Public Funds Investment Act Workshop

ESC Region 1
October 2017
What is PFIA Designed to Do?

- **Provide guidelines for safety**
  - Highest credit quality limits
  - Requires controls (maximum maturity, maximum WAM, DVP)

- **Provide for flexibility to match individual needs**
  - Allow flexibility for entities to set their own parameters

- Allow for adjustments to internal and external change

- Apply to all entities
TEC Change

- Texas Education Code
- SB 754 amending 45.205(b)
- Allowing school depository contracts to be extended
- **Total of three (3) two-year terms**
- Allows for **modifications at extensions** if mutually agreed upon
- Effective 9/1/17
PFIA Changes 2017

- HB 1701  *(effective 9/1/2017) (2256.005(k)*
  - Essentially eliminates broker/dealer certification
  - Certification to a business organization not person
    - In a form acceptable to both parties
  - Organization = pool or discretionary investment adviser
  - Certification form remains the same for these organizations but adds:

- (1) received and reviewed the investment policy of the entity; and acknowledged that the business organization has implemented reasonable procedures and controls in an effort to preclude investment transactions conducted between the entity and the organization that are not authorized by the entity’s investment policy, except to the extent that this authorization:
  - (A) is dependent on an analysis of the makeup of the entity’s entire portfolio;
  - (B) requires an interpretation of subjective investment standards; or
  - (C) relates to investment transactions of the entity that are not made through accounts or other contractual arrangements over which the business organization has accepted discretionary investment authority.
PFIA Changes  2017

- HB 2647 (2256.009(a))  Added Authorized Investments
- Adds insured interest bearing accounts in banks (FDIC) and credit unions (NCUIF)
- Defines structure for spread–shared deposit programs (like ICS)

- (7) interest-bearing deposits that are guaranteed or insured by:
  - (A) the Federal Deposit Insurance Corporation or its successor; or
  - (B) the National Credit Union Share Insurance Fund or its successor; and
- (8) interest bearing bank deposits other than those described by Subdivision (7) if:
  - (A) the funds invested in the banking deposits are invested through:
    - (i) a broker with a main office or branch office in this state that the investing entity selects from a list the governing body or designated investment committee of the entity adopted as required by Section 2256.025; or
    - (ii) a depository institution with a main office or branch office in this state that the investing entity selects;
  - (B) or broker or depository institution selected as described by Paragraph (A) arranges for the deposit of the funds in the banking deposits in one or more federally insured depository institutions, regardless of where located, for the investing entity’s account;
  - (C) the full amount of the principal and accrued interest of the banking deposits is insured by the United States or an instrumentality of the United States; and
  - (D) the investing entity appoints as the entity’s custodian of the banking deposits issued for the entity’s account:
    - (i) the depository institution selected as described by Paragraph (A);
    - (ii) an entity described by Section 2257.041(d); or
    - (iii) a clearing broker dealer registered with the Securities and Exchange Commission Rule 15c3-3 (17 C.F.R. Section 240.15c3-3).
PFIA Changes 2017

• **HB 1003**
• Higher ED:
  ▫ Raises required endowment amounts to exempt from PFIA
    • from $95 million to $150 million

• Investments:
  ▫ Added interest bearing accounts (banks and CU)
  ▫ Can invest through a Texas Broker on your List – Why? Should You?

• MMMF:
  ▫ redefines to comply with SEC 2a-7 Rule
    • Removes 90 day WAM limit (now 60) and $1 NAV requirement
PFIA Changes 2017

• Ultra short bond funds authorized (duration < 1 yr)
  ▫ Must hold investment grade investments
  ▫ Must not hold asset-backed investments
  ▫ An alternative to prime money market funds

• Pools:
  ▫ info statement must have policy of holding cash
  ▫ Must mark-to-market daily and stabilize at $1
  ▫ Board decides what’s reasonable to maintain $1
PFIA Changes 2017

- **Hedging:**
  - Addresses entities >$250mm in long term debt
  - Whose debt is in top four ratings
  - Projects redefined as protection of price fluctuations
    - In securities, commodities or index
  - Hedging can include
    - Hedging contracts, credit and insurance agreements
    - Must comply with CFTC and SEC provisions
  - This prevails over charter
  - Requires a hedging policy
  - Applies as general operations
  - Pledge of securities or special revenue
  - May credit any receipts to hedge of commodities
  - Expense can be considered O&M expense, acquisition cost or project cost

- **Tax Code**
  - Modified for higher education entities
PFIA Changes 2017

- HB 1238*

- Housing Authority Training requirements
  - Initial 10 hours within 12 months remains
  - Subsequent training is 5 hours each two fiscal years
  - No hours required with restricted investments
    - Invest only in interest bearing accounts and CDs
    - Not if in pools
PFIA Changes 2017

• HB 2928

• Clarifies FHLB securities as investments

• Clarifies authorization of FHLB letters of credit as collateral
PFIA Policy Specific Requirements

- **Write and adopt a policy annually** which must: (2256.005)
  - Must be adopted by resolution
  - The resolution must show any changes made
  - Be written
  - Primarily emphasize safety and liquidity
  - State the maximum stated maturity authorized
  - Address diversification, yield, maturity & capability of officers
  - List authorized investments
  - Include a procedure to monitor credit rating changes
  - Set a maximum weighted average maturity (WAM)
  - Method to monitor market prices
  - Require delivery versus payment (DVP)
  - Policy may ‘un-authorize’ any type investment
PFIA Strategy Specific Requirement

- Write and adopt a **strategy** (2256.005)
- Governing body must review and **adopt** the strategy annually
- Strategy must be approved by resolution
  - Assure that the resolution adopting policy also adopts strategy
  - To include the maximum weighted average maturity (WAM)

- The objectives of the portfolio must address in priority order:
  - The suitability of the investments to the entity’s financial requirements
  - Preservation and safety of principal invested
  - Liquidity
  - Marketability if need arises to liquidate
  - Diversification of the portfolio
  - Yield
PFIA Investment Officers

- **Governing Body Designates Investment Officer(s)**

- **Designation by rule, order ordinance or resolution (2256.005)**
  - Governing body may choose anyone as IO
  - IO is responsible for investment consistent with policy
  - A contracted adviser/entity can also be an IO
  - Effective until rescinded or terminated from employment
  - IO must follow Prudent Person Rule
  - Council must provide for the training of officers
  - No person can deposit, withdraw, transfer or manager unless authorized by law
  - Council has the option to chose officers (no necessary set position)
  - Regional Planning Commission can only serve Commission as IO

- Governing body retains ultimate fiduciary responsibility
The Investment Officer

- IO must be a local designated officer (Treasurer)

- Must disclose personal/business relationships by officer
  - Refers to personal business relationships
  - IO must file a statement disclosing the relationship
  - If IO relationship is within two levels of blood or marriage
    - Filed with the Texas Ethics Commission
    - If IO owns >10% of voting stock/shares or >$5,000 in fair market value of firm
    - If IO received >10% of IO’s prior year income from the firm
    - If IO received >$2,500 in investments in prior year for his personal account
  - Specific income limits are set but full disclosure is safer/easier
Officer Training

• Applicable to Treasurer and investment officer(s)
  ▫ and CFO (if Treasurer is not the CFO)

• Must use an independent source approved by governing body or investment committee
  ▫ This is not an annual designation

• All officers take 10 hours within 12 months of taking position
• All officers take 10 hours each successive two fiscal years (with exceptions)
  ▫ Fiscal year begins on first day of fiscal year
  ▫ City and ISD only: 8 hours each successive two fiscal years
  ▫ Housing Authorities 5 hours each successive two fiscal years*

• Training must include:
  ▫ IO Responsibilities, controls, security risks, strategy risks, market
    risks, diversification and compliance to Act
Training Exceptions (2256.008)

- No continued training for municipalities if:
  - It does not “invest” municipal funds
  - only investing in certificates of deposit

- Toll Roads and Conservation and Reclamation Districts
  - If using an RIA and has < 5 employees
  - Officer of the governing body attends one-time 4 hours training
  - Designated investment officers must attend the training with the full provisions

- Housing Authorities
  - Initial 10 hours in first 12 months
  - Continuing training is 5 hours each two years – or none if only CD and interest bearing accounts not pools!

- Emergency Service Districts (Health & Safety Code Ch. 775)
  - Training is not required for the district BUT
  - Without training investment only in US Obligations, CDs, pools

- Water Districts (Water Code Ch. 36)
  - Training of at least 6 hours in first year
  - Training of at least 4 hours each two years
PFIA Policy Certification Requirement

• The certificate effectively states:
  ▫ “Business Organization” now defined as pool (or discretionary mgr) has reviewed the policy
  ▫ Organization has implemented control procedures except where:
    • Policy requirements are dependent on analysis of total portfolio
    • Policy requires an interpretation of subjective investment standards
    • Policy relates to funds not invested through the organization

• The certificate must be received before any transaction takes place

• Policy certification distribution required to pools and discretionary investment advisers (2256.005)
  ▫ “Business organizations
    • “pools” and “contracted discretionary investment management firms”
  ▫ Certificate language must be acceptable to both parties – not set by PFIA
  ▫ Nothing relieves entity of responsibility to monitor investments
  ▫ You chose whether to get certificates before or after firm is approved
    • Better to get it first!
PFIA Specific for B/D and Audit

- **Council approval** of broker/dealers
  - Although no certification is required – send it as a best practice
  - A list of **broker/dealers** must be approved annually by Council
    - or a Council designated Investment Committee
    - List only broker/dealers

- **Compliance audits** required (2256.005 and 2256.023)
  - Entity must annually **complete** an annual compliance audit of controls and policy
    - In conjunction with annual financial audit
  - An audit by an **independent auditor** is required
    - if invested in more than CDs and pools
    - Audit consists of review of quarterly reports
Required Standard of Care

- Investments *shall* be made in accordance with Standard

- Investments are governed in order of priority by:
  - Preservation and safety of principal
  - Liquidity
  - Yield

- Determination of prudence takes into consideration:
  - Investment of all funds – not a single investment
  - Whether the investment was consistent with the policy
Prudence

- **Prudent Person Standard**
  Investments shall be made with judgment and care under circumstances then prevailing that persons of prudence, discretion and intelligence exercise in the management of their own affairs not for speculation but for investment considering probable safety as well as probable income.

- Addresses the cyclical nature of investing

- Periodic reviews address ‘changes’
PFIA Specific Investment Requirements

- No maximum maturities are set by PFIA – YOU set them

- State and Local Obligations are authorized if:
  - Rated A, or its equivalent, or better

- Interest bearing deposits at banks and credit unions must:
  - Must be insured or collateralized
  - Insurance through the FDIC
  - Insurance through the National Credit Union Insurance Fund
  - Must be a Texas bank or through Texas broker
  - Includes ICS (Insured Cash Sweep)
PFIA Specific Investments

• Certificates of deposit are authorized if:
  ▫ Collateral must be 100% of principal value
  ▫ Collateral can not include PFIA unauthorized MBS
  ▫ Can include CDARS

• Repurchase and Reverse Agreements are authorized if:
  ▫ Has a defined termination date
  ▫ Secured by authorized investments or cash
  ▫ Securities are bought and sold DVP
  ▫ Placed through a *primary* dealer
  ▫ Funds invested from the reverse mature before end of the reverse
PFIA Specific Investment Requirements

• Securities lending is authorized if:
  ▫ 100% collateralized or secured consistent with PFIA
  ▫ Allow for termination at any time
  ▫ Securities are pledged and held in entity’s name
  ▫ Placed through a primary dealer
  ▫ Have a term of one year or less

• Bankers acceptances are authorized if:
  ▫ It has a maturity < 270 days
  ▫ Is eligible as Fed collateral
  ▫ Accepted by US bank with short term rating at least A1/P1
PFIA Specific Investment

- **Commercial paper is authorized if:**
  - It has a maturity less than 270 days
  - Is rated A1/P1 or equivalent by *two* NRCRA
  - Is rated A1/P1 by *one* NRCRA with also a US bank LOC

- **Money market mutual funds are authorized if:**
  - Comply with SEC Rule 2a-7
  - You control the $1 NAV value !!!

- **Mutual fund is authorized if:**
  - Registered with the SEC and a duration < one year, WAM >2 years
  - Duration < one year, investment grade securities and no asset backs
  - Investment is less than 15% of operating fund average
  - No bond proceeds are invested in the mutual fund
  - No investment can exceed 10% of the fund itself
PFIA Specific Investment

• Guaranteed Investment Contracts (GIC) must:
  ▫ Have a defined termination
  ▫ Be fully collateralized to 100%
  ▫ Be pledged to the entity
  ▫ Be no longer than five years
  ▫ Be specifically authorized by governing body, bid, highest yield and have reasonable admin costs
PFIA Specific Investment Requirements

- **Investment Pools** have many restrictions
  - Contents, reporting, NAV, rating, website contents

- **Investor restrictions** include only if:
  - Governing body authorizes particular pool
  - The pool stays continuously rated AAA or AAA-m or equivalent
PFIA Specific Investment Requirements

- Higher Education investments include:
  - Cash mgmt and fixed income funds if Tax Code 501(f) eligible
  - Negotiable CDs with banks having a CD rating of 1
  - Corporate bonds and debentures in two highest long-term ratings
PFIA Specific Investment Requirements

- **Schools Districts** are authorized to buy corporate notes **if**:
  - It is rated no less that “AA-”
  - It is not convertible to stock and is secured
  - The District has an average of over 50,000 students

- **Hedging** is authorized in several instances **if**:
  - It complies with CFTC
  - It is segregated and accounted for separately
  - It is an “eligible entity” and uses for “eligible projects”
PFIA Specific Investments

- Securities that become “unauthorized” by law or policy
  - Need not be liquidated
  - Reinvestment must be as provided by policy

- Securities that lose their required rating
  - Entity must take *prudent steps* to liquidate
  - Must be liquidated but no specific time period
PFIA Specific Reporting

• **Quarterly Reporting must:** (2256.022)

  ▪ describe the investment position of the entity in **detail**
  ▪ be prepared jointly by investment officers
  ▪ be **signed** by each investment officer
  ▪ Be **presented** to governing body and chief executive quarterly
    • On a timely basis within a reasonable time
  ▪ contain **summary** information
    • Beginning and ending market value
    • Fully accrued interest (net earnings)
  ▪ detail each position by book/market, maturity date, fund
  ▪ state **compliance** with Policy and PFIA
PFIA Specific Requirements

- Broker/Dealers
  - Governing body must annually review, revise and adopt list
  - List is only for broker/dealers (not banks)
  - Can be approved by governing body designated investment committee
## A Checklist for PFIA Compliance

### TEXAS PUBLIC FUNDS INVESTMENT ACT COMPLIANCE ITEMS

<table>
<thead>
<tr>
<th>Ref.</th>
<th>Compliance Point</th>
<th>In compliance?</th>
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</thead>
<tbody>
<tr>
<td>2256.005(a)</td>
<td>Governing body shall adopt a written policy</td>
<td>Yes</td>
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<tr>
<td>2256.005(b)</td>
<td>Investment policy must:</td>
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<td>- be written</td>
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<td>- primarily emphasize safety of principal and liquidity</td>
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<td>Investment policy must include:</td>
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<td>- a list of authorized investments</td>
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<td>- maximum allowable stated maturity on any investment</td>
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<td>- maximum dollar-weighted average maturity authorized - based on stated maturity dates</td>
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<td></td>
<td>- method to monitor market price</td>
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<td></td>
<td>- requirement to settle all transaction (except pools/funds) delivery versus payment</td>
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<tr>
<td></td>
<td>procedures to monitor rating changes</td>
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<tr>
<td>2256.005(c)</td>
<td><em>Policy may provide for CD bids to be solicited orally, in writing, or electronically</em></td>
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<tr>
<td>2256.005(d)</td>
<td>As part of the policy governing body must adopt a strategy for each portfolio</td>
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<td>Written strategy must describe the objectives in the following priority order:</td>
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<td></td>
<td>- understanding the suitability of the investments to financial requirements of the entity</td>
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<td>- preservation of principal</td>
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<td>- liquidity</td>
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<td></td>
<td>- marketability of the investment if liquidity needs arise</td>
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<td></td>
<td>- diversification of the portfolio</td>
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<td>- yield</td>
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</table>
Changes in the Investment World
Making a Difference

• *Circumstances* – *rates are continuing to rise*

• New changes since 2015
  ▫ Banking regulations impact public entities
  ▫ Money market mutual fund changes
  ▫ Rates are going up!
Basel III – an international comprehensive set of reforms with multiple goals

- Basel III was developed by the Bank for International Settlements which was established in 1930; their goal is to help central banks with monetary and financial stability. Their head office is in Basel, Switzerland.
### Basel III and Dodd-Frank

#### Liquidity and Capital Components

<table>
<thead>
<tr>
<th><strong>Liquidity Coverage Ratio</strong></th>
<th><strong>Net Stable Funding Ratio</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Requires banks to hold high quality liquid assets (HQLA)</td>
<td>• NSFR seeks to reduce a bank’s funding horizon by promoting longer term funding sources</td>
</tr>
<tr>
<td>• Requires reserves to meet all liabilities in a 30 day stress scenario</td>
<td>• Reduces dependency on short term funding</td>
</tr>
<tr>
<td>• HQLA includes cash, reserves, government &amp; corporate debt</td>
<td>• Encourages funding stability</td>
</tr>
<tr>
<td>• Potentially limits banks from making loans</td>
<td>• Aims to better assess funding risk</td>
</tr>
</tbody>
</table>
### Basel III Affects Your Deposits

- Demand for HQLA reduces securities available to serve as collateral
- Banks carry significantly higher costs for public sector vs. corporate operating balances
- Banks are encouraging non-operating balances to off-balance sheet vehicles
  - such as money market mutual funds in the form of sweeps

<table>
<thead>
<tr>
<th>For every $100 mm in <strong>corporate deposits</strong></th>
<th>For every $100 mm in <strong>public deposits</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>-30 day run-off during event = 25%</td>
<td>-30 day runoff during event = 40%</td>
</tr>
<tr>
<td>-Required bank liquidity = $25 mm</td>
<td>-Required bank liquidity = $40 mm</td>
</tr>
</tbody>
</table>
Translation

• Banks try to reduce collateral

• Banks add fees to address regulatory burden

• Banks trade investment for service
New or Changed Fees

• Collateral fees

• Regulatory fees
  ▫ Various names but one fee
Use the Public Unit FDIC Coverage

• Based on type of account – a change in definitions
  ▫ All time and savings accounts = $250,000
    • Includes NOW and money market accounts
  ▫ All demand accounts = $250,000
    • Includes interest bearing and non-interest bearing

• Based on location of bank
  ▫ If the bank is outside the state all deposited are lumped together
  ▫ This has changed from ‘headquarters’
An FDIC Example

• Under the changed rules:
  • District X has:
    ▫ $585,000 in demand accounts
    ▫ $195,000 in time and savings accounts
    ▫ The District has **$445,000** in FDIC coverage

• FDIC coverage is calculated
  ▫ $250,000 (demand) + $195,000 (savings)
FDIC Coverage

• Political Unit Accounts
  ▫ If created under express authority of law
  ▫ Has some function of government delegated
  ▫ If it executes exclusive control of its funds for exclusive use

• Special cases
  ▫ 4a and 4b corporations
  ▫ Water supply corporations
Why Letters of Credit

• Authorized by law but questioned by AG
  ▫ LOC from FHLB Regional Banks
  ▫ Cost differential
    • Securities cost about 10-12 bps. and a LOC 5 bps.

• What is a LOC? How do I use it?
  ▫ FHLB is a banker’s bank owned by the member banks
  ▫ Credit backing comes from the member banks
  ▫ Time requirements for amount changes
  ▫ System stress
Regulatory Assessments

• Banks are beginning to pass through FDIC fee
  ▫ Not all banks pass through – ask! - verify

• Based on bank but basically 0.12%

• Higher balances hurt on collateral and FDIC fee

• Known by many names
  ▫ FDIC does not allow use of FDIC name for fee
Your Decision Hinges on Rates

• Compare your ECR to outside options

• A 0.40% ECR on $10 million balance will generate $3,333/month

• If rates outside give you 0.70% the same balance generates $5,833/month

• Invest the funds outside
  ▫ pay $3,333 directly and keep $2,500/mo ($30,004/yr)
Higher Balances Can Hurt

<table>
<thead>
<tr>
<th>Balance</th>
<th>FDIC Assessment</th>
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<tbody>
<tr>
<td>$ 21,250,000</td>
<td>$ 21,257</td>
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<tr>
<td>$ 10,000,000</td>
<td>$ 10,000</td>
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<tr>
<td>$ 8,000,000</td>
<td>$ 8,000</td>
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</tbody>
</table>

Lower ECR = higher required balances  
Higher balances = higher regulatory fee  
Higher regulatory fee = higher balances

A vicious cycle
Alternatives to Collateral

• Investment options within the bank
  ▫ Rarely helps because of balance regulatory fee

• Investment options through the bank
  ▫ Structure of accounts reduces balances, collateral, and regulatory fee
  ▫ Sweeps allow for outside investment and no collateral requirements for bank

• Investment options outside the bank
New SEC Rules for MMMF Affect You

• New regulations are directed towards safety, liquidity and stability

• Minimum 10% in securities convertible to cash in 1 day
• Minimum 30% in securities convertible to cash in 1 week
• Maximum WAM shortened to 60 days
• Maximum WAL of 120 days
  ▫ weighted average life to reduce use of variables
• Monthly reporting to SEC on shadow prices
• Procedures for stress tests

• Translation safety first based on liquidity
The Fund’s Escape Hatch

• Ability to process at price not $1

• Ability to suspend redemptions to prepare for liquidation

• Status Change for PRIME MMMF
  ▫ These are now ‘mutual funds’
  ▫ Floating NAV
  ▫ Not authorized under PFIA as a MMMF

  ▫ Essentially a Mutual Fund – not authorized for bond proceeds
Account Structures Give You Options

- Structure bank accounts with a “investment sweep”
- Sweeps balances to a MMMF each day
  - Acts like a pool for your funds until needed
- Eliminates balances for which you pay regulatory fee
- Eliminates balances for bank to collateralize

- MMMF is a security that you OWN
  - Place MMMF (with $1 NAV) in Investment policy
Direct Investment

• Investing in securities outside banks

• Yield curve changes have created opportunities
What is public investing?

- Managing risk
- Putting money to work.
  - Creating a performing asset
  - Building a portfolio to serve the entity
- Utilizing markets and products for entity benefit
- Adding yield but not risk to the portfolio
- Assuring cash efficiency and security
  - including banking arrangements
Basic Public Objectives

• Safety of principal
  ▫ Preservation of capital

• Liquidity
  ▫ Assuring that funds are available
  ▫ Covering known and unexpected expenses

• Diversification
  ▫ Avoiding risk of over-concentration

• Yield
  ▫ Making all the funds work

• How do we achieve the objectives?
How do I achieve Safety?

- Document all transactions
- Use competitive transactions
- Delivery versus Payment (DVP) Settlement
- Use independent counter-parties
- Establish controls and procedures
- Establish Collateral
  - Independent safekeeping and reporting
- Diversify
- Understand the various securities/opportunities
- Review and report regularly
- Review bank contracts
  - establish equality
  - review for practicality
- Recognize changes in your and the markets’ situation
How do I achieve **Liquidity**?

- Create and understand your cash flow
- Invest to fund known liabilities
- Maintain a small cash buffer for emergencies
- Use liquidity alternatives
  - Pools and MMMFs
- Buy high credit quality securities
  - High quality assures a secondary market
How do I achieve **Diversification**?

- **Create competition** in every transaction
  - Never rely on one institution or broker
  - Do not allow a broker to do competitive bidding for you

- **Diversify by type of security**
  - Knowledge of the alternative securities
  - Use securities that make sense for the period

- **Diversification maturity**
  - Create a ladder to meet your liabilities
How do I achieve Yield?

- Invest to your cash flow needs
- Reduce lower yielding balances at bank
- Know the securities and use appropriate ones for the time
- Assure there is always competition
- Know, compare and use your alternatives
- Monitor bank costs and structures
## Key Commonalities

<table>
<thead>
<tr>
<th>SAFETY</th>
<th>LIQUIDITY</th>
<th>DIVERSIFICATION</th>
<th>YIELD</th>
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<tbody>
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<td>cash flow</td>
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</tr>
<tr>
<td>credit quality</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Investment Process/Cycle

• A disciplined process which assures that circumstances then prevailing are being met:
  ✓ Identify risk tolerance levels
  ✓ Identify cash flow needs
  ✓ Set macro strategy
  ✓ Develop internal controls
  ✓ Write policy
  ✓ Structure the portfolio strategy and execute
  ✓ Report and monitor
Step 1: Identifying and Managing Risks

• Risks occur in every investment
• Risks occur within the custody area
• Risks occur with counter-parties

• Risks occur internally
• Risk can not be avoided
• Risk can be managed

• Identify your risk tolerance level
Risk, Return and Strategy are Intrinsically Linked

- Your strategy and opportunities will depend on:
  - Your resources and risk tolerance
  - Your cash flow
  - The time you spend
  - The economic conditions
  - The geo-political conditions

- Can be dependent on your economic view
Managing Credit Risk

- **Credit Risk**
  - The risk of issuer failure
    - Inability to pay interest or principal
    - PFIA requires monitoring and action on credit rating downgrade
    - PFIA authorized investments face little credit risk
Managing Credit Risk

- Restrict portfolio to the highest credit ratings
- Monitor credits
- Prepare a process ready for credit downgrades
- Diversify
- Limit maximum maturities
- Require dual ratings
  - Two views are better than one
- Utilize credit rating agencies
  - Understand when they are being political too!
  - Understand the rating definitions
- Monitor the markets periodically
## Know Where Ratings Are

<table>
<thead>
<tr>
<th>Description</th>
<th>S&amp;P</th>
<th>Moody’s</th>
<th>Fitch</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extremely strong capacity – very low expectation of default</td>
<td>AAA</td>
<td>Aaa</td>
<td>aaa</td>
</tr>
<tr>
<td>Very high credit &amp; strong capacity - low default expectation</td>
<td>AA</td>
<td>Aa</td>
<td>aa</td>
</tr>
<tr>
<td>Somewhat susceptible to adverse conditions – low default risk</td>
<td>A</td>
<td>A</td>
<td>a</td>
</tr>
<tr>
<td>Adequate capacity but subject to adverse conditions</td>
<td>BBB</td>
<td>Baa</td>
<td>bbb</td>
</tr>
<tr>
<td>Lowest investment grade</td>
<td>BBB-</td>
<td>Ba</td>
<td>b</td>
</tr>
</tbody>
</table>

Many pools and funds are not rated on these but on ‘volatility’ ratings such as V-1. Money market instruments (like CP) have similar levels but different ratings (A1/P1).
Liquidity Risk

- **Liquidity Risk**
  - The risk of not having cash when needed
  - The inability to sell security when needed for cash
  - Public funds’ biggest risk
    - Danger that it forces many to stay TOO liquid

- **Managing Liquidity Risk**
  - Do your cash flow
  - Create a “liquidity buffer”
Market Risks

• **Market Risk**
  ▪ The risk that market prices will fall
  ▪ Lower prices threatens liquidity
    • If you can not sell at a loss
  ▪ If sold you might recognize a loss of principal
    • If not sold it is an “unrealized” loss and no threat

• **Volatility Risk (the “Fear Index”)**
  ▪ The risk of significant changes in market prices
  ▪ Higher the volatility = higher risk
  ▪ Volatility increases with longer maturities, low credit and structured securities
Managing Event Risk

• **Event Risk**
  ▫ An unforeseen change that affects markets.
  ▫ Moves markets especially with *uncertainty*
    • “Risk –On” and “Risk-Off” (as in put your risk hat on)

• **Managing Event Risk**
  ▫ Diversification
Security Structure Risk

• Extension Risk
  ▫ Risk that securities lengthen in maturity unexpectedly
  ▫ Primarily in mortgage backed securities
    • when mortgage rates rise people do not refinance

• Re-Investment Risk
  ▫ Risk that reinvestment will be at lower rates
  ▫ Primarily in callable securities
    • when they are called as rates fall
Non-Market Risks

• Counterparty risk
  ▫ Broker background checks
  ▫ FINRA registration
  ▫ Independent safekeeping outside brokerage

• Banking risks
  ▫ Reconciliation within 30 days
  ▫ Verify availability of funds
  ▫ Continuously monitor cost of services with account analysis

• Employee risk
  ▫ Separation of duties
  ▫ Oversight and cross training
  ▫ Cash controls like numbered receipts, safes, assigned tills
Technology’s Risks

• **Employee controls**
  ▫ Pin numbers and separation
  ▫ Limited access to applications
  ▫ Stand alone computer access

• **Bank fraud controls**
  ▫ Filters/blocks on ACH
  ▫ Payee positive pay
Safekeeping and Custody Risk

- **Custody Risk**
  - Custody of pledged securities
  - Risk to proof of the pledge
  - Risk to control of the pledge

- **Safekeeping Risk**
  - Safekeeping of securities you own
  - Risk to your proof of ownership
    - Proving your ownership
Safekeeping Accounts

Safekeeping accounts are not regular bank accounts but must be tied to a demand deposit account (DDA) so that money that buys a security can only flow back to the same account. These accounts are in the securities clearing section of the bank and assigned by name.
Key Custody and Safekeeping Factors

• Custodian must be **independent**
• Custodian should **report to you** directly
• Custodian should **verify** authorized collateral and margin
• Custodians rarely mark-to-market
• You **chose** your safekeeping agent
• You **approve** your custodian
Safekeeping Transaction Costs

- **Custody Costs**
  - Basically 10-12 basis points (0.0010-0.0012)
  - May be cheaper if you use the bank as a broker...but involves risk

- **Safekeeping Fees considered**
  - May be hard or analysis cost from your bank
    - Clearing fees
      - Settling the security into your safekeeping account
      - DVP costs nothing more and is required
  - Safekeeping fees
    - By cusip or Par and different for FRB or DTC
  - Income distribution fees
    - Maturities, coupons, calls
Collateral Risk

• FDIC and collateral issues

• Bank Collateral
  ▫ Securities pledged to repay a debt
  ▫ Deposits protected by FDIC and collateral
  ▫ Covered by Public Funds Collateral Act
    • (Local Government Code, Chapter 2257)

• Manage the risk by answering:
  ▫ What is acceptable collateral to me?
  ▫ Is there enough of it?
  ▫ Is the collateral pledged specifically to the City – can I prove it?
Managing Collateral Risk

• Define authorized collateral (in policy and RFP)
  ▫ “Obligations of the US Government, its agencies and instrumentalities, including mortgage backed securities and CMO passing the bank test”
  ▫ Monitored and maintained by the bank at all times.
  ▫ Reports monthly from custodian

• The options by law include:
  ▫ Surety bonds
  ▫ Treasury notes and bills
  ▫ US Agencies
  ▫ Municipals rated A or better
  ▫ Letters of Credit
“Events of Default”

- Event of default
  - Bank fails and is closed/sold by regulator
  - Bank does not uphold contract

- If there is an event of default
  - Initial 3-day ‘cure’ period
  - Notify custodian to secure the collateral
  - Your custodian becomes your bailee
  - Without a cure securities can be sold by public entity
It all comes back to FIRREA

- “Financial Institutions Resource, Recovery and Enforcement Act”
  - Regulation used by FDIC in bank closures
  - Key components must be followed

- Requirements:
  1. depository/collateral agreement be in writing
  2. agreement be approved by resolution of the Bank Board or Bank Loan Committee
  3. resolution must be in ‘official’ bank records
  4. must not contain a list of specific securities pledged
Collateral Reports

• Investment officer’s responsibility

• Do you/Can you verify contents
  ▫ What value is substitution verification?

• New move to money center banks and inquiry
  ▫ Adding inquiry and daily pricing
Collateral Control

- Collateral covers deposits over FDIC insurance
  - by tax id and type of account

- Collateral is **pledged** not owned

- Set the margin at 102% to protect from price volatility

- Establish **independent** custody

- Require independent monthly **reporting**
  - 2013 change in PFCA requires you to request reports
The Fed as Custodian

- Many banks are moving from the Federal Reserve custody
  - Move to State Street, Bank of NY or FHLB for cost

- Only Fed Standard Pledgee Agreement Form is used

- Supplements the Collateral Agreement
  - Reference the ‘Circular 7’ in your agreement

- Fed will ask for authority to use e-mail to contact you
The Fed as Collateral Custodian

The Fed will only sign this form.
Fed Confirmation E-Mails

Authorizing use of e-mail for contact purposes
Recent Circular 7
Change Notification

• **Fed is acting to protect investors**
  ▫ The pledgee (the investor) has control
  ▫ Contract must require bank to monitor and maintain collateral levels

• **Treatment of principal**
  ▫ Principal will be held in non-interest bearing account until the earliest of:
    • New securities are substituted
    • Principal is released by pledgee (public entity)
    • Principal collected by pledgee on event of default

• **Treatment of MBS (amortizing book-entry security)**
  ▫ Principal will be held in non-interest bearing account until the earliest of same three conditions

• **Treatment of interest**
  ▫ Interest goes to the pledgor (bank) unless written notification of event of default
Banks are Changing Custodians

- Expense factor
- Safekeeping of own securities eases transfers
- Security remains the same
Collateral Pooling

- **Voluntary** – bank and public entity
  - Not applied to counties or higher education
  - Either party can withdraw in 90 days

- May return under new rules from Comptroller

- Was not in use because of unworkable rules
  - Exclusion of collateral types used heavily by banks
  - Reporting requirements and liability of public entities
Repo Sweep Caution

- **Repo Sweeps** pose a unique risk
  - Segregation of assets not a buy-sell transaction

- Collateral is *segregated* not bought and sold

- As a sweep, repo must be established as buy-sell

- Unclear FDIC construction by bank could cause loss
Monitor Your Bank

- Know your depository
- Understand the collateral terms and agreement
- Check collateral report monthly from custodian
- Take action if necessary
Bank Rating Services

VERIBANC, Inc.
The B.E.S.T. Banking Investment - Post Office Box 4119 - Woonsocket, Rhode Island 02895
1-800-837-4228 - www.veribanc.com

INSTANT RATING CONFIRMATION

<table>
<thead>
<tr>
<th>ID#</th>
<th>Institution Name</th>
<th>City, State</th>
<th>Type</th>
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<tbody>
<tr>
<td>000348534</td>
<td>STABANCY BANK</td>
<td>AUSTIN, TX</td>
<td>SA</td>
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</table>

Color Code And Star Rating for Period Ending

<table>
<thead>
<tr>
<th>Date</th>
<th>Rating</th>
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<tbody>
<tr>
<td>08/31/06</td>
<td>YELLOW/**</td>
</tr>
<tr>
<td>12/31/06</td>
<td>GREEN/***</td>
</tr>
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<td>03/30/07</td>
<td>GREEN/***</td>
</tr>
<tr>
<td>06/30/07</td>
<td>GREEN/***</td>
</tr>
</tbody>
</table>

SA = Savings Association

Today: 08/06/2006 your credit card has been charged: $ 10.00
Order No: 251006302000223
Thank you for ordering our instant ratings. Additional information is available on the institution(s) you have selected. Please call for more details. Next new information is expected in September 2008.

VERIBANC, Inc.

EARLY DATA

Occasionally, one type of institution's data becomes available considerably before information for other kinds of banking firms is released. For example, credit union financial reports can be received at VERIBANC as much as one month before bank or savings associations (S&L) data. When this situation occurs, the “EARLY DATA” column on the reverse side of this page is used and the applicable date is printed beneath the ratings. This procedure allows all four past quarters of ratings for other types of institutions (e.g., banks and S&Ls) to continue to be displayed. The “EARLY DATA” column is also used when an institution supplies very recent data to VERIBANC for the purpose of establishing a “provisional” rating. The provisional rating, developed from data that has not been reviewed by any government agency, represents VERIBANC's policy that a provisional rating (denoted by the symbol *) can never be lower than the current actual rating which is based on federally reviewed data.

DESCRIPTION OF RATING CRITERIA: COLOR CLASSIFICATION

VERIBANC's color code is a quick-look measure of an institution's condition based on its equity strength and profitability. Three colors are used - GREEN, YELLOW and RED. The criteria by which VERIBANC determines the color category for an institution are as follows:

GREEN  The institution's equity is five percent or more of its assets and it had positive net income during the most recent reporting period. Of the three color categories, this is the highest based on the criteria described.

YELLOW  The institution's equity is between three and five percent of its assets or it has incurred a net loss during the most recent reporting period. Both of these conditions may apply. If there is a net loss, the loss was not sufficient to erode a significant portion of the institution's equity. The items that result in a YELLOW classification merit your attention.

RED  The institution's equity is less than three percent of its assets or it has incurred a significant net loss during the most recent reporting period. The items that result in a RED classification deserve your close attention.
HIGHLINE and BEST Bank Rating Agencies
Step 2: Cash Flow

- Identifies when funds are needed
- Protects your liquidity
- Improves investment returns
- Establishes policy parameters
  - Maximum maturity
  - Maximum weighted average maturity
  - Risk benchmarks
- Promotes safe maturity extensions
- Defines your portfolio
Time Horizons Set Strategies

• Think and build your portfolio around time horizons

• Cash flows allows you to act pro-actively
  ▫ Provides comfort that necessary funds are available
  ▫ Allows some extension by recognizing future flows

• Defines the portions of your portfolio
  ▫ And from that the strategy for each

• Yield is not the end-game but an added benefit
Debt Service Time Horizons

- A $2 mm debt payment is scheduled out 6 months
- $400,000 is paid in each month to meet debt service
- Staying liquid over the 6 months earns $14,000
- Investing each successive month at rates shown earns $16,333

<table>
<thead>
<tr>
<th>Horizon</th>
<th>Yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overnite</td>
<td>2.0 %</td>
</tr>
<tr>
<td>1 month</td>
<td>2.1 %</td>
</tr>
<tr>
<td>2 months</td>
<td>2.2 %</td>
</tr>
<tr>
<td>3 months</td>
<td>2.3 %</td>
</tr>
<tr>
<td>4 months</td>
<td>2.4 %</td>
</tr>
<tr>
<td>5 months</td>
<td>2.5 %</td>
</tr>
</tbody>
</table>
Two Approaches

- Different approaches to doing and acting

- **Traditional** approach details
  - Define all variables
  - Build on extensive historical data
  - Extensive analytics for forecasting

- **Expense Orientation** approach simplifies
  - Limit the elements being analyzed
  - Designed to get going faster

- Both approaches have same goal
  - Present viable information for decision-making
  - Develop parameters for portfolio structure
  - Limiting liquidity risk
The 80-20 Rule

• Regardless of approach
  ▫ Capturing every detail can be overwhelming in detail
  ▫ Can be difficult to maintain
  
  ▫ 80% of expenses come from 20% of expense categories
    • Payroll and fringes probably account for 80%
  
  ▫ 80% of revenues come from 20% of revenue sources
    • Taxes, state payments or fees probably account for 80%
  
• Capture the key elements
  ▫ Summarize remaining “other” amounts and focus
Traditional Cash Flow

- Building on a historical base
  - Selection and refinement is critical

- Captures more detailed information
  - Use of 80-20% rule
  - Multiple categories

- Initially captures historical data
  - Builds on linked spreadsheets normally

- End result in net cash flow
  - Multiple years highlight and smooth aberrations

![Cash Flow Table](image-url)
## Traditional Category History

<table>
<thead>
<tr>
<th></th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
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</thead>
<tbody>
<tr>
<td><strong>Revenues</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Taxes</td>
<td>8,500,000</td>
<td>7,000,000</td>
<td>3,500,000</td>
<td>750,000</td>
<td>1,000,000</td>
<td>2,000,000</td>
<td>1,000,000</td>
</tr>
<tr>
<td>State $$</td>
<td>250,000</td>
<td>200,000</td>
<td>200,000</td>
<td>200,000</td>
<td>250,000</td>
<td>300,000</td>
<td>300,000</td>
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<tr>
<td>Svc Fees</td>
<td>150,000</td>
<td>150,000</td>
<td>250,000</td>
<td>275,000</td>
<td>400,000</td>
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<tr>
<td>Utility</td>
<td>2,000,000</td>
<td>350,000</td>
<td>433,000</td>
<td>400,500</td>
<td>600,000</td>
<td>700,000</td>
<td>750,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>10,900,000</td>
<td>7,700,000</td>
<td>4,383,000</td>
<td>1,625,500</td>
<td>2,250,000</td>
<td>3,400,000</td>
<td>2,450,000</td>
</tr>
<tr>
<td><strong>Expenses</strong></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Salaries</td>
<td>2,000,000</td>
<td>2,000,000</td>
<td>2,000,000</td>
<td>2,000,000</td>
<td>2,000,000</td>
<td>2,000,000</td>
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<tr>
<td>Contracts</td>
<td>300,000</td>
<td>300,000</td>
<td>350,000</td>
<td>450,000</td>
<td>645,000</td>
<td>875,000</td>
<td>750,000</td>
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<tr>
<td>Capital</td>
<td>300,000</td>
<td>200,000</td>
<td>400,000</td>
<td>500,000</td>
<td>400,000</td>
<td>450,000</td>
<td>500,000</td>
</tr>
<tr>
<td>Debt Svc</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2,000,000</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>2,600,000</td>
<td>2,500,000</td>
<td>4,750,000</td>
<td>2,950,000</td>
<td>3,045,000</td>
<td>3,325,000</td>
<td>3,250,000</td>
</tr>
<tr>
<td><strong>Net Cash</strong></td>
<td>8,300,000</td>
<td>5,200,000</td>
<td>-367,000</td>
<td>-1,324,500</td>
<td>-795,000</td>
<td>75,000</td>
<td>-800,000</td>
</tr>
</tbody>
</table>
## Multi-year Layering Smoothes Info

<table>
<thead>
<tr>
<th></th>
<th>JAN</th>
<th>FEB</th>
</tr>
</thead>
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<tr>
<td><strong>REVENUES</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td>10,998,532</td>
<td>9,848,555</td>
</tr>
<tr>
<td>2015</td>
<td>15,973,535</td>
<td>4,595,222</td>
</tr>
<tr>
<td>2016</td>
<td>10,595,555</td>
<td>9,500,123</td>
</tr>
<tr>
<td>AVG</td>
<td>12,522,540</td>
<td>7,981,300</td>
</tr>
<tr>
<td><strong>EXPENSES</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td>8,126,666</td>
<td>7,222,001</td>
</tr>
<tr>
<td>2015</td>
<td>10,565,956</td>
<td>8,000,000</td>
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<tr>
<td>2016</td>
<td>7,203,654</td>
<td>7,010,123</td>
</tr>
<tr>
<td>AVG</td>
<td>8,632,092</td>
<td>7,410,708</td>
</tr>
<tr>
<td>NET Funds</td>
<td>3,890,448</td>
<td>570,592</td>
</tr>
</tbody>
</table>

- Layering each year’s history allows an average
- Building off history allows you to compute monthly future flows
- Historical % used on new budget creates a forecast
- Tie the summary sheet to detail sheets per year
  - Layering years takes out one year aberrations.
Expense Orientation Approach

- Focusing on balance required to pay expenses
  - Use historical needs and a buffer to set investment requirements
  - Ongoing use builds the traditional information

- You can create the basic cash flow in your head
  - How much is your payroll each month?
  - How much is your accounts payable each month?
  - When are your debt service payments? How much?

- Adding a ‘liquidity buffer’ provides for the unexpected
This entity needs $3 million each month but only needs one investment.

<table>
<thead>
<tr>
<th>S</th>
<th>M</th>
<th>T</th>
<th>W</th>
<th>TH</th>
<th>F</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>Payables $250,000</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>8</td>
<td>9</td>
<td>10</td>
<td>11</td>
<td>Payables $250,000</td>
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<td>15</td>
<td>16</td>
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<td>Payables $250,000</td>
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<td>20</td>
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<tr>
<td>22</td>
<td>23</td>
<td>24</td>
<td>25</td>
<td>Payables $250,000</td>
<td>26</td>
<td>27</td>
</tr>
</tbody>
</table>
Debt Service Based on Need

This entity has two debt service payments: February and August.
Funds for debt service flow in from tax payments first 6 months.
Balances build in these front months.
Keeping funds liquid leaves them at the lowest possible rate.

We need to make these funds work.
An overview of the cash flow needs allows the investor to look ahead. The flow in Jan. alone covers the February payment. The net balances of each other month can be invested 11, 9, 8 and 6 months.
We use the excess balances not needed for the next month and extend.

Three excess balances result in 3-month investments.

The cash flow knowledge allows Sept. to be extended to 8-month investment.
Everyone has a CORE Portfolio
Measuring and Using the Core

- A core is money you have not touched for an extended period
  - allows you to extend the portfolio
- If you have no core you have a maximum maturity of one year or less

- Your WAM should fit the cycles of your cash flow
- Your WAM will set a benchmark to compare risk

What is the apparent maximum maturity and WAM of each of these?
Strategies are a must on capital projects

- Often A large nonrecurring expenditure
  - unique cash flow
  - like projects can show trends

- Preliminary work with departments
  - Set expenditure plan before funds arrive
  - Bond documents contain basic plans

- Ongoing updates to departments
  - Builds trust and good plan
  - Explain impact of investment

- Explain to generate support
  - Impact of additional earnings
  - Arbitrage impacts
Step 3: Policy Backup

- Required for all governments in Texas
  - Must be written
  - Must emphasize safety and liquidity
  - Must address
    - diversification, max maturity, capability of IO, and yield
  - Must be approved and adopted by governing body
    - Rule, order, or ordinance

- The Policy reflects the Act
  - Must be flexible but also create controls
  - Must consider the core
Investment Policy Elements

• Scope and Legal Background
  ▫ This Policy applies to all funds under City control.

• Objectives
  ▫ Safety, liquidity, diversification and yield
  ▫ Define not just state the objectives

• Statement of Intent
  It is our policy to invest in a manner which will provide a reasonable market yield with maximum security while meeting cash flow needs and conforming to all state and local statutes.
Investment Policy or Procedures

• **Assignment of Responsibilities**

• **Investment Officer Responsibilities**
  ▫ The Finance Director is designated as the Investment Officer and is responsible for all investment decisions and activities.
  ▫ The Officer will receive training every two years
  ▫ The officer will develop procedures and controls.
  ▫ The officer will not be personally liable if the policy and procedures are followed.

• **Council Responsibility**
  ▫ The Council shall adopt the Policy annually
  ▫ The Council shall accept reports
  ▫ The Council review broker/dealer lists annually.
Investment Policy Clarifications

- **Authorized Investments**
  - Authorized investments include *only* the following
  - Set the maximum maturity for each security type at time of purchase
  - Set credit criteria
  - Set additional requirements by type
  - Add or delete securities to accommodate your and market situations

*Example:*
Authorized investment under this Policy shall be limited to the instruments listed below and as further defined by the PFIA.
- Obligations of the US, its agencies and instrumentalities, excluding CMOs, with a stated final maturity less than 2 years
- Fully collateralized or insured CDs of banks doing business in TX...collateralized in accordance with this policy
- FDIC insured CDs from any state

All security transactions will be made on a competitive basis.
Policy Controls for Brokered CD Securities

- Differentiate from “depository” CD
  - Define issuers
  - Take possession DVP
  - Check

- FDIC insured brokered certificates of deposit securities from a bank in any US state, delivered versus payment to the safekeeping agent, not to exceed one year to maturity. Before purchase, the Investment Officer must verify the FDIC status of the bank on fdic.gov to assure that the bank is FDIC insured.
Monitoring Procedure: Brokered CD Security

- Even more important than credit ratings

- Difference created by FDIC coverage limited to $250,000
  - No reprieve for mergers and acquisitions

- The Investment Officer shall monitor, on no less than a weekly basis, the status and ownership of all banks issuing brokered CDs owned based upon information from the FDIC. If any bank has been acquired or merged with another bank in which brokered CDs are owned, the Investment Officer shall immediately liquidate any brokered CD which exceeds the FDIC insurance level.
Monitoring Credit Control

- **Monitoring credit** on securities requiring rating
  - Commercial paper
  - Bankers Acceptances
  - State and Local government bonds
  - (Corporate bonds – only for higher education)
  - Pools

- **Policy must have a procedure to monitor ratings**
  - Act: “an investment that requires a minimum rating...does not qualify during period without minimum rating...take all prudent measures to liquidate...”
Monitoring Credit Policy Language Choice #1

• The Officer shall monitor on a monthly basis, the credit rating on all authorized investments requiring a rating based on independent information from a nationally recognized rating agency.

• If the security falls below the minimum rating, the Officer will notify------ of the loss of rating, conditions affecting the rating and possible loss of principal along with liquidation alternatives available for action within two weeks of the loss of rating.
Monitoring Credit Policy Language Choice #2

- The Officer, or adviser, shall monitor on a monthly basis, the credit rating on all authorized investments requiring a rating based on independent information from a nationally recognized rating agency.

- If the security falls below the minimum rating, the Investment Officer shall immediately solicit bids for and sell the security, if possible, regardless of loss of principal.
A Diversification Table Can Embed Additional Controls

<table>
<thead>
<tr>
<th>Security Type</th>
<th>Max % of Portfolio</th>
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</thead>
<tbody>
<tr>
<td>Treasuries</td>
<td>80 %</td>
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<tr>
<td>Agencies</td>
<td>70 %</td>
</tr>
<tr>
<td>Depository CD</td>
<td>40 %</td>
</tr>
<tr>
<td>% by bank</td>
<td>20 %</td>
</tr>
<tr>
<td>Brokered CD</td>
<td>20 %</td>
</tr>
<tr>
<td>Limit per bank</td>
<td>$250,000</td>
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<tr>
<td>CP</td>
<td>20 %</td>
</tr>
<tr>
<td>% by issuer</td>
<td>10 %</td>
</tr>
<tr>
<td>Constant $ Pools</td>
<td>100 %</td>
</tr>
<tr>
<td>% of pool</td>
<td>10 %</td>
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<tr>
<td>MMMF</td>
<td>40 %</td>
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<tr>
<td>Bank Accounts</td>
<td>60%</td>
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</tbody>
</table>
Investment Procedures

• **Internal Controls**

• The Investment Officer will create internal procedures to control fraud, collusion, errors,...

• Control areas
  ▫ Cash flow
  ▫ DVP
  ▫ competitive bidding
  ▫ monitoring credit
  ▫ monitoring FDIC status
Investment Procedures

- **Broker/Dealer Requirements**
  - Certification requirements for anyone selling you an investment
    - Pools and *discretionary manager* only (9/1/17)

A list of no more than five brokers will be maintained and reviewed by the Council annually.

Every pool and business organization will be provided a copy of this Policy and must certify to having read it and not sell any investments not authorized by Policy.

*Limiting brokers for efficiency*
*Adding brokers for competition*
Investment Controls

• Ethics and Conflicts of Interest
  ▫ Standards and Disclosure

Officers will refrain from personal business that would conflict with proper and impartial execution of their duties. All personal and business relationships with entities doing business with the District will be disclosed to -------------. 
Investment Policy

• Collateral
  ▫ Authorized types, margin (102%), reporting
  ▫ Reporting from custodian if possible

In order to anticipate market changes, 102% collateral will be required on all time and demand deposits. Acceptable collateral will include only:
  - Obligations of US and agencies including MBS passing the bank test
  - State and local bonds rated A or better
  - FHLB Letters of credit

Substitution allowed with prior City approval or as approved by City. The Bank is responsible for maintaining collateral levels daily.

Custodian must be outside the holding company of pledging bank.
Investment Policy

- Safekeeping
  - Delivery versus payment
  - Independent safekeeping
  - No broker safekeeping

- Securities owned by the City will be safe-kept at its banking services depository and all security transactions will be made delivery versus payment.

- Safekeeping bank will not be used as a broker.
Investment Policy

• Performance Reporting
  Market prices to be derived from an independent source

  Reporting will comply with the PFIA at a minimum.

  The market prices will be obtained from an independent source.

  The City’s portfolio shall be designed for safety and liquidity and maintain a maximum ______ month weighted average maturity.

  The benchmark for the portfolio will be the average _____ month T-Bill rate for the same period to measure reasonable market yield.
Investment Policy

- **Investment Policy and Strategy Adoption**

  The **Policy and Strategy** shall be reviewed and adopted by resolution no less than annually by the City Council.

  The approval resolution **shall note any changes** to the Policy or strategy.

  Write approving resolution for **Policy and Strategy**
Possible Appendices

• Listing of changes to policy by year

• Statutes and ordinances or www. link

• Glossary

• Authorized brokers/dealers (annual approval)

• Change the approving resolution to Approval of the Policy, Strategy and Broker/Dealers
Step 4: Setting a Macro Strategy

• **Macro strategy**
  ▫ Policy statement from passivity or pro-activity
  ▫ Includes setting WAM and maximum maturity
  ▫ Requires annual review
  ▫ Must be flexible enough to adjust to market and internal conditions
  ▫ Must be adopted by the Council annually
    • Put in your policy
    • Assure that resolution approves both policy and strategy

• **Market Strategy**
  ▫ Changes daily and requires market information
What is a Macro Strategy?

• Sets the stage for an overall view of how the portfolio will function

• Sets your weighted average maturity (WAM)

• It must describe how you intend to obtain:
  ▫ Objective of investments: what actions and controls
  ▫ Suitability of instruments: all high credit quality
  ▫ Safety of Principal: high credit quality and safekeeping
  ▫ Liquidity: laddering and adding a liquidity buffer
  ▫ Marketability of investments: all with secondary markets
  ▫ Diversification: competition and moves with the markets
  ▫ Yield: competition, extensions to meet cash flows
Writing your macro strategy

- Commingling/combining is a key first step to a strategy

- Buy-and-hold not trading portfolio.

- Use its cash flow to structure the portfolio.

- Use only high-credit quality securities.

- Maximum maturity will be ____ months and the maximum weighted average maturity will be ____ months.
Sample Strategy for a Short Conservative Portfolio

The primary objective is liquidity and reasonable yield. Authorized securities or the pool used will be of the highest credit quality. When not matched to a liability it will be short term and liquid. The portfolio will be diversified to avoid market and credit risk. Diversification requirements can be met through a pool. Maximum WAM is 180 days.
Sample Strategy for a Short Conservative Pro-active Portfolio

- The primary objective is to invest in accordance with cash flow needs to produce a market yield.
- All securities will be of the highest credit quality.
- The portfolio will be structured as a ladder to match known liabilities and providing for a reasonable liquidity buffer for unexpected needs.
- The portfolio will be diversified to avoid market and credit risk.
- The maximum weighted average maturity will be six months.
Step 5: Procedures and Controls

- Controls are needed to manage risk
  - Put key steps in policy or supporting procedures

- Keep them short and practical

- Key areas:
  - Collateral and safekeeping
  - Trading procedures and counter-parties
  - Settlement by delivery versus payment
  - Competitive bidding
Documentation on Investments

- Each transaction must be documented
  - Document for archival/accounting purposes
  - Document for settlement purposes

- The Trade Ticket provides a history
  - Description of the security
  - Accounting information
  - Confirmation and verification of trade
  - Competitive bidding documentation
<table>
<thead>
<tr>
<th>Trade Information</th>
<th>Accounting Information</th>
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<tbody>
<tr>
<td>Settlement Date:</td>
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<tr>
<td>Fund:</td>
<td>Premium/&lt;Discount&gt;:</td>
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<tr>
<td>Security:</td>
<td>Principal:</td>
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<td>CUSIP:</td>
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<td></td>
<td>Accrued:</td>
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<tr>
<td>Coupon:</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Maturity:</td>
<td>Net Settlement:</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Competitive Bidding:</td>
<td>Daily Amortization:</td>
</tr>
<tr>
<td>@</td>
<td></td>
</tr>
<tr>
<td>@</td>
<td>Daily Accrued:</td>
</tr>
<tr>
<td>@</td>
<td></td>
</tr>
</tbody>
</table>
Counterparty Risk

• Contract Protection

• Banks
  ▫ Clearing, service provision, custody, collateral
  ▫ Set responsibilities and establish business relationship

• Custodians
  ▫ Processing control and reporting
  ▫ Assure reporting from the custodian

• Broker/Dealers
  ▫ Repurchase Agreements only contract
Counter-party: Safekeeping and DVP

• Don’t use your bank as a broker
  ▫ Not able to perfect ownership
  ▫ Always clear securities to your depository/safekeeping agent

• Never allow a broker/dealer to hold your securities
  ▫ PFIA makes it illegal: DVP is required
  ▫ PFIA is conflicted on some items – keep to DVP

• **DVP** is CRITICAL for **independence** and control
• Check your custody reports regularly.
Counter-party risks: Banking Controls

- Reconciliation
- Account analysis review
- Payment methodology according to rates
- Timely Reporting
- Availability Policies
- Independent safe-keeping
- Collateral
  - 102% level
  - reporting
  - Written agreement
Key Employee Controls

• Separate of transaction authority
  ▫ Separate transaction, accounting, and recordkeeping

• Delegate authority clearly
  ▫ Investment decision-making
  ▫ Subordinate staff limitations
  ▫ mandatory vacations/job rotation
  ▫ perform work during period

• Get and match written confirmations on all transactions

• Limit access to cash
Technology Needs Controls

- Wire Transfer Agreements
- Control and changes in PINs
- Log of system transactions
- Dollar Limits on accounts
- Positive Pay on accounts
- Filters and Blocks on ACH
- Credit cards, checks, fraud
- PCI compliance
- Remote Deposit use
- Designated money moving terminal
Banking Impacts Your Treasury

- A key element of Treasury
  - Timely receipt of funds
  - Safety of funds
  - Investment alternatives

- Structure of accounts
  - Type and use of accounts

- Services
  - Fraud services and cost efficiencies

- Collateral safety
Depository Law

- Local Government Code Chapter 105
  - For cities and school districts
  - Banks, CU or savings associations
  - Resolution for ETJ banks required (105.011b2)
  - Notice required (21 days from deadline)
  - Allows for more than one depository (105.015)
  - Term limit of 5 years (105.017)
  - Deposit of funds in 60 days
  - Collateral portions superceded by PFCA (Govt Code 2257)
Special Depositories

- Local Government Code Chapter 131
  - In case of a bank failure or business suspension or regulatory take-over
  - Local government can name special depository
  - Special depository is to pay entity all funds due within three years
Paying for Banking

• It all goes back to the cost
• It all depends on interest rates

• Fee Basis
  ▫ Paying the service fees directly in cash

• Compensating Balance
  ▫ Providing a balance which earns interest that then pays the fees
  ▫ The earnings credit rate (ECR) is used to earn the interest
ECR Rates Matter

- Pool rates are about 0.10%-0.15%
- ECR rates are 0.55%-0.70%
- Impact on balance and FDIC pass-through
- Should comp balance be on your investment report?

<table>
<thead>
<tr>
<th></th>
<th>$ 1,500</th>
<th>$ 1,500</th>
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</thead>
<tbody>
<tr>
<td>Fee</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECR</td>
<td>0.20%</td>
<td>0.70%</td>
</tr>
<tr>
<td>Balance Req.</td>
<td>$ 9,000,000</td>
<td>$ 2,500,000</td>
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<tr>
<td>FDIC Fee</td>
<td>$ 9,000</td>
<td>$ 2,500</td>
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</table>
At the Turning Point on Rates

- As the ECR goes down balance required goes up
  - Less earnings to pay for same fees
- As the balance goes up the FDIC fee goes up
  - Increased fees means higher balance required

<table>
<thead>
<tr>
<th>Balance in Bank</th>
<th>$ 6,000,000</th>
<th>$ 500,000</th>
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<tr>
<td>Fees to be paid</td>
<td>$ 1,500</td>
<td>$ 1,500</td>
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<tr>
<td>ECR @ 0.20%</td>
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<tr>
<td>Balance Requirement</td>
<td>$ 6,000,000</td>
<td>$ 00</td>
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<tr>
<td>Reserve (10%)</td>
<td>$ 600,000</td>
<td>$ 50,000</td>
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<tr>
<td>FDIC Fee</td>
<td>$ 1,750</td>
<td>$ 279</td>
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<tr>
<td>Balance for Outside Earn</td>
<td></td>
<td>$ 5,500,000</td>
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<tr>
<td>Total Earnings (at 0.45%)</td>
<td>$ 1,500</td>
<td>$ 2,062</td>
</tr>
<tr>
<td>Year Pick-up</td>
<td>$ 18,000</td>
<td>$ 24,744</td>
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</table>
Carry-Over Management

• Managed by you monthly
  ▫ Insist on quarterly/semi-annual carry-over
  ▫ Adjust your balances monthly before close

• Managed by an automatic sweep
  ▫ Sweep excess funds to a money market fund or account
  ▫ Have the sweep set at either:
    • Compensating balance amount
    • Zero
The All-important Account Analysis

Your invoice for service

District earned $4,078 but needed only $2,569

Left $1,509 behind

---

**BALANCE INFORMATION**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
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<tbody>
<tr>
<td>Average Ledger Balance</td>
<td>$15,781,757.58</td>
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<tr>
<td>Less Average Float</td>
<td>$47,131.01</td>
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<tr>
<td>Average Collected Balance</td>
<td>$15,734,626.57</td>
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<tr>
<td>Average Negative Collected Balance</td>
<td>$0.00</td>
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<tr>
<td>Average Positive Collected Balance</td>
<td>$15,734,626.56</td>
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</table>

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
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<tbody>
<tr>
<td>Positive Collected Balance</td>
<td>$15,734,626.56</td>
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<tr>
<td>Less Legal Reserve</td>
<td>$1,573,462.66</td>
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<tr>
<td>Investable Balance for Earnings Allowance</td>
<td>$14,161,163.90</td>
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</table>

**EARNINGS ALLOWANCE INFORMATION**

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<thead>
<tr>
<th>Description</th>
<th>Average Balances</th>
<th>Rate</th>
<th>Amount</th>
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<tr>
<td>Earnings Allowance on Positive Balance</td>
<td>$14,161,163.90</td>
<td>0.3400%</td>
<td>$4,078.13</td>
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<tr>
<td>Expenses on Negative Collected Balance</td>
<td>$0.00</td>
<td>3.2500%</td>
<td>$0.00</td>
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**ACCOUNT POSITION**

<table>
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<tr>
<th>Description</th>
<th>Amount</th>
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<tr>
<td>Less Price of Services Used</td>
<td>$2,569.42</td>
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<td>Equalization Factor</td>
<td>$0.00</td>
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<td>Amount Due</td>
<td>$0.00</td>
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### ANALYSIS STATEMENT

Member FDIC

GROUP SUMMARY ANALYSIS
BANK AND COST CENTER NUMBER 099 00002363

DATE PREPARED 05-04-11
MONTH ENDING 04-30-11
MONTHLY SETTLEMENT 04-30-11
SETTLEMENT & ACCOUNT TYPE DEBIT 500
OFFICER NUMBER PNAT 2 OF 19

<table>
<thead>
<tr>
<th>SERVICE</th>
<th>NUMBER OF UNITS</th>
<th>UNIT PRICE</th>
<th>SERVICE CHARGE</th>
<th>BALANCE REQUIRED</th>
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<tr>
<td>FDIC ASSESSMENT</td>
<td>531.49%</td>
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<td>200,576.19</td>
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<td>DEPOSITORY SERVICES</td>
<td></td>
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<td>ACCOUNT MAINTENANCE</td>
<td>6</td>
<td>7.0000</td>
<td>42.00</td>
<td>166,000.00</td>
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<td>VAULT DEPOSIT</td>
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<td>0.2500</td>
<td>44.50</td>
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<td>ITEM PROCESSING DEPOSIT</td>
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<td>GENERAL CHECKS PAID TRUNCATED</td>
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<td>ZBA MAJOR ACCOUNT MAINT</td>
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<td>RETURNS-RECEIVER</td>
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<td>CSS DEP UN-ENCODED ITEMS</td>
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<td>0.0700</td>
<td>75.29</td>
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<td>STOP PAY AUTOMATED&lt;=12 MONTHS</td>
<td>1</td>
<td>3.0000</td>
<td>3.00</td>
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<td>DEBITS POSTED-ELECTRONIC</td>
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<td>0.0500</td>
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<td>CREDITS POSTED-ELECTRONIC</td>
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<td>DEPOSIT ACCOUNT STATEMENTS</td>
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<tr>
<td>GEN DISC CSS FD-DS FRONT IMP</td>
<td>39</td>
<td>0.7000</td>
<td>2.70</td>
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<tr>
<td>IMAGE DEPOSIT</td>
<td>44</td>
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<td>44.00</td>
<td>152,952.50</td>
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<tr>
<td>IRD DEPOSITED ITEMS-ROSO</td>
<td>9</td>
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<td>0.00</td>
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<td>IMAGE DEPOSITED ITEMS-ROSO</td>
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<td>0.0850</td>
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<td>COMMERCIAL DEPS-CASH VAULT</td>
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<td>CLR/CURR DEP/5100-VLT</td>
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<td>GENERAL ACH SERVICES</td>
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Volume * price = Fee or Balance Required
Create a monthly CHECKLIST for your analysis fees.

<table>
<thead>
<tr>
<th>Service Description</th>
<th>Mo. Vol</th>
<th>Contract Fee</th>
<th>Total Cost</th>
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</thead>
<tbody>
<tr>
<td>Master Account Maintenance Fee</td>
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<td></td>
</tr>
<tr>
<td>Subsidiary Account Maintenance</td>
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<td>0.00</td>
<td></td>
</tr>
<tr>
<td>Money Market Account Maintenance Fee</td>
<td>8.0000</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>Investment Sweep Maintenance</td>
<td>50.0000</td>
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<td></td>
</tr>
<tr>
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A critical monthly responsibility and control

From the monthly account analysis, input the volumes for each service.

Match the total fees in the spreadsheet to the account analysis.

If they do not match then a fee is wrong.

Check it!
Sweeps expedite funds plus allow you to automatically drill down to a comp balance or to zero balance.
Evaluating Banks

- **Services**
  - Basic versus enhanced services
  - Does the bank keep up with technology?

- **Fees**
  - Transition or retention incentives?
  - Adjust for bundled services
  - Compare apples to apples

- **Earnings**
  - Look at ECR, interest bearing, MMA and sweeps
Bank Focus #1: Safety & Fraud

- **Same old issues: safety and service**
  - Collateral and margins
  - FDIC coverage
  - Bank credit
  - Delivery versus payment settlement
  - Independent transactions and parties

- **New approaches**
  - Electronic processing
  - Payee positive pay
  - Courier options
  - Pooling of collateral
  - Security sign-ons (PINS and secure-cards)
  - Online investment access
Positive Pay & Payee PP

- A requirement for safety
- Relieves liability for fraudulent checks received
  - Add payee positive pay for double fraud protection

- District sends bank the check register
  - PP is check number and amount, Payee adds payee name
- Data base of valid checks screens all checks received
  - Check number and amount standard
  - New developments on payee and signatures
- District gets option to review and approve

- *Without positive pay* District retains liability
Reconciliation (ARP)

- Partial Reconciliation
  - paid check report

- Full Reconciliation
  - matches issued and paid
  - outstanding items, voids & cancels

- Deposit Reconciliation
  - Location identification

- Combining with Positive Pay
  - Price savings
  - Staff time savings
Mobile Access

- Smart phone applications

- Retrieve balance and transaction detail
  - Positive pay exceptions
  - Event messaging

- Usually no cost

- Security considerations
Bank Focus #2: Expediting funds

• Move funds and documents
  ▫ as expeditiously and efficiently as possible

• Use technology to minimize cost

• Use technology to increase access to funds
  ▫ for longer earning period

• Use physical and electronic services
  ▫ May require changing internal processes
E-Commerce and E-Funding

E-Payables and E-Receiveds
• Converting paper to electronic transactions

• EDI: Not a technology – a change in process
  ▫ Electronic data interchange

• Extending bank operations

• Major cost-savings developments
Virtual Payables

- Single Use Accounts (SUA)
- Non-plastic card electronic payment (virtual card)
  - Expiration date control
- Can increase rebate potential
- Supplier receives payment immediately – payor pays on statement date

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<td>Cut check</td>
<td>Generate single use account online</td>
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<td>4</td>
<td>Mail check to vendor</td>
<td>Email payment info to vendor</td>
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<td>5</td>
<td>Vendor cashes check</td>
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<td>6</td>
<td>Manual reconciliation</td>
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RCK - Represented Check

• Transforming NSF consumer checks to ACH

• NSF checks are not represented next day
• NSF checks converted to ACH
• ACH direct debits are processed on a specific date

• Increased collections benefit
New Options

- **Smart Safes**
  - Onsite deposit
  - Coin/currency
  - Deposit CR same day
  - Printed receipt
  - Counterfeit bill check
  - Armored car pick-ups

- **Check Printing**
  - Send file to printer
  - Processing & printing
  - Mailing
  - Image to District
  - Possible reduced USPS
Cards Abound

- **Stored Value Cards**
  - Originally for payroll alternative ("pay card")
  - Creates a debit card for employees
  - Internal Payroll Processed as direct deposit
    - Funds go to the card
  - Stops liability for lost checks
  - Cost significantly lower than checks

- **Commercial cards/ Purchasing Cards**
  - Rebate possibilities
  - Purchasing cards contain filters
    - Dollar/day, dollar/mo, merchant codes, etc.
Remote Check Acceptance

- On-site scanning of checks received
- Transmission of scanned image: check and coupons
  - Customization of fields
  - Imaged and archived information
- Scan and send from cashier or back office
- Savings
  - Float savings on deposit speed
  - Courier (or staff transit) savings
  - Liability savings
  - Extended deposit times (9:00pm)
Smart Safes

- Armored car services
- Deposit daily – credit received daily
- Physical deposit can be delayed
Check Printing

• Send the check file to your bank

• District check information

• Checks are printed, stuffed and mailed
Controlled Disbursement

- Outdated? Use of alternatives limit use
- Sweeps eliminate usefulness
  - Cost is lower to sweep
- Using remote bank to clear checks
- Cash management purposes - not delay
- Elimination with electronic capture
- Additional costs make it less than worthwhile
Merchant Services Fees

• Merchant Service Providers
  ▫ Can be banks or other providers

• Payment Company Fees
  ▫ Differ by type “merchant”

• Merchant Service Provider Fees
  ▫ Set $ fee and % fee
  ▫ Dependent on your size/volume of payments
Investment Process/Cycle

- Continuing the process which verifies that circumstances then prevailing are being met:
  - Identify risk tolerance levels
  - Identify cash flow needs
  - Set macro strategy
  - Develop internal controls
  - Write policy
  - Structure the portfolio strategy and execute
  - Report and monitor
Benefits of Commingling

• Think through the portfolio structure
  ▫ Radically different fund types need a separate policy

• Separate portfolios
  ▫ Require separate accounting
  ▫ May cause liquidity problems
  ▫ Can reduce yield by requiring liquidity balances

• Commingled portfolios
  ▫ Can still address unique needs of funds
  ▫ Smaller liquidity needs may allow more extensions
  ▫ Reporting is simpler
Strategies

• Dependent on your cash flow
• Dependent on your risk tolerance
• Dependent on your policy limits
• Dependent on your economic view
  ▫ Will rates go up?
  ▫ When will it go up?
  ▫ How far will it go?
  ▫ What part of the curve will go up?
Sector Analysis

- Market sectors are the different types of securities
  - Treasuries, agencies, CP, CD, pools

- Sectors vary by risk and structure
  - agencies and new agency issues
  - commercial paper
  - taxable municipals

- Evaluating sectors requires information on that sector
  - credit decisions and risks
  - historical spread analysis
## Cross Sector Relative Value

Online Portfolio Analytics Available at http://www.efolio.net/

### Treasuror

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### Taxable Muni

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### Tax-Free (General Market) Muni

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<td>132</td>
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</table>

*34% Tax Rate, 0.7% COF
Spread Analysis

• Spread means difference
  ▫ Difference in rate between securities or market sectors

• Spreads are dynamic
  ▫ Anticipated spreads on credit
  ▫ Current spreads
  ▫ Historical spreads
  ▫ Volume spreads

• Doing a spread analysis means comparing rates

• You must check the rates at that maturity in various sectors
Yield Curve Analysis

- **Yield curves depict the market conditions**
  - Shows the markets expectations and demands
  - Tells a story
  - Illustrates the best value
  - Read in light of current conditions

- **Picking the best place on the curve**
  - Your portion of the curve is restricted by policy
  - Your portion is restricted by risk tolerance and cash flow
Yield Curve Nuances
Rates Flattening Continues

- The curve ended the month flatter on the month. But some flattening came from the front end jump in rates after Yellen’s comments regarding a December hike. The long end will take a little longer to react.
- Short term rates continue to move up as the FOMC stays optimistic on inflation, but the bond market doesn’t believe they will act and keeps taking the long end down in rates. More inflation and rate talk will move the long end upwards at some point.
- The risk off (safety) trades keep yields down in the short to intermediate portion of the curve as international investors bring money in and cash stays in money funds.
- As low as our US rates are, they remain above other global options which will turn as other central banks raise rates.
Relative Value by Yield

- A core investment out 1.5 years...

- T-Note: 0.28%
- FNMA: 0.35%
- FHLMC: 0.33%
- FHLB Call: 0.40%

- What are your considerations?
- How far do you feel safe going?
Liquidity is an Investment

- Liquid funds are:
  - A key portion so rates are critical
  - Designated to cover known very short term (one month)
    - Market conditions will control how much to keep liquid
  - There to cover some level of unanticipated expenses

- Liquid funds must:
  - give a reasonable market return
  - be easy to use
  - give good, timely reporting
  - give full information on rates and investments

- Current liquidity condition???
Bank Liquidity Choices

• A range of choices
  ▫ non-interest bearing checking
  ▫ interest bearing checking
  ▫ money market accounts
  ▫ NOW or savings accounts
  ▫ sweeps

• Rates are different in each category

• Current condition has banks not wanting funds
  ▫ Current best rates and opportunities...?
  ▫ ECR
  ▫ Money market accounts
Liquidity Choices

• Interest bearing accounts in any Texas bank
  ▫ Bank must be FDIC insured

• Interest bearing account in any TX credit union
  ▫ CU must be insured by
  ▫ National Credit Union Insurance Fund
ICS for Public Funds

As a manager of public funds, you work to keep monies for local governments, schools, police departments, public hospitals, roads, public utilities, and other public entities safe. But this work does not come without challenges.

Through ICS®, the Insured Cash Sweep® service, you can place public funds into interest-bearing demand deposit accounts (using a demand option) and/or money market deposit accounts (using a savings option) that are eligible for FDIC insurance (which can eliminate ongoing collateral tracking burdens and having uninsured funds to footnote in financial statements). And Insured Cash Sweep makes it easier than ever for you to earn a return while protecting the public’s vital resources.

If you are a depositor of public funds and want to use the ICS service...

The law of your state must permit the use of services such as ICS for deposits of public funds. Search for your state below to see if ICS is enabled for public funds. Select a state to see the state specific law enabling ICS for deposits (where applicable) and a list of banks that offer ICS.

View this short video to learn how public fund managers can benefit from CSARS and ICS services.

Infographic: How Public Funds are Using Insured Cash Sweep.
ICS - Insured Cash Sweep

- Same as CDARS
  - Promontory Network

- Spreads funds
  - into money market accounts

- Liquidity
  - With 6 draws per month

- All FDIC insured

- On your books it is one investment
‘Spread’ Demand Accounts

• Stick to spreads done by banks to establish depository relationship
• Spreads done by brokers
• Assure your ownership rights
Non-Bank Liquidity Choices

- Risk and return variations on each choice
- Local Pools
  - which guarantee next day liquidity
- The “broker liquidity”
  - LOC but who is the depositor
- “Money Market Mutual Funds” (MMMF)
  - Guarantee next day liquidity
  - Striving to maintain $1 NAV
- Repurchase Agreements (larger entities)
Liquidity Choices - How do I Chose?

• Current alternatives:
  ▫ O/N Repo Rate 1.00
  ▫ LGIF (constant dollar) 0.90
  ▫ Bank checking 0.15
  ▫ Bank money market *account* 0.40
  ▫ Bank NOW accounts 0.40
  ▫ Bank sweep to MMMF 0.40
Commingled Investments

- Local Government Pools
- Money Market Mutual Funds
- Mutual Funds

They provide:
- Economy of scale
- Diversification
- Some extension with liquidity
- Reporting
- All participants are equal owners

All commingled are portfolios
- You are not collateralized
- You are not insured
- you own your “share” of everything in the portfolio
Fund/Pool Types

- **Constant dollar funds/pools**
  - Money market funds or pool equivalents
  - Strive to maintain $1 asset (share) value – built for liquidity

- **Net asset value funds/pools**
  - Mutual funds or pool equivalents – built for yield
  - Share value fluctuates on market price
  - Potential loss of principal
  - Not eligible for bond funds
Pools and Funds

- **Pools**
  - Based on ILCA
  - Require resolution by governing body
  - Rated
  - Unregulated
  - All types

- **Money Market Funds**
  - A security
  - SEC registered
  - No resolution required
  - SEC oversight and regulation
  - New changes from 2012
  - One type only
    - Strict restrictions based on investments
Pools and Funds

• Pools and funds must:
  ▫ disclose all information
  ▫ built on SEC requirements for MMMF

• You must:
  ▫ read the information!

• Information statements
  ▫ Prospectus
  ▫ Full Information

• Confirmations
  ▫ Transaction History

• Reports
  ▫ Monthly History
Pools - Know what they are..

- Most pools are constant dollar
  - Texpool I and II
  - Logic
  - Class
  - TASB – Liquidity
  - TexStar
- Some pools are mutual funds or hybrid
- Check the rates and how they are calculated
- It’s your job to know
- Potentially have accounts at more than one pool
What do these figures tell you?

Know how to read the facts about your pool(s).

<table>
<thead>
<tr>
<th>TexPool</th>
<th>TexPool Prime</th>
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<tbody>
<tr>
<td>Current Rate</td>
<td>0.0526%</td>
</tr>
<tr>
<td>Allocation Factor</td>
<td>0.000001441</td>
</tr>
<tr>
<td>7 Day Net Yield</td>
<td>0.6%</td>
</tr>
<tr>
<td>Current Balance</td>
<td>$15,071,460.779.41</td>
</tr>
<tr>
<td>Weighted Average Maturity (1)</td>
<td>48 Days</td>
</tr>
<tr>
<td>Weighted Average Maturity (2)</td>
<td>72 Days</td>
</tr>
<tr>
<td>Market Value Per Share</td>
<td>1.00004</td>
</tr>
</tbody>
</table>

Performance data quoted represents past performance which is no guarantee of future results. Investment return will fluctuate. The value of an investment when redeemed may be worth more or less than the original cost. Current performance may be higher or lower than performance stated.

For more information, see the TexPool Information Statement available on this web site. You should consider the investment objectives, risks, charges, and expenses carefully before you invest. Information about these and other important subjects is in the Information Statement which you should read carefully before investing.

An investment in the security is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Although the issuer seeks to preserve the value of an investment at $1.00 per share, it is possible to lose money by investing in the security.

(1) "WAM Days" is the mean average of the periods of time remaining until the securities held in

...
A Pool ?? Or??
What does your policy say??

These are brokered CDs bought by a pool, not in City’s name and not in their policy.
Is this a pool?

- Funds are comingled but no one gets same deal/yield
- You are given a specific maturity
- You are given a projected yield

$750 mm

$1mm

1 year
1.40%

$1mm

1 year
1.10%

$1mm

1 year
0.95%
Money Market Funds

- Caution and clear definitions needed with 2a-7 compliance

- IF they “strive to maintain a $1 NAV”
  - Registered with the SEC and comply with 2a-7
  - Known as constant-dollar or 2a-7 funds
  - “Strive to maintain a $1 net asset value”
    - try to maintain $1 per share value

- They may NOT strive to maintain a $1 NAV but still be legal

- You own a pro rata share of the fund
  - Pays you interest at month-end

- Guarantees next day liquidity
  - Does not guarantee a profit or $1
The Ubiquitous Repo

- Primarily for larger entities except for “flex”

- Simultaneous “Buy-Sell” Transactions
  - Allows full liquidity at market rates
  - Uses DVP and independent custody
  - Margins (102%) monitored constantly
  - Various types include overnight, open & term

- **“Flex”** is designed for capital projects
  - Established for the entire expenditure period
  - Rate is fixed and normally above issue rate
  - Flexibility on draws with xx/month
  - Interest on semi-annual basis
Tri-Party Repo Transactions

Public Entity
with $$$

Agreement to buy-sell

Primary dealer
with securities

$ $$

Third Party NYC Bank

Cash Account

Instructions

Securities Account

Securities
DVP
Repo **Sweep** Dangers

- Not a true buy-sell transaction
  - Segregation of securities in bank’s account

- Questionable settlement on bank failures
  - No established policy by FDIC on credit

- Rates are higher —
  - Where is the risk?
So what do I do about...liquidity?

• Look and Chose what alternatives you want to use
  ▫ Bank accounts (money markets versus interest bearing)
  ▫ Pools
  ▫ Money market funds

• Compare the alternatives rates - at least monthly

• Have alternatives available to you

• Do not use liquidity too much
Step 7: Accounting, Monitoring and Reporting

- **Detail** gives archival information
- **Summary** spots trends and risk

- Use reporting to monitor the portfolio
  - Does it meet my policy objectives?
  - Does it meet my cash flow needs?
  - Is it too liquid or too extended?
  - Does it make sense in this market environment?
Purpose of Portfolio Reporting

- **Designed to:**
  - **Show risk**
    - Volatility risk (change in market value)
  - **Provide accounting/archiving**
    - Detail for holdings and summary for information
  - **Illustrate compliance**
    - Compliance with policy parameters (SLDY)
  - **Judge performance**
    - Yield
    - Benchmark comparison
Accounting and Reporting Concepts

• **Two types of securities**
  ▫ Discount securities
  ▫ Fixed income securities (with a coupon)

• **Two values**
  ▫ Market value = price of you sell it – changes daily
  ▫ Book value = your value net of amortization – changes daily

• **Three computations**
  ▫ Interest accrual (coupons)
  ▫ Accretion (earnings)
  ▫ Amortization (expense)
How Do I Actually Earn?

- Earning come only from:
  - **Principal**
    - The value of the principal increases
  - **Interest**
    - A coupon accrued then pays on a schedule
    - Rate accrues then pays on a fund/pool
Bought above par – moves to par
Amount above par is amortized – “expensed”

Bought below par – moves to par
Amount below par is accreted – “earns”
What Did I Earn?

• **Earnings** = accrual + accretion - amortization
  - Earnings do not reflect cash flows from coupons or maturities
  - Earnings happen everyday as principal and interest move

• Amortization from notes bought above par decreases earnings

• Accretion from notes bought below par increases earnings
What is Yield?

- A common denominator for measuring value.

- The income return on a bond if held to maturity
  - Expressed as annual rate
  - Includes coupons and original price calculation

- Yield incorporates coupon and price
  - It is what you ultimately earn

- Bonds have 4 yields:
  - Coupon, current, YTM and tax equivalent yields
Market Yields Change -
Your Purchase Yield Does Not

• Bonds are issued or auctioned at price of 100
• Bonds have a coupon “fixed” for life at issuance

• As markets change the market yield moves
• That move shows your unrealized gain/loss
Prices and Yields
Move Inversely

A 5% coupon at par (100)

Coupon = 5%  Yield = 5%
Prices and Yields

If Rates Go UP

A 5% coupon is not worth as much if rates go up so price goes down

Coupon = 5 %    Yield = 6 %
Prices and Yields

If Rates Go DOWN

A 5% coupon is worth more if rates go down so price goes up

Coupon = 5 %  Yield = 4 %
Weighting Information

- Different positions require compilation for information

- Weighting recognizes impact of
  - size of position
  - different maturities
  - different yields

<table>
<thead>
<tr>
<th>Book Value</th>
<th>Days Remaining</th>
</tr>
</thead>
<tbody>
<tr>
<td>50,000</td>
<td>70</td>
</tr>
<tr>
<td>1,000,000</td>
<td>14</td>
</tr>
<tr>
<td>250,000</td>
<td>360</td>
</tr>
<tr>
<td>3,000,000</td>
<td>1</td>
</tr>
<tr>
<td>500,000</td>
<td>400</td>
</tr>
<tr>
<td>2,500,000</td>
<td>180</td>
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<tr>
<td>2,000,000</td>
<td>80</td>
</tr>
<tr>
<td>Weighted Avg</td>
<td>99 days</td>
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</table>
### Calculating Weighted Average Maturity

Multiply book value by days remaining to maturity
Divide Sum by total book value of portfolio

<table>
<thead>
<tr>
<th>Book Value</th>
<th>Days Remaining</th>
<th>Book x Days</th>
</tr>
</thead>
<tbody>
<tr>
<td>50,000</td>
<td>70</td>
<td>3,500,000</td>
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<tr>
<td>1,000,000</td>
<td>14</td>
<td>14,000,000</td>
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<tr>
<td>250,000</td>
<td>360</td>
<td>90,000,000</td>
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<td>1</td>
<td>3,000,000</td>
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<tr>
<td>500,000</td>
<td>400</td>
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<tr>
<td>2,500,000</td>
<td>180</td>
<td>450,000,000</td>
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<td>2,000,000</td>
<td>80</td>
<td>160,000,000</td>
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<tr>
<td>9,300,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>=920,500,000/9,300,000</td>
<td></td>
</tr>
</tbody>
</table>

Weighted Avg 99 days
Weighted Average Yield

✓ The weighted average yield describes the performance of a buy-and-hold portfolio.

✓ Weighted yield is a measure to compare to your benchmark.

✓ This measure does not consider market value impact.

✓ Full calculation requires adjustment for days in month and year.
# Calculating Weighted Average Yield

Multiply book value by purchase yield  
Divide Sum by total book value of portfolio

<table>
<thead>
<tr>
<th>Book Value</th>
<th>Purchase Yield</th>
<th>Book x Yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>6,568,777</td>
<td>0.70%</td>
<td>45,981</td>
</tr>
<tr>
<td>3,211,222</td>
<td>1.40%</td>
<td>44,957</td>
</tr>
<tr>
<td>5,999,158</td>
<td>0.99%</td>
<td>59,392</td>
</tr>
<tr>
<td>1,425,654</td>
<td>1.25%</td>
<td>17,821</td>
</tr>
<tr>
<td>12,513,588</td>
<td>2.50%</td>
<td>312,840</td>
</tr>
<tr>
<td>2,000,000</td>
<td>1.50%</td>
<td>30,000</td>
</tr>
<tr>
<td>1,598523</td>
<td>0.90%</td>
<td>14,387</td>
</tr>
<tr>
<td><strong>Weighted Avg Yield</strong></td>
<td><strong>1.58%</strong></td>
<td></td>
</tr>
</tbody>
</table>
Distributing Interest

- Total interest to be distributed = $10,000
  
  *Use either month-end balance or average balance*

<table>
<thead>
<tr>
<th>Fund</th>
<th>Balance</th>
<th>% of Ptf</th>
<th>Distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating</td>
<td>12,541,799</td>
<td>48.34 %</td>
<td>4,834.61</td>
</tr>
<tr>
<td>Debt Service</td>
<td>575,123</td>
<td>2.21 %</td>
<td>221.70</td>
</tr>
<tr>
<td>Water</td>
<td>9,258,951</td>
<td>35.69 %</td>
<td>3,569.13</td>
</tr>
<tr>
<td>CIP</td>
<td>3,565,821</td>
<td>13.74 %</td>
<td>1,374.56</td>
</tr>
</tbody>
</table>
Keys in Investment Reporting

- Accuracy
- Timeliness
- Compliance
- Risk Identification
- Pricing
- Value Representation
- Formats
- Information
Reports Reflect Policy Parameters

- Key report parameters reflect your policy compliance
  - Maximum maturity limitations
  - Maximum average maturity limitations
  - Diversification goals and limits
  - Performance benchmarks
  - Philosophy (Strategy) on the portfolio
  - Volatility (change in market value)
    - not required by PFIA as of 2011

- Reports reflect risk tolerance
Specific Report Requirements

• **Compliance statement and signatures**
  ▫ Reports prepared in compliance with the PFIA and Investment Policy.
  ▫ Every Investment Officer is to sign report

• **Detail**
  ▫ Each investment position (including bank accounts) with maturity date
  ▫ Book and market values of each position *at end of period
  ▫ Portfolio/fund investment belongs to

• **Summary**
  ▫ Beginning and ending book and market value of portfolio
  ▫ Earnings for the period (accrued + accretion – amortization)
  ▫ Market sector summaries
Describing Your Portfolio

• Positions
  ▫ Securities
  ▫ Bank accounts and Compensating balances
  ▫ Sub-totals

• Description
  ▫ Type of security *and* issuer
  ▫ Description: coupon, yield, DTM, your ID #
  ▫ Dates: purchase and maturity (and call)
  ▫ Values: par, current book and market
## Detailing a Position

<table>
<thead>
<tr>
<th>Purchase Date</th>
<th>Security Type</th>
<th>Par</th>
<th>Coupon</th>
<th>Yield</th>
<th>Maturity Date</th>
<th>Call Date</th>
<th>Book Value</th>
<th>Market Value</th>
<th>Gain or &lt;loss&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>xx/xx/xx</td>
<td>T-Note</td>
<td>500,000</td>
<td>0.50 %</td>
<td>0.45 %</td>
<td>xx/xx/xx</td>
<td>-</td>
<td>501,123</td>
<td>502,100</td>
<td>977</td>
</tr>
<tr>
<td>xx/xx/xx</td>
<td>CD-Frost</td>
<td>245,000</td>
<td>0.60 %</td>
<td>0.60 %</td>
<td>xx/xx/xx</td>
<td>-</td>
<td>245,000</td>
<td>245,000</td>
<td>00</td>
</tr>
<tr>
<td>xx/xx/xx</td>
<td>T-Bill</td>
<td>750,000</td>
<td>0.00 %</td>
<td>0.35 %</td>
<td>xx/xx/xx</td>
<td>-</td>
<td>723,500</td>
<td>720,000</td>
<td>&lt;3,500&gt;</td>
</tr>
<tr>
<td>xx/xx/xx</td>
<td>FNMA</td>
<td>750,000</td>
<td>0.75 %</td>
<td>0.90 %</td>
<td>xx/xx/xx</td>
<td>xx/xx/xx</td>
<td>743,200</td>
<td>755,100</td>
<td>11,900</td>
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<td></td>
<td></td>
<td>2,245,000</td>
<td>0.58 %</td>
<td></td>
<td></td>
<td></td>
<td>2,212,823</td>
<td>2,222,200</td>
<td>9,377</td>
</tr>
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</table>

From this information you can calculate the WAM and WAY.
<table>
<thead>
<tr>
<th>Purchase Date</th>
<th>Security</th>
<th>Coupon</th>
<th>Maturity Date</th>
<th>Yield</th>
<th>Par Value</th>
<th>Beginning Book</th>
<th>Beginning Market</th>
<th>Ending Book</th>
<th>Ending Market</th>
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</thead>
<tbody>
<tr>
<td>xx/xx/xx</td>
<td>T-Bill</td>
<td>-</td>
<td>xx/xx/xx</td>
<td>1.00%</td>
<td>500,000</td>
<td>490,000</td>
<td>480,000</td>
<td>492,000</td>
<td>488,000</td>
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<tr>
<td>xx/xx/xx</td>
<td>T-Note</td>
<td>1.50%</td>
<td>xx/xx/xx</td>
<td>1.45%</td>
<td>500,000</td>
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<tr>
<td>xx/xx/xx</td>
<td>T-Note</td>
<td>0.90%</td>
<td>xx/xx/xx</td>
<td>1.00%</td>
<td>500,000</td>
<td>499,999</td>
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<tr>
<td>xx/xx/xx</td>
<td>FNDN</td>
<td>-</td>
<td>xx/xx/xx</td>
<td>1.15%</td>
<td>650,000</td>
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<td>643,000</td>
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<td>FHLB</td>
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<td>xx/xx/xx</td>
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<td><strong>1,142,000</strong></td>
<td><strong>1,144,000</strong></td>
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<td>xx/xx/xx</td>
<td>CD - Bank A</td>
<td>1.20%</td>
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<td>750,000</td>
<td>750,000</td>
<td>750,000</td>
<td>750,000</td>
</tr>
<tr>
<td>xx/xx/xx</td>
<td>CD – Bank B</td>
<td>1.15%</td>
<td>xx/xx/xx</td>
<td>1.15%</td>
<td>500,000</td>
<td>500,000</td>
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<tr>
<td>xx/xx/xx</td>
<td>TexPool</td>
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<td>xx/xx/xx</td>
<td>0.20%</td>
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<td>1,444,567</td>
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<tr>
<td>xx/xx/xx</td>
<td>Logic</td>
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<td>xx/xx/xx</td>
<td>0.20%</td>
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<td>1,765,432</td>
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<td><strong>3,199,999</strong></td>
<td><strong>3,199,999</strong></td>
<td><strong>1,444,567</strong></td>
<td><strong>1,444,567</strong></td>
</tr>
<tr>
<td>xx/xx/xx</td>
<td>Int. Bearing</td>
<td>0.15%</td>
<td>xx/xx/xx</td>
<td>0.15%</td>
<td>450,000</td>
<td>450,000</td>
<td>450,000</td>
<td>410,111</td>
<td>410,111</td>
</tr>
<tr>
<td>xx/xx/xx</td>
<td>Comp Balance</td>
<td>0.50%</td>
<td>xx/xx/xx</td>
<td>0.50%</td>
<td>2,121,111</td>
<td>2,121,111</td>
<td>2,121,111</td>
<td>2,121,111</td>
<td>2,121,111</td>
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</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td></td>
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<td><strong>2,571,111</strong></td>
<td><strong>2,571,111</strong></td>
<td><strong>2,571,111</strong></td>
<td><strong>2,531,222</strong></td>
<td><strong>2,531,222</strong></td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>0.74%</strong></td>
<td><strong>8,951,109</strong></td>
<td><strong>8,944,110</strong></td>
<td><strong>7,360,789</strong></td>
<td><strong>7,362,789</strong></td>
</tr>
</tbody>
</table>
Now Make it Information

Allocation by Sector

Allocation by Maturity

- Treas.
- Agy
- CD
- Pool
- Bank

- O/N
- 1-3mo
- 3-6mo
- 6-9mo
- 9-12mo
- >1yr
Diversification by Maturity

- These graphs tell the story of your investing and strategy – and markets
- Maturity diversification show risk has been spread
- Maturity diversification illustrates risks (too.. long, short...)
- Maturity diversification illustrates strategy

- What do these two graphs tell us?
Benchmarks

• **Purpose**
  - Risk or performance?

• **Selection with yield versus rate of return**
  - Comparability
  - Sector recognition
  - Comparable treasury versus index

• **What should you use?**
  - Comparable period Treasury
  - 3-month, 6-month, 1-year
This was the Situation

### QUARTERLY INVESTMENT REPORT

<table>
<thead>
<tr>
<th>Type Investment</th>
<th>Rate</th>
<th>Beginning Book Value</th>
<th>Ending Book Value</th>
<th>Beginning Market Value</th>
<th>Ending Market Value</th>
<th>Interest Earned</th>
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<tbody>
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<td>Texpool Investment Pool</td>
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<td>7,004</td>
<td>7,000</td>
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<td>247,666</td>
<td>247,366</td>
<td>247,666</td>
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<td>Market Acct</td>
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<td>Bank Compensating</td>
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<td>1,600.00</td>
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<tr>
<td></td>
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<td>2,254,366</td>
<td>2,254,670</td>
<td>2,254,366</td>
<td>2,254,670</td>
<td>1,904</td>
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</tbody>
</table>

This quarterly report was prepared in compliance with the Public Funds Investment Act and the Investment Policy and Strategy.

* Funds in the bank are earning at the Earnings Credit Rate (ECR) and the interest earned is applied to pay the bank fees. Until January 2013 all these funds are also insured 100% by the FDIC.

---

Investment Officer

Investment Officer
### Summary Information

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning Book Value</td>
<td>8,951,109</td>
</tr>
<tr>
<td>Beginning Market Value</td>
<td>8,944,110</td>
</tr>
<tr>
<td>Unrealized Gain/Loss</td>
<td>-6,999</td>
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<tr>
<td>Yield</td>
<td>0.71 %</td>
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<tr>
<td>WAM Days-to-Maturity</td>
<td>72 days</td>
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<tr>
<td>Ending Book Value</td>
<td>7,360,789</td>
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<tr>
<td>Ending Market Value</td>
<td>7,362,789</td>
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<tr>
<td>Change in Market Value</td>
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<tr>
<td>WAM Days-to-Maturity</td>
<td>75 days</td>
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<tr>
<td>Yield</td>
<td>0.74 %</td>
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<tr>
<td>Benchmark Yield</td>
<td>0.65 %</td>
</tr>
</tbody>
</table>

If you are more than 0.75% from your benchmark you should know why!
Pool/Fund Reporting

- Pools and Funds price and value
  - designed to show risk to investor

- Constant dollar (money market equivalents)
  - Price is always $1
  - Days-to-maturity is always 1 day

- Mutual fund equivalents
  - Price is the net asset value or share price that day
  - Days to maturity is the WAM of the underlying portfolio
Annual GASB Reporting

- GASB focus is on risk
  - Government Accounting Standards Board

- Displays fiduciary responsibility and public trust

- Annual risk disclosure
  - Collateral risk
  - Safekeeping risk
  - Volatility risk
  - Credit risk
GASB 31

- Fair Market Evaluation
  - Designed to show change in market value
  - Annual reporting only
  - Entry is made and reversed
  - Too much volatility equals volatility risk
  - Discloses risk created by change of market price

- Only used for securities > one year only
GASB 40

• Used to define your investment profile of risk

• Disclosure is aimed at:
  ▫ Credit risk including credit quality from rating agencies
  ▫ Interest rate risk
    • disclosure including WAMs and specific derivatives
  ▫ Interest rate sensitivity
    • Primarily on structured notes
  ▫ Foreign exchange (currency) risk
Texas PFIA Makes GASB 40 Reporting Easy

• All areas are covered by policy and approved by governing body

• Reporting Credit Exposures:
  ▫ All Agencies are AAA
  ▫ Credit ratings critical on CP, BA, Corporates
  ▫ Procedure to monitor credit in policies

• Reporting Interest Rate Exposures:
  ▫ % Callables or other structured notes
    * Requires listing of callable and structured notes only

• Reporting Interest Rate Exposures:
  ▫ Maximum Maturity
  ▫ Weighted Average Maturity
  ▫ Benchmarks
GASB 72

- Defining fair market value
- Defining the source of pricing to determine risk
- Three levels of securities by pricing mechanism

- Most PFIA securities are LEVEL ONE
  - US Treasuries and agencies
  - Time and demand deposits
  - Brokered CDs
  - Commercial paper
  - Pools and money market mutual funds
Beyond Liquidity

- Short-term, longer-term and core investments
- Require use of securities
- Depository CDs eliminate safekeeping costs
- All securities need to be safekept
  - In your depository or a separate depository
  - Not to be held by broker/dealer
Choosing Investments

- Every penny requires an investment decision

- Investing is short and long term

- Cash flow needs control your choice
  - Primary control
  - Put money out where you need it
  - Usually ladder to fit needs

- Market conditions also control
  - Current conditions limit extensions
  - Current conditions favor 6 to 12 months
A Portfolio Exercise

• Portfolio of $100mm – currently all in pools

• Time: November – about to receive funds (~ $35mm)

• Cash Flow: needs $2 a month

• Policy: 3 year max maturity and 1 year WAM
The Pie and Your Strategy

- **Liquid Portion**
  - Provides liquidity
  - Alternatives
  - Today’s strategy?

- **Short-Term Portion**
  - Match upcoming known expenditures
  - Compare alternatives in securities and maturities
  - What is today’s strategy?
The Pie and Your Strategy

- **Long-Term Portion**
  - Matching known expenditures
  - Usually 6 to 12 months
  - What is today’s strategy?

- **Core Portion**
  - Reserves, no planned shorter term use
  - Focus on rate movements and yield
  - May call for different securities
  - What is today’s strategy?
The Ladder Strategy

- Ladders match cash flow
- Built on time horizons
- Often focus on one investment per month
- No need to fill consecutively – let market yields guide choice by rate
Authorized PFIA Investments

- US Treasuries
- US Agencies
- Commercial Paper
  - Corporate and ABS
- Bankers Acceptances
- Repurchase Agreements
- Investment Pools
- Certificates of Deposit
  - TX bank/savings banks
- Brokered CD Securities
- Money Market Funds
- Mutual Funds
- GICs
- State of Israel bonds
- *Letters of credit*
- Municipal Obligations
- Corporate bonds (certain ISDs)
Most Frequently Used Investments

- **US Treasuries**
  - Treasury Bills and Notes

- **US Agencies/Instrumentalities**
  - FHLB, FNMA, FFCB, FHLMC, etc.

- **Certificates of Deposit**

- **Brokered Certificates of Deposit**

- **Money Market Mutual Funds**

- **Local Government Investment Pools**
Aides to Strategy Choices

- **Yield curve analysis**
  - where are rates now
  - where are rates going

- **Sector analysis**
  - assuming that similar sectors are similar
  - which issuers are available, wanted

- **Spread analysis**
  - which maturity range is best
  - which bond is best in that maturity
Yield Curve Analysis

- Yield curves depict the market conditions
  - Shows the markets expectations and demands
  - Tells a story
  - Illustrates the best value
  - Read in light of current conditions

- Picking the best place on the curve
  - Your portion of the curve is restricted by policy
  - Your portion is restricted by risk tolerance and cash flow
Rates Flattening Continues

- The curve ended the month flatter on the month. The 2-yr to 10 yr spread is a narrow 78 bps roughly half of the spread since 2009.
- Rates continue to flatten as the FOMC stays optimistic on inflation but the bond market doesn’t believe they will act.
- The short end has moved up with Fed hikes rates but risk off (safety) trades have pushed yields down in the short end as international investors bring money in and cash stays in money funds.
- The long end faces challenges from low inflation, but may start to turn with a weaker dollar in place.
- As low as our US rates are, they remain above other global options which will turn as other central banks raise rates.

*End of Month Rates - Full Yield Curve – Fed Funds to 30yr*
So what do I do - about a strategy

- Chose your time horizon
  - Fill months which need funds
  - Skip months where funds are already available

- Set your maximum money to invest

- Have a general idea of where rates are

- Compare value in all authorized markets
  - Do competitive bidding or ask several brokers for ‘best value’
The Investment Decision

• Where do I need money? (cash flow)
• What can I buy? (authorized securities)
• Am I diversified? (policy)

• Where is the market?
• Where are the rates going?
• What has the best yield? (relative value)

• Relative Value Analysis is = Comparative Shopping
Buying Decision

• Determine the maximum maturity – time horizon
  ▫ Set a spread in time for choices
  ▫ Do not go beyond maximum maturity
  ▫ Request offers short of or on that date

• Offers will differ in maturity and type
  ▫ Are they all authorized?
  ▫ Do they fit diversification?
  ▫ Do I know what they are?

• Chose the best yield
Time Deposits

• Depository certificates of deposit
  ▫ Insured or collateralized

• Share certificates of credit unions
  ▫ Insured only

• Depository relationship
PFIA Language re CD
2256.010

• **(a) Depository Texas CD**
  ▫ Insured by FDIC or
  ▫ Collateralized per PFCA
    • including authorized mortgage backed securities in PFIA
    • Secured in any manner allowed by law
  ▫ Includes CDARS program

• **(b) Brokered CD**
  ▫ Invest through Texas bank or Texas broker (on broker list)
  ▫ Fully insured by US or its instrumentality
  ▫ Limited to $250,000 per bank
  ▫ Broker *can custody* ---conflict with DVP
Credit Unions

- Share Certificates
- Insured by National Credit Union Insurance Fund
- Can not be collateralized
- CU must be in Texas
CD Confusion

- Depository CD
  - Relationship with bank
  - Paperwork involved
  - Can exceed $250,000
  - Collateralize > $250,000
  - Only TEXAS
  - Not on broker list
  - Can be spread (CDARS)

- Brokered CD
  - A registered security
  - Straight buy/sell
  - Can not exceed $250,000
  - No collateral allowed
  - Any state
  - On broker list
  - Are not spread

- MERGER PROTECTION
- NO MERGER PROTECTION
DEPOSITORY
Certificates of Deposit

• Depository agreements
  ▫ Bank relationship
  ▫ Texas banks only
  ▫ Requires paperwork to create a deposit
    • Terrorist Act provisions
  ▫ Funds are left in the bank as a deposit

• All MUST BE Insured by FDIC or collateralized
  ▫ Above $250,000 requires agreement and collateral
  ▫ Texas collateral rules protect you under PFCA
  ▫ Different collateral types are legal
  ▫ Controlled by PFIA and depository law (Local Gov’t Code Ch.105)
Policy Language Authorizing **Depository** CDs

- Fully insured or collateralized depository certificates of deposit of banks doing business in Texas, with a maximum maturity of ---- years guaranteed or insured by the Federal Deposit Insurance Corporation, or its successor, or collateralized in accordance with this Policy.

- Collateralized CD will be created under a written collateral agreement in accordance with FIRREA.
Brokered CDs

- This is a security not a deposit
  - You have no relationship to the bank
  - It has little or no secondary market once bought

- Built from one large CD
- Broken into smaller CD securities by a broker
- Sold on the secondary market
Policy Language Authorizing Brokered CDs

• **FDIC insured** *brokered* certificate of deposit *security*
  ▫ from banks in any **US state**,  
  ▫ *delivered versus payment* to the City’s safekeeping depository,  
  ▫ not to exceed one year to maturity.

• **Before purchase** the Investment Office must verify that the bank is FDIC insured on [www.fdic.gov](http://www.fdic.gov)
Controls on Brokered CD

• The investment officer must monitor
  ▫ On no less than a weekly basis
  ▫ Status and ownership of the issuing bank based on FDIC information

• If the bank has merged or been acquired where other deposits exist
  ▫ Investment Officer shall immediately liquidate any brokered CD which places the city above the FDIC insurance coverage
Brokered CDs  (Added 2011)

- Differentiate “Brokered” CD as securities in policy and on reports
  - “Brokered certificate of deposit securities”
- Often sold by brokers or banks
- Legal in Texas but only if FDIC insured

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<tr>
<th>Quantity</th>
<th>Security Description</th>
<th>Date Acquired</th>
<th>Total/Adj Cost Basis</th>
<th>Fiscal Year Value 12/31/09</th>
<th>Unrealized Gain or (Loss)</th>
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<td>CD LAKE CITY BANK WARSAW, IN 01.150% JAN 24 2011</td>
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<td>97,848.78</td>
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<td>98,000</td>
<td>CD BANK OF NASHVILLE NASHVILLE, TN 01.700% AUG 05 2011</td>
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<td>98,000.00</td>
<td>97,694.92</td>
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<td>98,000</td>
<td>CD FIFTH THIRD BK CINCINNATI, OH 04.000% SEP 10 2010</td>
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<td>CD BANCO POP PUERTO RICO HATO REY, PR 03.900% MAR 10 2010</td>
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<td>98,460.40</td>
<td>460.40</td>
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</table>
CD Accrual and Payments

- You purchase a CD:
  - Par $500,000.00
  - Principal $500,000.00
  - Interest rate 1.50%
  - Days-to-Maturity 180

- Total Earnings = $3,750.00
- Earning each day = $20.83 per day
  \[ \frac{($500,000 \times 1.50\%)}{360 \times 180} \]

- Earnings are from accrued interest only
- Earnings belong on your monthly/quarterly reports
- Payments will differ (monthly, quarterly, at maturity) Check it!
Buying a FDIC CD

• FDIC coverage is permanent at $250,000

• Decide on your needed maturity date

• Phone several banks in Texas for the rate competition
  ▫ Ask for the maturity ranges (3 mo, 6 mo, 1 year) and compare
  ▫ Get all in APY (annual percentage yield)
  ▫ Clarify dates, agreement and certification requirements

• Do not use a broker to place a depository CD

• Chose the best rate and notify the banks
  ▫ Get instructions to send money
  ▫ Send money on settlement date
Buying A Collateralized CD

- Decide on your needed maturity

- You will need a collateral agreement
  - Agree on terms and collateral needs
  - Clarify certification

- Phone several banks for the rates
  - Get all in APY (annual percentage yield)

- Chose the best rate and notify the banks
  - Get instructions to send money
  - Send money on settlement date
Buying a CDARS CD

- Check for CDARS banks in Texas (CDARS.com)
  - Currently up to $50 million at $10mm per week

- Maturities set at 3, 6, and 12 months normally
  - They all settle on Thursdays

- Phone or email several banks for the rates
  - Get all in APY (annual percentage yield)
  - Certification only from entrance bank

- Chose the best rate and notify the banks
  - Get instructions to send money and agreement for CDARS
    - Standard CDARS Deposit Placement Agreement
  - Send money on settlement date
Certificate of Deposit Account Registry Service

Access Multi-Million-Dollar FDIC Insurance

CDARS® – the Certificate of Deposit Account Registry Service® – is the most convenient way to access FDIC insurance on multi-million-dollar CD deposits and to earn CD-level rates, which often compare favorably to Treasuries and money market mutual funds.

Thousands of financial institutions offer the CDARS service. Find out if yours is one of them.

[Select a State]  FIND CDARS

One Bank
Access multi-million-dollar FDIC insurance coverage by working directly with just one bank, a bank you may already know and trust.

One Rate
Earn one rate for each CD maturity and enjoy the added protection of the CDARS service.

One Statement
Receive one easy to-read statement from your bank summarizing all your CD holdings.

For access to multi-million-dollar FDIC insurance on funds placed into demand deposit accounts and/or money market deposit accounts, check out CDARS.
CDARS

How CDARS Works

Everything is handled through a CDARS® Network member of your choice. Financial institutions that can offer CDARS are members of a unique network. When you place a large deposit with a CDARS Network member, that institution uses the CDARS service to place your funds into CDs issued by other members of the CDARS Network.

This occurs in increments below the standard FDIC insurance maximum ($250,000) so that both principal and interest are eligible for FDIC insurance. By working directly with just one institution, you can receive insurance coverage from many. And, you receive just one regular, consolidated account statement.

When you’re ready to take advantage of CDARS, here’s what happens:

1. You sign a CDARS Deposit Placement Agreement and a custodial agreement, and then invest money with a member of the CDARS Network (a relationship institution).
2. Your funds are placed using the CDARS service.
3. Your CDs are issued by other members in the CDARS Network.
4. You receive confirmation of your CDs from your relationship institution.
5. You receive consolidated interest payments and statements through your relationship institution.

Customer invests $5,000,000 through a Network member

21 CDs under $250,000 are issued by 21 Network banks

View this short video to learn more about CDARS.
CDARS Banks in Texas

Where to Find CDARS

Thousands of financial institutions across the country participate in CDARS® and new ones are being added to the CDARS Network every day. You can find a financial institution in your area by state.

Search Results for TX

<table>
<thead>
<tr>
<th>Bank Name</th>
<th>Contact Name</th>
<th>Phone Number</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allegiance Bank</td>
<td>Dave Androl</td>
<td>(281) 894-3213</td>
<td>Email</td>
</tr>
<tr>
<td>Texas</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Houston, TX</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Alliance Bank</td>
<td>Tammy Miller</td>
<td>(903) 886-2187</td>
<td>Email</td>
</tr>
<tr>
<td>Sulphur Springs, TX</td>
<td>Sue Sanders</td>
<td>(903) 886-2187</td>
<td>Email</td>
</tr>
<tr>
<td>Amarillo National Bank</td>
<td>Ross Kerns</td>
<td>(800) 378-8300</td>
<td>Email</td>
</tr>
<tr>
<td>Amarillo, TX</td>
<td>Monte Broglin</td>
<td>(800) 378-8300</td>
<td>Email</td>
</tr>
<tr>
<td>Amsorg Bank, National Association</td>
<td>Julie Guyton</td>
<td>(713) 232-1428</td>
<td>Email</td>
</tr>
</tbody>
</table>

Click here to find CDARS for public funds.
Other Virtual CD Options

- Virtual Banks doing business in Texas
  - State Farm Insurance
  - Ally Bank
  - USAA
  - Others?

- Stay under FDIC insurance levels
- Must make investment directly
Check the web for information on the markets.
Monetary Results

• 2001 as rates dropped
  ▫ Liquid funds slid from 6.5% to 1.5%
  ▫ Earnings on $1mm would have been $39,000
  ▫ Laddered portfolios could have been $50,000

• 2008 as rates dropped in January
  ▫ Liquid funds slid from 5.25% to 1.0%
  ▫ Earnings on $1mm would have been $32,000
  ▫ Laddered portfolio would have been $45,000

• 2017 Opportunities
Your Money Markets

- Money markets
  - Loose collection of markets

- Debt or fixed income market
  - Creativity and innovation
  - Structural variety requires knowledge (embedded options, calls, strips, bullets, etc.)

- All book entry requires documentation

- DVP settlement is critical
Your Buying Decision

- **The same bond will not be offered:**
  - T-Note 2.0% 11/22/18 2.01%
  - T-Note 2.0% 11/22/18 2.05%
  - T-Note 2.0% 11/22/18 2.08%

- **The bond will be different in many ways:**
  - FNMA 2.2% 11/22/18 2.14%
  - FHLMC-c 2.4% 10/01/18 2.65%
  - FHLB 2.0% 09/22/18 2.50%
Two Basic Types of Securities

- **Money market = < 1 year**
  - US Gov’t
  - Agencies
  - Local Gov’t
  - Corporations
  - All are Discount notes

- **Fixed income = > 1 year**
  - Gov’t
  - Agencies
  - Local Gov’t
  - Corporations
  - Treasury Notes/Bond
  - Agency Notes
  - Long-term Bonds
  - Corporate Notes
  - All have coupon
Discount Structures

- All securities with original maturities < 1 year
  - Treasury bills
  - Agency discount notes
  - Commercial paper

- Quoted at a discount
  - Often close to yield
  - Ask to be quoted yield for comparison purposes
Discount Securities
Accrete (Gain) Value Over Life

- Always bought at a price less than 100

- Earn daily and only through accretion

- Buying a $100,000 T-Bill
  - Price = $ 98,000
  - You own it 200 days until maturity
  - Discount/# of days
  - $2,000/200 days = $ 10 / day

You buy it at $ 98,000
it matures at $100,000
Discount Security Choice

- Get the yield not the ‘discount’
- Check the only two things that matter to you:
  - (a) the date for cash flow
  - (b) the yield

<table>
<thead>
<tr>
<th>Mat</th>
<th>Bid</th>
<th>Asked</th>
<th>Chg</th>
<th>Yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/20/xx</td>
<td>99.5</td>
<td>99.6</td>
<td>-.1</td>
<td>1.15</td>
</tr>
</tbody>
</table>

CHG – change in price from prior day close
Daily Accretion

- You purchased a T-Bill 8/6/xx at a 1.11% yield:
  - Par $1,000,000.00
  - Principal $997,695.69 (book value day 1)
  - Discount $2,304.40
  - Days-to-Maturity 356 days
  - **Daily Accretion** $6.47 \( \frac{2,304.40}{356} \)
    - Earnings only from accretion
Security ‘Notes’

• Any security with original maturity > 1 year

• All will have a coupon

• It will “coupon” i.e. “pay” every 6 months
  ▫ Coupon rate x par amount = annual income
  ▫ Pay will be half of annual income
  ▫ $1,000,000 1.50% = $15,000/year = $7,500/six months
Notes have **Fixed Coupons**

- Coupons accrue daily and pays semi-annually

- $1 million 5% Note = $50,000/yr
  - Pays $50,000/year
  - Paid in 2 payments of $25,000

- At Purchase you buy any accrued:
  - Accrued interest purchased $1,000

- At first coupon:
  - Interest received $25,000
  - Interest earned $24,000 + bought

- Each coupon after:
  - Earned and received $25,000
Your Trade Looks Like:

<table>
<thead>
<tr>
<th>Description</th>
<th>Settlement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market Sector</td>
<td>Par</td>
</tr>
<tr>
<td>CUSIP</td>
<td>Principal</td>
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<tr>
<td>Price</td>
<td>Accrued Interest</td>
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<tr>
<td>Call?</td>
<td>Non-call</td>
</tr>
<tr>
<td>Trade Date</td>
<td>Settlement Date</td>
</tr>
<tr>
<td>Settlement Date</td>
<td>Net Settlement</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description</th>
<th>Settlement</th>
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<tbody>
<tr>
<td>Market Sector</td>
<td>T-Note</td>
</tr>
<tr>
<td>Maturity Date</td>
<td>11/30/18</td>
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<td>CUSIP</td>
<td>912828TT3</td>
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<tr>
<td>Price</td>
<td>@ 99.5</td>
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<td>Call?</td>
<td>Non-call</td>
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<tr>
<td>Trade Date</td>
<td>12/10/16</td>
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<td>Settlement Date</td>
<td>12/11/16</td>
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<table>
<thead>
<tr>
<th>Settlement</th>
<th>Settlement Date</th>
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<tbody>
<tr>
<td>Par</td>
<td>1,000,000.00</td>
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<tr>
<td>Discount</td>
<td>5,000.00</td>
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<tr>
<td>Principal</td>
<td>995,000.00</td>
</tr>
<tr>
<td>Accrued Interest</td>
<td>138.88</td>
</tr>
<tr>
<td>Net Settlement</td>
<td>995,138.88</td>
</tr>
</tbody>
</table>
Notes Bought at Par

- Buying **at par** ($1=$1)

- Principal stays the same through life

- Earnings only through accrued interest on coupons

- Example: Certificates of Deposit
  - Other notes also if at par
Notes Bought at a Premium

• Buying above par ($1=$1)

• Daily amortization is an expense
  ▫ Book value decreases each day

• Premium of $20,000 for 180 days

  $111.11/day

$100
99.5
99
99.5
100
100.5
101
101.5
102
102.5
Purchase
Maturity

Amortization

Expense
Choosing a Note

- Your two considerations:
  - Yield to compare to other securities
  - Maturity date to match your cash flow needs
- Ignore Coupons
- Disregard price – yield will reflect it
- All costs are net in yield

<table>
<thead>
<tr>
<th>Coupon</th>
<th>Maturity</th>
<th>Bid</th>
<th>Asked</th>
<th>Yield</th>
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<tbody>
<tr>
<td>1.20</td>
<td>11/15/xx</td>
<td>100.00</td>
<td>100.01</td>
<td>1.15</td>
</tr>
</tbody>
</table>
Discount or Premium?

- Premiums decrease yield
- Discounts increase yield

**T-Note**
- 5% Note - yield of 3.22%
- A premium or discount?

**T-Note**
- 5% Note - yield of 6.75%
- A premium or discount?
The Normal Yield Curve

Yields on the curve reflect the yields on the most recently auctioned security of that maturity.
The Treasuries

• Designed and marketed to reduce uncertainty

• Treasury Bills
  ▫ 3mo, 6mo, and 1yr maturities
  ▫ Auctioned weekly
  ▫ Always mature on Thursdays
  ▫ Quoted on yield or discount price

• T-Notes (and T-Bond)
  ▫ Maturities in 2, 3, 5, 7, 10 and 30 years
  ▫ All have coupons
  ▫ All mature on the 15th or last day of the month
  ▫ Quoted as yield and priced as % of par
Treasury Bills

- No surprises
- Always sold at a discount
- Earn on principal or interest?
- No changes in form
US Treasury Notes

- No Surprises – to give markets certainty
  - Auctioned with full information published

- Semi-annual fixed coupons fixed at auction
  - Always 1/8s, 1/4s, or ½ coupon rates (certainty)
  - Always mature on the 15th or last day of month
  - Interest is actual days/actual days of year basis

- Price quoted as % of par (99,100,101)

- Usually quoted as yield not price
Rate Info for Comparisons

Stock Market Data & Financial Markets Summary - Wall Street Journal

<table>
<thead>
<tr>
<th>Interest Rate</th>
<th>YIELD/RATE%</th>
<th>52-WEEK</th>
<th>CHANGE IN PCT. PTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LAST</td>
<td>WK AGO</td>
<td>HI</td>
</tr>
<tr>
<td>Federal-funds rate target</td>
<td>1.00-1.00</td>
<td>0.25</td>
<td>0.25</td>
</tr>
<tr>
<td>Prime rate*</td>
<td>4.25</td>
<td></td>
<td>4.25</td>
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<tr>
<td>Money market, annual yield</td>
<td>0.35</td>
<td>0.32</td>
<td>0.26</td>
</tr>
<tr>
<td>Five-year CD, annual yield</td>
<td>1.46</td>
<td>1.46</td>
<td>1.19</td>
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<tr>
<td>30-year mortgage, fixed</td>
<td>3.93</td>
<td>3.89</td>
<td>3.57</td>
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<tr>
<td>15-year mortgage, fixed</td>
<td>3.23</td>
<td>3.19</td>
<td>2.85</td>
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<tr>
<td>Jumbo mortgages, $417,000-plus</td>
<td>4.40</td>
<td>4.88</td>
<td>4.23</td>
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<tr>
<td>Five-year adj mortgage (ARM)</td>
<td>3.57</td>
<td>3.53</td>
<td>3.13</td>
</tr>
<tr>
<td>New-car loan, 48-month</td>
<td>3.02</td>
<td>3.06</td>
<td>2.85</td>
</tr>
</tbody>
</table>

See all Money Rates
* Base rate posted by 70% of the nation's largest banks.
Federal-funds, prime rate updated as needed later evening; all other rates updated by 7 p.m. ET.

<table>
<thead>
<tr>
<th></th>
<th>PRICE CHG</th>
<th>YIELD%</th>
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</thead>
<tbody>
<tr>
<td>U.S. 3 Month</td>
<td>1/32</td>
<td>1.126</td>
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<tr>
<td>U.S. 2 Year</td>
<td>0/32</td>
<td>1.589</td>
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<tr>
<td>U.S. 5 Year</td>
<td>-6/32</td>
<td>2.042</td>
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<tr>
<td>U.S. 10 Year</td>
<td>-14/32</td>
<td>2.418</td>
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<tr>
<td>U.S. 30 Year</td>
<td>-31/32</td>
<td>2.936</td>
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<tr>
<td>Germany 2 Year</td>
<td>-1/32</td>
<td>-0.686</td>
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<tr>
<td>Germany 10 Year</td>
<td>-13/32</td>
<td>0.479</td>
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<tr>
<td>Italy 2 Year</td>
<td>-1/32</td>
<td>-0.143</td>
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<tr>
<td>Italy 10 Year</td>
<td>-15/32</td>
<td>2.063</td>
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<td>Japan 2 Year</td>
<td>0/32</td>
<td>-0.135</td>
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<td>Japan 10 Year</td>
<td>0/32</td>
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<td>Spain 2 Year</td>
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<td>Spain 10 Year</td>
<td>-7/32</td>
<td>1.649</td>
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<tr>
<td>U.K. 2 Year</td>
<td>-2/32</td>
<td>0.476</td>
</tr>
<tr>
<td>U.K. 10 Year</td>
<td>-16/32</td>
<td>1.359</td>
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See at Closing Global Government Bonds

Highlights of Additional Data:
- Track the Markets
- Money Rates
- Bond & Index Benchmarks
- Global Government Bonds
- Treasury Quotes
- TIPS Quotes
- Corporate Gainers & Decliners
- Credit Derivatives
Other Treasury Structures

- **Callables**
  - Treasury has a right to issue them but does not

- **Strips** (US Government securities)
  - Separate Trading of Registered Interest & Principal
  - zero coupon, wireable, like a long T-Bill

- **TIPS**
  - inflation adjusted
US Agencies and Instrumentalities

The advantages of lower credit

- Treasuries give markets standardization

- Agencies **offer more** to get your business
  - Reflective of higher implied risk

- All ‘good day’ maturities
- Flexible maturity date choices
- Flexible structures
- More yield to take ‘risk’ of lower credit
Most Common Market Agencies

- FNMA and FHLMC are currently full faith and credit of the US
  - Conservatorship status under court direction
- These agencies are in the market most of the time.

- FHLMC
  - “Freddie Mac” Home Loan Mortgage Corp
- FNMA
  - “Fannie Mae” National Mortgage Assoc.
- FHLB
  - Federal Home Loan Bank
- FFCB
  - “Farm Credit” Farm Credit Bank

SLMA is no longer an authorized agency!
Agencies/Instrumentalities

- Higher yields
- High liquidity
- Steady supply
- Issued not auctioned
- Date tailored
- Non-standard coupons
- No bad end date

- Many varieties:
  - Bullets
  - Callables
  - Floaters
  - Strips
  - Variable Rate
  - Step-Ups
Agencies Come in Two Varieties

• Clarify and differentiate in your policy to include/exclude
  ▫ *Obligations of the US Government, its agencies instrumentalities,* excluding *mortgage backed securities*

• **Agency Notes**
  ▫ *debentures* of the agency
  ▫ backed by the credit of the agency

• **Mortgage Backed Agencies**
  ▫ backed by mortgages
  ▫ affected by interest rates and mortgage pay-downs
Agency “Derivatives”

- A “derivative” is any “derived” from a basic security
  - Not all derivatives are bad or are based on mortgages
  - Agencies create derivatives to add value
  - Options are *embedded* in the security to create structures

- Simple structure derivatives
  - Callables
    - have a call option allowing the issuer to refinance at lower rates
  - Floaters
    - *float* with some defined index
  - Indexed
    - are priced according to some defined index (like T-Bill auctions)
Callable Structures

- Critical factors for callables
  - Lock-out period
  - Call dates and frequencies
  - Almost always called at par (100)

- Various structures – 2/1; 3/1; 5/2; 10/3
  - European – one-time call
  - Bermuda – “Discrete call”, callable only on interest payment dates
  - American – “Continuous call”, callable anytime with # of days notice

- Step-up callables
  - Fixed coupon to next call date
  - At call bonds either called or coupon “steps up”/increases
  - Multiple steps
Step-Up Notes
A special security when rates are to rise

US RATES – OVERNIGHT TO 3 YEARS

Lock-out period
Valuation and reporting of Callable Securities

• Priced at spread to Treasuries usually

• Reported to indicate maturity date (maximum risk)
  ▫ Days to maturity is to maturity not call for maximum risk
  ▫ Amortize to call date or maturity date? Why?

• Your decision is based on your need and interest rate outlook

• Option Adjusted Spread (OAS)
  ▫ Creates synthetic “bullet”
  ▫ Compare spread from OAS analysis to historical spread for non-callable securities from same market sector
Floating-Rate Notes

- “Floaters” reset rates periodically
  - Tied to an Index (like T-Bill auction)
  - Often priced with a specific spread

- Reset Periods
- Day Count Periods
- Payment Periods
- Maturity
- Valuation
Some More Securities

• Additional types of securities
  ▫ Not used by most public entities

• They are legal if in your policy
  ▫ You might want specificity in definitions

• Chose your policy securities carefully
Bond Mutual Funds AND
Ultra Short -Term Mutual Funds

• Structure is key – not liquid securities – PRIME MMMF
  ▫ Moves on market prices – not a straight accrual
  ▫ Must have a maximum WAM of 2 years
  ▫ Not permitted for bond funds because of risk
  ▫ Not much reason to use – especially now
    • Potential of principal loss in rising rates

• Check the fee
  ▫ Use no-load funds
  ▫ total expense ratio

• Know the earnings history

• Read the prospectus
  ▫ Size
  ▫ Goals and policy restraints
Corporate Bonds

- Only for Higher Education and ISD >50,000
- Credit required AA- but higher may be safer
- Monitoring required
Mortgage Backed Securities

• Built from pools of home mortgages
  ▫ “Pass-through” securities
  ▫ Passes through P&I from homeowner

• Stated maturity and expected maturity

• Performance of pool
  ▫ dependent on mortgage payments
  ▫ Dependent upon interest rates

• Subjective pricing
Mortgage Backed Securities

• Homeowners pay their monthly principle and interest

• Funds flow through agency “pool” of mortgages

• Owners of MBS gets their pro rata amount of P&I
Derivative Mortgage Backed

- Created for investors clamoring for yield

- Pool of mortgages is divided
  - Collateralized Mortgage Obligations (CMO)
  - Each piece (tranche) is structured differently

- CMO differ in risk
  - TAC, PAC, Jump-Z, Inverses
Municipal Obligations

- Current value over other securities but slowing loosing

- Taxable and non-taxable issuers
  - In any US state
  - Rated A or above (you may want higher!)

- Various structures
  - GO or revenue bonds

- Credit and liquidity issues

- Arbitrage safe haven
Commercial Paper

- Commercial Paper
  - High quality and good short term tool
  - Unsecured promissory notes of a company
  - A1/P1 rating required
  - Defined as 270 days maximum maturity

- Restrict policy to 90 days (max 180)
- Liquidity risk
- Credit monitoring critical
- Spread Issue (+15 to DN)
- Stick to known names and investigate
- Diversify
- Minimize % in policy
Asset Backed Commercial Paper

- Know what backed the securities
- Based on underlying securities or assets
  - Not based on credit of the company
- Originally backed by receivables
  - Short-term debt used to finance long term risk
- High concentrations threaten funds/pools
  - Florida, Montana, Washington State
Bankers Acceptances

- Bankers Acceptances
  - International trade primarily
  - Defined as 270 maximum

- Restrict to 90-120 days in policy
- Illiquid
- Measure spread vs CP
- Credit issues
- Foreign versus domestic?
Israeli Bonds

- Issued, assumed or guaranteed
  - by the State of Israel
  - Assumed backing by US

- Denominated in US dollars
- Longer term shortest is 2 years
- Illiquid
- Currently 1yr 1.58%, 3yr 2.10%
Limited-Use Securities

• **GIC**
  ▫ Guaranteed Investment Contracts
  ▫ Basically insurance contracts

• **Specialized funds [IRS Code Sec 501(f)]**
  ▫ Institutions of Higher Education

• **Municipal utilities**
  ▫ Distributing electricity or natural gas
  ▫ Hedging contracts
  ▫ Decommissioning Trust Fund

• **Mineral Rights Funds**
  ▫ Alternate uses for mineral right (gas) funds
  ▫ Barnett Shale impetus
Settlement

• Clearing your purchased security

• Clearing into your depository/safekeeping
  ▫ Important role to verify and secure

• All electronic documents and securities

ABA 11-xxxxxxxx
For account of City of -------
Settlement Steps (Bringing it in)

- Agree on details and amount with broker
- Create a trade ticket to document the buy
- Send ticket to your bank
- Bank watches for the security online
- Bank will match your and broker info and $$
- Bank will then release funds – if matched

- Bank and broker will send you a confirmation
Securities Wire Systems

- **Federal Reserve Wire** - “FedWire”
  - Function of the Federal Reserve
  - Wire reference number enables tracking

- **Depository Trust Corporation** - DTC
  - Primarily for commercial paper

- **Participatory Trust** – PTC
  - GNMA settlement

- Always---→ **Delivery versus Payment**

- “Free Delivery” for transferring owned assets to new institution
Purchases and Sales

- **Settlement**
  - Cash (same day)
  - Regular (next day)
  - Bid (sale) vs. Offer (buy)
  - Independent safekeeping
So what do I do - about securities

- Know what you are buying – ask questions – be comfortable
- Buy according to your cash flow needs
- Always get competitive bids
- When in doubt.....DON’T!
Making the Decision

- **Need:** $500,000 payroll on 8/27/18
- **Choices:** Treasuries, CD, Agency, Pool
- **Curve:** Stable and normal upward slope

**Yields:**
- **CD** 7/25/18 2.00 %
- **T-Bill** 7/19/18 1.90 %
- **FNMA** 7/18/18 2.40 %
- **Pool** 1.30 %
Making the Decision

- **Need:** $500,000 payroll on 8/27/18
- **Choices:** Treasuries, CD, Agency, Pool
- **Curve:** Flat curve, talk of Fed raise in rates

**Yields:**
- CD 7/25/18 2.00 %
- T-Bill 7/19/18 1.90 %
- FNMA 7/18/18 2.40 %
- Pool 1.30 %
Making the Decision

- **Need:** $500,000 payroll on 8/27/18
- **Choices:** Treasuries, CD, Agency, Pool
- **Curve:** Economy looks bad

**Yields:**
- **CD** 7/25/18 2.00 %
- **T-Bill** 7/19/18 1.90 %
- **FNMA** 7/18/18 2.40 %
- **Pool** 1.30 %
Relative Value by Yield

- Investment out about six months... no specific liability

- T-Bill 1.22%
- T-Note 1.28%
- FNMA 1.50%
- FHLMC 1.52%
- GE CP 1.55%
- FFCB 1.40%
- CD 0.80%

- Which one do you NOT use?
- What are your considerations?
Relative Value by Yield

- Longer term investment out 1.5 years...core investment
  - T-Note 2.28%
  - FNMA 2.35%
  - FHLMC 2.33%
  - FFCB 2.40%
  - WB 2.60%
  - CD 1.50%

- What are your considerations?
Real Value

Which do you choose?

<table>
<thead>
<tr>
<th>Rate</th>
<th>Maturity</th>
<th>Bid</th>
<th>Asked</th>
<th>Chg</th>
<th>Ask Yld</th>
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<tbody>
<tr>
<td>5 3/4</td>
<td>May 10</td>
<td>97:16</td>
<td>97:18</td>
<td>-4</td>
<td>6.61</td>
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<tr>
<td>10 3/4</td>
<td>May 10</td>
<td>111:14</td>
<td>111:16</td>
<td>0</td>
<td>6.61</td>
</tr>
</tbody>
</table>
Buy the discount

- **5 3/4 Apr xx**
  - Price 97/16
  - Yield 6.61%
  - PAR 1,000,000
  - Prin 975,625
  - Acc 19,271
  - Net 994,896 *

- **10 3/4 Apr xx**
  - Price 111/14
  - Yield 6.61%
  - PAR 1,000,000
  - Prin 1,116,875
  - Acc 31,600
  - Net 1,148,145
Broker/Dealers

- **Services**
  - Access to markets
  - Market analysis
  - Security analysis
  - Credit research

- **Risks**
  - Default of firm
  - Transaction loss
  - Delivery & Safekeeping

The brokers job is to SELL you not advise you.

Only advisers are registered to give advice.
Broker or Dealers? Bank?

- **Broker**
  - No inventory
  - Transaction based
  - FINRA Regulation
  - Capitalization
  - Retail - Institutional

- **Dealer**
  - Maintains inventory
  - FINRA Regulation

- **Primary Dealer**
  - Reports to NY Fed
  - Capital monitored
  - Open market trading for NY Fed
  - Liquidity provider
  - FINRA
Primary Dealer List
www.ny.frb.org

Currently 23 primaries
“Non-Primary” Dealers

- Not monitored by the Federal Reserve
- Voluntary compliance with Fed’s standards
- Register with SEC and SRO (e.g. FINRA)
- Often regional and specialize in certain types of securities
- Can provide products, ideas and service
FINRA 2111

- FINRA requirement
- Know Thy Client
- Defines institutional clients (*sophisticated*)
- No broker decision-making
- Adviser vs broker clarity

**INSTITUTIONAL SUITABILITY CERTIFICATE**
**AFFIRMATIVE INDICATION OF EXERCISE OF INDEPENDENT JUDGMENT**
*(Pursuant to FINRA Rule 2111)*

In connection with any recommended** transaction or investment strategy by a registered broker-dealer, the undersigned acknowledges on behalf of the Institution named below that:

A. It is an Institutional Account*** as defined in FINRA Rule 4512(c)3;

B. It is capable of evaluation investment risks independently, both in general and with regard to all transactions and investment strategies involving a security or securities and will exercise independent judgment in evaluating the recommendations of a broker-dealer and its associated persons, unless it has otherwise notified the broker-dealer in writing;

C. It will notify the broker-dealer if anything in this Certificate ceases to be true;

D. He or she is authorized to sign on behalf of the Institutional Account named below.

By signing this Certificate, the undersigned affirms that the above statements are accurate but does not waive any rights afforded under U.S. federal or state securities laws, including without limitation, any rights under Section 10(b) of the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.
Municipal Adviser Certification

- Complete the form showing an independent debt adviser is being used

- Put a notice on your website naming your municipal adviser and investment adviser
City of _____________. Texas

Municipal Advisor Certification

August 20xx

By publicly posting the following written disclosure, the City of ____________ intends that market participants receive and use it for purposes of the independent registered municipal advisor exemption to the SEC Municipal Advisor Rule.

The City has retained as Registered Municipal Advisors, ________________, Investment Bankers; and as Registered Investment Advisor _________________. The City is represented by and will rely on its Municipal Advisors and Investment Advisor to provide advice on proposals from financial services firms concerning the issuance municipal securities and municipal financial products (including investments of bond proceeds and escrow investments). This Certificate may be relied upon until further notice by the District.

Proposals may be addressed to:

Ida Know
Finance Direc{}tor
City of ______________

x

____________, Texas

ida@city of --.gov

For posting to your website -
Selecting a Broker

- Determined by portfolio needs
- Local versus non-local
- Primary versus secondary
- Banks
- How many brokers?
- What due diligence?

- NEVER use broker safekeeping – move securities to your depository bank
What you need from the broker

- FINRA registration
  - Central Registration Depository Number (CRD#)
- Texas Registration – State Securities Board
- Annual Financial Statement
- Questionnaire information
- You do not need a 1295 nor certification
- Send them your policy as due diligence
Your Protection?

- Broker/dealer list must be approved annually
  - Broker/dealers **only** not banks or pools on list

- **Peer Experience and References**
- Credit Lines
- Capital Adequacy
  - A standard not a guarantee
  - Government Security Dealer Act 1986 (structure)
  - Government Securities Act 1993 (standards)

- SIPC ONLY APPLIES TO BROKER HELD SECURITIES – not applicable

- **FINRA (Financial Industry Regulatory Authority)**
  - Self regulatory body
Broker Dealer Questionnaires

• Differentiate between brokers and primary brokers

• All brokers:
  ▫ firm information
  ▫ contact broker information
  ▫ delivery instructions
  ▫ public client references

• Non-Primary Brokers:
  ▫ market sector involvement
Non-Primary Information

- FINRA Registration and CRD number
- Texas State Securities Registration
- Market Involvement in your market sectors
- Public Sector Involvement
- References

- Audited Financial Statements
  - provided annually
How to Use a Broker

- Making an investment
  - Set your time horizon
    - Set the maximum maturity date
  - Tell multiple brokers what you need/want
    - “I need the best rate not past xx/xx/xx in an agency or treasury”
  - Wait for them to do the research and respond with option
    - They will bring back alternatives for you to chose from
  - You compare and make the decision
    - Inform them all what you bought (the “cover”)
    - Feedback is important
Your job as an investor:

- Meet known asset/liability requirements.
- Prepare for unexpected liabilities.
- Balance yield with liquidity and flexibility.
- Read major market trends for applicability.
- Read the curve and markets for rate direction.
- Enhance yield.
- Protect principal: i.e. don’t lose money!

- Have a strategy
So what do I do - about all this

- Do your cash flow
- Write your policy

- Choose at least two brokers and qualify them
- Do competitive bidding always

- Create your ladder
- Use securities for your ladder

- Do delivery versus payment
- Get started!
Remember Investing is Risk Management! Get Started.

Linda Patterson
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linda@patterson.net