplemented by additional emergency assistance, were sufficient to maintain net farm income above the average for the decade of the 1990s (figure 4). The majority of payments came from three government

programs: 1) AMTA payments, authorized by the Agricultural Market Transition Act, Title I of the 1996 Federal Agriculture Improvement and Reform Act (FAIR), which are often referred to as production flexibility contract payments (Nelson and Schertz). These payments were designed to replace the existing commodity program payments with a fixed schedule of declining payments, and were viewed as front-loading of future reductions in assistance. AMTA payments totaled \$6 billion in 1998 and \$5.1 billion in 1999.

Figure 4--Emergency Assistance and Loan Deficiency Payments push calendar year 1999 direct government payments to historical high



Source: USDA/ERS

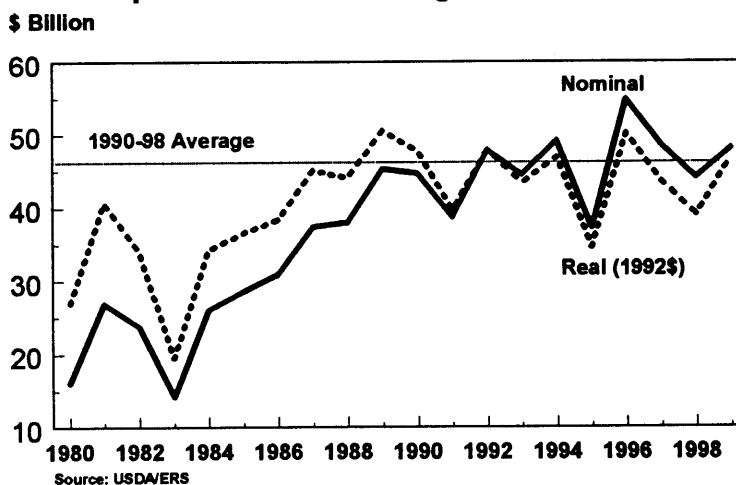
Under the 1996 FAIR Act, the government moved away from commodity programs designed to

manage supplies, toward scheduled payments that allowed farmers greater freedom in producing for global markets. 2) Loan deficiency payments (LDPs), which had originally been authorized under the Food Security Act of 1985 to provide direct payments to producers not receiving commodity loans, even though they were otherwise eligible for loans. LDPs had been virtually nonexistent until 1997, then provided \$1.8 billion in 1998 and \$6.9 billion in 1999. 3) Emergency assistance payments, funds provided through supplemental appropriations bills enacted in October 1998 and November 1999. Emergency assistance increased government payments by \$2.8 billion in 1998 and \$8.7 billion in 1999.

...and net farm income rises above average for the 1990s.

While nominal 1999 net farm income is likely to be below its record 1996 and 1997 levels, the additional government payments have boosted it from its 1998 level. At \$48.1 billion, net farm income is expected to be above its \$45.5 billion average for 1990-98.

Figure 5--Net farm income to rise in 1999, surpass 1990-98 average of \$45.5 billion



Regional income conditions vary during 1999

Application of an income simulation model to data collected in USDA's 1998 Agricultural Resource Management Study (ARMS) allow projection of likely effects of changes in 1999 prices and government payments on the net cash income of farm operations in farm resource regions (figure 6). These regions, recently constructed by USDA's Economic Research Service, depict geographic specialization in production of commodities (USDA, 1999).

While net cash income for the farm sector is expected to rise over 7 percent in 1999, this analysis is focused on farms with sales greater

Figure 6--Projected change in average farm business net cash income, 1998-99f

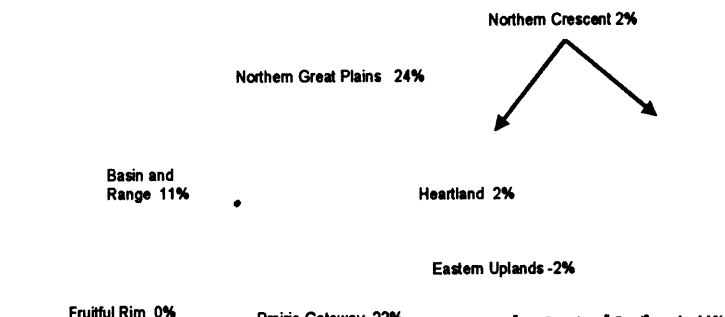
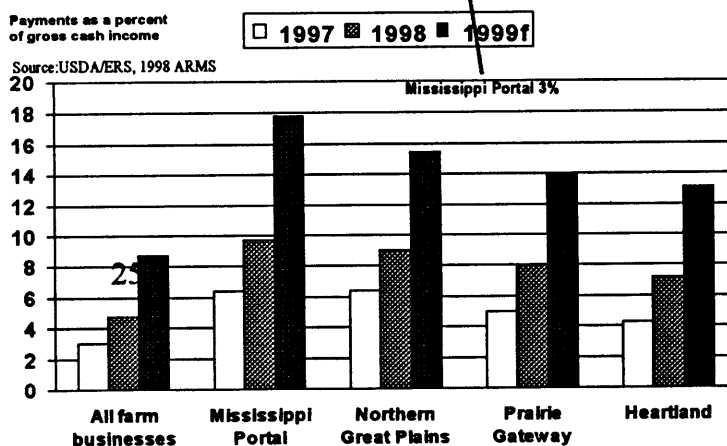


Figure 7--Government payments are an increasingly important source of income in several regions



than \$50,000. These farms are expected to report average net cash income gains of 4 percent in 1999. The largest gains are in the Northern Great Plains and Prairie Gateway, areas with relatively low 1998 incomes that have benefited from the 1999 increase in government payments. As these payments have increased in 1998 and 1999, they are accounting for increasing shares of gross cash income for all U.S. farms and are particularly significant in select regions (figure 7).

Farm debt expected to stabilize in 1999...

As prices generally trended downward in the late 1990s, total farm business debt rose by \$9 billion during 1997 and by over \$7 billion during 1998. By the end of 1998 farm debt totaled \$172 billion, its highest level since 1986 (USDA). Debt is expected to decline slightly in 1999, but actual changes in farm business debt levels will depend heavily on the extent to which farmers use emergency assistance payments to improve future financial risk positions by reducing outstanding loan balances (figure 8).

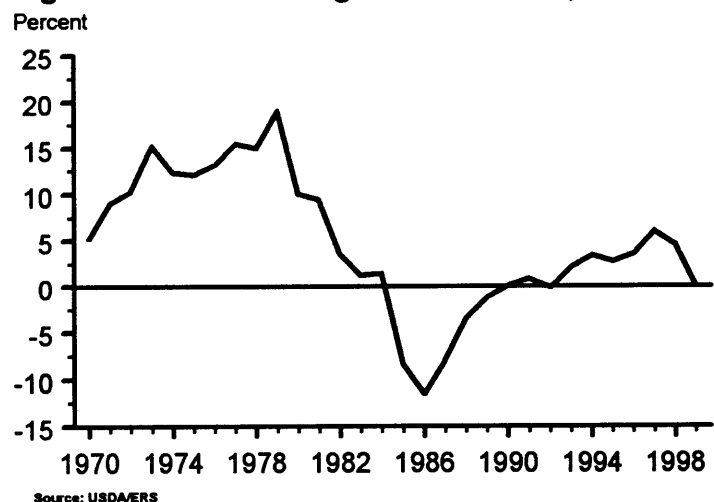
Given the uncertainty concerning the timing of price improvements in cash markets for many agricultural commodities, farmers are expected to experience relatively low price and income levels for the near term. Lenders are expected to encourage their farmer clients to improve their balance sheets by applying some of their additional government payments to existing debt.

Despite a relatively favorable interest rate environment, elevated debt levels, combined with low commodity prices in the near future, suggests that, in the absence of further government emergency assistance funding, indebted farm operators will have less income available to meet higher principal and interest payments on their loans. There is concern that potential cash flow problems, coupled with the rise in farm debt, may burden the sector's ability to service debt, and precipitate a return of financial stress in the sector. Some fear a possible return of the farm financial crisis in the mid-1980s, a time of rapidly declining land values, farm foreclosures, debt write-offs and restructurings, and bank failures. For the immediate future, the infusion of government payments has been adequate to avert any reemergence of widespread financial stress.

Banks major agricultural lender, farm loans show little stress

Bankers had reported that traditional credit analyses, using market prices prevailing in the late summer of 1999, suggested that a growing number of borrowers would have difficulty cash flowing loans in the absence of additional government assistance. The emergency assistance

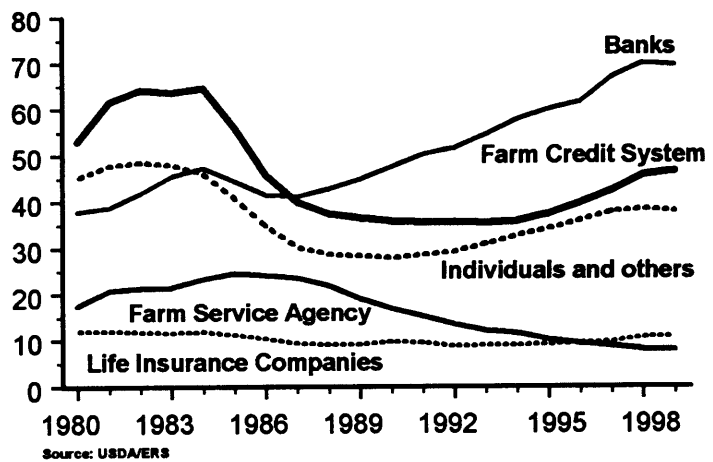
Figure 8--Annual changes in farm debt, 1970-1999f



package did much to alleviate that potential problem.

If farmers experienced greater loan repayment difficulties in 1999, it has not yet been reflected in the performance of the loan portfolios of the principal lender. Commercial banks are the largest source of credit for U.S. farmers, providing more than 40 percent of the agricultural loan volume outstanding at the end of 1998 (figure 9). Farm debt held by banks is expected to decrease slightly in 1999, following an increase of almost 5 percent in 1998. Bank debt rose over \$27 billion from the beginning of 1988 through the end of 1998, a gain of almost 64 percent. During that period banks' share of the total farm debt market has increased from less than 31 percent to nearly 41 percent. While bank real estate loans (those secured by farmland) have risen rapidly in recent years, nonreal estate loans accounted for over 61 percent of bank loans to farmers at the end of 1998.

Figure 9--Banks provide over 40 percent of US farm debt
\$ billion



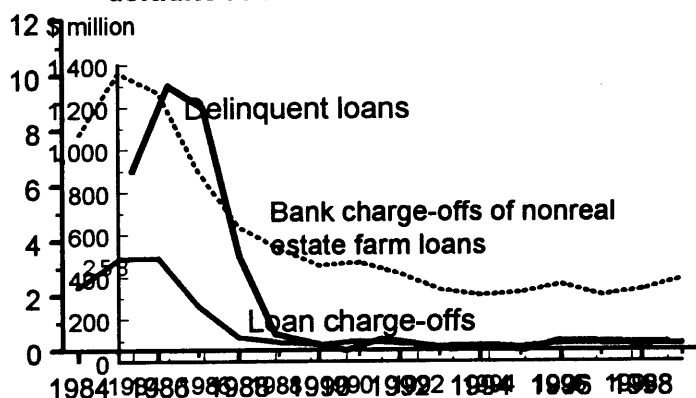
Banks' farm nonreal estate loan portfolio had not exhibited any deterioration in farm financial conditions through the second quarter of 1999, as reported by banks in call reports filed with the Federal Reserve Bank (Walraven). Performance of bank real estate loan portfolios, reported only since 1992, show similar results. These reports suggest a sound current farm loan portfolio, compared to both other sectors of the economy and to previous periods of farm financial stress.

During the mid-1980's, farmers' loan repayment difficulties were reflected in the rise in nonperforming loans and charge-offs of farm loans (figure 10). In 1985, over 10 percent of all bank nonreal estate loans to farmers were either delinquent (past due 30-90 days) or nonperforming (past due 90 days or more plus nonaccruals). In the first quarter of 1999, the number of such loans is less than 2 percent.

Bank charge-offs rates, which reached 3.36 percent of nonreal estate loans in 1986, remained below 0.2 percent in the second quarter of 1999. In contrast, nonagricultural commercial bank consumer loan charge-offs typically run in excess of 2 percent, while consumer credit card charge-off rates have exceeded 4 percent annually since the late 1980's, and are currently above 6 percent.

Bankers reported charge-offs of

Figure 10--Bank farm nonreal estate loan problems remain low relative to mid-1980's
Percent of loans



agricultural nonreal estate loans of \$1.3 billion in 1985 and \$1.2 billion in 1986 (figure 11). Charge-offs were \$87 million in 1998, and \$37 million in the first half of 1999. Farm Service Agency (FSA, formerly Farmers Home Administration) guaranteed loans, available through most lenders, are primarily offered by banks to their farmer borrowers who might not otherwise qualify for a bank loan. Guaranteed loans, which were not widely available during the mid-1980s, will make over \$2.7 billion available in 1999, with almost \$2 billion of this targeted for nonreal estate loans. This suggests that banks are not likely to suffer significant losses in 1999. Charge-offs will likely not rise during the remainder of 1999, as banks are now likely to move less quickly to resolve problem loans, awaiting farmers' application of funds from the emergency assistance package to meet debt service obligations.

Financial difficulties of farm borrowers affected agricultural banks during the 1980's, as evidenced by the failure of more than 200 agricultural banks during 1985-87, with more than 65 failing in each year. Only 4 agricultural banks have failed since 1992. One agricultural bank failed in 1998, and none failed during the first quarter of 1999. In general, banks are financially sound and well positioned to deal with borrower difficulties.

Agricultural banks entered 1999 well capitalized, reporting ample funds to meet the credit needs of qualified borrowers. However, bank officers responding to 1999 surveys conducted by the Federal Reserve Banks of Minneapolis, Chicago, Kansas City, Dallas, and Richmond indicate widespread concern. While more bankers in each region report a softening in farmers' demand for loans relative to a year earlier, and most reported higher availability of funds for qualified borrowers, most also reported lower loan repayment rates, higher numbers of renewals and extensions, and increased collateral requirements.

Farmers' use of repayment capacity expected to decline in 1999

While the rise in debt in recent years may result in additional financial difficulty for some farm operators, relatively high 1999 net cash incomes indicate that widespread financial distress is unlikely. Much of the financial crisis of the mid-1980s can be attributed to the build-up of debt in the preceding years. Farm business debt more than quadrupled from about \$46 billion in 1969 to \$194 billion by the end of 1984. As financial problems extended beyond the farm gate to farm creditors and suppliers, farm business debt fell over \$56 billion from this peak, to \$138 billion by the end of 1989. The farm financial crisis of the mid-1980's was driven, to a large extent, by the inability of borrowers to meet higher debt repayment obligations out of the cash income that their farms were generating.

In an effort to better monitor potential farm financial problems as they arise, ERS has developed a farm sector model comparing farmers' actual debt with that which could be serviced by current income. A detailed description of the debt repayment capacity utilization (DRCU) model has been presented elsewhere (Ryan, 1999). In general terms, the model measures actual debt relative to the maximum debt that current farm operator income can support.

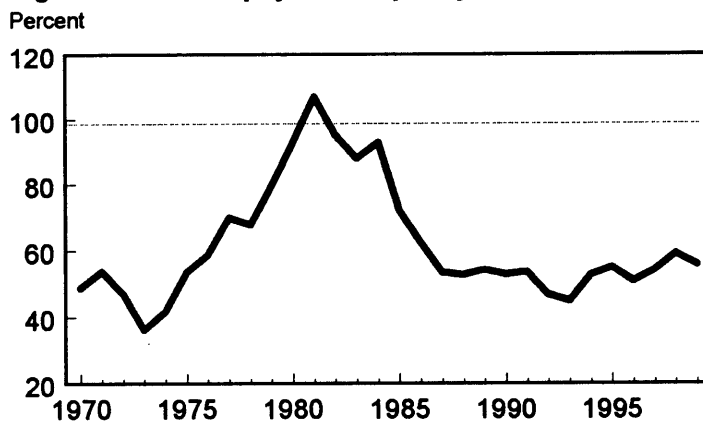
Lenders generally require that no more than 80 percent of a loan applicant's available income be

used for repayment of principal and interest on loans. For farm operators, this income available for debt service (measured as net cash income plus interest in the USDA farm sector accounts) can be used to determine the maximum amount of loan payment the farmer could make. Given current market interest rates and an established repayment period, the maximum debt that the farmer could carry with this loan payment can be determined. Using current bank interest rates and a 7-year repayment period, maximum feasible debt conceptually measures the line of credit that could be available to farmers.

Debt repayment capacity utilization (actual debt expressed as a percentage of maximum feasible debt) effectively measures the extent to which farmers are using their available lines of credit (figure 12). This ratio indicates that, in 1999, farmers are expected to use about 56 percent of the debt that could be supported by their current incomes. In 1998 this measure attained its highest value since 1986. It remains substantially below its levels during 1979-85, when it consistently measured above 70 percent.

Comparison with more recent history provides additional evidence that some farmers are not likely to experience rising financial difficulty in 1999. Use of debt repayment capacity rose from 45 percent in 1993 to 56 percent in 1995, then dropped to 51 percent in 1996, as high net cash income levels and lower interest rates offset the effect of a rise in outstanding debt. DRCU rose to 54 percent in 1997, but the impact continuing favorable interest rates in 1998 was not sufficient to offset the combined effects of rising debt and lower net cash income. As a result, use of debt repayment capacity rose to almost 59 percent in 1998. Rising net cash income and stable debt will compensate for a slight rise in interest rates in 1999, resulting in DRCU declining to 56 percent.

Figure 12—Debt repayment capacity utilization, 1970-99



Actual debt compared to a hypothetical maximum debt that could be carried based upon repayment capacity.

Source: USDA/ERS

Debt service conditions improve in most regions

Farmers usually do not begin to experience repayment problems until their operation carries a level of debt that is substantially higher than they can service with current income. Typically, farm operators meet debt service requirements through the planned sale of commodities produced within the year or production cycle. In times of lower income, farmers can meet short-term shortfalls by reducing working capital, selling additional inventories, and liquidating financial assets. Meeting debt service obligations does not become problematic until DRCU exceeds 120 percent, or the farm operation's debt is 1.2 times the estimated maximum level of debt that it could service using only current income.

The discussion of DRCU above has focused on historical trends in the measure as it applies to the farm sector. The model has been extended to allow regional comparisons of farm operators' ability to service debt. Using 1998 ARMS data and the income simulation model allows comparison of the relative difficulty farm operators (with sales greater than \$50,000) may experience in meeting debt repayment terms in each farm resource region.

More than 22 percent of all farms reported DRCU above 1.2 in 1998, suggesting potential difficulty in fully servicing existing debt obligations (figure 13). Improved incomes are projected to have reduced the share of high DRCU operations to 20 percent in 1999.

During 1999, the share of farms with high DRCU increased only in the Heartland and Southern Seaboard regions. A significant decrease occurred in the Mississippi Portal, when the share dropped from 28 percent in 1998 to 22 percent in 1999, while the share in the Northern Great Plains declined from 32 percent to 25 percent.

Farms with DRCU greater than 1.2 owed 43 percent of all reported farm business debt in 1998 (figure 14). Repayment of a substantial portion of debt could potentially require adjustments beyond the normal farm commodity marketings. As the government emergency assistance package reached farmers, the share of debt fell to less than 40 percent in 1999. While the share of debt owed by high DRCU operations decreased in all regions during 1999, the Basin and Range decline from 64 percent in 1998 to 53 percent in 1999 was largest.

Figure 13--The share of farms owing more than 1.2 times estimated maximum debt is projected to decline in most regions in 1999...

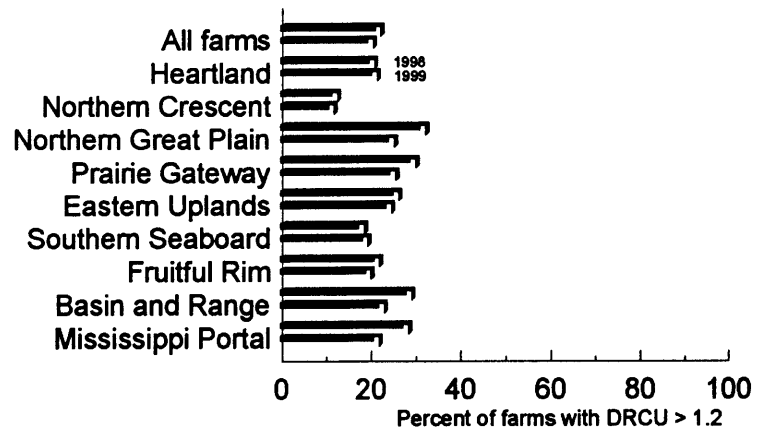
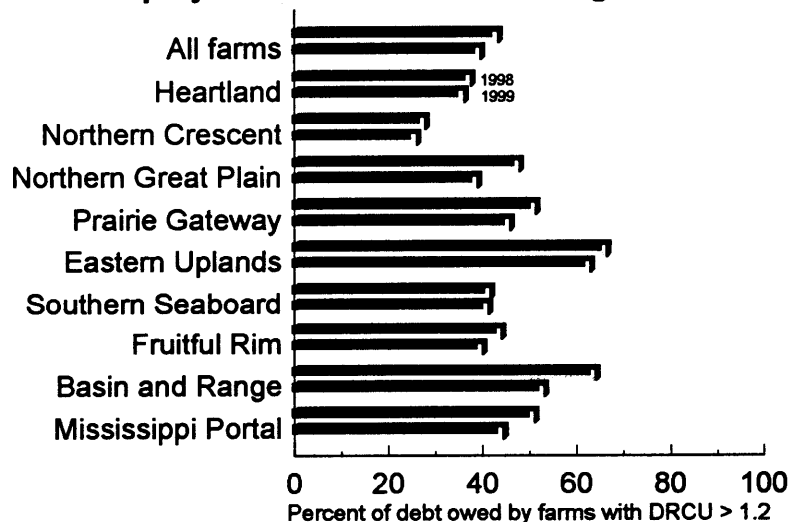


Figure 14-- ...and the share of debt owed by these farms is projected to decrease in all regions in 1999.



Conclusions

This paper is based on a presentation made in October 1999. At that time it appeared that U.S. farmers might be facing increasing loan repayment problems in 1999. Low commodity prices were driving down cash receipts from farm product marketings, and, while loan deficiency payments were rising, it appeared that they would be inadequate to prevent many farmers from experiencing cash flow difficulties and loan repayment problems in 1999. The emergency financial assistance package, passed in November 1999, has provided almost \$9 billion in income supplements to farmers, offsetting the negative effects of lower prices, and boosting income to a level that, relative to 1998, farmers' ability to service debt in 1999 has improved.

References

Agricultural Income and Finance: Situation and Outlook Report. Washington, D.C.: Economic Research Service (Various issues).

Farm Financial Standards Council (FFSC). *Financial Guidelines for Agricultural Producers: Recommendations of the Farm Financial Standards Council (revised)*, 1995.

Nelson, Frederick J, and Lyle P. Schertz (eds.). *Provisions of the Federal Agriculture Improvement and Reform Act of 1996*. Agriculture Information Bulletin No. 729. Commercial Agriculture Division, Economic Research Service, U.S. Department of Agriculture, Washington, D.C. (September 1996).

Ryan, James T. [Farm Operators] Utilization of Debt Repayment Capacity: A Leading Indicator of Farm Financial Stress. Paper presented at NC-221 meeting, Louisville, KY, October 6, 1998. Published in *Financing Agriculture and Rural America: Issues of Policy, Structure, and Technical Change: Proceedings of NC-221*, Ames: Dept of Agr. Econ., Iowa State University (April 1999) pp 175-185.

Ryan James T. [Utilization of Debt Repayment Capacity by Commercial Farm Operators." Selected paper, AAEA annual meeting, Indianapolis, Indiana, August 1995.

Ryan, James T. "Estimated Lender Loan Losses Relative to Changes in Farm Debt Levels in the 1980's." Paper presented at NC-161 meeting, Kansas City, MO, September 24, 1990. Published in *Financing Agriculture in a Changing Environment: Macro, Market, Policy, and Management Issues: Proceedings of NC-161*. State College: Pennsylvania State University, Dept. of Agricultural Economics and Rural Sociology (May 1991) pp. 147-166.

Ryan, James T. and Mitchell Morehart. "Debt Repayment Capacity of Commercial Farm Operators: How Much Debt Can Farmers Afford?" *Agricultural Income and Finance: Situation and Outlook Report*. AFO-45. Washington, D.C.: Economic Research Service (May 1992).

U.S. Department of Agriculture (USDA). *Farm Resource Regions*. Pamphlet. Available @www.econ.ag.gov/whatsnew/issues/regions. Washington, DC: Economic Research Service (1999).

U.S. Department of Agriculture (USDA). Farm Business Economics Briefing Room, @www.econ.ag.gov. Washington, DC: Economic Research Service .

Walraven, Nicholas A. *Agricultural Finance Databook*. (quarterly periodical). Board of Governors, Federal Reserve System, Washington, D.C. (Various issues).