The information in this chapter was last updated in 1993. Since the money market evolves very rapidly, recent developments may have superseded some of the content of this chapter.

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Chapter 11
GOVERNMENT-SPONSORED ENTERPRISES

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The ability of savers to exchange loanable funds with borrowers is a foundation of modern economies. In most instances, the exchange is accomplished through financial intermediaries. Intermediaries arise in the private sector because they can profit from their ability to move funds from savers to borrowers at a cost lower than would arise from borrowers and savers acting individually.

Some of the largest financial intermediaries in the United States today are government-sponsored enterprises (GSEs). Beginning as early as 1916, the federal government established these intermediaries to provide funding to sectors of the economy that it considered in need of credit beyond that supplied by purely private financial intermediaries. Government restrictions on private intermediaries' operations were believed to underlie the credit shortfalls. For example, banks in many states were restricted from making loans outside of their local lending areas, effectively preventing them from diversifying their loan portfolios geographically. This inability to diversify, it was contended, led intermediaries to limit their portfolio risk by making fewer real estate loans than they would if diversification had been possible.[1]

Private ownership distinguishes GSEs from credit programs directly affiliated with the federal government. Because GSEs are privately owned, they operate with only limited government direction. Since their funds come from private credit markets, GSEs are excluded from the federal budget, although some have borrowing privileges from the Treasury under certain circumstances. Exclusion from the federal budget places the activities of the GSEs under less congressional review than agencies whose budgets must undergo regular deliberation.[2] Also, the GSEs are exempt from most of the laws and regulations that apply to federal agencies and employees. Finally, any financial gains or losses from the operation of GSEs are distributed among the GSEs' stockholders.

[1] For a more thorough discussion of this point, see Cacy (1967) and Sellon (1990).

[2] In recent years, however, GSEs have come under increasing scrutiny. Weak earnings and an increasing awareness of the potential risks that GSEs may pose to federal financial resources are partly responsible. The Congressional Budget Office (1991) reviews the risks and proposals to address them.

A GENERAL DESCRIPTION OF THE GSES

Currently, six GSEs are in operation:

- Federal Home Loan Bank System
- Federal Home Loan Mortgage Corporation (Freddie Mac)
- Federal National Mortgage Association (Fannie Mae)
- Farm Credit System
- Federal Agricultural Mortgage Corporation (Farmer Mac)
- Student Loan Marketing Association (Sallie Mae).

As the names suggest, the first three are intended to provide funds to housing, the next two to agriculture, and the last to higher education.

Table 1 summarizes the organization structures, types of operations, and types of assets financed by the various GSEs. As shown in Table 1, the Farm Credit System includes 11 regional banks and three borrower-owned cooperatives as well as many local lender associations, while the Federal Home Loan Bank System operates through 12 regional banks. All other GSEs are single firms.

Some GSEs operate primarily as portfolio lenders and hold most of the assets they purchase or loans they make in their own portfolios. The Farm Credit System, the Federal Home Loan Bank System, and Sallie Mae are primarily portfolio lenders. Other GSEs operate primarily as guarantors of loans. Fannie Mae and Freddie Mac issue mortgage-backed securities that represent fractional ownership of an underlying pool of mortgages originated by private financial institutions, and they guarantee some or all of the timely repayment of interest and principal to the holders of the securities. For this guarantee they deduct a fee from the payments made to the securities' holders.

Table 2 shows a simplified balance sheet for the GSEs. The largest holder of loans purchased from private lenders at year-end 1991 was Fannie Mae, which held over $126 billion of mortgages. Freddie Mac held almost $26 billion of mortgages, and Sallie Mae held over $22 billion of student loans.

The next asset category in Table 2 is loans to private lenders, which includes primarily advances, warehousing advances, and direct loans. Advances are loans made primarily by the Federal Home Loan Banks (FHLBs) to member thrifts to provide liquidity and to encourage growth in their portfolios. Warehousing advances are loans made by Sallie Mae to financial institutions and educational establishments which, in turn, lend the funds to qualified students. These totaled $9.7 billion in 1991. Direct loans are made directly to farmers and to rural homeowners by the Farm Credit Banks or their local associations. As of year-end 1991, these direct loans totaled about $50 billion.

Other assets are cash, other investments, and physical assets such as buildings. For Fannie Mae and Freddie Mac, this category also includes interest receivables, currency swap receivables, and property acquired through foreclosure.

TABLE 1

Characteristics of Government-Sponsored Enterprises

Enterprise	Assets Financed	Organizational Structure	Operations
Farm Credit System			
Farm Credit Banks and affiliated associations	Agricultural operating, production, supply, and real estate loans	11 regional banks, 262 associations; all are borrower-owned cooperatives	Portfolio lenders
Banks for Cooperatives	Loans and leases to agricultural cooperatives, rural utilities, and others	3 national borrower-owned cooperatives	Portfolio lenders
Federal Agricultural Mortgage Corporation	Agricultural real estate and rural housing loans, and loans guaranteed by the Farmers Home Administration	Unitary firm	Guarantor
Federal National Mortgage Association	Residential mortgage loans	Unitary firm	Guarantor; portfolio lender
Federal Home Loan Mortgage Corporation	Residential mortgage loans	Unitary firm	Guarantor; portfolio lender
Federal Home Loan Bank System	Advances secured by residential mortgages or federal agency securities	12 district banks	Portfolio lenders
Student Loan Marketing Association	Federally guaranteed student loans and advances secured by them	Unitary firm	Portfolio lender

Source: Congressional Budget Office.

TABLE 2

Balance Sheets of the Government-Sponsored Agencies

December 31, 1991

	Assets				Liabilities		
	Loans Purchased from Private Lenders	Loans Made to Private Lenders	Other Assets	Total Assets or Total Liabilities + Equity	Credit Market Debt	Other Liabilities	Equity
Federal Home Loan Banks	—	79,065	75,491	154,556	108,149	35,711	10,696
Federal Home Loan Mortgage Corporation	25,800	—	20,323	46,123	30,262	13,295	2,566
Federal National Mortgage Association	126,486	—	20,586	147,072	133,937	7,588	5,547
Farm Credit System	—	49,935	12,568	62,503	53,433	2,671	6,399
Federal Agricultural Mortgage Corporation	—	—	66	66	50	1	15
Student Loan Marketing Association	22,067	9,734	13,519	45,320	43,139	1,031	1,150
TOTAL	174,353	138,734	142,553	455,640	368,970	60,297	26,373

Source: Various 1991 annual reports of the GSEs.

Federal Home Loan Bank System The Federal Home Loan Bank System was created by Congress in 1932 to serve as a lender to savings and loan institutions, mutual savings banks, and mortgage-originating insurance companies. Twelve regional Federal Home Loan Banks were originally established. The activities of the regional banks were coordinated by the banks' common regulator, the Federal Home Loan Bank Board, an independent federal agency.

The National Housing Act, passed in 1934, established the Federal Savings and Loan Insurance Corporation under the System to insure the repayment of savings accounts held by the member institutions in the System. The 1970 Emergency Home Finance Act added the Federal Home Loan Mortgage Corporation (Freddie Mac) to the System.

The FHLBs are owned by their member institutions, which are required to purchase stock in their regional bank. In 1989, the passage of the Financial Institutions Reform, Recovery, and Enforcement Act (FIRREA) expanded the types of financial institutions that may become members of the System by making membership available to commercial banks and credit unions holding 10 percent or more of their portfolio in home mortgages or related assets. Members of the FHLB System receive dividends on their stock, elect a majority of directors to the board of their regional bank, and receive advances and other banking services from the System.

The main service received by FHLB members is advances that provide short-term liquidity or a longer-term source of funds for mortgage loans. The Federal Home Loan Bank System obtains funding for the advances by issuing notes and bonds in the domestic and international capital markets. In addition, the Federal Home Loan Bank System has the right to borrow up to $4 billion from the Treasury.

The FHLBs also provide their members with a variety of other banking services. One of these, designed to help member banks control interest rate risk, is the interest rate swap, whereby the FHLBs and the member institutions formally agree to swap fixed interest rate payments for floating interest rate payments. The interest payment streams are based on a "notional" principal amount which is used for calculating reciprocal cash flows and is not exchanged. Swaps usually allow the member institutions to more closely match their asset and liability interest payments, thereby reducing their exposure to interest rate risk.

The FHLBs also provide member institutions with checking accounts, overnight accounts, and term accounts. These member accounts are interest-bearing and make up roughly 20 percent of the FHLBs' total liabilities.

FIRREA abolished the Federal Home Loan Bank Board and replaced it with the Federal Housing Finance Board, which assumed a broader role in overseeing the FHLBs than had its predecessor. The Federal Housing Finance Board is charged with ensuring that the banks carry out their role in financing housing while maintaining adequate capital.

Federal Home Loan Mortgage Corporation Freddie Mac was authorized by the Emergency Home Finance Act of 1970 and was chartered that same year to provide a secondary market for conventional home mortgages. (Fannie Mae was authorized to buy conventional mortgages concurrently with Freddie Mac.) At the time the legislation was passed, no secondary market for these loans existed. From 1970 through 1989, Freddie Mac was owned by the FHLBs, but FIRREA made it an independent entity and brought it under the control of an 18-member board of directors, five of whom are appointed by the President of the United States. Today, Freddie Mac operates under the direction of the Department of Housing and Urban Development (HUD).

Freddie Mac's mortgage holdings understate its presence in the secondary mortgage market, as it is primarily a mortgage guarantor. Freddie Mac purchases mortgages from financial institutions, places the mortgages in a trust, and issues mortgage-backed securities to investors backed by the principal and interest payments from the mortgages. Because the mortgages are placed in a trust, neither they nor the mortgage-backed securities are listed on Freddie Mac's balance sheet. In 1991, Freddie Mac purchased over $73 billion in 30-year, fixed-rate, single-family mortgages; over $18 billion in 15-year, fixed-rate, single-family mortgages; and almost $8 billion in adjustable-rate mortgages. Against these purchases, Freddie Mac issued over $92 billion in mortgage-backed securities.

Freddie Mac is owned by its stockholders. Its entire outstanding stock is voting common stock,[3] which is listed on the New York and Pacific Stock Exchanges. As of year-end 1991, just over 60 million shares were outstanding.[4]

Federal National Mortgage Association Congress established Fannie Mae in 1938 to provide a secondary market for home mortgages insured by the Federal Housing Administration (FHA). Under the original statute, Fannie Mae financed its purchases of mortgages in the secondary market by borrowing from the public or by raising funds from the issuance of preferred stock to the Treasury. Fannie Mae's authority expanded in 1948 to include the purchase of Veterans Administration mortgages.

In 1954 Congress began to move Fannie Mae toward private ownership. Beginning that year, sellers of mortgages to Fannie Mae were required to purchase stock in Fannie Mae, thus providing private funds for the eventual retirement of the Treasury stock that had provided a portion of the institution's initial funding.

In 1968, Congress made Fannie Mae a federally chartered corporation, wholly owned by private shareholders and overseen by a 15-member board of

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[3] Until February 6, 1990, Freddie Mac also had outstanding nonvoting common stock that did not trade and was held by the Federal Home Loan Banks. On that date, Freddie Mac called and retired the 100,000 shares outstanding at their par value of $1,000 per share.

[4] In March 1992, Freddie Mac's Board of Directors authorized a three-for-one stock split, raising the number of shares outstanding to just over 180 million.

directors. Also during 1968, the Department of Housing and Urban Development acquired regulatory authority over Fannie Mae. Two years later the Emergency House Finance Act of 1970 gave Fannie Mae authority to purchase conventional home mortgages. This change opened up a much larger market segment to Fannie Mae and set the stage for a dramatic expansion of its mortgage purchases.

In 1991, Fannie Mae purchased almost $37 billion in mortgages. Over three-fourths were conventional fixed-rate, single-family mortgages; about $5 billion were adjustable-rate, single-family mortgages; and almost $2 billion were multi-family mortgages. At year's end, about 86 percent of Fannie Mae's total assets of $147 billion were mortgages.

Against these assets, Fannie Mae had $142 billion of liabilities and over $5 billion of stockholders equity. The stock is publicly traded on the New York, Pacific, and Midwest stock exchanges. About 282 million shares were outstanding as of year-end 1991.

Farm Credit System The Farm Credit System was created by the Federal Farm Loan Act, signed into law on July 17, 1916. During the following year, 12 geographically dispersed Federal Land Banks were chartered and an oversight committee, the Federal Farm Board, was formed. The System was designed to make direct long-term loans to farmers for the purchase of real estate. Local associations of member borrowers called Federal Land Bank Associations, organized as lending arms under the banks, originated and administered these direct loans to farmers. By 1932, 5,000 such associations existed nationally. In 1923, a Federal Intermediate Credit Bank was added to each Federal Land Bank to facilitate production loans to farmers. In 1933, local Production Credit Associations were created under the regional Federal Intermediate Credit Banks to originate and service short-term farm production loans. Banks for Cooperatives were also created that year, as a lending arm to serve agricultural cooperatives and rural utilities. Together, the Federal Land Banks, Production Credit Associations, and Banks for Cooperatives composed the Farm Credit System. In 1953 the Farm Credit Act created the Farm Credit Administration, an independent agency of the federal government, to oversee operations of the System.

Congress altered the structure of the Farm Credit System in the mid-1980s in response to the System's earnings losses earlier in the decade. The losses resulted from high loan default rates associated with a financial downturn in the agricultural sector and from deficiencies in the System's management and lending policies. The primary deficiencies were that the value of loans were often based on the underlying value of collateral rather than repayment ability and that interest rates on loans were often tied to the average cost of funds rather than the marginal cost. Legislation passed in 1985 and 1987 changed the way the System operated. The 1985 legislation eliminated the Farm Credit Administration's role in

determining the System's operations policies, instead converting it to a supervisor of the System's safety and soundness. The legislation also instituted loss-sharing agreements among the System's institutions (which requires similar System institutions to jointly cover the financial losses incurred by individual institutions) and required outside audits of regional institutions' operations. More far-reaching legislation, passed in 1987, eliminated one regional Federal Land Bank, merged the Federal Land Banks and Intermediate Credit Banks into regional Farm Credit Banks in the remaining 11 districts, and created the FarmCredit System Financial Assistance Corporation, overseen by the Farm Credit Financial Assistance Board (FAB). At the same time, ten of the regional Banks for Cooperatives merged to form CoBank, a centralized farm cooperative and rural utility lending arm of the System. Two regional Banks for Cooperatives did not join CoBank, instead choosing to operate as they had.

The FAB is a federal agency that oversees the issuance of Farm Credit Financial Assistance Corporation bonds and lends funds to financially troubled Farm Credit Banks. The Farm Credit System Financial Assistance Corporation is authorized to issue up to $4 billion in bonds. The banks that borrow from the FAB are obligated to repay the loans in full, although interest payments on the loans are paid in part by the federal government.

The 1987 legislation also formed the Farm Credit System Insurance Corporation, funded by premiums paid by Farm Credit System lending institutions, to provide a guarantee of timely principal and interest payments to investors in System securities. This same legislation required the Farm Credit Administration to oversee capital standards for System institutions and specified a minimum capital level of 7 percent of each institution's risk-adjusted assets. The Farm Credit Administration has the discretion to increase the capital level if it judges additional capital to be necessary.

The Farm Credit System is the only GSE that directly originates loans to the public. These loans may be either long-term (usually mortgages) or shorter-term (usually farm production or farm operating loans) and are originated through the local associations. Associations obtain their funds from the regional Farm Credit Banks, effectively placing the regional banks in the role of wholesale lenders.

Federal Agricultural Mortgage Corporation Farmer Mac is a federally chartered GSE originally created by the Farm Credit Act of 1971, as amended by the Agricultural Credit Act of 1987. Technically, Farmer Mac operates under the Farm Credit System, but it does not participate in the liability-sharing arrangement of the other System institutions and it is not covered by the System's insurance fund.

The mission of Farmer Mac is to attract new capital to agriculture and to provide liquidity to agricultural lenders by aiding in the development of a secondary market for certain agricultural and rural housing loans. Most loans are

not purchased by Farmer Mac, but are purchased by private poolers that are certified by Farmer Mac. Once loans are purchased by the pooler, Farmer Mac acts as a guarantor. It does this by guaranteeing the last 90 percent of the timely payment of principal and interest on securities backed by the loans. The poolers are responsible for the first 10 percent. Like other GSEs, Farmer Mac earns fees for its guarantor services.

In addition to its guarantor role, Farmer Mac is authorized to set up the standards for loans that qualify for purchase by the poolers, to set up standards for certified facilities to act as loan poolers, to establish standards of loan pools, and, in some cases, to purchase qualifying loans.

Under a program enacted in 1990 called Farmer Mac II, Farmer Mac is authorized to directly purchase portions of agricultural loans that carry direct guarantees from the Farmers Home Administration (FmHA). Farmer Mac funds the purchases by the issuance of securities backed by the loans. Farmer Mac guarantees the timely payment of principal and interest on its securities. The guarantee is backed by the FmHA guarantee on the underlying loans.

Student Loan Marketing Association Sallie Mae is a shareholder-owned corporation established by Congress in 1972 for the purpose of increasing the availability of credit to postsecondary students. To accomplish its goals, Sallie Mae provides funds to financial institutions engaged in lending under the Guaranteed Student Loan Program, and provides a secondary market by standing ready to purchase student loans. The agency is authorized to raise funds through the issuance of stock and debt obligations. The legislation specifies that Sallie Mae is to be overseen by 21 directors: 7 chosen by financial institutions, 7 by educational institutions, and 7 (including the chairman) by the President of the United States. Ownership of voting stock in Sallie Mae is restricted to educational and financial institutions qualified to participate in the Guaranteed Student Loan Program.

Loans that qualify for the Guaranteed Student Loan Program are originated by lending institutions and by certain state agencies and educational institutions. Since 1984, these loans have carried guarantees from state or nonprofit guarantee agencies, which reimburse lenders fully on the first 5 percent of loan losses and on a diminishing basis thereafter. Many originators opt to delay selling the loans during the period that the student remains in school because the government makes the interest payments during that period. Sallie Mae also provides liquidity to the private originators of student loans by making cash advances (called warehousing advances) through the Warehousing Advance Program.

Originally, funding for Sallie Mae's operations came from various sources, including loans from the Federal Financing Bank and sales of debt instruments carrying a federal guarantee. Subsequent to a January 1982 agreement with the Treasury Department, however, Sallie Mae has raised funds only from private market sources and without an explicit federal guarantee.

GSE SECURITIES

The GSEs issue debt securities across a broad spectrum of maturities. The maturity for an individual issue is generally determined by the use to which the funds will be put. Long-term securities are usually issued to fund longer-term direct loans or to fund the purchase of longer-term, fixed-rate loans and mortgages. Short-term securities are usually issued to fund short-term direct loans or to fund the purchase of short-term or variable-rate student or mortgage loans. Except Farmer Mac, GSEs hold a substantial amount of variable-rate loans or other short-term assets with interest rates that adjust relatively frequently, and they therefore issue a substantial amount of short-term securities. Matching the maturities of securities to those of the assets funded by the securities limits the interest rate exposure of these GSEs.

A second reason GSEs may issue short-term securities is to lower their interest rate costs in periods of declining interest rates. During these periods, maturing bonds are retired with proceeds from the issue of short-term securities, with the reissuance of bonds taking place when the GSEs perceive that interest rates have bottomed.[5]

GSEs sell securities to the public through dealer firms. Firms specializing in short-term note issues are typically organized in groups ranging from six to nine members and are composed of both primary and nonprimary government securities bank and nonbank dealers. Firm groups specializing in medium- and long-term offerings are usually larger, ranging up to 180 members.

Dealer group members have written agreements that specify their responsibilities to the GSE and are a precondition for participation in the sale of GSE securities. The agreements usually require that the members (1) support the secondary trading of the GSE securities that they issue, (2) do not obtain primary-issue GSE securities for their own proprietary accounts or for the proprietary accounts of other dealers without the permission of the issuing GSE, and (3) buy the securities for their own proprietary accounts when circumstances dictate and the GSE explicitly requests that they do so. Membership standards for dealers vary across the GSEs, but the standards normally require financial soundness based upon adequate capitalization levels, participation in other sectors of the

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[5] For example, the summary report of the Federal Farm Credit Banks Funding Corporation for 1991 included the following description of the financing activity of Farm Credit Banks for that year:

> Many banks also rolled their maturing bonds into discount notes to take advantage of the declining rate environment, expecting to return to bonds when rates bottomed out and the cost advantage of issuing notes no longer existed. That point was never reached and, although financing needs were lower in 1991 than in 1990, bonds outstanding decreased by a greater percentage as Banks chose to fund a higher portion of assets with discount notes.... As 1991 ended the market appeared to be approaching its bottom, and with it Banks may elect to switch some of their funding back to the bond market. (P. 13)

government securities market, and participation in the secondary market trading of the securities.

GSEs price securities through a cooperative effort with their dealer groups. The primary factor in the pricing decisions is the GSEs' perceptions of the market demand for their securities. Their perceptions are influenced by information they receive about other GSE securities offerings, Treasury offerings, and corporate issues, but their most important source of information is the dealer group members. The members of dealer groups engage in an informal competition among themselves to supply accurate information to the GSEs about the demand for new GSE issues. GSEs claim that this competitive arrangement supplies them with information that allows them to move new issues into the market at the lowest cost possible. Dealer group members perceive that the provision of accurate, timely information places them in a favorable position when the GSEs allocate new-issue securities.[6]

Dealer group members are generally aware of the GSEs' securities issuance schedules and contact the GSEs in advance to get information on the size of the issue and the anticipated price. They then begin to line up orders for the securities from their customers. Orders may be dependent on or independent of the announced price. The size of the security issue is subsequently announced on the wire services. At the time of the announcement, the dealers report to the GSEs the volume of the securities they have "placed" or sold prior to the announcement. The pricing of the issue and allotment of securities to individual dealers occur some days later. At that later date, any shortfall between the announced placement and the amount placed to customers of the dealers is absorbed by the dealers in their own proprietary accounts. Dealers may dispose of the securities in their accounts in any manner they choose.

Short- and Medium-Term Securities Slightly over one-fourth of the outstanding liabilities of GSEs at the end of 1991 were short-term securities (Table 3). The proportion of short-term debt has grown in recent years primarily because of a greater reliance on short-term instruments by Sallie Mae, Freddie Mac, and Fannie Mae. The proportion of short-term debt used by the Farm Credit System and the FHLBs has changed little since the mid-1980s.

Discount notes are the most common of short-term security issued by GSEs. At the end of 1991, $75.7 billion of discount notes were outstanding at the GSEs, accounting for 58 percent of their total short-term debt. Discount notes range in maturity from overnight to 360 days, but individual GSEs may choose to offer only selected maturities. The Federal Home Loan Bank System, for example, does not offer discount notes for maturities of less than 60 days, whereas Freddie Mac prefers the short end of the maturity schedule, usually overnight.

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[6] A more detailed discussion of this process can be found in Appendix D of the *Joint Report on the Government Securities Market* (Department of the Treasury et al. 1992).

TABLE 3

Short-Term (Less Than 1 Year) Debt

as a Percentage of Total Debt

	Year-End 1991
Student Loan Marketing Association	28
Federal Home Loan Mortgage Corporation	61
Federal National Mortgage Association	26
Federal Agricultural Mortgage Corporation	N/A
Farm Credit System	30
FHLB System	22

Source: Various 1991 annual reports of the GSEs.

The minimum denominations of discount notes offered by the GSEs also vary. Sallie Mae and the FHLBs offer discount notes in minimum denominations of $100,000; Freddie Mac, $25,000; Fannie Mae, $10,000; and the Farm Credit Banks, $5,000.

Discount notes are offered on a daily basis. The dealers maintain close contact with investors and are normally able to place the GSEs' desired amount of notes. Commercial banks and money market funds are the major investors in discount notes, although insurance companies and pension funds also purchase some notes. Sales to individuals are rare. Discount notes are normally offered in book-entry form at Federal Reserve Banks and upon maturity may be redeemed in immediately available funds.[7] The dealer groups deduct a fee of 5 basis points (50¢ per $1,000) of the dollar value of the notes placed. The fee is calculated on an annual basis; thus, the actual fee for an individual issue is only a fraction of the 5 basis point figure as the discount note issues are for terms of less than a year.

In addition to discount notes, some GSEs issue other short- to medium-term securities such as Master Notes, Residential Financial Securities, and medium-term notes. Sallie Mae and Fannie Mae issue Master Notes, which are interest-bearing instruments with the interest payments reset weekly at a spread above the auction-determined yield of 91-day Treasury bills. Master Notes are callable with a seven-day notice at any point after three weeks from their issuance. These securities have a maturity between 1 and 18 months and a minimum denomination of $10 million.

Fannie Mae also raises short-term funds through the issuance of Residential Financial Securities. These securities are generally issued for terms of six months, one year, or two years and are unsecured general obligations of Fannie Mae.

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[7] Immediately available funds—also referred to as fed funds—are funds that are transferred over the Federal Reserve's wire system.

Residential Financial Securities have denominations of $10,000 or higher, are issued in book-entry form, and are redeemed in immediately available funds.

Freddie Mac issues medium-term notes. Medium-term notes are unsecured debt securities that usually mature between three and seven years. These securities may be issued with a fixed rate of interest, with a variable rate (tied to LIBOR, the London Interbank Offered Rate), or as a zero coupon (sold at a discount and redeemed at par). Medium-term notes are issued both in book-entry form at the Federal Reserve and in registered, certified form. The notes are available in denominations of $10,000 and in additional increments of $5,000.

Long-Term Securities Fannie Mae and Freddie Mac meet most of their long-term financing needs through the issuance of debentures. Debentures are long-term debt instruments secured only by the creditworthiness and earning power of the issuing GSEs; nevertheless, they enjoy a reputation as relatively safe investments. Debentures are normally sold monthly, although they may be issued at other intervals. Approval by the Treasury is required for the sales in order to avoid the simultaneous issuance of GSE debt with that of Treasury debt. Like the short-term debt instruments of the GSEs, debentures are sold primarily through dealer groups, are usually issued in book-entry form at the Federal Reserve Banks (though they are sometimes available in registered, certified form), and are usually redeemable in immediately available funds.

Debentures may be offered with a fixed or floating rate. In most cases the floating rate is tied to the rate on like-maturity Treasury securities, but the floating rate on some Freddie Mac debentures is tied to LIBOR.

The Federal Home Loan Bank System's primary source of long-term funding is consolidated bonds. These instruments are the joint obligations of all of the FHLBs, but are not formally secured by the assets of the FHLB System. The FHLBs, however, are required to maintain certain types of high-quality assets, free from any lien or pledge, in a total amount equal to outstanding consolidated bonds (other than consolidated bonds specifically subordinated to outstanding consolidated bonds). The bonds normally are made available through scheduled monthly sales but may be sold more frequently. The bonds are in minimum denominations of $10,000 and in additional increments of $5,000. Interest is paid semiannually, and settlement is in immediately available funds.

The Farm Credit System also issues consolidated bonds as its primary long-term instrument, but these bonds represent formal claims against the System's assets. These bonds usually carry a fixed rate of interest and are sold in multiples of $1,000. Sales occur up to 16 times per year through the System's dealer group.

In addition to debentures and consolidated bonds, GSEs sometimes offer more exotic long-term debt instruments. Fannie Mae, the FHLB System, and Sallie Mae target foreign investors through a variety of debt offerings that are denominated in foreign currencies.

Mortgage-Backed Securities Mortgage-backed securities (MBSs) give investors pro-rata ownership rights in an underlying pool of mortgages. As such, the interest and principal payments that investors receive depend directly on the payments made by borrowers, including any proceeds from the prepayment of the mortgages.

MBSs are not explicit balance sheet liabilities of Fannie Mae or Freddie Mac, but they are contingent liabilities because Fannie Mae and Freddie Mac guarantee the timely payment of interest and principal by the underlying mortgages to the MBS holders, including the full principal in the event of foreclosure. Thus any shortfall in payments by borrowers exposes Fannie Mae and Freddie Mac to credit risk.

GSEs earn fee and interest income from MBSs. Fees are paid by investors to the GSEs for the guarantee of timely repayment of principal and interest. GSEs also earn interest on payments they hold until the time they pass the payments on to the holders of the MBSs.

In recent years, a variety of innovative MBSs have been developed in order to attract a broader range of investors. One of the largest innovations has been the "lender swap mortgage-backed security" in which the financial institution is allowed to trade a portfolio of its mortgages to the GSEs for securities backed by those loans. The GSEs in turn perform the role of a "credit enhancer" by guaranteeing the timely repayment of both principal and interest.

Another innovation has been the issuance of MBSs in classes based on the anticipated prepayment risk of the underlying mortgages. Investors in these collateralized mortgage obligations (CMOs) may choose a securities class that will be retired from early prepayments of mortgage principal (a short maturity) or from the last prepayments or repayments of principal (a long maturity). CMOs proved popular with investors when they were introduced in 1983. However, changes made to the tax laws in 1986 limited the appeal of CMOs to investors.

A subset of CMOs called real estate mortgage investment conduits (REMICs) were created in response to the 1986 tax law changes. These securities are similar to standard CMOs but are offered with terms designed to overcome some of the accounting and tax complexities inherent in CMOs.[8] REMICs have proven popular with investors as evidenced by the fact that over half of all MBSs issued by Fannie Mae and Freddie Mac in 1991 were REMICs.

The issuance of MBSs by Fannie Mae and Freddie Mac has increased rapidly in recent years. Fannie Mae had $372 billion of MBSs outstanding at the end of 1991 compared to just $178 billion three years earlier. Freddie Mac had $359 billion in outstanding MBSs at year-end 1991, compared to $226 billion at the end of 1988.

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[8] For a more complete discussion of REMICs, see Konstas (1987).

The Secondary Market for GSE Securities GSE debt securities are exchanged in over-the-counter secondary market trading through the same dealer firms who are the primary issuers of the securities. Dealers earn income from bid-ask spreads and from the net interest earnings on securities holdings.

The volume of trading in GSE debt securities is much smaller than in the mammoth Treasury market, but the GSE market is sufficiently broad to ensure that the GSE securities are still considered very liquid. Most trading is concentrated in relatively short maturities.

Yields Yields on GSE debt are normally somewhat higher than those of comparable maturity Treasury securities, but the spreads typically have been relatively small because investors have viewed GSE debt as having an implicit federal guarantee against default. Twice during the 1980s, however, the spreads between some GSE debt and Treasury securities widened substantially because of investors' uncertainty regarding the financial health of the issuing GSEs and uncertainty over whether the government would make the presumed federal guarantee explicit.

The first episode took place in early 1980, when Fannie Mae financed a portfolio of long-term mortgages with short-term debt. When interest rates subsequently rose sharply, Fannie Mae's profit margins decreased substantially. As a result, from 1980 through 1985 Fannie Mae experienced only two profitable years. The lower profits combined with investor uncertainty over whether the government would rescue Fannie Mae led to a larger interest rate spread between Fannie Mae and Treasury securities.

The Farm Credit System ran into financial trouble somewhat later in the decade, and it posted losses totaling $4.6 billion from 1985 through 1987. These losses originated from loan defaults that resulted from financial weakness in the agricultural sector in the early to mid-1980s and overly optimistic assessments of the value of farmland pledged as collateral for mortgage loans made by the System. Also contributing to earnings losses was the long-term, fixed interest rate structure of the System's liabilities combined with the short-term, variable interest rate structure of its assets. As interest rates declined over this period, the System found that their cost of funds exceeded the return from their loan portfolio, resulting in earnings losses. The System's losses raised fear in the financial markets that it would default on some securities if the Treasury did not lend assistance. This fear was reflected in the wider premium investors required to hold Farm Credit System securities, as shown in Figure 1.

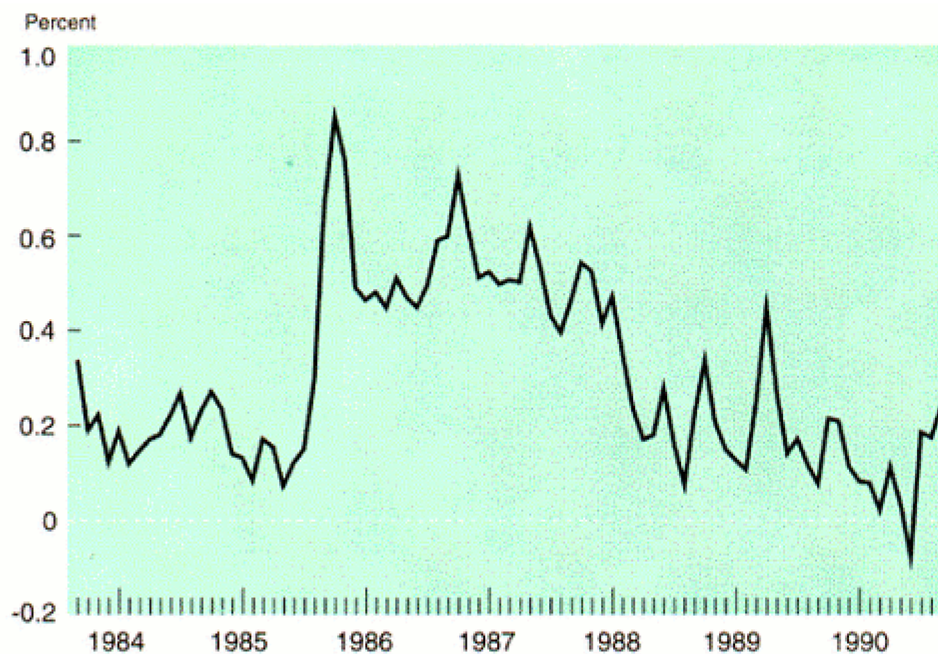
In both episodes, the federal government eventually made the implicit guarantees explicit by providing federal government loans to the GSEs. Once the loans were made, the interest rate spread of the GSE securities and comparable U.S. Treasury securities narrowed.

FIGURE 1

Yield Spread Between Farm Credit and

U.S. Treasury Bonds of Comparable Maturity

(Farm credit bond maturing on 10/22/90; T-bond maturing on 10/15/90)



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