Chapter 11

Investment Analysis and Taxation of Income Properties

Investment Analysis
Big Picture

- Motivations for Investing in Income Properties
  - Rate of Return
  - Price Appreciation (a part of expected return)
  - Diversification
  - Inflation Protection
  - Tax Benefits

Investment Strategies (1of 2)

- Investing in Core Properties
- Investing in Core Properties with a “Value Add” Strategy
- Property Sector Investing
- Contrarian Investing
- Market Timing
- Growth Investing
- Value Investing

Investment Strategies (2 of 2)

- Strategy as to Size of Property
- Strategy as to Tenants
- Arbitrage Investing (private acq. to public sale –REIT)
- Turnaround/Special Situations
- Opportunistic Investing
- Investing in “Trophy” or “Blue Chip” Properties

- Development

Market Characteristics

- Real Estate **Cycle**
  - Large Market in number and size of properties
  - Competitive
  - Fragmented Ownership
  - Overdevelopment Potential
  - The cycle differs for different property types.

Market Analysis

- Evaluation of supply and demand for a type of property
- Absorption (how much space is leased-up in a period)
- Supply of Space
- Market Rents
- Forecasting Supply, Demand, Market Rents, and Occupancy

Analysis – Specific Projects

- Subject property versus “Market”
- Actual Cash Flows
- Proforma build
- Importance of Existing Leases

Investment Analysis Review

- Present Value (Discounted Cash Flow or *DCF Analysis*)
  - A way to solve for the initial price (value) that an investor may pay given a specified discount rate.
    - Discounted value of the cash flows (at some *r*)
    - The discount rate is the rate of return that an investor will require in order to make a specific investment
    - Do not need to know purchase price (we are solving for this)
    - How to determine *r* ?

- Net Present Value (NPV)
  - If purchase price known
  - Comparison of DCF value to proposed price/investment
  - DCF – price = NPV

Investment Analysis Finance Review

- Given a “Purchase Price” or Cost……
  - PV of future CF less Cost = NPV
  - Internal Rate of Return (IRR) of deal
    - The discount rate at which the net present value of the cash flows is equal to 0.
    - The discount rate that equates the purchase price (initial outflow) with the present value of future cash flows

If IRR > r; accept Project

If IRR < r; reject Project

Where r is the appropriate discount rate, or required return, or the “hurdle rate”

Comment on Rates

- What is difference between IRR and *r* ?

- *r* is the investor's "required return" regardless of proposed purchase price. Apply to future cash flows.

- IRR can only be calculated "given" a proposed purchase price (or investment amount). It is what the deal "throws off" given that price. Apply to all cash flows including investment.

Monument Office Building
(Unleveraged analysis first)

- Available at asking price: $8,500,000
- Three tenants – various rates & terms
  - Expense stops
- Hold property for 5 years
  - Assume terminal cap rate = going in cap rate

Note: 15/16th edition of Brueg Fisher textbook has different assumptions from 14e. The Master spreadsheet has both versions.

Monument Office Building p352
(Unleveraged analysis first – See Excel file)

- **Ch 11 – Lease 15&16e** Excel Master file
  - Lease Analysis and proforma
  - Build proforma

- **Discuss**
  - **Valuation concepts**
  - **Implied Going in cap rate**

Monument Office Building p352 (Leveraged)

- **STOP.**
- **Ch 11 – Monument** case extends to add:
  - Leverage (debt financing)
  - Income Tax Concepts
  - Complex
- **Simplify**
  - Before proceeding, let's do a simpler example that doesn't mix these.

Levels of Property Analysis

Level	Description	Important CF	Required return
1.	Unleveraged	NOI	*r*
2.	Leveraged	CF after Debt Service CF to Equity (BTCF)	*k*
3.	After Tax (leveraged)		*m*

Green Grass Office Building
A Simpler Example
(IncomePropertyIllustrated_Simplified.xlsx)

Start with a simple example to illustrate

1. Unleveraged example
2. Debt Financing (Leverage)
3. Taxation

See file: See three tabs (sheets)

NOTE: Following slides refer to the Excel model

Green Grass Office Building

(IncomePropertyIllustrated_Simplified.xlsx)

- Review “Unleveraged Analysis” tab
  - $1,000,000 all cash purchase

- Then, consider adding Debt
  - See next few slides then review “Leveraged Analysis” tab

Debt Financing Balance Sheet

(IncomePropertyIllustrated.xlsx)

Property	$1,000,000	Debt (mortgage)	$700,000
		Equity	$300,000*

* Simple analysis ignores closing costs, fees etc.

Debt Financing: Terminology

- Debt Service: The total monthly (or annual) payment you must make to meet your obligation (interest + principal in case of amortizing loan)

- Equity Required* = Price – Debt

- *CF to Equity* = NOI – Debt Service
  - aka Before Tax Cash Flow (BTCF) (text uses this)
  - aka Equity Dividend (BTCF)

- Equity Dividend Rate = $\frac{CF\ to\ Equity}{Equity\ Investment}$
  - aka "cash on cash" return.

* But you need to also add any closing costs, including points.

Green Grass Example

- Green Grass Office Building:
  - $1,000,000 Property;
  - 85% allocated to building and 15% to land *(for taxes)*
  - NOI_1 = $112,056

FINANCING

  - 70% LTV; 8% Interest Rate, 30 Year Am.
  - No financing costs (no “points”) to keep it simple
  - $700,000 debt; $300,000 equity
  - Monthly Payment = $5,136.35
  - Annual Debt Service (x12) = $61,636

Before-Tax Cash Flow - Operations

- CF to Equity (or BTCF) = NOI - DS
  - $112,056 - $61,636 = $50,420
  - a.k.a. “equity dividend”
- Equity Dividend Rate = EQDIV/Equity
  - $50,420/$300,000 = 16.81%
  - a.k.a “*cash on cash*” return
- Debt Coverage Ratio =
  - $112,056/$61,636 = 1.82
- These ratios pertain to the first year of operations (meaningful if stabilized NOI)

Before-Tax Cash Flow – Sale of Property

- Before-Tax Cash Flow from the Property Sale ($BTCF_s$):
  - We need this to do a DCF analysis
  - $BTCF_s$ = Sales Price – Mortgage Balance
  - If the property were sold in Year 5 for net price of $1,375,000 ($1,326,250 net) then
  - $BTCF_s$ = $1,326,250 - $665,489 = $660,761
    - The mortgage loan balance ($665,489)
    - How to get mortgage balance (25 years remain)?
    - n=25x12, i=8/12, pmt=-5,136.35, Compute PV

We'll return to this simple example later…..

U.S. Taxation

Administered by Internal Revenue Service (IRS)

- Four Classes of Real Property
  - Real Estate held as a **“personal residence”**
  - Real Estate held for sale to others – **“dealer” property”**
  - Real Estate held for use in a trade or business – **“trade or business property”**
  - Real Estate held as an investment for the production of income – **“investment property”**

3 Types of Taxable Income

- Active Income
  - Salaries, wages, bonuses, and commissions
- Portfolio Income
  - Interest, dividends, and capital gains
- Passive Income
  - Rents from real estate, and royalties from oil and gas rights

Passive Activity Loss (PAL) Restrictions

- IRS does not want investors to be able to “shelter” other income with real estate losses (many created by depreciation)
- Passive losses cannot be used to reduce active or portfolio income
- Passive losses may be used to reduce other passive income
- Passive losses not used may be used in future years

Passive Activity Loss Restrictions

- 1st Exception
  - Active participants may deduct up to $25,000 in passive losses against other non-passive income, subject to income limitations
- 2nd Exception
  - Broad exception for some real estate professionals

Depreciation and “Basis”

- The original cost basis includes all costs associated with acquiring the property and transferring the title
- Land value cannot be depreciated
- The “depreciable basis” is the total value that can be depreciated over the recovery period
- Depreciable Basis = Cost Basis – Land Amount

Depreciation

- Depreciation
  - Depreciable Basis / Recovery Period
- Recovery Period depends on property type
  - Residential income producing property (27.5 Years)
  - Non-residential income producing property (39 Years)

After-Tax Cash Flows

- Calculating the after-tax cash flow from operations
- Step 1: Compute taxable income and tax payable

Net Operating Income

+ Capex (if deducted in NOI)

- Depreciation
- Interest

= Taxable Income

Then multiply by tax rate

After-Tax Cash Flows
(Back to our earlier example GreenGrass)

- From our example, depreciation is based on a building value of $850,000 over 39 years
  - Depreciation = $850,000/39 = $21,795
  - Interest = $55,789 (possible with “amort” function on the financial calculator or build an amortization schedule in Excel. This is the interest portion of the total $61,636 of year 1 Debt Service.)

Tax Calculation

(IncomePropertyIllustrated_simplified.xlsx)

- Year 1 taxable income would be:

NOI	$112,056	
Capex (if deducted in NOI)	+ 0	
Depreciation	- $21,795	
Interest	- $55,789	
Other (tax amortization of points)	- 0	
Taxable Income	$34,472	
Thus Tax Payable @ 30%	10,342	A CF item

Tax Calculation

A few complications

Tax Calculations	Cash Calculations
Net operating income (*NOI*)	Net operating income (*NOI*)
+ Capital expenditures (*CAPX*)	
− Depreciation (*DEP*)	
− Interest expense (*INT*)	− Interest expense (*INT*)
− Amortized financing costs (*AFC*)	− Principal amortization (*PA*)
= Taxable income (*TI*)	= Before-tax cash flow (*BTCF*)
× Ordinary Tax rate (*TR*)	− Tax liability (*TAX*)
= Tax liability (*TAX*)	= After-tax cash flow (*ATCF*)

Model can be made more realistic by a) adding CAPX (model contemplates a % of EGI) and b) adding “Points”

After-Tax Cash Flows

- Step 2: Compute after-tax cash flow from operations *for year 1*

$ATCF_1$ $= BTCF_1 – Taxes$

$= \$50,420 – 10,342$

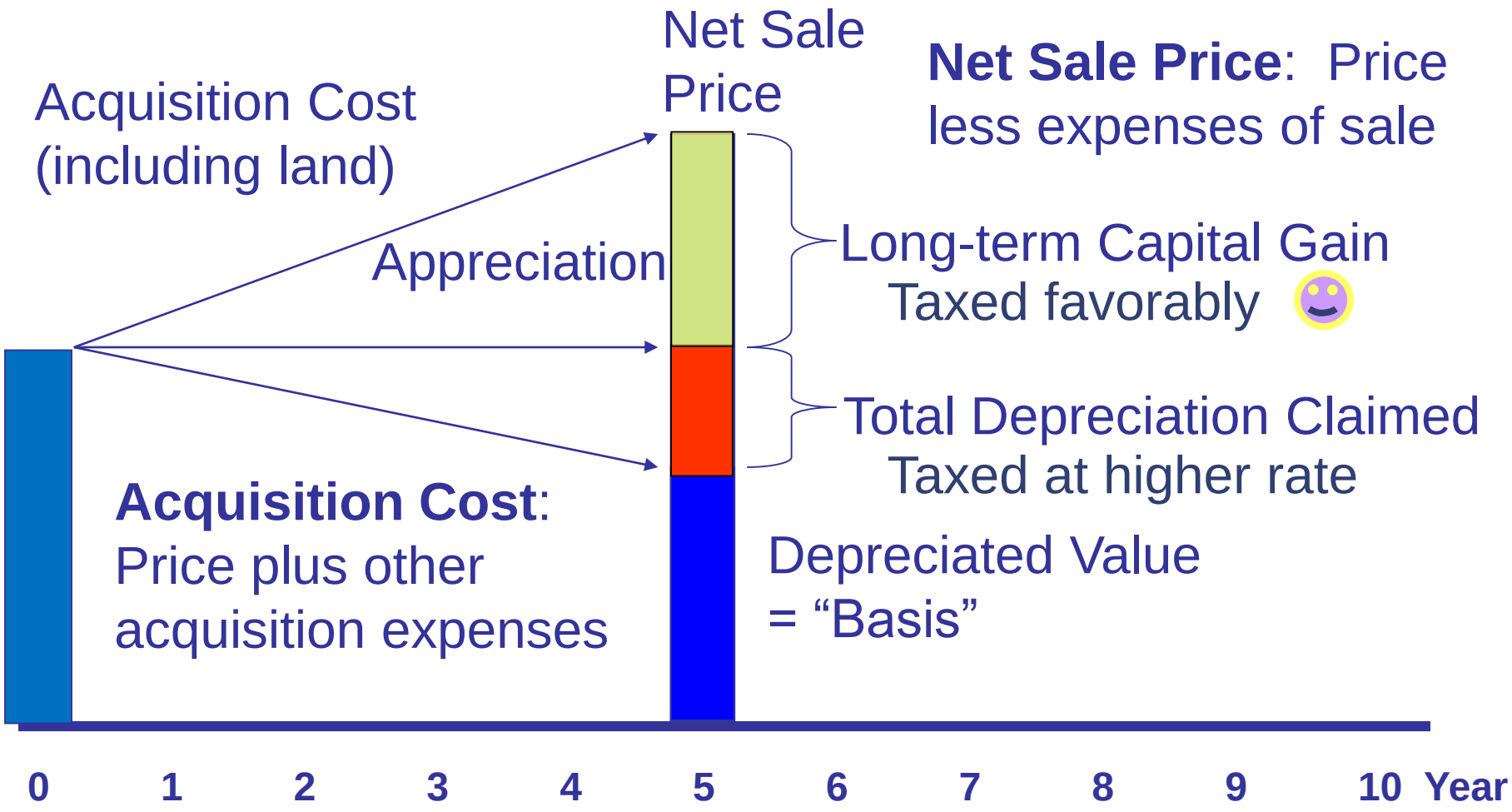
$= \$40,078$

Taxes on Sale of Property

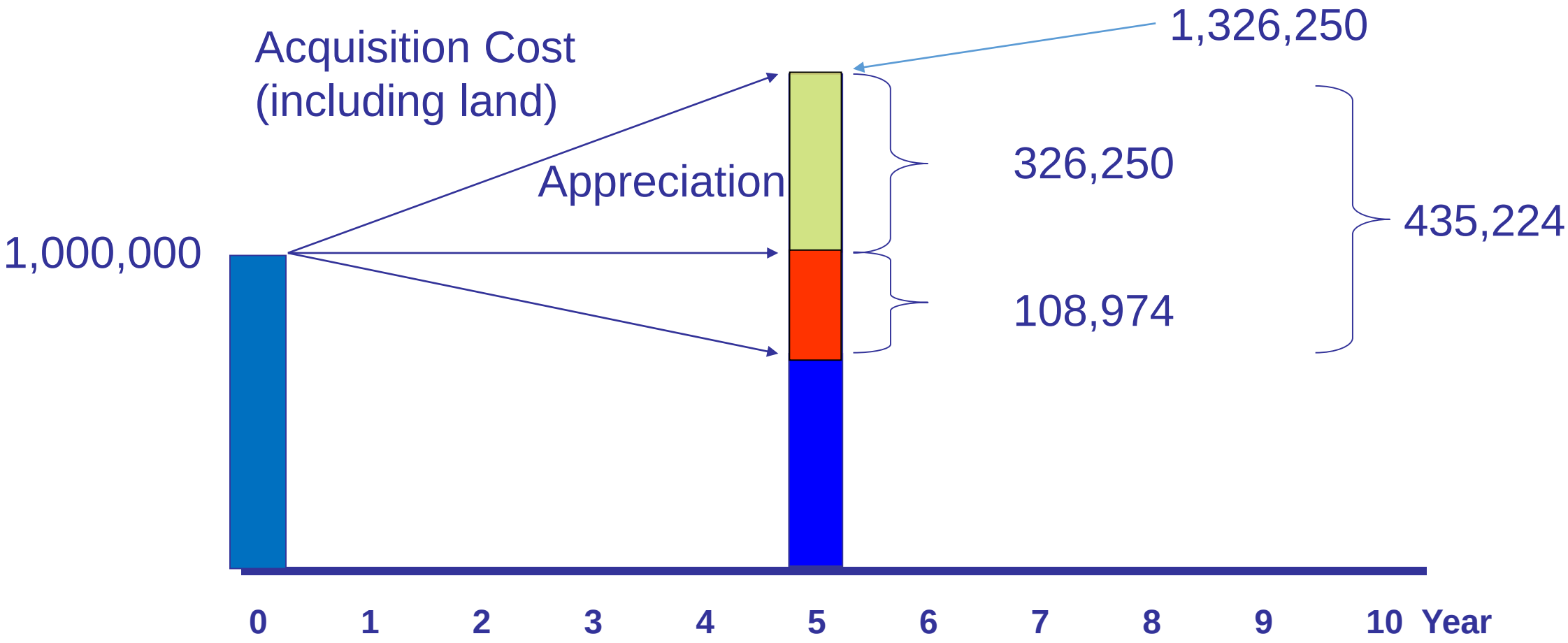
- Taxes on the property sale
  - Gain from recaptured depreciation
    - Taxed at 25%
  - Gain from price appreciation
    - The maximum is 15%

  - Note that these rates can change as Congress changes tax code frequently

Taxation of Gain



Taxation of Gain



Taxation of Gain

- Net Proceeds of sale (year 5) $1,326,250
- Property basis:
  - Original price $1,000,000
  - Add Capital Improv.(5 yrs) 0
  - Less Dep'n (850/39)x5 - 108,974
  - Adj. Basis $ 891,026
- Gain for tax purposes $ 435,224
  - Adjustment (unamortized points*) 0

GAIN $ 435,224

* This adjustment is somewhat technical.

Tax on Sale

Type	Amount	Rate	Tax
Dep’n recap	108,974	25%	27,244
Appreciation	326,250	15%	48,938
Total	435,224		76,181

After-Tax Cash Flows

- Step 4: Compute after-tax cash flow from the property sale
- $ATCF_s = BTCF_s – Taxes$

  $ATCF_s = \$1,326,250 - \$665,489 - \$76,181$

  $= \$ 584,580$

- Possible Analysis
  - Compute After-Tax Internal Rate of Return
  - Compute After-Tax Net Present Value

Example to “Put it all Together”

Review: Numbers above are all from Excel file

Green Grass Example (Tax & Leverage)

IncomePropertyIllustration_Simplified.xlsx

Discuss

- “Discount rate” used in each
- IRR in each

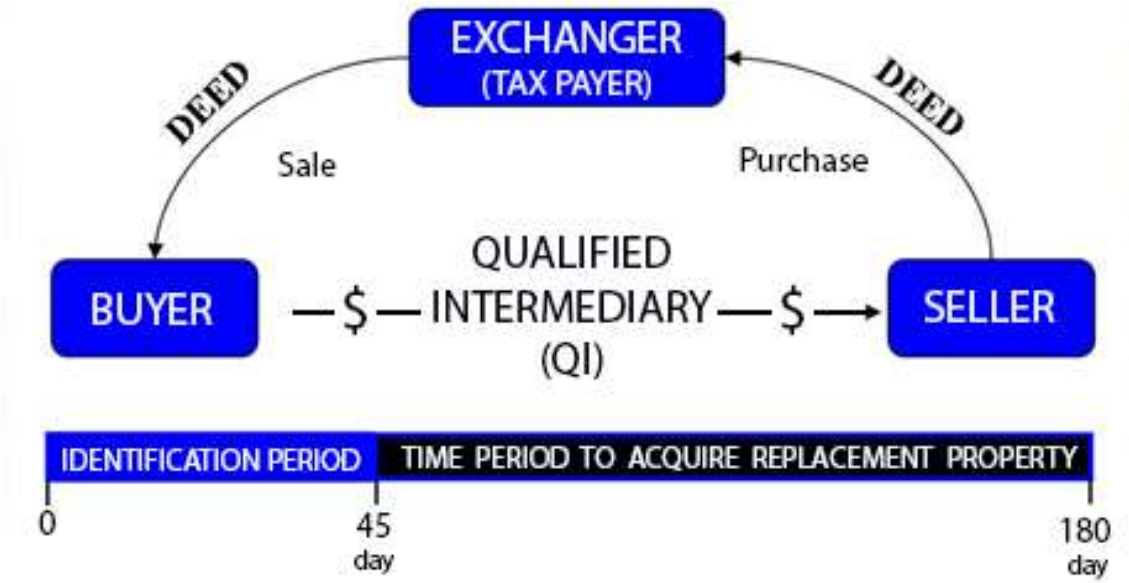
Special Tax Rule – Gain on Sale 1031 Exchange (Detail in Ch 14)

- Special Rules under Section 1031of IRC*
  - Tax on Gain can be "deferred" if proceeds are reinvested in real estate
  - "Like-kind" exchange
  - "1031 properties" (a market exists)
  - "Boot" is non-like-kind consideration including cash and debt relief; and is not eligible for exchange benefit

* Internal Revenue Code

Property Exchanges (1031 exchange)

- Exchange Agreements
  - “like-kind” exchange of income properties
  - Delayed Exchanges
    - 45 days to identify replacement property
    - 180 to complete purchase
    - Must use intermediary
    - Can close replacement property before sale property



Tax Summary

- **Calculation of Taxable Income**
  - Start with NOI and adjust.
- **Calculation of Tax on Sale of Property**
  - Gain is taxed:
    - 1st at depreciation recapture rates
    - 2nd at capital gain rates
- **1031 Exchange Concept**