

Assessment of Local Government Investment Pools:

A Survey of California
County Pools



STATE OF CALIFORNIA

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Hugo López
Executive Director

January 31, 2000

Dear Friends and Colleagues:

On behalf of the California Debt and Investment Advisory Commission (CDIAC), I am pleased to release the report "Assessment of Local Government Investment Pools: A Survey of California County Pools." This report provides useful insight into the recent investment practices of California local agencies and the tools available to analyze them.

After the Orange County Investment Pool bankruptcy in 1994, state officials responded by enacting legislation that more explicitly directed local government investment pools to choose investment instruments based first upon safety and liquidity and then upon yield. State officials also renamed and expanded the California Debt *and Investment* Advisory Commission's mandate to include oversight of local government investment practices through education, technical assistance, and policy research. Consistent with CDIAC's expanded mandate, this report reviews how county investment pools have implemented the post Orange County bankruptcy statutory changes, as evidenced by their investment policies and portfolio reports. Some of the report's key findings include:

- Most county investment policies place greater restrictions on their investment choices than required under state law;
- The majority of county investment portfolios had weighted average maturities of a year or less and yields ranging between 5.5 percent and 5.8 percent as of June 30, 1998;
- Generally, counties experienced very little liquidity risk due to deviations between book values and market values of their portfolios;
- Self-enforcement of state law appears, to-date, to be effective.

CDIAC

January 31, 2000

Page 2

These results reflect positively on the current management of public funds and are consistent with the overall prudent investment practices of public fund managers. Nevertheless, history has shown the need for continued vigilance. A few isolated incidents (such as the investment losses sustained by the cities of San Jose and Montebello in 1984 and the Orange County pool bankruptcy in 1994) have shaken public finance markets in California and throughout the country. Safe investment standards, oversight, and education all play crucial roles in preventing such crises from reoccurring in the future.

As this report is being released, there are proposals to eliminate the investment portfolio reporting requirements in current state law that ensure legislative bodies, and ultimately, the public, are provided vital information on a regular and timely basis regarding their local agency's investment practices. These requirements were put in place following investment crises in San Jose and elsewhere, were suspended during a period of state fiscal stress, and reconstituted in the aftermath of the Orange County investment pool bankruptcy. The reporting requirement provides an important public safeguard, both to ensure prudent practices and to ensure the public's right to know how their local officials are protecting taxpayer dollars. Ironically, this report could not have been done without the benefit of the very reports some now attempt to strike from state law. Now is not the time, if ever there were such a time, to turn away from the progress made by recent statutory changes

Reports such as this one, in combination with other information and educational resources, play a crucial part in CDIAC's mission to promote best investment practices and protect taxpayer dollars. I thank those local agencies that provided CDIAC with the necessary information to fulfill this endeavor. I welcome your comments and input on the important work of protecting Californians' tax dollars.

Sincerely,

Philip Angelides
State Treasurer and
Chairman, California Debt and
Investment Advisory Commission

ACKNOWLEDGEMENTS

This report was written by Kristin Szakaly, Investment Research Specialist for the Commission, with the assistance of several members of the Commission staff. Executive Director Hugo Lopez, Director of Policy Research James Goldstene, and Deputy Treasurer Barbara Lloyd edited and provided helpful comments on the current version of the document. Former CDIAC staff members Stephen Shea and Eileen Marxen provided guidance and helped edit prior versions of the report. Berma Williams, Nova Edwards, Lori Clayton-Ampey, and Robert Ingenito formatted and proofread the document for publication. Student Interns Chad Cowan and David Felman assisted in gathering data and inputting information.

The Commission also thanks County Treasurers for voluntarily submitting their investment policies and portfolio reports for analysis in this report.

CALIFORNIA DEBT AND INVESTMENT ADVISORY COMMISSION

The California Debt and Investment Advisory Commission was created in 1981 to assist state and local governments to most effectively and efficiently issue, monitor and manage public debt. In 1995, the Commission's responsibilities were expanded to include a municipal education program to help local governments to safely and effectively invest public funds. To carry out its responsibilities, the Commission maintains a database of all public debt issued in California, conducts a continuing education program, publishes a monthly newsletter with debt issuance data and informative articles, and conducts research to develop reports, guidelines and briefs on topical issues related to public debt issuance and investment practices.

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Additional information concerning this report or the programs of the California Debt and Investment Advisory Commission may be obtained by calling (916) 653-3269 or by visiting the Commission's website at <http://www.treasurer.ca.gov/stocda.htm>.

TABLE OF CONTENTS

	Page
Executive Summary	i
Introduction	1
Chapter I: Background on Local Agency Investment Options	3
Chapter II: Survey Design	19
Chapter III: Results of Analysis	31
Appendix I: Assessing Safety, Liquidity and Yield	51
Appendix II: Other Information Sources on Local Government Investment Pools (LGIPS)	56
Endnotes	57
Glossary of Terms	59

EXECUTIVE SUMMARY

INTRODUCTION

Local government investment pools (LGIPs) are an important investment tool for local agencies. Evidence of this can be seen in the significant investment in local government pools throughout the U.S. According to Standard & Poor's *CreditWeek Municipal*, upwards of \$65 billion were invested in local government investment pools as of May 1997. In California alone, county government pools were responsible for investing over \$32 billion in public funds as of June 1998. In such an investment pool, local agencies may commingle cash balances and collectively invest them as one large pool of funds. The gains or losses from the investments are distributed to pool participants in proportion to the size of their deposits. Likewise, administrative expenses are shared among participants, providing economies of scale.

Managers of local government investment pools in California are vested with an important public trust, and as a whole, these funds have performed over time in a manner deserving of this trust. Local agency officials view pool investment as a relatively safe, liquid mechanism that provides benefits such as diversification and ease of administration. For the most part, local government investment pools have a strong history of prudent management of public funds. However, a few isolated incidents over the past 15 years have succeeded in shaking public finance markets in California and throughout the country. These cases included investment losses sustained by the cities of San Jose and Montebello in 1984, and retirement fund losses by the city of Camarillo in 1988. Despite these, albeit rare, examples of failures in public sector accountability, the state law requiring regular reports by pool investment officers to local agency pool participants was allowed to sunset in 1991. In addition, from 1991 to 1994, the requirement that local agencies produce and submit reports to their legislative bodies was suspended because of fiscal difficulties facing county governments. Only three

years after the sunset and initial suspension of these requirements, California's financial markets were rocked by the investment pool bankruptcy of Orange County.

State officials responded to these financial crises in general by enacting legislation that more explicitly directed LGIPs to choose investment instruments based first upon safety and liquidity and then yield. For example, after the Orange County investment pool bankruptcy, the California Legislature, working with local officials, passed legislation restricting the types and amounts of certain investments while creating a system of checks and balances by requiring counties to establish oversight committees with certain responsibilities. State officials also renamed and expanded the mandate of the California Debt *and Investment* Advisory Commission (CDIAC) to include coverage of local government investment practices through education, technical assistance, and policy research.

Consistent with CDIAC's expanded mandate, this report reviews how county investment pools have implemented the post-Orange County bankruptcy statutory changes, as evidenced by their investment policies and portfolio reports. The report also provides general insight into the investment practices of local agencies and the tools that can be used to analyze them. It specifically highlights (1) the techniques that county pools use to achieve safety, liquidity, and yield; (2) the variation in policy and investment choices among pools; and (3) the tradeoffs associated with these investment choices. The report also provides useful tools to assist local agencies in evaluating investment pools.

CHAPTER I—BACKGROUND ON LOCAL AGENCY INVESTMENT OPTIONS

The inflow of revenues to local government agencies rarely matches the timing of their expenditure obligations. Local agencies might amass significant amounts of idle cash surpluses at certain times of the year if they were unable to invest these amounts pending the need to make expenditures. By investing cash balances, local agencies can garner earnings on these funds until they are needed for particular expenditures. Local

agencies have three basic investment options: individual investments such as U.S. Treasury and Agency obligations; investment agreements such as guaranteed investment contracts; and pooled investments such as mutual funds, the State Local Agency Investment Fund (LAIF) and county pools. For this report, CDIAC focused its analysis on county investment pools.

Local governments have pooled revenues for investment purposes for many years. In particular, smaller agencies, such as school districts and special purpose districts, have pooled investment funds with larger city and county governments at least since the early part of this century. Pooling has provided such agencies with investment benefits and opportunities similar to that of larger agencies without requiring the same level of administrative cost and oversight.

The view that LGIPs are generally a safe, liquid investment was severely tested most recently when the Orange County investment pool went bankrupt. The Orange County pool lacked sufficient safety and liquidity to protect the principal of its investments, which ultimately led to the pool's insolvency. The pool used mechanisms such as multiple layers of reverse repurchase agreements (which generally are employed to meet short-term cash flow needs) to heavily leverage the pool's deposits and inflate the pool's holdings. The pool also held numerous instruments such as "inverse floaters" whose returns (and values) moved in opposite directions from the general market. When interest rates began to rise and the value of the pool's holdings and collateral declined, the County portfolio was not liquid enough to meet its immediate obligations. For example, the reverse repurchase agreement providers invoked "margin calls" (demands for additional collateral to back up the agreements). While the pool was able to meet these margin calls for a time, eventually it faced a liquidity crisis. The lenders began to liquidate the collateral to eliminate their market exposure, turning the pool's *paper* losses into *realized* losses.

State officials, with input from local agency officials and organizations, enacted additional statutory safeguards in hopes of preventing a situation like the Orange

County investment pool bankruptcy from happening again. The safeguards were designed to help local agencies focus on safety and liquidity as their first two guiding principles while lessening the emphasis on achieving high yields. These statutory changes further restricted the types and amounts of permissible investments, required county governments to include specific information in their investment policies, including allowable investments and criteria for withdrawal of funds, and promoted accountability for the management of public funds by requiring county governments to establish oversight committees and to once again provide investment policies and portfolio reports on a regular basis to their governing boards. However, local agencies still had flexibility to determine which investments were most appropriate for their investment portfolios within the new statutory framework.

Even in the aftermath of the Orange County investment pool debacle, the Government Code requirements for public investments remain *self-enforcing*, based on the principles that most local agencies have successfully implemented prudent investor standards, and that frequent reports to legislative bodies, oversight committees, and interested members of the public enhance accountability.

CHAPTER II—SURVEY DESIGN

CDIAC conducted a survey of LGIPs to determine current investment practices of local governments in light of the statutory changes that occurred after the Orange County pool bankruptcy. CDIAC focused the survey on county investment pools because of the consistency of available data and the similarity of purpose and membership among county pools. This survey included pools that invest solely in the State Local Agency Investment Fund (LAIF) but did not include the LAIF itself. These pools account for well over half of the local agency funds invested in California. County pools were asked to submit copies of their latest investment policies and portfolio reports, as of June 30, 1998.

Using this survey approach, CDIAC developed tools to assess county investment policies and portfolio choices. For analyzing the investment policies, CDIAC gathered data on withdrawal criteria, weighted average maturity (WAM) restrictions, allowable investment instruments, and depositor investment restrictions (for example, whether the LGIP accepts voluntary deposits). For analyzing the investment portfolios, CDIAC collected information on the value of the portfolio; actual portfolio WAM; number of investment instruments; share of total portfolio invested in each type of instrument; and portfolio yield to maturity.

This survey-like analysis provides a snapshot of LGIP investment policy and portfolio choices and how they conform to state law. Given that the information collected does not include the local agency's cash flow forecast, the analysis cannot provide a definitive evaluation of the portfolio's liquidity risk. While it is not intended to provide a precise measure of the pool's liquidity risk, the analysis does provide general insight into the pool's liquidity based upon the selection of investments reported in the investment policy and portfolio. In addition, the investment portfolio report contains a signed statement by the County Treasurer that the pool can meet cash needs for a period of six months, which provides some insight into the short-term cash liquidity of the pool.

CHAPTER III—RESULTS OF ANALYSIS

CDIAC's analysis provides statistics on the various policy and portfolio criteria, including WAM restrictions, allowable investments, and portfolio composition. The information was reviewed to better understand the strategies used to achieve safety, liquidity and yield among county pools.¹

Some of the key findings of the analysis include:

- Most county investment policies place greater restrictions on their investment choices than required under state law. This practice implies that many of the pools go beyond what is minimally required to minimize credit and liquidity risk.

Assessment of Local Government Investment Pools: A Survey of California County Pools
EXECUTIVE SUMMARY

- Smaller counties invest largely in pooled instruments, such as the State Local Agency Investment Fund (LAIF), whereas larger counties rely more on individual instruments, including U.S. Treasury and Agency obligations.
- As of June 30, 1998, county pool portfolios report WAMs ranging from 1 day to 1,044 days and average yields varying from 5.2 percent to 6.1 percent. Out of 58 county pools, 33 have WAMs of less than a year and 43 have portfolio yields between 5.5 percent and 5.8 percent.
- Most counties experienced very little liquidity risk due to deviations between book values and market values of their portfolios; 75 percent differed by less than 1.0 percent.
- Self-enforcement of state law appears to be effective. CDIAC identified five counties with one case each of noncompliance. Noncompliance resulted from (1) a rise in the market value of certain assets in the portfolio since their purchase date that increased their share of the portfolio, and (2) differences in statutory interpretation of the timing of compliance. Recent statutory changes (SB 1793) have clarified the timing of compliance as the purchase date of an investment rather than at all times. The cases of noncompliance identified in this report now would be considered in compliance with state law. In any event, none appeared to present significant risks to safety, liquidity, or yield.

These findings reflect a point-in-time analysis. The investment portfolios have changed since the information was collected, as instruments held have matured or have been sold and as new investments have been purchased. Nevertheless, the report still remains useful because the findings provide perspectives on the post-Orange County pool bankruptcy investment practices of county pools and the effectiveness of self-enforcement.

CONCLUSIONS

In response to the Orange County pool bankruptcy, lawmakers enacted legislation to further promote safety and liquidity of public investments. The changes remain part of a system that polices itself—a system where local agencies are responsible for abiding by state law and local investment policies. For the most part, the system has worked successfully. CDIAC’s point-in-time analysis found counties generally in compliance with the limits of state and local restrictions. Legislation implemented this year will reduce compliance conflicts related to market fluctuations, but require continued vigilance on the part of pool managers to ensure the safety and liquidity of the portfolio.

As time passes and the Orange County pool bankruptcy becomes more a part of history than present consciousness, the push to ease restrictions may well become stronger. While the case can be made to consider some changes over time based upon the evolution of best practices in the market place, history has shown us that caution is in order. The rapidity with which market conditions can change argues for continued vigilance by local agencies in frequently monitoring and assessing investment choices and their effects on the overall LGIP portfolio. As past history has shown, isolated instances such as the Orange County pool bankruptcy can lead to financial crises with nationwide repercussions. Safe investment standards, oversight, and education all play important roles in preventing such crises from occurring in the future.

Local agencies can apply the tools used in this report to assess their portfolio investments. They can use this information to measure the risks and rewards associated with an investment strategy, and ideally, work towards achieving and maintaining the most appropriate level of safety, liquidity and yield for their portfolios.

CDIAC designed this report to provide an overview of local government investment pools as part of its role in meeting local governments’ debt and investment education needs. In addition to this report, CDIAC offers investment seminars to

provide local officials with relevant information to assist them with their responsibilities. CDIAC, under the chairmanship of the State Treasurer, has worked with a broad variety of interested parties to promote best investment practices through legislation, through the establishment of a toll-free Hotline (1-888-CDIAC49) for local agencies to confer with CDIAC regarding questionable debt and investment practices, and through the creation of a *Treasurer's Alert!* publication to disseminate timely information on such practices and other issues of vital importance to promoting and protecting the public trust.

CDIAC invites feedback on this report and any other comments that can assist the Commission to improve its educational, technical assistance, and policy guidance activities.

INTRODUCTION

This report is intended to provide insight into the investment practices of county investment pools and the tools that can be used to analyze them. County investment policy and portfolio information are analyzed in two formats—a consolidation of information into a broad-based local agency average and a categorical breakdown of certain data by the size of the portfolio. This report assesses the investment choices made by county pools administrators and shows how portfolio holdings differ on average among agencies according to various characteristics such as portfolio size and weighted average maturity.

This information is *not* intended to motivate county officials to compete with each other, but rather to illustrate investment patterns and potential costs and benefits of alternative choices. The report's findings are based upon data reflecting point-in-time information and may not reflect current portfolio holdings. Nevertheless, the analysis provides valuable information regarding the risk tolerance of county investment pools.

Chapter 1 provides background information on investment options available to local agencies with an emphasis on pooled investments. The chapter provides an overview of investment pools operating in California and the laws that restrict the local agency investment choices. Lastly, it details the statutory changes affecting local agency investment pools that were enacted as a result of the Orange County investment pool bankruptcy.

Chapter 2 describes the methodology used in this report to analyze county investment pool policies and portfolios. CDIAC limited the report to county investment pools because they share similar operational purposes and are required to report certain common information in their policies and reports. The chapter describes the key criteria used for analyzing the investment pools including weighted average maturity, types of instruments, and portfolio yield.

Chapter 3 summarizes the results of CDIAC's analysis of county investment policies and portfolio reports. The information shows that economic conditions in 1998 contributed to a similarity in investment choices among pools. The flatter yield curve environment at that time provided little incentive for pools to accept additional risk through investing in long-term investments. The data show that most pools have chosen short-term, relatively conservative investments.

Two appendices and a glossary are provided at the end of the report. The first appendix describes safety, liquidity, and yield in terms of credit risk, market risk and liquidity risk. The second appendix lists sources used to develop the criteria for evaluating the county investment policies and portfolios. Finally, a glossary of select investment terms provides definitions of investment instruments and key concepts used in the report.

CHAPTER I

BACKGROUND ON LOCAL AGENCY INVESTMENT OPTIONS

This chapter provides general information on the types of investments available to local agencies. It is aimed at providing useful background information, particularly to individuals unfamiliar with the subject. Because the latter chapters of this report focus on analyzing the investment of cash balances in local government investment pools, this chapter places most of its emphasis on pooled investments. Specifically, it describes the types of pools operating in California, the rules and restrictions that pools must follow, and the statutory changes that were enacted in the aftermath of the Orange County Investment Pool bankruptcy.

I. WHY DO LOCAL AGENCIES INVEST PUBLIC FUNDS?

The inflow of revenues to local government agencies rarely matches the timing of their expenditure obligations. For example, property tax revenues generally are derived from semiannual installments, while local agency payroll obligations and other similar spending commitments occur more frequently throughout the fiscal year. Local agencies also may receive “lump-sum” proceeds from the sale of bonds issued to pay for capital improvements. In most cases, however, the bond proceeds are not expended immediately, but rather are dispersed over a period of several months or years. Without the ability to invest cash balances pending the need to make expenditures, local agencies might amass significant amounts of idle cash surpluses at certain times of the year.² By investing cash balances and bond proceeds, local agencies can garner a return on their investments until the funds are needed for particular expenditures.³ For example, local agencies can invest in short-term instruments and “roll over” funds as needed or can match investment maturities with upcoming, anticipated expenditure needs.

II. WHAT INVESTMENT OPTIONS ARE AVAILABLE FOR LOCAL AGENCIES?

Local agencies have several investment options depending on the type of cash available for investment. For general cash balances, local agencies may only invest in individual investments such as U.S. Treasury and Agency obligations, or in pooled investments including county investment pools and the State Local Agency Investment Fund (LAIF), as specified in state law. Bond proceeds also may be invested in these instruments as well as in more structured instruments such as investment agreements. These options are not mutually exclusive. For example, a local agency can hold half of its portfolio in individual investments and half in pooled investments. Of course, government investors must weigh the costs and benefits of each investment option before selecting the most appropriate instrument or mix of investments that best meets their cash flow needs.

A. Individual Investments

Local agencies can address cash flow needs by investing in individual investment instruments if the investments meet the conditions specified in state law. California Government Code Sections 16429.1, 53601, 53635, and 53684 list the types of investments that local agencies can make and the conditions that must be met for each investment. These conditions include the maximum maturity length of an investment, the maximum share of a portfolio that may be invested in each type of instrument, and the credit quality requirements for certain investments (see Figure 1 on page 5). The law allows local agencies to invest in the following instruments: U.S. Treasury and Agency obligations, local agency bonds, State of California obligations, California local agency obligations, bankers' acceptances, commercial paper, negotiable certificates of deposit, collateralized bank deposits, time deposits, repurchase agreements, reverse repurchase agreements, mortgage pass-through securities and medium-term notes.

Figure 1:
Allowable Investment Instruments Per
State Government Code (as of January 1, 2000)

Investment Type¹	Maximum Maturity	Maximum Specified %of Portfolio	Minimum Quality Requirements
Local Agency Bonds	5 years	None	None
U.S. Treasury Obligations	5 years	None	None
State of California Obligations	5 years	None	None
CA Local Agency Obligations	5 years	None	None
U.S. Agencies	5 years	None	None
Bankers' Acceptances	270 days	40 percent ²	Federal Reserve eligible
Commercial Paper--Counties	270 days	40 percent	A1/P1 rating
Commercial Paper--All Others	180 days	15 or 30 percent ³	A1/P1 rating
Negotiable Certificates of Deposit	5 years	30 percent	None
Repurchase Agreements	1 year	None	None
Reverse Repurchase Agreements & Securities Lending Agreements	92 days	20 percent combined of base value	None ⁴
Medium-Term Notes	5 years	30 percent	A rating
Mutual Funds	N/A	20 percent ⁵	Multiple ⁶
Money Market Mutual Funds	N/A	20 percent	Multiple ⁷
Collateralized Bank Deposits	5 years	None	None
Mortgage Pass-Through Securities	5 years	20 percent	AA rating ⁸
Time Deposits	5 years	None	None
County Pooled Investment Funds	N/A	None	None
Local Agency Investment Fund (LAIF)	N/A	None	None

Sources: Government Code Sections 16429.1, 53601, 53635, and 53684.

¹Prior to January 1, 2000, county governments were subject to the same restrictions as all other local governments for purchases of commercial paper. In addition, the Government Code did not include language referring specifically to investments in securities lending agreements.

²No more than 30 percent of the surplus funds may be in Bankers Acceptances of any one commercial bank.

³Limit is 15 percent unless dollar weighted average maturity of all commercial paper does not exceed 31 days, then 30 percent is allowable. Commercial paper issuers must be U.S. Corporations with total assets in excess of \$500 million. Purchases may not represent more than 10 percent of the outstanding paper of an issuing corporation.

⁴Reverse repurchase agreements must be made with primary dealers of the Federal Reserve Bank of New York and the securities used for the agreement must have been held by the issuer for at least 30 days.

⁵No more than 10 percent of the agency's surplus funds may be invested in any one mutual fund.

⁶Must receive the highest ranking by 2 of the 3 largest nationally recognized rating agencies or the fund must retain an investment advisor who is registered with the SEC (or exempt from registration), has assets under management in excess of \$500 million, and has at least 5 years experience investing in instruments authorized by the State Government Code Sections 53601 and 53635.

⁷Must receive the highest ranking by 2 of the 3 largest nationally recognized rating agencies or the fund must retain an investment advisor who is registered with the SEC (or exempt from registration), and has not less than 5 years experience managing money market funds with assets under management in excess of \$500 million.

⁸Issuer must have an A rating or better for the issuer's debt as provided by a nationally recognized rating agency.

The Government Code specifically prohibits local agencies from investing in a number of individual instruments, including inverse floaters, range notes, interest-only STRIPs, and securities that could result in zero interest accrual if held to maturity. It also prohibits investment in any instruments *not specifically* authorized by the law.

While local agencies may invest in any of the instruments listed in Figure 1 on page 5, the amount of investment resources available will influence the types of investments actually purchased. Certain instruments have high transaction costs and therefore require a large dollar investment to net an acceptable return. Therefore, agencies with relatively smaller amounts of available investment resources may be precluded from purchasing high transaction cost instruments. For example, in a cash-collateral securities lending agreement (which resembles a reverse-repurchase agreement), a financial service company purchases a local agency's securities in exchange for cash collateral with an agreement to repurchase the securities at a later date. The financial service company is paid an agreed upon rate of interest for the cash from the local agency. For the transaction to be profitable for the local agency, the return on the reinvestment of the cash-collateral received in the transaction, after transaction costs, must exceed the amount of interest paid to the financial service company. This may require a significant investment of funds, particularly if the yield spread on investments of different maturities and qualities is narrow.

Investing in individual investments provides local agencies with the flexibility to choose the credit quality, maturity length, and yield of an investment instrument to meet specific cash flow needs and investment goals; however, this flexibility is not without a cost. The local agency must invest significant staff time, expertise, and resources in order to purchase and monitor individual investments or hire an investment advisor or portfolio manager to carry out these duties.⁴ Even if the instruments are purchased and held to maturity, investing in individual instruments requires local agency officials to take a more active approach to investment than if they invested in a local agency investment pool managed by a separate government agency. This pooled approach to investment is discussed beginning on page 8.

B. Investment Agreements

Investment agreements, which include guaranteed investment contracts (GICs), repurchase investment contracts (RICs) and bank investment contracts (BICs), offer local agencies another alternative to individual or pooled investment instruments for the investment of note and bond proceeds, such as the investment of construction funds and debt service funds.⁵ Investment agreements are contracts between major financial institutions and local agencies that guarantee a fixed or variable rate of return for an agreed upon period of time. In an investment agreement, the financial institution essentially agrees to pay the local agency par on its investment plus interest on those funds. Investment agreements vary in credit quality and may or may not be collateralized; that is, the financial institution may or may not have securities set aside in a separate account to be used to repay the investor in the event that the agreement defaults. Generally, collateralized agreements have lower yields compared to non-collateralized agreements because the collateral increases the cost to the provider at the same time as it reduces the risk that the local agency will lose the principal of its investment due to a default.

In many cases, investment agreements can be customized to meet an investor's cash draw-down schedule for a particular payment. For example, the agreement may be designed with semi-annual interest payments that coincide with debt service payment dates, which allows a local agency to match a long-term revenue stream to long-term debt service liabilities. This customization also can include safeguard provisions in the event the provider receives a credit rating downgrade from one or more of the nationally recognized rating firms, such as Standard and Poor's, Fitch, or Moody's.⁶ The provider may be required to post additional collateral if such an event occurs.

These agreements need to be crafted carefully to avoid unnecessary costs to the local agency. A local agency may be required to pay certain fees, commissions or penalties to a financial institution in the event of an unexpected withdrawal of bond

proceeds or early termination of the investment agreement. Depending on the structure of the agreement, these additional fees can be significant.

C. Pooled Investments

The third investment option available, pooled investments, includes local agency investment pools, the LAIF, mutual funds, and money market mutual funds. Mutual funds and money market mutual funds differ from government pools in several ways. Mutual funds and money market mutual funds generally are privately operated, regulated by the SEC, and may invest in securities not allowed under California law. Government investment pools, such as the LAIF and local agency investment pools, are managed and operated by treasurers, finance directors, or external investment managers, and their staffs, and are not regulated by the SEC. These government pools, however, are subject to a variety of investment restrictions specified in state law, and these restrictions vary depending upon whether the pool is operated by the State or a local government (county or city). Local government investment pools, for example, are subject to the same Government Code investment restrictions as are local agencies investing in individual instruments, although a local agency's investment policies may further restrict the choice of allowable investments.

The authority to invest public funds in the government-operated pools is derived from state laws that generally govern local government investing (Government Code Sections 16429.1 through 16429.3 and 53684).⁷ Under the law, local government agencies may commingle cash balances and collectively invest them as one large pool of funds in an investment pool. The gains or losses from the investments are distributed to pool participants in proportion to the size and timing of their deposits. Pools provide local agency investors with a “passive” investment tool—the non-managing local agency participant generally has no control over the types of investments chosen or the general management of the pool.⁸

The governing body of a local agency has the authority to decide first if it should operate an investment pool, and second, which local agencies should be allowed to deposit funds in the pool.⁹ Most LGIPs allow participation from local agencies under the governing jurisdiction of the agency managing the pool and/or from local agencies that lie within certain geographical boundaries. For example, a county pool may accept deposits only from schools, special districts and cities within the county’s jurisdictional boundaries. Other types of pools, in particular the LAIF and privately operated pools, accept deposits from local agencies across multiple local jurisdictions.

1. Description of Pools Operating in the U.S

Generally speaking, pools can be grouped into three types: state pools, county pools, and other government/private pools (hereafter referred to as “other” pools). As shown in Figure 2 below, more than half of all state and local government pool assets in the U.S. were invested in state-run LGIPs as of May 1997. While other pools represented over 40 percent of the investment pools available, they accounted for only about one-sixth of total pool assets. County pools ranked in the middle on both accounts, with about one-third of the total number of investment pools and one-fourth of total pool assets. According to Standard & Poor’s, California has over 60 pools, the most of any state.

**Figure 2:
 U.S. Local Government Investment Pool Market**

Type of Pool	Number of Pools	Total Assets (in Billions)
State	37	\$75 - 85
County	68	30 - 40
Other	82	20 - 25
Total	187	\$125 - 150

Source: Standard and Poor’s *CreditWeek Municipal*, May 5, 1997.

2. Description of California Investment Pools

Figure 3 on page 11 provides a list of the state, county and other pools operating in California. “Other” pools include those formed under California’s joint powers authority act (Government Code Section 6509.5), which allows local agencies to form an authority that may carry out investment duties common to any of the members of the authority.

County treasurers and finance directors administer the majority of pools in California (58 out of 63). California county governments have the legal authority and, in many cases, specialized resources (for example, staffing and investment expertise), to provide a pooled investment fund for other local agencies. By contrast, private businesses and local government authorities other than county governments operate most pools in other states. In these states, county governments may be too small or may not have the legal authority to pool funds.

County pool participants can differ significantly from those in LAIF or other pools. In California, county investment pools provide an important investment mechanism for cities, school districts and other agencies within their geographical boundaries. By contrast, the LAIF and other pools generally have broader geographical boundaries and therefore attract investors from all across California. The LAIF also may accept deposits from non-profit corporations whose membership is confined to public agencies or public officials.

As a general rule, county pool investments are more likely to be affected by regional economic forces than the broader-based LAIF or other pools. Economic factors such as unemployment changes and housing starts can have a more immediate and stronger effect on local fiscal conditions than on the State. These economic forces can create dramatic changes in local revenue patterns and expenditure needs. If these changes create cash shortfalls or windfalls, the county pools would have to incorporate these changes into their investment strategies.

In addition, California statutes place specific restrictions on the administration of county pools that the LAIF and other pools are not required to follow. For instance, while all local agencies are required to have a written investment policy, state law requires all county pools to include specific information in their investment policies (see discussion beginning on page 16 of this report). State law does not require privately operated pools or the LAIF to have an investment policy. While not required, the LAIF does have an investment policy containing information similar to that required for county pools.

Figure 3:
California Local Government Investment Pools

State		
Local Agency Investment Fund (LAIF)		
County		
Alameda	Madera	San Luis Obispo
Alpine	Marin	San Mateo
Amador	Mariposa	Santa Barbara
Butte	Merced	Santa Clara
Calaveras	Mendocino	Santa Cruz
Colusa	Modoc	Shasta
Contra Costa	Mono	Sierra
Del Norte	Monterey	Solano
El Dorado	Napa	Sonoma
Fresno	Nevada	Stanislaus
Glenn	Orange	Sutter
Humboldt	Placer	Tehama
Imperial	Plumas	Toulumne
Inyo	Riverside	Trinity
Kern	Sacramento	Tulare
Kings	San Bernardino	Ventura
Lake	San Diego	Yolo
Lassen	San Francisco	Yuba
Los Angeles	San Joaquin	
Other		
Cadre Network Health Financial Services		
California Asset Management Program (CAMP)		
California Hospital & Health Facilities Liquid Asset Fund		
Cooperative Liquid Assets Securities System (CLASS)		

Source: S & P *CreditWeek Municipal*, May 5, 1997.

3. What Benefits Can Investment Pools Provide?

While pools may differ in their operation and investment strategy, they provide certain benefits that otherwise may not be available to local agencies investing solely in individual investments or that would be prohibitively expensive to obtain through an individual investment program alone. These benefits include the following:

Pools Provide Ease of Administration. Perhaps the most significant benefit for local agencies, in particular those agencies with relatively small amounts available for investing, is the administrative ease of investment. Local agencies may not have the staff expertise to be active portfolio managers or the resources to hire staff with the requisite expertise to oversee and administer the investment portfolio. Pooling provides them with access to such resources at more affordable costs.

Pools Increase Access to Otherwise Unavailable Instruments. Without pooling, local agencies with small investment resources could not participate in certain investment transactions because they have high transaction costs. Pooling allows small local agencies to participate in these transactions by combining their investment resources with other local agencies and spreading costs among all pool participants. Each local agency receives returns that are proportional to the amount and time period invested less its share of overall transaction costs.

Pools Can Provide Diversification and Liquidity. Regardless of the amount of investment resources available, local agencies can benefit from an LGIP's diversification and liquidity. Pools can invest in a variety of financial instruments from different issuers, providers, and economic sectors. Diversification protects local agencies against investment-related risk associated with adverse changes in credit and market conditions.

The LAIF and LGIPs also reduce liquidity risk by diversifying the pool's maturity structure into short-, medium- and long-term instruments. The diversification of the pool

and the generally high volume of shorter-term investments provide a liquid investment mechanism for cash balances and/or bond proceeds of local agencies. Some LGIPs are also flexible and may allow partial withdrawal of pool funds without requirements for advance notice. This provides the local agency with quick access to its funds in the event of an unforeseen cash need or if market changes warrant a change in its investment approach.

Local agencies investing in LGIPs face lower default risk and lower liquidity risk because of the diversification and liquidity that pools provide. In light of these benefits, many public officials view pool investment as a relatively safe and liquid investment tool that at the same time provides a reasonable rate of return on investment. This view was put to the test, however, when the Orange County LGIP declared bankruptcy in 1994.

III. HOW DID THE ORANGE COUNTY BANKRUPTCY AFFECT LOCAL AGENCY INVESTING?

The Orange County LGIP bankruptcy resulted from a number of factors that left the county pool insolvent. The pool invested in derivative products such as inverse floaters that produced significant returns if interest rates remained stable or declined. However, in late 1993, interest rates began increasing, and the value of certain investments in the Orange County LGIP started to decline.

While increasing interest rates will cause any fixed-rate investment instrument to decline in market value, it does not automatically lead to losses, particularly of the kind that trigger a bankruptcy. If a local agency purchases an instrument with the intent to “buy and hold,” it will not lose principal even though the market value of the asset may be declining in a rising interest rate environment. In the Orange County LGIP case, however, the \$7.4 billion pool comprised of local agency deposits was heavily leveraged to create an investment portfolio of over \$20 billion using mechanisms such as multiple layers of reverse repurchase agreements. So long as interest rates remained stable or declined, the interest earnings on the pool would exceed the short-term borrowing costs of its reverse repurchase agreements. However, as interest rates began to rise in late

1993, the pool began to suffer losses. In particular, the value of the pool's leveraged investments began to decline as interest rates rose.

The reverse repurchase agreement providers invoked "margin calls" demanding additional collateral to back up the agreements. While the pool was able to meet these margin calls for a time, eventually it faced a liquidity crisis. The county portfolio was not liquid enough to meet its immediate obligations, and the lenders began to liquidate the collateral to eliminate their market exposure, turning the pool's *paper* losses into *realized* losses.

A. What Changes Resulted from the Bankruptcy?

As a result of the Orange County bankruptcy, the State Legislature amended the Government Code to more explicitly direct local agencies to focus on safety and liquidity of investments before yield, to increase the level of oversight of local agency investments, and to restrict local agency use of certain types of investments. A new provision that was added by the Legislature, Government Code 53600.5, stated "the primary objective [for local agency investment]...shall be to safeguard the principal of funds...The secondary objective shall be to meet the liquidity needs of the depositor. The third objective shall be to achieve a return on the funds..." These objectives were designed to direct local agencies away from chasing yield at the expense of safety and liquidity (a key factor in the Orange County pool downfall), and lead them towards a more prudent standard for investing public funds. The following subsections describe the key statutory changes in greater detail.

1. Prudent Investor Standard

Government Code Section 53600.3 was added to explicitly state that local agency investment officials should adhere to "prudent investor standards." Before the new law, local agency officials were expected to invest public funds in a responsible manner although no *codified* prudent investor standard was specified in state law.

The prudent investor standard instructs local agencies to exercise care, skill, and caution in investing and managing public funds. The standard requires local agency investment officials to keep the beneficiary's interest in mind, treat all investors with impartiality, and delegate investment management authority to others (such as an external investment manager) only with appropriate oversight in place to monitor performance. Local agency officials may be liable for improper conduct if prudent investor standards are not met. While local officials cannot be held liable for poor portfolio performance alone, it may be used as evidence linking them to imprudent conduct.

2. Oversight Committee

After the Orange County bankruptcy, Government Code Sections 27131, 27134, 27137 were added to require each county government to establish a treasury oversight committee with specific responsibilities. Government Code sections 27131 and 27134 require the oversight committee to review and monitor the county's investment policy annually and to initiate an annual audit to ensure the county's investment portfolio is in compliance with its policy. The committee's role in day-to-day investment operations, however, is limited. Government Code Section 27137 states:

Nothing in this article shall be construed to allow the county treasury oversight committee to direct individual investment decisions, select individual investment advisors, brokers, or dealers, or impinge on the day-to-day operations of the county treasury.

In addition, Government Code Section 53646 was added to increase local investment accountability and oversight. This section requires local agencies to develop investment policies and to submit their investment portfolio reports (including information on the investment structure, the market value, type of investment, maturity, etc.) on a regular basis to their legislative bodies or oversight boards.¹⁰ The goal of this section is to establish a system of checks and balances to prevent inappropriate investment choices from being made.

3. Investment Policy Requirements

The Legislature also added Government Code Section 27133 to require county investment officials to include specific information in their investment policies. These include the following:

- a list of allowable securities including the maximum percentage and term of each type;
- the manner of calculating and apportioning the costs of the overall investing, handling, and managing of funds;
- the limits on the receipt of honoraria, gifts and gratuities by the treasurer and oversight committee members;
- the criteria for selecting brokers and dealers;
- the criteria for considering local agency investor withdrawal requests from the county treasury; and
- the terms and conditions for voluntary depositors.

4. Restrictions on Investments

Additional changes were made to the Government Code restricting the types and amount of investment in instruments deemed inappropriate for local agencies. Government Code Section 53601.6 was amended to prohibit investment in inverse floaters, range notes, mortgage derived interest-only STRIPs, and investments that could yield zero interest if held to maturity. The use of reverse-repurchase agreements was also restricted (see Government Code Sections 53601 and 53635), thus virtually

eliminating the potential for another local government to leverage its investment portfolio as Orange County did prior to the bankruptcy.

B. Self-Enforcement Remains Key Feature of Government Code

Even in the aftermath of the Orange County bankruptcy, the Government Code requirements for public investments remain *self-enforcing*. State legislative officials did not institute external enforcement standards because, in general, most local agencies have in the past successfully implemented appropriate investment practices (or at least have successfully averted outcomes like the Orange County bankruptcy). Rather than punish all local agencies for the transgressions of a few, state legislators chose a more *laissez-faire* approach by allowing the local agency investment community to police itself.

State lawmakers and local officials widely supported the changes made to the Government Code as a means of improving the safety and liquidity of public investments without establishing an external enforcement mechanism outside of the local agency itself. The new requirements direct local agency officials to meet specific prudent investor standards, restrict permissible investments, and promote local agency oversight and accountability for the management of public funds, leaving enforcement of these new state laws at the discretion of local agencies.

While the statutory changes may restrict some investment choices and provide for greater oversight, local agencies retain a great deal of flexibility for making investment choices. Flexibility allows local agencies to craft investment strategies that are best suited to their individual investment needs. Some local agencies can accept a higher degree of risk to gain yield while still taking appropriate safety and liquidity measures, whereas others must choose more conservative investment approaches. However, flexibility also can provide the means for making poor investment choices that may result in significant losses to the local agency investment portfolio (as was the case with the Orange County pool prior to any lawsuit settlements).

IV. WHAT IS THE FOCUS OF THIS REPORT?

In an attempt to evaluate post-Orange County statutory changes, this report focuses solely on recent investment practices of local agency investment pools. CDIAC collected and reviewed investment policies and portfolio reports from county investment pools. These documents reflect, at least in part, the choices made as a result of the statutory changes. Through its analysis, this report shows key tools that local agencies can use to assess the relative safety, liquidity and yield of pools (see Appendix 1 for a discussion on assessing safety, liquidity, and yield). It also provides information on current investment approaches and trends that local agencies and other officials may find useful. The next two chapters of this report outline the methodology that CDIAC used for conducting the analysis and the key findings of the study.

CHAPTER II

SURVEY DESIGN

This chapter discusses CDIAC’s methodology for analyzing the investment policies and practices of LGIPs. The information used in the analysis was collected from county investment policies and portfolios and is publicly available from most LGIPs in California. CDIAC used various financial assessment tools to review county pool investment practices, as represented by investment policies and portfolio holdings as of June 30, 1998. This analysis may prove of interest to lawmakers and other public officials as it reviews post-Orange County investment pool goals, strategies, and actual practices.

I. METHODOLOGY

A. Counties Chosen As Survey Group

CDIAC chose California county pools exclusively as the targeted group for reviewing government investment pool practices. While it did not review the State Local Agency Investment Fund (LAIF) or other government/private pools (hereafter referred to as “other” pools), CDIAC did include counties that invested solely in these funds. County pools were selected for the following reasons:

- **Focus of State Law Changes.** Many of the law changes that were enacted after the Orange County investment pool bankruptcy were directed specifically at county investment pools. Thus, county investment pools are a natural choice for this analysis of government investment pool practices.
- **Comparing “Apples to Apples.”** Limiting the study to county investment pools provides a more uniform basis for comparison than if the LAIF or other pools were included for several reasons:

- County pools generally accept voluntary contributions from local agencies within their geographic boundaries and require mandatory investment from others (e.g., school districts). In contrast, participation in the LAIF and other pools is completely voluntary and includes participation from local agencies and certain nonprofit organizations across the state.
- The broader and larger constituent base makes the LAIF and other statewide pools less susceptible to individual local fiscal problems than county pools, which may face significant pool withdrawal demands if a local fiscal emergency arose.
- State law limits to a greater extent the types, maturities and amounts of investment instruments in which county pools can invest than the investments that the LAIF or other pools may select from.
- **Consistency and Availability of Data.** The Government Code requires counties to include specific information in the documents submitted to their governing boards, creating a readily available, comparable source of data for this study of LGIPs.
- **Significant Sample Size.** County pools represent a significant portion of the California LGIP market. The number of county pools makes them a good sample group for conducting statistical analyses.

B. Survey Approach Used to Analyze Data

CDIAC chose a survey-like approach in assessing the characteristics and performance of LGIPs. This methodology uses either prepared documentation and reports or targets a group to complete a written survey. CDIAC selected the former approach for this report, contacting County Treasurers and Finance Directors for copies of their pools' investment policies and portfolio reports, for several reasons:¹¹

- This method lessened the administrative burden on the local agencies; therefore, they were more likely to respond to the request in a timely manner.
- Because the agencies submit these documents to their legislative bodies on a regular basis, and the Treasurer or the Finance Director must approve them, they are more likely to be complete and accurate than are responses to a written survey that the agency has not completed before as part of its normal course of business.
- This method of data collection is less likely to exhibit any form of “sample bias.” Sample bias can occur in several ways, including responding to a survey in a manner to produce the perceived desired results and basing survey results only on those individuals that chose to respond (whose responses likely would differ significantly from those who chose not to respond).
- The documents are considered public documents that generally are readily accessible.

Using this approach, CDIAC developed tools to assess county investment policies and portfolio choices. The tools, which are discussed below in greater detail, incorporated guidelines established by national and state organizations including the National Association of State Treasurers, the Government Finance Officers Association, and the California Society of Municipal Finance Officers.

This survey-like approach provides a snapshot of LGIP investment policy and portfolio choices. It does not, however, provide a full picture of a pool’s well-being because the local agency’s cash flow forecast is not included. Without cash flow data, the analysis cannot provide a definitive evaluation of the portfolio’s liquidity risk. Nevertheless, the analysis does provide general insight into the pool’s liquidity based upon the selection of investments reported in the investment policy and portfolio. In

addition, the investment portfolio report contains a signed statement by the County Treasurer that the pool can meet cash needs for a period of six months, which provides some insight into the short-term cash liquidity of the pool.

The findings in this report reflect a point-in-time analysis. The investment portfolios have changed since the information was collected, as instruments held have matured or have been sold and as new investments have been purchased. Nevertheless, the report still remains useful because the findings provide a sense of recent investment practices of county pools and the effectiveness of self-enforcement.

C. Sources

Appendix 2 displays the sources used to develop the tools that were employed for analyzing the county investment pool data. The National Association of State Treasurers, Government Finance Officers Association, and Girard Miller's book, *Investing Public Funds*, provide guidelines for LGIP operations including pool administration, cash flow schedules, investment policies, and investment strategies. The California Society of Municipal Finance Officers and Miller's book also furnish questions to consider when investing in a LGIP.

CDIAC's analysis is based upon the information contained in the LGIPs' investment policies and portfolio reports. Data collected from the investment policies include:

- Withdrawal criteria,
- Weighted average maturity (WAM) restrictions,
- Allowable investment instruments, and

- Investment restrictions (for example, whether the LGIP accepts voluntary deposits).

Data collected from the investment portfolio reports generally include:

- Estimates of the book, par, and/or market value of the portfolio;
- Actual WAM of the portfolio;
- Number of investment instruments;
- Share of total portfolio of each investment type; and
- Portfolio yield to maturity.

The items selected for analysis were chosen because they reveal portfolio characteristics and are consistently reported across all counties.¹²

1. Investment Policy Assessment Tools

The investment policy guides the management of a local agency portfolio. It provides goals, objectives, and rules for investing local agency funds. Moreover, the investment policy serves as the first wall of protection for prudent investment of public funds.

The Government Code requires local agencies to submit an investment policy to their governing legislative bodies on an annual basis. Pursuant to Government Code Section 27133, county investment policies must include:

- A list of instruments in which the local agency may invest;
- The maximum term of any instruments purchased;

- The criteria for selecting broker/dealers;
- The limits on the receipt of honoraria, gifts and gratuities from any firm with whom the county does business;
- A requirement that the treasurer provide the oversight committee with an investment report as required by the board of supervisors;
- The manner of calculating and apportioning costs of managing or handling investment funds;
- The terms and conditions under which a local agency may deposit funds into the county treasury for investment purposes; and
- The criteria for handling withdrawal requests from the county treasury, including their effect on the stability and predictability of county investments.

Allowable Investments. CDIAC analyzed local agencies' investment policies for the degree that they incorporated and adhered to the Government Code restrictions and to the extent local agencies restricted the type or quantity of allowable investments for their individual portfolios beyond that required by state law. CDIAC chose state law as a baseline for analyzing LGIP investment policies because it sets a minimum standard with which all local agencies must comply. Investment policies that simply incorporate by reference the Government Code sections for allowable investments explicitly restrict the local agency's investments to those instruments deemed appropriate for public fund investment under state law, but go no further.¹³ Investment policies that restrict the type of eligible investments or their concentration to a greater degree than the Government Code have the potential to further reduce the credit risk, market risk or liquidity risk of the portfolios.¹⁴

Weighted Average Maturity (WAM). A particularly useful measure of liquidity risk is the weighted average maturity (WAM) of a portfolio. The WAM of a LGIP provides an indication of the overall liquidity of pool investments. It is a measure of the average maturity of all individual investments weighted by their dollar values (see “Understanding WAM” text box). Weighting investments by their values provides a better sense of the portfolio composition by maturity than if a simple average maturity is calculated.

It should be noted that state law does not explicitly restrict the WAM of a LGIP portfolio, nor does it require county policies to do so. Rather, state law focuses on limiting the maturity of *individual* investments. If a county were to invest in instruments to maximize the WAM of its portfolio, the maximum WAM allowable under current state law generally would be five years. Nonetheless, longer-term instruments purchased prior to the effective date of current law need not be sold and certain longer-term instruments may be purchased with special approval by the local agency’s legislative body. Either situation may increase the county’s WAM beyond five years in certain cases.

A shorter WAM increases a portfolio’s liquidity and its ability to maintain a stable net asset value (NAV). A stable NAV preserves the principal value of a pool’s investments, returning at a minimum the principal value of each investment dollar for dollar (see “Understanding NAV” text box). For example, according to Standard & Poor’s Rating Service, interest rates would have to rise over 200 points for a LGIP with a 90-day WAM to “break the dollar” on the principal invested. Conversely, a LGIP with a

Understanding WAM

The weighted average maturity (WAM) of a pool is the average maturity of all assets held in the pool weighted by their dollar value. The following is a formula for WAM that takes into account current market values:

WAM = $\frac{\text{days to maturity} \times \text{market value of an investment}}{\text{market value of investment}}$

Example: Suppose a pool held two investments, one valued at \$1 million and the other valued at \$5 million. The \$1 million investment matures in three years while the \$5 million investment matures in 1 year.

The simple average maturity:

$(\text{sum of the maturities}) / (\text{number of investments}) = (1 \text{ year} + 3 \text{ years}) / 2 \text{ instruments} = 4 / 2 = 2 \text{ years}$

The weighted average maturity is:

$(\text{sum of the weighted maturities}) / (\text{sum of the market values of the instruments}) = ((3 \text{ years} \times \$1 \text{ million}) + (1 \text{ year} \times \$5 \text{ million})) / \$6 \text{ million} = (3 + 5) / 6 = 8 / 6 = 1.33 \text{ years}$

Weighting the average maturity takes into account that over 80 percent of the portfolio value is invested in a one-year instrument.

one-year WAM may risk the principal value of the deposit if interest rates rise over 50 points. Thus, the longer the WAM, the more difficult it is to maintain a stable NAV pool.

Pools with shorter WAMs face fewer challenges in complying with Governmental Accounting Standards Board Statement 31 (GASB 31) fair market value reporting requirements. GASB 31 established accounting and financial reporting standards for all investments, including those held by external LGIPs that accept and commingle investments from one or more legally separate entities.¹⁵ It requires external pools to report the fair market value of investments held; that is, the value of the instruments if exchanged in a current transaction between willing parties, including the recognition of any “paper” gains or losses. Pools that conform to Securities and Exchange Commission (SEC) Rule 2a-7, however, are permitted to continue reporting their investments at amortized cost rather than at fair market value, thereby reducing administrative recordkeeping costs.¹⁶ The logic behind this exception is that in a non-volatile interest rate market, the amortized cost of an investment will be representative of its fair market value. External investment pools that do not operate under Rule 2a-7 standards must report all investments with remaining maturities greater than 90 days at fair market value.

While a shorter WAM can improve the safety and liquidity of a portfolio, it may come at the expense of higher yields. Because investors face lower liquidity risk with shorter-term maturities, they do not have to be compensated as much in the form of higher yields for holding these investments. The extent of the tradeoff—that is, the amount of yield foregone due to maintaining a short WAM—is discussed in greater

Understanding NAV

The net asset value (NAV) is the average net value of a fund's underlying securities. It takes into account the value of assets and subtracts outstanding liabilities, providing an average price per share (unit) of a pool or mutual fund. The equation to calculate NAV is:

$$NAV = (\text{total assets} - \text{liabilities of pool}) / (\text{the number of shares outstanding})$$

How this measure changes over time provides information on whether the pool or mutual fund is *stable* or *variable*. A stable NAV pool seeks to maintain the principal value invested—dollar for dollar—on a daily basis. A variable NAV pool generally seeks to maintain the principal invested but accepts day-to-day fluctuations in the pool's NAV. Stable NAV pools tend to have shorter weighted average maturities (WAMs) to protect the pool from significant swings in interest rates that may compromise the pool's stability. Variable NAV pools have longer WAMs and compensate investors for the additional risk with higher yields.

detail in the next chapter. In that chapter, CDIAC evaluates the potential liquidity risk associated with county pool investment policies by comparing WAM restrictions. In doing so, the maximum maturities of underlying investments also are analyzed.

Administrative Criteria. In addition to the portfolio WAM, potential pool liquidity risk can be measured by looking at withdrawal restrictions and participation criteria specified in a county's investment policy. Once again, this report uses state law as a baseline for analysis. Government Code Section 27136 specifies that all withdrawal requests must be submitted to the County Treasurer who determines whether the withdrawal will adversely affect the LGIP. However, the Government Code does not specify a minimum notification period. Counties that require a minimum notification period for withdrawals or that specify additional withdrawal restrictions do so as a means of diminishing their pool's overall liquidity risk. By preventing any one agency from unexpectedly withdrawing a large percentage or their entire fund balance from the pool, all pool depositors are protected from any potential pool cash shortfall or liquidity crisis.¹⁷

County pools can further reduce liquidity risk by restricting pool participation. State law does not restrict pool participation. Therefore, it is up to the pools themselves to determine the appropriate participation criteria. A pool that allows voluntary investment without restrictions at some point may face unexpected withdrawals that could put a strain on the pool's liquidity. Voluntary members may not have a longstanding deposit and withdrawal record with the pool. In such cases, the pool would not be in the position to anticipate investment withdrawal requests before they occur. Investment policies that limit voluntary access or place restrictions on voluntary investment may increase their pool's overall liquidity.

In this report, CDIAC reviews county pool restrictions placed on voluntary and mandatory participants. Counties can increase the stability of their LGIPs by requiring the participation of certain local agencies. For example, the State Education Code specifies that school districts shall place moneys into their county treasury, but does not

specify a required length of time for the deposit (see “School District Investment Requirements” text box). Varying interpretations of the Education Code (in particular, regarding the definition of surplus monies) have resulted in some counties requiring school districts to invest all of their funds in the respective county pool and others allowing school districts to invest certain surplus monies outside of the county treasury.¹⁸ The more restrictive the policies are towards voluntary investors and mandatory pool participants, the lower the pool’s potential liquidity risk.

2. Investment Portfolio Assessment Tools

The key to the safety, liquidity, and yield of a county LGIP lies with the actual implementation of procedures outlined in the investment policy. The implementation process includes designating authorized

personnel, estimating liquidity needs, making investment choices, developing broker/dealer relationships, creating accountability mechanisms, establishing safekeeping procedures, and monitoring the portfolio performance. Not all of these factors are readily observable by those individuals not directly involved with the investment process. However, the resulting investment holdings are available through periodic local agency investment reports. Therefore, for the purpose of this report, CDIAC focuses on the choice of investment instruments as evidenced by the county investment portfolio reports.

School District Investment Requirements

Education Code Section 41001 states:

“The governing board of every school district shall pay all moneys received or collected by it from any source and all moneys apportioned to it from taxes levied and collected under the authority of city councils for school purposes, into the county treasury to be placed to the credit of the proper fund of its district. All money collected by the city council or other governing body of any municipality from taxes levied for school purposes when received shall be paid into the county treasury to the credit of the school district for the schools of which the taxes were levied.”

While the above code section states that all moneys received or collected by the school district must be deposited into the county treasury, it does not specify that these funds must *remain* on deposit in the pool. Also, Education Code Section 41015 provides that “surplus” moneys may be invested as specified by state law:

“The governing board of any school district or any county office of education which has funds in a special reserve fund of the district or county office of education or any surplus moneys not required for the immediate necessities of the district or county office of education, is hereby authorized to invest all or any part of the funds in any of the investments specified in Section 16430 or 53601 of the Government Code.”

Counties prepare their portfolio reports on a regular basis (at least every quarter), which allowed CDIAC staff to get an accurate “snapshot” of county investment choices. Most of the county investment portfolio reports contained the following information for each investment:

- Date of purchase and maturity;
- Amount invested (valued at book, par and/or market value);
- Yield on investment; and
- WAM (in most cases, the average WAM of the portfolio is also included).¹⁹

Using the available data, CDIAC developed the following criteria for evaluating the LGIP investment portfolios:

State and Local Investment Restrictions. CDIAC evaluated pool portfolios for their compliance with state guidelines and local restrictions. Adherence to state and local investment restrictions is a basic, albeit important, criteria for assessing the potential for risk, since the restrictions were developed to protect public funds from being invested inappropriately. The restrictions are designed to limit investment in instruments that have long maturities, are illiquid, or leverage the portfolio excessively, to reduce the market risk and liquidity risk of the pool.

WAM. CDIAC reviewed actual county portfolio WAMs and assessed the tradeoff between liquidity and yield. As discussed earlier, the WAM of the portfolio is an important indicator of the portfolio’s liquidity and ability to maintain a stable NAV. As local agencies shorten their portfolios’ WAMs, they increase the liquidity of their pools and their ability to maintain stable NAVs. However, these pools generally sacrifice yield to obtain greater liquidity and stability.

Diversity. CDIAC assessed the diversity of county pool portfolios by reviewing the number and variety of instruments held. The composition of the portfolio is important for measuring liquidity risk because too large of a concentration in long-term or illiquid instruments may jeopardize the liquidity of the portfolio. Pools can protect their liquidity in the event an instrument defaults or declines in value by diversifying their portfolio in terms of types of instruments, number of instruments, industry sectors, portfolio maturities, and issuers (other than the U.S. Treasury, for which concentration does not increase risk).

Yield. CDIAC analyzed the yield spread among county pools as an indication of their different choices of investment instruments and their relative investment risk levels. Every investment contains a certain degree of risk, whether it is credit risk, market risk or liquidity risk. For example, U.S. Treasury obligations are backed by the full faith and credit of the federal government and come the closest to being considered risk-free with respect to credit risk and liquidity risk. However, investors in these instruments still face market risk, particularly if they hold instruments with maturities of five years or more.

Some counties are better suited to invest in relatively riskier investments due to favorable cash flow conditions or staff resources, and thus they are compensated through higher yields on their investments. Other counties must be more conservative in their investment choices because they do not have large cash balances to invest or the staff resources to dedicate to the active portfolio management that would be required for prudent investment in certain instruments that may provide higher yields.

Together, the examination of the various investment policy and portfolio criteria discussed in this chapter provides a good illustration of the goals, strategies, and actual practices that have been employed by county investment pools since the Orange County pool bankruptcy. The next chapter summarizes CDIAC's assessment of these criteria and its principal findings.

CHAPTER III

RESULTS OF ANALYSIS

This analysis provides summary statistics on the various investment policy and portfolio criteria, including WAM restrictions, allowable investments, and portfolio composition. The information is reviewed to better understand the strategies used to achieve safety, liquidity and yield among county pools.²⁰

Some of the key findings of the analysis include:

- Most county investment policies place greater restrictions on their investment choices than required under state law. This practice implies that many of the pools go beyond what is minimally required to minimize credit and liquidity risk.
- Smaller counties invest largely in pooled instruments, such as the State Local Agency Investment Fund (LAIF), whereas larger counties rely more on individual instruments, including U.S. Treasury and Agency obligations.
- As of June 30, 1998, county pool portfolios report WAMs ranging from 1 day to 1,044 days and average yields varying from 5.2 percent to 6.1 percent. Out of 58 county pools, 33 have WAMs of less than a year and 43 have portfolio yields between 5.5 percent and 5.8 percent.
- Most counties experienced very little liquidity risk due to deviations between book values and market values of their portfolios; 75 percent differed by less than 1.0 percent.
- Self enforcement of state law appears to be effective. CDIAC identified five counties with one case each of noncompliance. Noncompliance resulted from (1) a rise in the market value of certain assets in the portfolio since their

purchase date that increased their share of the portfolio, and (2) differences in statutory interpretation of the timing of compliance. Recent statutory changes (SB 1793) have clarified the timing of compliance as the purchase date of an investment rather than at all times. The cases of noncompliance identified in this report now would be considered in compliance with state law. In any event, none appeared to present significant risks to safety, liquidity, or yield.

The specific details supporting these findings and others are discussed below.

I. REVIEW OF COUNTY INVESTMENT POOL POLICIES

A. Most Agencies Further Restrict Government Code Eligible Instruments

Most county pools have investment policies that restrict the type, maturity, or share of investment instruments held in their portfolios beyond State Government Code specifications.²¹ Over 50 of the counties surveyed place additional restrictions on at least one of their eligible investment instruments. As one might expect, the instruments with additional restrictions generally are the more complex, riskier investment options. For example, most counties incorporate state law into their investment policies without adopting additional local restrictions for investing in U.S. Treasury obligations (51 pools) and in U.S. Agency instruments (38 pools). Approximately one-half of the LGIPs incorporate the Government Code without additional restrictions for commercial paper (CP), collateralized bank deposits, and bankers' acceptances (BAs). Only one-third of pools incorporate the Government Code without further restrictions for reverse-repurchase agreements (reverse repos) and collateralized mortgage obligations (CMOs). About the same number (18 pools) explicitly prohibit the use of reverse repos and CMOs in their investment policies.

The explicit prohibition of reverse repos and CMOs reflects the more conservative approach county pools have taken since the Orange County bankruptcy. Reverse repos and CMOs do not necessarily compromise the safety of a portfolio when

used properly; however, many counties appear to have determined that these instruments carry greater investment risk than is appropriate for their public investment portfolio. CMOs, in particular, are fairly complex instruments that may require more staff experience or resources than the local agency has available. By prohibiting the investments, these counties avoid altogether the potential risks of associated with these instruments.

B. Many Counties Specify Portfolio WAM Limitations

Twenty-one LGIPs included WAM restrictions in their investment policies. The WAM restrictions ranged from 90 days to five years, with an average WAM of about 1.8 years, or 650 days.²² Many counties restrict the WAM of their LGIP portfolio in an effort to reduce the potential for a liquidity crisis similar to that which befell Orange County.

C. Administrative Criteria Also More Specialized

Most county LGIPs have incorporated further modifications beyond minimum Government Code requirements into their investment policies as they relate to the administration of their pools. In general, the requirements concern specific withdrawal restrictions and pool participant limitations, which should increase pool stability and reduce liquidity risk.

1. Withdrawal Criteria

Only eight investment policies reference the Government Code LGIP withdrawal criteria without modification.²³ Of the LGIPs that specified more restrictive withdrawal criteria, seven required more than two days notification before a withdrawal can be made and fifteen required at least 30 days written notification. In most cases, special early withdrawal notification is required when deposits are withdrawn for non-cash flow purposes or for outside investment. Some counties require special notification for withdrawals over a specified amount (for example, \$500 million). These modifications

improve pool stability by preventing unexpected withdrawals of deposits and providing counties with better control over their pools' cash flow. By the same token, the *overall* liquidity of the pool is improved, although the *individual* liquidity of any one depositor may be reduced.

2. Participation Criteria

Thirty-six counties specified in their investment policies that they allow voluntary investment in their LGIP. In most of these LGIPs, however, voluntary investors must meet certain criteria and adhere to deposit and withdrawal restrictions. In some cases, voluntary investors must be located within the county boundaries and enter into a contract with the county that specifies the terms of their participation. Many counties restrict voluntary participant investment to the voluntary investor's operating cash only because it tends to have a more predictable withdrawal schedule. These restrictions are intended to protect the stability of the pool by reducing the potential for unexpected withdrawals due to unforeseen events.

Some county pools also have mandatory participation by local agencies within their geographic boundaries. Mandatory participation can ensure stable and predictable inflows and outflows of cash in the pool. Most county investment policies either specify or imply that certain local agencies (generally, school districts) must deposit at least a portion of their funds in the LGIP.

D. Investment Policies Generally More Restrictive than State Law

Investment policies provide guidelines for local agency investment of public funds, and are indicative of the local agency's goals for safety, liquidity and yield. Investment policies set the broad parameters within which the local agency should operate, and at a minimum should be consistent with state law. CDIAC's analysis of county investment policies found that most counties set standards that are more restrictive than those required by state law. Using a more conservative approach,

counties are providing further protection against circumstances that might compromise the safety or liquidity of their portfolios. The extent to which counties are successful in providing this protection, however, ultimately depends upon the degree to which they abide by their own investment policies and upon the effectiveness of ongoing credit, liquidity, and risk management practices within the parameters set by the policies. This point is particularly relevant given the self-enforcing nature of both state investment laws and the investment policies themselves.

The following section discusses the approaches that counties take to implement their investment policies.

II. REVIEW OF LGIP INVESTMENT PORTFOLIO REPORTS

This section analyzes the implementation of county investment policies. It also compares the investment portfolios of smaller pools with larger pools, finding that the pools practice different investment strategies but generally share similar methods for achieving safety, liquidity, and yield of investment.

**Figure 4:
 Overview of County LGIPs Data¹**

	Average	Minimum	Maximum
Market Value	\$581,460,859	\$1,253,130	\$7,703,745,637
Weighted Average Maturity	318 days	1 day ²	1,044 days
Portfolio Yield (for Reporting Period)	5.7%	5.2%	6.1%
Number of Investment Instruments	70	1	398
Types of Instruments	7	1	11

¹ As identified in county LGIP investment reports as of June 30, 1998.

² Investment in a pooled fund (such as LAIF) is counted as one investment with a weighted average maturity of one day.

Figure 4 on page 35 presents general descriptive statistics of the county investment pools. County LGIPs vary in market value from approximately \$1.2 million to over \$7.7 billion. The average LGIP size is \$581 million, though this measure may be somewhat misleading as 43 of the 58 LGIPs have market values less than the average.²⁴ With such a large degree of variation in pool size, one might anticipate a great deal of variation in pool investment strategies and portfolio characteristics. Surprisingly, this generally is not the case.

A. Weighted Average Maturity of Portfolios Average Less than One Year

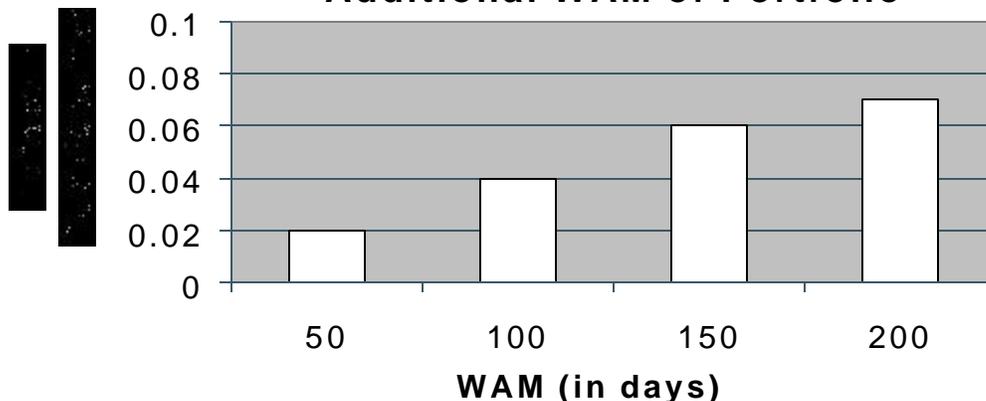
The reported weighted average maturity (WAM) of county LGIP portfolios ranges from 1 day to 1,044 days. The average WAM is less than 1 year (318 days); however, this figure may be somewhat misleading as 33 of the 58 LGIPs have WAMs below the average.²⁵ These short-term pools are generally more insulated from market risk than pools with WAMs greater than a year in large part because shorter WAMs reduce the pool's vulnerability to the loss of market value in the event that interest rates rise. As discussed in Chapter 2, pools with shorter WAMs can maintain a stable NAV more easily than pools with longer WAMs, particularly in volatile interest rate environment. Thus, county pools can achieve stability in value through shorter portfolio WAMs. Shorter WAMs also increase the liquidity of the pool.

Under normal market conditions, the tradeoff for seeking more stability or liquidity is lower yield. In the relatively flat yield curve environment that existed when these portfolio statistics were collected, the yield differentials between pools of varying WAMs was minimal. The data from county LGIP portfolios show that there is indeed a positive relationship between longer WAM and higher yields; however, the relationship is less pronounced than it would be in a normal, upward-sloping yield curve environment.

Using the data collected, CDIAC ran a regression analysis of the relationship between yield and WAM and found that for each 100 days WAM, the portfolio yield increases by only 0.03 percentage points (see Figure 5 on page 37).²⁶ This implies that

the difference between a 90-day WAM portfolio and a one-year WAM portfolio is only about one-tenth of a percentage point (or ten basis points).

**Figure 5:
 Small Increase in Yield for
 Additional WAM of Portfolio**



LGIPs reported LAIF investments as having one-day WAM, which reflects the one-day turn around period for withdrawals from the fund. The actual WAM of the fund, however, is longer (for example, the reported average maturity of LAIF as of June 30, 1998, was 212 days and as of June 17, 1999, was 189 days). The actual maturity provides investors with information that reflects more accurately the stability of the portfolio. For the purpose of assessing the return on their LAIF investments against an appropriate benchmark, a more meaningful comparison would be to compare a benchmark of a WAM similar to LAIF's actual average maturity rather than the one-day reported maturity.

B. Little Market Deviation of Portfolios from Book Values

A market value that is substantially lower than a portfolio's book value may be an indication of increased liquidity risk. In the event that part or all of the portfolio's investments need to be liquidated prior to maturity, *paper* losses would be converted to *realized* losses in value of the portfolio. Depending on the counties' unexpected cash needs, such losses could negatively affect the security of participants' deposits.

To obtain a general measure of liquidity risk of the county investment portfolios, market values were compared to book values.²⁷ The degree to which market values deviate from book values are reported in Figure 6 below. Over 75 percent of counties reported a market value that ranged within 1 percent of their portfolio’s reported book value. No county reported a market value that deviated by more than 3 percent of its book value. In general, most county portfolios did not show evidence of increased liquidity risk using this measure.

**Figure 6:
 Comparison of Market Deviation from
 Book or Par Value of County Investment Porfolios¹**

Market Value Ranges ²	Number of Counties	Percentage of Total
Less than +/- 1%	41	75.9%
Over +/- 1% but less than +/- 2%	11	20.4%
Over +/- 2% but less than +/- 3%	2	3.7%
Over +/- 3%	0	0.0%
Total Counties Reporting	54	100.0%

¹ Based on data reported as of June 30, 1998. For counties that did not submit a book value, par value was substituted.

² Three counties reported only market value (Two of these counties invest solely in LAIF). One county did not submit a report.

C. Diversification of Investment Instruments is Common Feature

CDIAC’s analysis found that county LGIPs achieve diversification of investment instruments in their portfolios. On average, the county pools have spread out their investments among a large number and variety of instruments.²⁸ Even the counties with one investment instrument have diversified the types of instruments in their portfolios because their one investment is in the LAIF, a pooled fund consisting of hundreds of investment instruments.

The data show a strong relationship between the size of the portfolio and the variety of instruments held. The average portfolio holds 70 investment obligations that are diversified across seven different categories of instruments.²⁹ In addition, on average, less than 2 percent of a portfolio is invested in each instrument. This finding illustrates that county LGIPs, on average, are maintaining sufficient diversification by issuer. Keeping the concentration by issuer to less than 5 percent of the total portfolio mitigates the pool's credit risk in the event of a problem with any one issuer, such as a default.

**Figure 7:
 Summary of County LGIP Investment by Type¹**

Investment Type	Average Percent Invested of all LGIPs	Maximum Percent Invested	Number with Investment in Specified Type	Average Percent Invested for LGIPs that Invest in Specified Type
Pools	20.3%	100.0% ²	49	25.0%
U.S. Agency Obligations	30.7%	78.4%	48	37.1%
U.S. Treasury Obligations	7.5%	50.1%	43	10.4%
Commercial Paper	9.3%	29.9%	42	12.8%
Medium-term Notes	10.7%	40.7%	37	16.8%
Negotiable CDs	6.5%	33.9%	31	12.1%
Bankers' Acceptances	3.8%	36.7%	26	8.5%
Repurchase Agreements	3.7%	26.6%	23	9.4%
Money Market Funds & Mutual Funds	2.1%	19.0%	21	6.3%
Time Deposits	0.5%	7.0%	15	1.9%
Collateralized Bank Deposits	1.0%	21.5%	14	4.2%
State and Local Agency Bonds	0.5%	11.4%	13	2.8%
Mortgage Pass-Through Obligations	0.3%	5.4%	8	2.0%
Reverse Repurchase Agreements ³	0.0%	0.0%	0	NA

¹ As identified in county LGIP investment reports as of June 30, 1998.

² 100% investment in the LAIF (2 counties).

³ Does not include Securities Lending Agreements.

Counties accomplish diversification in similar ways, with most favoring instruments with lower overall risk. The LAIF and other investment pools, along with U.S. Agency securities, are the most popular investment types among county LGIPs. As Figure 7 above shows, at least 48 county pools currently hold some form of U.S.

Agency or pooled investment. County LGIPs invest an average of nearly 31 percent of their total portfolios in U.S. Agency obligations and over 20 percent in pooled investments. These averages are considerably higher if based only on data from those county pools that are invested in the specified type of investment (see the far right column of Figure 7 on page 39 for comparisons). U.S. Treasury and Agency obligations combined account for an average of over 38 percent of LGIP portfolios. Significantly fewer counties invest in CMOs and reverse repurchase agreements. The average share of the pools invested in these instruments is less than 5 percent of the total pool.

D. Portfolio Yields Differ Little Across Pools

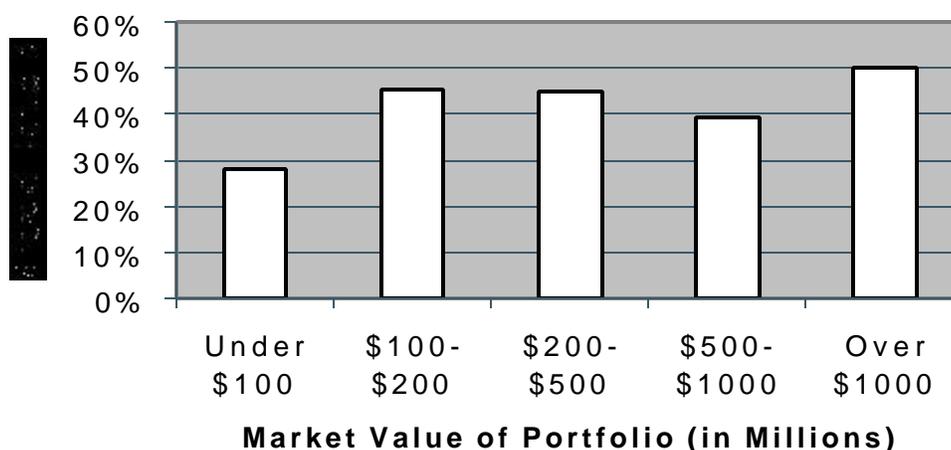
The range of portfolio yields among county pools in general does not vary significantly from the average portfolio yield of all county pools reported in Figure 4 on page 35. Nearly 75 percent of county pools have portfolio yields between 5.5 percent and 5.8 percent for the reporting period. Two pools with lower than average yields (5.2 percent and 5.3 percent) contain several uniquely structured, long-term obligations purchased in the late 1980s that have very low or negative yields, which are drawing down the overall portfolio yield.

The close spread among county pools indicates similar average levels of investment risk among counties. This contrasts with the spread that existed between the Orange County investment pool and other county pools in the months prior to the bankruptcy. According to the Orange County Register (December 11, 1994), the Orange County investment pool was earning 8 percent. During the six months prior to the bankruptcy, pools such as the state LAIF were earning between 4.5 to 5.0 percent. From the data analyzed in this report, there does not appear to be any county pools pursuing extremely risky investment strategies as evidenced by their reported portfolio yields.

Figure 8 on page 41 illustrates the composition of county LGIP portfolios based on the share of a portfolio in U.S. Treasury and Agency obligations, and grouped by the

market value of the portfolio. To examine the relationship between portfolio size and composition, each LGIP is placed into one of five size categories.³⁰ In most cases, the average market value for each category was representative of the median county LGIP portfolio in each group.

**Figure 8:
 Investment in U.S. Treasury and
 Agency Obligations Generally Greater
 with Larger Portfolios**



E. Diversification of Portfolios Increase with Market Value

As Figure 9 on page 43 shows, LGIP portfolios valued under \$100 million rely heavily on investment pools for a large share of their investments (over 42 percent). Smaller counties may choose to invest largely in investment pools as part of a more passive, less time-intensive management approach. This approach relies on external managers and seeks diversity through the many instruments purchased by the pool. Smaller counties in particular may benefit from the administrative cost savings associated with this approach, especially if they do not have adequate staff or resources to dedicate toward full-time investment management. Plus, assuming proper management of the selected pools, county investments in pools can be useful to manage credit risk, market risk, and liquidity risk because the selected pool portfolios

themselves are diversified by type of instrument, issuer, and maturity. Smaller counties might not be able to achieve this degree of diversity if they were to invest in individual investments because of their limited investable resources, the high thresholds for minimum purchases, and the high transaction costs relative to dollars invested for minimum purchases.

Figure 9 on page 43 also shows that LGIPs with portfolios valued in excess of \$100 million generally do not rely on investment in external pools, although they do use them to some extent. These counties rely on internal staff and/or external investment advisors for active management of their investment portfolios. This form of active management, however, does not imply a more risky investment strategy. Figure 8 on page 41 shows that about one-half of the over \$1 billion LGIP portfolios category consists of U.S. Treasury and Agency obligations. The larger portfolios also rely more heavily on commercial paper and negotiable CDs. During the reporting period, those portfolios over \$1 billion in market value do not contain more complex obligations such as CMOs. They also are not investing in reverse repurchase agreements. From this analysis, it appears that larger county pools reduce credit and liquidity risk by diversifying their portfolios using a combination of conservative and liquid investment instruments.

**Figure 9:
 Average Share of Investment Instruments by Market Value¹**

Investment Type	Market Value of Portfolio				
	Under \$100 M	\$100M to \$200 M	\$200M to \$500M	\$500M to \$1B	Over \$1B
U.S. Treasury Obligations	7.7%	1.7%	5.2%	8.2%	14.0%
U.S. Agency Obligations	18.4%	43.5%	39.9%	31.4%	36.0%
State and Local Agency Bonds	0.5%	0.2%	1.2%	0.1%	0.6%
Bankers' Acceptances	2.1%	4.6%	5.3%	3.6%	5.3%
Commercial Paper	3.9%	7.3%	11.6%	20.3%	13.8%
Negotiable CDs	3.2%	6.9%	7.5%	8.6%	10.7%
Repurchase Agreements	1.8%	1.0%	5.7%	7.7%	6.4%
Reverse Repurchase Agreements	0.0%	0.0%	0.0%	0.0%	0.0%
Medium-term Notes	10.4%	14.3%	8.0%	16.0%	7.4%
Pools	42.1%	16.8%	6.1%	0.9%	2.1%
Money Market Funds & Mutual Funds	3.8%	0.8%	1.7%	1.1%	0.6%
Collateralized Bank Deposits	1.4%	0.3%	1.6%	0.4%	0.7%
Mortgage Pass-Through Obligations	0.3%	0.8%	0.0%	0.3%	0.0%
Time Deposits	0.7%	0.3%	0.3%	0.6%	0.4%

¹ As identified on LGIP investment reports as of June 30, 1998.

F. Maturities and Yields Do Not Vary Significantly Based on Size of Pool

While one might expect larger counties to have the ability to assume greater investment risks (and thus, achieve higher yields) due to the availability of staffing and other resources, the analysis did not find any relationship between LGIP portfolio size and yield. As Figure 10 on page 44 shows, portfolio yields are fairly flat among pools of different sizes, and, on average, the county LGIPs have WAMs of a year or less (with the exception of the \$500 million to \$1 billion category). Surprisingly, the largest portfolios on average have shorter WAMs than the smallest portfolios (224 days versus 326 days), yet very similar portfolio yields. The flat yield curve environment that existed at the time the data was collected accounts for some of the similarity in yields, due to the fact it leaves little room for additional yield gains from lengthening the WAM of a

portfolio. Larger LGIPs, while investing in more categories and a greater number of instruments, generally are not taking on significantly more investment risk than smaller pools.

**Figure 10:
 Summary of County LGIP Average
 Characteristics by Market Value of Portfolio¹**

	Under \$100 M	\$100M to \$200 M	\$200M to \$500M	\$500M to \$1B	Over \$1B
Weighted Average Maturity	326 days	364 days	294 days	417 days	224 days
Portfolio Yield (for reporting period)	5.7%	5.7%	5.5%	5.8%	5.7%
Number of Instruments	19	65	73	77	168
Types of Instruments	5	7	9	8	8

¹ As identified on LGIP investment reports as of June 30, 1998.

G. Self-Enforcement of Portfolio Restrictions Appears to be Working

CDIAC evaluated each investment portfolio for compliance with state law regarding the types and concentrations of instruments held and found most LGIPs were in compliance at the time. CDIAC staff identified five counties that at the time of the initial analysis exceeded the maximum percentage allowable for certain investment instruments. As is clear from the summary below, these items of noncompliance are not alarming.

The areas of noncompliance included the following:

- One county exceeded the allowable percentage of commercial paper. State law specifies a maximum share of 15 percent for commercial paper, unless the WAM of commercial paper held in the portfolio does not exceed 31 days. The county indicated it held 18.3 percent of its portfolio in commercial paper, and the WAM of the commercial paper held exceeded 31 days.

- Four counties exceeded the maximum percentage allowable for medium-term notes. State law specifies a maximum share of 30 percent in medium-term notes. The four LGIPs exceeded this amount with portfolio concentration levels ranging from 30.1 percent to 37.8 percent.
- The incidents of noncompliance are a result of market fluctuations and varying interpretations of the timing of compliance. In two cases, market values of the instruments increased over the time period more than the value of the overall portfolio; thus, the share of the portfolio held in these instruments increased and put the pools temporarily out of compliance. Several pools also differed from CDIAC in their interpretation of the timing of compliance. At the time, these pools interpreted state law requirements to require compliance at the date of purchase rather than at all times. These differences have since been eliminated by legislation favoring the purchase point-in-time interpretation, which is discussed in more detail below. Given the nature of the noncompliance cases, external enforcement and additional oversight do not appear warranted at this time. Identifying and addressing noncompliance before it threatens the safety and liquidity of a pool, nonetheless, is important. Periodic analysis conducted in a manner similar to this report can provide general information on LGIP policies and portfolios that may assist in identifying areas of noncompliance so that they may be appropriately addressed.

1. Confusion Existed Surrounding Definition of Medium-Term Notes

LGIPs could purchase securities that are medium-term notes without realizing that the instruments meet this description. Government Code Section 53601(j) does not clearly define the types of obligations that fall under the category of medium-term notes; rather, it states that medium-term notes are obligations with a maximum maturity of five years issued by a corporation or depository institution operating in the United States. Brokers often refer to long-term corporate obligations as “corporate notes” rather than medium-term notes even if their present term to maturity is within the five-year time

frame. In at least one of the LGIP portfolios, corporate obligations were identified separately from medium-term notes.

Depending on their cash flow demands, county pools that exceed the concentration limit for medium-term notes may increase the liquidity risk of their portfolio. In the event of a cash emergency, a county pool with too much invested in medium-term notes might not have enough liquid assets to cover its depositors' cash needs. If the market were particularly unfavorable at the time the notes needed to be sold, the pool potentially could lose part of the principal of investments. While the four pools identified above have not identified any liquidity problems in their investment reports, clarifying the definition of medium-term note may prevent or at least minimize such a problem in the future. AB 1679 (Chapter 643, Statutes of 1999, Local Government Omnibus Bill) includes language that clarifies to some extent the current definition of medium term note. AB 1679 states that purchases of medium term notes have a maximum maturity of five years or less and do not include instruments already authorized under state law.³¹ The provisions of this bill take effect beginning on January 1, 2000.

2. Law Change Clarifies Timing of Compliance

Another potential source of confusion stems from the interpretation of the timing of compliance with state law. Prior to January 1, 1999, the Government Code did not specify whether LGIPs should be in compliance with investment restrictions at all times or at select points in time, leaving the door open to varying interpretations of the law. Some local officials interpreted the code to mean compliance only at the date of purchase of securities, while others and CDIAC assumed compliance at all times. Proponents of the date of purchase standard argued that daily variations in market value might place them out of compliance with state law even though the instruments held in their portfolio did not change. To resolve this confusion, the Legislature passed and the Governor signed SB 1793 (Chapter 588, Statutes of 1998, Greene).

Senate Bill 1793 clarifies the definition of compliance for local agency portfolios. Beginning January 1, 1999, the new law requires compliance only at the date of purchase for the type of instrument purchased. It does not require that the *entire* portfolio be in compliance with existing concentration parameters to be in compliance with state law, but does require any applicable investment type concentration restriction to be met before a particular instrument may be purchased. This amendment to state law also does not require the portfolio to be in compliance if actions other than purchasing new securities result in a change to the portfolio's composition. For example, suppose a portfolio consists of four different types of instruments, each with the same market value. Assume that state law specifies concentration limits at the time of purchase that restrict each instrument from exceeding 30 percent of the portfolio's total value. If one of the instruments is sold and the cash is used by the agency rather than reinvested, then the portfolio is divided equally between the three remaining instruments. The concentration of each instrument now would exceed 30 percent. Under the new law, however, the local agency would not be out of compliance because no instrument was purchased. Similarly, if one of the remaining three instruments was sold and another type of instrument purchased, only the new instrument purchased would need to meet state law restrictions regarding concentration.

While it is too soon to say how SB 1793 will affect county LGIPs, one potential problem is reduced liquidity. If long periods of time pass between purchases of new instruments, the concentrations of various instruments held by the pool could change significantly. Over-concentration in long-term or specially structured instruments that may be difficult to sell quickly could leave a pool vulnerable in the event of a cash emergency or sudden interest rate fluctuation. LGIPs particularly at risk under the law change are those that purchase instruments infrequently, have longer WAMs, and have frequent withdrawals by depositors. County pool officials should continue to monitor the concentration of instrument types and issuers in their portfolios beyond the point of a new purchase to ensure that the safety, liquidity and market value of their investments are maintained.

H. Analysis Finds Portfolios Generally Meeting State Law and Investment Policy Goals

CDIAC staff analyzed county portfolio investment reports and found counties generally were meeting both state law and their own investment policy goals and conditions. County portfolios with WAM restrictions met their limits easily, were diversified by the number and type of instruments, and did not contain prohibited investment instruments that CDIAC staff could identify. Small county portfolios differed from large county portfolios in the management style used; however, the difference did not translate into a significant variance in average portfolio yields. Small counties preferred a more passive portfolio management approach, relying on pooled funds for a significant portion of their investments. The largest counties actively managed their portfolios, although they invested about half of their portfolios in U.S. Treasury and Agency obligations.

A handful of counties did exceed the concentration limits set by state law for certain investment instruments. Increases in the market value of some components of the portfolio affected the compliance of at least two pools. Some counties differed from CDIAC in their interpretation of the timing of compliance because, at the time, the Government Code did not state whether compliance should occur at the time of purchase or at all times. Legislation enacted in 1998 clarified this issue, instructing counties that they need to meet concentration limits for investments only at the date of purchase. However, county pools still need to be cognizant of the composition of their portfolios at all times to be prepared in the event of a cash emergency or change in market conditions.

III. CONCLUSIONS

In response to the Orange County bankruptcy, lawmakers enacted legislation to further promote safety and liquidity of public investments. The changes remain part of a system that polices itself—a system where local agencies are responsible for abiding by

state law and local investment policies. For the most part, the system has worked successfully. CDIAC's point-in-time analysis found most counties operating within the limits of state and local restrictions. Legislation enacted in 1998 will reduce noncompliance issues related to market fluctuations, but require continued vigilance on the part of pool managers to ensure the safety and liquidity of the portfolio.

As time passes and the Orange County bankruptcy becomes more a part of history than present consciousness, the push to ease restrictions may well become stronger. While the case can be made to consider some changes over time based upon the evolution of best practices in the market place, history has shown us that caution is in order. The rapidity with which market conditions can change argues for continued vigilance by local agencies in frequently monitoring and assessing investment choices and their effect on the overall LGIP portfolio. As past history has shown, isolated instances such as the Orange County pool bankruptcy can lead to financial crises with nationwide repercussions. Safe investment standards, oversight, and education all play important roles in preventing such crises from occurring in the future.

Local agencies can apply the tools used in this analysis to conduct their own assessment of their pooled investments. They can use this information to measure the risks and rewards associated with an investment strategy, and ideally, work towards achieving and maintaining the most appropriate level of safety, liquidity and yield for their portfolios.

CDIAC designed this report to provide an overview of local government investment pools as part of its role in meeting local governments' debt and investment education needs. In addition to this report, CDIAC offers investment seminars to provide local officials with relevant information to assist them with their responsibilities. CDIAC, under the chairmanship of the State Treasurer, has worked with a broad variety of interested parties to promote best investment practices through legislation, through the establishment of a toll-free Hotline (1-888-CDIAC49) for local agencies to confer with CDIAC regarding questionable debt and investment practices, and through the

creation of a *Treasurer's Alert!* publication to disseminate timely information on such practices and other issues of vital importance to promoting and protecting the public trust.

CDIAC invites feedback on this report and any other comments that can assist the Commission to improve its educational activities and efforts toward the important goal of protecting California's tax dollars.

APPENDIX I

ASSESSING SAFETY, LIQUIDITY AND YIELD

California State Government Code Section 53600.5 instructs local agency investment officials to (1) safeguard the principal of funds, (2) meet the liquidity needs of the depositor, and (3) achieve a return on the funds. Accordingly, these three principles should guide LGIP investment selection and also serve as the basis for an assessment of these choices.

A crucial, albeit obvious, first step to take before any selections or assessments of pool investments are made is defining safety, liquidity, and yield. These terms are used frequently enough when discussing goals for an investment portfolio, but often are not defined beyond the terms themselves. When a local agency seeks a balance between safety, liquidity, and yield for its portfolio, in effect it is determining an acceptable level of investment risk for its public funds.

I. SAFETY

To achieve “safety of principal,” investment officials generally try to minimize investment losses that result from a default or a decline in value by limiting the portfolio’s exposure to two primary risks: credit risk and market risk.

A. Credit Risk

Credit risk reflects the potential inability of the issuer or guarantor of the security to make scheduled interest and/or principal payments on an investment. If an investment has a high degree of credit risk, this means that the issuer’s ability to make scheduled interest and/or principal payments on investments may be compromised. Unsecured corporate notes are an example of investments that have relatively higher credit risk because the investment is only as good as the corporation behind it. This

type of investment has no collateral or security to ensure payment of interest and/or principal in the event the corporation is unable to meet debt payments. A U.S. Treasury security is an example of an investment instrument that has very low credit risk because the security is backed by the full faith and credit of the federal government.

Credit Ratings. One of the most important factors in determining relative credit risk of an investment is the level of its credit rating. The credit rating largely represents the ability of the issuer to make timely payments of interest and principal on its debt obligations.³² It also reflects the security structure of the investment instrument.

Letter-ratings system differ among the credit rating firms.³³ The three most widely used credit rating firms are Moody's, Standard & Poor's, and Fitch IBCA. Their highest long-term debt ratings, which are considered the best quality investment grade, are Aaa (Moody's) or AAA (Standard & Poor's and Fitch IBCA). These obligations carry the smallest degree of default risk. The lowest investment grade credit ratings are Baa (Moody's) or BBB (Standard & Poor's and Fitch IBCA). The lowest long-term debt rating that the three firms assign to highly speculative instruments are C (Moody's) or D (Standard & Poor's and Fitch IBCA). These obligations carry a high degree of credit risk because either the issuer's prospects for paying debt service on the obligation is poor (C rating) or the issuer has already defaulted on the interest or principal payments of the obligation (D rating). Issuers also are rated on their capacity to make short-term debt service payments. Short-term investment grade corporate debt may be rated P1 (Moody's), A1+/A1 (Standard & Poor's), or F1+/F1 (Fitch IBCA) for superior debt repayment capacity, P2, A2, or F2 for strong repayment capacity, and P3, A3, or F3 for acceptable debt repayment capacity.

B. Market Risk

Market risk reflects the potential negative impact on the value of an investment arising from changes in market conditions. For example, given a fixed coupon rate, the value (or price) of an instrument is inversely related to interest rates. As interest rates rise, the value of an investment drops.

Market risk is of less concern to investors that plan to hold investments to maturity. If a local agency needs to liquidate an instrument prior to maturity, however, prevailing interest rates will affect the value of the security. If interest rates rise significantly, the market value of a fixed rate investment may fall below the price paid. Conversely, if interest rates fall significantly, the market value of the instrument may rise above the price paid.

The single most important factor in determining relative market risk of an investment is the length of its maturity. The longer the maturity, the greater the risk that interest rates may turn adverse and reduce the value of an investment. For example, 30-year Treasury bonds have relatively higher market risk than short-term commercial paper.

C. Minimizing Credit Risk and Market Risk

Minimizing credit risk and market risk can involve several approaches such as purchasing only the highest investment grade instruments or matching the maturities of investments to cash needs. For some local agencies, loss of principal or value is unacceptable. Therefore, each individual instrument is carefully selected and monitored to minimize risks. Other agencies may express concern over loss of principal or value in the context of the portfolio as a whole. Thus, the overall portfolio will be balanced to achieve a desired level of safety, though individual instruments may vary in their credit risk and market risk. While both approaches seek to provide adequate safety, the latter approach may result in greater volatility in price and return on individual instruments and, therefore, requires more active management to ensure the portfolio is properly balanced to protect the principal invested.

II. LIQUIDITY

Liquidity risk reflects the potential inability to sell a security before its maturity date, particularly without incurring a loss. Linked with this definition of liquidity risk is the concept that any instrument may have constraints on its marketability; that is, there may

be limits on the pool of potential investors to whom it could be sold at an attractive price without suffering a significant loss in value under certain circumstances. Long-term instruments and instruments lacking a well-developed, active secondary market, such as 30-year Government bonds and nonnegotiable certificates of deposit, carry a higher degree of liquidity risk than short-term, widely-sold instruments such as Treasury bills and negotiable certificates of deposit. By purchasing investments that are actively sold in the secondary markets, investors can minimize potential losses that might arise due to factors such as high transaction costs (for example, due diligence research) or the inability to find a willing buyer at a future point in time. For local agencies, the liquidity of an individual investment may not be as critical as how that individual investment complements the existing liquidity of the portfolio and whether the portfolio can meet future short- and long-term cash needs.

Local agency officials likely face greater challenges from liquidity risk than credit risk because liquidity needs may occur quickly due to unforeseen cash shortfalls whereas a decline in credit quality typically occurs over a greater length of time and can be monitored. Credit risk also has been minimized greatly in recent years through the use of instruments that are highly rated at the time of purchase, including those which are collateralized, insured, or come with letters of credit that guarantee the payment of interest and principal.

III. YIELD

While safety and liquidity come first in structuring an investment portfolio, yield remains an important factor. A straightforward relationship between yield and risk exists—the greater the level of risk assumed, the more compensation (in the form of higher yields) is required. Local agencies seek to maximize their yield on investment in a manner that is consistent with their safety and liquidity goals. As a measure of their success in balancing these goals, for example, local investment officers may strive to meet or beat a benchmark rate for their portfolio. Examples of benchmarks include the six-month or one-year Treasury bill rate, or a broker/dealer benchmark index rate with a one-year WAM. A benchmark index rate reflects the returns on a pool of investment

instruments such as U.S. Treasury and Agency obligations, and has a portfolio WAM of a specified maturity. Information regarding different benchmark index rates is available in trade journals such as the Wall Street Journal or through online services such as Bloomberg.

Some local agencies may strive to beat their selected benchmark. For most local agencies, beating their benchmark consistently is unlikely even with experienced, active management and good timing. If it does occur, especially by significant margins, it may signal that the portfolio has taken on riskier investments or that the chosen benchmark is not the appropriate measure for comparison.

In Orange County's case, the portfolio's reported yield was approximately twice that of other government pool portfolios in the six months prior to the bankruptcy. With hindsight, it is easy to see that the much higher returns reflected a risky investment strategy used to maximize the portfolio's investment returns at the expense of safety and liquidity.

IV. SUMMARY

Local agencies must determine an acceptable level of risk for their portfolios and then seek to manage within this range by defining criteria such as portfolio WAM, credit rating criteria, investment concentration, etc. Many factors will influence this determination including their short-term cash needs, portfolio size, staff resources, and political issues. Once these factors have been defined and specified in the local agency's investment policy, local agencies must evaluate investment options, including LGIPs, to ensure they meet the standards established for their investment portfolios.

APPENDIX II

OTHER INFORMATION SOURCES ON LOCAL GOVERNMENT INVESTMENT POOLS (LGIPS)

GUIDELINES TO ASSIST IN DEVELOPING INVESTMENT AND DISCLOSURE POLICIES:

- National Association of State Treasurers (NAST), *Special Report on Local Government Investment Pools*, 1995.
- Government Finance Officers Association (GFOA) Committee on Cash Management, *Sample Investment Policy*, 1997.
- Girard Miller, *Investing Public Funds (Second Edition) Chapter 6*, GFOA, 1998.

QUESTIONS AND ISSUES TO CONSIDER WHEN INVESTING IN LGIPS:

- California Society of Municipal Finance Officers (CSFMO) Committee on Cash Management, *Report on Government Investment Pools*.
- Girard Miller, *Investing Public Funds (Second Edition) Appendix I, Part 3*, GFOA, 1998.

ENDNOTES

¹ It is important to reiterate that the findings reported are based solely on a point-in-time analysis of county investment policies and portfolio reports.

² Without the ability to undertake short-term cash flow borrowing when cash balances lag expenditure requirements, local agencies may not meet all of their obligations on a timely basis. Information on the short-term borrowing tools available to local governments can be found in the California Debt and Investment Advisory Commission's *California Debt Issuance Primer*.

³ Cash balances may include operating cash and surplus cash. Operating cash is composed of revenues dedicated for general agency operations such as wages and salaries. Surplus cash is loosely defined as revenues that are not currently earmarked for expenditure.

⁴ Hiring an investment advisor or portfolio manager does not absolve the local agency of its duties as a fiduciary or its compliance and reporting obligations. These responsibilities are discussed in more detail later in this chapter.

⁵ The Government Code does not allow local agencies to use investment agreements for the investment of cash balances; however, it allows local agencies to invest note and bond proceeds in investment agreements given certain conditions are met.

⁶ Credit ratings are designed to reflect the probability that the principal and interest on an investment will be paid in a timely manner. Ratings of instruments are periodically reviewed and adjusted upward or downward, if necessary, to reflect changes in the issuer's credit position.

⁷ Government Code Section 16429 and subsequent sections permit local agencies to invest cash balances in the LAIF under certain conditions. The State Treasurer's Office administers LAIF, receiving input on investment-related issues from the LAIF board. The LAIF invests in securities as provided for under Government Code Sections 16430 and 16480.4. The investment restrictions that affect LAIF differ from those that apply to local agencies. For example, under Government Code Section 16430, LAIF has statutory maturity restrictions of 30 years for U.S. Treasury and Agency obligations and can purchase U.S. government STRIPs. By contrast, Government Code Section 53601 restricts local agency investment of cash balances in U.S. Treasury and Agency obligations to instruments with maturities of five years or less. Local agencies also cannot purchase U.S. government STRIPs (Government Code Section 53601.6). While the LAIF has less restrictive *statutory* limitations placed on eligible investment instruments than local agencies, LAIF's current *investment policy* contains guidelines for certain investment instruments that are equivalent to the Government Code Sections 53601 and 53635 restrictions applicable to local government investment of cash balances.

⁸ Some LGIPs (in particular, privately operated ones) offer investment portfolios tailored to individual needs. Funds invested in these specialized portfolios generally are not commingled with the general pool.

⁹ State law requires school districts to initially deposit revenues in their county investment pools; however, there is some debate regarding whether schools must *leave* all revenues invested in the county pool.

¹⁰ In the case of county governments, the board of supervisors and oversight committee annually must review and approve the local agency investment policy. Portfolio reports must be submitted within 30 days following the end of the quarter covered by the report.

¹¹ Government Code Section 53646(a) requires that an investment policy be submitted and considered annually by the legislative body of the local agency at a public meeting. Government Code Section 53646(b) requires that an investment report be "rendered" to the legislative body within 30 days of the quarter's end. For this study, CDIAC staff requested documents current as of June 30, 1998.

¹² CDIAC received investment policies and portfolio reports from all California counties except Colusa County.

¹³ Strict adherence to the Government Code does not guarantee that a pool's investments are safe or liquid. The Government Code provides a broad set of investment criteria, some of which may be inappropriate for certain pools. Conversely, an investment policy that is too restrictive might inadvertently accentuate one or more of these risks in certain unforeseen circumstances. This report considers the safety and liquidity of actual pool investments in the next chapter.

Assessment of Local Government Investment Pools: A Survey of California County Pools ENDNOTES

¹⁴ Actual credit risk, market risk or liquidity risk can only be determined by analyzing the actual portfolio. Two pools can have identical credit risk, market risk or liquidity risk even though one pool has a more restrictive investment policy. The other pool simply may choose not to invest in the whole spectrum of investments that are allowable under its investment policy.

¹⁵ Internal investment pools (which accept investments only from the primary government and its component units and not from legally separate entities) also must report certain investments at fair market value, allocating gains and losses to funds based upon the proportion of their principal investment. They are exempt, however, from GASB 31 requirements for certain types of investment instruments such as money market investments with maturities of one year or less.

¹⁶ SEC Rule 2a-7 sets conditions that registered mutual funds must follow in order to operate in the U.S. These conditions include restrictions on the types of investments, terms to maturity of investments, dollar WAM of the portfolio, and portfolio diversification.

¹⁷ By the same token, such restrictions potentially increase the liquidity risk to any one depositor because they may not have access to their deposit if needed within a short turn-around period.

¹⁸ A May 1998 Standard & Poor's survey of 22 county investment pools reported mandatory local agency participation (largely school district) rates ranging between 79 percent and 100 percent.

¹⁹ In cases where the portfolio WAM was not included, CDIAC staff estimated it based on the information provided.

²⁰ It is important to reiterate that the findings reported are based solely on a point-in-time analysis of county investment policies and portfolio reports.

²¹ Several LGIPs specify less restrictive investment instrument requirements in their investment policy. These less restrictive requirements relate to the purchase of U.S. Treasury and Agency obligations with maturities exceeding 5 years. According to Government Code Section 53601, "no investment shall be made in any security...unless the legislative body has granted express authority to make that investment either specifically or as a part of an investment program approved by the legislative body no less than three months prior to the investment."

²² The county specifying a five-year WAM currently allows the purchase of U.S. Treasury and Agency obligations with maturities exceeding five years.

²³ Government Code Section 27136 specifies that all withdrawal requests must be submitted to the County Treasurer who then determines whether the withdrawal will or will not adversely affect the liquidity of the LGIP. The Government Code does not specify a minimum notification period.

²⁴ The median county pool market value is \$134 million.

²⁵ The median county pool WAM is 266 days.

²⁶ This finding was statistically significant, which implies that the result was not mere random chance but one that we would expect to see if the test was repeated with another sample set of data.

²⁷ In the event that book values were not reported, par values were used instead.

²⁸ Because of a lack of detailed information, the analysis could not determine to what extent the instruments were diversified by industry or by issuer.

²⁹ CDIAC's analysis categorized investments into 12 different main categories. See Figure 7 on page 39 for a listing.

³⁰ The categories were chosen because they follow natural breaks in the data (on average, there's over an \$80 million gap between the market value of the last portfolio in one category and the first portfolio in the next category). The number of investment pools within each category varies significantly, from 22 pools in the under \$100 million category to 6 pools in the \$200 to \$500 million category.

³¹ Any questions or doubts that counties have as to the type of investment they are considering purchasing should be directed to legal counsel. CDIAC can provide information to local agencies, but cannot render a legal opinion as to the legality or appropriateness of any particular investment.

³² Other factors considered when determining the credit rating of an issuer include the nature and provisions of its outstanding obligations and any protections afforded in the event of a bankruptcy.

³³ Moody's differs from Standard & Poor's and Fitch in its lettering system in that it uses a combination of upper and lower case letters instead of all capital letters.

GLOSSARY OF TERMS

Active Portfolio Management—The goal of active portfolio management is to ensure that the portfolio is getting the full value out of its investments. This strategy involves actively studying market imperfections and changes such as interest rate swings to devise an investment approach that may provide significant benefits to the portfolio. It may involve timing investments to take advantage of market demand for certain instruments. For example, the agency can sell highly sought after instruments and buy other, comparable but lower cost securities in a transaction and realize a gain. Investment staff must be committed to daily monitoring of an active portfolio for it to be successful.

Bankers' Acceptances (BAs)—These instruments are short-term bills of exchange that are accepted as payment by banks engaged in financing trade. For example, a U.S. corporation planning to purchase goods from a foreign vendor will ask its bank to issue a letter of credit on behalf of the corporation. The letter of credit will allow the foreign vendor to draw a draft on the U.S. corporation's bank to pay for the merchandise. Upon receipt of the letter and the draft, the foreign vendor will ship the merchandise and present the draft at its bank, which allows the vendor to receive payment for the merchandise sold. The vendor's foreign bank forwards the draft to the U.S. bank, at which point the draft is "accepted" as an obligation that the purchaser's U.S. bank must pay at a specified maturity date. The U.S. bank may keep the acceptance or may sell it to a third party investor. Bankers' acceptances are sold at a discount and are considered fairly safe investment instruments because both the purchaser's bank and the initiating corporation are obligated to pay the holder at maturity.

Certificates of Deposit (CDs)—These instruments are issued by depository institutions such as commercial banks, savings institutions and credit unions against funds invested

for a specified time period (typically between 0 to 5 years). The term “CD” by itself generally refers to negotiable certificates of deposit that can be resold to other parties. CDs, however, also may be nonnegotiable. Nonnegotiable CDs cannot be actively traded on the secondary markets and generally are held to maturity by the party that purchased them. Yields on CDs vary depending on liquidity, credit quality, and, for nonnegotiable CDs, whether they are collateralized.

Collateralized Bank Deposits—Collateralized bank deposits can be broadly defined as notes, bonds, and other obligations (such as nonnegotiable CDs) that are secured at all times by valid first party interest in collateral. For California local agencies, the collateral must meet specified Government Code requirements.

Collateralized Mortgage Obligations (CMOs)—CMOs are created by combining mortgages or mortgage pass-through securities into a pool. Groups of obligations, backed by the assets of the pool, are issued as tranches. Each CMO will have several tranches. A tranche will have a fixed interest rate and maturity date, but characteristics of the underlying assets will determine actual performance. For example, events such as accelerated repayment of principal can affect the duration and return on the investment. Investors need to understand the characteristics of a tranche before investing in the obligations. For California local agencies, CMOs must meet specified Government Code requirements.

Commercial Paper (CP)—These instruments are short-term (generally 270 days or less), unsecured promissory notes issued by various economic entities to finance short-term credit needs. They usually are sold at a discount and pay face value upon maturity. Commercial paper generally is rated by at least one rating agency. The yields on commercial paper vary by the maturity length and credit quality of individual issuers. To be eligible for purchase by California local agencies, commercial paper must meet certain standards specified in the Government Code.

Medium-Term Notes—Medium-term notes are debt obligations that are continuously offered in a range of maturities. For the purpose of this report, they are defined as

notes of a maximum maturity of five years that are issued by a corporation organized or operating in the U.S. or by a depository institution that is licensed and operating in the U.S. To be eligible for purchase by local agencies in California, these notes must be rated “A” or better by a nationally recognized rating firm. These notes may be collateralized or asset-backed, and may be issued bearing a fixed or variable rate of interest.

Money Market Mutual Fund (MMMF)— A MMMF combines the assets of all shareholders into a common investment account for diversification purposes and professional management. MMMFs do not have maturity dates and generally allow daily access to investment funds. MMMFs are regulated by the Securities and Exchange Commission (SEC) and must comply with SEC Rule 2a-7 which governs such issues as the fund’s credit quality, diversification, maturity of individual investments, weighted average maturity and net asset value. The California Government Code specifies certain standards that MMMFs must satisfy before local agencies may purchase them.

Mortgage Pass-Through Security—These instruments are based on pooled home mortgages sold by federal agencies and instrumentalities such as Ginnie Mae and Freddie Mac. The amount of principal and interest paid to investors varies from month to month in part because homeowners may accelerate principal payments on a mortgage. The anticipated pay down schedule of the securities will vary from mortgage pool to mortgage pool. Mortgage pass-through securities are complex investment instruments that do not respond to market forces like other, more standard investment instruments. In a declining interest rate environment, mortgage pass-through investors face higher reinvestment risk and lower returns from their investment than investors in other instruments because homeowners tend to refinance in lower interest rate environments, accelerating the principal payments on their mortgages. Thus, the mortgage pass-through investor receives the accelerated principal payments at par and must reinvest these earnings in a lower interest rate environment.

Mutual Funds—Mutual funds combine the assets of all shareholders into a common investment account for diversification purposes and professional management. Under California law, mutual funds permitted for investment by local agencies need not follow regulations specified by the SEC regarding diversification, types of allowable investments, and maturity of individual investments. Instead, they must meet standards set in the state Government Code for allowable investments and meet certain criteria such as receiving the highest credit rating by two of the three largest nationally recognized ratings agencies or retaining an investment advisor with at least five years experience and assets in excess of \$500 million.

Passive Portfolio Management—Passive management minimizes the amount of training and labor effort required to attain an average market yield for the portfolio. It is an appropriate approach when staff resources prohibit daily management of investments. A number of techniques can be employed to manage a portfolio in this manner, including hiring an external portfolio manager, investing all of the portfolio in a managed fund such as a pool or MMMF, and laddering the maturities of investments within a portfolio.

Repurchase Agreements (Repos)—Repurchase agreements represent a simultaneous transaction where an investor lends a financial institution cash and receives securities of a greater than equivalent value as collateral. The financial institution commits to repurchasing the collateral at a specified date for the same cash value plus an agreed upon rate of interest. These transactions can be for any length of time, but typically range from overnight to one year. For California local agencies, the value of the collateral must be 102 percent of the funds borrowed.

Reverse-Repurchase Agreements (Reverse Repos)—These transactions are the mirror image of the repurchase agreement. In a reverse repo, an investor (such as a public agency) borrows cash from a financial institution in exchange for securities. The investor agrees to repurchase the securities at a specified date for the same cash value plus an agreed upon rate of interest. Securities dealers often use reverse repos to purchase securities they need to deliver to customers. Public agencies may use

reverse repos as a cash management tool when emergency cash is needed but liquidation of investments is undesirable. For California local agencies, these transactions are limited to 92 days maturity and 20 percent of the portfolio.

Time Deposits—These instruments are issued by depository institutions against funds deposited for a specified length of time. For the purpose of this report, time deposits (which would include instruments such as deposit notes) are distinct from CDs. The primary difference between the two is the method of interest calculation. Interest payments on time deposits are calculated in a manner similar to that of corporate bonds whereas interest payments on CDs are calculated similarly to money market instruments.

U.S. Government Agency and Instrumentality Obligations— Federal agencies and instrumentalities issue a variety of investment instruments such as discount securities, variable-rate securities, and coupon securities. The agencies and instrumentalities that issue these securities include FNMA (Fannie Mae), FHLMC (Freddie Mac), GNMA (Ginnie Mae) and Federal Farm Credit Banks. While most of the instruments issued are not explicitly backed by the full faith and credit of the U.S. Government, there is an implicit guarantee that the federal government would step in if default were imminent. Agency and instrumentality investments generally have higher yields than Treasury obligations because they may be perceived as less liquid or less marketable because of their structure (e.g., small or irregular issue).

U.S. Government Treasury Obligations—In general, U.S. Government Treasury obligations consist of discount securities (Treasury bills) and coupon securities (notes and bonds). Treasury bills are short-term (one year or less) cash management tools that are highly liquid. Coupon securities range in maturity from two to ten years for notes and ten or more years for bonds. These instruments are free from default risk because they carry the full faith and credit backing of the U.S. Government. The U.S. Treasury also offers zero-coupon Treasury obligations (also known as “strips”), but California state law does not allow local agencies to purchase these securities because of the greater interest rate risk and price volatility associated with them.