# STATE OF LOUISIANA
# LEGISLATIVE AUDITOR

**Department of the Treasury**
**Louisiana Education Quality Trust Fund**
**State of Louisiana**
Baton Rouge, Louisiana

Staff Study

October 1996

***Performance Audit Division***

***Daniel G. Kyle, Ph.D., CPA, CFE***
***Legislative Auditor***

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# DEPARTMENT OF THE TREASURY
# LOUISIANA EDUCATION QUALITY TRUST FUND
# STATE OF LOUISIANA

Baton Rouge, Louisiana

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October 9, 1996

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OFFICE OF
LEGISLATIVE AUDITOR
STATE OF LOUISIANA
BATON ROUGE, LOUISIANA 70804-9397

DANIEL G. KYLE, PH.D., CPA, CFE
LEGISLATIVE AUDITOR

1600 NORTH THIRD STREET
POST OFFICE BOX 94397
TELEPHONE: (504) 339-3800
FACSIMILE: (504) 339-3870

October 9, 1996

The Honorable Jerry Luke LeBlanc, Chairman
and
Members of the House Committee on Appropriations

Dear Legislators:

In accordance with House Resolution No. 36 of the Regular Session of 1996, this is our staff study of the investment performance of the state treasurer in managing the Louisiana Education Quality Trust Fund.

*I hope this information will be of help to you in your review of the Education Quality Trust Fund.*

Sincerely,

Daniel G. Kyle

Daniel G. Kyle, CPA, CFE
Legislative Auditor

DGK:DKG:jl/dl

[INVEST-LTR]

# Louisiana Education Quality Trust Fund

## OBJECTIVES

During the 1996 Regular Session of the Louisiana Legislature, the House of Representatives adopted House Resolution No. 36, which directed the Legislative Auditor to evaluate the investment performance of the state treasurer in managing the Louisiana Education Quality Trust Fund (LEQTF). This report conveys the results of our work covering the time period January 1, 1994, through June 30, 1996.

The primary objectives of our study were to:

- Evaluate the investment performance of the state treasurer in managing the LEQTF, including both buying and selling practices as they relate to bonds and notes.
- Review laws and policies relating to the investment of funds in the LEQTF.

## BACKGROUND

The Louisiana Education Quality Trust Fund (LEQTF) was established in 1986 to improve the quality of education in Louisiana. Funded with oil and gas royalties from the federal government relating to the Outer Continental Shelf, the LEQTF also receives interest and other investment income on assets held in the trust. The market value of assets held in the LEQTF on June 30, 1996, was $767.8 million.

The LEQTF consists of two funds, the Permanent Trust Fund and the Support Fund. The Permanent Trust Fund receives 25 percent of mineral production revenues and investment income and 75 percent of realized capital gains. The legislature cannot make appropriations from the Permanent Trust Fund.

The Support Fund receives 75 percent of mineral and investment income and 25 percent of realized capital gains. The legislature appropriates 50 percent of monies in the Support Fund to the state Board of Elementary and Secondary Education (BESE) (a beneficiary), and 50 percent to the Board of Regents (a beneficiary). The beneficiaries each received over $36.2 million in fiscal year 1994-95 from the LEQTF. These two boards annually submit to the legislature and the governor, at least 60 days before the regular legislative session, a proposed program and budget for the expenditure of monies in the Support Fund. Article 7, Section 10.1 of the Louisiana Constitution sets forth specific educational purposes for these funds that include, for example, carefully defined research efforts of public and private universities in Louisiana and ensuring an adequate supply of superior textbooks, equipment, and other instructional materials in elementary, secondary, and vocational-technical schools.

Louisiana Revised Statute (LSA-R.S.) 17:3803 grants the state treasurer authority to invest funds held in the LEQTF. Upon initial establishment of the LEQTF, the treasurer could invest in securities such as direct general obligations of the United States (U.S.) government, other U.S. governmental agencies, such as the Government National Mortgage Association, and certificates of deposit. In 1994, Louisiana voters approved an amendment to the constitution that allows the LEQTF to invest up to 35 percent of assets in equity securities (stocks). The state treasurer adopted rules in May 1995 concerning the investment of funds in stocks and then selected an outside investment manager. A program for investing in stocks began in October 1995.

The annual report of the treasurer's office for the fiscal year ended June 30, 1993, states that for the five fiscal years ended June 30, 1993, the annual average rate of return of the LEQTF was 10.69 percent. During 1994, the Federal Reserve increased interest rates in an effort to abate inflationary concerns and slow economic growth. The 1994 increases in interest rates resulted in an unfavorable year for the bond market and also for the LEQTF by decreasing the market value of its bonds and notes. Since the annual rate of return calculated for the trust fund considers market value of the securities, there was a negative rate of return of (1.67) percent for fiscal year 1993-94. Also, during three months of 1994, the state treasurer incurred net losses in selling LEQTF bonds and notes. In House Resolution No. 36, the House of Representatives directed the Legislative Auditor to evaluate the investment performance of the state treasurer for the LEQTF.

## METHODOLOGY

Our study of the LEQTF was conducted under the provisions of Title 24 of the Louisiana Revised Statutes of 1950, as amended. We examined bond and note trading for the time period January 1, 1994, through June 30, 1996 (the "review period"). A note is defined as a security having a maturity greater than one year and less than 10 years, and a bond as a security having a maturity greater than 10 years. We did not include short-term investments (less than one year in duration, such as U.S. Treasury bills) within the scope of our review, except for the specific purpose of performing two hypothetical cash flow analyses that assumed the securities owned by the LEQTF on January 1, 1994, were retained throughout 1994. (See page 6.)

To review investment activity in the LEQTF, our procedures consisted of (1) reviewing the trading files (quote sheets and brokerage confirmation slips) of the state treasurer's office; (2) reviewing the monthly statements of the custodial bank (Regions Bank); (3) reviewing applicable state statutes, policies and procedures of the state treasurer's office, and other pertinent information; (4) interviewing certain officials and employees of the treasurer's office and Regions Bank; (5) obtaining market prices for certain securities from *The Wall Street Journal* and other sources; and (6) reviewing the time-weighted methodology used by the custodial bank to calculate the rate of return.

Because of the high volume of security trading during 1994 (Exhibit 4 on page 10) and because the LEQTF suffered net realized losses for September, October, and December of 1994, we evaluated what would have happened to the LEQTF portfolio in 1994 had there been no selling of securities. We performed two cash flow analyses that assumed the securities held on January 1, 1994, were retained for the entire year. One analysis assumed that monthly cash flows were invested in federal funds (Appendix A) and the second analysis assumed monthly cash flows were invested in U.S. Treasury 5-year notes (Appendix B).

Finally, we contacted other southern states to obtain their policies and procedures relating to investment of state funds. States that furnished us information include the following:

| | | |
|---|---|---|
| Alabama | Mississippi | South Carolina |
| Florida | North Carolina | Tennessee |
| Georgia | Oklahoma | Virginia |
| | Kentucky | |

Except for Oklahoma, Florida, and Virginia, much of the information we received was not relevant to the LEQTF because it concerned investment policies for general fund investments. General fund investment objectives are short-term in nature compared to a more long-term horizon for the LEQTF.

## BOND PRICES AND MARKET VALUE OF THE LEQTF

The prices of bonds move inversely with changes in interest rates. The impact that interest rates can have on bonds, if unfavorable, is sometimes referred to as "interest rate risk." The following illustration shows how interest rates influence the prices of bonds and notes:

> Assume that an investor purchases a newly issued 10-year note on January 1, 1996, with a maturity date of January 1, 2006. Assume that the market rate of interest on January 1, 1996, for a 10-year note is 6 percent, and the coupon rate on the note purchased is 6 percent; thus, the investor purchases the note at par value or for $10,000. The investor can expect to receive $600 in interest payments annually for 10 years and $10,000 when the note matures in 10 years. If one year later, on January 1, 1997, the market interest rate is 6 percent for notes with a maturity of 9 years, then the investor could expect to sell the note for $10,000 because a buyer of that note who paid $10,000 would receive a rate of return of 6 percent on the $10,000 paid to purchase the note.
>
> Alternatively, if on January 1, 1997, the interest rate for 9-year notes has increased to 9 percent, no one would pay the investor $10,000 for the right to receive $600 in annual coupon interest because this would yield only 6 percent. A buyer would be able to buy another note providing a 9 percent yield. The result is that the price of the investor's note would have declined to a price level where annual coupon payments of $600 for 9 years plus the $10,000 repayment at maturity would equal a yield of 9 percent. If long-term interest rates rise, prices of bonds or notes in the bond market decline. Conversely, if long-term interest rates decline, prices of bonds and notes increase.

After the state treasurer purchases a bond for the LEQTF, its price will increase and decrease, in response to fluctuating interest rates. As a result, the market value of the LEQTF changes daily because prices of many of the trust's securities change daily. The custodial bank for the trust computes monthly, quarterly and annual rates of return to show the investment performance of the LEQTF. The custodial bank uses monthly ending market values (instead of acquisition costs of securities) to compute the rate of return, which includes unrealized gains and losses in the computation. Exhibit 1 below depicts market values and the annual rates of return for the past four years. Unrealized gains (or losses) reflect the market value of the assets as of a given date less the acquisition costs of the assets. Unrealized gains (or losses) are those gains or losses that have not actually been incurred by the sale of securities. If the security had been actually sold, the resulting gain or loss would be termed "realized."

**Exhibit 1**
**LEQTF Selected Portfolio Data**

| | June 30, | | | |
|---|---|---|---|---|
| | **1993** | **1994** | **1995** | **1996** |
| Market Value of the Portfolio | $779,049,198 | $729,577,406 | $777,843,011 | $775,338,047 |
| Unrealized Gains and (Losses) | $55,043,024 | ($22,426,573) | $5,827,458 | ($2,457,333) |
| Total Annual Rate of Return | 11.29% | (1.67%) | 11.13% | 5.84% |

Source: State Treasurer's Annual Report on the Louisiana Education Quality Trust Fund, as of June 30, 1995, page 5. Information for June 30, 1996, was obtained from a Regions Bank LEQTF report.

## NET GAINS AND LOSSES FROM SALES OF SECURITIES

Exhibit 2 on page 5 shows the monthly net realized gains and losses of the LEQTF during calendar years 1994 and 1995 and the number of sales for each month. These gains and losses are derived only from sales of bonds or notes before maturity, and, therefore, do not include any unrealized gains or losses occurring as a result of holding a security until maturity. As previously mentioned, short-term investments (less than one year in duration), such as repurchase agreements, are not included in this exhibit.

In 1994, Mr. Rodney L. Craig was the chief investment officer for the state treasurer for almost the entire year and made most, if not all, investment decisions relating to the LEQTF portfolio. In 1994, the state treasurer formed for the LEQTF an investment advisory group that first met in November 1994. In May 1995, the treasurer's office adopted a Rule in the Louisiana Administrative Code to govern certain matters pertaining to the investment of the monies in the LEQTF. This Rule stated that an Investment Advisory Panel would be established to advise the state treasurer regarding the investment of the assets of the LEQTF including assisting in the development of investment policy. After its initial meeting, the advisory group never met again and never adopted any formal policies or investment advice relating to the management of the LEQTF portfolio.

Some other states have boards that review and approve major investment policy. Florida's treasurer must present major investment decisions to the State Board of Administration. Virginia's treasurer reports monthly to the Treasury Board. The monthly reports include such things as investment activity, earnings, and comparisons of actual performance against benchmarks. Oklahoma's investment policy provides that the treasurer may, at his or her discretion, appoint an investment advisory committee.

As can be seen in Exhibit 2 below, Mr. Craig was an active investment manager who sold monthly an average of 11 bond and note issues. Mr. Jules M. Nunn, who succeeded Mr. Craig *in December 1994 has an investment philosophy that differs from his predecessor. Mr. Nunn* prefers to buy securities and hold them for a long period of time. As seen in Exhibit 2, there were many months during 1995 when there were no sales of notes or bonds. In the first six months of 1996, there was only one sale (in March) for a loss of $6,000.

**Exhibit 2**
**Louisiana Education Quality Trust Fund**
**Net Gains and Losses From Sales of Bonds and Notes**

| | **1994** | | **1995** | |
|---|---|---|---|---|
| | **Realized Gains/(Losses)** | **Number of Sales** | **Realized Gains/(Losses)** | **Number of Sales** |
| January | $760,362 | 22 | -0- | -0- |
| February | 31,825 | 1 | -0- | -0- |
| March | 1,567,953 | 14 | -0- | 2 |
| April | 76,560 | 5 | -0- | -0- |
| May | 3,867,890 | 12 | $290,542 | 14 |
| June | 3,684,425 | 13 | 1,262,527 | 3 |
| July | 839,816 | 2 | -0- | -0- |
| August | 507,552 | 28 | -0- | -0- |
| September | (736,392) | 27 | -0- | -0- |
| October | (2,490,806) | 9 | -0- | -0- |
| November | -0- | -0- | -0- | -0- |
| December | (166,213) | 1 | -0- | -0- |
| **Totals** | **$7,942,972** | **134** | **$1,553,069** | **19** |

Source: Prepared by legislative auditor's staff from information provided by the Department of the Treausury.

Under Mr. Craig's management, the LEQTF incurred net trading losses in three months of 1994, but for the year, as a whole, there was a net realized gain of $7,942,972. Because of the amount of trading (see Exhibit 4 on page 10) and the net losses realized in three months during calendar year 1994, we decided to ascertain what would have been the market value of the LEQTF portfolio at December 31, 1994, had there been no selling of securities during the year. We performed two hypothetical analyses that assumed the securities held on January 1, 1994, were retained for the entire year. The two analyses were made using the following assumptions:

1. The treasurer's office received or disbursed all interest on the portfolios, other investment earnings, and royalties (net of disbursements to the beneficiaries) on the 15th day of each month.

2. Both analyses included short-term investments (less than one year in duration, such as repurchase agreements) because such investments were actually held in the trust on January 1, 1994.

**Federal Funds Analysis** - The first analysis (Appendix A) assumes that monthly net receipts were reinvested at the average 1994 federal funds rate for the remainder of 1994. The market value of this hypothetical portfolio on December 31, 1994, would have been $706,451,920. This is $1,712,958 greater than the actual market value of the LEQTF of $704,738,962 on December 31, 1994. Therefore, at December 31, 1994, the actual market value of the LEQTF under Mr. Craig's management was less than the value that could have been obtained with these hypothetical assumptions.

**Treasury Note Analysis** - The second analysis (Appendix B) assumes that monthly net receipts were reinvested in 5-year Treasury notes. A 5-year maturity was selected because at the beginning of 1994, the average maturity for all assets in the LEQTF was 5 1/4 years. Since 5-year Treasury notes are issued every month, we assumed a different issue was purchased each month with the cash inflow for that month. At the end of 1994, we obtained market prices for these 12 securities to include in the total market value of the portfolio. The market value of this hypothetical portfolio on December 31, 1994, would have been $704,960,401. This is $221,439 greater than the actual market value of the LEQTF of $704,738,962 on December 31, 1994. Therefore, at December 31, 1994, the actual market value of the LEQTF under Mr. Craig's management was less than the value that could have been obtained with these hypothetical assumptions.

**Recommendation** - Decisions relating to the general management and investment philosophy of the LEQTF portfolio should not be made entirely by one individual, the chief investment officer. A May 1995 Rule stated that an Investment Advisory Panel would be established to advise the state treasurer regarding the investment of the assets of the LEQTF including assisting in the development of investment policy. The state treasurer should re-activate this panel to carry out these objectives and to review investment activity and performance.

# LAWS AND POLICIES CONCERNING INVESTMENTS

Two statutes govern how the state treasurer invests state funds. LSA-R.S. 49:327 applies generally to investments made by the state treasurer whereas LSA-R.S. 17:3803 applies specifically to LEQTF investments. LSA-R.S. 49:327 recognizes that it is in the best interest of the state to maximize return on investments made by the state treasurer. This statute authorizes investments in securities such as U.S. Treasury obligations, certain U.S. government agency obligations, direct and reverse security repurchase agreements, and time certificates of deposit. LSA-R.S. 17:3803 provides additional authority and direction to the state treasurer for investment of funds held in the LEQTF, by providing, in part, as follows:

> It is found and determined that existing laws of the state governing the investment of public funds do not provide sufficient flexibility to the state or the opportunity to maximize its return on investment of the offshore revenues to be received from the federal government. It is the desire of the legislature to grant additional authority to the state treasurer with respect to the investment of offshore revenues . . . as will generate favorable return to the state . . .

LSA-R.S. 17:3803 allows the treasurer more flexibility in its investment approach than LSA-R.S. 49:327. Specifically, LSA-R.S. 17:3803 authorizes investments in securities lending contracts, and also provides that there are no limits on the maturity of investments. LSA-R.S. 49:327 contains a general limit on maturity of 5 years.

In 1995, the legislature enacted LSA-R.S. 49:327(B)(5) to require the treasurer to develop and adopt an investment policy that clarifies investment objectives and the procedures and constraints necessary to reach those objectives. This law provides that all such policies should *place appropriate emphasis on the goals of safety of principal first, liquidity second, and yield third.* In a Rule adopted in May 1995, the state treasurer adopted investment goals before the enactment of LSA-R.S. 49:327(B)(5). The treasurer's office established the following investment goals, which are not prioritized, for the LEQTF:

1. Preservation of the assets

2. Provision of income in a stable and predictable manner to the beneficiaries

3. Enhancement of the market value of the assets

The goals established by the treasurer's office will need to be revised and prioritized if they are to comply with the objectives identified in LSA-R.S. 49:327(B)(5). However, the legislature may wish to enact a provision in LSA-R.S. 17:3803 concerning the investment goals for the LEQTF. *Since up to 35 percent of LEQTF assets can be invested in equities, arguably the first* investment objective of this portion of LEQTF assets is enhancement of market value. Therefore, the statutory rule that prioritizes safety of principal should not apply to the equity portion of the LEQTF. Also, since the monthly royalty and investment income received by the LEQTF usually cover the warrants drawn by the beneficiaries, the second investment objective of LSA-R.S. 49:327(B)(5)--liquidity--may not be as important for the LEQTF as it is for other investments made by the state treasurer.

## Matter for Legislative Consideration

The legislature may wish to consider whether the investment goals set forth in LSA-R.S. 49:327(B)(5)(b) are appropriate for the LEQTF.

# RETURN ON INVESTMENT

The custodial bank for the trust (Regions Bank) calculates rates of return indicating investment performance for the LEQTF on a time-weighted basis. The time-weighted basis considers the market value of the trust fund at the beginning and end of each month, the royalties coming into the trust, and the disbursements paid out to the trust beneficiaries. The ending market value includes income actually received during the month and accrued income (income earned but not yet received) on the trust's securities. The custodial bank calculates a rate of return each month and issues quarterly reports that provide financial information about the LEQTF including rates of return.

LSA-R.S. 49:329(B) provides that the treasurer shall submit a quarterly report concerning the LEQTF's investment activity for the previous quarter. Regions Bank prepares these reports. This statute requires that certain other information be included in this report including the following:

1. The total amount of funds invested in the LEQTF for the month
2. The rate of investment earnings shown as a percentage of the amount of the investment
3. The comparable rate of investment earnings for U.S. Treasury two-year notes and 30-day Treasury bills ("legislative benchmarks")

**Performance Benchmarks**

In addition to the two legislative performance benchmarks set forth above (U.S. Treasury two-year notes and 30-day bills), a May 1995 Rule adopted by the state treasurer requires another benchmark for LEQTF bonds, which is the Lehman Brothers Government Bond Index net of investment management fees, custodial fees, and transaction costs.

At the end of each fiscal year, the treasurer's office issues a report on the LEQTF (annual report) that provides financial and other information about the LEQTF including rates of return. The annual report and the quarterly reports contain the legislative benchmarks of the U.S. Treasury two-year notes and 30-day bills. The quarterly reports also show a Lehman Aggregate Index, and the 1995 Annual Report shows the Lehman Brothers Intermediate Bond Index and Government Bond Index. In addition, the quarterly reports show rates of return for

Treasury notes of 5-year and 10-year maturities. Selected portfolio data contained in the 1995 Annual Report and the quarterly report for the quarter ended June 30, 1996, are shown below.

**Exhibit 3**
**Selected Portfolio Data**

| | June 30, | | | |
|---|---|---|---|---|
| | **1993** | **1994** | **1995** | **1996** |
| Market Value of the LEQTF Portfolio | $779,049,198 | $729,577,406 | $777,843,011 | $775,338,047 |
| Unrealized Gains and (Losses) | 55,043,024 | (22,426,573) | 5,827,458 | (2,457,333) |
| Average Maturity | 5.08 Years | 8.60 Years | 7.08 Years | 6.75 Years |
| Average Coupon | 7.41% | 6.92% | 6.53% | 6.98% |
| Total Annual Rate of Return | 11.29% | (1.67%) | 11.13% | 5.84% |
| Lehman Brothers Government Bond Index Rate of Return | 12.90% | (1.37%) | 12.07% | 4.66% |
| 5-Year Treasury Note Rate of Return | 12.41% | (2.41%) | 11.42% | 3.14% |
| 10-Year Treasury Note Rate of Return | 17.57% | (6.17%) | 15.27% | 2.00% |
| 30-Day Treasury Bill Rate of Return | 2.87% | 3.16% | 4.80% | 5.26% |
| 2-Year Treasury Note Rate of Return | 6.58% | 1.33% | 7.85% | 5.13% |

Source: State Treasurer's Annual Report on the Louisiana Education Quality Trust Fund, as of June 30, 1995; Investment Performance Evaluation of the Louisiana Education Quality Trust Fund by Mercer Investment Consulting, Inc., dated October 1995; Regions Bank LEQTF reports; the Bloomberg Financial Markets reporting service; and Lehman Brothers.

As shown above, the rate of return for 30-day Treasury bills is usually much less than the Lehman Brothers Government Bond Index or the actual rate of return earned by the LEQTF. The reason for this is that the 30-day Treasury bill has a much shorter maturity than the average maturity of LEQTF securities. As can be seen in Exhibit 3, the average maturity of the LEQTF portfolio has varied from 5 years to 8.6 years.

Other southern states use a variety of performance benchmarks, and many of these are oriented toward short-term investing, which is appropriate for management of state general funds. For portfolios of intermediate duration, Virginia uses the Lehman Intermediate Government/Corporate Index and for longer term portfolios, the Lehman Aggregate Index. Oklahoma has a performance objective that investments shall earn not less than the rate for comparable maturities on U.S. Treasury obligations.

There are two possibilities for improving performance benchmarks for LEQTF bonds and notes. First, as done in Oklahoma, the U.S. Treasury note with a maturity that is closer to the average maturity of LEQTF debt securities (a 6- to 8-year note) can be included. This benchmark would provide the most risk-free rate of return (the U.S. government) as a basis with which to compare how well the LEQTF performed. The 5- and 10-year Treasury notes shown in the quarterly reports could also be included in the annual report.

Second, using the 30-day Treasury bill as a benchmark is not that meaningful for a portfolio with a maturity of anywhere from 5 to 8 years. It could be discontinued as a performance benchmark for the LEQTF.

## Matters for Legislative Consideration

1. The legislature may wish to consider adding as a performance benchmark U.S. Treasury notes with maturities that are closer to the average maturity of LEQTF debt securities (6 to 8 years).

2. The legislature may wish to consider deleting U.S. Treasury 30-day bill rates as a performance benchmark for the LEQTF.

# REVIEW OF LEQTF TRADING FILES

We reviewed the bid sheets, broker confirmation slips, and other related information for all bond and note transactions in the LEQTF. From January 1, 1994, until June 30, 1996, there were 417 transactions as follows:

**Exhibit 4**
**Number of Bond and Note Transactions**

| Calendar Year | Sales | Purchases | Totals |
|---|---|---|---|
| 1994 | 134 | 215 | 349 |
| 1995 | 19 | 31 | 50 |
| 1996 (6 months) | 1 | 17 | 18 |

Source: Prepared by legislative auditor's staff from information provided by the Department of the Treasury.

During the review period, the treasurer's office had an informal policy to select and contact three broker/dealers for their price bids before executing a trade. Investment division personnel of the treasurer's office entered the price bids from each broker/dealer for the particular security and transaction onto a sheet of paper (the trade sheet). The trade sheet indicated whether the transaction was a purchase or sale and also showed the type, maturity, and amount of the security to be traded. The informal policy further provided that after the trade was executed, the confirmation slip from the broker was attached to the trade sheet, and these documents were then filed by fund name.

A review of the LEQTF trading files indicated that informal policies were not always complied with during 1994 as follows:

1. **Bid Process Before Consummation of a Trade.** For most transactions, the treasurer's office obtained two or three price bids from securities brokers and consummated the transaction with the broker offering the best bid. For new issues of securities, the issue price is set and is generally the same among brokers, so only one bid is obtained. Excluding new issues, there were 24 instances during 1994 (7 percent of 1994 transactions) where only one price bid was entered on the trade sheet before a transaction was consummated. Of these 24 trades, Paine Webber, Incorporated, had 11; First National Bank of Commerce had 5; Kemper Securities had 3; Dean Witter Reynolds, Incorporated, and Blaylock & Partners, L. P. had 2 each and Smith Barney, Incorporated, had one. For 1995 and the first six months of 1996, our review did not disclose any instances where only one price bid was obtained before execution of a trade.

   Securities typically have a high as well as a low price achieved during a trading day. To verify those transactions where only one price bid was received, we attempted to obtain daily high and low prices; however, we were unable to obtain this information. Alternatively, for securities with one price bid, we obtained closing or late afternoon prices for the days that the securities were traded. A comparison of the actual prices paid or received with the representative bid we obtained is contained in Exhibit 5 on the following page.

# Exhibit 5
# Representative Bids for Securities Traded With Only One Bid in 1994

| Security | Trade Date - 1994 | Purchase or Sale | Actual Price Paid or Received | Representative Bid* | Par Value | Difference Between Actual and Representative Bid |
|---|---|---|---|---|---|---|
| U.S. Treasury Note | 3/8 | Purchase | 96.984375 | 96.265625 | $20,000,000 | ($143,750) |
| GNMA Pool | 5/20 | Purchase | 100.421875 | 100.3125** | 400,795 | (438) |
| U.S. Treasury Note | 10/20 | Purchase | 97.210937 | 96.265625 | 20,000,000 | (189,063) |
| U.S. Treasury Note | 10/20 | Sale | 97 | 96.265625 | 20,000,000 | 146,875 |
| FNMA | 1/19 | Purchase | 99.29687 | 99.5625 | 5,000,000 | 13,282 |
| FNMA | 1/19 | Purchase | 99.54687 | 99.5625 | 5,000,000 | 782 |
| U.S. Treasury Note | 2/16 | Sale | 100.0625 | 99.828125 | 15,000,000 | 35,156 |
| FNMA | 3/2 | Sale | 103.875 | 104.03125 | 20,000,000 | (31,250) |
| U.S. Treasury Strip | 3/17 | Purchase | 34.37 | 33.855 | 25,000,000 | (128,750) |
| U.S. Treasury Strip | 3/23 | Purchase | 36.1013 | 35.891 | 10,000,000 | (21,030) |
| FNMA | 5/2 | Sale | 104.625 | 104.25 | 5,000,000 | 18,750 |
| FNMA | 5/2 | Sale | 106.42968 | 105.96875 | 30,000,000 | 138,279 |
| U.S. Treasury Note | 5/2 | Sale | 104.35937 | 104.34375 | 20,000,000 | 3,124 |
| U.S. Treasury Note | 5/2 | Sale | 106.48437 | 106.50 | 20,000,000 | (3,126) |
| U.S. Treasury Note | 5/19 | Sale | 106.20312 | 106.4375 | 40,000,000 | (93,752) |
| U.S. Treasury Note | 5/16 | Purchase | 100.03125 | 100.15625 | 25,000,000 | 31,250 |
| U.S. Treasury Note | 5/16 | Purchase | 99.8125 | 100.15625 | 10,000,000 | 34,375 |
| GNMA Pool | 5/13 | Purchase | 100.9375 | 100.78125 | 20,400,000 | (31,875) |
| U.S. Treasury Note | 5/19 | Purchase | 101.53125 | 102.0938 | 20,000,000 | 112,510 |
| U.S. Treasury Note | 6/3 | Purchase | 101.6875 | 101.828125 | 30,000,000 | 42,188 |
| FNMA | 10/13 | Purchase | 98.5625 | 98.07421875 | 2,000,000 | (9,766) |
| FNMA | 10/14 | Purchase | 98.39062 | 98.3125 | 2,000,000 | (1,562) |
| FNMA | 10/19 | Purchase | 99.8125 | *** | 5,000,000 | Unknown |
| FNMA | 12/6 | Sale | 100.46875 | *** | 13,000,000 | Unknown |
| **Total** | | | | | | **($77,791)** |

* We were unable to obtain daily high and low prices, so we used a representative bid.

** Generic bid, which means a GNMA with a coupon rate and maturity date very similar to the security listed in the table was used to obtain the bid.

*** No bid available from *The Wall Street Journal* or the Bloomberg Financial Markets Reporting Service. There was no similar security with which to obtain a generic bid.

Source: Prepared by legislative auditor's staff from information provided by the Department of the Treasury. Representative bids were obtained from the Bloomberg Financial Markets Reporting Service, *The Wall Street Journal*, or Prudential Securities, Incorporated.

2. **Trades where the best price bid was not taken.** There were seven instances (2 percent of 1994 transactions) where at least two bids were obtained, but the treasurer's office consummated the transaction without using the best bid. As shown in Exhibit 6, the extra cost of each of these transactions ranges in amount from $2,343 to $28,125. Three of these transactions were sales of Treasury Strips, and two transactions were purchases of Government National Mortgage Association (GNMA) pools where $4,593 and 3,062 more were paid than the lower price quoted. Of these seven trades, Paine Webber, Incorporated, had three; First National Bank of Commerce had three, and Commercial National Bank had one. Exhibit 6 below provides more detail concerning these transactions.

**Exhibit 6**
**LEQTF Trade Executions Not Using the Best Bid**

| Type of Security | Trade Dates | Actual Sales Price | Best Bid | Par Amount | Dollar Difference | Broker/ Dealer* |
|---|---|---|---|---|---|---|
| Treasury Strip | 6/2/94 | 19.276 | 19.305 | $40 million | $11,600 | CNB |
| Treasury Strip | 6/2/94 | 31.066 | 31.078 | $25 million | $3,000 | FNBC |
| Treasury Strip | 6/2/94 | 39.834 | 39.846 | $25 million | $3,000 | FNBC |
| Treasury Strip | 5/18/94 | 101 8/32 | 101 8.5/32 | $15 million | $2,343 | Paine |
| | | **Actual Purchase Price** | **Best Bid** | | | |
| Treasury Notes | 5/18/94 | 106 3/32 | 105 30.5/32 | $20 million | $28,125 | Paine |
| GNMA Pools | 5/27/94 | 96 28/32 | 96 27/32 | $9.8 million | $3,062 | Paine |
| GNMA Pools | 5/24/94 | 99 26.5/32 | 99 23.5/32 | $4.9 million | $4,594 | FNBC |
| **Total Dollar Difference** | | | | | **$55,724** | |

* CNB is an abbreviation representing Commercial Nation Bank. FNBC represents First National Bank of Commerce, and Paine represents Paine-Webber, Incorporated.

Source: Prepared by legislative auditor's staff from information provided by the Department of the Treasury.

We discussed these transactions with Mr. Jules Nunn, Chief Investment Officer, of the treasurer's office. For the purchase of GNMA pools, he explained that sometimes paying a slightly higher price is justifiable if it results in fewer pools being purchased. For example, if $20 million of GNMAs are to be purchased, it would be preferable to have two pools of $10 million each instead of 20 pools of $1 million each. Fewer pools result in reduced accounting and administrative costs. Also, Mr. Nunn stated that if the GNMAs are sold, a better price may be obtained from sale of a large pool as compared to a small pool.

3. **Trades with no documentation.** One sale and three purchases in 1994 had no trading documentation in the files. Two of these purchases were new issues, so more than one bid was not necessary. To verify the prices on the other transactions where there was no documentation in the files, we attempted to obtain representative bids from the Bloomberg quote system in the treasurer's office and *The Wall Street Journal*. However, representative bids were not available.

## Exhibit 7
## Representative Quotes for Securities With No Trade Documentation

| Security | Trade Date - 1994 | Purchase or Sale | Actual Price Paid or Received | Par Value | Representative Quote |
|---|---|---|---|---|---|
| Federal Home Loan Bank | March 2 | Sale | 99.07812 | $20 million | Not available |
| GNMA Pool | July 17 | Purchase | 100.42187 | $687,011 | Not available |
| Student Loan Marketing Association | December 21 | Purchase | 100.00 | $5 million | Not available |
| Student Loan Marketing Association | December 21 | Purchase | 100.00 | $5 million | Not available |

Source: Prepared by legislative auditor's staff from information provided by the Department of the Treasury.

### Recommendations:

1. As previously stated, during the review period, the state treasurer had an informal policy requiring that three bids of broker/dealers be obtained before executing a trade. As of July 9, 1996, the treasurer formalized a policy requiring that three bids be obtained. The treasurer should take steps to ensure compliance with this policy.

2. The treasurer's office should implement a procedure whereby proposed trades can be reviewed by someone other than the person executing the trade, to ensure that the best price bid is the one actually used.

# Appendix A: Federal Funds Analysis

The hypothetical federal funds analysis provides an estimate of the investment performance of the Louisiana Education Quality Trust Fund (LEQTF) assuming a conservative ("buy and hold") investment strategy had been followed during the year ended December 31, 1994.

The four major assumptions underlying the federal funds analysis are as follows:

1. All investment securities held by the LEQTF at January 1, 1994, were held for the entire year.

2. Estimated monthly net cash flow was invested for the remainder of the year at an average 1994 federal funds rate of 4.25 percent. Estimated monthly net cash flow was invested on the 15th day of each month. The net cash flow consisted of estimated principal receipts on Government National Mortgage Association (GNMA) pools, interest, mineral royalties, and securities lending income less actual amounts of warrants paid to beneficiaries.

3. Warrants are paid out of the Support Fund and are based on amounts appropriated by the Louisiana Legislature. Actual warrant amounts paid monthly during 1994 were used to determine the estimated net cash flows for each month.

4. Accrued interest (interest earned but not received) was not used in this analysis.

Exhibit 1 shows the par value and fair market value of the investment securities held by the trust fund on January 1, 1994, and December 31, 1994. As stated above, the hypothetical analysis assumes there would have been no changes (buying or selling) in the investment securities held during the year. The par value of GNMA pool certificates would have decreased during the year due to receipt of principal payments resulting from payoffs of underlying mortgages in each pool. These principal receipts were included in determining the amounts of the monthly net cash flows.

## Exhibit 1
## LEQTF Assets: Par Value and Fair Market Value as of January 1 and December 31, 1994

| Security | January 1, 1994 (Actual Values) | | December 31, 1994 (Hypothetical Values) | |
|---|---|---|---|---|
| | Par Value | Fair Market Value | Par Value | Fair Market Value |
| Short-Term Treasury Investment Fund | $721 | $721 | $721 | $721 |
| Repurchase Agreement | 38,760,000 | 38,760,000 | 38,760,000 | 38,760,000 |
| U.S. Treasury Notes | 215,000,000 | 232,850,250 | 215,000,000 | 211,609,650 |
| Federal Home Loan Bank Notes | 160,000,000 | 170,816,600 | 160,000,000 | 156,960,650 |
| Federal Home Loan Mortgage Notes | 80,000,000 | 80,975,300 | 80,000,000 | 72,128,325 |
| Federal National Mortgage Association Notes | 195,000,000 | 203,918,400 | 195,000,000 | 183,482,175 |
| Government National Mortgage Association Pools | 30,716,566 | 32,407,417 | 24,060,617 | 23,382,212 |
| Totals | $719,477,287 | $759,728,688 | $712,821,338 | **$686,323,733** |

Source: Prepared by legislative auditor's staff from information provided by the Department of the Treasury.

Exhibit 2 shows the estimated cash flows for 1994 assuming no change in the LEQTF securities during 1994 and monthly investment of net cash flows at an average federal funds rate of 4.25 percent.

## Exhibit 2
## LEQTF 1994 Hypothetical Fair Market Value and Cash Flows

| | |
|---|---|
| Fair Market Value of Investment Securities held on December 31, 1994 | **$686,323,733** |
| GNMA Principal Receipts During 1994 | 6,655,947 |
| Royalties | 20,557,226 |
| Interest Income | 47,996,750 |
| Securities Lending Income | 292,838 |
| Estimated Earnings on 1994 Cash Flow | 499,780 |
| Warrants (net of reverse warrants) | (55,874,354) |
| Total Estimated Fair Market Value on December 31, 1994 | $706,451,920 |

Source: Prepared by Legislative Auditor's staff from information provided by the Department of the Treasury.

Applying the assumptions contained in the federal fund analysis, the estimated fair market value of the trust fund would have been $706,451,920 as of December 31, 1994. The actual fair market value of the trust fund portfolio on December 31, 1994, was $704,738,962.

Therefore, based on the results of our assumptions and analysis, a conservative "buy and hold" strategy during 1994 could have resulted in a portfolio fair market value $1,712,958 greater than the actual value on December 31, 1994.

# Appendix B: U.S. Treasury Note Analysis

The hypothetical U.S. Treasury note analysis provides an estimate of the investment performance of the Louisiana Education Quality Trust Fund (LEQTF) by assuming a conservative ("buy and hold") investment strategy had been followed during calendar year 1994.

The five major assumptions underlying the U.S. Treasury note analysis are as follows:

1. All investment securities held by the LEQTF on January 1, 1994, were held for the entire year. The repurchase agreement held on January 1, 1994, was invested for the remainder of the year at an average 1994 federal funds rate of 4.25 percent.

2. Estimated monthly net cash flow was invested on the 15th day of each month. The monthly net cash flow consisted of estimated principal receipts on Government National Mortgage Association (GNMA) pools, interest, mineral royalties, and securities lending income less warrants paid to the beneficiaries.

3. Estimated monthly net cash flow was invested for the remainder of the year in 5-year Treasury notes. A 5-year maturity was selected because at the beginning of 1994, the average maturity for all assets in the LEQTF was 5 1/4 years. Every month, 5-year Treasury notes are issued late in the month. Therefore, on the 15th day of the following month, we assumed the purchase of notes issued in the previous month. The purchases were made at the closing price on the 15th day of the month for the particular Treasury note. We assumed payment of accrued interest (interest earned but not received) for one-half of a month with each monthly purchase.

4. Except for accrued interest associated with each purchase of Treasury notes (described in No. 3 above), accrued interest was not used in this analysis.

5. Warrants are paid out of the Support Fund and are based on amounts appropriated by the Louisiana Legislature. Actual warrants paid monthly during 1994 were used to determine the estimated net cash flows for each month.

Exhibit 1 shows the par value and fair market value of the investment securities held by the trust fund on January 1, 1994, and December 31, 1994. We obtained market values as of December 31, 1994, for the Treasury note issues purchased during the year. As stated above, the hypothetical analysis assumes there would have been no changes (buying or selling) of the investment securities held at the beginning of the year. The par value of GNMA pool certificates would have decreased during the year due to receipt of principal payments resulting from payoffs of underlying mortgages in each pool. These principal receipts were included in the determination of the monthly net cash flows.

## Exhibit 1
## Five-Year Treasury Note Analysis
## LEQTF Assets: Par Value and Fair Market Value
## as of January 1, and December 31, 1994

| Security | January 1, 1994 (Actual Values) Par Value | January 1, 1994 (Actual Values) Fair Market Value | December 31, 1994 (Hypothetical Values) Par Value | December 31, 1994 (Hypothetical Values) Fair Market Value |
|---|---|---|---|---|
| Short-Term Treasury Investment Fund | $721 | $721 | $721 | $721 |
| Repurchase Agreement | 38,760,000 | 38,760,000 | 28,974,035 | 28,974,035 |
| U.S. Treasury Notes | 215,000,000 | 232,850,250 | 215,000,000 | 211,609,650 |
| U.S. Treasury Notes - 5-Year Maturities | | | 30,124,000 | 28,422,634 |
| Federal Home Loan Bank Notes | 160,000,000 | 170,816,600 | 160,000,000 | 156,960,650 |
| Federal Home Loan Mortgage Notes | 80,000,000 | 80,975,300 | 80,000,000 | 72,128,325 |
| Federal National Mortgage Association Notes | 195,000,000 | 203,918,400 | 195,000,000 | 183,482,175 |
| Government National Mortgage Association Pools | 30,716,566 | 32,407,417 | 24,060,617 | 23,382,211 |
| Totals | $719,477,287 | $759,728,688 | $733,159,373 | $704,960,401 |

Source: Prepared by legislative auditor's staff from information provided by the Department of the Treasury.

Exhibit 2 shows the estimated cash flows during 1994 assuming there was no buying or selling of the securities held by the trust fund on January 1, 1994, and that monthly net cash inflows were invested in treasury notes with a five-year maturity.

## Exhibit 2
## Five-Year Treasury Note Analysis
## LEQTF 1994 Hypothetical Fair
## Market Value and Cash Flows

| | |
|---|---|
| GNMA Principal Receipts During 1994 | $6,655,947 |
| Royalties | 20,557,226 |
| Interest Income (net of purchased accrued interest on 5 year treasury notes) | 48,309,950 |
| Securities Lending Income | 292,838 |
| Purchases of 5 year Treasury Notes | (29,727,572) |
| Warrants (net of reverse warrants) | (55,874,354) |
| Net cash outflow | ($9,785,965) |

Source: Prepared by legislative auditor's staff from information provided by the Department of the Treasury.

Negative cash flows totaling $9,785,965 occurred in three months during the year (June, July, and August) when actual warrants paid exceeded the projected cash inflows. During these months, the balance of the repurchase agreement held by the trust on January 1, 1994 ($38,760,000) was reduced by the amount of the monthly negative cash flow. Estimated interest earnings for the repurchase agreement during subsequent months were adjusted to reflect the reduced principal balance.

Applying the assumptions contained in the five-year Treasury note analysis, the estimated fair market value of the trust fund would have been $704,960,401 as of December 31, 1994. The actual fair market value of the trust fund portfolio on December 31, 1994, was $704,738,962.

Therefore, based on the results of our assumptions and analysis, investment of net cash flows each month in five-year Treasury notes could have resulted in a portfolio fair market value $221,439 greater than the actual value on December 31, 1994.