INVESTMENTS 240:
PRINCIPLES OF INVESTMENT ACCOUNTING
Investment Accounting System

- Ensures full disclosure and accountability (reports are public records)
- Accurately describes all investments
- Can be used to accurately measure performance
- Promotes "clean" audits

Investment Reports

- Components of investment reports include:
  - An inventory of all securities which includes CUSIP, par value, market value, book value, settlement date, maturity date, coupon rate, and yield
  - A record of all investment transactions (purchases, sales, calls, maturities)
  - A record of all income (interest received, realized capital gains)
Components of the Inventory

- **CUSIP**: Letter and number combinations assigned to identify publicly traded securities. Each number is unique to the issue.

- **Par Value**: The value of a bond at maturity; its future value.

- **Market Value**: The liquidation value of each security as of a specific date; may be greater (or less) than your purchase cost due to changing interest rates.

**Book Value (Cost)**: The amount disbursed to purchase a security, including any accrued interest due to the seller on the settlement date.

- The buyer will receive the entire coupon payment at the next interest payment date.
  
  \[
  \text{Book Value} = \text{Principal} + \text{Accrued Interest} \\
  \text{(Principal Cost} = \text{Par Value} \times \text{Purchase Price})
  \]

- After the next interest payment is received, the accrued interest is amortized from the book value and the book value will equal the principal cost.

**Settlement Date**: The date in which the securities are delivered versus payment. The legislation requires "delivery vs. payment" (DVP) and the use of a qualified safekeeping agent.

**Maturity Date**: The future date in which the par amount is paid to the investor. The par value will be paid at maturity, regardless of original purchase cost.
Components of the Inventory

- **Coupon (or Rate):** The annual percentage amount paid to an investor, based upon the par value of the bond; the rate may be fixed or variable.

- **Yield to Maturity:** The rate of return anticipated on a bond if it is held to maturity.
  - If coupon < YTM, the bond was purchased at a discount.
  - If coupon > YTM, the bond was purchased at a premium.
  - If coupon = YTM, the bond was purchased at par (100).

The Portfolio Inventory

- Categorize investments by issuer and type
  - Issuers include: Fannie Mae (FNMA), Freddie Mac (FHLMC), Federal Home Loan Bank (FHLB), Federal Farm Credit Bank (FFCB), and Farmer Mac (FAMCA), U.S. Treasury (UST)
  - Types include: Callable bonds (fixed rate and step-ups), Non callable bonds (or bullets), Discount notes

The Portfolio Inventory

- Assign a transaction number or some other form of internal identification number [useful during audits].
- Retain transaction numbers until the security matures or is sold.
- Include all details of the trade.
The Portfolio Inventory

<table>
<thead>
<tr>
<th>CUSIP</th>
<th>Investment Type</th>
<th>Face Value</th>
<th>Par Value</th>
<th>Purchase Date</th>
<th>Stated Maturity</th>
<th>Purchase Days to Yield</th>
<th>Accrued Interest Current</th>
<th>Amount Purchased</th>
<th>Market Value</th>
<th>Book Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>36959HR17</td>
<td>Commercial Paper</td>
<td>250,000.00</td>
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<td>11/29/2012</td>
<td>0</td>
<td>0.223</td>
<td>249,812.08</td>
<td>249,812.08</td>
<td>249,812.08</td>
</tr>
</tbody>
</table>

Separation of Duties

INVESTING AUTHORITY
Maintains official investment records
Balances with custodian and Investment Manager
State Auditor examines internal records
REGISTERED INVESTMENT ADVISOR (Optional)
Submits monthly/quarterly reports
Sends transaction advices to Public Entity

BROKERS/DEALERS
Sends trade confirmations to public entity and Investment Manager

CUSTODIAN BANK
Issues monthly custody statements

The Concept of Asset Conversion

• An investment transaction is a conversion process.

• Cash and investments are both assets of your public entity.

• Adjustments are made between cash and investments when bond purchases, sales, maturities, and calls take place.
The Concept of Asset Conversion

- Cash account and Investment account
  - A bond purchased for $1 million reduces cash and increases investments on the settlement date by that amount.
  - The total assets of the public entity remain the same.
- The total asset value of the public entity increases when the investment pays interest (or when capital gains are realized).

Cash Basis Portfolio Accounting

- Public entity investment reports use cash basis portfolio accounting.
  - Purchase cost is reduced by the amount of purchased accrued interest at the next interest payment date.
  - Purchase cost remains level to the maturity or sale date.
  - Premiums are not amortized; discounts are not accreted.
  - Income is reported when received (realized).
  - Realized income is shown as proceeds minus cost.

Accrual Portfolio Accounting

- Purchase cost is adjusted daily ("adjusted book value")
- Premiums are amortized over the life of the security
- Discounts accrete over the life of the security
- Interest accrues daily
- Capital gains/losses are based upon adjusted book value
Reconciliation Process

• The public entity’s internal record-keeping is subject to audit by the State Auditor.
• Components of the Reconciliation Process:
  • Internal Records (the official books)
  • Custodian bank – safekeeping of investment assets, purchase cost, income, trade activity
  • Investment advisor (if used) – inventory of assets and individual purchase cost, income, list of transactions
  • Additional records – broker/dealer trade confirms

Reconciliation Process

• A “pay-in” is made by the Public Entity evidencing a receipt of funds. This transaction is based upon a transaction that lists the original investment cost minus the proceeds of a sale (or called bond).
• Other investment transactions to be “paid-in” include interest payments. It is recommended that a pay-in occurs when a receipt of funds occurs (credited) at the custodian; other acceptable methods include periodic pay-ins during the month provided that such multiple transactions are reconciled prior to the pay-in to ensure that the Public Entity’s records balance with the custodian.

Common Reconciliation Errors

- Using market value rather than book value (cost)
- Failing to account for purchased accrued interest
- Not recognizing a discount at maturity
- Not amortizing a premium paid
- Not maintaining supporting documentation
- Not recognizing income when received
Net Effect Between “Total Cash” & “Total Investments”

- A bond with an original issue date of 2/13/13, purchased in the secondary market for a settlement date of 3/12/13, at a price of 99.95 with a coupon of 0.79% and maturing on 2/13/2017, will affect the total cash account as follows:

  \[
  \begin{align*}
  & 1,999,000.00 \quad \text{2,000,000 minus a discount of 1,000} \\
  + & 1,272.78 \quad \text{Accrued interest paid at purchase = Initial Purchase Cost} \\
  = & 2,000,272.78 \quad \text{Reduction in total cash offset by an increase in total investments}
  \end{align*}
  \]

Net Effect between “Total Cash” & “Total Investments”

- At the following interest payment date (08/13/2013), cash and investments are affected as follows:

  Gross interest payment received minus accrued interest paid at purchase = net interest income (the “pay-in” amount):

  \[
  \begin{align*}
  & 7,900.00 \quad \text{Interest received (credited by the custodian bank)} \\
  - & 1,272.78 \quad \text{Accrued interest paid at settlement date (3/12/2013)} \\
  = & 6,627.22 \quad \text{Net interest income (Increase in cash offset by a decrease in investment cost)}
  \end{align*}
  \]

Net Effect between “Total Cash” & “Total Investments”

- Another method is to increase cash by the full amount of the next interest payment received, which has been previously offset by a negative addition to income at the original settlement date of purchase.

- In the example shown, the amount of accrued interest paid at original purchase, $1,272.78, is treated as a negative to total cash on the purchase date, noted as a bracketed entry, (1,272.78).
**Net Effect between “Total Cash” and “Total Investments”**

- The amount of the decrease in the cash account and the amount of the increase in the investment account = the price of the bond, plus any accrued interest paid at purchase (with the amount of purchased accrued interest eventually reduced at the payment date of the next interest payment).
- Price may also include a premium paid at purchase, as illustrated in the following example:

<table>
<thead>
<tr>
<th>Par</th>
<th>$2,000,000.00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Premium</td>
<td>1,000.00</td>
</tr>
<tr>
<td>Acc. Int</td>
<td>1,272.78</td>
</tr>
<tr>
<td>Net</td>
<td>$2,002,272.78</td>
</tr>
</tbody>
</table>

* Purchased accrued interest is amortized at the next interest payment date. The premium is amortized at maturity.

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**Net Effect between “Total Cash” & “Total Investments”**

- A straight interest payment (after the amortization has taken place) is paid-in totally, as an increase in the cash account.
  - This amount is recognized even if the amount of interest paid has been totally credited to the money market sweep account within the custody account.
  - From an accounting perspective, cash is debited and interest income is credited.

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**Net Effect between “Total Cash” & “Total Investments”**

- On cash basis accounting (utilized by Ohio public entities), a negative pay-in may occur at maturity if the purchase premium of a bond exceeds the final interest payment amount.
- Additionally, in the case of callable securities where a premium has been paid, a lower yield will be realized if the bond is called prior to maturity.
Net Effect between “Total Cash” & “Total Investments”

- The premium paid remains a part of the fixed-cost at purchase, plus any accrued interest paid.
- The actual “yield” of the bond would have been reflective of current market yields at the time of purchase:
  - FFCB 0.79% due 2/13/17 with an original settlement date of 3/12/13 is currently offered at a price of 100.05, resulting in a true yield to maturity of 0.78% and a yield to call on 2/13/14 of 0.74%.

Checks & Balances

INVESTING AUTHORITY (PUBLIC ENTITY)
- Investment manager verifies inventory purchase cost with custody statement
- State Auditor examines individual transactions and compares to Custody statements and internal records of Treasurer/transactions advices and broker/dealer confirms

BROKERS/DEALERS
- Affirm transaction with custodian
- Deliver/receive bonds vs. payment (DVP)
- Payment date = settlement date

CUSTODIAN BANK
- Pay for purchases/delivers with funds on settlement date (DVP)

Review & Questions