

GAO

Testimony



139623

For Release
On Delivery
Expected at
10:00 a.m. EST
Wednesday,
September 27,
1989

Issues Surrounding Underwriting Standards
Developed by the Federal Agricultural
Mortgage Corporation

Statement of
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Agriculture Issues
Resources, Community, and Economic
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Before the
Subcommittee on Conservation,
Credit and Rural Development
Committee on Agriculture
House of Representatives



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Mr. Chairman and Members of the Subcommittee:

I am pleased to be here today to discuss our recent work concerning issues facing the Congress and the Federal Agricultural Mortgage Corporation--Farmer Mac--as they develop and implement the new secondary market for agricultural real estate and rural housing loans. We have been working on many issues related to this new market since its early formative stages. Our most recent work focuses on issues and concerns related to Farmer Mac's underwriting and other standards that have been submitted for Congress' review. This work was done at the request of the Subcommittee on Policy Research and Insurance, House Committee on Banking, Finance and Urban Affairs, and the Subcommittee on Agricultural Credit, Senate Committee on Agriculture, Nutrition and Forestry. The testimony I am presenting today is the same as I presented on September 12, 1989, before the Subcommittee on Policy Research and Insurance.

My testimony includes information on (1) secondary markets in general and the overall issues that need to be considered in developing and implementing a secondary market for agricultural real estate and rural housing loans, (2) underwriting and risk management in Farmer Mac, and (3) concerns and issues we have identified during our review of the current Farmer Mac standards submitted to Congress.

BACKGROUND

The Agricultural Credit Act of 1987 (P.L. 100-233, Jan. 6, 1988) established Farmer Mac as a federally chartered instrumentality of the United States and an institution of the Farm Credit System (FCS). The purpose of Farmer Mac is, among other things, to encourage capital market participation in agricultural real estate and rural housing lending. This increased participation is intended to provide (1) lenders more lending capacity by allowing them to sell their farm real estate and rural housing loans through a secondary loan market and (2) farmers and ranchers more long-term credit at stable interest rates, including fixed rates.

The act required Farmer Mac to submit certain underwriting standards to the Congress for review within 120 days after the first meeting of the permanent board of directors, which was March 2, 1989. Farmer Mac submitted the first of the required standards--those that govern the quality of the loans--on time on June 30, 1989. On July 18, 1989, Farmer Mac submitted another set of standards to govern loan pool makeup, that is, the maximum size of any given loan, minimum number of loans, and types and geographic distribution of loans. Farmer Mac also provided the Congress on June 30, 1989, with standards addressing certifying qualifications of organizations that will be permitted to act as loan poolers. The act required that the first two sets of

standards would not take effect before the later of 30 legislative or 90 calendar days beginning on the date the standards were submitted for review. It has no provision, however, for when the certification standards take effect. Some potential market participants and Farmer Mac officials with whom we have spoken have hopes that the first pool of loans can be issued by late this year or in early 1990.

During our review of the Farmer Mac underwriting standards, we interviewed private and government individuals and officials concerned with secondary markets in general and Farmer Mac in particular. We interviewed bankers; insurance company, investment house, and investment-rating agency representatives familiar with secondary market and farm credit issues; and officials from several other organizations, including the American Institute of Certified Public Accountants, Farm Credit Administration, Federal National Mortgage Association (Fannie Mae), Federal Home Loan Mortgage Corporation (Freddie Mac), the American Bankers Association (ABA), the Independent Bankers Association of America, the American Society of Farm Managers and Rural Appraisers, and the Federal Financial Institutions Examination Council.

We also interviewed selected Farmer Mac stockholders that bought enough stock to become loan poolers and those that bought only enough to become originators in the Farmer Mac market. In addition, we obtained informal comments from Farmer Mac

representatives as we performed our work and considered them in finalizing our observations.

ISSUES CONCERNING THE DEVELOPMENT AND IMPLEMENTATION
OF A SECONDARY MARKET FOR AGRICULTURAL REAL ESTATE LOANS

Our first effort in the area of secondary markets for agricultural real estate loans resulted in a July 1987 report¹ to Representative Richard H. Lehman. This report provides information on secondary markets, in general, including purposes those markets have served in the past, and major issues meriting further attention in determining the effects of a secondary market for agricultural real estate loans on farmers, lenders, and the federal government. Our latest report,² issued on May 5, 1989, to Representative Lehman and three other requesters, provides information on underwriting standards for secondary markets, in general, and discusses key issues facing Farmer Mac in developing its underwriting standards.

In our July 1987 report, which is a primer on secondary markets, we raised five issues that we believed merited further consideration in the secondary market debate taking place at that

¹Farm Finance: Secondary Markets for Agricultural Real Estate Loans (GAO/RCED-87-149BR, July 17, 1987).

²Federal Agricultural Mortgage Corporation: Underwriting Standards Issues Facing the New Secondary Market (GAO/RCED-89-106BR).

time. Most of those issues are still the subject of much debate today. Some were incorporated in the Agricultural Credit Act as future Farmer Mac studies to be performed by GAO. These studies focus on (1) implementation of Farmer Mac and its effect on producers, lenders, FCS, and the capital markets; (2) the feasibility of an agricultural real estate loan secondary market without a Farmer Mac guarantee; and (3) the feasibility of expanding Farmer Mac's authority for the sale of securities based on a pool of loans made to farm-related and rural small businesses. Another issue is the focus of today's hearings as you review the underwriting standards that will determine what loans will be eligible to be sold in the new secondary market. In appendix I, we provide a description of each issue as it appeared in our 1987 report.

In our May 1989 report we broadly defined underwriting standards as criteria, or guidelines, used to (1) limit the type and amount of risk of loss permitted in a financial portfolio and (2) establish methods to insure against loss from those risks. In secondary markets such standards are generally used to establish the qualifications that individual loans must meet if they are to be eligible to be purchased and packaged into pools for resale. Standards for pools must therefore be flexible enough to evolve over time to accommodate changes in economic factors, risk management techniques, and other factors that affect the secondary market. However, they must also be constant in their ability to

ensure that only loans that meet acceptable risk parameters are included in the pools. Appendix II provides further information from our May 1989 report on risks in secondary mortgage markets and risk-bearing mechanisms and strategies.

ISSUES RELATING TO UNDERWRITING AND
RISK MANAGEMENT IN FARMER MAC

Agricultural real estate is a new frontier for a national secondary market. The characteristics of agriculture make these loans more risky than housing loans in secondary housing markets. In terms of the homogeneity of the land and structures, use of the land and structures, and sources of cash flows, agriculture is much more risky than housing that has a diversity of income streams, as well as building standards and ordinances that protect the value of housing. Therefore, many decisions about this new market necessarily will be based on trial and error--a method that has much potential risk.

In our May report, we stated that several issues merited consideration during the legislative review process for Farmer Mac underwriting standards. These issues are:

- What are the implications of the geographical diversity requirements in the act?

- What are the implications of agricultural commodity diversity requirements in the act?

- Can state-of-the-art real estate appraisals provide enough assurance in verifying cash-flow potential and agricultural real estate values to enable prudent loan-making decisions?

- How would the use of lender or pooler subordinated participation interests versus cash reserves affect the federal government's financial risk on securities guaranteed by Farmer Mac?

- Will the prescribed risk-based fees be adequate for Farmer Mac?

- What implications do the Securities and Exchange Commission (SEC) registration and disclosure requirements have for Farmer Mac-guaranteed securities?

- What effect will the loan-to-value ratio in the act have on government risk?

- What effect will rural housing provisions have on Farmer Mac-guaranteed securities and how will such loans be packaged?

Many of these issues relate primarily to potential government risk. Some of the questions must be addressed as the new market is being implemented, while others need to be addressed as the detailed underwriting standards for the market are developed. Appendix III includes excerpts from our May 5, 1989, report providing a further discussion of each issue.

CONCERNS WITH FARMER MAC'S UNDERWRITING STANDARDS

In creating Farmer Mac, the Congress established several broad expectations for Farmer Mac, including (1) limiting the government's risk exposure from Farmer Mac; (2) increasing the availability of long-term agricultural credit at stable interest rates by providing greater liquidity and lending capacity to lenders for diversified pools of agricultural real estate loans; (3) ensuring that small originators and small loans are not discriminated against in the market; (4) enhancing the ability of individuals in small rural communities to obtain financing for moderately priced homes; and (5) getting the market operating quickly.

As mentioned earlier, Farmer Mac has submitted three sets of standards and Farmer Mac officials told us that these standards represent the guiding principles for the market's future operations. Farmer Mac will also issue a Securities Guide containing, among other things, minimum requirements for various

aspects of the Farmer Mac program and more detailed criteria to guide the market's operation. Under the Agricultural Credit Act, Farmer Mac is not required to submit the Securities Guide for Congress' review. As a result, there is no assurance that some outstanding questions will be addressed in it. Our views today, therefore, are based on our understanding of the current underwriting standards and not on assumed or planned standards or more detailed criteria that are not yet formalized or available for review.

Also, I would like to state that the concerns I will mention today have not necessarily been endorsed by potential market participants, but they represent our views that were formed after having talked to potential market participants and others familiar with secondary markets and the farm credit area. In developing our views, we necessarily have considered the Congress' concern that it limit the government's potential risk to some extent. It is not unusual that market participants concerned about risk and benefits to them, both individually and as organizations, may not totally agree with our overall concern for the government's potential risk exposure. Some believe that the government will ultimately accept some of the risk in the market through support mechanisms such as we have recently seen in the savings and loan and the FCS bail-outs.

On the basis of our examination of the enabling legislation and the Farmer Mac standards, and discussions with a wide variety of individuals and officials from both the private sector and the government, several issues and concerns merit further consideration by the Congress during the legislative review period to ensure that the loan criteria, market structure, and risk parameters satisfy Congress' broad expectations. In this context, I would like to present our views on the Farmer Mac underwriting standards.

Specifically, we raise concerns related to key terms and concepts, exceptions to the standards, consistency of financial information, financial ratios, standardized market operating agreement, regulatory approaches, pool diversification standards, appraisal standards, and standards for rural housing loans.

Key Terms and Concepts

It is important that key terms and concepts governing the eligibility of loans be adequately defined to ensure that the loans in a pool have met certain basic criteria that (1) allow only loans of known and comparable risk into the pool and (2) ensure that Congress' broad expectations are met. Some terms and concepts included in Farmer Mac's standards are undefined.

Throughout the standards Farmer Mac does not specify accounting practices to be used in calculating financial ratios and preparing financial statements. Different accounting interpretations could result in loans with noncomparable risk. I will discuss broader implications of this later. Credit underwriting standard 6 illustrates how undefined terms could potentially result in loans in the pool that do not meet Congress' expectations. This standard requires that the property financed meet the minimum acreage or minimum annual receipts requirements to be established by Farmer Mac, but does not elaborate on the key terms "minimum acreage" or "minimum annual receipts." For purposes of oversight, such a standard provides little assurance of what borrowers Farmer Mac will ultimately include in the market.

Exceptions to the Standards

While it is necessary to allow for flexibility in loan underwriting standards to provide the capability to react to nonconforming but acceptable situations, it is also important that the exception does not become the rule because that could create a situation where the market is potentially guided by a case-by-case subjective judgment that ultimately may not provide the risk protection intended under broader pooling criteria. The credit underwriting, loan diversification, and certified facility standards include broad language to allow for exceptions to and/or

broader interpretations of the standards. For example, credit underwriting standard 9 provides that

"Farmer Mac may, on a pool-by-pool basis, accept loans that do not conform to one or more of the preceding standards when: (a) those loans demonstrate compensating strength on one or more of the standards to which they do conform; and (b) those loans are made to producers of particular agricultural commodities or products in a segment of agriculture in which such non-conformance and compensating strength are typical of the financial condition of sound borrowers."

Several financial sector officials and potential market participants indicated that Farmer Mac could better ensure that the exception would not become the rule by establishing some limitations on the absolute amount of exceptions allowed in any given pool.

Consistency of Financial Information

As is the case with terms and concepts, it is important that the financial information in each loan application be reported in a consistent and comparable manner to better ensure comparable and known risks in the loan pool. Many potential market participants we talked to acknowledged that the underwriting standards do not

require financial information in a manner that ensures such consistency. As a result, loans could be included in pools that may not have comparable or even known risk characteristics. For example:

-- Standardized accounting terms and methods are not required. These terms and methods are necessary to ensure consistency of financial information used to make loan decisions that ultimately determine the risks in the loan pools. Farmer Mac does not require borrower's financial statements supporting loan applications to follow specific accounting principles such as generally accepted accounting principles (GAAP). The lack of reliance on GAAP or some set financial disclosure practice makes it very difficult to compare financial information on all loans in a loan pool. The Farm Financial Standards Task Force³ is currently completing a national study of the use of accounting conventions in agricultural finance. The task force found a lack of consistency in the use and understanding of accounting practices and terms used in agriculture and plans to issue its report in November 1989, which it hopes will lead to more consistency in the presentation of financial information.

³The task force is sponsored by the ABA and comprised of members from many groups, including the academic community, commercial banks, insurance industry, FCS, accounting profession, and regulatory agencies.

-- Projected financial statements are not specifically required. Projected financial statements are important because they represent how the farmer plans to carry out the farming operation during the projected period. These statements are particularly important if the farmer plans to change cropping or production systems on land he currently farms, or buys new land and is farming it for the first time. As part of projected financial statements, a cash-flow analysis is a valuable tool because it provides lenders with a detailed repayment plan of how the farmer plans to meet currently maturing debt obligations. Most lenders we talked with told us that they currently prepare cash-flow analyses as an integral part of their credit approval processes. They also told us that it is imperative to have 3 years of tax returns together with the other financial statements required by the standards to prepare reliable cash-flow analyses. Farmer Mac does not require borrower tax returns to be submitted with loan documentation. The "forward looking" approach, which predicts future financial performance, is missing in the standards.

Financial Ratios

It is important that Farmer Mac fully evaluate the potential effects of its standards and accompanying financial ratios to

determine if they will have intended effects. Financial ratios are used together with other criteria as determinants of the ability of a loan to qualify to be sold into the Farmer Mac secondary market. Some examples of potential unintended effects follow.

- Credit underwriting standard 5 requires that the real estate being financed have a minimum 1 to 1 cash flow to debt service coverage ratio, except for loans in which (a) the borrower's principal residence is on the property securing the loan and (b) the proforma debt coverage ratio of the entity being financed has for the last 3 years been no less than 1.5 to 1. We have been told that a large portion of agricultural real estate loans being made to farmers today are for add-on purchases. Some potential market participants have expressed concerns that it is unreasonable to require such add-ons to meet the cash flow to debt service coverage ratio of 1 to 1. They pointed out that in agriculture, as well as in the rental housing markets, new purchases generally do not economically cash-flow in the first few years. One way to accommodate this phenomenon may be to require more stringent ratios and criteria for the overall farm operation.

- Some lenders told us that the standards may allow loans to be based on the value of an unusually high-priced residence on the property, and not necessarily the ability

of the property to carry debt based on its production capability. To illustrate this point, one banker told us that a farmer had off-farm income that supported the construction of a residence on his farm at a cost that exceeded the value of an average house in the area by about \$100,000. The banker also told us that, when the farmer defaulted and the farm was offered for sale, the buyers were only willing to pay the average value of a home in the area; therefore the bank lost about \$100,000. Some lenders said that to avoid liquidity problems that could result in losses upon default, Farmer Mac may want to consider limiting the allowable dollar value of the house in determining the ultimate loan amount for the entire property or allowing only a certain percentage of off-farm income to be used to qualify as income supporting the loan application.

Standardized Market Operating Agreement

The marketing agreement between the lender and pooler can determine exactly who bears the ultimate risk in the market. This agreement basically spells out the rights, responsibilities, and liabilities--including recourse provisions--for lenders and poolers. If such agreements are not done properly and consistently even small changes in language can result in huge liability shifts. Most potential market participants that we

talked to acknowledged these risk implications. The Farmer Mac certified facility standards are very general in defining the framework for a standard market operating agreement between lenders and loan poolers. In addition,

- Recourse provisions of the subordinated participation interests⁴ have not been addressed in the standards. This one element will be a pivotal point that will determine if and when the government has to provide funds to keep the market afloat in a recession scenario such as agriculture experienced in the mid-1980s. Appendix III provides a broader discussion of the subordinated participation interest issue.

- Several lenders and others we talked to raised concerns that, without a market agreement specifically geared to making sure smaller lenders with lower volume loans could participate in the market, small lenders may be either excluded through competitive pressures or receive less than desirable market agreements from individual poolers.

⁴Subordination participation interests are created when a pooler and/or lender retains a portion of a mortgage pool and the holders of the retained portion do not receive principal and interest payments (subordinated payments) until after all other investors have received their payments (senior payments).

Regulatory Approaches

According to many sources we talked to, the potential market participants could be regulated by several different regulators and this could result in some participants being regulated more strictly than others. This could result in inhibiting competition and actually excluding some participants from the market. For example, there is some concern that commercial bank regulators may require significantly more capital to be held against Farmer Mac loans than insurance company regulators may require. Both banks and insurance companies have acknowledged this issue and agree that banks, under certain scenarios, could be essentially excluded from the market or have to act as mortgage bankers by simply originating mortgages and not retaining any part of the loan. While Farmer Mac standards require that poolers have at least \$2 million in capital, they do not specify capital requirements in the sense of commercial banking's safety and soundness regulations. It is also probable that appraisals will be regulated by several different regulators, posing a similar concern. Farmer Mac needs to examine the potential implications of differing regulatory approaches on all market participants and how such approaches may affect Farmer Mac's activities.

Pool Diversification Standards

The Agricultural Credit Act specified that each pool of loans meet diversification requirements including that each pool be secured by agricultural real estate that is widely distributed geographically and is used to produce a wide range of agricultural commodities. These standards are important because they can determine the overall risk that will exist in any given pool and may also affect the market's structure. The current diversification standards may allow poolers to potentially bypass the geographic diversification requirement of the act by drawing loans from the intersection of three contiguous regions, which could reduce the diversity of individual pools due to similar agricultural commodities and climatic conditions in these areas. Farmer Mac could prevent this by disallowing the formation of pools of loans that come from such a limited geographic area.

Appraisal Standards

Appraisal standards are a key part of the loan-making decision because they govern the valuation of property and cash flows that will be used as a basis for the collateral and earning capacity to repay the loan in case of default. Farmer Mac's appraisal standards rely, in large part, on Uniform Standards of Professional Appraisal Practice for such items as appraisal definitions, education requirements, and appraisal reporting developed by the

Appraisal Foundation⁵. Farmer Mac standards also have broad provisions for monitoring the implementation of the standards.

While we did not specifically evaluate Farmer Mac appraisal standards, we noted that they do not come under the appraisal provisions of the recently passed Financial Institutions Reform, Recovery, and Enforcement Act of 1989. The act requires appraisal standards at the federal level to ensure that loans or transactions requiring appraisals have appraisals performed in accordance with standards to be developed under the purview of the Federal Financial Institutions Examination Council--an organization that coordinates the activities of agencies that regulate depository institutions, such as commercial banks, credit unions, and savings and loan institutions. It appears that loans made by insurance companies and FCS institutions--potential major participants in the new market--will not come under the appraisal provisions of the 1989 act.

Because the Congress studied the appraisal issue and decided on federal involvement in aspects of the appraisal industry that potentially cover at least some loans sold into the Farmer Mac secondary market, we believe additional consideration needs to be

⁵The Appraisal Foundation is a nonprofit entity established by U.S. and Canadian appraisal associations to help ensure that appraisers are qualified to offer their services to financial institutions and to the real estate industry.

given to how the Congress wants to assure itself that all loans in the Farmer Mac market are appraised adequately.

Standards for Rural Housing

Credit underwriting standard 8 provides that Farmer Mac will adopt credit underwriting standards similar to those of Fannie Mae, adjusted to reflect the usual and customary characteristics of rural housing. The standard establishes a 75-percent loan-to-value ratio that can be met in part with private mortgage insurance.

Farmer Mac has not identified specific Fannie Mae standards that will be used, nor what adjustments will be made to reflect the usual and customary characteristics of rural housing. We believe that Farmer Mac standards should include more criteria on what the rural housing loans will look like, so that the Congress has a better idea of the risk parameters for that market and the adequacy of the 75-percent loan-to-value ratio set in the standards.

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In summary, Mr. Chairman, many of the issues I discussed today relate to potential government risk. We believe that the Congress had an expectation to limit the government's potential risk exposure from Farmer Mac. Some of the issues and questions raised

must be addressed as the new market is being implemented, while others need to be addressed as the detailed underwriting standards for the market are developed. Certainly, Farmer Mac has the potential to offer a unique new element to the nation's agriculture credit delivery network.

We hope that the observations provided today will aid the Subcommittee's oversight of Farmer Mac's activities. We look forward to working with your Subcommittee and Farmer Mac to ensure that this new secondary market for agricultural real estate and rural housing loans fulfills the expectations laid out in the Agricultural Credit Act of 1987.

This concludes my prepared statement. My colleagues and I will be happy to respond to any questions you may have.

KEY ISSUES CONCERNING THE DEVELOPMENT
OF A SECONDARY MARKET FOR AGRICULTURAL
REAL ESTATE LOANS

On the basis of our examination of nine legislative proposals introduced in the 100th Congress and our discussions with individuals and officials from both the private sector and government, we believe that several issues merit additional consideration in the secondary market debate. Our observations on the following questions should help highlight the issues involved.¹

IS FEDERAL GOVERNMENT INVOLVEMENT NEEDED TO
DEVELOP A LARGE NATIONAL-SCOPE SECONDARY
MARKET FOR FARM REAL ESTATE LOANS?

Given the historical experience with farm real estate lending, it is unlikely that a large national-scope secondary market for farm real estate loans can be established without federal government involvement. Historically, the federal government has encouraged FCS' role in providing farm real estate loans on reasonable terms because it had determined that such credit was not adequately provided through other lenders. FCS' "agency status" has historically enabled it to obtain a stable source of funds from the capital markets to make long-term farm real estate loans. Wall Street investment house representatives told us that a large secondary market for farm real estate loans could not exist without some degree of government involvement. Given the current financial stress in the farm sector--combined with the economic, weather, geographic, and political environments normally facing the sector--potential risks faced by investors are great.

The private sector has not, of its own accord, developed a large national-scope farm real estate secondary market. The legislative proposals all provide some degree of government involvement to, at a minimum, get such a market off the ground. The major consideration in this area is to what extent federal backing is needed to stimulate or sustain secondary market development. Will the federal government have to be involved in the short or long term to ensure the long-term existence of such a secondary market? Will the federal government have to provide some level of credit enhancement, such as a guarantee or insurance, or would a federal charter be adequate?

¹This appendix was developed from information contained in section 3 of our report entitled Farm Finance: Secondary Markets for Agricultural Real Estate Loans (GAO/RCED-87-149BR, July 17, 1987).

Direct federal involvement in the secondary market for home mortgages was critical to the development of that market and still plays a major role today. In the early years federal insurance and guarantees of mortgages and mortgage-backed securities helped accelerate secondary market development. Today, a significant amount of the home secondary market activity is supported by a federally-owned organization--Ginnie Mae--and two other federally chartered organizations--Fannie Mae and Freddie Mac. The federal government does not guarantee or insure Fannie Mae's or Freddie Mac's securities, but the organizations have "agency status" and investors assume the government stands behind their securities. The three agencies accounted for about 79 percent of all mortgage-backed securities issued in 1986. Fannie Mae and Freddie Mac accounted for about 49 percent.

Like the home mortgage market, a federally chartered agency (the FCS) supports the lion's share of farm real estate lending today. If the home mortgage secondary market offers any answers as to the need for government involvement to establish a large secondary market for agricultural real estate loans, the answer is probably yes.

WHAT IMPACT WOULD A LARGE NATIONAL-SCOPE
SECONDARY MARKET FOR FARM REAL ESTATE
LOANS HAVE ON FCS AND OTHER LENDERS?

The Congress is currently concerned about the health of FCS because it has lost billions of dollars in the last few years and is expected to need federal assistance in the future. The Congress is also concerned about the health of commercial banks that serve agriculture because they have been failing at unusually high rates during the same period. We believe that a secondary market is not a short-term solution to the current financial stress in the agricultural sector, but it does have major long-term implications.

Development of a national secondary market for agricultural real estate loans could strengthen, weaken, or leave unchanged the fates of FCS and other lenders to agriculture. However, the current legislative proposals do not provide enough information to allow a complete understanding of how farmers, lenders, or the government would be potentially affected.

Because of its access to a stable source of credit through the capital markets that other lenders could not match, FCS has dominated farm mortgage lending. Commercial banks, generally, have obtained competitively priced, short-term funds from customer deposits, which has allowed them to maintain a substantial market share for short-term agricultural loans. However, because these

funds are short-term deposits, large percentages of them cannot prudently be committed to long-term fixed-rate loans. Commercial banks and other lenders see the ability to convert long-term mortgage loans to short-term assets (through mortgage loan sales) as positive.

If commercial banks could, without restriction, access the same source of funds at the same cost as FCS, they could potentially increase their market share of total farm lending. Conversely, FCS could potentially lose market share and, all other things being equal, lose a proportionate amount of interest income.

However, the potential impact of a secondary market on FCS and other lenders could be better understood if we knew what organization would operate the market, what fees would be charged, what loan volume might be expected, and what restrictions would be placed on participation. If total farm lending increased substantially and FCS operated a secondary market that all lenders could access without restriction and for which it charged fees to lenders, including the FCS, to provide credit enhancement, it might improve its financial position, even if it lost market share as a primary lender.

On the other hand, if a secondary market for farm real estate loans were to be controlled by any particular lender group, that group could use its control to improve its fee income or market share at the expense of other lenders. In addition, entry to the market could be restricted by qualifying lender and loan criteria. For example, if only lenders with an asset size of \$40 million or more would be able to participate, most "agricultural banks," as defined by the Federal Reserve Board, would be precluded from participating. As of December 31, 1986, the average asset size of agricultural banks was about \$33 million.

Some commercial agricultural lenders are already concerned about FCS' market share because of the recent changes FCS made in response to the need to be more efficient and minimize operating losses, coupled with its favored access to the capital markets. Prior to the early 1980's, FCS' organizational structure was decentralized down to the local level, with separate locations and management for production credit and real estate credit activities. The commercial banking sector's concern about losing market share flows from reorganizations of FCS at the local level that have taken place since the early 1980's. For example, FCS production lending and real estate lending facilities have consolidated in some areas and colocated in others. The commercial banking sector sees the convenience of "one-stop banking" at FCS, for both production and real estate loans, as a catalyst that could

eventually shift market share of short-term loans from commercial banks to FCS.

SHOULD FCS BE GIVEN POWERS TO OPERATE AS
THE SECONDARY MARKET FOR ALL LENDERS?

Arguments for making FCS the secondary market for farm real estate loans are that FCS already performs some secondary market functions, operates in all states, and needs an infusion of capital. It provides liquidity and attracts a wide range of investors; insulates its borrowers against the effects of cyclical flows of funds; enhances regional flows of funds to farmers; and reduces regional differences in interest rates by allowing money to flow to areas of higher interest rates, thereby exerting downward pressure on those rates. FCS has been able to perform these functions largely because of its "agency status" that has traditionally enabled it to access the capital markets routinely for funds. In addition, its charter has permitted it to operate as a national lending agency enabling it to perform the cross-region functions normally attributed to secondary markets.

On the other hand, arguments can be made against FCS being the secondary market. With the changing face of agricultural lending, if the market is not structured in such a way as to allow agricultural lenders, other than FCS, equal access to the capital markets for farm real estate lending, the agricultural credit delivery network as a whole may become too vulnerable to financial stress. Commercial "agricultural banks" may become less able to compete with FCS.

Furthermore, the implications for managing the government's risk exposure to the national agricultural credit portfolio may be unacceptable if one lender--FCS--increases its market share of farm lending. A GAO report entitled Financial Condition of American Agriculture (GAO/RCED-86-09; Oct. 10, 1985) pointed out that farm lenders with loan portfolios more concentrated in agricultural lending were more vulnerable to financial stress in the sector. One solution to this problem may be to develop short-range and long-range plans for agricultural lending that would encourage as many lenders as possible to compete for farm lending, spreading the risk of lending to one sector, as much as possible, throughout the lender and investor community. This strategy could possibly incorporate a plan for FCS to operate the secondary market, thereby deriving more of its future income from secondary market activities rather than from primary lending.

COULD A NEW SECONDARY MARKET ENTITY
COEXIST WITH THE FCS?

FCS' favored status in the capital markets raises questions as to whether a new secondary market entity could also compete as well for funds. The issue most related to this question is whether the new entity could attract funds at an interest rate that would allow lenders to make loans at competitive rates.

A related question is how well the investment community would accept another agricultural lending entity, especially when the agricultural sector is still experiencing financial stress and FCS is losing billions of dollars. Wall Street brokerage house representatives told us that if a new secondary market were to be established, it would require at least the same level of government backing perceived by investors for FCS and possibly more to initially establish the market.

WHAT LOANS SHOULD BE ELIGIBLE TO
BE SOLD IN THE SECONDARY MARKET?

Probably the most important issue to determining the potential impacts of a secondary market on farmers, lenders, and the government is underwriting criteria that embody specific loan criteria. This single element can determine such factors as market volume; expected loss experience; likely costs to risk bearers, such as investors and credit enhancers; and social benefits to the farm community. For example, underwriting criteria that allowed virtually all farm loans to be sold in the secondary market would result in a high expected loss experience and high risk to investors and others who have provided credit enhancements.

Another component of this eligibility question is whether land-based agricultural loans can be adequately standardized to be included in a national-scope secondary market. While it is possible to develop a standardized loan application that will go a long way to understanding risks associated with the farm sector and individual farm operations, it will likely be more difficult to develop large pools of loans with substantially homogeneous characteristics. For example, Midwest grain farms have much different cash-flow characteristics than West-coast ranches with tree crops and vineyards.

UNDERWRITING STANDARDS AND RISKS IN
SECONDARY MARKETS: A PRIMER

This appendix provides answers to key questions on underwriting standards and risks in secondary markets. Those questions are (1) What are mortgage underwriting standards?, (2) How are risks borne in a secondary mortgage market?, and (3) What risk implications exist in current secondary market securities?¹

WHAT ARE UNDERWRITING STANDARDS?

Underwriting standards are criteria, or guidelines, used to limit the type and amount of risk of loss permitted in a financial portfolio and establish methods to insure against those risks. For example, if an automobile insurance company insures only drivers with accident-free driving records, the prices--or premiums--the company charges to insure against expected losses should be lower than if the company insures motorists without accident-free driving records. The underwriting guidelines in this case would address the driving records of those who potentially could be insured.

Underwriting is the process of (1) identifying potential risks of loss associated with financial instruments, such as insurance policies, and (2) either assessing the expected costs of covering those risks or providing the essential information that would allow others to make such a determination. Underwriting is an integral part of business and financial transactions that occur daily throughout the private and public sectors of the economy and involve the transfer and pricing of risk. The underwriting process is used when a business sells many types of financial instruments, including insurance policies, stocks, bonds, and loans.

Banks use the underwriting process and underwriting standards to make individual loans that they may hold in their portfolio or later sell in a secondary market. These standards address factors, such as past credit history, current and projected income, and expenses, that reflect on the potential borrower's willingness and ability to pay. This information is used to make a lending decision. When a bank decides to make a loan, it sets loan terms, including an interest rate, collateral values, and other conditions consistent with the risks involved in the loan. An individual with

¹This appendix was developed from information contained in section 1 of our report entitled Federal Agricultural Mortgage Corporation: Underwriting Standards Issues Facing the New Secondary Market (GAO/RCED-89-106BR, May 5, 1989).

a good credit rating and sufficient collateral is likely to receive more favorable terms--including a lower interest rate--than a borrower with a delinquent payment history or limited financial resources. Some risks, such as the credit risk and character of borrower, can be controlled through use of underwriting standards; other risks, such as the changing economic environment, cannot be controlled by underwriting standards and are handled through pricing and use of credit enhancements like insurance, reserves, or guarantees.

Underwriting in the Secondary Mortgage Markets

The investment market is usually defined in terms of primary and secondary markets. A primary market exists at the point that an original debt or ownership interest is created; for example, when a company sells a new issue of stock. In its simplest form, a secondary market transaction occurs when a loan is sold by the originating lender or a stock is resold by an investor. Thus, essentially a secondary market involves the buying and selling of existing rather than new products. Secondary markets exist for several types of financial assets, such as mortgages, car loans, credit card receivables, and manufacturers' notes receivable. A secondary market transaction is made when a bank sells existing loans to other banks or investors or when a number of these loans are packaged into pools and resold to investors through the use of securities backed by these loans or mortgage-backed securities. Risks inherent in the individual loans and the specific pools must be identified so that investors have confidence about their ultimate returns. Our report entitled Farm Finance: Secondary Markets for Agricultural Real Estate Loans (GAO/RCED-87-149BR) dated July 17, 1987, provides further information on the secondary mortgage market concept.

In secondary markets for residential and commercial mortgages, competent underwriting helps protect those who are taking the risks involved in guaranteeing payments of mortgage-backed securities. In these markets lenders can convert their long-term assets--which in this situation would be long-term mortgages--into short-term assets by selling the loans to secondary market entities. These entities buy loans that meet their criteria, which usually ensure that the loans are readily saleable. The secondary market entities package the loans or pool them together with other loans, using established underwriting standards, and in turn transfer or spread their risks by issuing securities backed by the underlying loans to the investing public. As a result, investors can invest their funds in securities that can be easily converted into cash--having liquidity--and are marketable, without incurring the costs of evaluating the risk associated with individual loans. To encourage investors to purchase such securities and to increase their

confidence in the securities, poolers can guarantee or insure timely principal and interest payments, for a price, through the use of private insurers. Governmental guarantors also, at times, bear the risks of loss associated with the securities.

The Federal Home Loan Mortgage Corporation (Freddie Mac), Federal National Mortgage Association (Fannie Mae), and Government National Mortgage Association (Ginnie Mae) were created for the purpose of sponsoring secondary markets. Freddie Mac and Fannie Mae are known as government-sponsored enterprises,² and Ginnie Mae is a federal agency. These organizations operate with mortgage-backed securities having varying types of guarantees. Some guarantees are provided by the federal government; others are provided by the government-sponsored agency. Government agencies such as the Federal Housing Administration (FHA) and Veterans Administration (VA) also provide guarantees on individual mortgages, which lenders sell to poolers.

Underwriting standards in current government-sponsored secondary markets are found in legislation and in the agencies' implementing guidelines. Standards that are found in legislation may be stated in broad or specific terms. Standards found in implementing guidelines interpret, clarify, and expand upon legislated standards or are developed by the responsible agency to address areas where legislation is silent and where there is a need for guidelines. Legislation that provides specific standards limits the flexibility an agency has in carrying out certain provisions of the legislation but gives the Congress more control over the operation of the market.

Underwriting standards address both pools of loans that are used to back securities and individual loans that make up the pools. Some standards affect both pools and individual loans; others affect one or the other. For example, the size limitations of a pool would affect only the pool while the size limitations of individual loans could affect both the pool and the individual loan. In addition, standards applying to property appraisals generally affect only individual loans.

²A government-sponsored enterprise is an instrumentality established by the government and accorded favored regulatory treatment to increase access to the capital market for specific economic sectors--including agriculture--thought to be inadequately served by fully private lenders.

HOW ARE RISKS BORNE IN A SECONDARY MORTGAGE MARKET?

Existing secondary markets for residential mortgages, commercial loans, and certain agricultural loans are structured to manage risk by transferring risks to certain market participants. Risk bearers involved in secondary mortgage market transactions include (1) originators of loans (lenders), (2) poolers who purchase loans from the lenders and issue securities, (3) insurers of loans that are ultimately included in a pool, (4) guarantors of loan-backed securities issued by poolers, and (5) investors in the securities. Risks fall into two broad categories--risks related to changes in the general economy, which affect all securities, and risks that are unique or specific to individual securities.

Who Are the Risk Bearers?

All of the risk bearers--loan originators, poolers, insurers, guarantors, and investors--differ in the role they play in the secondary market for residential loans; but all make it possible for the existence of a large, active investment market for such loans. Most of the largest secondary mortgage markets are sponsored by the federal government. Organizations most often associated with the secondary residential mortgage market are Ginnie Mae, Fannie Mae, and Freddie Mac. All three serve as guarantors; Fannie Mae and Freddie Mac also serve as poolers and investors in loans that have not been pooled. Other organizations, such as large banks, mortgage bankers, and state and local governments, can serve alternately as all types of risk bearers--loan originators, poolers, insurers, guarantors, and investors--in a secondary mortgage market.

Ginnie Mae, Fannie Mae, and Freddie Mac--as guarantors--were created by federal law and thus have "agency status," and the financial community perceives that their securities are backed by the government.³ In reality, only Ginnie Mae is a federal agency, and its debt is backed by the full faith and credit of the federal government. However, Fannie Mae and Freddie Mac, although created by statutory charter, are private organizations without explicit federal government guarantees. These organizations do share a common characteristic of encouraging investors to buy mortgages or securities representing a pool of mortgages by assuming risks that would otherwise be borne by the original lender or the investor. This is done by providing a guarantee to investors that the principal and interest derived from the underlying mortgage payments will be paid in case of borrower default.

³This perceived government backing has not been tested for Fannie Mae and Freddie Mac.

What Are the Risks?

Potential risks in existing secondary markets include the general market risks of interest rate changes and inflation and the cash-flow risks inherent in defaults, prepayments, reinvestments, refinancing, and liquidity--the ability to quickly convert securities into cash. Some of these risks are less manageable than others, but existing secondary markets have used risk management to shift risk from their portfolios to other market participants. Market participants must use available information to identify and analyze these risks through market mechanisms and arrive at a price on securities that will compensate them for their perceived risk. Generally referred to as risk pricing, this process is used by participants to decide what types of securities would be better to meet the risk and investment return preferences of investors. In addition to risk pricing, the cost of conducting the buying and selling transactions must be included in determining security types.

To quantify and compare these risks and potential returns on alternative investments available in the market place, participants must have access to adequate market information. Investors form expectations about risks and returns on the basis of the information that is available at the time investment decisions are made. Market information addresses such factors as the history of loan defaults (when a borrower fails to repay the loan), delinquencies (when a borrower fails to make loan payments on time in accordance with established repayment schedules but does not default), bankruptcies, interest rate changes, market conditions, and early loan payments.

The greater the amount of relevant and reliable information available to investors at the time they form their risk and return expectations, the better the market is in discovering, pricing, and dealing with risks. For example, forecasts of market performance can be wrong, especially where little information exists, so the risk taker needs to analyze available information for developing different scenarios and evaluating possible default rates, interest rate changes, and other factors. The risk taker uses these scenarios to determine how to handle these risks, realizing that risks are not the same across the nation even for the same market or for similar markets and that methods for managing risks, such as portfolio diversification, do not necessarily eliminate risks but strive to make overall risks less volatile.

Certain risk factors affect the amount, timing, and uncertainty of cash flows received by investors but are difficult to measure. In agricultural loans, for example, federal farm

subsidy payments are subject to change, thus altering cash flow and affecting returns on agricultural investments. Further, federal farm credit programs that provide loan guarantees and interest rate subsidies can change, affecting the amount of the guarantees or subsidies and exposing investors to additional risks. Weather conditions, such as the 1988 drought, can also have adverse impacts on agriculture and change the cash-flow position of farmers in various regions of the country.

For most existing secondary market securities backed by pools of loans, information needed to evaluate risk for specific securities is available to some degree. Risk can be divided into general market risk and cash-flow risk. General market risk, of interest rate changes and inflation, affects returns to investors, is related to the overall movements in the general economy, and is usually more difficult to manage than cash-flow risk. Cash-flow risk stems from repayments of loan principal by borrowers. Cash-flow risk is specific or unique to a particular security issue and is caused by actions of the lender, borrower, pooler, or others, altering the cash flow to the investor.

General Market Risks

Major risks facing secondary market poolers and investors are changing market interest rates, which increase or decrease the market price of their securities, and inflation, which affects all securities by reducing the purchasing power of the income returns and invested dollars. Measuring these potential risks and the effects they could have on market participants' behavior is difficult because of the uncertainty in making, analyzing, and interpreting forecasts of future interest rates and inflation.

Interest rate risk can have a tremendous effect on the market value of securities. For example, when market interest rates increase, the value of lower-interest-rate securities held by investors, decreases. Because potential investors have the option to buy the new higher-interest-rate securities, all other things being equal, they would purchase the older securities from the current holders only if the market price of the securities were discounted to provide the same yield as the new securities. If, for some reason, investors holding the lower-interest-rate securities decided to sell in a higher-interest-rate environment, they would experience a loss on their investments.

Interest rate risks are sometimes managed by using a defense against financial loss called "hedging." Hedging makes it possible to reduce risks of volatile rates to security holders by negotiating set prices for the future regardless of whether the market rates increase, stay constant, or decrease. Security

holders, for instance, might enter into a contract to sell their securities at a later date for a set price. Whether the interest rate increases or decreases, they receive the same price at the time of the sale. The security holders have hedged against fluctuating interest rates and price declines.

Inflation risk is highly dependent on changes in the macroeconomic environment and other financial factors. Inflation refers to a rising level of prices as measured by a general price index. Inflation reduces the purchasing power of the dollar, and as a result, lenders tend to demand higher interest rates to compensate them for the reduction. For a particular security, risks of inflation, as well as changes in interest rates, can be managed through the use of innovative financial instruments, such as adjustable interest rate loans.

Cash-Flow Risks

Cash flow risks for an investor or a pooler in a secondary mortgage market involve the availability of funds for poolers to make payments to investors when due and for poolers and investors to obtain funds by liquidating the security when cash is needed. Availability depends primarily on whether (1) borrowers default or become delinquent on payments or pay the loans off early, (2) poolers reinvest excess cash flow wisely or are able to refinance when a shortfall occurs, and (3) the securities are liquid enough to be converted into cash. To help manage all these risks, a pooler would issue securities whereby mortgage payments are passed through to investors. However, investors might want different types of securities to avoid the same risks or may demand to be compensated for these risks by requiring a higher interest rate.

Default risk occurs when, and if, issuers of secondary market asset-backed securities fail to collect from loan originators enough mortgage payments to pay investors the periodic interest payments or to repay investors the principal amount at the time specified in the contract because borrowers default or become delinquent on the underlying mortgages. For example, borrowers with variable interest rate mortgages may not be able to make payments when interest rates increase. To protect the investors, some securities, such as bonds, contain provisions that place strict obligations on the issuer who generally holds the mortgages. Government-sponsored markets have additional provisions that preclude a loan originator who defaults because of fraud from continued participation in the market.

In existing secondary markets, certain mechanisms--called credit enhancements--have been developed for transferring risks to other parties to help guard against the default risk being passed

on to investors. Issuers of securities can reduce or eliminate investors' exposure to these risks by using various methods of guaranteeing or insuring the timely payment of principal and interest, such as government guarantees, private insurance, or special reserves that can be drawn on to make such payments. For example, as far as investors are concerned, default and delinquency risk does not exist for U.S. Treasury securities. Securities of U.S. government-sponsored agencies, i.e., Fannie Mae, Freddie Mac, and Ginnie Mae are generally considered to have virtually no default or delinquency risk largely because of actual or implied government guarantees to pay security holders and because investors believe that the government would act to prevent these organizations from defaulting.

Prepayment risk is manifested when borrowers make early principal payments on mortgages or pay the entire principal amount before loan maturity. For example, as interest rates decrease, a borrower with a fixed interest rate is more likely to pay off the mortgage--thereby removing it from the pool of loans--more quickly so it can be refinanced at a lower rate. Conversely, when interest rates increase, a borrower who has a variable-rate loan and expects that interest rates will continue to rise over an extended period may pay off the loan and obtain a fixed-rate loan to lock in an interest rate. Under these scenarios, all principal is repaid but future interest payments are forfeited. This creates reinvestment decisions on how to obtain the best returns in a "down" interest rate market. (See the discussion under "Reinvestment risk" below.)

Prepayments expose investors in some types of secondary mortgage market securities to the risk that they will receive less return on their investment than anticipated. These prepayments mean that the principal amount of a loan is invested for a shorter period than investors expected and, as a result, can expose investors to the possibility that they may not be able to reinvest funds received as prepayments to receive the same or greater return.

Investors can avoid prepayment risk by buying securities, such as bonds, that do not permit prepayments and that promise to pay specified amounts of principal and interest periodically over the life of the security. Where permissible, institutions may charge fees or higher interest rates for loans that are prepaid or subject to prepayment conditions to cover the added risks involved. For example, some commercial real estate mortgages include terms that allow lenders to impose a penalty charge on borrowers who pay off their loans during the first few years of the mortgage. In addition, some lenders charge higher interest rates on loans that

allow prepayments, as a pricing mechanism to recognize the risk involved in that kind of loan.

Reinvestment risk is caused by poolers having idle funds resulting from a difference in amount and/or timing of (1) income received by the pooler from mortgage payments and (2) amounts paid to investors. For example, a pooler receives annual payments from borrowers and splits these into quarterly payments to investors; the pooler invests all funds received that are not paid to investors. Both poolers and investors in loan-backed securities are subject to the risk of poolers having to invest cash receipts (interest income and principal payments, including prepayments) at lower than anticipated interest rates because of a general decline in market rates. As a result, the actual return on the investment could be less than the expected return. Investors can reduce potential reinvestment risks by purchasing bonds that pay a fixed amount at maturity.

Refinancing risk occurs when a pooler has a shortage of funds because of a timing difference between cash inflows from loans and cash outflows to investors in securities backed by the loans. This timing difference may cause the pooler to borrow funds to avoid a shortfall in making scheduled payments to investors. For example, defaults on underlying loans for a bond issue may cause a shortfall in cash flows going into the pool. It may take some time before foreclosure and recovery can be accomplished. In the interim, the pooler may have to obtain additional carryover financing--or refinance--to make up cash deficiencies in meeting semiannual interest payments on the outstanding securities until maturity. Investors do not experience refinancing risk in secondary markets, and poolers can minimize risk by using security design structures that pass payments directly to investors.

Liquidity risk in a secondary market relates to the ability to convert the asset-backed securities into cash quickly. It is a risk investors take that they will not be able to readily dispose of their investments through the subsequent sale of the security at a price that will let them recoup their original investment at any time they choose. In general, the more uncertainty that exists, the thinner the market and the greater the liquidity risk. For example, a U.S. government security has little or no liquidity risk because such securities are widely traded, partly because of the investors' faith that the government will stand behind it, whereas the stock of a small company traded on the open market may have substantial liquidity risk. Liquidity risk can be lessened by purchasing low-risk securities, such as Treasury securities, that are actively traded in a secondary market characterized by a large number of buyers and sellers.

WHAT RISK IMPLICATIONS EXIST IN
CURRENT SECONDARY MARKET SECURITIES?

The success of the various secondary markets in attracting a wide range of investors was made possible in part by their ability to offer a variety of asset-backed securities--including pass-through securities, mortgage-backed bonds, mortgage pay-through bonds, collateralized mortgage obligations (CMO), and real estate mortgage investment conduits (REMIC)--designed to provide the risk protection and returns sought by investors. These securities, described more fully below, have different risk implications for the market participants, ranging from almost no risks to high risks. The residential mortgage secondary markets have led the way in the area of security design. Other secondary markets offer securities modeled after those originally introduced by Ginnie Mae, Fannie Mae, and Freddie Mac. Investors in securities backed by mortgages include commercial banks; savings and loan associations; mutual savings banks; state and local government agencies; pension funds; and private citizens, either individually or through mutual funds. These securities allow investors to invest in mortgage assets without having to become involved in the costly administrative details.

Pass-Through Securities

With a pass-through security, the borrowers' mortgage payments of interest and principal, minus fees for servicing and other charges, are passed through to the holders. Thus, the holders of a pass-through security have an ownership interest in the security's underlying mortgages.

Since the security holders own the mortgages, they are subject to risks of interest rate and inflation, default, prepayment, reinvestment, and liquidity. However, the major risk associated with residential mortgage-backed pass-through securities is prepayment caused when borrowers refinance mortgages as market interest rates decline. This often can result in a reduction in total return to the security holders. Frequently, poolers bear the risk of default by guaranteeing or insuring, for a fee, the timely payment of principal and interest to investors. The most common pass-through security is the Ginnie Mae, which is issued by private entities and backed by residential mortgages insured by FHA and VA. Ginnie Mae offers, through the full faith and credit of the federal government, guarantees for the timely payment of scheduled monthly principal and eventual payment of interest to investors.

Mortgage pass-through securities are also issued directly by private originators or poolers. These pass-throughs are not insured or guaranteed by any government agency but are supported

only by the quality of the underlying loans and any credit enhancement mechanism used to transfer the risk of the pool to another party. Two types of credit enhancements traditionally have been used to manage pass-through risks, namely mortgage pool insurance, or guarantees provided by private insurance companies, and letters of credit provided by commercial banks.

In 1986, private sector entities began issuing a third type of credit enhancement, senior/subordinated pass-through securities. In such securities, payments of principal and interest are passed through to investors on a prioritized basis: servicing and trustee fees are paid first; senior security holders are paid second; a reserve fund is established and maintained at a certain balance third; and finally, subordinated security holders are paid from any remaining funds. The size of the subordinated class of securities is established according to how much protection against loss the investor or issuer desires--the larger the subordinated class, the more protection--and what security rating is sought--the better the rating, the more protection is needed.

The senior pass-throughs are usually sold to investors after being rated by a nationally recognized agency, such as Standard and Poor's Corporation or Moody's Investors Service. The rating on the senior security is supported by the subordinated security in that no payments are made to the subordinated security holders until after the senior security holders have been paid. These subordinated securities may be designed to meet the needs of the participants and may be sold to investors or retained by the issuer. In some cases, the subordinated securities have been sold to investors at a substantially higher yield compared to the senior class of securities because of the higher risk associated with their expected cash flows. A July 1988 study by Goldman, Sachs and Company indicates that, through June 1988, about 60 percent of conventional pass-throughs had this type of credit enhancement.

Mortgage-Backed Bonds

Mortgage-backed bonds are secured, or collateralized, by home mortgage loans owned by the bond issuer who is usually a private-sector mortgage originator, such as a savings and loan association, a savings bank, or a mortgage banker. These securities have a maturity date and a stated principal and rate of interest. They promise to pay investors interest semiannually and to repay the principal amount at maturity.

Prepayment, reinvestment, and refinancing risks are borne by the issuer of mortgage-backed bonds since the bond contract provides for the issuer to make scheduled interest and principal payments without regard to the timing or amount of payments the

issuer receives from the pooled mortgages. Default risk for mortgage-backed bonds is minimized since such bonds are usually over-collateralized, meaning that the collateral must continue to have a market value exceeding the face value of the outstanding bonds.

Mortgage Pay-Through Bonds

Mortgage pay-through bonds are collateralized by home mortgage loans owned by the bond issuer who is usually the mortgage originator, such as a savings and loan association, a savings bank, or a mortgage banker. These bonds are like pass-through securities in that they link the cash flow from the collateral to the cash flow on the bonds. Payment frequencies of the borrower on the mortgage and the issuer on the bonds may differ; however, the issuer assumes the risk of making up any shortfall. Principal payments on the bonds fluctuate depending on prepayments, defaults, and delinquent payments.

The issuer assumes any reinvestment risks due to prepayments. However, in the event of default, who assumes the risk depends on the liquidation value of the collateral and the types of guarantees and insurance provided in the contract between the issuer and the bond holder.

Collateralized Mortgage Obligations

CMOs are bonds created from the cash flow of underlying pools of conventional mortgages. The principal and interest receipts from the mortgages have no direct relationship to payments to the bond holders. Each pool of mortgages that backs the bonds is divided into a series of bonds, commonly referred to as "tranches," that have their own maturity dates and fixed interest rates. Cash flow from the mortgages is used by the issuer to make payments to holders of the various tranches. These payments are prioritized: first, interest payments are made to all tranches, and then principal payments are made to the tranche that has the earliest maturity date, to the tranche with the next earliest maturity date, and so on. After interest payments have been made, all available cash goes to repay principal on the "fastest-pay" tranche. Following retirement of the first tranche, the next tranche in the sequence becomes the exclusive recipient of principal payments until this tranche is retired. This sequential process continues until the last tranche of bonds is retired. The most common type of CMO has been a four-tranche CMO, although CMOs have been structured with over a dozen tranches. The average life of individual tranches may overlap or there may be gaps of time between the tranches. The average maturity of a four-tranche CMO might be as follows: first-tranche bonds, 1 to 3 years; second-

tranche bonds, 3 to 7 years; third-tranche bonds, 5 to 10 years; and fourth-tranche bonds, 15 to 20 years.

The earlier tranches have short or intermediate final maturities and attract investors seeking low exposure to interest rate risk. Since the shorter tranches must be retired before the longer tranches receive principal payments, the longer tranches have a limited amount of prepayment and reinvestment risk although they are exposed to risks of default, inflation, and liquidity. Investors who desire less prepayment risk and less reinvestment risk prefer the longer tranche of a CMO over a pass-through security that has no prepayment risk protection.

Real Estate Mortgage Investment Conduits

The Tax Reform Act of 1986 permitted a new tax-free entity called a REMIC that can hold mortgages secured by any type of real estate and issue multiple classes of mortgage-backed securities to investors. (Securities, issued by these entities, also have come to be known as REMICs.) Among other things, the law grants flexibility to entities who issue mortgage-backed securities and elect to be treated as a REMIC for tax purposes by allowing them to use all the above mortgage-backed security designs that are tailored to meet specific investor needs without being taxed as a separate taxable entity.⁴

Generally, an entity qualifies as a REMIC if substantially all of its assets consist of qualified mortgages. A REMIC offers advantages to issuers of mortgage-backed securities: (1) a REMIC is treated as a partnership for tax purposes, meaning that it is not subject to federal income tax provided it meets all the requirements of the law, and (2) REMICs can structure mortgage-backed securities to allow the pooler to consider the issuance either as a pass-through or as a CMO. Since a REMIC is capable of issuing multiple-classes of mortgage-backed securities that resemble CMOs, risks of interest rate, inflation, default, prepayment, reinvestment, and liquidity apply much the same as with CMOs, depending on the length of maturities of the various classes.

In secondary mortgage markets, tax considerations are important because decisions about the type of mortgage-backed securities sold to investors is affected by the economic consequences of existing tax laws. Securities issued by REMICs are one of the newest forms of mortgage-backed securities in secondary

⁴ For a discussion of REMICs and their operations, see our report entitled Housing Finance: Agency Issuance of Real Estate Mortgage Investment Conduits (GAO/GGD-88-111, Sept. 2, 1988).

mortgage markets, and the volume of these securities has grown to an annual issuance of over \$300 billion. Government-sponsored residential mortgage secondary markets--Fannie Mae and Freddie Mac--have issued most of the REMICs to date.

KEY UNDERWRITING STANDARDS ISSUES FACING FARMER MAC

On the basis of our review of underwriting standards provisions for Farmer Mac in the Agricultural Credit Act of 1987, underwriting standards and practices used in various existing secondary markets, and our discussions with individuals and officials from both the private sector and the government, we believe that the following are key issues relating to overall risk management that merit consideration during the legislative review process for Farmer Mac underwriting standards.¹

WHAT ARE THE IMPLICATIONS OF THE GEOGRAPHICAL DIVERSITY REQUIREMENTS IN THE ACT?

The act requires each loan pool to consist of loans that are secured by agricultural real estate that is widely distributed geographically. The act does not define what is meant by "widely distributed geographically;" however, this concept could have a major effect on market operation and performance.

Defining geographic diversity will require determining levels of risk Farmer Mac should accept in providing guarantees for pools of loans from different areas of the country. For example, pools of loans concentrated in one area or region whose economy is not diversified are more likely to fluctuate with that area's economic conditions, thereby making the pool more risky. Some areas of the United States have a higher degree of risk than others because of such factors as less crop diversity, more unpredictable weather conditions, poorer soil, fewer transportation networks, and the area's reliance on export versus domestic markets. Secondary markets, in general, have the ability to reduce overall risk by spreading risks of individual loans over a pool of loans. One way to spread those risks is to include in the pool loans from various parts of the United States so that the pool does not consist of loans only from the same area/region. Areas, such as the West Coast--with diverse agricultural commodities and a high degree of domestic and export commodity mix--could conceivably be packaged into pools that would have less overall risk than a pool of loans from the Midwest--with a reliance on export markets that may rise as they did in the 1970s or slump as they did in the early 1980s. Thus, packaging Midwest and West Coast loans into one pool may improve the risk performance of a purely midwestern pool of loans.

¹This appendix was developed from information contained in section 4 of our report entitled Federal Agricultural Mortgage Corporation: Underwriting Standards Issues Facing the New Secondary Market (GAO/RCED-89-106BR, May 5, 1989).

Defining what is meant by loans that are secured by agricultural real estate that is widely distributed geographically may also require determining the size that financial institutions should be to be poolers of Farmer Mac-guaranteed loans. A definition of "widely distributed" may stipulate any of several pool constructions: a national portfolio consisting of loans from all regions of the United States; a regional portfolio of loans from one region (such as the Southwest, Midwest, or West Coast); a portfolio from one or two states; or any combination of these or other interpretations. The wider the area encompassed in this definition, the more difficult it will be for smaller financial entities to be primary poolers since they would need to have access to a regional or nationwide network to purchase loans outside their areas. However, under this scenario, smaller organizations could conceivably become subpoolers or regional poolers that package loans to be sold to the major pooler and included in large pools receiving a Farmer Mac guarantee.

The demographic characteristics of stockholders that purchased Farmer Mac stock indicate that the market structure may be able to accommodate a national diversification strategy and, at the same time, meet legislative requirements that smaller institutions be included in the market so that liquidity in the loan market can be achieved at these institutions. Preliminary analysis indicates that both small and large institutions--including those with assets of \$25 million or less and those with over \$160 billion--operating in all states have purchased Farmer Mac stock and that they are predominantly from the Midwest. In addition, most of those that have purchased enough stock to be poolers are generally large enough to be regional or national poolers.

In December 1988, the Farmer Mac Interim Board completed its sale of common stock for capitalization purposes and for purposes of determining which stockholders would qualify to be poolers and which ones could be only loan originators. The stock was divided into two classes--A and B--with the same par value per share. Class A stock was to be held only by non-FCS entities that are insurance companies, banks, or other financial institutions. Class B stock was to be held only by FCS institutions. All potential stockholders were required to purchase at least 250 shares of stock to participate in the market. Potential class A stock purchasers had to purchase designated amounts of stock based on their asset size while potential class B stock purchasers only had to purchase 250 shares regardless of size. Potential class A stockholders were required to purchase stock based on the following schedule: 250 shares for institutions with less than \$50 million in assets; 500 shares for institutions with between \$50 million and \$100 million in assets; 1,250 shares for institutions with between \$100 million

to \$500 million in assets; and 5,000 shares for institutions with over \$500 million in assets. Additionally, both class A or class B stock purchasers who desired to become poolers had to purchase at least 12,500 shares.

Preliminary analysis of class A stock purchase transactions indicates that 1,614 institutions purchased stock. Information on class B stock was not available for analysis. Of those that purchased class A stock, 22 purchased enough to qualify, contingent on meeting Farmer Mac certification standards, as poolers--10 of which are commercial banking institutions, 3 are investment banks, 6 are insurance companies, 2 are trust companies, and 1 is a commodity firm.

According to an analysis performed by the Independent Bankers Association of America, of the 1,614 institutions that purchased class A stock, 1,496 are commercial banking institutions. Current analysis indicates only that the other 118 were not commercial banks. About 74 percent, or 1,100 of the institutions have assets of less than \$50 million--574 with assets of \$25 million or less, 326 with assets from \$25 million to \$37.5 million, and 203 with assets from \$37.5 million to \$50 million. In addition, about 26 percent, or 393 banking institutions with assets over \$50 million bought shares: 284 with assets from \$50 million to \$100 million; 93 with assets from \$100 million to \$500 million; and 16 with assets over \$500 million. Involving the smaller banking institutions in Farmer Mac appears to be consistent with the act's requirement of not discriminating against small lenders and its purpose of providing greater liquidity so that agricultural borrowers might benefit from the new market.

At the time the shares were offered, all 12 Farm Credit Banks and the Central Bank for Cooperatives indicated that they would purchase class B shares. As a result of the Agricultural Credit Act of 1987, the FCS is undergoing reorganization including a mandatory merger of various banks comprising the system. Although FCS officials had made no decisions on who would be poolers or originators, they told us that they are currently working on a plan to develop a FCS-wide certified pooler with all FCS institutions as potential originators of loans.

WHAT ARE THE IMPLICATIONS OF AGRICULTURAL
COMMODITY DIVERSITY REQUIREMENTS IN THE ACT?

The act states that a pool must consist of agricultural real estate loans representing a wide range of agricultural commodities. The term "wide range" is not defined in the act, yet such a definition could have a major impact on the operation of the market. This issue is closely related to geographical diversity.

Secondary markets can use loan diversity within a pool to help spread risks; however, most residential secondary markets have loan pools that are homogeneous in terms of loan types, for example, 1-to-4 family homes. In the case of Farmer Mac, it may be possible to reduce risk of default of any one pool when a pool includes loans covering a diversity of commodities. If a pool consists of loans backed by agricultural real estate used to produce a diversity of commodities (such as wheat, grapes, cattle, corn, vegetables, and fruit), poor economic performance by any one commodity would tend to have less effect on the overall portfolio than a pool that consisted of only one commodity type and that commodity was performing poorly.

Individual banks and holding companies located in a region that produces primarily one or two types of commodities may find it easier to become poolers of agricultural real estate loans if a "wide range" of commodity diversity is defined to mean commodity diversity within a given region. However, that definition may translate to fewer rather than a larger number of commodities and more potential risks for poolers. On the other hand, national poolers may have less risk--as explained above--and regional poolers would probably be able to buy loans outside their regions to become national poolers.

CAN STATE-OF-THE-ART REAL ESTATE APPRAISALS PROVIDE ENOUGH ASSURANCE IN VERIFYING CASH-FLOW POTENTIAL AND AGRICULTURAL REAL ESTATE VALUES TO ENABLE PRUDENT LOAN-MAKING DECISIONS?

An agricultural real estate loan by nature is more difficult to appraise because of its complexity. It tends to be more similar to a commercial real estate loan--rather than a residential loan--relying on income generated through commodity production to repay the loan. In contrast, residential real estate, even rental property, relies on the current resident's income that can come from diverse sources reflecting a wide variety of professions.

An appraisal of agricultural real estate depends, to a large extent, on cash flow as a key factor in making a reliable estimate of both annual operating income and the fair market value of any commercial enterprise or farm. Income and fair market value estimates are used to determine the debt-carrying ability of the enterprise, thereby providing information to evaluate against certain qualifying financial ratios. The fair market value estimate, which represents the appraised value of the enterprise, is also used in setting maximum loan size by multiplying fair market value by the loan-to-value ratio.

State-of-the-art appraisals are based primarily on residential rather than commercial business appraisal methods and techniques. Differences between housing and agricultural markets bring into question whether these methods and techniques will provide a reliable verification of agricultural real estate values and related cash-flow patterns for loan-making and underwriting purposes. (See app. III of GAO/RCED-89-106BR for a more detailed discussion of appraisals.) Some important distinctions between agriculture and housing credit markets exist:

- Off-farm income can provide an additional income stream to evaluate in making loans. However, loans for agriculture real estate are based on the expected cash flow generated by commodities the borrower can produce and sell, realizing that production and sales rely heavily on factors--such as changing federal farm subsidies, world market demand, weather conditions, and interest rates--that are largely uncontrollable by the farmer.
- A residence generally has a relatively stable collateral value that some business enterprises may lack.
- Farm properties are much less homogeneous than residences, have higher unit prices, are harder to appraise, and may be more difficult to liquidate if the loan defaults.
- In agriculture, the capacity of the operator, in terms of both financial and business/management skills, has an important determining effect on the value of the collateral.

In recent years, various government reports have questioned the ability of the appraisal industry and financial institutions involved in loan making to ensure that appraisal practices provide a basis for adequate loan-making decisions. According to a 1988 report from the House Committee on Government Operations, faulty and fraudulent appraisals have been associated with a number of failed banks and savings and loan institutions. According to the report, these abusive appraisals are recognized as a serious national problem whose harmful effects are widespread and costly. Additionally, a 1986 report from the House Committee on Government Operations states that standardization in appraiser qualifications is lacking--only 33 percent of the nation's real estate appraisers belong to any highly regarded professional trade association; and these organizations have been unable to successfully discipline their members. Further, in testimony before the House Committee on

Banking, Finance, and Urban Affairs on January 13, 1989,² GAO reported that, of the 26 failed savings and loan institutions reviewed, 88 percent had violated federal regulations requiring them to obtain appraisals of loans. Some did not obtain appraisals or obtained appraisals after the loan had been made.

The Congress has taken steps to reduce appraisal fraud, abuse, and inconsistency and to raise the standards of the real estate appraisal profession to a level at which all real estate appraisers will produce the highest quality work for their clients. The Subcommittee on Commerce, Consumer, and Monetary Affairs, House Committee on Government Operations, proposed legislation in November 1987--the Subcommittee plans to reintroduce the appraisal legislation in the 101st Congress--to establish uniform appraisal standards at the federal level to ensure that any loan or transaction that could ultimately lead to federal government liability and involve appraisals is to have appraisals performed in accordance with uniform standards by certified appraisers. Although not specifically included in the proposal, agricultural standards could be interpreted to come under the purview of the legislation. According to officials of the American Society of Farm Managers and Rural Appraisers, mortgages sold in the new agricultural real estate secondary market should be included in the appraisal guidelines in this proposed legislation. They said that appraisers of agricultural real estate should be certified with additional accreditation and education documenting their abilities as rural real estate appraisers.

Given the billions of dollars of government-sponsored secondary mortgage market securities outstanding and the current savings and loan problems--many directly related to appraisals--the potential liability to the government, as a result, is becoming an increasingly important concern for secondary markets in general. Because Farmer Mac's legislative history indicates that the Congress did not want the government to assume major risks in this market, the "lessons learned" from the savings and loan appraisal problems may help formulate appraisal policy for Farmer Mac.

HOW WOULD THE USE OF LENDER OR POOLER SUBORDINATED PARTICIPATION INTERESTS VERSUS CASH RESERVES AFFECT THE FEDERAL GOVERNMENT'S FINANCIAL RISK ON SECURITIES GUARANTEED BY FARMER MAC?

The act provides that a pooler must establish either a cash reserve or subordinated participation interests of at least 10

2Failed Financial Institutions: Reasons, Costs, Remedies and Unsolved Issues (GAO/T-AFMD-89-1, Jan. 13, 1989).

percent of the outstanding principal of a pool of loans. In the event of a pooler's inability to make principal and interest payments to investors, these funding sources are to be used first to make such payments. The act does not provide a clear definition of subordinated participation interest. In addition, it does not explain how pooler's and lender's cash reserves are to be structured.

The Senate report on the bill, which became the Farmer Mac legislation, states that the subordinated participation interest provision ensures that FCS banks and associations in a weakened financial condition will not be precluded from participating in this market because of an inability to establish a cash reserve. The conference report accompanying the act states that it was the intent of the conferees to provide poolers with flexibility in the design of subordinated participation interests. Although the act specifies a cash reserve of at least 10 percent of the outstanding principal of the pool is to be established, it does not specify that it must be "maintained" at the same level.

The legislative history does not indicate whether the Congress intended to accept more risk by using either a subordinated participation or a cash reserve credit enhancement but does indicate that the Congress did not want to assume major risk exposure from Farmer Mac. The amount of potential government risk that is ultimately realized depends on how the cash reserves and subordinated participation interests are structured.

Current Usage of Cash Reserves

An entity that issues securities may establish and maintain a pure cash reserve by depositing a predetermined amount of cash into a separate account at the time securities are sold to investors. Interest income earned on the reserve may be added to the reserve balance or withdrawn, depending on the terms of the contract.

Although existing government-sponsored residential mortgage markets do not require cash reserves, private issuers of conventional mortgage-backed securities, at times, establish cash reserves in conjunction with other credit enhancements. In the event of payment delays, the issuer draws down the reserve as necessary to provide payments to investors. The initial size of such a reserve and the amount maintained--as a percentage of the outstanding principal of the pool--vary according to the risk of the underlying loans and the rating of the security sought by the issuer. The size of a cash reserve also depends on what other credit enhancements have been set up for the security.

Current Usage of Subordinated Participation Interests

The subordinated participation is a relatively new credit enhancement technique that has taken several forms initially and through evolution. Essentially, a subordinated participation is that portion of a loan that a lender does not sell when selling loans in a secondary market transaction. When the lender retains ownership in a portion of the loan, that lender also has the right to receive principal and interest payments on that portion of the loan. In the event of a cash-flow shortage caused by borrower nonpayment on the underlying loans, the lender agrees to subordinate or forego the principal and interest payments that it would receive during a payment period so those funds can be used to make payments to investors holding senior securities--those that receive payments first--during that same period. This security design reduces or eliminates reliance on guarantors other than lenders and poolers. In existing secondary markets, the subordinated portion is retained by the lender or pooler or is sold to investors as a separate class of securities. To make the subordinate security more attractive to investors, in practice, it has been supplemented by other forms of credit enhancements, such as insurance or cash reserves dedicated to protect subordinate security investors.

Some private poolers of conventional residential and commercial real estate mortgages use a security design by which principal and interest payments, when received, are paid first to senior security holders with any excess cash being disbursed to subordinated security holders. One characteristic of this type of security design is that unless specified otherwise, only the current payment--whether it is monthly, quarterly, or annually--to the subordinate holder can be used to pay cash-flow shortages to senior security holders; no past or future payments to subordinate holders can be used. Having no recourse beyond the current payment period could limit risk to the lender and shift that risk to secondary market guarantors in periods where large cash-flow shortfalls occur in a short time rather than over a period of time.

To guard against this risk and provide additional credit enhancement to the investors, poolers and lenders holding subordinated participations sometimes establish a small cash reserve--referred to as a liquidity reserve--for disbursing cash to investors who hold senior securities. The liquidity reserve has been established by lenders or poolers depositing a certain amount in the reserve when the loan is pooled or by escrowing into the reserve a certain percentage--generally less than 1 percent in housing markets--of each month's cash flow to the subordinate security holder. The amount of the liquidity reserve, at times, is

determined by rating agencies who set formulas based on other credit enhancement and the ratings desired for a given security.

Unclear What Effects the Use of
Subordinated Participation Interests
Versus Cash Reserves Will Have on
Government Risk

The legislative history indicates that the government did not want to be exposed to major risk through Farmer Mac. One method of reducing government risk was to allow poolers to establish cash reserves or subordinated participation interests to ensure payments to investors. When borrowers make payments of principal and interest on loans backing up a pool, these payments are used to pay investors who hold the securities backed by the pool. The cash reserves and subordinated participations are provided for this market so that, in the event that borrowers do not make payments as scheduled, funds are available from poolers and lenders rather than from the government to pay investors to make up shortfalls. However, even with a cash reserve or subordinated-participation-interest level of at least 10 percent--the level required by the implementing legislation--Farmer Mac and the government may be exposed to risk.

The act states that a pooler must take full recourse against reserves and subordinated participations; but because the act does not specify the mechanics of either, it is not clear exactly what full recourse entails. In the case of a cash reserve, full recourse would probably apply to all cash in the reserve. With a subordinated participation, full recourse would be according to the specific terms set out in the subordinated participation agreement. Since subordinated participation is not yet sufficiently defined to determine what full recourse entails, the financial and risk implications of full recourse to the subordinated participation cannot be determined. Until it is determined how the subordinated participation or cash reserve will be structured, the comparative risk implications to the government when using either of these for Farmer Mac-guaranteed securities cannot be determined. However, to the degree that limitations are put on the ability of poolers to collect cash-flow shortages--resulting from nonpayment by borrowers--from a subordinated participation or cash reserve, Farmer Mac and potentially the government will be expected to make up the difference.

The most critical concern in structuring a subordinated participation or a cash reserve focuses on how likely it will be that cash-flow shortages from borrower nonpayment will exceed cash reserves or the amount of shortages that can be obtained from subordinated holders to pay to investors. If it is likely that

payment shortages will exceed the cash reserves or the amount that may be obtained through recourse to the subordinate security holders, then the question focuses on who will provide the guaranteed payments to investors. Unless Farmer Mac is able to make up that shortfall through other mechanisms, such as liquidity reserves and risk-based fees, it may have to activate its \$1.5 billion line of credit from the Treasury. If that were to become inadequate, the government's implied backing of the "agency" would be tested.

The ultimate potential loss to the government under this scenario would be reduced by the amounts--minus collection costs--that could eventually be collected from those nonpaying borrowers through normal collection procedures including extreme measures, such as foreclosures and liquidation of borrower assets.

Options to Be Considered

Cash reserves maintained at a certain percent of the outstanding balance of a pool--at least 10 percent in Farmer Mac's case--will provide greater protection to the government than cash reserves that can be drawn down; however, cash reserves that are maintained at a certain level could be more costly to lenders and poolers. Subordinated participation interests provide varying levels of protection to the government depending on the mechanics of the full recourse the government has to subordinated participation interest holders. Costs to these holders can also vary depending on the amount of recourse.

In the short run, cash reserves are likely to be more costly credit enhancements for lenders and poolers than a subordinated participation interest as used in practice today (see discussion above) because more cash--at least 10 percent--must be provided up front when using the Farmer Mac-specified cash reserve. In the long run, the cost for lenders and poolers would depend on the actual mechanics of the cash reserve and subordinated participation. As indicated previously, subordinated participation and cash reserves are not yet sufficiently defined and their comparative risk implications to the government cannot be determined. However, a cash reserve may be a less risky method for the government in both the long and short run because it provides assurances that the agreed-upon cash amount will be available at all times, versus relying on future collections of cash-flow shortages from subordinated security holders. The competing congressional concerns about (1) minimizing up-front cash-flow needs by lenders or poolers and (2) containing government risk exposure could be addressed through various cash reserve and subordinated participation structures or other credit enhancements. Many options are certainly available to address these concerns.

Some options presented below could be used singularly or in combination to achieve the most desirable credit enhancement package.

- Subordinated participation interests could be adjusted above 10 percent to better ensure that defaults over 10 percent will be covered by the subordinated securities' current cash flows--the higher the subordinated participation interest, the more cash flow is available to cover nonpayments.
- A combination of cash reserves and subordinated participation interests could be used.
- A liquidity reserve escrowed from current cash flows or initially deposited by the pooler/lender could be established to provide some back-up cash to pay current cash-flow shortages that are beyond the current cash flow from the subordinated security.
- A subordinated participation could be used to allow total and immediate recourse to the pooler or lender in the amount of the cash reserve that the lender and pooler could have elected to contribute to as an alternative to subordinated participation interests.
- A subordinated participation could be used to allow recourse on each payment period's cash flow to the lender or pooler up to the amount of the cash reserve they could have elected as an alternative to subordinated participation interests.
- Private mortgage insurance could be required on loans sold into the pool or on the subordinated portion only.
- Crop insurance on all or part of a loan could be required to help ensure cash flow in the event of failed or poor crops.
- Geographical and/or commodity diversity could be broad to try to minimize risk in the portfolio.
- Risk-based fees on individual pools could be raised.

These modifications could result in a profit-margin squeeze for participating lenders and poolers because of potential added costs. Depending on the competitiveness of the market, this could also result in higher costs of credit to the borrower.

Some Farmer Mac representatives we talked to indicated that strong certification standards for poolers may reduce the need for monetary credit enhancements. They said that strict requirements for poolers to monitor loan originators, especially appraisal practices, could reduce the potential risk in the market. In addition, the offering circular for Farmer Mac stock states that the interim board recommended that the permanent board establish a minimum capital requirement of \$2 million for certified poolers, which Farmer Mac representatives said would help to ensure the financial integrity of the market. These measures could help ensure that risk parameters set out by Farmer Mac are met but still do not resolve the questions concerning timing and amount of recourse to subordinated participation interest holders for loan pool losses.

WILL THE PRESCRIBED RISK-BASED FEES
BE ADEQUATE FOR FARMER MAC?

A pooler is to pay to Farmer Mac an amount not to exceed 0.5 percent of the amount of the initial principal of the pool plus up to 0.5 percent of the outstanding balance of the pool each year to be used as Farmer Mac's risk-based fee. In the event of borrower's nonpayment of loans backing securities guaranteed by Farmer Mac and after all other cash reserves or subordinated participation interests are exhausted, these fees are used as a last resort to pay security holders before Farmer Mac draws on its own resources or its line of credit to the Treasury to make good on its guarantee. If Farmer Mac cannot maintain timely payment of principal and interest on the loan pool, then it may need to draw on the Treasury.

Since historical information on default rates for agricultural real estate loans is limited, it is difficult at this time to determine whether a risk-based fee of 0.5 percent initially and per year will be adequate. In residential markets where such data exist, a minimum, rather than a maximum rate is set. It is not normal practice to set a maximum rate for such a fee in a secondary market because the fee then could cease to be based on risk. Instead it could become more of a management decision reflecting political or economical factors not necessarily risk-related. Setting risk-based fees requires reliable historical information on default and foreclosure rates that currently does not exist for agriculture.

The risk-based fee does not necessarily operate independently of other credit enhancement mechanisms. For example, adjustments in the amount of cash reserves or subordinated participation interests can be made in conjunction with the risk-based fee rates to cover these expected losses. Such an approach, however,

requires the need for a great deal of flexibility on Farmer Mac's part.

An additional consideration is presented in the offering circular for Farmer Mac stocks--that the primary source of funding for Farmer Mac operations will be the risk-based fee. Even though a portion of the fee is to be set aside by Farmer Mac in a segregated account as a reserve against losses from guarantee activities, there may be a constant draw-down of this fee for daily operations of Farmer Mac. Neither the act nor the offering circular defines what portion will be set aside.

WHAT IMPLICATIONS DO SEC REGISTRATION AND DISCLOSURE REQUIREMENTS HAVE FOR FARMER MAC-GUARANTEED SECURITIES?

The act requires that securities offered to the public and backed by a Farmer Mac guarantee must be registered with the SEC. The Securities Act of 1933 requires issuers to file with the SEC a registration statement and a prospectus before offering the securities to the public. The purpose of registration is to ensure full and fair disclosure of information about the company, its management, and the intended use of the proceeds from the issue. These disclosures are meant to help potential investors make investment decisions on an informed basis, not to make investment recommendations to them about the registered securities. The disclosures include (1) financial information, such as audited financial statements, (2) underwriting standards, and (3) nonfinancial information, such as management capability, character of borrower, and potential risk factors associated with the industry and the issuer's business.

Certain issues relating to the registration of Farmer Mac-guaranteed securities include (1) risk-premium implications of registering these securities when other federally chartered agencies are not required to do so, (2) rating implications for other "agency-market" securities stemming from the rating of Farmer Mac-guaranteed securities, and (3) the costs incurred in complying with SEC registration requirements.

Other "Agencies" Not Required to Register With SEC

Other government-sponsored agencies--such as Fannie Mae and Freddie Mac--are not required to register their securities with the SEC. However, Freddie Mac, Fannie Mae, Ginnie Mae, and SBA officials told us they routinely disclose information to potential investors about the pools of loans backing the securities. Since SEC registration is not required for other "agency" securities, the investment community is uncertain about how potential investors

will perceive the riskiness of Farmer Mac securities as a result of the Congress's decision to treat those securities differently.

Some investment bankers told us that investors will "look through" the actual portfolio risks and treat Farmer Mac securities as low-risk investments because of the implied backing of the government, as they do other "agency" securities. According to Standard and Poor's officials, this would probably be true only until, if at all, Farmer Mac guarantees exceed the \$1.5-billion--the amount available to it from the Treasury--line of credit. At that time investors could become much more concerned about the quality of the loans and underwriting standards. An implication is that, at that time, more stringent underwriting standards may be needed to build the investors' confidence in the securities. Until then, investors may be willing to accept about the same returns on Farmer Mac securities as they do on other "agency" securities. As a result, if these market savings are passed through to agricultural borrowers, their cost of money may be kept down.

Rating of Securities

Another issue is whether Farmer Mac securities will receive a credit rating from rating agencies such as Standard and Poor's and Moody's Investors Service and, if so, whether such ratings would set a precedent leading to rating other domestic "agency" securities. The act does not specify that a rating for credit risk evaluation be performed for these securities, although many experts believe that such ratings would be done.

Currently, all agencies receive favored status in the capital markets because of implied government backing, but some experts indicate that rating one security--Farmer Mac--could lead to rating all "agency" securities. Some experts are concerned that if individual agency securities were rated in the United States, such a rating practice could increase the agencies' cost of credit because a rating brings into question the government's willingness to stand behind the agencies. Rating agency personnel also told us that if each U.S. "agency" were rated, the cost of credit to the agencies could rise because some agencies could receive lower ratings than others, which would require them to pay higher risk premiums to investors. The congressional intent and historical willingness of the government to sustain a given agency's programs would be an important factor in determining whether an agency were to receive a favorable rating.

Costs of Registering With SEC

An issue that has been raised by potential poolers of and investors in Farmer Mac-guaranteed securities is whether the additional cost of registering these securities with SEC would adversely affect the volume of loans originated and sold in the secondary market and increase the cost of credit to borrowers. Some are concerned that these additional costs could reduce poolers' profits and/or increase costs to borrowers. SEC regulations require issuers to disclose estimated costs of issuing and distributing the registered securities. Issuers generally itemize these costs into several categories including (1) SEC registration fees, (2) rating agency fees, (3) printing and engraving fees, (4) legal fees, (5) accounting fees, (6) trustee services fees, (7) state fees, and (8) miscellaneous fees.

Information was not available on these eight cost categories for "agency" securities because other agencies are not required to register their securities with the SEC. Therefore, we talked with SEC officials to determine how we might obtain information on these costs. They suggested we review all initial public offerings of mortgage-backed securities registered with the SEC in 1988, which had complete information on these categories. We found 21 such securities, none of which were directly guaranteed by the government or a government-sponsored agency although they included other kinds of credit enhancements. The amount of securities offered ranged from \$10 million to \$1.4 billion, and the issuers' estimated costs--based on the eight categories--of issuing and distributing securities ranged from \$250,000 to \$4,915,000. A summary of these 8 cost categories for the 21 registration statements we examined is shown in table III.1. The range in dollars represents the highest and lowest costs of each category for all the registration statements, and the range in percent of amount offered represents the highest and lowest percentages for each category for all the registration statements.

Table III.1: Cost of Registering Securities With the SEC

<u>Cost categories</u>	<u>Range in dollars</u>		<u>Range as percent of amount offered</u>	
	<u>Low</u>	<u>High</u>	<u>Low</u>	<u>High</u>
SEC registration fees	\$ 2,000	\$ 290,000	.020	0.020
Rating agency fees	14,000	500,000	.005	0.450
Printing and engraving fees	15,000	550,000	.010	1.000
Legal fees	75,000	2,500,000	.020	2.000
Accounting fees	5,000	350,000	.003	0.350
Trustee fees	7,000	1,003,000	.004	0.250
State Fees	4,750	72,000	.001	0.012
Miscellaneous fees	5,000	200,000	.001	0.067

The wide range in costs for these eight categories makes it difficult to use these data for drawing conclusions on the expected cost of SEC registration of agency securities, such as those that would be guaranteed by Farmer Mac. However, we determined that (1) two cost categories--SEC and rating agency fees--were incurred as a direct result of SEC registration and the absence of "agency" exemption status, (2) while SEC fees would likely be incurred by Farmer Mac, rating agency fees would be incurred only if Farmer Mac is rated, (3) costs from the other categories would likely be incurred to some extent by "agencies" because they usually disclose information on pools of loans backing securities along with other pertinent information, and (4) these other costs may be higher with SEC registration than without because SEC's regulations call for the disclosure of more detailed information and would likely require more legal work.

The amount of the SEC registration fee is calculated according to SEC's regulation--currently \$0.02 per \$100 of amount of securities offered. The other cost categories vary according to a combination of factors, such as type of expenses involved, amount offered, and complexity of the security structure.

Because of these potential added costs, a profit-margin squeeze for participating lenders and poolers could result. Depending on the competitiveness of the market, this could also result in higher costs of credit to the borrower.

The conference report that accompanies the act states that the conferees were presented with conflicting information concerning spreads in interest rates--that would be caused by SEC

registration--between government securities and AAA-rated corporate securities. As a result, the conference report requires the Secretary of the Treasury, in consultation with the SEC and the Board of Governors of the Federal Reserve System, to prepare a report for the Senate Committee on Agriculture, Nutrition, and Forestry and the House Committee on Energy and Commerce within 180 days of the first sale of securities guaranteed by Farmer Mac. The report is to include (1) an analysis of spreads in percentages, including whether the spread between such securities and other securities issued or guaranteed by government agencies exceeds 0.25 percent, and (2) an analysis of the impact of not treating Farmer Mac-guaranteed securities as government securities relative to other government securities.

WHAT EFFECT WILL THE LOAN-TO-VALUE RATIO
IN THE ACT HAVE ON GOVERNMENT RISK?

The act requires that no agricultural mortgage loan will have a loan-to-value ratio greater than 80 percent to qualify for a Farmer Mac pool. Many western and midwestern bankers told us that they do not make agricultural real estate loans with loan-to-value ratios of more than 65-70 percent because of the uncertainty of the market value of the collateral backing the loans. The loan-to-value ratio can be an important factor in how likely it is that in case of a loan default, the pooler will recover the outstanding loan amount. To the extent that this is not possible, Farmer Mac's guarantee may be activated. If Farmer Mac is unable to continue principal and interest payments to the investor from its resources, then the Treasury line of credit may be needed.

To better manage the risk in loan pools, loans in the Farmer Mac pools may have to meet varying loan-to-value ratios because of the legislatively mandated requirement that loans in a pool must be diversified by commodity. Loan-to-value ratios for these loans may vary depending on the collateral backing the loan and the type of commodity produced. For example, a midwestern company that developed standards for making agricultural production loans that it intended to sell recognized that there are differing risks associated with the various commodities produced. Therefore, it varied its loan-to-value ratios from 50 percent for poultry loans to 70 percent for seasonal crops, such as wheat and corn, and to 75 percent for hog and cattle production loans. This raises questions on whether or not real estate loans--that depend on various types of commodity production for repayment and that are eligible to be sold into the Farmer Mac secondary market--should require various loan-to-value ratios to ensure comparable and more manageable risks for loans in the pool.

WHAT EFFECT WILL RURAL HOUSING PROVISIONS
HAVE ON FARMER MAC-GUARANTEED SECURITIES
AND HOW WILL SUCH LOANS BE PACKAGED?

One of the stated purposes of the act is to enhance the ability of individuals in small rural communities--defined as having a population of not more than 2,500--to obtain financing for moderate-priced homes. The loans cannot exceed \$100,000 as adjusted for inflation; the act does not specify a formula for inflation adjustments. The act is silent on whether rural housing loans may be included in pools with agricultural real estate or whether they must form pools consisting solely of such loans. However, the conference report that accompanies the act states that pools composed solely of rural housing loans should include loans that are widely distributed geographically and vary widely in the amount of principal. The conference report also states that, to qualify for a pool, rural housing loans will require specific underwriting standards based on FCS loans to rural residents and on other residential secondary markets. It is unclear whether these standards will be incorporated into the overall Farmer Mac standards or applied and monitored separately from the agricultural real estate portion of the market.

Including rural housing loans with agricultural real estate loans in Farmer Mac pools could complicate the pool formation and risk-pricing since pools could include loans backed by both agricultural real estate and residences. Potential poolers told us that they are concerned that, with residences, pools could be less homogeneous, thus restricting the spreading of risk and the efficiency of the market and increasing costs of administering and operating the pool. Trade-offs will necessarily have to be made between pooling efficiency for rural housing alone and for agricultural real estate and rural housing together.