Briefing Report on

Derivative Investments By Texas State Entities

Office of the State Auditor
Lawrence F. Alwin, CPA

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OFFICE OF THE STATE AUDITOR
TWO COMMODORE PLAZA
206 EAST NINTH ST., SUITE 1900
AUSTIN, TEXAS 78701

MAILING: P.O. BOX 12067
AUSTIN, TEXAS 78711-2067

PHONE: (512) 479-4700 FAX 479-4884

LAWRENCE F. ALWIN, CPA
State Auditor

SHARON W. COBB, CPA
First Assistant

December 21, 1994

Members of the Legislative Audit Committee:

Six universities and two junior colleges in Texas have high concentrations of volatile mortgage derivatives in their portfolios which could result in future liquidity problems. These institutions have derivatives with market values ranging from 34 percent to over 50 percent less than book values at July 31, 1994. Odessa College has experienced liquidity problems because their entire portfolio consists of mortgage derivatives, and some of these funds were needed to meet current operating expenses.

There are existing conditions that lessen the impact of potential liquidity problems at the universities. For example, appropriations, tuition, and fees are deposited into the Texas State Treasury. These funds are not included in the investment portfolios at the various universities.

The potential liquidity problems result from the inadequate diversification of investment portfolios, which is caused by:

- lack of good management controls over the investing function
- investment personnel's heavy reliance on brokers and dealers in making investment decisions
- pressures on investment personnel to produce more income

Total derivative investments in Texas account for less than 10 percent ($6.5 billion) of the total investments ($74.6 billion) of all entities reporting derivatives. More than 92 percent of the derivative investments, or about $6 billion, are in the State's largest portfolios. A significant portion of these investments are held by pension and endowment funds, which are long term in nature. The level of investment in derivatives at these entities appears reasonable in the context of their total portfolios.

This project determined the extent of state funds at potential risk due to derivative investments. We also determined the extent of public funds invested in derivatives by state agencies, universities, and junior colleges. This project was conducted at the request of the Legislative Audit Committee.

We appreciate the courtesy and cooperation of management and investment personnel from the state agencies, universities, and junior colleges mentioned in this report.

Sincerely,

Lawrence F. Alwin

Lawrence F. Alwin, CPA
State Auditor

LFA/rmn/enclosure

Key Points Of Report

Briefing Report On
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Key Facts and Findings

- The high concentration of volatile mortgage derivatives in investment portfolios creates the risk that future liquidity problems could occur. Derivatives held by six universities and two junior colleges in Texas have market values ranging from 34 percent to over 50 percent less than book values at July 31, 1994. Odessa College has experienced liquidity problems. Five entities have more than 60 percent of their portfolios invested in mortgage derivatives, the majority of which are highly volatile. In addition, two other universities and one junior college have 34 to 44 percent of their total investment portfolios in the same types of derivatives.

- Inadequate diversification of investment portfolios increases the risk that liquidity problems could occur. The lack of adequate portfolio diversification is caused by three major factors: (1) lack of good management controls over the investing function, (2) investment personnel's heavy reliance on brokers and dealers in making investment decisions, and (3) pressures on investment personnel to produce more income.

- Total derivative investments account for less than 10 percent ($6.5 billion) of the total investments ($74.6 billion) of all entities reporting derivatives.

- More than 92 percent of the derivative investments, or about $6 billion, are in the State's largest portfolios. A significant portion of these investments are held by pension and endowment funds, which are long term in nature. The level of investment in derivatives at these entities appears reasonable in the context of their total portfolios.

- Derivatives are financial instruments (security or contract) whose value is linked to, or "derived" from, changes in interest rates, currency rates, and stock and commodity prices.

Contact:
Catherine A. Smock, CPA (512-479-4700)

Office of the State Auditor
Lawrence F. Alwin, CPA

This project was conducted in accordance with Government Code, Section 321.0133. The project was undertaken as a result of a request from the Legislative Audit Committee.

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Executive Summary

The High Concentration Of Volatile Mortgage Derivatives In Investment Portfolios Creates The Risk That Liquidity Problems Could Occur

The following five Texas institutions have more than 60 percent of their investment portfolios invested in mortgage derivatives, the majority of which are highly volatile:

- Odessa College
- University of North Texas Health Science Center
- Midwestern State University
- East Texas State University
- Southwest Texas State University

Odessa College has already experienced liquidity problems because its entire portfolio consists of highly volatile derivatives, and some of these funds were needed to meet operating expenses. (For additional detail on Odessa College, see *Review of Odessa College Investments*, SAO Report No. 95-028, December 1994.)

Two other universities and one junior college with 34 to 44 percent of mortgage derivatives in their portfolios reported highly volatile investments. These institutions are:

- Sul Ross State University
- Amarillo College
- Texas Woman's University

If sold under current market conditions, these institutions could experience significant losses from the sale of investments. There are existing conditions that lessen the impact of potential liquidity problems at the universities. For example, appropriations, tuition, and fees are deposited into the State Treasury. These funds are not included in the investment portfolios at the various universities.

Derivatives are financial instruments (security or contract) whose value is linked to, or "derived" from, changes in interest rates, currency rates, and stock and commodity prices. Uncertainty exists regarding the exact timing of principal return because mortgage derivatives are influenced by:

- changes in interest rates
- current economic climate
- the geographic makeup of underlying mortgage loans

A significant amount of the mortgage derivatives held by the six universities and two junior colleges are considered speculative, based on analysis performed by Fitch Investors Service, Inc., a nationally recognized statistical rating organization. Based on the criteria established by Fitch Investors Service, Inc., these universities have speculated with public funds through the investment in certain mortgage derivatives.

Inadequate Diversification Of Investment Portfolios Increases The Risk Of Future Liquidity Problems

Derivatives held by six universities and two junior colleges have market values ranging from 34 percent to over 50 percent less than the book values at July 31, 1994. The market values of these derivatives have a significant impact on the inadequately diversified portfolios.

Inadequate diversification of investments concentrates risk within a portfolio, and investing heavily in the same type of instruments magnifies the associated risks. The lack of adequate portfolio diversification is caused by three major factors:

- lack of good management controls over the investing function

- investment personnel's heavy reliance on brokers and dealers in making investment decisions
- pressures on investment personnel to produce more income

The Lack Of Diversification And The Extent Of Volatile Investments Indicate That Management Controls Are Not Sufficient To Protect Invested Public Funds

The high percentage of mortgage derivatives coupled with the volatility of these investments suggests that oversight by board members and senior management and the monitoring function have not worked effectively.

Controls and decision-making processes should be defined, implemented, and monitored to ensure that investments are appropriate. In such a dynamic environment, controls must be in place and working continuously to respond to changing financial conditions.

Investment Personnel Appear To Place Heavy Reliance On Brokers And Dealers In Making Investment Decisions

Investment personnel strive to achieve the goals and objectives set forth in the investment policy. A goal of brokers and dealers is to earn money through the sale of investments.

Some institutions, especially those with smaller portfolios, may not attract the level of expertise needed to manage a portfolio with complex investment instruments, such as derivatives. Investment personnel are responsible for ensuring that public funds are adequately safeguarded in all aspects of the investment function. The high percentage of certain mortgage derivatives indicates that all risks were not thoroughly analyzed before these investments were purchased.

The professional requirements that guide brokers and dealers do not alleviate the responsibility of investment officers to ensure that appropriate investments are made with public funds. Investment personnel should possess the technical knowledge and expertise needed to properly analyze the risks associated with investments.

If investment personnel do not fully understand the extent and level of risk associated with mortgage derivatives, then these investments should not be purchased.

Pressures On Investment Personnel To Produce More Income Creates More Risk For Investment Portfolios

Pressures on investment personnel to produce more income through investments are increasing as junior colleges, universities, and state agencies strive "to do more with less." Investments with higher yields generally carry higher risks.

Entities may be focusing heavily on maximizing return on investments, with less emphasis on weighing the associated risks. Proper portfolio management includes safeguarding principal and maximizing return while maintaining sufficient liquidity to meet current financial obligations.

Executive Summary

Total Derivative Investments in Texas Account For Less Than 10 Percent ($6.5 Billion) Of The Total Investments ($74.6 Billion) Of All Entities Reporting Derivatives

More than 92 percent of derivative investments, or about $6 billion, are in the State's largest portfolios. A significant portion of these derivatives are held by pension and endowment funds, which are long term in nature. The level of investment in derivatives at these entities appears reasonable in the context of their total portfolios.

Management's Responses

Management's responses from entities mentioned in this report are in Appendix 6.

Summary Of Objectives And Scope

Our objectives were to determine:

- The extent of state funds at potential risk due to derivative investments as of July 31, 1994.
- The extent of state funds invested in derivatives as of July 31, 1994.

State agencies, universities, and junior colleges were included in this initial assessment of portfolios with public funds. Survey responses were received from every entity except the State Bar of Texas.

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Section 1:

The High Concentration Of Volatile Mortgage Derivatives Creates The Risk That Liquidity Problems Could Occur

Five Texas institutions have more than 60 percent of their investment portfolios in mortgage derivatives, the majority of which are highly volatile. Figure 1 lists the institutions and the percentage of their portfolios invested in mortgage derivatives.

Figure 1
Institutions with more than 60 percent of their portfolios in mortgage derivatives

Institution	Percentage of Portfolio in Mortgage Derivatives as of July 31, 1994
Odessa College	100.0%
University of North Texas Health Science Center	86.4%
Midwestern State University	84.3%
East Texas State University	79.0%
Southwest Texas State University	62.4%

Source: SAO Survey of State Agency Investment in Derivatives

Odessa College has already experienced liquidity problems because its entire portfolio consists of highly volatile mortgage derivatives, and some of these funds were needed to meet operating costs. (For more information, see *Review of Odessa College Investments*, SAO Report No. 95-028, December 1994.)

In addition, two universities and one junior college with 34 to 44 percent of mortgage derivatives in their portfolios reported highly volatile investments. The liquidity of these portfolios could also be at risk. Figure 2 presents the institutions with their level of investment in mortgage derivatives.

Figure 2
Institutions with 34 to 44 percent of their portfolios in mortgage derivatives.

Institution	Percentage of Portfolio in Mortgage Derivatives as of July 31, 1994
Sul Ross State University	43.7%
Amarillo College	42.7%
Texas Woman's University	34.8%

Source: SAO Survey of State Agency Investment in Derivatives

If sold under current market conditions, these institutions could experience significant losses from the sale of investments. There are existing conditions that lessen the impact of potential liquidity problems at these universities. For example, appropriations, tuition, and fees are deposited into the State Treasury. These funds are not included in the investment portfolios of the various universities.

Derivatives are financial instruments (security or contract) whose value is linked to, or "derived" from, changes in interest rates, currency rates, and stock and commodity prices. Mortgage derivatives, or collateralized mortgage obligations, are securities created using the underlying cash flows from mortgage-backed securities (mortgage loan pools) as collateral. Uncertainty exists regarding the exact timing of principal return because the mortgage payments are influenced by:

- changes in interest rates
- the current economic climate
- the geographic makeup of the underlying mortgage loans

The six universities and two junior colleges have invested in certain mortgage derivatives known as inverse floaters, interest only (IOs) strips, and principal only (POs) strips. These particular investments can be used to "hedge" or protect an overall portfolio from changes in interest rates. However, high concentrations of these investments in any one portfolio magnify the sensitivity to interest rate changes, such as the rising interest rates experienced over the last year.

These mortgage derivatives are subject to "extension risk," which causes the maturity of the investment to extend as interest rates rise. The results of extension risk include:

- Extended maturity - Investments purchased for expected maturities of three to five years could now extend as long as 20 to 25 years. The actual maturities are impossible to predict. Although the principal of these investments is guaranteed, the investor may have to wait several years for its return.

- Lower cash flows - The monthly cash flows received by the investors decreases as the investment maturity extends. In the case of inverse floaters, the monthly interest rate payments can also decrease, if interest rates rise.

- Reduced yield - The extended maturity and lower cash flows over a longer period of time result in lower yields for the investor. Some of these

investments could produce a yield of less than one percent over a 20-year life of the mortgage derivative.

The majority of the mortgage derivatives held by the six universities and two junior colleges are considered speculative based on criteria established by Fitch Investors Service, Inc., a nationally recognized statistical rating organization. Mortgage derivatives consist of different classes, or tranches, of collateralized mortgage obligations (CMOs). Certain tranches are considered more volatile than others. Using the criteria established by Fitch Investors Service, Inc., these universities have speculated with public funds through the investment of certain mortgage derivatives.

Fitch Investors Service, Inc., analyzed various portfolios using a model developed to describe the relative impact of changing interest rates and general market conditions on CMOs, or mortgage derivatives. The Fitch rating model evaluates volatility using a scale of V-1 through V-10, with V-1 considered low risk, while V-10 is considered speculative. Figure 3 provides a summary of the volatility ratings for these derivatives. **(See Appendix 2 for detailed analysis of mortgage derivatives.)**

Figure 3
CMO Volatility Rating Definitions

Rating	Rating Definition
V-1 V-2	Market Risk: **LOW**
V-3 V-4	Market Risk: **MODERATE**
V-5 V-6 V-7	Market Risk: **MODERATE TO HIGH**
V-8 V-9 V-10	Market Risk: **HIGH TO SPECULATIVE**

Source: Fitch Investors Service, Inc.

The following table (Figure 4) illustrates the book value and market value (as of July 31, 1994) of the mortgage derivatives held by the six universities and two junior colleges. The major portion of each portfolio consists of investments with high to speculative market risk. These investments are rated V-8 through V-10 on the CMO Volatility Rating Scale developed by Fitch Investors Service, Inc. Some securities are not rated because:

- Fitch Investors Service, Inc., does not currently assign "V" ratings to mortgage-backed securities (MBS), which are included in some portfolios.

However, Fitch has indicated that these MBSs generally will fall in the V-3 to V-5 range if they were rated.

- The CUSIP number provided to Fitch Investors Service, Inc., could not be identified with a specific security. (A CUSIP is a unique identifying number assigned to each security at issuance.)

Figure 4

Entities with high concentrations of volatile mortgage derivatives

Entity	Total Portfolio as of July 31, 1994	Percentage of Portfolio Invested in Derivatives	Fund Types Invested in Derivatives	Book Value of Derivatives as of July 31, 1994	Market Value of Derivatives as of July 31, 1994	Dollar Amount Invested by Volatility Rating	
Odessa College	$21,854,441	100.0%	POOLED FUNDS:			V-8	$2,977,601
			Current Restricted	$1,092,722		V-9	4,950,958
			Current Unrestricted	6,337,788		V-10	13,925,882
			Renewal and Replacements	7,211,965			
			Unexpended Plant	1,748,355			
			Debt Service	3,715,255			
			Loan Funds	437,089			
			Auxiliary	437,089			
			Endowment	437,089			
			Agency and Club	437,089			
			TOTAL	**$21,854,441**	**$10,000,000**		**$21,854,441**
University of North Texas Health Science Center	$11,995,747	86.4%	POOLED FUNDS:			V-3	$290,893
			Education and General	$1,267,989		V-4	591,750
			Designated	5,922,483		V-5	1,367,563
			Auxiliary	189,862		V-8	2,627,652
			Restricted	609,067		V-9	2,153,805
			Loan Funds	664,021		V-10	2,438,423
			Endowment	505,715		Not Rated	890,280
			Unexpended Plant	31,498			
			Retirement of Indebtedness	254,280			
			Agency Funds	915,451			
			TOTAL	**$10,360,366**	**$6,143,749**		**$10,360,366**

Figure 4

Entities with high concentrations of volatile mortgage derivatives

Entity	Total Portfolio as of July 31, 1994	Percentage of Portfolio Invested in Derivatives	Fund Types Invested in Derivatives	Book Value of Derivatives as of July 31, 1994	Market Value of Derivatives as of July 31, 1994	Dollar Amount Invested by Volatility Rating	
Midwestern State University	$12,220,853	84.3%	POOLED FUNDS:			V-2	$443,977
			Education and General	$401,594		V-4	43,693
			Designated	2,322,081		V-6	473,359
			Auxiliary	1,982,352		V-7	578,398
			Current-Restricted	991,150		V-8	1,560,363
			Loan Funds	692,062		V-9	2,401,134
			Endowment	2,138,262		V-10	2,174,826
			Unexpended Plant	239,731		Not Rated	2,626,930
			Retirement of Indebtedness	1,311,663			
			Agency Funds	64,119			
			Renewal and Replacement	159,666			
			TOTAL	**$10,302,680**	**$6,303,393**		**$10,302,680**
East Texas State University	$21,162,214	79.0%	POOLED FUNDS:			V-2	$452,552
			Education and General	$1,927,120		V-4	816,750
			Designated	4,820,184		V-7	895,000
			Auxiliary	2,119,873		V-8	4,207,485
			Student Services	218,650		V-9	5,110,946
			Restricted	1,232,549		V-10	4,760,345
			Plant Funds	4,559,320		Not Rated	484,943
			Loan Funds	231,316			
			Endowment	433,351			
			Agency Funds	1,185,658			
			TOTAL	**$16,728,021**	**$9,093,754**		**$16,728,021**
Southwest Texas State University	$54,707,901	62.4%	Designated	$7,031,592		V-1	$1,099,954
			Auxiliary-Pledged	7,089,898		V-3	239,844
			Auxiliary-Unpledged	4,804,420		V-4	516,282
			Endowment	10,760,190		V-5	448,911
			Unexpended Plant	790,683		V-6	2,078,771
			Renewals and Replacements	770,000		V-7	3,777,997
			Agency Funds	2,907,538		V-8	10,996,499
						V-9	10,962,820
						V-10	3,585,556
						Not Rated	447,687
			TOTAL	**$34,154,321**	**$21,553,596**		**$34,154,321**

Figure 4
Entities with high concentrations of volatile mortgage derivatives

Entity	Total Portfolio as of July 31, 1994	Percentage of Portfolio Invested in Derivatives	Fund Types Invested in Derivatives	Book Value of Derivatives as of July 31, 1994	Market Value of Derivatives as of July 31, 1994	Dollar Amount Invested by Volatility Rating	
Sul Ross State University	$9,416,280	43.7%	Designated	$660,357		V-2	$550,698
			Endowment	3,038,324		V-6	195,517
			Unexpended Plant	414,894		V-7	159,125
						V-8	1,314,570
						V-9	1,183,476
						V-10	710,190
			TOTAL	**$4,113,575**	**$2,696,820**		**$4,113,576**
Amarillo College	$9,623,490	43.5%	Unrestricted	$4,095,591		V-5	$1,588,210
			Property Deposits	98,639		V-8	1,048,900
						V-9	1,054,708
						V-10	502,412
			TOTAL	**$4,194,230**	**$2,538,582**		**$4,194,230**
Texas Woman's University	$29,659,592	34.8%	POOLED FUNDS:			V-3	$144,848
			Designated	$2,780,081		V-4	1,085,631
			Auxiliary	1,848,941		V-6	1,335,203
			Restricted	101,766		V-7	318,249
			Endowment	5,190,975		V-8	2,245,788
			Unexpended Plant	294,289		V-9	2,090,941
			Renewals and Replacements	105,170		V-10	2,609,312
						Not Rated	491,250
			TOTAL	**$10,321,222**	**$6,610,357**		**$10,321,222**

Source: Fitch Investors Service, Inc. and SAO Survey of State Agency Investment in Derivatives

Section 2:

Inadequate Diversification Of Investment Portfolios Increases The Risk Of Future Liquidity Problems

Derivatives held by six universities and two junior colleges have market values ranging from 34 percent to over 50 percent less than the book values at July 31, 1994. The market values of these derivatives have a significant impact on the inadequately diversified portfolios.

Inadequate diversification of investments concentrates risk within a portfolio. Investing heavily in the same type of instruments magnifies the associated risks. Investment performance of a portfolio becomes dependent on limited types of investments. Rates of return on investment activity will fluctuate dramatically in an

inadequately diversified portfolio. High rates of return, experienced in the last two to three years with mortgage derivatives, have fallen drastically with the rise in interest rates.

The lack of adequate portfolio diversification is caused by three major factors:

- lack of good management controls over the investing function
- investment personnel's heavy reliance on brokers and dealers in making investment decisions
- pressures on investment personnel to produce more income

The diversification of the investment portfolio is an integral part of the investment strategy. Investment portfolios should carry a variety of investments to maximize yield while maintaining sufficient cash flow. The appropriate mix of investments at an entity is determined by the goals and objectives established in the investment policy.

Section 2-A:

The Lack Of Diversification And The Extent Of Volatile Investments Indicate That Management Controls Are Not Sufficient To Protect Invested Public Funds

The high percentage of mortgage derivatives coupled with the volatility of these investments suggests that oversight by board members and senior management and the monitoring function have not worked effectively.

Strong controls over the investment function needed to manage derivative investments include:

- Investment personnel with the technical knowledge and expertise to analyze and manage portfolios with complex financial instruments.
- An investment policy with clearly defined goals and objectives which have been established by the governing board. The investment policy should include:
  - the board's expectations for portfolio diversification
  - allowable investments
  - acceptable risk levels
  - expected rates of return
- An ethics policy addressing conflict of interest issues and requiring annual financial disclosure of key employees and board members.

- Ongoing monitoring of investment performance by investment personnel and senior management using written reports. This includes the use of independent pricing sources to determine the market value of investments.

- Submitting written reports to the governing board for review to determine if goals and objectives are being met.

Controls and decision-making processes should be emphasized as financial climates change and new investment instruments are created. In such a dynamic environment, controls must be in place and working continuously to respond to the changing financial conditions.

Strong management controls are needed to ensure investment strategies are followed and investment decisions align with established goals and objectives. Periodic review and assessment of investment portfolios can identify whether liquidity needs are met and ensure that the appropriate investment mix is maintained. **(Appendix 3 contains questions that board members and senior management can use to evaluate their controls over derivative investments.)**

Section 2-B:

Investment Personnel Appear To Place Heavy Reliance On Brokers And Dealers In Making Investment Decisions

When executing investment transactions, investment personnel strive to achieve the goals and objectives set forth in their investment policy. A goal of brokers and dealers is to earn money through the sale of investments.

Some institutions, especially those with smaller portfolios, may not attract the level of expertise needed to manage a portfolio with complex investment instruments, such as derivatives. Investment personnel are responsible for ensuring that public funds are adequately safeguarded in all aspects of the investment function. The high percentage of inverse floaters, interest only strips, and principal only strips indicates that all risks were not thoroughly analyzed before these investments were purchased. Heavy concentrations of these investments may not be appropriate in furthering the goals and objectives of certain public entities.

- Heavy concentrations of these tranches of mortgage derivatives may make it difficult to maintain sufficient liquidity to meet current cash flow needs.
- Selling these investments under current market conditions would result in significant losses to the institutions.
- If held to maturity, some of the investments could result in extremely low yields, or even negative yields.

Most of the universities and junior colleges appear to rely on brokers and dealers to provide the market value of the derivatives in their portfolios. In many cases, the same brokers and dealers that sold the investment to the institution also provide the market value. The lack of independent pricing sources is a concern because:

- Obtaining only one offer price during the purchasing process could result in paying more than market value for a particular investment.
- During the monitoring process, objective pricing information may not be provided, which could result in inappropriate investment decisions.
- While these sources may be reliable, they are not always familiar with the entity's investment strategy and policy.

Brokers and dealers have the responsibility to research investments and communicate pros and cons to the potential buyer before a purchase. Members of the National Association of Securities Dealers are subject to the "Rules of Fair Practice." These brokers and dealers are required to make reasonable efforts to obtain the customer's financial status and investment objectives before executing transactions.

Brokers and dealers are also required to determine the suitability of an investment before selling to the potential investor. A compliance review system evaluates whether a particular investment is suitable for the entity's investment portfolio. Many reputable brokerage firms insist on reviewing an entity's portfolio before selling them investments.

The professional standards of brokers and dealers do not alleviate the responsibility of investment officers to ensure that appropriate investments are made with public funds. Investment personnel should have adequate technical knowledge and expertise to properly analyze the risks associated with investments. If the expertise to analyze derivative investments is not available, then other types of investments should be considered. If investment personnel do not fully understand the extent and level of risk associated with mortgage derivatives, then these investments should not be purchased.

The Federal Financial Institutions Examination Council (FFIEC) issued a policy statement in December 1991 related to derivative investments for financial institutions. This statement:

- Establishes a framework for identifying when certain mortgage derivative products are high-risk mortgage securities. **(See Appendix 4 for the criteria used to determine if these derivatives are high risk.)**
- Addresses the selection of securities dealers.
- Requires depository institutions to establish prudent policies and strategies for securities transactions.
- Defines securities trading or sales practices that are viewed as being unsuitable when conducted in an investment portfolio.

Entities investing public funds can use this criteria when analyzing the risk associated with their individual investment portfolios. For predominately long-term funds, such as pensions and endowment funds, this criteria may not be applicable. Some investments are considered high risk because maturities extend longer than ten years. Long-term investments are appropriate for fund types like pension and endowment funds.

Section 2-C:

Pressures On Investment Personnel To Produce More Income Creates More Risk For Investment Portfolios

Pressures on investment personnel to produce more income through investments is increasing as junior colleges, universities, and state agencies strive "to do more with less." However, investments with higher yields generally carry relatively higher risks.

Entities may be focusing heavily on maximizing return on investments, with less emphasis on weighing the associated risks. In any portfolio, it is essential to maintain sufficient liquidity to meet current cash flow needs. Portfolio management includes safeguarding principal and maximizing return while maintaining sufficient liquidity to meet current financial obligations.

Investment pressures have influenced at least one investment portfolio in the State. The Texas Education Agency is required by Rider 58 of the current General Appropriations Act (Senate Bill 5) to change the investment strategy of the Permanent School Fund to result in an additional $50 million over the Comptroller's official estimate for the 1994-1995 biennium.

Section 2-D:

Two Institutions Have Portfolios That Are Not Diversified, And May Not Be At Risk Of Experiencing Liquidity Problems

Fitch Investors Service, Inc., rated the mortgage derivatives of one university and one junior college as having low to moderate volatility, as shown in Figure 5.

Although Texas Tech University and Bee County College have mortgage derivatives with relatively low to moderate volatility, these portfolios are not diversified. In an investment portfolio, diversification is normally achieved by placing funds in various types of investments. Diversification is used to reduce overall risk to a portfolio by investing funds in various instruments, each having different risk levels.

Both institutions report that a major portion of the money used to acquire these mortgage derivatives are long-term funds, such as endowment and plant funds. These funds can accept more extension risk than operating funds since the money is not needed to meet immediate cash flow needs. The principal amount of endowment funds cannot be spent.

Texas Tech University and Health Sciences Center - University investment personnel believe the investment pool is diversified through its ownership in more than 200 mortgage pools. Investments are "laddered," or staggered, with five- to seven-year maturity dates to meet future projected cash flow needs. Investment personnel explained that the mortgage derivatives they hold are engineered to meet the liquidity needs while mitigating the risk associated with these investments.

Figure 5

Institutions With High Concentrations Of Derivatives With Low To Moderate Volatility

Institution	Total Portfolio as of July 31, 1994	Percent of Portfolio Invested in Derivatives	Derivatives by Fund Type	Derivatives Book Value as of July 31, 1994	Market Value of Derivatives as of July 31, 1994	Dollar Amount Invested by Volatility Rating	
Texas Tech University and Health Sciences Center	$307,704,326	89.1%	Agency and Endowment	$74,030,180		V-1	$3,796,890
			Medical Practice Plan	46,611,595		V-2	34,769,569
			Plant Funds	24,676,727		V-3	24,400,321
			Designated	65,804,604		V-4	49,922,204
			Education and General	19,193,010		V-5	59,648,166
			Current-Restricted	27,144,399		V-6	22,277,296
			Auxiliary	12,612,549		V-7	2,996,876
			Loan Funds	4,112,788		Not Rated	76,374,530
			TOTAL	**$274,185,852**	**$268,771,148**		**$274,185,852**
Bee County College	$5,741,945	60.0%	Endowment	$545,840		V-1	$78,000
			Building and Maintenance	2,901,234		V-2	51,216
						V-3	700,000
						V-4	569,735
						V-5	500,000
						V-6	417,815
						V-8	898,159
						Not Rated	232,149
			TOTAL	**$3,447,074**	**$3,216,816**		**$3,447,074**

Source: Fitch Investors Service, Inc., and SAO Survey of State Agency Investment in Derivatives

Bee County College - This junior college holds 13 different mortgage obligations with maturities ranging from less than one year to about 23 years. The College has indicated that most of the mortgage derivatives were purchased with anticipated maturities of three to five years. Plant funds and endowment funds were used to purchase these mortgage derivatives. The College reports that the extended life should not adversely affect the long-term building plans of the institution.

Section 3:

Total Derivative Investments in Texas Account For Less Than 10 Percent ($6.5 Billion) Of The Total Investments ($74.6 Billion) Of All Entities Reporting Derivatives

More than 92 percent of the derivative investments, or about $6 billion, are in the State's largest portfolios. A significant portion of these investments are held by pension and endowment funds, which are long term in nature. The level of investment in derivatives appears reasonable in the context of the total portfolios at these entities.

The Teacher Retirement System, the Texas Education Agency, and The University of Texas System report market values greater than book values in their derivatives portfolios, as indicated by Figure 6. The mortgage derivatives held by the Texas Education Agency were rated as having low to moderate volatility by Fitch Investors Service, Inc.

TexPool's derivatives were sold at book value to the Texas State Treasury on December 9, 1994.

Figure 6

Book Value and Market Value of Derivatives In the State's Largest Portfolios

Entity	Total Investment Portfolio Book Value as of July 31, 1994	Percentage of Portfolio Invested in Derivatives	Book Value of Derivatives as of July 31, 1994	Market Value of Derivatives as of July 31, 1994
Teacher Retirement System	$32,324,809,000	5.4%	$1,755,754,333	$1,817,746,880
Employees Retirement System	$9,394,244,183	6.9%	$649,349,071	$620,413,923
Texas Education Agency	$8,955,851,502	26.4%	$2,365,699,731	$2,457,075,229
Texas State Treasury	$8,400,644,171	4.9%	$412,031,392	$398,685,064
The University of Texas System	$7,053,000,000	11.1%	$784,300,000	$797,400,000
TexPool	$6,405,829,000	1.2%	$75,000,000	$73,368,750

Source: SAO Survey of State Agency Investment in Derivatives

Other entities also hold derivatives in their respective portfolios, as shown in Figure 7. These portfolios appear somewhat diversified with respect to their mortgage derivatives (reported as 30 percent or less). Therefore, volatility ratings were not obtained for these investments. Subsequently, it was determined that Lee College's portfolio percentage was 33.5 percent, rather than 30 percent as reported by the institution.

Figure 7

Book Value and Market Value of Derivatives Held by Other Entities

Entity	Total Investment Portfolio Book Value as of July 31, 1994	Percentage of Portfolio Invested in Derivatives	Book Value of Derivatives as of July 31, 1994	Market Value of Derivatives as of July 31, 1994
General Land Office	$376,026,601	10.4%	$39,277,427	$37,959,125
Texas A&M University System	$624,585,200	3.3%	$20,733,887	$20,316,248
University of Houston System	$320,633,828	2.7%	$8,598,134	$8,292,447
University of North Texas	$67,955,537	28.8%	$19,597,481	$19,227,781
Stephen F. Austin State University	$10,600,000	27.0%	$2,867,522	$2,808,320
Angelo State University	$70,189,303	9.2%	$6,487,295	$4,304,175
Lee College	$10,524,791	33.5%	$3,535,516	$2,925,439
Alamo Community College District	$81,759,538	1.1%	$930,518	$911,177
McLennan Community College	$6,889,811	17.9%	$1,233,495	$760,000
Temple Junior College	$2,487,362	23.0%	$571,878	$456,099

Source: SAO Survey of State Agency Investment in Derivatives

Based on the percentage of derivatives held by three institutions (27 to 33.5 percent), the current controls and decision-making processes should be reviewed to ensure they are sufficient. These institutions are:

- University of North Texas
- Stephen F. Austin State University
- Lee College

Section 4:

Nationwide, Certain Mutual Funds And Other Similar Investments Have Experienced Losses Due To Derivative Investments

Some state entities have invested in mutual funds and other similar investments. These investments do not automatically expose entities to the risks associated with derivatives. However, indirect exposure to the same risks could occur if the mutual fund invests in derivatives.

Mutual funds are companies organized solely for the purpose of investing. The companies raise capital by selling shares to the investors. The money is then invested in various securities which are held in the mutual fund portfolio.

Nationally, certain mutual funds have experienced losses due to the derivative investments in their respective portfolios. The following information was compiled from a series of national publications, including *USA Today* and the *Wall Street Journal*:

- Paine Webber Group, Inc., purchased $180 million of bonds from its mutual funds because derivatives, which constituted 25 percent of the portfolio, created losses.

- BankAmerica injected at least $68 million into two of its mutual funds due to losses caused by derivative investments.

- Piper Jaffray Institutional Government Income Fund experienced losses from inverse floaters, which are derivative instruments.

- Five mutual funds managed by Kidder Peabody have requested the Securities and Exchange Commission's permission for financial assistance from its parent company.

State entities may not be aware of the extent some mutual funds and other instruments are invested in derivatives. Figure 8 illustrates the state entities with investments in mutual funds and other similar investments. Disclosure by mutual funds have varied dramatically: some funds clearly list their derivatives holdings while others do not fully explain these investments.

Figure 8
State Entities Invested In Mutual Funds and Other Similar Instruments

Entity	Percentage of Portfolio with Mutual Funds and Similar Investments	Types of Investments	Book Value as of July 31, 1994	Market Value as of July 31, 1994
The University of Texas System	8.8%	Money Market Fund	$627,100,000	$627,100,000
	18.1%	Equity Index Fund	$1,286,100,000	$1,326,100,000
University of Houston System	15.7%	International Equity Trust	$50,424,206	$50,424,206
	5.0%	Money Market Fund	$16,013,128	$16,549,559
Texas A&M University System	.1%	Mutual Funds	$1,007,359	$1,003,593
University of North Texas	1.0%	Small Business Administration	$677,248	$658,036
Angelina College	.8%	Mutual Funds	$33,000	$23,483

Source: SAO Survey of State Agency Investment in Derivatives

State investment personnel should fully research investments in mutual funds and other similar investments before transactions are executed. Offering documents (prospectuses) should be reviewed to determine the types of investments in these funds. Documentation should be obtained to ensure that investment personnel fully understand the extent and types of risks associated with the mutual funds and other similar investments.

Section 5:

Recommendations

State entities should *not* be prohibited from buying derivative investments. Any investment instrument carries a certain type and amount of risk. Derivative investments are good investments when used appropriately and in the context of overall portfolio management.

State entities must be able to manage the risks in their investment portfolios. Implementation of the following recommendations will help ensure that investment of public funds is managed appropriately.

State entities should strengthen management controls to protect public funds and minimize the risks associated with derivative investments. The governing boards and senior management should implement the following controls:

- Develop an investment policy with clearly defined goals and objectives. The investment policy should include:
  - the governing board's expectation of asset diversification
  - allowable investments
  - expected rates of returns
  - acceptable (tolerable) risk levels
- Review and adjust the investment policy to consider changes in market conditions.
- Establish an investment strategy to achieve the goals and objectives.
- Develop a system for ongoing monitoring of the investment portfolio and investment transactions. Investment decisions are made internally at some entities, while other entities hire an external firm to perform the investment function. In either case, investment personnel should ensure that public funds are invested in accordance with established policy.
- Design a system to ensure active monitoring of investments by senior management and board members.

State entities should establish ethical expectations for investment personnel, management, and board members.

- Establish an ethics policy addressing conflicts of interest issues.
- Implement a system whereby potential conflicts of interest are documented for board members and key employees involved with investment decisions. The financial disclosure statements currently required from board members (Article 6252-9b) could also be completed by key employees.

Management should ensure that personnel possess the qualifications and expertise needed to make investment decisions in accordance with investment policy.

- Investment personnel should obtain the training and education needed to make investment decisions associated with complex financial instruments, such as derivatives.
- Recognize that new financial instruments are continuously created to meet various investor needs in a dynamic market. In making decisions, investments should not be made if personnel and management do not fully understand the transactions or the related risks.

- Internal auditors should also receive ongoing training on investment activity to ensure they have the appropriate level of knowledge and expertise to evaluate the investment function.

Management should ensure that investments are properly analyzed.

- Use various pricing sources in making investment purchases, and obtain competing bids when appropriate. When competing bids are not obtained, document the reasons. Documentation related to potential investments should be reviewed and analyzed, including prospectuses, Bloomberg data, volatility ratings, and other available information.

- The monitoring system should include a mechanism for obtaining at least one independent pricing source to determine market values of investments in the portfolio.

- Portfolios should be independently analyzed to ensure that investments meet acceptable risk levels and expected rates of return established in the investment policy. This analysis should be performed by someone independent of the investment decision-making process.

Board members and senior management should obtain training on investment controls, associated risks, and potential liability.

- Board members should obtain the training needed to establish controls and monitor investment activities.

- This training should be updated at least annually.

The Legislature could help state entities protect public funds investments by one or more of the following options:

Require training for senior management and board members on investment controls, associated risks, and potential liability.

- This training would be mandatory for senior management and board members and updated at least annually.

- The Texas Higher Education Coordinating Board could provide this training to board members in conjunction with existing statutory training requirements. The Governor's Development Program could provide a means to train senior management.

Tighten the Public Funds Investment Act (Chapter 2256, Title 10 of the Government Code) to ensure that entities establish management controls needed to protect public funds in investing activities.

- Require that investment policies address:
  - board's expectations of asset diversification
  - allowable investments
  - expected rates of return
  - allowable (tolerable) levels of risk
- An entity's investment policy should be submitted to any brokers and dealers that the entities use in investment transactions.

Require annual compliance audits of management controls over investments and adherence to the established investment policy.

- Junior colleges could engage external auditors to perform this audit in conjunction with their annual financial audits. Results can be reported to the State Auditor's Office in the audited financial reports prepared by the external auditors.
- Internal auditors at the universities and state agencies could perform this audit at least annually. Results can be reported to the State Auditor's Office through the yearly report submitted by internal auditors.
- The State Auditor's Office could monitor the results of these audits and report annually to the Legislature on compliance with established investment policies and related management controls.

Develop restrictions on types of allowable investments using a laddered approach based on total investment portfolio size.

- Involve a task force composed of various investment officers throughout the State to develop the levels of portfolio size and related investment limitations.
- Consider that the larger the portfolio, the more flexibility is needed to manage risk and achieve expected rates of return.
- An example of this laddered approach could be:
  - All portfolios under $200 million should comply with the criteria established by the Federal Financial Institutions Examination Council (FFIEC), with the exception of pension and endowment funds. **(See Appendix 4 for FFIEC criteria.)**

An alternative for state entities who choose to hire an external firm to manage their investment portfolios is to use the Texas Treasury Safekeeping Trust Company as their portfolio manager.

The Trust Company provides cash management and investment services to state agencies and political subdivisions in Texas. Fees are charged to recover the cost of its operations, since the Trust Company is similar to a non-profit corporation.

The Trust Company also provides the following:

- availability of full-time investment staff to oversee investments
- current pricing information through Telerate and Bloomberg electronic services
- daily liquidity
- competitive yields

The Texas Treasury Safekeeping Trust Company was created in 1986 by the Texas Legislature as a special purpose trust company.

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Appendix 1:

Objectives, Scope, And Methodology

Objectives

The objectives of this project were to determine:

1. The extent of state funds at potential risk due to derivative investments as of July 31, 1994.

2. The extent of state funds invested in derivatives as of July 31, 1994.

Scope

All state agencies, universities, and junior colleges were surveyed in this initial assessment of investment portfolios. Survey responses were received from every entity except the State Bar of Texas. The percent of investment portfolios in derivatives varied from zero to 100. The survey disclosed 5 state agencies, 13 universities, and 8 junior colleges with derivative investments.

We broadly defined derivatives as a financial arrangement whose value is based on a traditional security, an asset, or a market index.

Methodology

All state agencies, universities, and junior colleges were surveyed to determine the extent of derivative investments at these entities. The survey requested information related to the book value, market value, and source of funds used to acquire derivative investments as of July 31, 1994. Survey responses included market values ranging from July 31 to August 31. We also asked entities to determine the percentage of their respective portfolios in derivative investments.

The services of a nationally recognized statistical rating organization, Fitch Investors Service, Inc., were also obtained to analyze the volatility of the derivatives held in certain portfolios. In addition, we conducted various interviews, met with certain investment officers of state entities, and compiled information to help assess management controls over investments.

Our report focuses on the survey results and the results of the analysis prepared by Fitch Investors Service, Inc.

Other Information

Fieldwork was conducted from August through November 1994. The project was conducted in accordance with applicable professional standards.

The audit work was performed by the following members of the State Auditor's Office:

- Dianne Oldroyd, CPA (Project Manager)
- Ann Huebner
- Ann Shenetha Manuel, J.D.
- Kevin Todd
- Catherine A. Smock, CPA (Audit Manager)
- Deborah L. Kerr, Ph.D. (Audit Director)

Appendix 2:

CMO Volatility Rating Definitions
By Fitch Investors Service, Inc.

Rating	Representative Distributions	Rating Definitions
V-1 **V-2**	PAC classes with wide prepayment collars, short duration floaters, and short duration sequentials.	**Market Risk: LOW** Securities rated V-1 and V-2 perform consistently across a range of interest rate scenarios. These securities exhibit interest rate risk comparable to short durations Treasuries.
V-3 **V-4**	Medium duration floater, short duration TAC, short duration PAC II, long duration PAC I.	**Market Risk: MODERATE** Securities rated V-3 and V-4 have relatively consistent performance across a range of interest rate scenarios. These securities experience interest rate risk comparable to long duration Treasuries.
V-5 **V-6** **V-7**	PAC classes with narrow collars, support classes, accrual bonds and short duration IOs and POs, Z bonds.	**Market Risk: MODERATE TO HIGH** Securities rated V-5, V-6, or V-7 experience significant variations in performance across a range of interest rate scenarios. These securities have substantial excess interest rate risk and in many instances exhibit negative convexity*. Z bonds with durations comparable to Treasury zero-coupon issues also fall in this range.
V-8 **V-9** **V-10**	Leveraged inverse floaters, long duration IOs and POs, Super POs, Jump Zs.	**Market Risk: HIGH TO SPECULATIVE** Securities rated V-8, V-9, or V-10 experience sharp, severe variations in performance across a range of interest rate scenarios. These securities exhibit risk characteristics such as extreme negative convexity, significant sensitivity to the direction of interest rate movements, and highly leveraged sensitivity to interest rate indexes.

Source: Fitch Investors Service, Inc.

* Negative convexity is a measure of how bond prices react to changes in interest rates. Many mortgage-backed securities, particularly CMOs, are negatively convex. It is the result of changes in how quickly or slowly the principal of a mortgage-backed bond is being paid.

Appendix 2
(continued)

CMO Tranche Types
By Fitch Investors Service, Inc.

The tranche type is determined based on a series of descriptors. The descriptors are ordered to reflect the principal payment behavior of the bond and then the interest payment behavior of the bond. The following is a list which describes each descriptor:

AD Accretion Directed - A bond that pays principal from specified accretions of accrual bonds.

CPT Component - A bond comprised of multiple components, sometimes of different types.

DLY Delay - Floating rate of inverse floating rate class for which there is a delay between the end of the interest accrual period and the payment date.

FIX Fixed Interest Rate - A bond whose coupon rate does not vary.

FLT Floater - A bond whose coupon resets periodically based upon a predetermined index. The coupon varies directly with changes in the index.

INV Inverse Floater - A bond whose coupon resets periodically based upon a predetermined index. The coupon varies inversely with changes in the index.

IO Interest Only - A bond that receives some or all of the interest portion of the underlying collateral and little or no principal.

LIQ Liquidity - LIQ bonds are an agency issue bond that has a five-year or less original stated maturity or any non-agency issue that has a three-year or less original stated maturity.

NPR Non-Paying Residual - Residual bond which pays neither principal nor interest.

PAC Planned Amortization Class - A bond that pays principal based on a predetermined schedule. The schedule is maintained as long as prepayment rates remain between the upper and lower "collar" rates.

PO Principal Only - A bond that does not receive any interest.

SCH Scheduled - A bond that pays principal based on a predetermined schedule, but does not fit the definition of a PAC or TAC. Generally, scheduled tranches have a prepayment collar that is too narrow to be called a PAC.

SEQ	Sequential Pay - A bond which starts to pay principal when classes with an earlier priority have been paid off. SEQ bonds have an uninterrupted payment of principal until retired.
SUP	Support - A bond that receives principal payments after scheduled payments have been made on some or all PAC, TAC, and/or SCH bonds for each payment date.
TAC	Target Amortization Class - A bond that pays principal based on a predetermined schedule. Similar to a PAC, but with less extension protection.
Z	Accrual - A bond that accretes interest which is added to the outstanding principal balance.

Appendix 2.1
ODESSA COLLEGE - CMO SUMMARY

CUSIP	ISSUER	SERIES	CLASS	TYPE	CURRENT BALANCE BY CUSIP	WAL RANGE	ENTITY'S BOOK * VALUE AS OF JULY 31, 1994	V-RATING
31359EFJ5	FNMA	93-179	SX	SUP_INV	4,685,455	1.0 - 15.7	**2,977,601**	V-8
31359AXU8	FNMA	93-108	D	PAC_PO	6,216,800	5.6 - 20.1	**275,000**	V-9
31359ED65	FNMA	93-228	G	SUP_FIX	24,079,157	1.5 - 22.4	**4,675,958**	V-9
312916N39	FHLMC	1558	SA	SUP_INV	2,821,637	1.4 - 26.7	**412,717**	V-10
3133T0V76	FHLMC	1585	PM	SUP_INV_DLY	12,426,982	1.0 - 24.7	**227,719**	V-10
3133T1D82	FHLMC	1602	SA	CPT_SUP_INV	17,962,791	1.3 - 23.2	**2,916,279**	V-10
3133T1Y48	FHLMC	1608	SG	SUP_INV	3,914,355	0.9 - 26.5	**1,895,250**	V-10
3133T2QE3	FHLMC	1611	PB	SUP_INV_DLY	126,225,285	0.8 - 23.9	**1,284,306**	V-10
3133T2TB6	FHLMC	1609	OD	SUP_INV_DLY	18,588,415	0.9 - 26.7	**1,835,625**	V-10
31359BM46	FNMA	93-162	S	SUP_INV	2,222,802	1.5 - 27.3	**59,335**	V-10
31359BNX1	FNMA	93-122	N	SUP_PO	2,332,485	1.5 - 26.8	**240,465**	V-10
31359DKG7	FNMA	93-184	M	SUP_PO	97,798,257	2.9 - 20.3	**1,638,009**	V-10
31359FEW4	FNMA	93-202	SU	SUP_INV	13,382,353	0.9 - 26.7	**3,416,177**	V-10
						TOTAL	21,854,441	

*This section added by the State Auditor's Office
**Securities not rated because they are mortgage backed securities and Fitch does not rate MBS; or the entity submitted an unverifiable CUSIP number.

Prepared by FITCH INVESTORS SERVICE

Appendix 2.2
UNIVERSITY OF NORTH TEXAS HEALTH SCIENCE CENTER - CMO SUMMARY

CUSIP	ISSUER	SERIES	CLASS	TYPE	CURRENT BALANCE BY CUSIP	WAL RANGE	ENTITY'S BOOK * VALUE AS OF JULY 31, 1994	V-RATING
312912UU0	FHLMC	1405	F	SUP_INV	34,407,310	2.9 - 2.9	290,893	V-3
312915AL5	FHLMC	1484	M	AD_FIX	9,612,000	6.6 - 12.5	591,750	V-4
3133T3KN7	FHLMC	1628	N	TAC_FIX	72,949,647	2.1 - 19.8	1,367,563	V-5
3133T1CD2	FHLMC	1584	S	SCH_INV	20,508,055	1.2 - 17.9	1,605,015	V-8
3133T3QK7	FHLMC	1660	S	SUP_INV	8,102,378	0.9 - 11.1	470,284	V-8
31359DV75	FNMA	93-185	SB	PAC_INV	14,594,454	1.8 - 23.2	475,000	V-8
31359EYC9	FNMA	93-213	H	TAC_PO	31,316,051	1.4 - 8.6	77,353	V-8
31359EW98	FNMA	93-206	SB	SUP_INV	23,889,972	1.6 - 22.6	2,153,805	V-9
3133T1CF7	FHLMC	1584	SB	SUP_INV	38,766,008	0.9 - 24.4	973,423	V-10
3133T1X98	FHLMC	1608	SC	SUP_INV	10,839,165	0.9 - 26.5	450,000	V-10
31359D2B8	FNMA	93-187	SB	SUP_INV	39,797,800	0.9 - 24.6	1,015,000	V-10
						VERIFIED CUSIP TOTAL	9,470,088	
						SECURITIES NOT RATED TOTAL	890,278	**
						COMBINED TOTAL	10,360,366	

*This section added by the State Auditor's Office.
**Securities not rated because they are mortgage backed securities and Fitch does not rate MBS; or the entity submitted an unverifiable CUSIP number.

Prepared by FITCH INVESTORS SERVICE

Appendix 2.3
MIDWESTERN STATE UNIVERSITY - CMO SUMMARY

CUSIP	ISSUER	SERIES	CLASS	TYPE	CURRENT BALANCE BY CUSIP	WAL RANGE	ENTITY'S BOOK * VALUE AS OF JULY 31, 1994	V-RATING
312909M68	FHLMC	1270	S	SUP_INV	7,136,689	2.4 - 2.5	86,909	V-3
312913WQ5	FHLMC	1436	SE	SUP_INV	4,370,938	3.0 - 3.1	260,755	V-3
31358J2D2	FNMA	91-141	SP	PAC_INV	4,422,719	0.3 - 2.2	96,313	V-3
312911FM7	FHLMC	1330	KB	SUP_INV	129,141	4.7 - 4.7	43,693	V-4
3133T3BZ0	FHLMC	1644	NB	PAC_INV	30,665,002	2.7 - 10.1	473,359	V-6
3133T1ZC9	FHLMC	1607	S	SCH_INV	3,284,637	2.8 - 9.6	578,398	V-7
312914P40	FHLMC	1477	P	TAC_INV_DLY	12,754,543	1.0 - 23.8	430,613	V-8
3133T3V54	FHLMC	1672	S	SUP_INV	36,491,568	0.9 - 21.5	490,976	V-8
31358QY74	FNMA	92-184	SA	SCH_INV	7,273,101	0.5 - 17.7	405,566	V-8
31358TCK3	FNMA	93-G2	SA	PAC_INV	1,719,825	0.6 - 23.5	149,667	V-8
31358TKU2	FNMA	93-G3	SD	PAC_INV	231,924	0.2 - 24.8	83,541	V-8
312915FH9	FHLMC	1496	PA	CPT_INV	1,537,992	0.6 - 22.6	72,157	V-9
3133T0BF0	FHLMC	1541	KC	SUP_INV_DLY	5,468,530	1.1 - 21.6	317,652	V-9
3133T0VT8	FHLMC	1560	SN	SUP_INV	2,775,161	1.0 - 23.2	608,183	V-9
3133T1YF3	FHLMC	G21	SN	SUP_INV	18,789,306	1.8 - 26.7	488,724	V-9
31359BZU4	FNMA	93-119	SH	TAC_INV	12,006,965	0.8 - 20.7	914,418	V-9
312916FT1	FHLMC	1526	S	SUP_INV_DLY	6,874,514	0.6 - 19.6	407,087	V-10
31358RXD0	FNMA	92-G64	SB	SUP_INV	4,297,564	0.4 - 21.4	209,729	V-10
31358UEV4	FNMA	93-32	SK	SCH_INV	3,769,095	0.6 - 27.2	156,584	V-10
31359E7C9	FNMA	93-235	H	TAC_PO	34,000,252	1.5 - 12.4	668,294	V-10
31359FFR4	FNMA	93-237	H	SUP_PO	76,376,466	3.3 - 23.5	733,132	V-10

VERIFIED CUSIP TOTAL	7,675,749	
SECURITIES NOT RATED TOTAL	2,626,931	**
COMBINED TOTAL	10,302,680	

*This section added by the State Auditor's Office.
**Securities not rated because they are mortgage backed securities and Fitch does not rate MBS.

Prepared by FITCH INVESTORS SERVICE

Appendix 2.4
EAST TEXAS STATE UNIVERSITY - COMMERCE - CMO SUMMARY

CUSIP	ISSUER	SERIES	CLASS	TYPE	CURRENT BALANCE BY CUSIP	WAL RANGE	ENTITY'S BOOK * VALUE AS OF JULY 31, 1994	V-RATING
313603WK4	FNMA	90-12	E	PAC_FIX	42,702,230	0.6 - 3.7	452,552	V-2
31359ATD1	FNMA	93-86	K	PAC_FIX	13,380,000	1.6 - 9.7	816,750	V-4
3133T2GH7	FHLMC	1621	SH	PAC_INV	11,254,000	5.3 - 12.3	400,000	V-7
31359DQR7	FNMA	93-168	T	SUP_FIX	34,815,200	0.9 - 26.8	495,000	V-7
3133T0SG0	FHLMC	1575	SB	SUP_INV	5,081,032	1.3 - 11.5	989,512	V-8
31358U2W5	FNMA	93-50	SH	SCH_INV	5,973,317	0.9 - 16.3	867,126	V-8
31358UBB1	FNMA	93-29	SE	SCH_INV	3,646,176	0.5 - 17.2	427,409	V-8
31359FUC0	FNMA	93-223	SJ	TAC_INV	4,126,316	1.9 - 18.7	965,000	V-8
31359FUF3	FNMA	93-223	SO	TAC_INV	3,754,947	1.9 - 18.7	958,438	V-8
3133T1YF3	FHLMC	G21	SN	SUP_INV	18,789,306	1.8 - 26.7	977,448	V-9
3133T3VH8	FHLMC	1666	S	TAC_INV	9,418,527	1.1 - 16.5	664,456	V-9
31359BEB9	FNMA	93-115	SD	SUP_INV	11,546,200	1.5 - 25.0	273,359	V-9
31359EXL0	FNMA	93-189	S	CPT_INV	17,888,750	1.4 - 22.6	2,196,805	V-9
31359FET1	FNMA	93-202	SR	TAC_INV	11,517,321	2.0 - 21.7	998,878	V-9
3133T0V68	FHLMC	1585	PL	SUP_INV_DLY	25,912,351	1.0 - 24.7	943,060	V-10
3133T1CF7	FHLMC	1584	SB	SUP_INV	38,766,008	0.9 - 24.4	966,104	V-10
3133T2QE3	FHLMC	1611	PB	SUP_INV_DLY	126,225,285	0.8 - 23.9	433,556	V-10
31358RXD0	FNMA	92-G64	SB	TAC_INV	4,297,564	0.4 - 21.4	349,549	V-10
31359AH77	FNMA	93-97	SB	SUP_INV	14,095,418	0.8 - 22.8	538,166	V-10
31359GDX1	FNMA	93-225	SM	SUP_INV	10,602,000	1.5 - 26.0	1,529,910	V-10

VERIFIED CUSIP TOTAL	16,243,078	
SECURITIES NOT RATED TOTAL	484,943	**
COMBINED TOTAL	16,728,021	

*This section added by the State Auditor's Office.
**Securities not rated because they are mortgage backed securities and Fitch does not rate MBS; or the entity submitted an unverifiable CUSIP number.

Prepared by FITCH INVESTORS SERVICE

Appendix 2.5
SOUTHWEST TEXAS STATE UNIVERSITY - CMO SUMMARY

CUSIP	ISSUER	SERIES	CLASS	TYPE	CURRENT BALANCE BY CUSIP	WAL RANGE	ENTITY'S BOOK * VALUE AS OF JULY 31, 1994	V-RATING
31358JBG5	FNMA	91-119	S	SEQ_INV	3,977,853	0.2 - 0.6	1,099,954	V-1
31358J2D2	FNMA	91-141	SP	PAC_INV	4,422,719	0.3 - 2.2	239,844	V-3
312911FM7	FHLMC	1330	KB	CPT_INV	129,141	4.7 - 4.7	87,386	V-4
312915DX6	FHLMC	1490	SE	PAC_INV	3,376,167	1.4 - 5.4	428,896	V-4
312913J31	FHLMC	1452	C	SUP_FIX	18,633,108	1.4 - 11.8	448,911	V-5
3133T3BZ0	FHLMC	1644	NB	PAC_INV	30,403,595	2.7 - 10.1	1,893,436	V-6
31358TTZ2	FNMA	93-G8	A	SCH_FIX	7,855,832	0.4 - 24.2	185,335	V-6
3133T1ZC9	FHLMC	1607	S	SCH_INV	3,198,640	2.8 - 9.6	771,197	V-7
31358UKT2	FNMA	93-53	M	SCH_FIX	14,362,435	1.1 - 23.3	1,177,787	V-7
31359A3F4	FNMA	93-116	SB	TAC_INV	28,948,566	1.0 - 13.9	430,191	V-7
31359BVD6	FNMA	93-134	SB	SUP_INV	3,879,006	0.8 - 11.6	928,900	V-7
31359DNX7	FNMA	93-164	SA	SUP_FLT	2,947,052	1.2 - 12.3	469,922	V-7
312915UE9	FHLMC	1504	SB	SUP_INV	740,736	0.6 - 22.9	39,796	V-8
312915ZT1	FHLMC	1505	NB	SUP_INV_DLY	246,046	0.5 - 24.6	88,921	V-8
3133T0YT5	FHLMC	1552	LA	PAC_INV	13,921,788	1.0 - 16.6	981,564	V-8
3133T0YY4	FHLMC	1552	LF	PAC_INV	27,954,471	0.7 - 16.6	2,110,364	V-8
3133T1CD2	FHLMC	1584	S	SCH_INV	20,508,055	1.2 - 17.9	972,737	V-8
3133T1YD8	FHLMC	G21	SL	SUP_INV	31,291,322	0.7 - 17.2	898,074	V-8
3133T3FV5	FHLMC	1637	LB	PAC_INV	7,205,558	3.0 - 13.8	1,834,501	V-8
3133T3V54	FHLMC	1672	S	SUP_INV	36,372,592	0.9 - 21.5	1,011,410	V-8
31358QY74	FNMA	92-184	SA	SCH_INV	7,273,101	0.5 - 17.7	410,700	V-8
31358TCK3	FNMA	93-G2	SA	PAC_INV	1,719,825	0.6 - 23.5	299,334	V-8
31358UBB1	FNMA	93-29	SE	SCH_INV	3,646,176	0.5 - 17.2	598,373	V-8
31359B4V6	FNMA	93-141	SB	SUP_INV	10,679,150	1.3 - 21.7	812,278	V-8
31359GKJ4	FNMA	94-10	S	PAC_INV	9,002,105	1.4 - 17.2	938,447	V-8
312915FH9	FHLMC	1496	PA	CPT_INV	1,520,844	0.6 - 22.6	288,628	V-9
312916VG1	FHLMC	1534	PH	TAC_INV_DLY	15,558,599	1.2 - 25.9	2,263,852	V-9
3133T04A9	FHLMC	1574	WH	SUP_INV	1,044,339	1.5 - 26.1	500,000	V-9

Prepared by FITCH INVESTORS SERVICE

Appendix 2.5
SOUTHWEST TEXAS STATE UNIVERSITY - CMO SUMMARY

3133T0BF0	FHLMC	1541	KC	SUP_INV_DLY	5,468,530	1.1 - 21.6	432,359	V-9
3133T2JF8	FHLMC	G24	SP	SUP_INV	10,965,915	1.2 - 26.9	3,953,962	V-9
31358UJQ0	FNMA	93-39	SA	SUP_INV	304,740	0.8 - 27.8	51,348	V-9
31358UTF3	FNMA	93-46	SK	SCH_INV	1,680,949	0.7 - 20.1	407,877	V-9
31359AVW6	FNMA	93-77	SA	SUP_INV	2,406,408	0.5 - 18.5	754,596	V-9
31359BZU4	FNMA	93-119	SH	TAC_INV	12,006,965	0.8 - 20.7	1,828,836	V-9
31359FAX6	FNMA	93-208	SE	SUP_INV	16,230,520	1.2 - 24.0	481,362	V-9
312915QW4	FHLMC	1491	Q	SUP_INV	1,989,560	0.1 - 27.1	62,082	V-10
31359E7C9	FNMA	93-235	H	TAC_PO	34,293,356	1.5 - 12.4	670,623	V-10
31359EJ77	FNMA	93-205	EA	TAC_PO	32,823,043	1.1 - 11.1	2,084,484	V-10
31359GXY7	FNMA	94-24	D	TAC_PO	24,897,375	1.5 - 14.7	768,367	V-10

VERIFIED CUSIP TOTAL	33,706,634	
SECURITIES NOT RATED TOTAL	447,687	**
COMBINED TOTAL	34,154,321	

*This section added by the State Auditor's Office.
**Securities not rated because they are mortgage backed securities and Fitch does not rate MBS; or the entity submitted an unverifiable CUSIP number.

Prepared by FITCH INVESTORS SERVICE

Appendix 2.6
SUL ROSS STATE UNIVERSITY - CMO SUMMARY

CUSIP	ISSUER	SERIES	CLASS	TYPE	CURRENT BALANCE BY CUSIP	WAL RANGE	ENTITY'S BOOK * VALUE AS OF JULY 31, 19	V-RATING
31358GBI	FNMA	91-23	PG	PAC_FIX	64,569,537	0.7 - 3.8	183,579	V-2
31358GSC	FNMA	91-42	J	PAC_FIX	54,604,728	1.1 - 3.7	173,281	V-2
31359FRI	FNMA	93-214	L	PAC_FIX	120,848,003	2.9 - 4.3	193,838	V-2
312911WI	FHLMC	1356	J	PAC_FIX	28,500,000	1.8 - 12.8	195,517	V-6
31358RQI	FNMA	92-203	SD	SUP_INV	5,469,725	0.7 - 10.5	159,125	V-7
31358RQI	FNMA	92-203	SE	SUP_INV	1,699,522	0.7 - 10.5	99,453	V-8
31358TCK	FNMA	93-G2	SA	PAC_INV	1,719,825	0.6 - 23.5	43,703	V-8
31358U2Y	FNMA	93-50	SB	SCH_INV	4,469,440	0.9 - 16.3	262,847	V-8
31358UBE	FNMA	93-29	SE	SCH_INV	3,646,176	0.5 - 17.2	427,409	V-8
31359APF	FNMA	93-85	SB	SUP_INV	6,466,198	0.8 - 12.7	197,905	V-8
31359GW	FNMA	94-29	S	TAC_INV	2,809,453	0.9 - 16.2	283,253	V-8
312915UC	FHLMC	1504	S	CPT_INV	11,250,000	1.4 - 25.2	200,000	V-9
3133T3VH	FHLMC	1666	S	TAC_INV	9,496,867	1.1 - 16.5	284,767	V-9
31358QQ3	FNMA	92-143	SH	PAC_INV	1,808,466	2.5 - 19.1	239,214	V-9
31359BZL	FNMA	93-119	SH	TAC_INV	12,006,965	0.8 - 20.7	459,495	V-9
312915ZX	FHLMC	1505	OB	SUP_INV	5,160,000	0.4 - 25.8	213,006	V-10
31358TRC	FNMA	93-27	S	SUP_INV	15,909,588	1.4 - 22.9	76,041	V-10
31359EJ7	FNMA	93-205	EA	TAC_PO	32,823,043	1.1 - 11.1	262,402	V-10
31359EYL	FNMA	93-213	J	SUP_PO	84,287,496	4.1 - 18.9	158,741	V-10
				VERIFIED CUSIP TOTAL			4,113,575	

*This section added by the State Auditor's Office.

Prepared by FITCH INVESTORS SERVICE

Appendix 2.7
AMARILLO COLLEGE - CMO SUMMARY

CUSIP	ISSUER	SERIES	CLASS	TYPE	CURRENT BALANCE	WAL RANGE	ENTITY'S BOOK * VALUE AS OF JULY 31, 1994	V-RATING
3133T3KN7	FHLMC	1628	N	TAC_FIX	72,949,647	2.1 - 19.8	589,877	V-5
31359AFL8	FNMA	93-75	C	SCH_FIX	30,320,000	4.7 - 20.1	998,333	V-5
31358UKS4	FNMA	93-53	LA	SCH_FIX	5,783,751	0.6 - 19.7	98,639	V-8
31359DV75	FNMA	93-185	SB	PAC_INV	14,594,454	1.8 - 23.2	950,261	V-8
3133T15T5	FHLMC	1614	VB	SUP_INV_DLY	19,797,985	0.8 - 22.9	561,202	V-9
31359EW98	FNMA	93-206	SB	SUP_INV	23,889,972	1.6 - 22.6	493,506	V-9
3133T1FW7	FHLMC	1599	S	SUP_INV	31,996,040	1.1 - 23.5	502,411	V-10
					VERIFIED CUSIP TOTAL		4,194,230	

*This section added by the State Auditor's Office.

Prepared by FITCH INVESTORS SERVICE

Appendix 2.8
TEXAS WOMAN'S UNIVERSITY - CMO SUMMARY

CUSIP	ISSUER	SERIES	CLASS	TYPE	CURRENT BALANCE BY CUSIP	WAL	ENTITY'S BOOK * VALUE AS OF JULY 31, 1994	V-RATING
312909M68	FHLMC	1270	S	SUP_INV	7,136,689	2.4 - 2.5	144,848	V-3
3129106G2	FHLMC	1329	SA	SUP_INV	9,597,383	2.9 - 4.6	293,460	V-4
31359DVN0	FNMA	93-180	SB	STP_INV	108,823,805	3.9 - 4.8	792,171	V-4
312914RL0	FHLMC	1476	SB	SUP_INV	2,478,577	0.6 - 11.5	375,153	V-6
3133T36C7	FHLMC	1671	KB	PAC_INV	19,055,777	3.0 - 8.6	960,050	V-6
31358RQH9	FNMA	92-203	SD	SUP_INV	5,469,725	0.7 - 10.5	318,249	V-7
312914P40	FHLMC	1477	P	TAC_INV_DLY	12,948,568	1.0 - 23.8	587,209	V-8
31358TCK3	FNMA	93-G2	SA	PAC_INV	1,719,825	0.6 - 23.5	299,334	V-8
31358UBB1	FNMA	93-29	SE	SCH_INV	3,646,176	0.5 - 17.2	427,409	V-8
31359GRN8	FNMA	94-22	SA	SCH_INV	21,886,180	1.6 - 14.7	931,836	V-8
3133T2JF8	FHLMC	G24	SP	SUP_INV	10,965,915	1.2 - 26.9	494,245	V-9
3133T3VH8	FHLMC	1666	S	TAC_INV	9,496,867	1.1 - 16.5	474,612	V-9
3133T4EX0	FHLMC	1686	SL	PAC_INV_DLY	11,838,093	1.1 - 15.2	923,229	V-9
31358QQZ1	FNMA	92-143	SH	PAC_INV	1,808,466	2.5 - 19.1	198,855	V-9
3129144D3	FHLMC	1487	K	SUP_INV	7,494,747	1.1 - 24.3	365,288	V-10
312914P81	FHLMC	1477	T	SUP_INV	488,443	0.8 - 27.5	48,381	V-10
312915ZX2	FHLMC	1505	OB	SUP_INV	5,160,000	0.4 - 25.8	767,500	V-10
312916FT1	FHLMC	1526	S	SUP_INV_DLY	6,941,348	0.6 - 19.6	267,216	V-10
31358T4M8	FNMA	93-21	SD	SCH_INV	13,412,824	0.3 - 24.4	711,094	V-10
31359EJ77	FNMA	93-205	EA	TAC_PO	32,823,043	1.1 - 11.1	449,833	V-10

VERIFIED CUSIP TOTAL	9,829,972	
SECURITIES NOT RATED TOTAL	491,250	**
COMBINED TOTAL	10,321,222	

*This section added by the State Auditor's Office.
**Securities not rated because they are mortgage backed securities and Fitch does not rate MBS; or the entitiy submitted an unverifiable CUSIP number.

Prepared by FITCH INVESTORS SERVICE

Appendix 2.9
TEXAS TECH UNIVERSITY AND HEALTH SCIENCES CENTER - CMO SUMMARY

CUSIP	ISSUER	SERIES	CLASS	TYPE	CURRENT BALANCE BY CUSIP	WAL RANGE	ENTITY'S BOOK VALUE AS OF JULY 31, 1994	V-RATING
312908RT5	FHLMC	1201	C	PAC_FIX	37,208,079	0.3 - 1.1	514,375	V-1
312910X31	FHLMC	1317	E	PAC_FIX	126,146,250	1.2 - 2.5	1,000,000	V-1
31340YAN9	FHLMC	3	C	STP_FIX	11,951,087	0.5 - 1.2	264,390	V-1
31358NY71	FNMA	92-110	E	PAC_FIX	122,381,000	1.3 - 2.8	1,017,500	V-1
31359DG56	FNMA	93-155	PC	PAC_FIX	29,200,000	2.4 - 2.4	1,000,625	V-1
312904EU5	FHLMC	188	F	PAC_FIX	94,860,468	0.9 - 3.9	3,794,375	V-2
312904YE9	FHLMC	1020	I	PAC_FIX	24,195,299	0.8 - 4.4	1,179,595	V-2
312905J94	FHLMC	1078	F	PAC_FIX	77,519,426	1.0 - 4.4	1,470,000	V-2
3129062M1	FHLMC	1136	F	PAC_FIX	102,496,000	1.0 - 4.4	1,487,109	V-2
312907FJ2	FHLMC	1142	G	PAC_FIX	123,306,795	1.0 - 4.2	1,035,798	V-2
3129095U4	FHLMC	1265	F	PAC_FIX	26,460,000	1.0 - 4.3	1,002,188	V-2
312909Z80	FHLMC	1275	D	PAC_FIX	120,000,000	1.0 - 3.9	1,998,438	V-2
3129104Y5	FHLMC	1326	E	PAC_FIX	21,300,000	1.2 - 3.7	1,528,359	V-2
312912ME5	FHLMC	1395	C	TAC_FIX	52,121,000	0.9 - 3.4	1,458,750	V-2
312915BT7	FHLMC	1489	F	PAC_FIX	100,385,000	3.3 - 4.5	1,507,031	V-2
312915G54	FHLMC	1500	E	CPT_PAC_FI	137,000,000	2.4 - 4.8	708,867	V-2
31358EP71	FNMA	90-98	H	PAC_FIX	64,800,000	0.6 - 3.9	1,881,250	V-2
31358EYV8	FNMA	90-88	H	PAC_FIX	18,092,000	0.7 - 4.4	1,910,000	V-2
31358GSG3	FNMA	91-42	J	PAC_FIX	54,604,728	1.1 - 3.7	862,673	V-2
31358GXH5	FNMA	91-52	H	PAC_FIX	50,551,741	1.0 - 4.1	807,032	V-2
31358KY36	FNMA	91-173	PG	PAC_FIX	54,731,000	1.4 - 3.5	972,500	V-2
31358LG34	FNMA	92-18	G	PAC_FIX	390,915,000	1.9 - 5.0	981,563	V-2
31358N7H9	FNMA	92-128	D	PAC_FIX	29,189,593	0.8 - 3.1	1,387,891	V-2
31358PDY0	FNMA	92-117	G	PAC_FIX	47,603,225	1.0 - 4.7	2,008,438	V-2
31358PNM5	FNMA	92-138	C	PAC_FIX	63,138,000	1.6 - 4.3	1,449,375	V-2
31358PR74	FNMA	92-125	E	PAC_FIX	48,500,000	0.9 - 3.9	1,004,844	V-2
31358FYZ6	FNMA	91-6	K	PAC-FIXED	47,135	1.0 - 3.5	2,372,555	V-2
31290SJ8	FHLMC	1161	F	PAC-FIXED	45,000	.8 - 3.9	1,960,938	V-2

Prepared by FITCH INVESTORS SERVICE

Appendix 2.9
TEXAS TECH UNIVERSITY AND HEALTH SCIENCES CENTER - CMO SUMMARY

312909JU9	FHLMC	1243	I	PAC_FIX	35,210,000	2.0 - 5.6	1,006,250	V-3
312912VZ8	FHLMC	1382	E	PAC_FIX	27,685,715	1.2 - 5.3	987,500	V-3
312913JB3	FHLMC	1424	PE	PAC_FIX	14,560,000	1.5 - 5.8	958,438	V-3
312915Z79	FHLMC	1506	PE	PAC_FIX	62,347,768	1.8 - 5.2	995,000	V-3
3133T5DQ3	FHLMC	1720	PE	PAC_FIX	55,930,000	3.8 - 6.0	976,875	V-3
3133T5DR1	FHLMC	1720	PG	PAC_FIX	26,200,000	5.2 - 8.7	969,375	V-3
3133T5GX5	FHLMC	1723	PE	PAC_FIX	38,987,000	2.5 - 6.9	951,406	V-3
3133T5JL8	FHLMC	1721	G	PAC_FIX	31,225,287	5.2 - 8.7	1,963,906	V-3
31358G2M8	FNMA	91-63	G	PAC_FIX	56,538,600	1.8 - 6.1	985,469	V-3
31358KJ58	FNMA	91-161	H	PAC_FIX	63,022,000	0.7 - 4.8	3,797,500	V-3
31358ND90	FNMA	92-108	G	PAC_FIX	30,502,500	2.7 - 5.2	1,920,633	V-3
31358QRM9	FNMA	92-171	PB	PAC_FIX	54,700,000	1.8 - 5.3	976,250	V-3
31358QRP2	FNMA	92-171	PD	PAC_FIX	107,033,000	1.8 - 5.3	2,927,344	V-3
31358TS75	FNMA	93-28	PG	PAC_FIX	84,883,000	2.3 - 5.5	1,509,375	V-3
31359EJN2	FNMA	93-194	PG	PAC_FIX	82,865,000	2.4 - 5.2	1,505,625	V-3
31359HD68	FNMA	94-81	PE	PAC_FIX	92,501,000	3.1 - 5.9	984,687	V-3
31359HRB2	FNMA	94-65	PE	PAC_FIX	51,828,000	3.0 - 5.7	984,688	V-3
312904FC4	FHLMC	189	C	PAC_FIX	43,846,400	1.3 - 7.4	1,940,000	V-4
312904GU5	FHLMC	191	C	PAC_FIX	53,630,000	1.5 - 9.8	1,430,625	V-4
3129073LO	FHLMC	1181	H	PAC_FIX	72,522,000	1.8 - 6.9	2,009,375	V-4
3129093T9	FHLMC	1250	G	PAC_FIX	43,833,118	1.5 - 9.9	1,503,750	V-4
312909TY0	FHLMC	1252	F	PAC_FIX	45,242,000	1.4 - 6.5	1,523,906	V-4
312911A75	FHLMC	1332	FA	PAC_FIX	91,491,419	1.4 - 6.7	987,500	V-4
312911EU0	FHLMC	1344	G	TAC_FIX	25,893,000	1.9 - 7.1	976,250	V-4
312911GQ7	FHLMC	1343	G	PAC_FIX	65,250,000	1.3 - 6.5	997,188	V-4
312911TE0	FHLMC	1348	PJ	PAC_FIX	75,124,500	1.6 - 8.2	1,479,080	V-4
312911XJ4	FHLMC	1350	F	PAC_FIX	142,858,000	1.7 - 7.7	1,984,469	V-4
312913AUO	FHLMC	1412	I	PAC_FIX	26,811,000	4.8 - 14.5	2,002,813	V-4
312913MV5	FHLMC	1433	E	PAC_FIX	47,505,000	1.6 - 8.9	972,813	V-4
312915H87	FHLMC	1500	GB	CPT_PAC_FI)	62,700,000	2.1 - 8.2	1,505,859	V-4
312915LD1	FHLMC	1497	FF	PAC_FIX	20,723,000	5.2 - 13.3	3,064,891	V-4
3133T0AL8	FHLMC	1541	F	PAC_FIX	137,330,451	2.3 - 8.3	1,003,750	V-4
3133T0Q98	FHLMC	1573	PI	PAC_FIX	29,869,200	5.8 - 13.0	2,851,321	V-4

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Appendix 2.9
TEXAS TECH UNIVERSITY AND HEALTH SCIENCES CENTER - CMO SUMMARY

3133T0XS8	FHLMC	1552	F	PAC_FIX	302,754,290	2.3 - 8.5	2,398,438	V-4
3133T1AG7	FHLMC	1583	G	PAC_FIX	56,335,000	2.5 - 8.3	1,001,875	V-4
3133T1AN2	FHLMC	1583	J	PAC_FIX	26,665,000	6.0 - 14.0	1,981,563	V-4
3133T2QW3	FHLMC	1609	F	PAC_FIX	141,123,206	2.8 - 8.0	947,813	V-4
3133T5HV8	FHLMC	1729	G	PAC_FIX	45,930,000	3.0 - 11.6	986,875	V-4
31358GU39	FNMA	91-53	H	PAC_FIX	26,842,000	1.0 - 7.1	1,003,750	V-4
31358LJP2	FNMA	92-6	H	PAC_FIX	116,800,000	1.8 - 9.8	998,750	V-4
31358PR82	FNMA	92-125	G	PAC_FIX	46,330,000	1.4 - 8.3	983,594	V-4
31358QK53	FNMA	92-182	PG	PAC_FIX	84,300,000	1.6 - 8.3	970,331	V-4
31358QZC2	FNMA	92-G59	B	TAC_FIX	15,366,000	1.1 - 6.5	928,906	V-4
31358RDP5	FNMA	92-197	A	PAC_FIX	141,006,000	1.9 - 8.6	971,250	V-4
31358RF81	FNMA	92-214	PH	PAC_FIX	7,579,500	2.0 - 9.6	1,520,625	V-4
31358RNL3	FNMA	92-198	H	PAC_FIX	35,869,000	1.7 - 7.6	1,512,188	V-4
31358T5P0	FNMA	93-23	PJ	PAC_FIX	84,636,000	1.9 - 8.9	1,015,625	V-4
31359AZR3	FNMA	93-94	G	PAC_FIX	47,298,620	2.8 - 11.0	1,003,125	V-4
31359B6P7	FNMA	93-149	H	PAC_FIX	120,589,400	2.7 - 8.2	1,502,344	V-4
31359DFR9	FNMA	93-139	G	PAC_FIX	80,372,750	2.4 - 8.4	2,008,750	V-4
31359DJ53	FNMA	93-155	G	PAC_FIX	89,400,000	2.4 - 8.4	991,875	V-4
313603YY2	FNMA	90-14	H	PAC_FIX	43,754,000	1.4 - 8.8	960,937	V-4
312909TZ7	FHLMC	1252	G	PAC_FIX	44,548,000	1.9 - 11.2	994,063	V-5
312910RW4	FHLMC	1288	H	PAC_FIX	153,800,000	2.0 - 12.3	4,415,500	V-5
3129115Q9	FHLMC	1370	F	PAC_FIX	46,933,333	1.8 - 10.2	1,000,625	V-5
312911RW2	FHLMC	1349	PH	PAC_FIX	49,765,000	1.7 - 9.5	985,938	V-5
3129123LO	FHLMC	1406	G	PAC_FIX	40,000,000	2.8 - 11.1	755,628	V-5
312914G99	FHLMC	1480	H	PAC_FIX	55,690,000	2.8 - 11.6	1,003,750	V-5
312914U85	FHLMC	1482	GA	PAC_FIX	25,743,200	2.6 - 15.0	3,218,125	V-5
3129156E6	FHLMC	1527	H	PAC_FIX	43,756,000	3.5 - 15.0	2,515,625	V-5
312915AF8	FHLMC	1484	G	PAC_FIX	64,748,000	2.4 - 9.0	993,594	V-5
312915FT3	FHLMC	1499	B	PAC_FIX	8,865,850	1.2 - 11.4	1,023,750	V-5
312915TW1	FHLMC	1504	PJ	PAC_FIX	73,100,000	2.7 - 13.4	1,489,688	V-5
312916EE5	FHLMC	1517	H	PAC_FIX	19,546,000	3.4 - 19.5	1,005,625	V-5
312916MD8	FHLMC	1530	G	PAC_FIX	43,064,795	2.9 - 13.5	1,981,563	V-5
312916UC1	FHLMC	1534	F	PAC_FIX	84,210,526	2.2 - 9.3	1,495,313	V-5

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Appendix 2.9
TEXAS TECH UNIVERSITY AND HEALTH SCIENCES CENTER - CMO SUMMARY

312916UD9	FHLMC	1534	G	PAC_FIX	92,397,660	3.3 - 14.8	2,499,219	V-5
312916YR4	FHLMC	1546	E	PAC_FIX	96,107,060	2.0 - 9.7	1,995,000	V-5
3133T0AP9	FHLMC	1541	GA	PAC_FIX	64,496,704	3.1 - 12.2	2,974,688	V-5
3133T0XV1	FHLMC	1552	GB	PAC_FIX	206,055,691	3.1 - 12.4	2,004,688	V-5
3133T1XP2	FHLMC	G21	J	PAC_FIX	109,739,000	4.0 - 15.4	996,875	V-5
3133T5GY3	FHLMC	1723	PG	PAC_FIX	32,768,000	2.6 - 13.0	966,563	V-5
31358LXZ4	FNMA	92-G11	HB	PAC_FIX	47,966,870	1.3 - 10.4	2,994,375	V-5
31358N7J5	FNMA	92-128	E	PAC_FIX	14,147,000	1.7 - 9.7	1,395,000	V-5
31358QQ32	FNMA	92-181	PK	PAC_FIX	49,985,000	2.7 - 15.8	989,375	V-5
31358RYG2	FNMA	92-G65	G	PAC_FIX	46,252,223	1.6 - 11.5	1,009,063	V-5
31358T4E6	FNMA	93-21	H	PAC_FIX	130,772,382	2.7 - 17.6	1,013,438	V-5
31358TA41	FNMA	93-26	JA	PAC_FIX	35,967,000	2.5 - 14.3	1,999,375	V-5
31358TAD1	FNMA	93-2	PE	PAC_FIX	91,462,500	1.9 - 10.4	2,002,344	V-5
31358TWA3	FNMA	93-25	E	PAC_FIX	48,820,000	3.0 - 11.4	1,008,750	V-5
31358TZZ5	FNMA	93-26	J	PAC_FIX	32,675,000	2.5 - 14.4	995,000	V-5
31358U5C6	FNMA	93-56	PT	PAC_FIX	65,901,000	2.8 - 12.0	982,813	V-5
31358URD0	FNMA	93-44	PH	PAC_FIX	152,500,000	2.8 - 12.0	1,999,063	V-5
31359AZT9	FNMA	93-94	H	PAC_FIX	52,253,052	5.3 - 17.6	997,344	V-5
31359BMR5	FNMA	93-121	PK	PAC_FIX	146,600,000	3.1 - 11.9	3,962,656	V-5
31359BT64	FNMA	93-137	PH	PAC_FIX	60,047,000	3.2 - 11.9	994,375	V-5
31359DGA5	FNMA	93-139	H	PAC_FIX	65,370,448	3.2 - 12.2	1,000,000	V-5
31358TWA3	FNMA	93-25	E	PAC-FIXED	2,730,000	3 - 11.4	1,000,000	V-5
31359FDF2	FNMA	93-202	N	PAC_FIX	41,666,669	2.8 - 15.7	989,375	V-5
312908E28	FHLMC	1217	G	PAC_FIX	55,207,125	2.0 - 11.7	1,049,013	V-6
312908RF5	FHLMC	1207	J	PAC_FIX	8,000,000	1.5 - 11.9	1,276,563	V-6
312909SR6	FHLMC	1241	I	PAC_FIX	22,850,200	1.6 - 12.7	1,001,875	V-6
312910G22	FHLMC	1315	H	PAC_FIX	61,448,000	1.7 - 11.3	1,012,813	V-6
3129115S5	FHLMC	1370	H	PAC_FIX	38,583,333	2.2 - 17.0	762,656	V-6
312911MP2	FHLMC	1351	TD	PAC_FIX	53,000,000	1.8 - 14.7	2,498,438	V-6
312913ZB5	FHLMC	1437	G	PAC_FIX	69,638,000	2.4 - 16.7	2,012,500	V-6
312915FU0	FHLMC	1499	C	PAC_FIX	43,965,000	1.4 - 15.0	1,006,875	V-6
31358K2H0	FNMA	91-176	PJ	PAC_FIX	45,734,000	1.7 - 13.5	2,004,375	V-6
31358LTB2	FNMA	92-17	G	PAC_FIX	33,080,000	2.0 - 11.8	982,188	V-6

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Appendix 2.9
TEXAS TECH UNIVERSITY AND HEALTH SCIENCES CENTER - CMO SUMMARY

31358MDG6	FNMA	92-34	E	PAC_FIX	113,355,200	2.0 - 11.9	2,778,750	V-6
31358N4X7	FNMA	92-124	PH	PAC_FIX	111,624,000	1.5 - 11.5	2,011,875	V-6
31358QLB9	FNMA	92-163	E	PAC_FIX	60,947,077	1.1 - 15.7	3,879,375	V-6
31358MWX8	FNMA	92-49	K	PAC_FIX	64,343,000	2.7 - 19.0	1,005,938	V-7
31358TZ51	FNMA	93-G13	H	PAC_FIX	83,587,906	2.7 - 20.0	1,990,938	V-7

VERIFIED CUSIP TOTAL	197,811,322
SECURITIES NOT RATED	76,374,530
COMBINED TOTAL	274,185,852

*This section added by the State Auditor's Office
**Securities not rated because they are mortgage backed securities and Fitch Does not rate MBS; or the Entity submitted an unverifiable CUSIP number.

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Appendix 2.10
BEE COUNTY COLLEGE - CMO SUMMARY

CUSIP	ISSUER	SERIES	CLASS	TYPE	CURRENT BALANCE BY CUSIP	WAL RANGE	ENTITY'S BOOK * VALUE AS OF JULY 31, 1994	V-RATING
312904AW5	FHLMC	181	I	CPT_PAC_FI)	18,376,200	0.5 - 1.5	8,000	V-1
312904X83	FHLMC	1036	E	PAC_FIX	25,141,837	0.3 - 1.4	39,000	V-1
312910XV9	FHLMC	1310	M	CPT	5,994,000	0.4 - 0.6	10,000	V-1
313603VH2	FNMA	90-13	H	SUP_PAC	26,146,666	0.3 - 0.7	21,000	V-1
312904ZN8	FHLMC	1021	H	PAC_FIX	66,047,716	1.1 - 4.2	50,000	V-2
31358JRB9	FNMA	91-G30	J	PAC_AD	499,000	0.9 - 3.9	1,216	V-2
31358HQW8	FNMA	91-82	PK	PAC_FIX	48,927,704	0.8 - 5.1	700,000	V-3
31358PR82	FNMA	92-125	G	PAC_FIX	46,330,000	1.4 - 8.3	500,000	V-4
31359GAR7	FNMA	93-225	WA	PAC_FIX	48,671,404	1.3 - 6.6	69,735	V-4
31358UU38	FNMA	93-G20	C	PAC_FIX	9,325,000	1.8 - 24.3	500,000	V-5
31359GDF0	FNMA	93-225	UC	PAC_FIX	25,056,481	1.5 - 13.3	340,056	V-6
31359GET9	FNMA	93-225	NB	SCH_FIX	136,811,259	1.4 - 13.7	77,759	V-6
31358UGP5	FNMA	93-38	T	SCH_FIX	28,294,838	0.4 - 23.2	898,159	V-8

VERIFIED CUSIP TOTAL	3,214,925	
SECURITIES NOT RATED TOTAL	232,149	**
COMBINED TOTAL	3,447,074	

*This section added by the State Auditor's Office.
**Securities not rated because they are mortgage backed securities and Fitch does not rate MBS; or the Entity submitted an unverifiable CUSIP number.

Prepared by FITCH INVESTORS SERVICE

Appendix 2.11
TEXAS EDUCATION AGENCY - CMO SUMMARY

CUSIP	ISSUER	SERIES	CLASS	TYPE	CURRENT BALANCE BY CUSIP	WAL RANGE	ENTITY'S BOOK * VALUE AS OF JULY 31, 1994	V-RATING
313602YN8	FNMA	89-44	G	PAC_FIX	33,015,906	0.4 - 2.3	14,526,497	V-1
31358FDM8	FNMA	90-119	H	PAC_FIX	42,822,178	0.3 - 1.1	14,520,215	V-1
31358ES45	FNMA	90-99	G	PAC_FIX	15,246,930	0.2 - 0.7	6,182,340	V-1
313602YA6	FNMA	89-42	E	PAC_FIX	85,866,477	1.2 - 5.2	8,389,954	V-2
31358J6A4	FNMA	91-134	H	PAC_FIX	131,633,130	1.0 - 4.1	10,682,249	V-2
31340Y2N8	FHLMC	89	D	SEQ_FIX	61,745,589	1.6 - 8.5	10,458,798	V-3
31340YGA1	FHLMC	20	G	PAC_FIX	44,130,000	2.7 - 14.8	15,238,031	V-4
31340YJA8	FHLMC	26	F	PAC_FIX	64,090,000	1.9 - 9.4	13,775,825	V-4
31340YJX8	FHLMC	30	D	PAC_FIX	73,941,000	2.5 - 13.9	34,596,606	V-4
31340YMP1	FHLMC	38	D	PAC_FIX	32,700,000	2.6 - 15.0	11,178,646	V-4
31340YQL6	FHLMC	45	F	PAC_FIX	31,342,500	2.7 - 13.8	9,940,950	V-4
31340YRU5	FHLMC	49	G	PAC_FIX	25,980,000	2.5 - 13.5	4,896,094	V-4
31340YVW6	FHLMC	60	H	PAC_FIX	48,645,000	2.4 - 12.3	4,800,000	V-4
31340YQ93	FHLMC	80	F	PAC_FIX	33,836,130	2.5 - 12.4	9,606,250	V-4
31340YU72	FHLMC	84	F	PAC_FIX	35,697,000	2.6 - 14.9	20,319,062	V-4
3129036K8	FHLMC	175	H	PAC_FIX	25,277,000	2.5 - 15.2	5,959,688	V-4
3129036T9	FHLMC	177	F	TAC_FIX	51,793,200	2.1 - 11.9	9,363,000	V-4
3129036V4	FHLMC	177	G	TAC_FIX	34,528,800	2.1 - 11.9	23,779,845	V-4
312907F52	FHLMC	1175	C	TAC_FIX	127,842,500	1.2 - 7.8	10,799,219	V-4
312909XL3	FHLMC	1261	N	CPT_AD_FIX	17,574,000	4.2 - 11.0	17,155,838	V-4
312911BQ2	FHLMC	1327	HB	PAC_FIX	15,315,833	5.9 - 10.9	15,042,202	V-4
312913DT0	FHLMC	1416	PK	PAC_FIX	14,625,000	5.1 - 12.5	14,574,727	V-4
312913N69	FHLMC	1451	J	PAC_FIX	15,226,000	6.7 - 11.9	5,183,539	V-4
312914BR4	FHLMC	1455	HA	PAC_FIX	4,180,000	5.4 - 13.9	4,174,775	V-4
312914FD1	FHLMC	1458	K	PAC_FIX	51,398,600	7.6 - 11.9	6,976,200	V-4
312914UX0	FHLMC	1465	E	PAC1_FIX	120,737,144	2.0 - 7.8	20,000,000	V-4
3133T14Z2	FHLMC	1614	L	PAC1_FIX	32,550,000	9.0 - 14.8	9,637,500	V-4

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Appendix 2.11
TEXAS EDUCATION AGENCY - CMO SUMMARY

3133T3RA8	FHLMC	1655	K	PAC_FIX	14,000,000	9.6 - 12.9	13,896,820	V-4
313602HM9	FNMA	88-28	H	PAC_FIX	62,700,000	2.0 - 10.5	19,695,312	V-4
313602WT7	FNMA	89-38	E	STP_FIX	22,402,249	2.4 - 12.6	7,877,211	V-4
313602XC3	FNMA	89-40	D	PAC_FIX	20,548,000	2.3 - 13.5	10,000,000	V-4
31358E3B6	FNMA	90-100	L	PAC_FIX	7,692,000	2.7 - 16.5	7,692,000	V-4
31358FUD9	FNMA	90-143	J	PAC1_FIX	44,640,000	2.4 - 14.9	10,132,078	V-4
313603A85	FNMA	90-19	G	SEQ_FIX	25,071,000	1.9 - 9.8	24,683,183	V-4
313603K84	FNMA	90-30	D	SEQ_FIX	41,057,000	2.0 - 12.2	16,057,000	V-4
3136035T5	FNMA	90-42	G	SEQ_FIX	27,000,000	2.2 - 13.8	19,873,438	V-4
31358LBY1	FNMA	92-11	D	TAC_FIX	47,669,000	1.1 - 5.9	9,825,000	V-4
31358N3G5	FNMA	92-122	D	AD_FIX	4,805,000	4.3 - 12.4	4,749,442	V-4
31358N6J6	FNMA	92-126	VC	AD_FIX	12,344,000	4.8 - 11.0	12,311,211	V-4
31358MMH4	FNMA	92-41	G	AD_SUP_FIX	13,516,000	2.9 - 8.9	4,912,500	V-4
31358MHB3	FNMA	92-45	H	AD_SEQ_FIX	10,769,500	2.7 - 9.9	4,837,500	V-4
31359E5N7	FNMA	93-210	PL	PAC_FIX	31,952,000	8.6 - 17.7	4,959,158	V-4
31359FMF2	FNMA	93-229	PH	PAC_FIX	14,535,000	10.4 - 11.9	11,567,688	V-4
31358ULD6	FNMA	93-40	E	PAC_FIX	25,500,000	2.4 - 7.6	25,500,000	V-4
31359AEJ4	FNMA	93-93	HB	PAC_FIX	16,100,000	8.9 - 11.9	15,950,914	V-4
31340YCC1	FHLMC	8	G	PAC_FIX	16,460,000	3.3 - 15.0	10,787,188	V-5
31340YHT9	FHLMC	25	G	PAC_FIX	43,940,000	2.2 - 12.3	19,982,187	V-5
31340YB99	FHLMC	72	G	PAC_FIX	24,700,000	3.0 - 14.4	16,591,376	V-5
31340YZ51	FHLMC	86	F	PAC_FIX	40,322,000	2.5 - 12.5	9,537,500	V-5
312903QR1	FHLMC	129	H	PAC_FIX	16,276,000	3.4 - 18.8	7,712,500	V-5
312903UN5	FHLMC	138	F	PAC_FIX	21,500,000	3.3 - 17.5	21,398,250	V-5
312903ZU4	FHLMC	151	F	PAC_FIX	63,174,000	2.7 - 15.5	7,470,000	V-5
312903E78	FHLMC	154	G	TAC_FIX	32,662,500	2.3 - 13.0	21,097,934	V-5
312903T49	FHLMC	166	J	PAC_FIX	17,630,000	3.1 - 16.5	12,044,922	V-5
3129035L7	FHLMC	173	G	PAC_FIX	14,328,000	3.3 - 18.4	7,612,344	V-5
312904KA2	FHLMC	192	I	PAC_FIX	21,414,000	2.7 - 15.1	12,153,290	V-5
312904N27	FHLMC	1030	F	PAC_FIX	40,171,000	2.5 - 14.7	14,480,469	V-5
312905PC0	FHLMC	1065	J	PAC_FIX	78,135,000	2.4 - 14.7	63,714,001	V-5
3129062N9	FHLMC	1136	G	PAC_FIX	39,902,000	2.3 - 14.6	29,418,750	V-5
312907DK1	FHLMC	1144	KA	TAC_FIX	19,250,000	3.0 - 18.2	19,250,000	V-5

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Appendix 2.11
TEXAS EDUCATION AGENCY - CMO SUMMARY

312907QZ4	FHLMC	1155	J	PAC_FIX	18,700,000	1.6 - 11.6	13,811,835	V-5
312909NP5	FHLMC	1254	M	CPT_AD_FIX	16,325,000	3.0 - 10.9	9,536,200	V-5
312909VA9	FHLMC	1264	I	PAC_FIX	16,399,000	4.6 - 21.3	5,876,879	V-5
3129095B6	FHLMC	1281	H	PAC_FIX	10,855,000	3.2 - 19.1	10,817,686	V-5
312910XR8	FHLMC	1310	I	PAC_FIX	17,029,000	3.5 - 20.8	16,672,455	V-5
312910VH2	FHLMC	1316	K	AD_FIX	39,295,000	2.4 - 11.2	18,999,386	V-5
312911B33	FHLMC	1332	J	PAC_FIX	48,666,642	3.1 - 19.5	15,000,000	V-5
312911TJ9	FHLMC	1348	PN	PAC_FIX	31,900,000	3.5 - 20.7	5,981,250	V-5
312912QH4	FHLMC	1390	H	PAC_FIX	19,890,000	3.2 - 19.4	13,895,000	V-5
312912F45	FHLMC	1394	HA	PAC_FIX	15,000,000	3.5 - 21.1	14,641,406	V-5
312913B70	FHLMC	1430	L	PAC_FIX	9,300,000	4.2 - 22.0	3,477,766	V-5
312913NH5	FHLMC	1433	J	PAC_FIX	26,034,000	2.9 - 17.1	19,334,000	V-5
312914AP9	FHLMC	1446	KA	PAC_FIX	10,225,000	4.5 - 22.5	10,160,092	V-5
312913K88	FHLMC	1452	PK	PAC_FIX	40,800,000	4.5 - 9.8	9,915,625	V-5
312915HG9	FHLMC	1502	C	CPT_AD_FIX	10,880,000	3.6 - 9.3	10,698,100	V-5
313602ZN7	FNMA	89-46	E	PAC_FIX	15,000,000	2.8 - 14.9	14,383,594	V-5
313602L69	FNMA	89-54	E	PAC_FIX	18,800,000	2.4 - 13.1	10,185,340	V-5
313602Q56	FNMA	89-58	H	PAC_FIX	13,000,000	2.7 - 14.9	12,865,268	V-5
313603BQ4	FNMA	89-79	D	PAC_FIX	37,400,000	2.6 - 15.1	26,719,093	V-5
313603CJ9	FNMA	89-80	G	PAC_FIX	14,584,000	3.4 - 16.4	13,817,813	V-5
313603HC9	FNMA	89-89	H	PAC_FIX	40,600,000	2.5 - 14.2	19,521,874	V-5
31358FCD9	FNMA	90-116	H	PAC_FIX	26,666,000	3.4 - 19.1	23,102,957	V-5
31358FED7	FNMA	90-119	J	PAC_FIX	115,620,000	2.0 - 12.2	16,595,469	V-5
313603VV1	FNMA	90-13	E	PAC_FIX	36,379,500	3.4 - 18.7	28,602,250	V-5
313603YE6	FNMA	90-17	G	PAC_FIX	37,936,000	2.8 - 15.8	18,889,423	V-5
313603C34	FNMA	90-18	K	PAC_FIX	20,100,000	3.1 - 17.3	19,784,430	V-5
313603S60	FNMA	90-26	K	PAC_FIX	33,714,000	3.3 - 18.0	19,540,625	V-5
313603W57	FNMA	90-29	J	PAC_FIX	47,168,200	2.4 - 14.5	32,911,850	V-5
313603Z47	FNMA	90-31	J	PAC_FIX	30,000,000	3.4 - 18.2	28,883,812	V-5
3136032X9	FNMA	90-37	K	PAC_FIX	16,856,000	3.0 - 16.5	16,553,376	V-5
31358EJH6	FNMA	90-62	G	TAC_FIX	25,213,000	2.3 - 13.9	9,433,594	V-5
31358EUD2	FNMA	90-79	J	PAC_FIX	25,230,000	2.8 - 15.9	14,721,094	V-5
313603RP9	FNMA	90-8	H	PAC_FIX	15,000,000	2.6 - 15.2	9,789,600	V-5

Prepared by FITCH INVESTORS SERVICE

Appendix 2.11
TEXAS EDUCATION AGENCY - CMO SUMMARY

31358EXH0	FNMA	90-85	E	SEQ_FIX	31,500,000	2.0 - 12.2	30,838,969	V-5
31358EQ47	FNMA	90-98	J	PAC1_FIX	47,040,000	2.6 - 15.1	23,315,969	V-5
31358H4T9	FNMA	91-101	G	AD_PAC_FIX	32,680,000	3.2 - 18.9	9,743,750	V-5
31358JLP4	FNMA	91-108	JA	PAC_FIX	36,175,000	2.5 - 15.7	35,472,598	V-5
31358JNY3	FNMA	91-130	C	SEQ_FIX	13,809,950	2.3 - 12.5	13,768,952	V-5
31358GPP6	FNMA	91-39	J	PAC_FIX	83,344,000	2.4 - 14.6	34,598,438	V-5
31358HQY4	FNMA	91-82	PM	PAC_FIX	24,300,000	2.5 - 18.4	19,237,500	V-5
31358N6F4	FNMA	92-126	PL	PAC_FIX	18,359,000	3.4 - 20.2	14,251,308	V-5
31358QAN5	FNMA	92-161	H	TAC_FIX	70,175,000	6.9 - 24.6	54,687,766	V-5
31358QLH6	FNMA	92-163	K	PAC_FIX	58,501,000	3.5 - 18.5	58,114,758	V-5
31358Q4C6	FNMA	92-188	PJ	PAC_FIX	54,600,000	3.0 - 17.2	9,787,500	V-5
31358RR70	FNMA	92-215	PM	PAC_FIX	6,555,000	3.3 - 18.3	6,545,782	V-5
31358M4E1	FNMA	92-65	J	AD_PAC_FIX	37,709,280	2.0 - 13.6	17,855,313	V-5
31358R4V2	FNMA	93-4	KA	PAC_FIX	10,692,500	3.4 - 19.6	10,692,500	V-5
31358TCB3	FNMA	93G-2	JA	PAC_FIX	11,582,400	3.8 - 20.5	11,546,379	V-5
312903SF5	FHLMC	131	E	PAC_FIX	10,000,000	3.6 - 18.9	9,542,540	V-6
312903SP3	FHLMC	133	D	PAC_FIX	10,250,000	4.1 - 19.8	9,942,500	V-6
312906C32	FHLMC	1116	H	PAC_FIX	34,428,000	3.3 - 19.5	4,795,938	V-6
3129064E7	FHLMC	1137	K	PAC_FIX	20,000,000	3.1 - 18.3	19,646,200	V-6
312907BT4	FHLMC	1141	G	PAC_FIX	69,812,000	3.2 - 19.0	54,539,650	V-6
312909UZ5	FHLMC	1264	H	PAC_FIX	8,717,000	2.2 - 16.0	8,598,003	V-6
312911BB5	FHLMC	1339	PK	PAC_FIX	47,649,000	1.9 - 15.4	11,765,161	V-6
313603MS8	FNMA	89-98	E	PAC_FIX	9,000,000	3.4 - 18.5	8,954,375	V-6
313603ZE5	FNMA	90-14	J	PAC_FIX	10,206,000	4.0 - 20.1	10,135,834	V-6
3136034Z2	FNMA	90-39	K	PAC_FIX	11,140,000	4.3 - 20.3	8,137,500	V-6
313603SJ2	FNMA	90-5	H	PAC_FIX	24,000,000	3.7 - 19.1	21,933,193	V-6
31358H3M5	FNMA	91-96	KA	PAC_FIX	7,450,000	3.3 - 19.3	7,184,594	V-6
31358N6E7	FNMA	92-126	PK	PAC_FIX	20,278,000	2.1 - 16.7	15,278,000	V-6
31358NUR1	FNMA	92-98	PM	PAC_FIX	76,716,000	2.2 - 17.1	15,950,914	V-6
312909WK6	FHLMC	1268	HA	PAC_FIX	9,822,000	2.5 - 18.2	9,770,238	V-7
31358KFK9	FNMA	91-154	PL	PAC_FIX	13,600,000	4.5 - 22.6	13,600,000	V-7
31358PED5	FNMA	92-117	LA	PAC_SEQ_F	10,000,000	2.4 - 18.3	9,690,625	V-7
31358PUR6	FNMA	92-131	KA	PAC_FIX	65,100,000	2.9 - 20.5	15,000,000	V-7

Prepared by FITCH INVESTORS SERVICE

Appendix 2.11
TEXAS EDUCATION AGENCY - CMO SUMMARY

31358PZ34	FNMA	92-146	PK	PAC_FIX	30,402,000	2.3 - 17.5	30,240,281	V-7

VERIFIED CUSIP TOTAL	1,979,811,385
SECURITIES NOT RATED TOTAL	**385,888,345**
COMBINED TOTAL	**2,365,699,731**

Prepared by FITCH INVESTORS SERVICE

Appendix 3:

Investment Control Questions Board/Management Should Ask

Derivatives are financial instruments (security or contract) whose values are linked to, or "derived" from, changes in interest rates, currency rates, and stock and commodity prices. The following questions have been developed to help boards and management gain an understanding of the investment activity and related controls for derivative transactions.

I. **The objective of these questions is to determine whether the board/ management has an understanding of the different investments purchased by the entity and the related risk associated with these investments.**

- Has an investment policy been established that clearly documents the entity's expectations regarding risk management of public funds?
- Are investment policies and practices designed to help fulfill the mission of the entity?
- Is the entity's investment strategy for derivatives use designed to further the economic, regulatory, industry, operating, or legislative objectives?
- Do derivative activities increase the entity's exposure to risks that might frustrate, rather than further, achievement of objectives?
- Is the board aware of the different types of derivative investments acquired by the entity and the associated risks of each type?
- Do the board and management receive an assessment of the various risks associated with the derivative investments (i.e. credit risk, market risk, legal risk, control risk, extension risk)?
- Are derivatives used to mitigate risk, or do they create additional risk? If risk is assumed, are trading limits established?
- Does the entity have limits on the extent of risks associated with the various types of collateralized mortgage obligations (i.e. IOs, POs, floaters, inverse floaters, PACs, support bonds, etc.)?

II. **The objective of these questions is to determine if the investment personnel have the appropriate knowledge and expertise to make decisions regarding derivative investments.**

- Does the investment officer have sufficient experience and training related to derivative investments?
- Do the employees involved in derivative transactions have the appropriate technical and professional expertise?

- Are personnel with authority to engage in and monitor derivative transactions well qualified and appropriately trained?

- Is the knowledge about derivative investments vested in only one individual or a small group?

- How does the board/management ensure the integrity, ethical values, and competence of personnel involved with derivative activities?

III. **The objective of these questions is to help the board and management determine if adequate controls are in place and working to ensure that only authorized transactions take place.**

- Are internal controls over derivative activities monitored on an ongoing basis?

- Does someone external of investment activities (i.e. internal auditor) evaluate the controls over derivative investments? Does this person have the appropriate technical expertise to properly evaluate the controls?

- Are duties involving the execution of derivative transactions segregated from other duties (i.e. accounting and internal audit functions)?

- Do the controls in place ensure that unauthorized transactions are quickly detected and that appropriate action is taken?

IV. **The objective of these questions is to determine the entity's current status regarding derivative investments.**

- Will any investments, originally acquired as short-term investments, be reclassified as long-term investments? If so, how much and what percentage of short-term investments will the reclassification represent?

  Book Value $_____

  Market Value $_____

  Percentage _____

- What benefit(s) do the derivative investments provide the entity that could not be achieved through more traditional investments?

- Will the entity's cash flow be adversely affected due to derivative investments? If so, what is the effect?

- How often does the entity mark the derivative investments to market value (i.e. daily, weekly, monthly)?

- What method of assessing value is used for derivative investments (i.e. in-house investment models, purchased software, broker firms, etc.)?

SOURCE: "AICPA Encourages Better Understanding of Derivatives," *The CPA Letter*, July/August 1994, Vol. 74, No. 6.

Appendix: 4

FFIEC Criteria For High-Risk Mortgage Securities

The Federal Financial Institutions Examination Council (FFIEC) states that "any mortgage derivative product that exhibits greater price volatility than a benchmark fixed rate thirty year mortgage-backed pass-through security will be deemed high risk." For purposes of the FFIEC policy statement, a high-risk mortgage security is defined as any mortgage derivative product that, at the time of purchase or at subsequent testing date, meets any of the following tests:

1. Average Life Test - The mortgage derivative product has an expected weighted average life greater than ten years.

2. Average Life Sensitivity Test - The expected weighted average life of the mortgage derivative product:

   a. extends by more than four years, assuming an immediate and sustained parallel shift in the yield curve of plus 300 basis points, or

   b. shortens by more than six years, assuming an immediate and sustained parallel shift in the yield curve of minus 300 basis points.

3. Price Sensitivity Test - The estimated change in the price of the mortgage derivative product is more than 17 percent, due to an immediate and sustained parallel shift in the yield curve of the plus or minus 300 basis points.

   When performing the price sensitivity test, the same prepayment assumptions and same cash flows that were used to estimate average life sensitivity must be used. The only additional assumption is the discount rate assumption.

   First, assume that the discount rate for the security equals the yield on a comparable average life U.S. Treasury security plus a constant spread. Then, calculate the spread over Treasury rates from the bid side of the market for the mortgage derivative product. Finally, assume the spread remains constant when the Treasury curve shifts up or down 300 basis points. Discounting the aforementioned cash flows by their respective discount rates estimates a price in the plus and minus 300 basis point environments.

   The initial price will be determined by the offer side of the market and used as the base price from which the 17 percent price sensitivity test will be measured.

Appendix 5:

Survey Instrument: Survey Of State Agency Investment In Derivatives

Does your agency currently have any funds invested in derivatives, or has your agency invested in derivatives during fiscal year 1994? Derivatives are investment products which may be a security or contract which derives its value from another security, currency, commodity, or index. Consider all funds such as operating, trust, and other.

If the answer is yes, please complete questions 1 through 5 and provide the information requested in items 6 and 7. Please return the data to us by September 2, 1994. Use July 31, 1994, as the reporting date. If the agency did not have derivative investments at July 31, 1994, but had derivative investments during the year, please answer items 3, 5, 6, and 7. Use additional pages as necessary. If the answer is no, please sign this form and return it in the enclosed envelope.

1. What is the original cost (book value) of the agency's investment in derivatives?

2. What is the estimated market value of total investments in derivatives and pricing source?

3. What is the source of funds invested in derivatives and amounts?

4. What percentage of total investments is invested in derivatives?

5. What are the total gains and losses from derivative transactions from September 1, 1993, to July 31, 1994?

6. Please describe each derivative product which makes up the above described investments, including information such as maturity date, risk, and special provisions.

7. Please provide a copy of the agency's investment policy.

_____ _____

Signature and Title of Individual Providing the Above Information Date

Appendix 6:

Management's Responses

The entities mentioned in this report were provided the option of submitting written responses. Fifteen entities provided written responses which are located in the following appendices:

University of North Texas Health Science Center	Appendix 6.1
Midwestern State University	Appendix 6.2
East Texas State University	Appendix 6.3
Southwest Texas State University	Appendix 6.4
Sul Ross State University	Appendix 6.5
Amarillo College	Appendix 6.6
Texas Woman's University	Appendix 6.7
Texas Tech University and Health Sciences Center	Appendix 6.8
Bee County College	Appendix 6.9
Teacher Retirement System	Appendix 6.10
Employees Retirement System	Appendix 6.11
The University of Texas System	Appendix 6.12
General Land Office/Veterans Land Board	Appendix 6.13
University of Houston System	Appendix 6.14
Lee College	Appendix 6.15

Entities that chose the option of not providing written responses include the following:

Odessa College
Texas Education Agency
Texas State Treasury
Texas A&M University System
University of North Texas
Stephen F. Austin State University
Angelo State University
Alamo Community College District
McLennan Community College
Temple Junior College
Angelina College

University of North Texas
Health Science Center at Fort Worth
3500 Camp Bowie Boulevard
Fort Worth, Texas 76107-2699
817-735-2525 FAX 817-735-2486

Vice President for Fiscal Affairs

December 2, 1994

Larry Alwin, CPA
State Auditor
P.O. Box 12067
Austin, TX 78711-2067

Dear Mr. Alwin:

The University of North Texas Health Science at Fort Worth acknowledges the recommendations of the State Auditor and assures you that we have been and will continue to actively work within the institution and with the Board of Regents to strengthen training and management controls over the investment activity. Also, the health science center will ensure that its financial managers are well versed on the intricacies of the investment market place.

The health science center has not had nor do we anticipate any cash flow problems. The health science center has had a positive cash flow for the past five years. Income sources continue to look strong and will meet future cash needs. A cash trend analysis over the past five years (ending August 31, 1994) shows that the institution has increased locally held cash and investment balances from $8.9 million to $12.6 million. The health science center's plans are to hold the current CMO's until maturity or until market conditions improve. In all probability the health science center will eventually realize the return of its investments but it will be over an extended period of time.

As of November, 1994, CMO's represent 45.13% of the center's investments.

Sincerely,

Mike Ferguson, Jr., CPA
Vice President for Fiscal
and Administrative Affairs

MF/jt

MIDWESTERN STATE UNIVERSITY
3410 TAFT BOULEVARD WICHITA FALLS, TEXAS 76308-2099
OFFICE OF THE PRESIDENT (817) 689-4211

December 1, 1994

Ms. Diane Oldroyd, Project Manager
State Auditor's Office
2 Commodore Plaza
206 E. 9th Street, Suite 1900
Austin, TX 78701

Dear Ms. Oldroyd:

I want to thank you for the opportunity to respond to the report on derivatives. Listed below are our comments regarding the audit.

1. Attached is the list of the individuals you requested from Midwestern State University.

2. Midwestern State University began investing in derivatives in 1990 as a result of communication with various brokers as well as discussion of these items with institutions and agencies within Texas.

3. Midwestern State University did not at any point in time rely on any single broker for purchases or sales of securities, neither did MSU purchase any item on margin. I should also mention that we had foregone the purchase of many, many more proposed instruments than that which we had purchased simply because they did not meet our narrow criteria for investment.

4. All of our purchases were made in accordance with our investment policy as approved by the Board of Regents, and you have been supplied a copy of that policy. These instruments also meet the requirements of the Public Funds Investment Act of 1987.

5. We met on several occasions with our primary broker and received assurances that CMOs met the criteria of our investment policy. We were led to believe that our portfolio was diversified as we did not invest large amounts in a few CMOs but smaller amounts in numerous various CMOs.

6. Since we had invested in these derivatives, we have earned over $5 million in total return. We anticipate that this return is minimally $3 million more than we would have received by investing in other instruments during this time frame.

7. During the summer of 1993 our investments were reviewed and discussed in detail with members of the State Auditors Office as part of the Management Control Audit SAO 94-096 covering MSU. This was done at a time when we had a greater proportion of our total investments in CMOs than we did at the time of the current report. The conclusions that came from the audit in the summer of 1993 were quite positive of our investment program and the statement in the executive summary regarding our investments is as follows: "The University is also prudent in its investments and cash management." As that review of our investment program raised no alarm as is currently being expressed, we continued to invest in derivatives.

8. During February and March of this year, the Chairman of the Finance and Audit Committee of the Board of Regents of MSU expressed concern regarding our portfolio. We ceased in April to invest in derivatives and have not invested in any derivatives since that point in time.

9. At the end of October 1994 we had 73.96% of our total portfolio or $9,819,098 invested in derivatives. We are continuing to allow these instruments to mature. As I indicated previously, we are not reinvesting in these instruments. I should also mention that at the end of October we were still earning 7.87% on these investments.

10. A finding of the audit mentions the lack of good management controls. As I mentioned before, we have supplied the State Auditor with a copy of our Board of Regents investment policy which we adhere to. In the summer of 1993, this policy and our investments were reviewed by members of the State Auditors staff and it was positively noted as is shown in the findings of that audit. We believe that the Chairman of our Finance and Audit Committee exercised control through his continued review of our portfolio and discussion of that portfolio.

11. The audit mentions as one of the findings that investment personnel appeared to place heavy reliance on brokers and dealers in making investment decisions. We at Midwestern State University followed our Regents investment policy by securing as much information as we possibly could from various sources. Unfortunately, most sources are dealers and brokers and each instrument which we did purchase was bid among various sources whenever possible in order that we obtain the best possible product at the lowest possible cost.

12. Our Board of Regents at its November 11th meeting of this year has moved to secure an independent investment advisor from which no purchases will be made, but who will provide guidance and assistance to the campus in any future investments. The selection of this advisor is currently underway by the Finance and Audit Committee of the Board of Regents.

13. We agree that pressures have existed on investment people to produce as much income as possible through investments. I believe this can be attributed to the fact that the State is continually diminishing its support of Higher Education, and we are all seeking other sources of revenue. If the State would adequately fund Higher Education and not initiate continued reductions in our budgets, there would be much less dependence on investment revenues.

In summary, the University operates through an investment policy. From the information which we had available and which was reaffirmed through an audit done by members of the State Auditors' office, that investment policy appeared to be working for the University and there was no mention at that point in time that there was a need for us to initiate changes. Therefore, we continued to invest until members of our Board of Regents exerted their responsibility and expressed concern and initiated a change in our investment practices. We are currently no longer investing in CMOs. In the future, we shall have the assistance of a professional investment advisor. Again, thank you for the opportunity to respond to the draft of your derivative report.

Sincerely,

Louis J. Rodriguez, President

LJR/ces

cc: Mr. Al Hooten, Vice President for Business Affairs
Ms. Paula Allard, Internal Auditor

Appendix 6.3:

MEMORANDUM

To: Dianne Oldroyd, Project Manager
Cathy Smock, Audit Manager
State Auditor's Office

From: Jerry D. Morris
President & CEO

Date: December 2, 1994

Subject: Response to Derivatives Report

We have reviewed the Derivatives Report prepared by the State Auditor's Office. Thanks very much for granting us an opportunity to respond.

The report fairly reflects the situation at East Texas State University. At the time the investments were made in derivatives, it was with the knowledge that the principal was secure since they were issued by either FHLMC or FNMA, with the belief that the investments would be short-term (1 to 3 years) and with projections that the yields would be reasonable. Like many other investors, we didn't realize the possible downside to derivatives until the Federal Reserve begin taking the unprecedented action of raising interest rates six times during the last eleven months. At any rate, we have made every attempt to avoid being defensive and to deal forthrightly with this issue, complex though it is.

Our early experience with derivatives was from 1991 through the Fall of 1993. The results were very positive in that yields in almost every case were above the amounts projected at the time the investments were made and the life of the investments in almost every case proved to be less than was forecast at the time the securities were purchased. This created a false security on our part. Had we had access to the Fitch rating model during the time we were investing in derivatives and the knowledge that the model would have graded many of the securities as highly speculative, we certainly would not have considered making those types of investments. We honestly thought we were being conservative as far as risk was concerned. We have always purchased securities with the intent of holding them to maturity. We never make investments that are dependent upon future market gains.

I want to mention that the University has never sold a security at a loss. Too, our cashflow projections indicate that we should not have to sell any of our securities unless we believe it is in our financial best interest to do so. While the yields have declined, the majority of the returns at this time are still reasonable. We modify our investment strategies to reflect changing market conditions. Our current strategy is to take advantage of recent increases in short term interest rates. This is important as our current holdings extend in length of maturities. We are now receiving external professional advice on our investment decisions.

In that respect, the Board of Regents has engaged the firm of Smith, Graham & Company of Houston, Texas to assist us in the management of our Investment Portfolio. In the weeks ahead, we will be working

Office of the President
Commerce, Texas 75429-3011
(903) 886-5014 FAX (903) 886-5010
ETSU is an Equal Opportunity University

with the investment management firm in addressing the following issues and developing recommendations for the Board's consideration at their next meeting:

- Review the current Board of Regent's Investment Policy to insure that it is appropriate in today's environment, that it fully complies with the Texas Public Investment Act and that it supports the mission, goals, and objectives of the University;

- Analyze each of the bonds in the portfolio for relative value, risk potential and overall enhancement to the portfolio;

- Conduct a scenario analysis identifying those securities which will outperform over a wide range of interest rate, yield curve and volatility scenarios;

- Develop an ongoing system of analysis and monitoring of the securities in the portfolio;

- Perform an in-depth cashflow requirement simulation model of the operating requirements of the University to insure that the inflow of cash from the portfolio will be adequate to meets those requirements;

- Provide information to the Board of Regents and top administrators that will help them in the performance of their duties relative to investments;

- Provide investment reports at each regular scheduled meeting of the Board of Regents and at other times when appropriate.

In closing, let me extend our sincere appreciation for the patience and understanding we have received from the staff at the State Auditor's Office as we have worked to provide accurate and meaningful information about our investment portfolio. We do not like the situation we presently find ourselves in but we intend to address the issue in a responsible and professional manner until this issue is resolved. The findings and the recommendations by your office will be followed closely, we assure you.

xc: Mr. John Armstrong, Chairman
ETSU Board of Regents

Vice President for Finance
and Support Services

November 30, 1994

Mr. Lawrence F. Alwin, CPA
State Auditor
P. O. Box 12067
Austin, Texas 78711-2067

RE: Derivatives Report

Dear Mr. Alwin:

Thank you for the opportunity to comment on the findings and recommendations contained in the report. We very much appreciate the concern and attention given to this very important subject by the Auditor's Office.

The Board of Regents, Texas State University System, has previously promulgated investment guidelines and reporting procedures for the component universities. However, we will diligently work with the Board and the System Director of Finance to strengthen them by implementing the recommendations contained in the report.

The report makes one very excellent point. I appreciate the comment that financial officers are under pressure to produce more income. The 1995 state appropriation for SWT is $4.6 million below the amount needed to make the same level of effort we were making on a per student basis in 1984. Faculty and staff salaries are 15 to 20 percent below our peers, and 1992 and 1994 Coordinating Board reports show SWT to have among the lowest administrative costs in the state. We are constantly seeking ways to overcome these problems, and increasing investment yields is one such strategy.

I have three concerns about the report as well. SWT did not "speculate", as that term is commonly used, in CMOs regardless of the Fitch categorization. All were purchased with non-operating funds and were purchased to be held until maturity. The dictionary definition notwithstanding, the term "speculate" commonly refers to expecting an increase in the market price of a security in hopes of achieving a gain by selling the security at a later date. Since we purchase every security to be held until maturity, we had no such expectations.

Southwest Texas State University

601 University Drive San Marcos, Texas 78666-4615
Telephone: 512-245-2244 Fax: 512-245-2033
SWT is a member of the Texas State University System.

Also, the report notes that Texas Tech and Bee County College are not likely to experience any extension risk because they have reported that they only invested long-term funds in derivatives. We believe SWT is in the same situation because we have only invested non-operating funds in these instruments.

The report recommends the adoption of a conflict of interest policy to establish ethical expectations for investment personnel. The Board of Regents already has a conflict of interest policy affecting all financial matters including investments. That policy has been strictly adhered to at SWT and within the Texas State University System in the area of investments. We are not aware of anything that would suggest an ethical lapse regarding our investments.

As interest rates began their upward climb we adjusted our investment strategy, and as principal and interest from our collateralized mortgage obligations are returned each month we are reinvesting those funds in other instruments to take advantage of the rising rates. This will offset the declining yields in CMOs.

Furthermore, the report notes that we had 62 percent of our funds outside the State Treasury invested in CMOs on July 31, 1994. That figure had fallen to 55 percent on September 30, 1994 and is now down to 51 percent.

The recommended training for investment personnel and internal auditors will be helpful, and the comments about using various pricing sources and analytical tools are well taken. It is very difficult to obtain competitive bids or quotes on individual derivatives because of their unique nature. However, we will do the best we can to make sure we are purchasing securities at a fair price.

Again, I appreciate the opportunity to comment and your handling of this issue. On the whole, the report is a fair and equitable treatment of a very complex matter.

Sincerely,

Bill Nance

Bill Nance, Vice President for
Finance and Support Services

BN:dl

Appendix 6.5:

SUL ROSS STATE UNIVERSITY
A member of the Texas State University System
ALPINE, TEXAS 79832

Office of
Vice President for Business Affairs

(915) 837-8076
***FAX* (915) 837-8334**

December 1, 1994

Mr. Lawrence F. Alwin, CPA
State Auditor
P.O. Box 12067
Austin, Texas 78711-2067

Dear Mr. Alwin:

We appreciate the opportunity to comment on the findings and recommendations contained in the Derivatives Report being prepared by the State Auditor's Office. Many of the suggestions will serve to enhance our ability to more effectively manage our institutional investment portfolio. The suggestion for required training, if implemented by the Coordinating Board and/or the Governor's Development Program, will be especially helpful. We do note a few points in the Report which we would like to address for clarification.

We are concerned with the report's position as related to potential liquidity problems. Your letter to the Members of the Legislative Audit Committee opens by making the statement that "Six universities and one junior college have high concentrations of volatile mortgage derivatives in their portfolios which could result in future liquidity problems." The report does acknowledge that there are existing conditions that lessen the impact of potential liquidity problems at the universities. Those conditions include appropriations, tuition, and fees deposited in the State Treasury which are not included in the investment portfolios of the universities. While Sul Ross State University falls within the second-tier (34 to 44 percent) as outlined in the report, we are concerned that the liquidity issue is emphasized as related to SRSU. The Report later acknowledges that most of the money invested in derivatives by Texas Tech University and Bee County College are long-term funds such as endowment and plant funds. The same acknowledgement should be made of SRSU, since approximately 84% of our derivative investments are in endowments (73.9%) and plant funds (10.1%). As the Report notes, these funds can accept more extension risk than operating funds since the money is not needed to meet immediate cash flow needs. The Report also notes that the principal amount of endowment funds cannot be spent. Our position in derivatives from day one has been to buy and hold to maturity, not to speculate on short-term changes in market conditions.

The Report also indicates that "high rates of return experienced in the last two to three years from these investments have fallen drastically with the rise in interest rates." It is true that SRSU has averaged 9.48% on its derivative investments over the past three years. USA TODAY recently reported that this past year has been the worst year in the bond market since 1927. It should be noted that even under these market conditions our current annualized yield is at 7.27%. When investment decisions were made at SRSU, we analyzed Bloomberg reports, in many cases contacted other brokers regarding pricing, and negotiated prices. Information contained in the Derivative Report will be added to our decision-making process as related to future investments.

The Report contains a statement that "using the criteria established by Fitch Investors Service, Inc., these universities have speculated with public funds through the investment of certain mortgage derivatives." We would reiterate that the SRSU position in derivatives has been to buy and hold to maturity, not to speculate on short-term changes in market conditions. We would also add that our investment decision-making process included an analysis anticipating the market turning against a particular investment. For example, when considering whether or not to buy a derivative yielding 11% at the time of investment, we would ask ourselves what changes in market conditions could occur and the investment still have an acceptable yield of 7%. Then based on the best available information at that time, we would make the investment decision. Incorporating the Fitch's ratings into our decision-making process will be beneficial to future investment decisions.

Our final concern with the Derivative Report is related to the conflict of interest recommendations. There is nothing contained within the report that would indicate a conflict of interest exists. However, the inclusion of this recommendation in your report, without stating that no conflict of interest was detected in your review, gives the reader the impression that conflicts of interest existed. Our Board of Regents has had a conflict of interest policy affecting all financial matters for many years. That policy has been strictly adhered to, and we are unaware of anything that would suggest an ethical lapse at SRSU.

Again, thank you for giving us the opportunity to comment on the draft of the Derivatives Report. Upon receipt of the final Report, we will work with our Board of Regents and its staff to modify our investment guidelines and reporting procedures to incorporate many of the suggestions contained in the Report.

Sincerely,

Mickey C Havens

Mickey C. Havens
Vice President for Business Affairs

Appendix 6.6:

Amarillo College

Established 1929

Office of the President

December 2, 1994

Ms. Dianne Oldroyd, Project Manager
Ms. Cathy Smock, Audit Manager
Office of the State Auditor
P. O. Box 12067
Austin, TX 78711-2067

Dear Ms. Oldroyd and Ms. Smock:

Subject: Amarillo College Response to State Auditor's Report Concerning Derivative Investments

This report suggests that our investment portfolio is inadequately diversified and therefore liquidity problems COULD occur in the future. We would like to point out that 57.2% of our investment portfolio is in TexPool, a highly liquid, non-volatile investment. We feel this level of diversification is more than adequate to minimize the risk of liquidity problems in the future. Our investments in mortgage backed securities come from our unallocated and unencumbered fund balances. The amount of these fund balances in TexPool is greater than the amount in mortgage backed securities. Given the overall stability of Amarillo College's financial outlook, as exemplified by a growing student population base; a stable and expanding local tax base; the passage of a $26 million bond issue that addresses facility needs; and a lower-than-average current tuition-and-fee structure, the College considers it highly unlikely that it would find itself in a situation that would require liquidation of both TexPool balances and mortgage-backed securities.

We reiterate that our investments in mortgage-backed securities are by design and intent for long-term investment and not for trading. We do not believe that the classification of some of these instruments as "speculative" is appropriate. We have not speculated with public funds and do not intend to speculate in the future. As you stated in your report, the principal of these instruments is guaranteed, which we believe is contradictory to the term "speculative."

P O Box 447 • Amarillo, Texas 79178-0001 • Phone 806/371-5123 • FAX 806/371-5370

We agree that we need to tighten management controls over the management function. We disagree, however, that we have a potential liquidity problem. Additionally, in the case of Amarillo College, there was simply no pressure on investment personnel to produce more income.

Sincerely yours,

Luther Bud Joyner
President

TEXAS WOMAN'S UNIVERSITY
DENTON DALLAS HOUSTON

OFFICE OF THE VICE PRESIDENT FOR FISCAL AFFAIRS
P.O. Box 23955, Denton, TX 76204, 817/898-3505

December 2, 1994

Mr. Lawrence F. Alwin, CPA
Office of the State Auditor
P. O. Box 12067
Austin, Texas 78701

Dear Mr. Alwin:

Thank you for the opportunity to respond to the draft derivatives report. Over the last five years, the Texas Woman's University investment portfolio has ranged from $19.9 million in fiscal year 1990 to $34.5 million as of August 31, 1994. Of the $34.5 million at August 31, 1994, $10.2 million or 29.6% was invested in Collateralized Mortgage Obligations (CMO's) and the remaining $24.3 million or 70.4% was invested in short-term liquid investments. With more than 70% of the University's portfolio in liquid investments, no cash flow problems will occur. In addition, over $5 million of the Texas Woman's University portfolio represents endowment funds which are not expendable. Therefore, endowment funds are appropriate for long term investment.

The first sentence in paragraph three on page eleven of the draft report reads as follows: "The high percentage of mortgage derivatives coupled with the volatility of these investments suggests that oversight of Board members and senior management and the monitoring function has not worked effectively." I would suggest changing that sentence to read: "The high percentage of mortgage derivatives coupled with the volatility of these investments suggests that the monitoring function for these funds could be improved."

As requested, attached is a list of the names, titles and mailing addresses for each person receiving a final copy of the report. If any additional information is needed, please let me know.

Sincerely,

Robert O. Benfield
Vice President for Fiscal Affairs

attachment
ROB:rt

An Equal Opportunity/Affirmative Action Employer

TEXAS TECH UNIVERSITY
TEXAS TECH UNIVERSITY HEALTH SCIENCES CENTER
Office of the President

Box 42013
Lubbock, TX 79409-2013
(806) 742-2121
FAX (806) 742-2138

December 2, 1994

FAX: (512) 479-4884

Ms. Dianne Oldroyd, CPA
Project Manager
Office of The State Auditor
Two Commodore Plaza
206 East Ninth Street, Suite 1900
Austin, Texas 78701

Dear Ms. Oldroyd:

Thank you for the opportunity to review your draft report on derivative investments. We were pleased with your finding that Texas Tech University (TTU) and Texas Tech University Health Sciences Center's (HSC) portfolio consists of conservative mortgage derivatives that possess low price volatility and is not susceptible to liquidity problems. As requested, we have included below our comments concerning other findings and recommendations discussed in the draft.

Diversification:

We would like to respond to your statement concerning the lack of diversification of TTU/HSC's portfolio. You stated in your report that proper portfolio management includes maximizing return while maintaining sufficient liquidity to meet current financial obligations. We certainly agree with this statement. TTU/HSC uses a "hold to maturity" philosophy where emphasis is placed on the maintenance of an adequate liquidity position and on the realization of a stable investment return. The draft report indicates that approximately 89% of TTU/HSC's investment pool consists of derivative securities. However, two important facts are not mentioned. Included in the 89% figure are investments in approximately 197 well seasoned government agency mortgage backed securities. Mortgage backed securities (MBS), such as those issued by the Government National Mortgage Association, have been around since the 1970's and are not normally included in the definition of derivatives. These 197 MBS pools provide additional diversification to the 200 conservative mortgage derivative securities included in our portfolio. Further, your report did not specifically mention that the other 11% of the investment pool consists of very short term investments (i.e. State of Texas TexPool Fund). This liquidity element provides another measure of diversification.

As discussed in the draft report, a major portion of the TTU/HSC investment pool consists of long-term, endowment type funds. The pool of these long-term monies has been invested pursuant to the conservative parameters of the Public Funds Investment Act and our Board of Regent's Investment Policy. Consequently, the allowable investment options do not include corporate bonds, equity securities, mutual funds, investments in real estate or investments in oil and gas properties. Allowable investments are still basically limited to liquidity items and to government bonds. The use of conservative mortgage securities and mortgage derivatives, such as planned amortization class securities (PACs), have allowed us to lock in stable yields while spreading extension and price volatility risks among almost 400 investments. The low to moderate Fitch Volatility ratings of our mortgage derivatives is further evidence that the investment pool has been diversified. If TTU/HSC opted to further diversify funds into straight U.S. Treasury/agency

securities, it would lessen the portfolio's yield while not significantly reducing potential risks. Recently, our Board of Regents adopted an endowment investment policy which follows the Uniform Management of Institutional Funds Act and complies with Section 51.0031 of the Texas Education Code. This policy would allow for investments of certain endowment funds into corporate bonds and equity securities. However, at this time, no endowment funds have been invested pursuant to this new broader policy.

Recommendations:

We are in basic agreement with the recommendations mentioned in the draft report. Most of these recommendations are already being utilized in our funds management process and have served our institutions well. Existing controls are in place to govern allowable investments, to provide for the proper segregation of duties and to provide for the on-going monitoring of the investment portfolio by senior management and by the Board of Regents. These controls are reviewed annually by TTU/HSC's Internal Audit Department. Investments are analyzed for suitability and conformity to TTU/HSC's Investment Policy. Comparable bids are received on similar investments prior to their purchase. Management possesses the necessary qualifications and expertise to make investment decisions. On-going training and education will continue to be pursued.

The incorporation of an ethics statement that addresses conflicts of interest will be developed and recommended to the Board of Regents for inclusion in the existing investment policies. Presently, the members of our Board of Regents and the President fully comply with the standards of conduct and conflict of interest provisions of the Government Code, Chapter 572. For all other appropriate investment officers, additional financial disclosure statements could be maintained with the governing boards of each institution. Our present investment procedure includes the use of an independent pricing source to determine market values of investments in the portfolio on a monthly basis. We have not utilized an independent analysis of the portfolio to ensure that investments meet acceptable risk levels and expected rates of return because we have not determined that the benefits of the analysis would outweigh the cost. We concur with the statement that additional flexibility in the management of risk should be given to larger portfolios. We recommend that the standard of a $25 million endowment threshold contained in Section 51.0031(c) of the Education Code be used for institutions of higher education. As suggested, our Investment Policy will continue to be reviewed and amended to conform with statutory changes and to take advantage of market alternatives as they become available. Any tightening of the Public Funds Investment Act should only cover broad categories and not specific instruments. We would like to participate if a task force is established to develop investment limitations.

Should you have any questions or need additional information, please feel free to contact Mr. Edmund W. McGee, Assistant Vice President for Investments, at (806) 742-3243.

Sincerely,

Robert W. Lawless
President

cc: Mr. Don E. Cosby
Mr. Elmo Cavin

Juan Garza
Business Manager

BEE COUNTY COLLEGE

Phone (512) 358-3130
FAX (512) 358-3943

MEMORANDUM

To: Cathy A. Smock, CPA
Audit Manager

From: Juan Garza
Business Manager

Date: December 2, 1994

Subject: Response to draft of the report on derivative investments in the State

---

Bee County College acknowledges that its investment portfolio is not diversified. As we have stated before, our investments in the mortgage derivatives are from our plant and endowment funds. These investments provide fixed interest rates of return that range from 6.00% to 9.10% as well as principal prepayments each month. These funds received along with any balances in operating funds are invested in TexPool.

Bee County College chose not to participate in certain mortgage derivatives known as inverse floaters, interest only (IOs) strips and principal only (POs) strips. During the months of September and October, 1994, Bee County College made the decision to move its mortgage derivative holdings from the four different investment firms to another firm in an effort to keep a closer look at market values of our investments. We are also in the process of securing the services of a money managing principal such as, the Princeton International L.L.P. so that we can utilize their expertise in managing our investment portfolio.

Our focus on future investments will be in the 2-5 year treasury bills as funds are realized from sales of mortgage derivative holdings when the markets are favorable over the next two years.

3800 Charco Road • Beeville, Texas 78102

Teacher Retirement System of Texas

1000 Red River Street
Austin, Texas 78701-2698

EXECUTIVE DIRECTOR
Wayne Blevins, Ed.D.

CHIEF INVESTMENT OFFICER
John E. Young, CFA

MEMORANDUM

TO: Dianne Oldroyd, Project Manager

FROM: John E. Young

DATE: December 1, 1994

SUBJECT: Derivatives Report-Confidential Draft

We have reviewed your draft of the Derivatives Report and find it to be comprehensive and balanced. The only suggestion we would have is to make a stronger statement on the comment related to FFIEC and pension and endowment funds. You state that "this criteria may not be applicable." We believe that because of the long-term nature of our investment programs the FFIEC criteria is not applicable.

We concur with the suggested legislative actions. They are reasonable and probably, for the most part, are already in place at the larger funds. Thank you for the opportunity to provide input. If we can help in any way, please let me know.

JEY:mhd

1-800-223-8778 Tel. (512) 397-6460 Fax. (512) 370-0519

CHARLES D. TRAVIS
EXECUTIVE DIRECTOR

JAMES A. ADKINS
DEPUTY EXECUTIVE DIRECTOR

EMPLOYEES RETIREMENT SYSTEM OF TEXAS
18TH & BRAZOS STREETS
P. O. BOX 13207
AUSTIN, TEXAS 78711-3207
(512) 476-6431

December 2, 1994

The Honorable Lawrence F. Alwin, CPA
State Auditor
Office of the State Auditor
P.O. Box 12067
Austin, Texas 78711-2067

Dear Mr. Alwin:

As requested by your office, we have reviewed the Derivatives Report Confidential Draft and offer a few brief comments. While we have a concern with the specific wording in the definition of derivatives found in the report, the key point which we feel should be included is the varied degree of risk associated with derivatives, particularly that not all derivatives are considered speculative.

Although some investors' capital has been impaired through the purchase of "exotic" derivative securities that may have been inconsistent with their investment objectives, the Employees Retirement System of Texas (ERS) portfolio holds no such securities. The only derivatives held in the ERS portfolio are Collateralized Mortgage Obligations (CMOs), specifically the most conservative of CMOs, Planned Amortization Classes (PACs). As noted by the ERS' fixed income advisor, Duff & Phelps Management Co., "the goal of CMO holdings in the System's portfolio is to limit risk...These securities have the following characteristics: they represent an interest in both principal and interest in a pool of single family home mortgages, are guaranteed by a United States Government Agency, they have average lives and durations substantially less than thirty year mortgages, and have significantly less exposure to prepayment acceleration or deceleration than thirty year mortgages...'Plain old' interest rates determine the market value of System portfolio securities...."

We understand your concerns over the apparent lack of diversification among some of the portfolios covered by your survey and agree with your conclusion that, among the State agencies' portfolios, the level of investment in derivatives "appears reasonable in the context of the total portfolios at these entities." Additionally, we agree in principle with the recommendations listed in your report; our own investment policy basically adheres to those recommendations.

As requested, I have enclosed the name, mailing address, and correct title for each ERS person in your distribution list.

Sincerely,

CHARLES D. TRAVIS
Executive Director

CDT/ngg

Enclosure

THE UNIVERSITY OF TEXAS SYSTEM
210 WEST SIXTH STREET AUSTIN, TEXAS 78701

December 2, 1994

Office of Asset Management
(512) 499-4337

Ms. Diane Oldroyd, Project Manager
Office of the State Auditor
Two Commodore Plaza
206 East Ninth St., Suite 1900
Austin, TX 78701

Dear Ms. Oldroyd:

First of all allow me to complement the Office of the State Auditor in the way that this project was handled. I think the report accurately reflects the risks that the State of Texas faces due the use of derivative investments. While I continue to believe that you have used an overly broad definition of derivatives, the report correctly focuses on the risks of the instruments, in a portfolio context. The Office of the State Auditor is to be congratulated on the professional manner in which this matter was handled.

The report states that "Nationwide, mutual funds and other similar investments have experienced losses due to derivative investments". I feel that this is an overly broad generalization. It is true that some mutual funds have experienced losses from these type of investments. Some mutual funds with no exposure to derivative investments have also experienced some losses. The nature of investments is such that occasional losses are unavoidable. I think the key point should be that some mutual funds have inappropriately used derivative investments and that some of these funds have experienced losses due to derivative investments.

The report's statement that "State entities may not be aware of the extent some mutual funds and other instruments are invested in derivative instruments" is also overly broad. The context of the report implies that The University of Texas System has not sufficiently researched it's mutual fund investments. Such a statement is not warranted by the type of study that was conducted by your office. Your conclusion that "state investment personnel should fully research investments in mutual funds and other similar investments before transactions are executed" is beyond question. The implication that this has not been done to date is not supported by the survey that was conducted.

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To Diane Oldroyd	From T.G. Ricks
Co. & Auditor's Office	Co.
Dept.	Phone # 499-4337
Fax # 479-4884	Fax # 499-4365

Texas Veterans Land Board
Garry Mauro, Chairman

Stephen F. Austin Building
1700 North Congress Avenue
Austin, Texas 78701-1496
(512) 463-5060

November 30, 1994

Ms. Diane Oldroyd, Project Manager
Ms. Cathy Smock, Audit Manager
Office of the State Auditor
Two Commodore Plaza
206 East Ninth Street, Suite 1900
Austin, Texas 78701

Dear Ms. Oldroyd and Ms. Smock:

Thank you for the opportunity to respond to the Derivatives Report prepared by the State Auditor's Office.

We believe that your office has created a clear and educational report on a very difficult subject. We would, however, like to express one concern. That is, we are concerned about the report's suggestion that limitations be placed on portfolios based solely on size. Size is only one factor in determining the appropriate investments for an entity. Type of funds invested (i.e., bond proceeds, operating funds, etc.), investment horizon, expertise of investment officers, and the like all should influence the investment decision. Therefore, we would discourage limitations based exclusively on size.

There are excellent opportunities to enhance the return of the investment portfolios of state entities by investing in sophisticated securities. It is very important to balance protecting state funds and ensuring that the appropriate return be earned. We hope that this report and any ensuring legislation, will maintain that balance.

Thank you.

Sincerely,

Bruce R. Salzer
Director of Funds Management

cc: Garry Mauro
Mitzi Angly

H:\users\brsalzer\audit.ror

UNIVERSITY OF HOUSTON SYSTEM

Office of Administration and Finance
1600 Smith, Suite 3400
Houston, Texas 77002
(713) 754-7411

via fax 3 pages
512/479-4884

2 December 1994

Ms. Dianne Oldroyd
State Auditor's Office
Two Commodore Plaza
Austin, Texas 78701

Dear Ms. Oldroyd:

Thank you for your letter of November 18 and an invitation to respond to State Auditor's Office draft "Briefing Report on Derivative Investments by State Agencies." For the University of Houston System, the entry in the column, "Types of Investment," of the table on the 17th page of our copy of the report, appears as:

Money Market
International
Equity Trust
Fund

It should read:

International
Equity Trust.

Money Market
Fund

On the 20th page of the draft, appears the recommendation:

> *An entity's investment policy should be submitted to any brokers and dealers that the entities use in investment transactions.*

For an endowment fund, an institution's investment policy is not relevant to the function brokers and dealers perform in managing an investment portfolio. As you correctly point out elsewhere in the draft, an entity's investment personnel and external professional fund managers are responsible for making investment decisions according to its investment policies and objectives. Brokers and dealers are engaged by professional managers only to carry out decisions to trade securities in a timely manner and at least cost.

On the 21st page of the draft, appears the recommendation:

> ***Develop restrictions on types of allowable investments using a laddered approach based on total investment portfolio size.***

Investment policies and objectives with respect to a entities need for liquidity, stability in earnings, rate of return and tolerance for risk, not portfolio size, should determine allowable investments. Such determination is best made by an entity's portfolio management.

Elsewhere on the 21st page of the draft appears the recommendation:

> ***An alternative for state entities who choose to hire an external firm to manage their investment portfolios, is to use the Texas Treasury Safekeeping Trust Company as their portfolio manager.***

The Texas Treasury Safekeeping Trust Company should be considered as an external investment portfolio manager only as an alternative in competition with other qualified management firms. Such criteria as its past and expected performance with respect to return and risk, the qualifications of its investment personnel, its investment style, and its administrative costs should be evaluated by those vested with the fiduciary responsibility for public funds along with like criteria for alternative external managers.

Once again, many thanks for the opportunity to comment on your draft. I hope you find our commentary helpful. The names, titles and addresses of the persons to receive the final report are attached. Please call me at 713/754-7410 if you need additional information.

Cordially,

Edward L. Whalen

Edward L. Whalen

Attachment

cc G. S. Campbell

T2200

LEE COLLEGE

December 2, 1994

Office of the State Auditor
Two Commodore Plaza
206 East Ninth Street, Suite 1900
Austin, Texas 78711-2067

Dear Mr. Alwin :

We would like to commend the State Auditor's Office for the thorough report on investments by state institutions and agencies.

Our fiscal responsibility leads us to review our investments and we have already complied with your comments regarding analysis of our financial portfolio. We are especially pleased to find that we have followed a sound investment strategy and we are in a strong financial position.

The investment strategy followed by Lee College is built on a solid reserve position. The Board of Regents and the President of Lee College are committed to maintaining strong reserves. Lee College currently maintains a reserve balance of over $6,795,670 of which over $3,000,000 is in unrestricted reserve balances. These funds are available for immediate use if needed.

The source of funds which we have invested in the bond market includes only long-term endowment funds, long-term plant funds and other restricted funds. We have invested no state funds in bonds. Further, we have invested no operating funds in the bond market. Additionally, Lee College owns no bonds which are in danger of losing principal. We have maximized our yields while maintaining liquidity to meet current obligations.

Lee College is committed to a conservative fiscal policy. We will continue to review our investment policy to insure that Lee College funds are invested in the best possible manner.

Thank you for the opportunity to respond.

Jackson N. Sasser, President *Phone 713-425-6300* *Fax 713-425-6555*

P. O. Box 818 • Baytown, Texas 77522-0818 • 713-427-5611

Appendix 7:

Glossary Of Selected Key Terms

Average Life - The average number of years the principal in a mortgage pool is expected to remain outstanding.

Collateralized - The underlying mortgage-backed securities backing a CMO deal.

Collateralized Mortgage Obligations (CMO) - A security created using the underlying cash flows from mortgage-backed securities as collateral. A CMO shifts the uncertainty regarding the exact timing of principal return in a mortgage-backed security. This uncertainty exists because the timing of mortgage principal payments is influenced by changes in interest rates, the current economic climate, and the geographic makeup of loans.

Coupon - The interest rate paid on a security.

Credit Risk - The likelihood that a party involved in an investment transaction will not fulfill its obligations. This type of risk is often associated with the issuer of the investment security and is affected by the concentration of deposits or investments in a single instrument or with a single institution.

Derivatives - Financial arrangements whose returns are linked to, or derived from, some underlying stock, bond index, commodity, or other asset. They come in two basic types: options and "forward-type" derivatives, which include forwards, futures, and swaps. They may be listed on exchanges or negotiated privately between institutions.

Derivative Securities - Trade like normal bonds, but their returns are determined by, or derived from, factors other than plain interest rates. For instance, returns on "structured notes" may vary in line with changes in stock prices, commodity prices, foreign exchange rates, or two different interest rates. Returns on mortgage derivatives involve bets on the rate at which homeowners will repay mortgages, and often act like leveraged interest rate options.

Extension Risk - Possible illiquidity of an investment due to a change in interest rate that slows down prepayments. The investor may have to hold the investment longer than originally intended to recover the amount invested.

Floater - A CMO class created from fixed rate mortgage backed collateral whose coupon adjusts on a monthly basis versus a market index.

High-risk - A type of security deemed unsuitable for specified investors by certain regulatory agencies.

Index - A benchmark measure of interest rates used in calculating coupons on adjustable securities.

Interest Only - A security whose payment represents the coupon payments on the outstanding principal balance of the underlying mortgage-backed security collateral and pays no principal.

Inverse Floater - A CMO class whose coupon adjusts opposite to the changes in a market index.

Interest Rate Risk - The risk that longer-term fixed income stocks will drop in market value if general interest rates climb or the risk that interest rates will change above current levels on a locked-in or fixed rate instrument.

Legal Risk - The possible financial loss resulting from an action by a court or by a regulatory or legislative body that could invalidate a financial contract.

London Interbank Offered Rate (LIBOR) - The average rate offered for U.S. dollars deposited in the international money market.

Market Risk - The risk that the market value of an investment, collateral protecting deposits, or securities underlying a repurchase agreement will decline. This type of risk is affected by the length to maturity of a security, the need to liquidate a security before maturity, the extent that collateral exceeds the amount invested, and the frequency at which the amount of collateral is adjusted for changing market values.

Mortgage-backed Securities - The securities are structured by pooling together standardized residential mortgage loans of similar characteristics. The investor purchases a pro-rata share of the interest and principal that the borrowers pay on the mortgage loans in the pool.

Negative Convexity - Measure of how prices react to changes in interest rates. Many CMOs are negatively convex, which means that when interest rates are falling, the price of the CMO may not rise as rapidly as a Treasury bond with equivalent coupon and maturity. When interest rates rise, the CMO may experience more severe price declines than the equivalent Treasury bond. Negative convexity is the result of changes in how quickly or slowly the principal of a CMO is being paid. Changes in the speed of principal payments are a function of how quickly the mortgages that make up the bond collateral are paid off, either through refinancing or home sales. Investors who have adequate information about the degree of negative convexity of a security will demand protection from this risk in the form of a discounted price.

Prepayment - An additional principal payment made on a mortgage loan.

Prepayment Risk - The risk associated with the extension or contraction of principal repayments in a pooled mortgage security. Prepayments of any loan in the mortgage pool by a borrower will shorten the average life of the security and also affect the yield. As interest rates decline, the borrowers are more likely to refinance their mortgage into a lower rate loan.

Principal Only - A security whose payment represents the principal stream of cash flow from the underlying mortgage-backed collateral and bears no interest rate.

Tolerable Risk - The level of risk an entity is willing to accept without regards to the potential returns. Only investment activity below this threshold will be undertaken. Tolerable risk should be established when the entity outlines its investment objectives.

Tranche - A security class of a CMO deal.

Volatility - The relative impact of changing interest rates in general market conditions on an investment.

Weighted Average Life (WAL) - The average amount of time the principal balance of a mortgage pool is outstanding.

Yield - The annual return on an investment (from dividends or interest) expressed as a percentage of either cost or current price.

Yield to Maturity - Refers to the yield of a bond also taking into account the premium or discount of the bond.

Z-Bond - This tranche of a CMO is similar to a coupon bond. Rather than receiving interest, it is reinvested at the coupon rate of the security. Z-bonds are generally the last tranche in a pool of collateralized mortgage obligations.

Copies of this report have been distributed to the following:

Legislative Audit Committee

Honorable James E. "Pete" Laney, Speaker of the House, Chair
Honorable Bob Bullock, Lieutenant Governor, Vice Chair
Senator John Montford, Chair, Senate Finance Committee
Senator Kenneth Armbrister, Chair, Senate State Affairs Committee
Representative Robert Junell, Chair, House Appropriations Committee
Representative Tom Craddick, Chair, House Ways and Means Committee

Governor of Texas

Honorable Ann W. Richards

Legislative Budget Board

Sunset Advisory Commission

Board Chairmen, Chief Executive Officers, and Other Relevant Personnel at the Entities Included in this Report