Debt Valuation and Interest

A financial instrument such as a bond is always valued at the present value of the cash flows discounted at the market rate. A bond has two cash flows associated with it:
- The present value of the principal payment at the end (PV1)
- The PV of the regular interest cash payments (PV annuity)
  - Cash payments = Principal x Stated Rate x Time
  - If payment is semiannual, multiply years by 2, and divide rate by 2 when using tables or calculator (i.e. 10 years @ 10% semiannual: n=20 r=5%)

Notice there are two rates:
- The stated rate is used to calculate the cash interest payment
- The market rate is used to discount the cash flows to get PV

A bond may sell at a discount or a premium, according to market:
- A discount is a selling price below the face value (98 is 98% of face)
- A premium is a selling price above face value (102 is 102% of face)

**JE (premium):**
- Cash $10200
- Bond payable $10000
- Premium on bonds $200

**JE (discount):**
- Cash $9800
- Discount on Bond $200
- Bonds Payable $10000

Interest Expense

Interest expense is composed of two components:
- The cash interest paid +/- amortization of the discount/premium

**Premium JE:**
- Premium on bonds $10
- Interest expense $490
- Cash $500

**Discount JE:**
- Interest expense $510
- Discount on Bond $10
- Cash $500

Both of these entries amortize premium/discount on a straight-line basis ($200/20 periods= $10 amortization per period)
- Also remember that these are semiannual payments (1/2 annual)

The Effective Interest Rate method finds interest expense first:
- Current carrying value x market interest rate= interest expense
- Interest expense less cash paid gives amortization amount
- Find new carrying value after each payment
  - Bond face value less unamortized discount or plus premium
- Repeat process until bond matures and has no discount or premium

Bond Issuance between Periods

If a bond is issued or sold between interest periods, then there must be an accrual of interest:
- For the issuer, this is selling the buyer a receivable
  - The issuer can also credit interest expense, but it is preferred to recognize a receivable
  - The issuer debits the cash received for the bond plus any accrued interest; the credit is to bonds payable and an interest payable (for the accrued interest)
- For the buyer, a receivable is debited for the accrued interest

Other Bond Concerns

- The cost of issuing the bonds is a deferred charge (asset) called Unamortized Bond Issue and is amortized over the life of the bond
- If debt is extinguished -> reacquisition price less net carrying amount give a gain or loss
  - Be sure the unamortized premium or discount is up-to-date

Notes Payable

- Valued at the present value of future interest and principle cash flow
- A Zero-Interest-Bearing Note is issued fully discounted, and the total discount is amortized to interest expense over note’s life

Imputed Interest

If a note has no ready market or cannot be derived from the FMV of what is given or received, an interest rate can be approximated
- The rate is the same for similar instruments with similar ratings
- Can be affected by restrictive covenants, collateral, payment schedule, existing prime rate; it is made when issued and any subsequent changes are ignored.