

Welcome

General Appraiser Market Analysis and Highest & Best Use – Summary Version

Jim Amorin, MAI, SRA
2009 President
Appraisal Institute



SECTION ONE

Section 1

Part 1. Real Estate Markets and Analysis

Part 2. Types and Levels of Market Analysis

Part 3. The Six-Step Process and Use of Market Analysis



Part 1.

Real Estate Markets and Analysis

Market Analysis

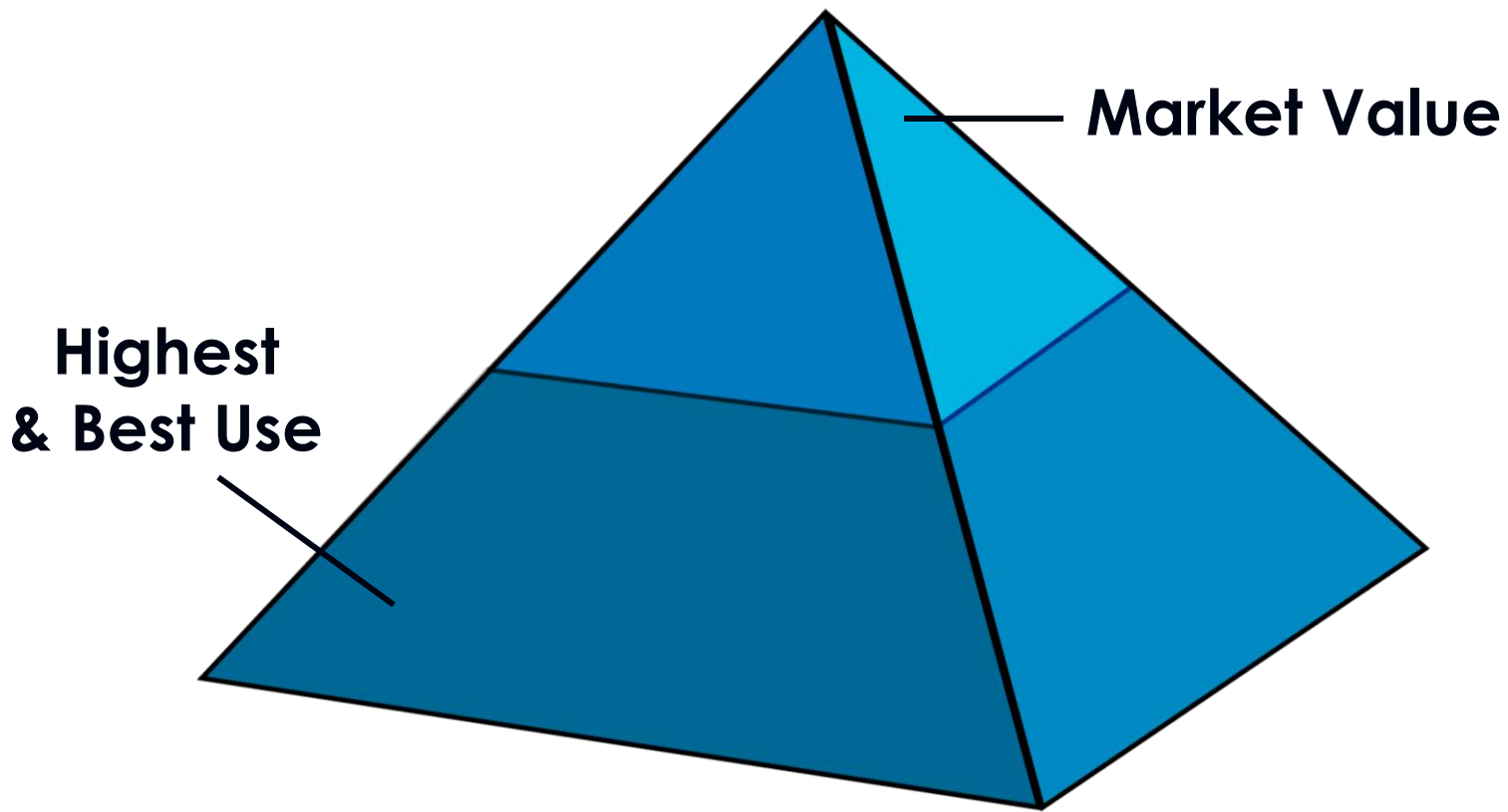
A process for examining the demand for and supply of a property type and the geographic market area for that property type.

Highest & Best Use

The reasonably probable and legal use of vacant land or an improved property that is physically possible, appropriately supported, financially feasible, and that results in the highest value. The four criteria the highest and best use must meet are legal permissibility, physical possibility, financial feasibility, and maximum productivity.

Highest & Best Use, cont.

Highest & best use is the foundation of all market value appraisals.



1.1 Discussion Question

**Are there appraisal assignments that don't require a highest & best use determination?
Can you identify several?**

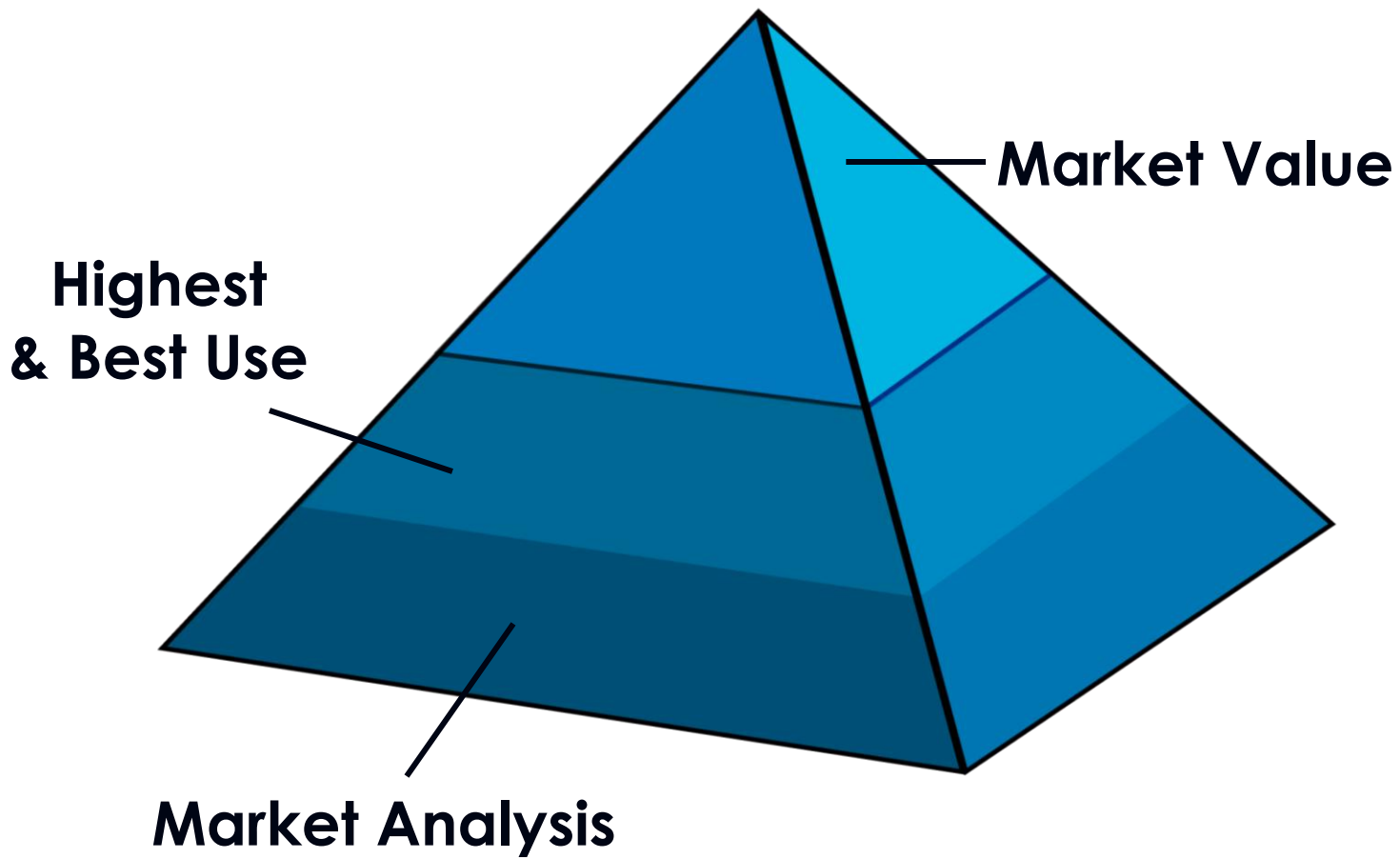
- *Use value (value of a property for a specific use)*
- *Investment value (value of a property to a particular user)*
- *Insurable value*

1.2 Discussion Questions

- 1. What is the most challenging highest & best use problem you have encountered in your appraisal work to date?**
- 2. How did you solve the problem?**
- 3. What was your conclusion?**

The **Use** Determines Value.

The **Market** Determines Use.



Potential Market: 3 Ingredients

- 1. Demand – there must be potential purchasers.**
- 2. Supply – there must be potential sellers.**
- 3. Prices – there must be a mode of exchange.**

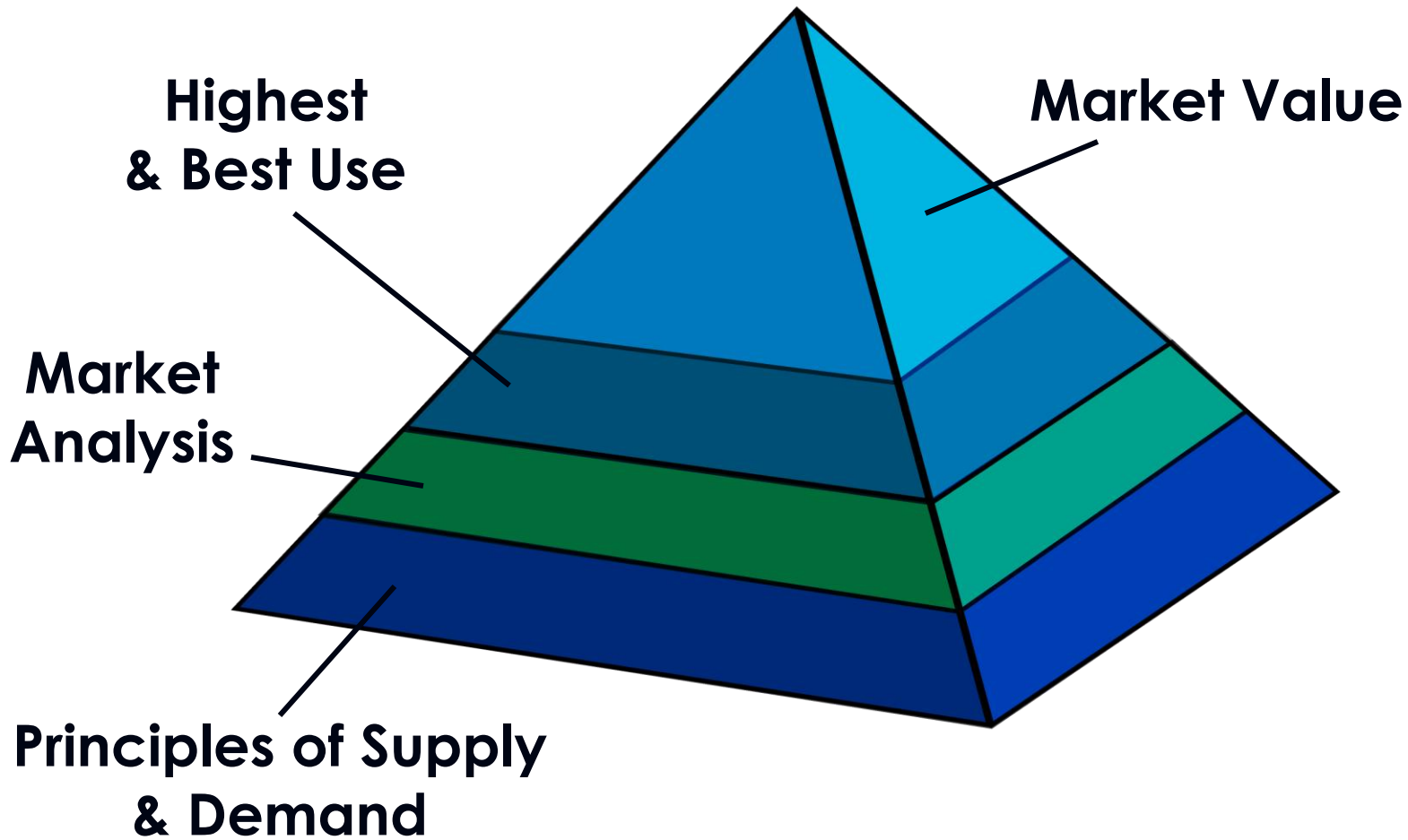
Market Analysis Considerations

Market analysis: The study of 4 factors that create value:

1. Utility
2. Desire
3. Effective buying power
4. Scarcity

**What is the foundation
of market analysis?**

**Principles of
Supply and Demand**



Where Market Analysis Fits

Identification of the Problem	
<ul style="list-style-type: none">Identification of real estateDate of value opinionDefinition of valueOther limiting conditionsExtraordinary assumptions and hypothetical conditions	<ul style="list-style-type: none">Identification of property rights to be valuedIdentification of intended use and intended users of appraisalDescription of scope of work

Where Market Analysis Fits, cont.



Scope of Work Determination

Where Market Analysis Fits, cont.

Market Analysis

Property productivity analysis

- Physical characteristics analysis
- Legal/political characteristics analysis
- Locational characteristics analysis

Market area delineation

Where Market Analysis Fits, cont.

Market Analysis

Demand and supply analysis

- Demand studies
- Inventory/analysis of competitive properties

Marginal demand analysis

Subject capture analysis

Where Market Analysis Fits, cont.

Highest & Best Use Analysis

- Land as though vacant
- Property as improved

Conclusions:

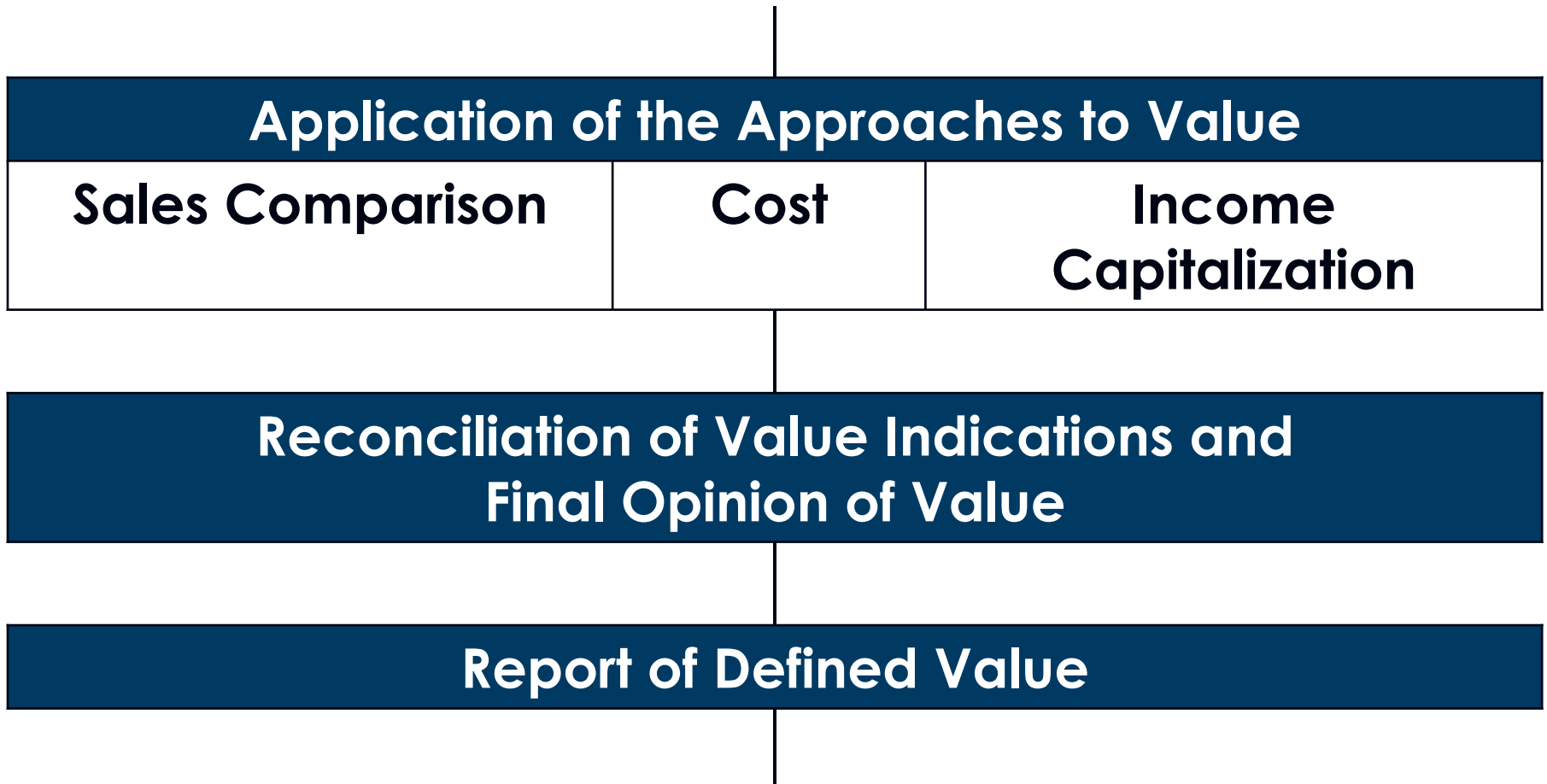
- Use
- Time (probable use date or occupancy forecast)
- Market participants
- User of space
- Most probable buyer

Where Market Analysis Fits, cont.



Collection and Screening of Specific Comparable Data

Site Value Opinion



Part 2.

Types and Levels of Market Analysis



Characterizing Market Analysis by Depth of Analysis

Market study. *A macroeconomic analysis that examines the general market conditions of supply, demand, and pricing or the demographics of demand for a **specific area** or **property type**. A market study may also include analyses of construction and absorption trends.*

Characterizing Market Analysis by Depth of Analysis

Marketability study. *A microeconomic study that examines the marketability of a given property or class of properties, usually focusing on the market segment(s) in which the property is likely to generate demand. Marketability studies are useful in determining a specific highest & best use, testing development proposals, and projecting an appropriate tenant mix.*

Characterizing Market Analysis by Depth of Analysis



Types of Data Used

Primary data. *Information that is gathered first-hand by the analyst for a particular assignment. Facts and information collected specifically for the purpose of the investigation at hand.*

Secondary data. *Information not directly compiled by the analyst. Facts and information gathered not for the immediate study at hand but for some other purpose.*

Characterizing Market Analysis by the Way Demand Is Measured

Inferred Demand Analysis

All demand analysis begins with a *projection* of future performance.

Projection. *A prediction of the future that is an extension of current and historical trends.*

Characterizing Market Analysis by the Way Demand Is Measured

Inferred Demand Analysis

- A study of current and past market conditions
- Uses historical data and statistics to draw inferences about the future
- Sometimes called *trend analysis*

Indicators of Demand

- **Existing properties – performance of property may be the most reliable indicator of demand**
- **Proposed properties – 3 main groups of market indicators to be investigated**
 - **Property specific**
 - **Market area**
 - **Macro area**

Indicators of Demand

- **Property specific**
 - Current/historical vacancy and rental rates
- **Market area**
 - Current/historical vacancy and rental rates for competitive space
 - Construction activity
 - Preleasing of planned and under-construction space
 - Current condition and historical changes in fundamental demand forces

Indicators of Demand, cont.

- **Macro area**

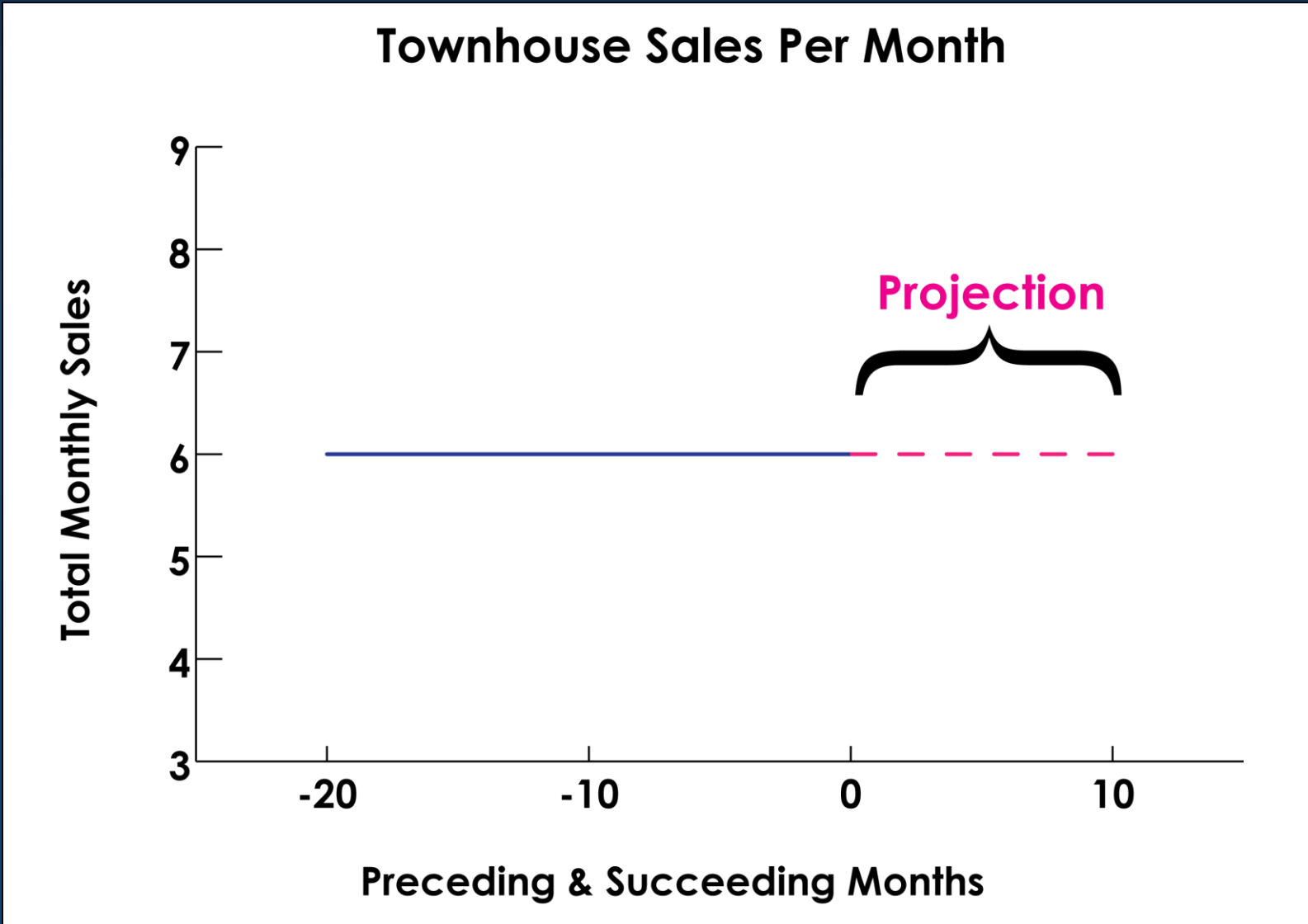
- **Current/historical vacancy and rental rates for existing property types**
- **Construction activity – property type**
- **Preleasing of planned and under-construction space**
- **Condition and change in fundamental forces**

Inferred Demand Analysis Guidelines

- **As geographic area of data increases, reliability for a specific property decreases.**
- **Analyst must consider impact of current absorption of new and vacant space on the remaining market.**
- **Planned/proposed additions to supply must be weighed against current/future demand.**

Inferred Demand Analysis Guidelines, cont.

- Inferred analysis must be specific as to property type.
- Current occupied space can be a good indicator of current demand *only if*
 - Neither **pent-up demand** nor **artificially induced occupancy** is present in the market.



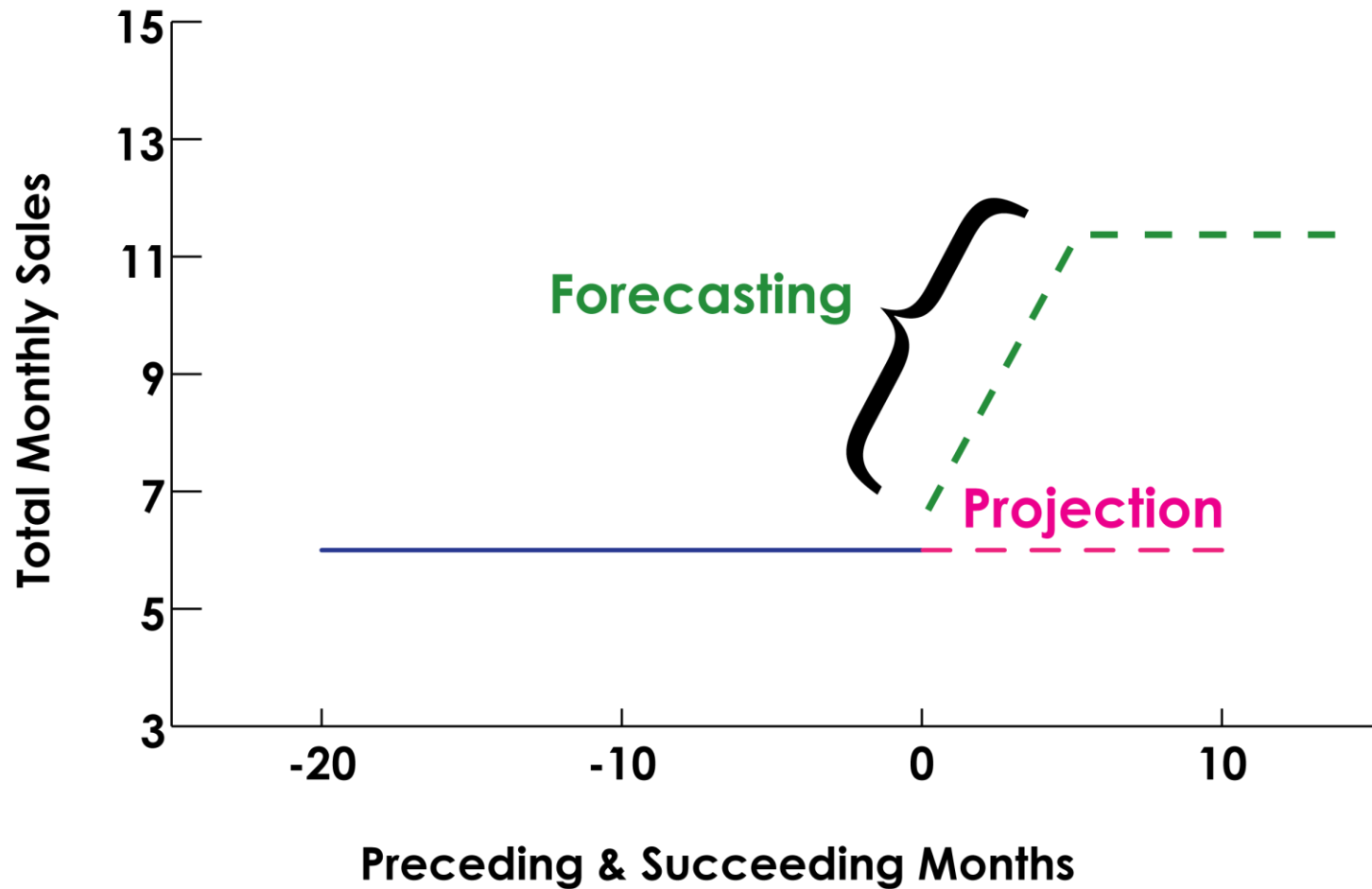
Characterizing Market Analysis by the Way Demand Is Measured

Fundamental Demand Analysis

Identifies present demand and **forecasts** future demand based on segmentation of broad demographic and economic data to reflect the subject property's specific market

Forecast. *A prediction of the future based on the fundamental forces of demand.*

Townhouse Sales Per Month



Fundamental Forces – Generators – of Demand

First premise: Real estate exists to house economic activities, supply services, and provide amenities to meet human needs.

Need for each element in a market area is related to economic and demographic characteristics of market area.

Fundamental Forces – Generators – of Demand, cont.

Economic/demographic forces are known collectively as the *fundamental forces of demand*:

Employment

Population

Income

Fundamental Forces – Generators – of Demand, cont.

A Change in	Leads to	A Change in	Which Leads to	A Change in Demand for
Employment	⇒	Office jobs	⇒	Office space
Employment	⇒	Industrial jobs	⇒	Industrial space
Population	⇒	Households	⇒	Housing units
Income	⇒	Effective buying power	⇒	Retail space

Fundamental Forces – Generators – of Demand, cont.

Second premise: The relationships among these forces of demand are important no matter which type of market analysis is done.

Valuable addition to inferred analysis

Necessary for fundamental analysis

Fundamental Forces – Generators – of Demand, cont.

Third premise: There is a hierarchy to the fundamental forces of demand.

- Engine of growth is typically **employment**, which leads to **office** and **industrial jobs** and **housing growth**.
- Following both – never leading either – is **retail growth**.

Follow the Money



Levels of Market Analysis

4 Levels of Market Analysis:

A – Inferred: small stable property, stable market

B – Inferred: stable property, stable market

C – Fundamental: large, complex property and/or unstable market

D – Fundamental: highly dependent on primary sources (not usually associated with appraisals)

2.2 Problem

Category	XYZ Market
Existing office space	8,312,500 sq. ft.
Total number of buildings	95
Average building size	87,500 sq. ft.
Vacant space	498,750 sq. ft.
Vacancy rate	6.0%
Total office employment	29,000
Average growth in office employment – last 3 years	3,600/year
Average net absorption – last 3 years	900,000 sq. ft./year

2.2 Problem, cont.

A. Is the information adequate for a Level A marketability study? What additional information could be developed?

It is probably adequate but additional data could include trends in office building permits, office rental rates, and office vacancy rates as well as under-construction properties, etc.

2.2 Problem, cont.

**B. Is this a Level A marketability study?
Why/Why not?**

It is not a Level A marketability study because it lacks conclusions. The purpose of a marketability study is to draw conclusions regarding the performance of a particular property or property class.

2.2 Problem, cont.

C. How long can it be inferred until the XYZ market reaches 95% occupancy?

**8,312,500 0.05 = 415,625 sq. ft. vacant @
95% occupancy**

**498,750 sq. ft. currently vacant – 415,625 sq. ft.
= 83,125 sq. ft. to be absorbed**

**83,125 sq. ft. 900,000 sq. ft. absorbed/year
= 0.09 year**

= 1 month

2.2 Problem, cont.

D. How much space does the average office worker occupy?

$$(8,312,500 - 498,750) \div 29,000 =$$

269 sq. ft./office worker

Levels of Market Analysis

**Always
Do**

LEVEL A

**If Necessary
to Produce
Credible Results
Supplement With**

LEVEL B

**If Necessary
to Produce
Credible Results
Supplement With**

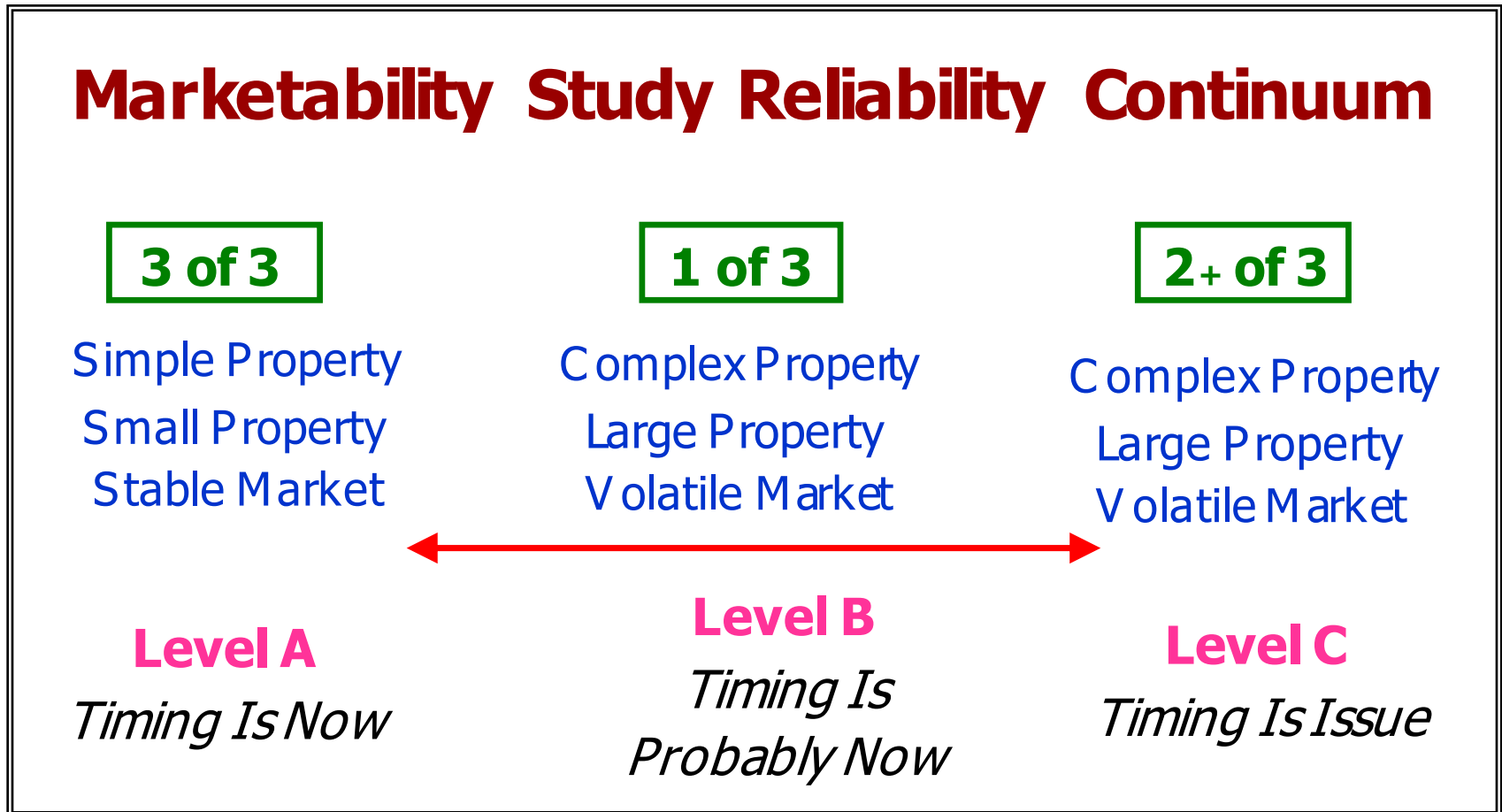
LEVEL C



2.4 Exhibit. Characteristics of Levels A–C Market ability Studies

Category	Level A	Level B	Level C
Property productivity			
Physical	Descriptive only	Descriptive + Critique	Descriptive + Critique
Legal	Basic	Basic + Deed research	Basic + Deed research
Locational	General	Linkages/urban growth	Linkages/Urban growth + <i>Rating Grid</i>
Market delineation	Macro: whole community	Concerned w/ direct competition	Concerned w/ source of demand (users)
Demand analysis	Comps + General data	Comps + Published surveys + Trends	Comps + Published surveys + Forecasting
Timing/phasing of use	Not an issue	Could be minor issue	Is an Issue
Future market strength	Inferred from comps	Inferred through <i>total demand</i>	Calculated through <i>marginal demand</i>

2.6 Exhibit. Selecting the Level of Marketability Study





Part 3.

The Six-Step Process and Use of Market Analysis

Overview of the Six-Step Process

Step

1. **Analyze** property productivity.
2. **Delineate** the market area.
3. **Project/Forecast** demand.
4. **Measure and project/forecast** competitive supply.
5. **Calculate** marginal demand.
6. **Project/Forecast** subject capture.

Market Analysis

The study of 4 factors that create value in real estate:

- 1. Utility Property productivity analysis
- 2. Desire
- 3. Effective buying power } Demand analysis
- 4. Scarcity Supply analysis

Overview of the Six-Step Process

Step 1. Analyze Property Productivity.

Productivity analysis. *An analysis of the capacity of a property to house economic activities, supply services, and provide amenities to meet human needs.*

Physical, legal, locational characteristics

Overview of the Six-Step Process

Step 2. Delineate the Market Area/
Competitive Market Area.

Level B Analysis – Most concerned with the competitive market area

Competitive market area. *The geographic region adjoining a property within which a property's direct competition is located.*

Overview of the Six-Step Process

Step 2, cont.

Level C Analysis – Most concerned with the market area

Market area. *The geographic region from which a majority of demand and in which the majority of competitors are located.*

Defined by **users** and **competition**

Overview of the Six-Step Process

Step 3. Project/Forecast Demand.

Real estate demand. *The quantity of a particular type of real estate product or service that will be purchased or leased in a given market.*

Projecting demand: Level B marketability study

Forecasting demand: Level C marketability study

Overview of the Six-Step Process

Step 4. Measure and Project/Forecast Competitive Supply.

Supply analysis. *The study of the various aspects of the competitive properties. It includes the survey of the competition, new construction, demolition, conversion, and vacancy.*

Overview of the Six-Step Process

Step 5. Calculate Marginal Demand.

Marginal demand analysis. *An analytical technique in which the market demand is compared with market supply in both the present and the future to determine if there is excess demand or excess supply.*

aka **residual demand analysis**

Overview of the Six-Step Process

Step 6. Project/Forecast Subject Capture.

Application of the previous 5 steps to the subject – answers the following questions:

- 1. What is stabilized occupancy?**
- 2. Are the property characteristics competitive?**
- 3. Is the location competitive?**
- 4. How much rent can be charged?**
- 5. How much of the demand can be captured?**

Overview of the Six-Step Process

Step 6, cont.

Subject capture. *The comparison of the subject property with the market it serves over time and across space; the percentage of the total demand or marginal demand that a specific property can expect to attract now and in the future; short-term capture is referred to as absorption; long-term capture is referred to as share of the market.*

Overview of the Six-Step Process

Step 6, cont.

Stabilized occupancy (or vacancy). *An expression of the expected performance of a property in its particular market considering current and future demand and supply, and under conditions consistent with market rent.*

SECTION TWO

Section 2

Part 13. Fundamental Concepts and the Four Tests of Highest & Best Use Analysis

Part 14. Considerations in Highest & Best Use Analysis

Part 15. The Three Conclusions of Highest & Best Use Analysis

■ **Part 13.**

■ **Fundamental
Concepts and the
Four Tests of Highest
& Best Use Analysis**



**The value cannot be right
if the highest & best use
is wrong!**

Highest & Best Use Definition

The reasonably probable and legal use of vacant land or an improved property that is physically possible, appropriately supported, financially feasible, and that results in the highest value. The four criteria the highest & best use must meet are legal permissibility, physical possibility, financial feasibility, and maximum productivity. Alternatively, the probable use of land or improved property – specific with respect to user and timing of the use – that is adequately supported and results in the highest present value.

Highest & Best Use Definition

*The **reasonably probable** and legal use of vacant land or an improved property that is physically possible, appropriately supported, financially feasible, and that results in the highest value. The four criteria the highest & best use must meet are legal permissibility, physical possibility, financial feasibility, and maximum productivity. Alternatively, the probable use of land or improved property – specific with respect to user and timing of the use – that is adequately supported and results in the highest present value.*

The Four Criteria in the Definition of H&BU

- **Physical possibility**
- **Legal permissibility**
- **Financial feasibility**
- **Maximum productivity**

What information is required?

Maximum Productivity

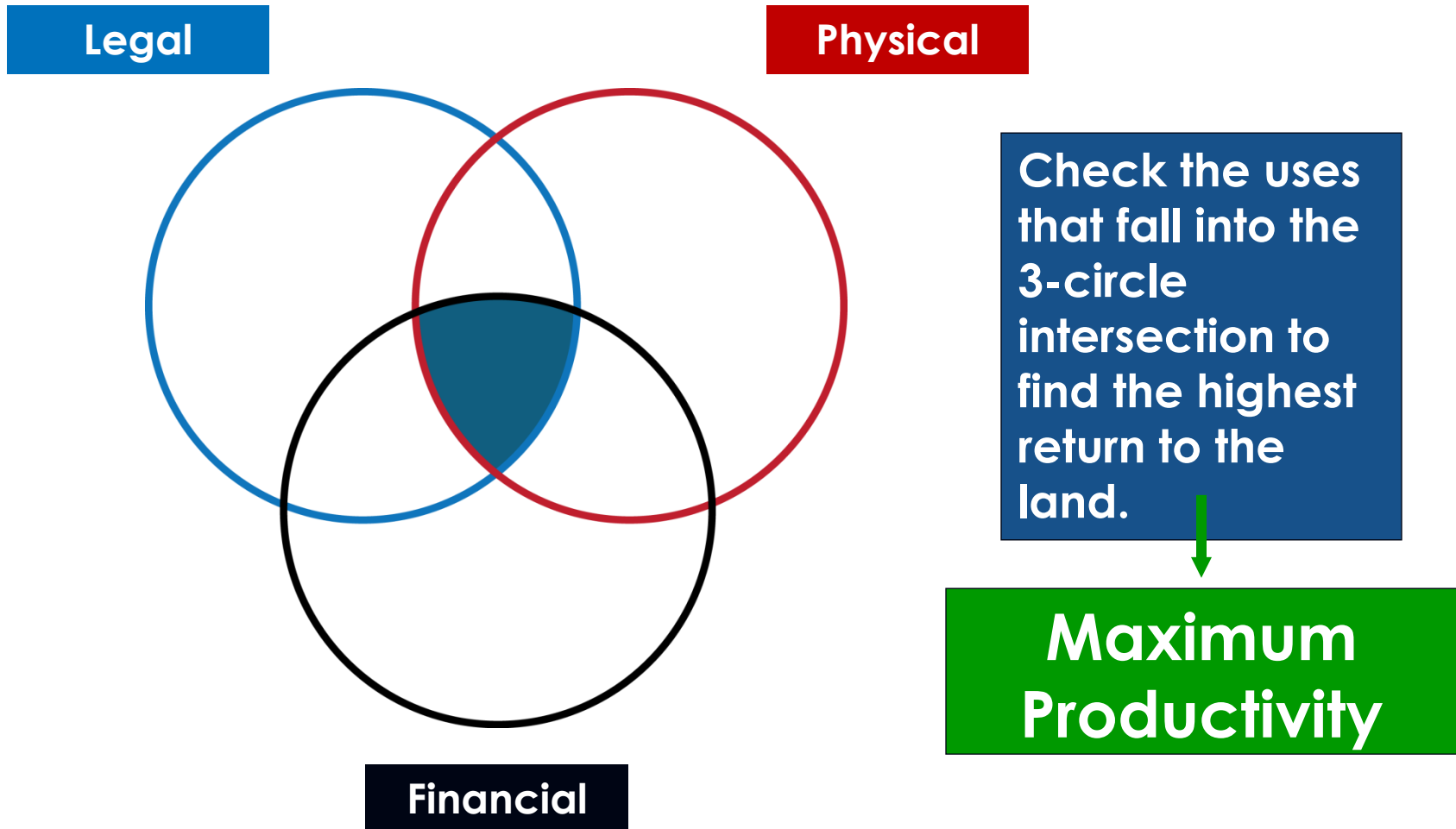
4 Tests

But the definition has 6 items!

Highest & Best Use Definition

The ¹reasonably probable and ²legal use of vacant land or an improved property that is ³physically possible, ⁴appropriately supported, ⁵financially feasible, and that results in the ⁶highest value.

13.2. Exhibit. Maximum Productivity



The Four Tests

- Legally permissible
- Physically possible
- Financially feasible
- Maximally productive

*What about **reasonably probable**
and **appropriately supported**?*

Legally Permissible and Physically Possible

- Order irrelevant
- Together = **reasonably probable**
- Used to select alternatives for financial analysis

Physical Possibility

Considerations include

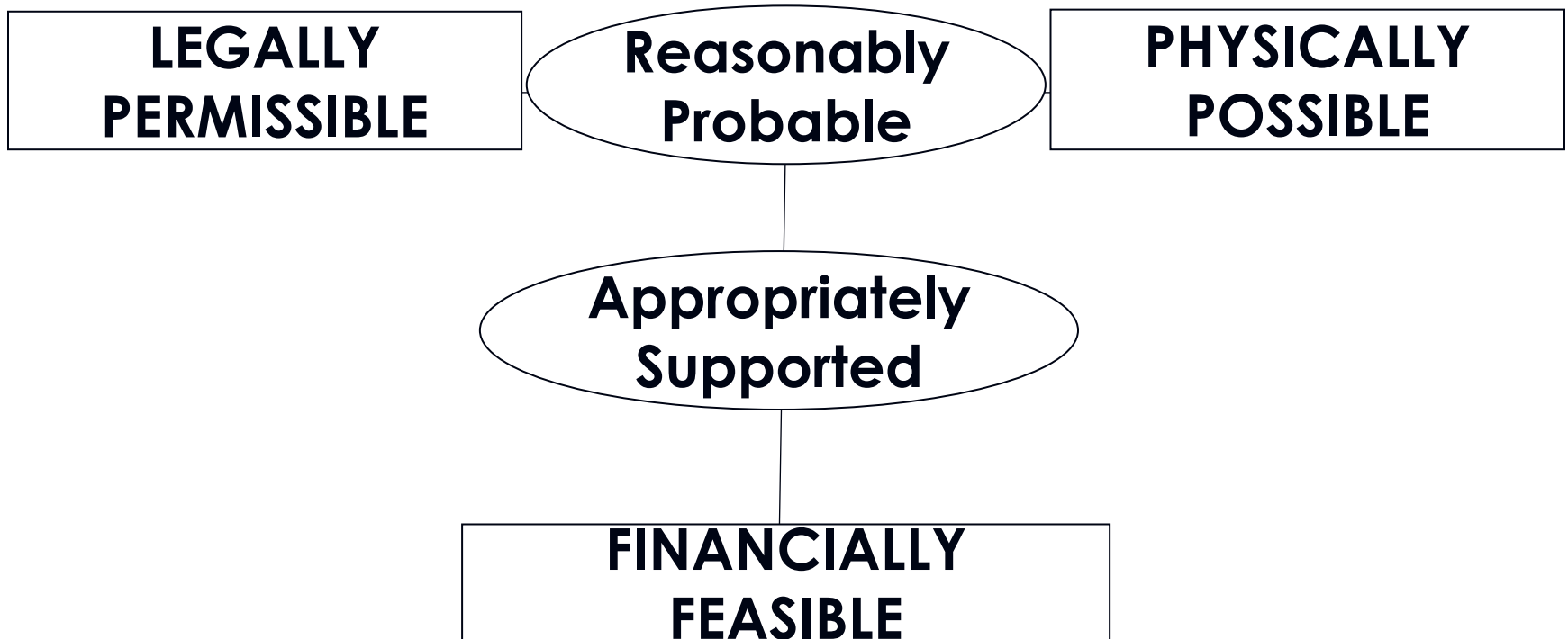
- **Topography, soil composition, or other site conditions**
- **Size of property (both land and improvements)**
- **Availability (current and future) of utilities and other support services**
- **Restrictions that may technically not eliminate a use but could require extraordinary construction features**

Legal Permissibility

Considerations include

- **Current zoning**
- **Building codes**
- **Private restrictions**
- **Probability of modifications or change to current restrictions**

13.3 Exhibit. HBU Flow Chart



13.4 Problem. Choosing Uses for Financial Feasibility Testing

Which uses should be tested for financial feasibility?

- *The physical possibility test might provide the greatest limitation to development.*
- *Physical terrain and access would probably eliminate retail and service station use.*

Financial Feasibility

Definition

Financial feasibility. *Any physically possible, legal use of property that produces a positive return to the land after considering risk and all costs to create and maintain the use; any use that results in a positive land value.*

Financial Feasibility

Definition

Financial Feasibility. *Any physically possible, legal use of property that produces a positive return to the land after considering risk and all costs to create and maintain the use; any use that results in a positive land value.*

Appropriately Supported = Provable Demand

Measuring Financial Feasibility

Financial feasibility can be indicated through market analysis in two ways:

1. Implied through market activity, and
2. Measured through financial analysis.

Measuring Financial Feasibility

Financial feasibility can be indicated through market analysis in two ways:

1. Implied through *market activity*, and
2. Measured through *financial analysis*.

Measuring Financial Feasibility through *Market Activity*

Look for

- Current market occupancy (vacancy)
- Recent market activity (absorption)
 - Sales of similar properties
 - Purchase of land for similar use by *end users*
 - Recent leasing activity of similar uses
- Recent construction activity

Measuring Financial Feasibility through *Calculation*

- 1. Land residual**
- 2. Feasibility rent**
- 3. Profitability index**

Measuring Financial Feasibility through *Calculation*, cont.

■ 1. Land residual technique

■ The use of a property creates property value.

■ The use that creates the highest land value is highest & best use.

Property Use Value

less Labor Cost for Use Value

less Capital Cost for Use Value

less Entrepreneurship for Use Value

= Land-Use Value

13.5 Problem.

Land Residual Technique

A. Is the use of the site for office development financially feasible?

As-if-completed value: 20,000 sq. ft.	\$250 =	\$5,000,000
Building cost: 20,000 sq. ft.	\$200 =	\$4,000,000
Plus entrepreneurial incentive @ 10% =		<u>400,000</u>
Less total cost to construct		<u>4,400,000</u>
Indicated site value		\$ 600,000

Yes!

13.5 Problem, cont.

B. Would the project be feasible if as-if-completed property value were 10% less and building construction cost were 10% more?

As-if-completed value: 20,000 sq. ft.

\$225 = \$4,500,000

Building cost: 20,000 sq. ft. \$220 = \$4,400,000

Plus entrepreneurial incentive @ 10% = 440,000

Less total cost to construct 4,840,000

Indicated site value -\$ 340,000

No!

Measuring Financial Feasibility through *Calculation*, cont.

2. Feasibility rent analysis

Feasibility rent. The rent necessary to justify new construction. This concept helps the analyst determine timing, as well as the difference between required rent and market rent based on known costs and expected returns to the investor. The capitalized difference between feasibility rent and market rent represents total depreciation if market rent is less than feasibility rent. Also known as feasible rent.

Measuring Financial Feasibility through *Calculation*, cont.

2. Feasibility rent analysis

Compare with market rent

Currently financially feasible if

Market Rent > Feasibility Rent

Not currently feasible if

Feasibility Rent > Market Rent

Feasibility Rent Premise

Value = Total Project Cost (Current Cost)

$$\text{Value} = I_o \quad R_o$$

$$I_o \quad R_o = \text{Total Project Cost}$$

$$\therefore I_o = \text{Total Project Cost} \quad R_o$$

Data Required to Estimate Feasibility Rent

- Land (site) value to end users
- Site preparation costs
- Gross building size/rentable area
- Building and improvement costs
- Overall capitalization rate (R_o)
- Estimated market rent
- Estimated operating expenses or operating expense ratio
- Estimated stabilized vacancy and collection loss

Solving for Feasibility Rent

Step	Solving for Feasibility Rent
1	Estimate total project costs: <ul style="list-style-type: none"><li data-bbox="359 558 1760 615">▪ Land (site) cost indicated by end-user sales<li data-bbox="359 665 1045 722">▪ Site preparation cost<li data-bbox="359 772 1653 829">▪ Building cost and building rentable area
2	Multiply total project costs by overall capitalization rate (R_o) to get feasibility <i>NOI</i> (I_o).

Solving for Feasibility Rent, cont.

Step	Solving for Feasibility Rent
3	Add operating expenses (OE) to get feasibility <i>EGI</i>. Note. If operating expenses are expressed as a % of <i>EGI</i> , then the I_o is divided by $1 - OER$ (operating expense ratio).
4	Adjust for stabilized V&CL to get feasibility <i>PGI</i>.
5	Divide feasibility <i>PGI</i> by rentable sq. ft. of building to get feasibility rent/sq. ft.

13.6 Problem.

Feasibility Rent Estimation

Data Derived from the Market

Site size in acres	8.5
Land value/acre to end users	\$120,000
Building area (sq. ft.)	160,000
Building cost/sq. ft.	\$100
Site prep. & site imprvmnt. cost/acre	\$40,000
<i>Stabilized V&CL</i>	5%
Operating expenses/sq. ft. (OEs)	\$8
OEs	\$1,280,000
Capitalization rate (R_o)	9%

What is the feasibility rent?

13.6 Problem, cont.

A. What is the feasibility rent for the office building in the current market?

Apply the following steps:

1. Land value: 8.5 acres \$120,000/acre

Building cost: 160,000 sq. ft. \$100/sq. ft.

Site preparation cost: \$40,000/acre 8.5 acres

2. Feasibility I_O : Total project costs R_O

13.6 Problem, cont.

3. Feasibility *EGI*: $I_o + OE$
4. Feasibility *PGI*: Feasibility *EGI* $\div (1 - V\&CL)$
5. Feasibility *PGI* \div Rentable sq. ft. of building = Feasibility rent/sq. ft.

13.6 Problem, cont.

A. What is the feasibility rent for the office building in the current market?

Land value	\$1,020,000	
Building cost	16,000,000	
Site preparation cost	340,000	
Total project costs	\$17,360,000	Total costs R_o
Feasibility I_o	\$1,562,400	$I_o + OEs$
Feasibility EGI	\$2,842,400	$EGI (1 - V\&CL \text{ rate})$
Feasibility PGI	\$2,992,000	PGI rentable sq. ft.
Feasibility rent	\$18.70/sq. ft.	

13.6 Problem, cont.

B. Is the project feasible?

Yes. Market analysis shows that current market rent is \$20.00/sq. ft. Therefore, this project is feasible because its feasibility rent is \$18.70/sq. ft.

Measuring Financial Feasibility Through *Calculation*, cont.

3. Use of the profitability index

Profitability index. *The present value of anticipated investment returns (benefits) divided by the present value of the capital outlay (cost); also called benefit-cost ratio.*

Measuring Financial Feasibility Through *Calculation*, cont.

3. Use of the profitability index, cont.

Similar to Net Present Value

Net present value. *The difference between the present value of all expected investment benefits (PV) and the present value of capital outlays (CO): $NPV = PV - CO$.*

13.7 Example. Profitability Index

Is the renovation financially feasible?

Value of improved property ~ current use	\$ 900,000
Value after renovation	\$1,400,000
Contributory value of renovation	\$ 500,000
Cost of renovation incl. entrepreneurial incentive	\$ 400,000
Profitability index =	$\frac{\\$500,000}{\\$400,000} = 1.25$

Yes!

Maximally Productive Use

Definition

The physically possible, legally permissible, and financially feasible use that results in the highest present value.

- **Use that produces highest present value – other things being equal – is highest & best use**
- **Must consider risk of the use**



- **Part 15.**

- **The Three
Conclusions of
Highest & Best Use
Analysis**

The Three Conclusions

Physical Use

Timing of the Use

User/Buyer

Physical Use

The *physical use* that results in the highest property value



The physical use that results in the highest *land* value

Physical Use

Focus on use of land that produces the *highest value*

- This can be demonstrated by use of the land residual technique.

Physical Use

Remember:

The Market Determines Use

The *Use* Determines Value

- **Since Use Determines Value**
- **Comparables *Must* Match the Use.**

The Three Conclusions

 **Physical Use**

Timing

User/Buyer

Timing

- **Probable use or occupancy date**
 - **Translates forces of supply and demand**

15.1 Discussion Question

What are some legal and physical limitations that may change over time?

Physical	Legal
<i>Availability of utilities</i>	<i>Change in zoning</i>
<i>Availability of public transportation</i>	<i>Change in comprehensive plan</i>
<i>Completion of contamination clean-up</i>	<i>End of deed restrictions</i>
	<i>End of lease restrictions</i>

15.2 Problem. Delay in Use Due to Legal Constraints

What is the property's highest & best use?

	<u>Single-Unit</u>	<u>Commercial Use</u>
Rezoning time (Yr.)	0	1
Indicated current value	250,000	400,000
Rezoning cost		
Carrying costs (R.E. taxes)		
Relative value		
Discount rate		
Net present value		

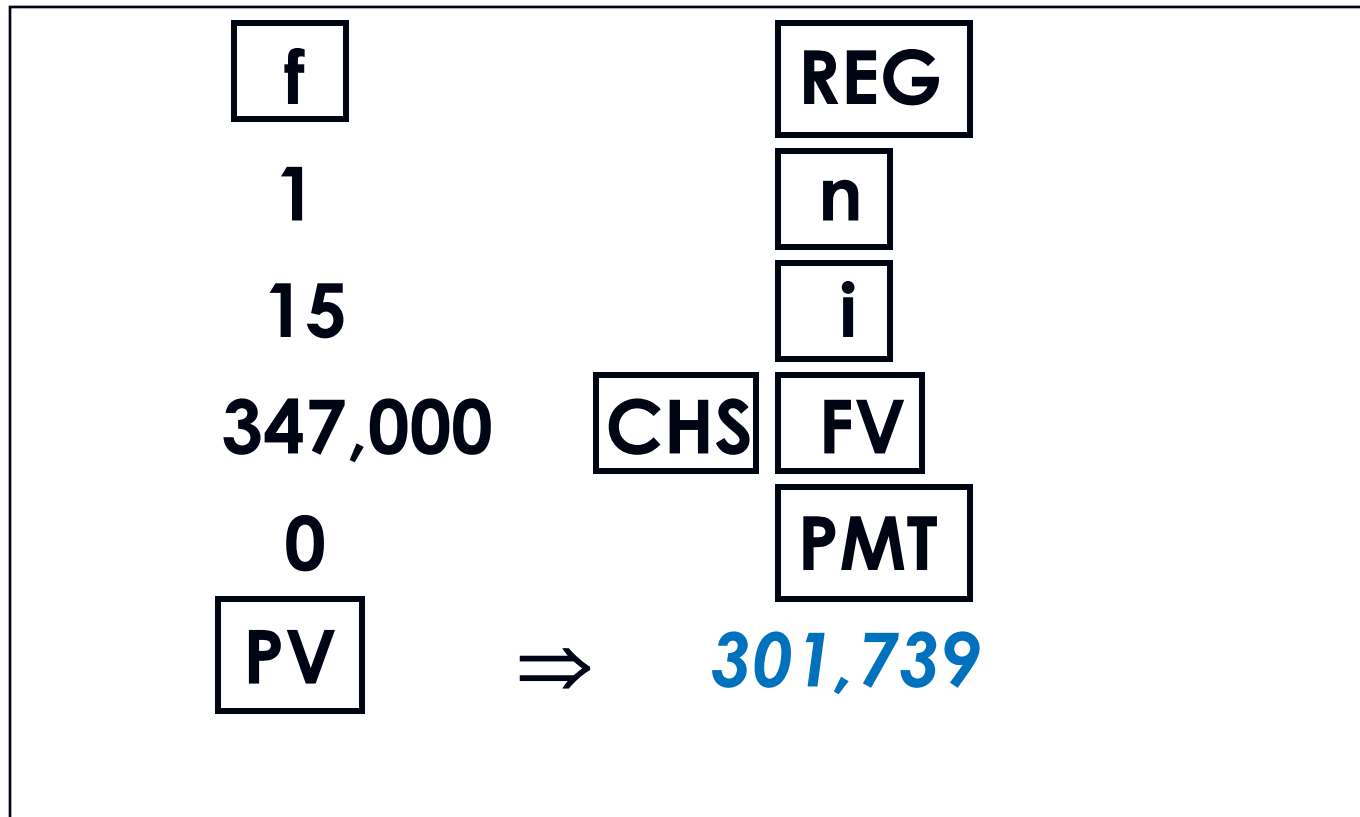
15.2 Problem. Delay in Use Due to Legal Constraints

What is the property's highest & best use?

	<u>Single-Unit</u>	<u>Commercial Use</u>
Rezoning time (Yr.)	0	1
Indicated current value	250,000	400,000
Rezoning cost	0	(50,000)
Carrying costs (R.E. taxes)	<u>0</u>	<u>(3,000)</u>
Relative value	\$250,000	\$347,000
Discount rate	N/A	15%
Net present value	\$250,000	\$301,739

Highest & best use: Rezone the property for commercial use, assuming continued demand for commercial space.

HP-12C Keystrokes



Timing

Financial considerations

A use does not have to be *currently financially feasible* to be the highest & best use.

15.3 Problem. Feasibility Rent Estimation

Site size in acres	8.5
Land value per acre to end users	\$120,000
Building area (gross = rentable area) (sq. ft.)	160,000
Building cost/sq. ft.	\$125
Site preparation and site improvement cost/acre	\$40,000
Vacancy & collection loss	5%
Operating expenses per sq. ft.	\$8
Operating expenses (OE)	\$1,280,000
Capitalization rate (R_o)	9%

15.3 Problem, cont.

A. What is the feasibility rent for the office building in the current market?

Land value to end user
Building cost (incl. entrepreneurial incentive)
Site & site improvement preparation cost
Total project costs
Feasibility I_o : (Total costs R_o)
Feasibility EGI : ($I_o + OE$)
Feasibility PGI : [$EGI (1 - V\&CL)$]
Feasibility rent (PGI rentable sq. ft.)

15.3 Problem, cont.

A. What is the feasibility rent for the office building in the current market?

Land value to end user	\$ 1,020,000
Building cost (incl. entrepreneurial incentive)	20,000,000
Site & site improvement preparation cost	<u>340,000</u>
Total project cost	\$21,360,000
Feasibility I_o : (Total costs R_o)	\$1,922,400
Feasibility EGI : ($I_o + OE$)	\$3,202,400
Feasibility PGI : [$EGI (1 - V\&CL)$]	\$3,370,948
Feasibility rent (PGI rentable sq. ft.)	\$21.07/sq. ft.

15.3 Problem, cont.

B. Is the project currently financially feasible?

No!

Market rent = \$20.00/sq. ft.

Feasibility rent = \$21.07/sq. ft.

∴ the project is not feasible.

15.5 Problem, cont.

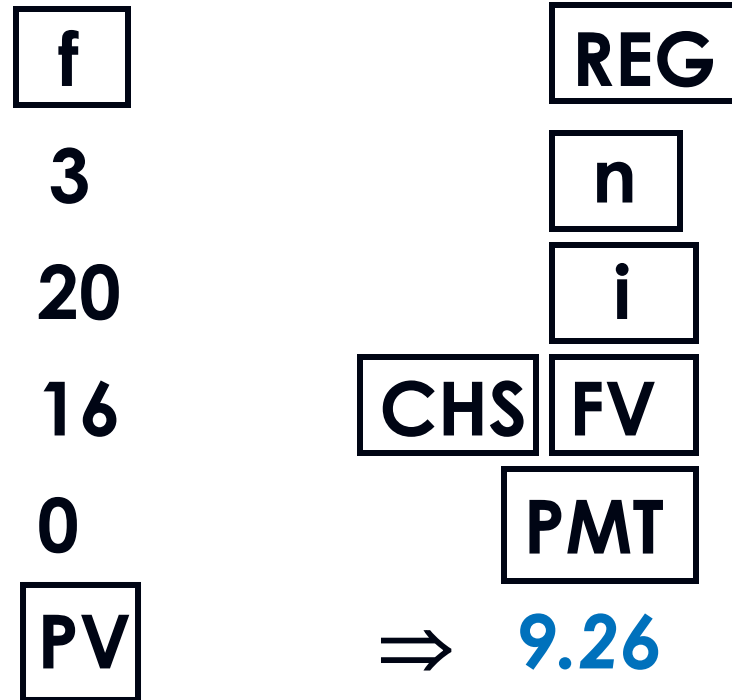
	Fast Food Restaurant	Convenience Store
Most recent user price/sq. ft.	\$10	\$16
Holding period (yrs.)	0	3
Discount rate	N/A	20%
Present value/sq. ft.		

15.5 Problem, cont.

	Fast Food Restaurant	Convenience Store
Most recent user price/sq. ft.	\$10	\$16
Holding period (yrs.)	0	3
Discount rate	N/A	20%
Present value/sq. ft.	\$10.00	\$9.26

Fast food restaurant is the highest & best use.

HP-12C Keystrokes



The Three Conclusions

✓ **Physical Use**

✓ **Timing**

Buyer/User

Buyer/User Conclusion

- **Specific as to buyer**
 - **User vs. investor**
- **Specific as to user**
 - **Typical size, price range, etc.**

Question 14

What is the site's highest best use?

	Bank	Fast Food Restaurant	Pharmacy	Service Station
User price	\$23.00	\$19.00	\$14.00	\$16.00
Delay	3	2	0	1
PV @ 20%	\$13.31	\$13.19	\$14.00	\$13.33

- A. branch bank
- B. fast food restaurant
- C. pharmacy
- D. service station

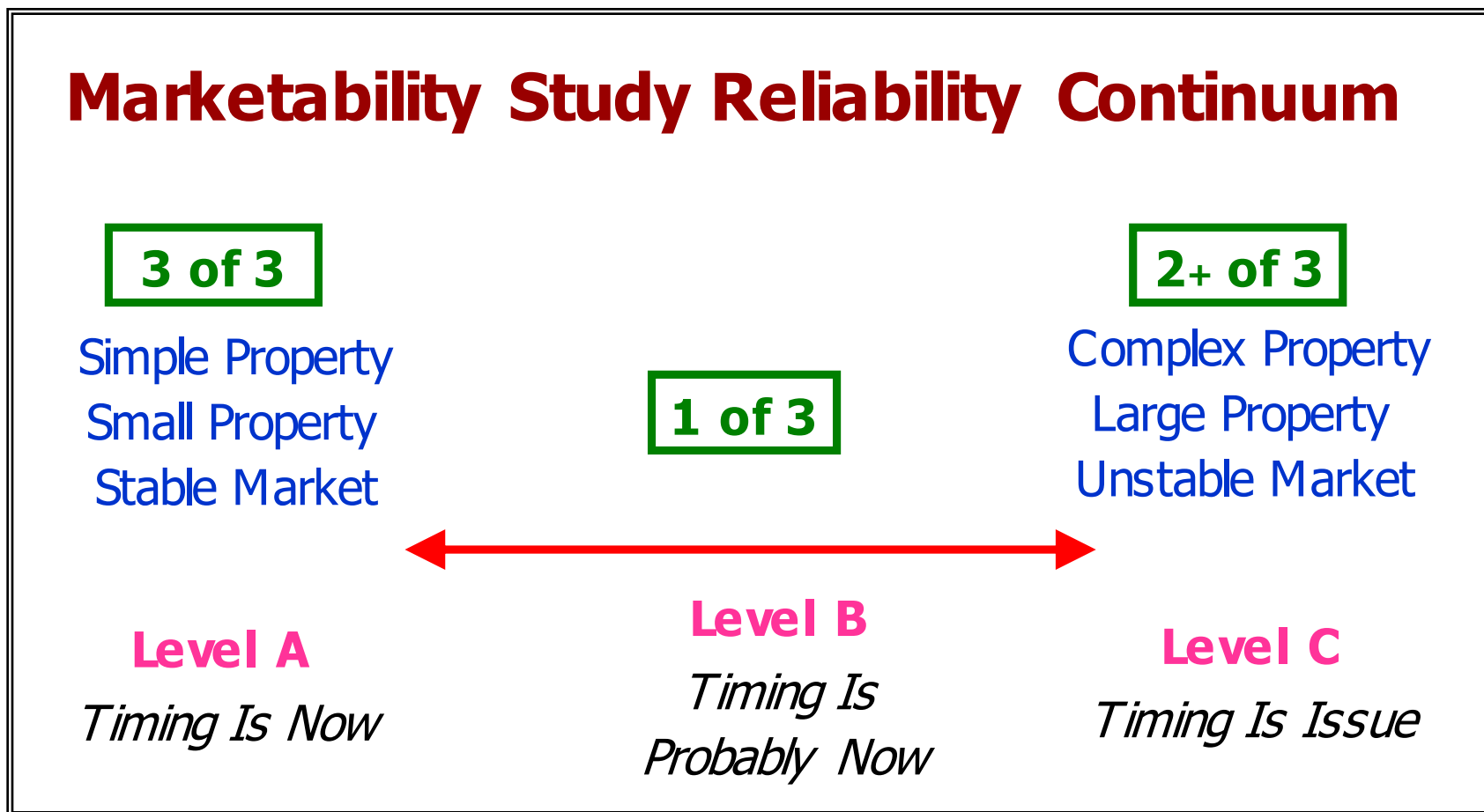
SECTION THREE

Part 18.

Introduction to Level C Marketability Studies



Introduction to Level C Marketability Studies



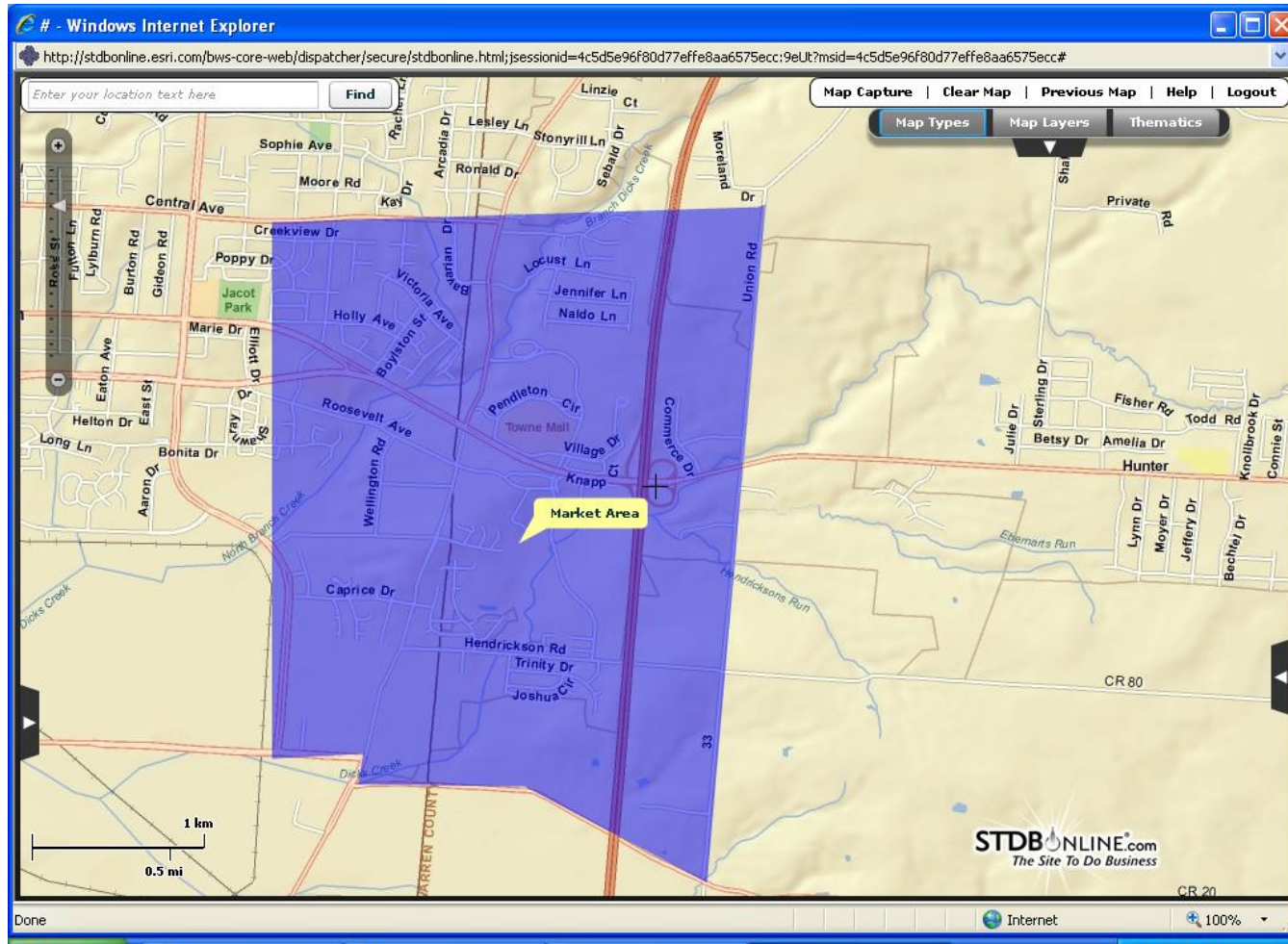
Introduction to Level C Marketability Studies

- **Volatile market conditions may make trend analysis unreliable.**
- **Property type/size may make fundamental analysis necessary.**

Case Study: Demonstration

- **Level C Marketability Study for an Existing Multifamily Property Using a Commercial Forecasting Source**

Defined Market Area



Demand for Apartments

- The forecast for demand is a function of:
 - Current and Future Population
 - Current and Future HH Size
 - Current and Future HH Composition

Demand for Apartments

- Process to follow:
 1. Estimate the Current and Future Population.
 2. Establish Current and Future HH Size.
 3. Segment Current and Future HH's into Owners and Renters.
 4. Segment HH's by Income to determine % that can meet monthly rent.

Estimate Population

Current and Forecasted Population



Market Area

Demographic and Income Profile - Appraisal Version

Prepared by STDBonline

Site Type: Custom Polygon

Summary	2000	2009	2014
Population	6,939	7,382	7,670
Households	2,860	3,087	3,228
Families	1,968	2,022	2,064
Average Household Size	2.42	2.38	2.37
Owner Occupied HUs	1,682	1,739	1,783
Renter Occupied HUs	1,178	1,348	1,445
Median Age	34.7	35.6	36.4

Marginal Demand for Multifamily Housing		
Category	Current Year	+ 5 Years
Total population in market area	7,382	7,670
Persons per household		
Total number of households		
Est. % multifamily HH		
Forecast of demand for apartment units		
% HH that can afford subject-type units		
Demand for subject-type units		
Current supply of units		
Forecast of new units		
Demolitions		
Total competitive supply		
Less frictional vacancy @ 5%		
Net available units		
Net excess (shortage) of demand		



Market Area

Demographic and Income Profile - Appraisal Version

Prepared by STDBonline

Site Type: Custom Polygon

Summary	2000	2009	2014
Population	6,939	7,382	7,670
Households	2,860	3,087	3,228
Families	1,968	2,022	2,064
Average Household Size	2.42	2.38	2.37
Owner Occupied HUs	1,682	1,739	1,783
Renter Occupied HUs	1,178	1,348	1,445
Median Age	34.7	35.6	36.4

Marginal Demand for Multifamily Housing		
Category	Current Year	+ 5 Years
Total population in market area	7,382	7,670
Persons per household	2.38	2.37
Total number of households	3,102	3,236
Est. % multifamily HH		
Forecast of demand for apartment units		
% HH that can afford subject-type units		
Demand for subject-type units		
Current supply of units		
Forecast of new units		
Demolitions		
Total competitive supply		
Less frictional vacancy @ 5%		
Net available units		
Net excess (shortage) of demand		

Tenure Segmentation

- In the residential market, there are owner-occupants and there are renters. Each market segment has different demand traits that must be explored.
- See the following example.

Establish Housing Tenure



ESRI

Market Area

Specialty Housing Profile

Prepared by STDBonline

1990 Housing Units	2,576
Owner Occupied Housing Units	51.0%
Renter Occupied Housing Units	43.2%
Vacant Housing Units	5.8%
2000 Housing Units	2,996
Owner Occupied Housing Units	56.1%
Renter Occupied Housing Units	39.3%
Vacant Housing Units	4.6%
2009 Housing Units	3,291
Owner Occupied Housing Units	52.8%
Renter Occupied Housing Units	41.0%
Vacant Housing Units	6.2%
2014 Housing Units	3,439
Owner Occupied Housing Units	51.8%
Renter Occupied Housing Units	42.0%
Vacant Housing Units	6.1%

Tenure Segmentation

- The ratio of apartment units to other types of housing should be determined to segment the demand.
- We have concluded **41%** of the total as multifamily housing such as the subject for rent for the current year.
- But only **40%** (down from 42%) for the +5-year projection, since we expect the market area to have less renter appeal in the future.

Marginal Demand for Multifamily Housing		
Category	Current Year	+ 5 Years
Total population in market area	7,382	7,670
Persons per household	2.38	2.37
Total number of households	3,102	3,236
Est. % multifamily HH	41%	40%
Forecast of demand for apartment units	1,272	1,295
% HH that can afford subject-type units		
Demand for subject-type units		
Current supply of units		
Forecast of new units		
Demolitions		
Total competitive supply		
Less frictional vacancy @ 5%		
Net available units		
Net excess (shortage) of demand		

Affordability Segmentation

- **In addition to segmenting the market between owner and renter households, it is necessary to segment the households that can afford the units in the subject.**

Tenant Income Estimation

- Subject rents: \$850 to \$1,250
- % of income spent on housing: 35%

\$850	\$1,250
<u>x 12</u>	<u>x 12</u>
\$10,200	\$15,000
<u>÷ 35%</u>	<u>÷ 35%</u>
\$29,143	\$42,857

Affordability Segmentation

- As shown, potential tenants would likely have income characteristics of at least \$29,000 (the lowest rent level).
- A decision must be made about how much additional segmentation is required. Some analysts would also exclude all income levels above \$43,000 (the highest rent level).
- For the case study property, exclude incomes above \$150,000.

Affordability Segmentation

- See Household Income Figures.

Households by Income	2000		2009		2014	
	Number	Percent	Number	Percent	Number	Percent
< \$15,000	346	11.9%	242	7.8%	224	6.9%
\$15,000 - \$24,999	316	10.9%	265	8.6%	277	8.6%
\$25,000 - \$34,999	480	16.6%	342	11.1%	329	10.2%
\$35,000 - \$49,999	494	17.1%	562	18.2%	552	17.1%
\$50,000 - \$74,999	638	22.0%	725	23.5%	755	23.4%
\$75,000 - \$99,999	389	13.4%	513	16.6%	557	17.3%
\$100,000 - \$149,999	183	6.3%	343	11.1%	427	13.2%
\$150,000 - \$199,000	14	0.5%	62	2.0%	68	2.1%
\$200,000+	37	1.3%	33	1.1%	39	1.2%
Median Household Income	\$44,227		\$53,809		\$55,434	
Average Household Income	\$55,933		\$63,911		\$66,987	
Per Capita Income	\$23,378		\$26,391		\$27,810	

Concluded Affordability Percentage \approx 80%

Marginal Demand for Multifamily Housing		
Category	Current Year	+ 5 Years
Total population in market area	7,382	7,670
Persons per household	2.38	2.37
Total number of households	3,102	3,236
Est. % multifamily HH	41%	40%
Forecast of demand for apartment units	1,272	1,295
% HH that can afford subject-type units	80%	80%
Demand for subject-type units	1,017	1,036
Current supply of units		
Forecast of new units		
Demolitions		
Total competitive supply		
Less frictional vacancy @ 5%		
Net available units		
Net excess (shortage) of demand		

Step 4. Measure Competitive Supply

- **Competitive supply must match the characteristics used to measure demand.**
- **In this example, since demand was measured over all multifamily product types, supply should count all multifamily units in the market area.**

Step 4

Measure and Forecast Competitive Supply

	Current	+5 Years
Existing Supply	1,020	1,020
Expected New Units	0	175
Expected Demolitions	0	40

Adjust for Frictional Vacancy

- In order to arrive at *available supply*, frictional vacancy must be considered.
- For the example market, assume that frictional vacancy is **5%**.

Marginal Demand for Multifamily Housing		
Category	Current Year	+ 5 Years
Total population in market area	7,382	7,670
Persons per household	2.38	2.37
Total number of households	3,102	3,236
Est. % multifamily HH	41%	40%
Forecast of demand for apartment units	1,272	1,295
% HH that can afford subject-type units	80%	80%
Demand for subject-type units	1,017	1,036
Current supply of units	1,020	1,020
Forecast of new units		175
Demolitions		40
Total competitive supply	1,020	1,155
Less frictional vacancy @ 5%	51	58
Net available units	969	1,097
Net excess (shortage) of demand		

Level C Marketability Study Multifamily Property

Page 496

Step 5. Calculate Marginal Demand

Marginal Demand for Multifamily Housing		
Category	Current Year	+ 5 Years
Total population in market area	7,382	7,670
Persons per household	2.38	2.37
Total number of households	3,102	3,236
Est. % multifamily HH	41%	40%
Forecast of demand for apartment units	1,272	1,295
% HH that can afford subject-type units	80%	80%
Demand for subject-type units	1,017	1,036
Current supply of units	1,020	1,020
Forecast of new units		175
Demolitions		40
Total competitive supply	1,020	1,155
Less frictional vacancy @ 5%	51	58
Net available units	969	1,097
Net excess (shortage) of demand	48	(62)