Chapter 1

The Real Estate Space Market & Asset Market

What's a "market"?…

A mechanism for the voluntary exchange of goods and services among owners.

Two types of markets relevant to commercial property:

1. The *Space* Market . . .

- *For the usage (or right to use) "real property".*
- *AKA "usage market", or "rental market".*
- *(e.g., tenants & landlords exchange money for leases.)*

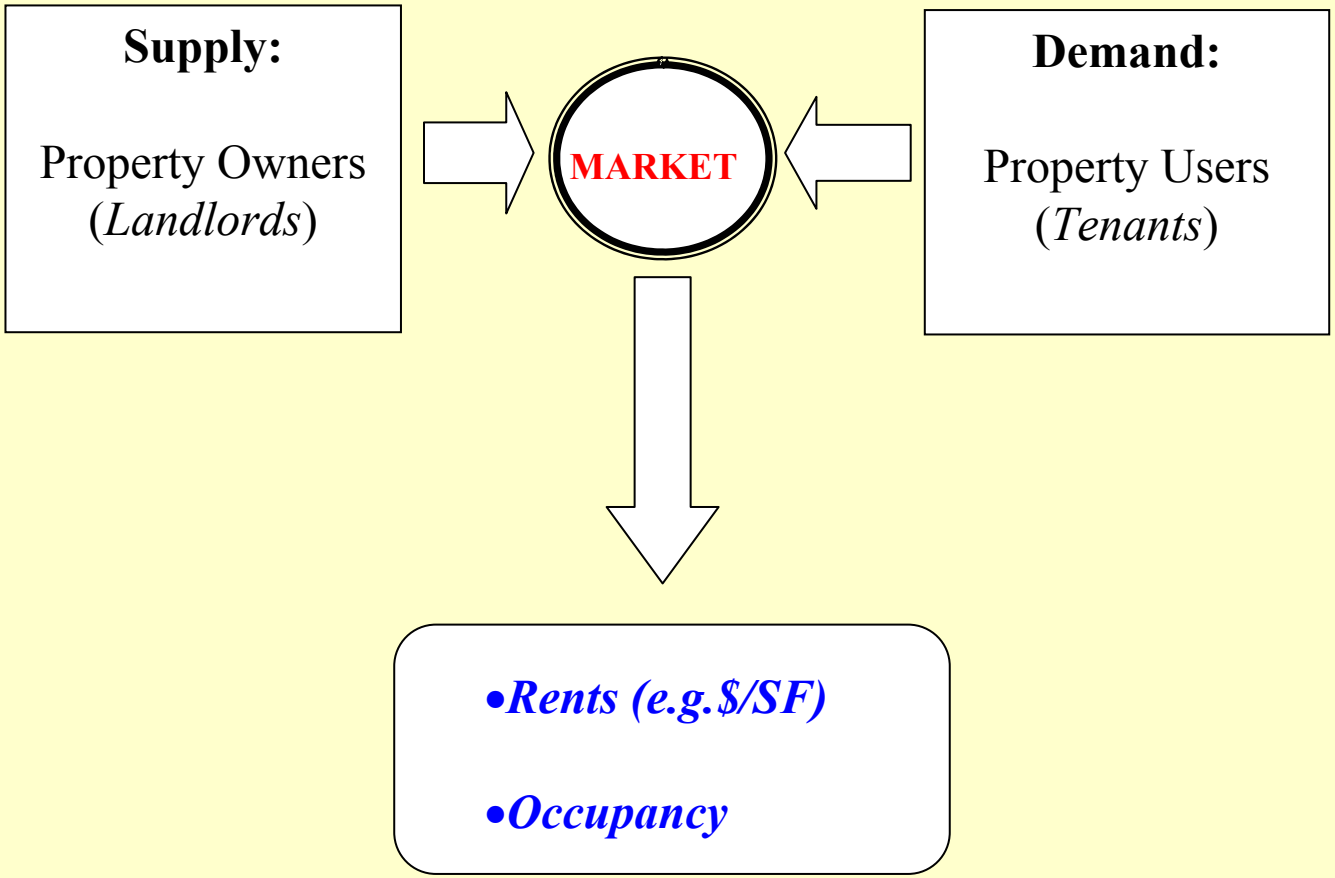
2. The *Asset* Market . . .

- *For the ownership of "real property".*
- *AKA "property market".*
- *(e.g., Oh.STRS exchanges my pension $ for an office bldg.)*

*What's "**real property**"? …*

Ans: ***Land & built space***.

1.1.1 The Space Market…



1.1.2 "*Segmentation*" in the Space Market…

- A market is *"segmented"* if it breaks up into sub-markets, or market segments.
- Within each sub-market or segment, the same good may have a *different* equilibrium *price*.
- **The real estate space market is highly segmented.**
- ***Why?…***

Demand side:

- Users require *specific types* of space… A lawyer can't use a warehouse. A trucking firm can't use a high-rise office bldg.
- Users require *specific locations* (or types of locations)… A lawyer won't get much business at the intersection of I-70 and I-77. A trucking firm's trucks would spend all their time stuck in traffic if their warehouse were located in downtown Cincinnati.

Supply side:

- Buildings are of *specific physical types* (warehouses ≠ high-rise offices).
- Buildings are in *specific locations* (and they can't move!).

Concept check…

1. Is there a functioning market for apartment rental in Cambridge?…
2. Is there a functioning market for apartment rental in the Boston metro area as a whole?…
3. Is there a functioning market for apartment rental in the United States as a whole?…

Concept check…

4. Is there a functioning market for “building rental” in Cambridge?…
5. Is there a functioning market for gasoline in the United States as a whole?…
6. Is there a functioning market for apartment property *ownership* (investment, as distinct from rental) in the United States as a whole?… *[Hint: this is the asset market, not the space market.]*

As a result of segmentation in the space market…

As of the same point in time (in this example, Oct.1992):

- Class A **Office** Rents =
  - $**23**/SF/yr Dntn Chicago.
  - $**33**/SF/yr Dntn New York.
- Rents in **Suburban Dallas**
  - $ **7**/SF/yr for Apartments.
  - $**13**/SF/yr for Retail space.

1999 prices for a typical (same) house: 2200 SF, 4BR/2B, 2-car Garage…

City	Price	Index
Houston, TX	$115,000	50
Pittsburgh, PA	$163,000	70
Dallas, TX	$180,000	78
Atlanta, GA	$200,000	87
Cleveland, OH	$201,000	87
Cincinnati	$231,000	100
Chicago, IL (Schaumburg)	$300,000	130
New York, NY (Westchstr)	$353,000	153
Chicago, IL (Lincoln Pk)	$409,000	177
Boston, MA	**$421,000**	**182**
Los Angeles, CA (Hollywd)	$530,000	229
San Francisco, CA (city)	$720,000	311
New York, NY (Manhattan)	$1,144,000	495
Source: Caldwell-Banker		

New York is 10-times Houston…
Boston is almost 3-times Pittsburgh:

"Location, location, location…"

Two major dimensions of space mkt segmentation:

- Geographic location.
- Property type.

Geographic location:

- Basic unit is the "metropolitan area" ("MSA").
- Sub-markets (e.g., CBD, Suburban, neighborhoods) also important.

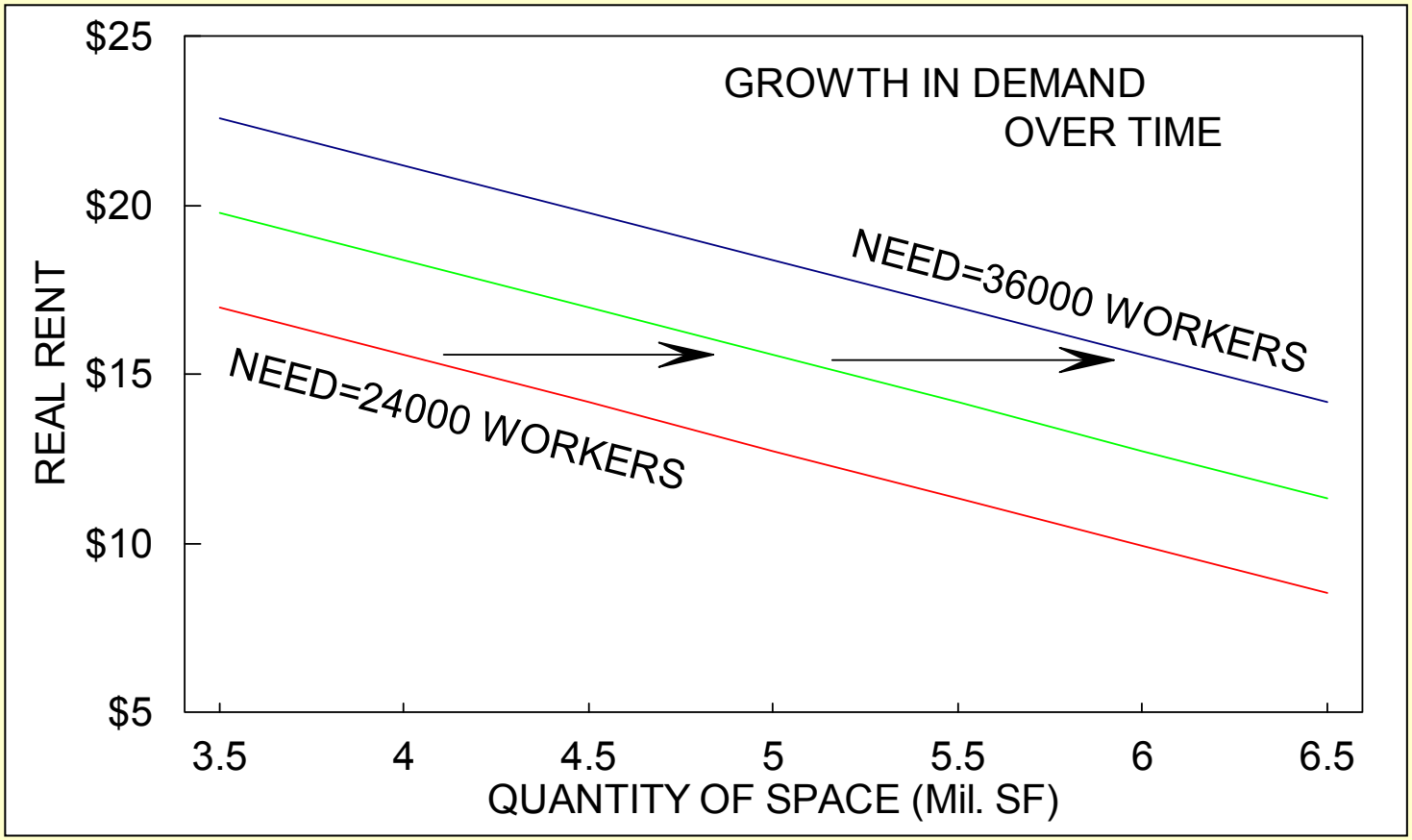
Property type:

- Residential (apartment)
- Office
- Industrial (warehouse)
- Retail
- Other (hotels, health-care, etc…)

Example space market:

Cincinnati CBD Class A Office Mkt, 1980s-90s…

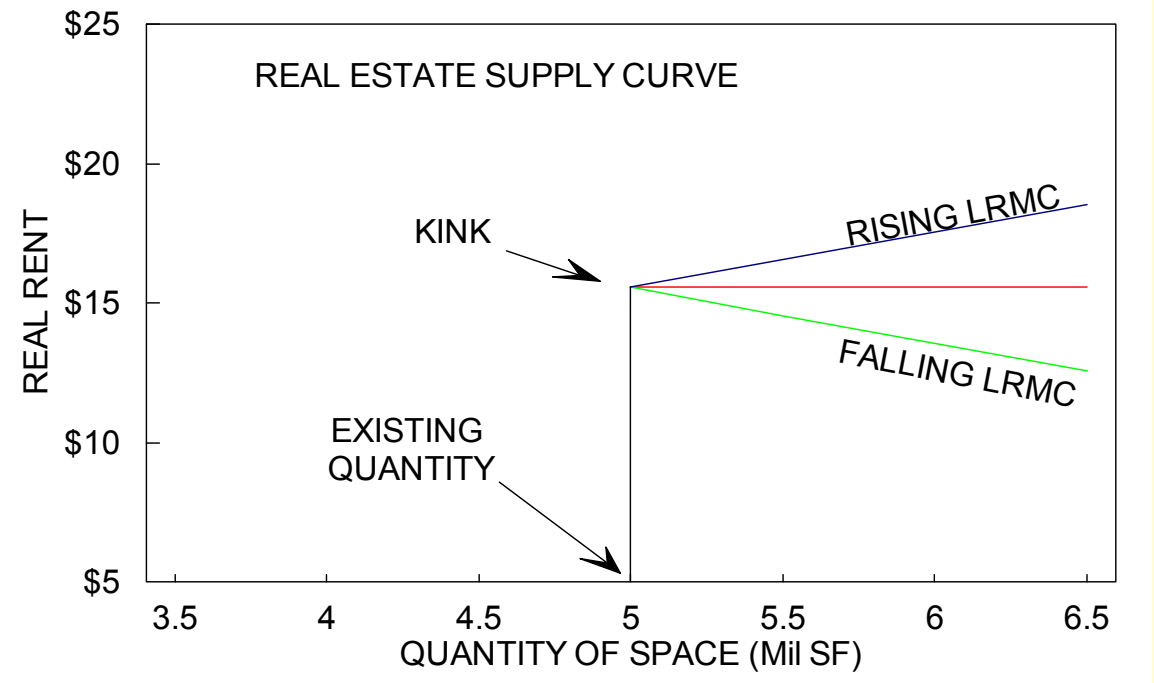
Exhibit 1-1: Office Demand as a Function of Employment, the 1980s…



Note: Pretty "normal" shaped **demand** function

1.1.3. The real estate space **supply** function has a more peculiar shape…

Real estate space long-run supply is ***kinked***…



This is due to the ***longevity*** of buildings. (*You can add them a lot easier than you can subtract them!*)

1.1.4 Supply, Development, & Rent…

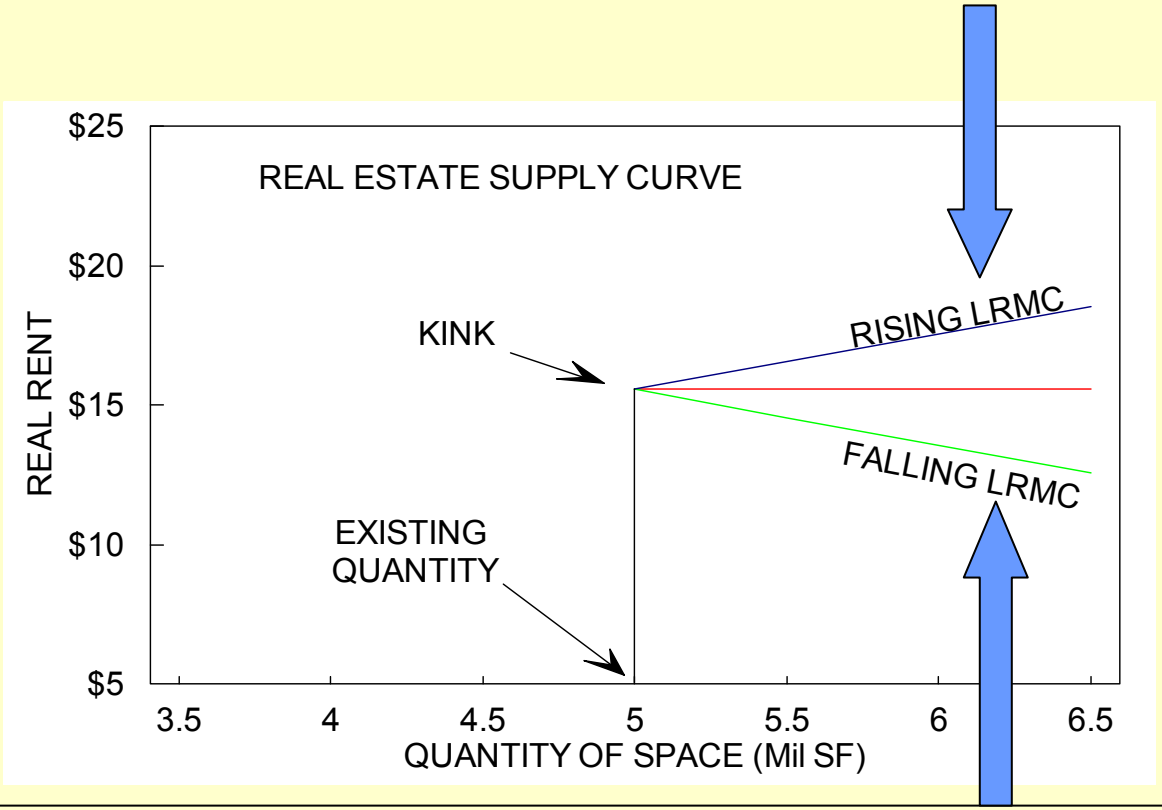
Supply function = Long-run Marginal Cost function (LRMC)

LRMC = Virtually zero (at and below existing supply).

LRMC = Development cost (beyond existing supply)

Development cost = Construction + Land (inclu dvlpr profit)

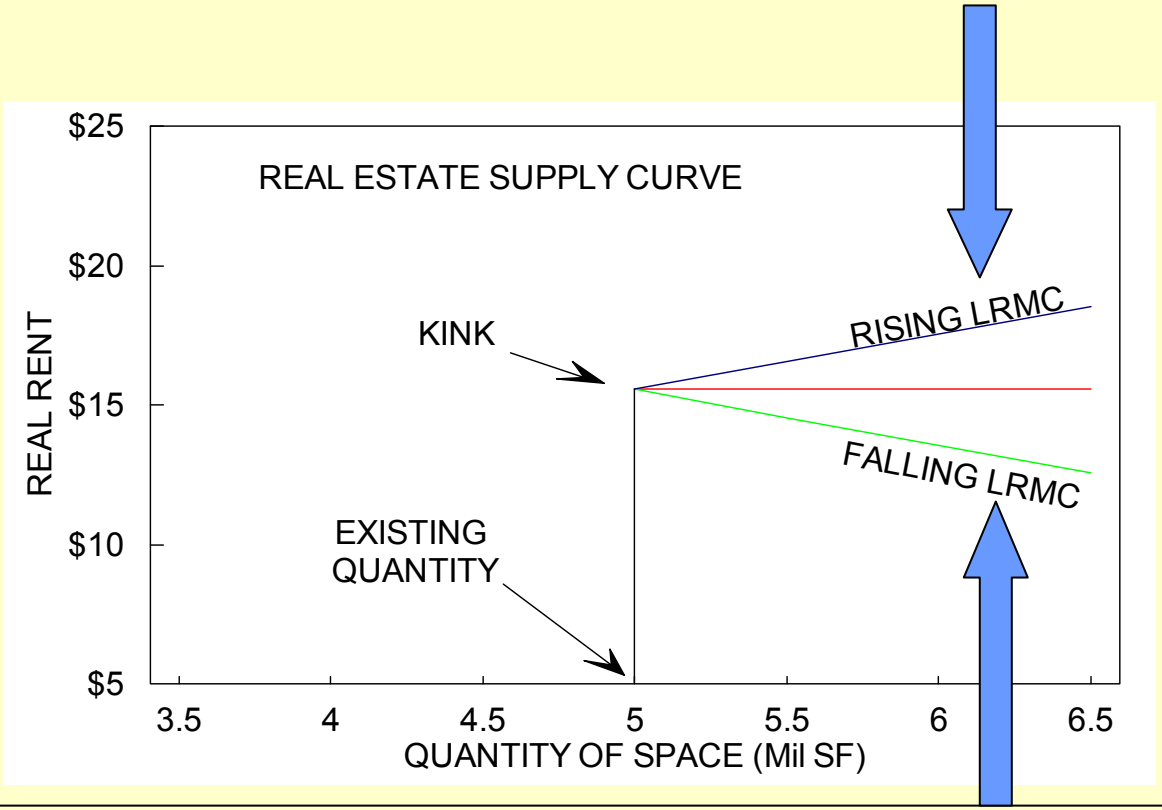
• **Rising LRMC** *(costs more to build next than last)*
←→ ***Land scarcity, Location demand growth***



• **Falling LRMC** *(costs less to build next than last)*
←→ ***Loss of centrality, Location demand decline***

• **Rising LRMC** *(Islands, Growth constraints)*

↔ ***Manhattan, Boston, SF, Honolulu,…***



• **Falling LRMC** *(Land available, Trans/Tel Infra)*

↔ ***Typical CBD in Midwest & South***

In a market with expanding demand:

LR equilibrium rent

= “Replacement cost rent”.

= Rent the market tends to return to.

= Rent just sufficient to make new development profitable.

Example: Cincinnati CBD office market, 1980s-90s…

- Devlpt Cost = $200/SF (of blt space, inclu land + construction)
- Mid-1980s CBD office bldgs were selling at “8% cap rates”.
- That means investors at that time were willing to pay

$$\$1 / 0.08 = \$12.50$$

per dollar of current net income produced by the bldg.

Example: Cincinnati CBD office market, 1980s-90s…

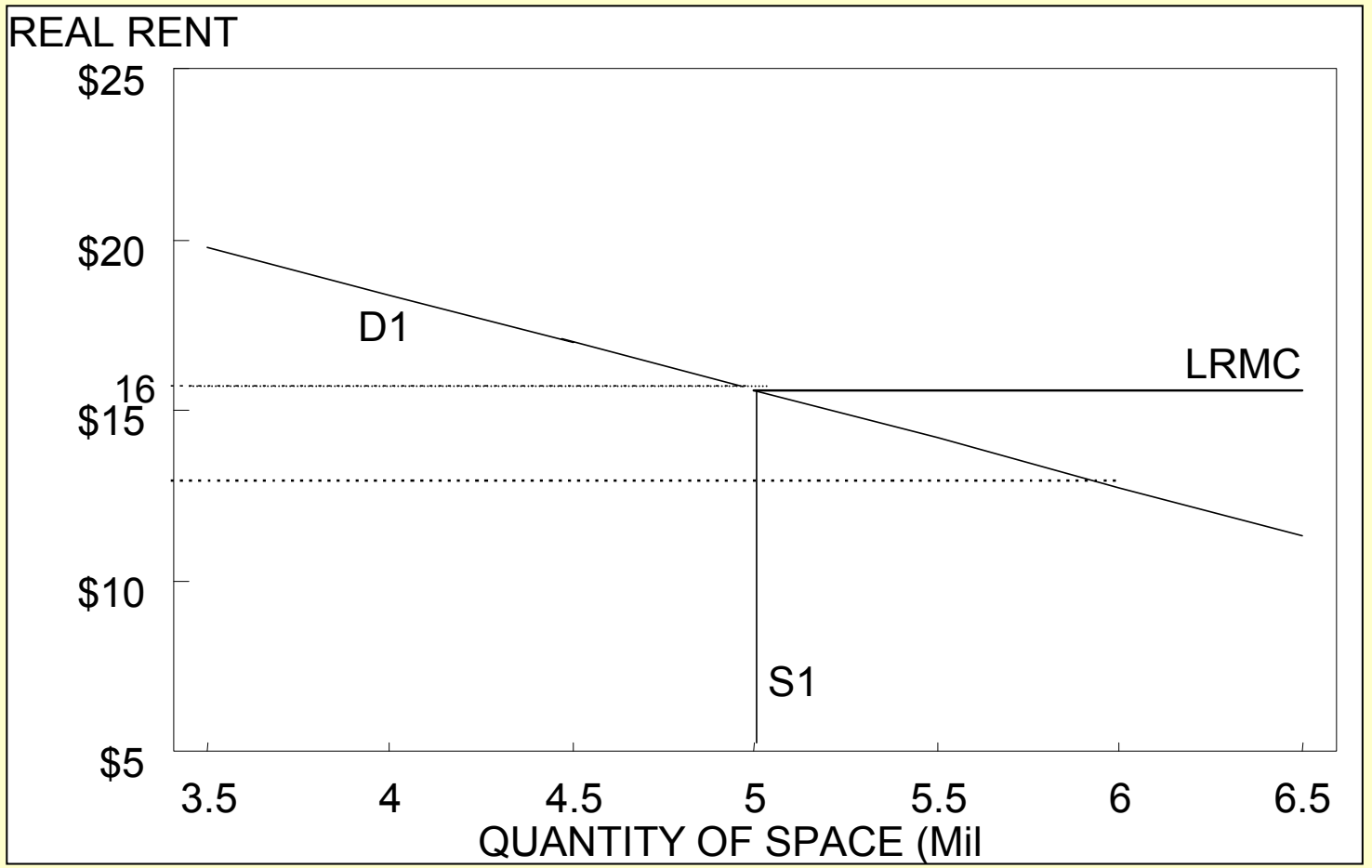
- Thus, if office bldgs could generate $16/SF of net rent, then it would be just profitable to develop new buildings:
  $16 / 0.08 = $200 = Devlpt Cost
- Thus, $16/SF is the LR equilibrium ("Replacement Cost") rent.
- Rents at $16/SF or more, with cap rates at 8% or less, would tend to trigger new development of downtown office buildings in Cincinnati in the 1980s.

But would this new development really turn out to be profitable?…

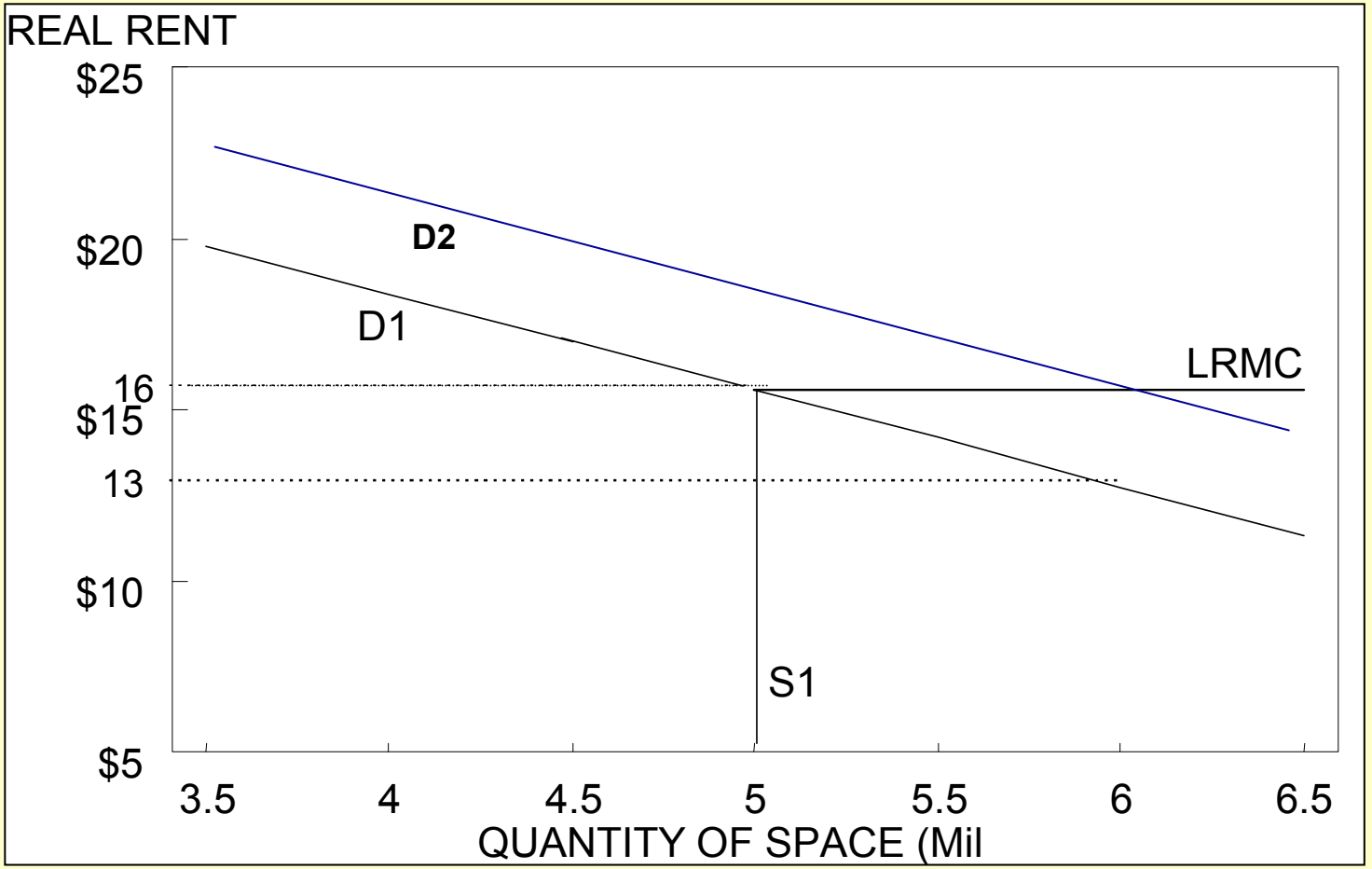
1.1.5. Forecasting Future Rents…

*You need to forecast changes in **both** future demand and future supply, and consider that the "kink point" moves out with increases in current stock of supply…*

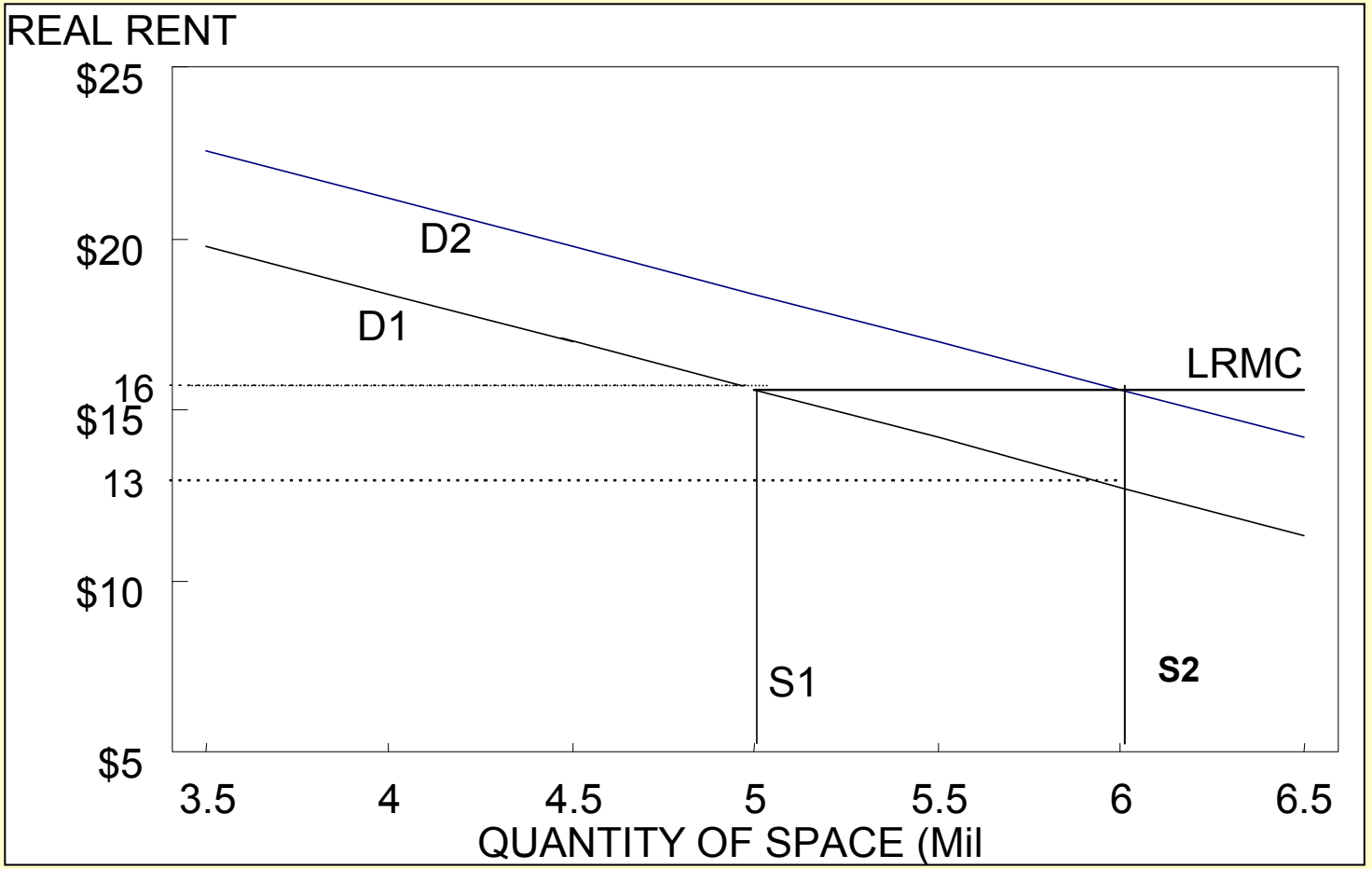
What happened in the Cincinnati office market at the end of the 1980s, through early 1990s…



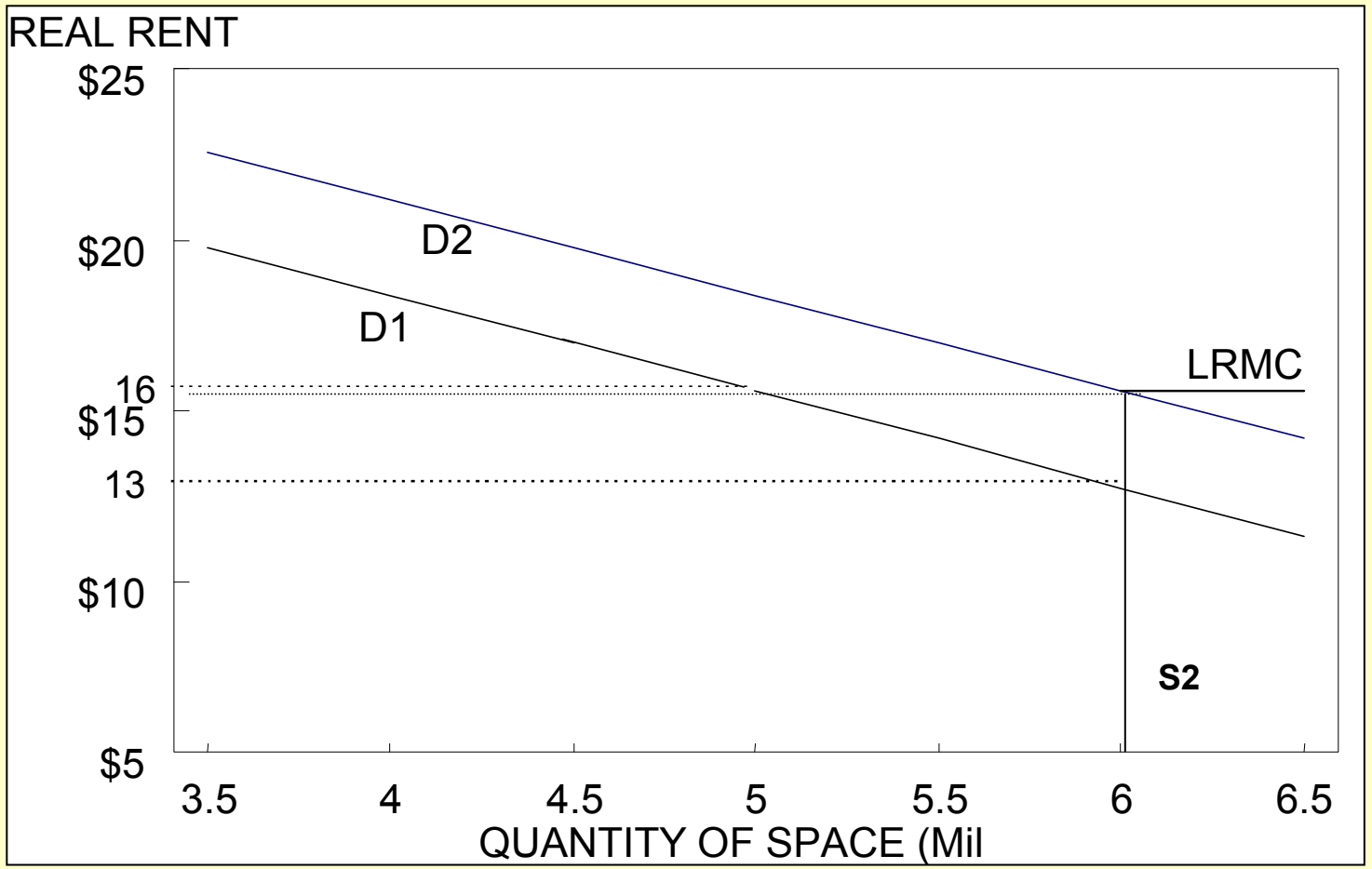
(1) Expecting demand to grow from D1 to D2,…



(1) Expecting demand to grow from D1 to D2, developers built 1 million SF new space (Chemed Ctr & 312 Walnut).



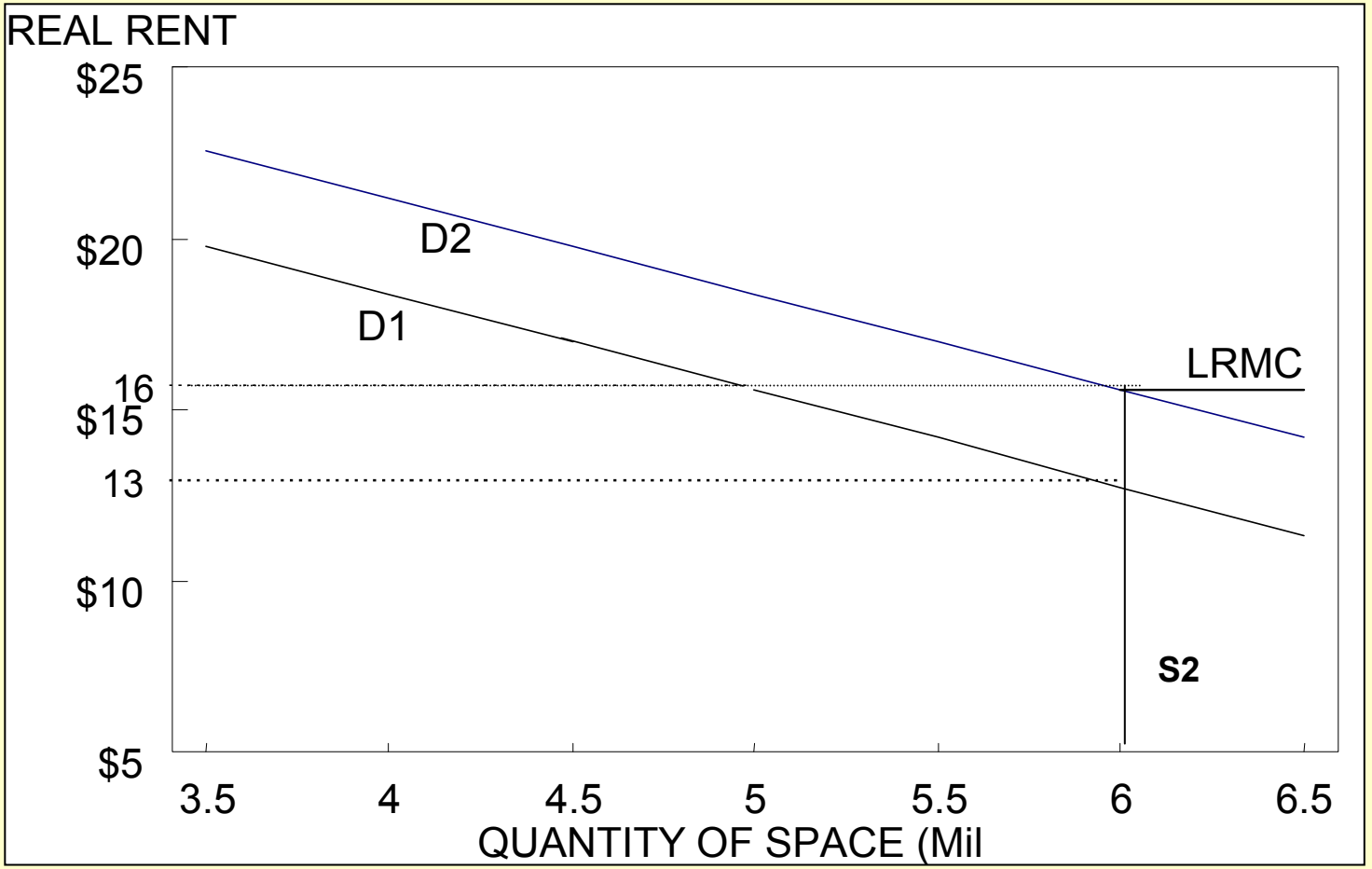
(1) Expecting demand to grow from D1 to D2, developers built 1 million SF new space (Chemed Ctr & 312 Walnut).




CINCINNATI
COMMERCE CENTER
OHIO RIVER
1 312 Elm
2 Carew Tower
3 Ameritrust Center
4 DuBois Tower
5 Star Bank
6 312 Walnut
7 Atrium I & II
8 Chemed Center
9 Chiquita Center
10 Central Trust
11 580 Building
12 Society Bank
13 P&G Headquarters

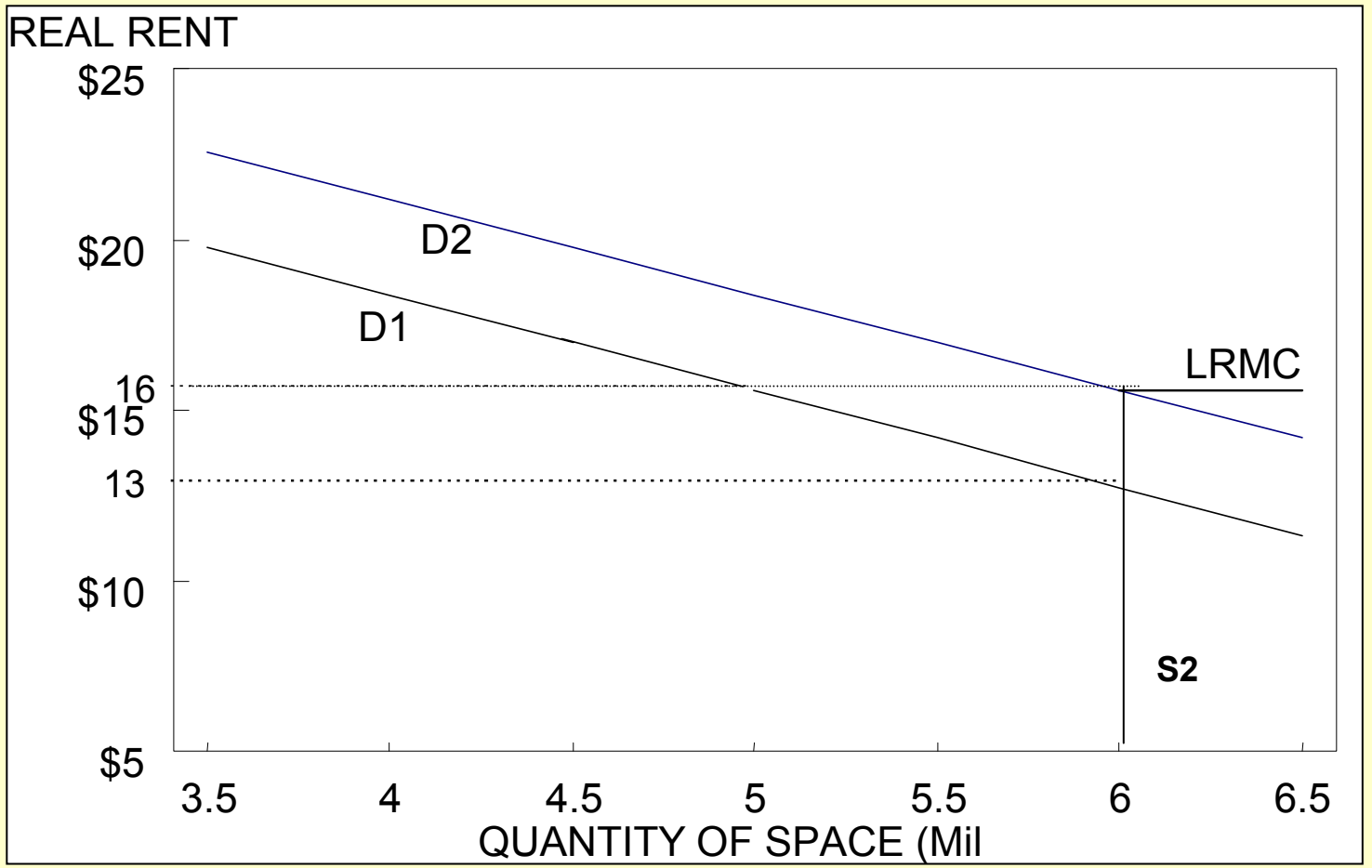
Chemed Ctr + 312 Walnut = 1 MSF Spec, 1990.

(1) Expecting demand to grow from D1 to D2, developers built 1 million SF new space (Chemed Ctr & 312 Walnut).



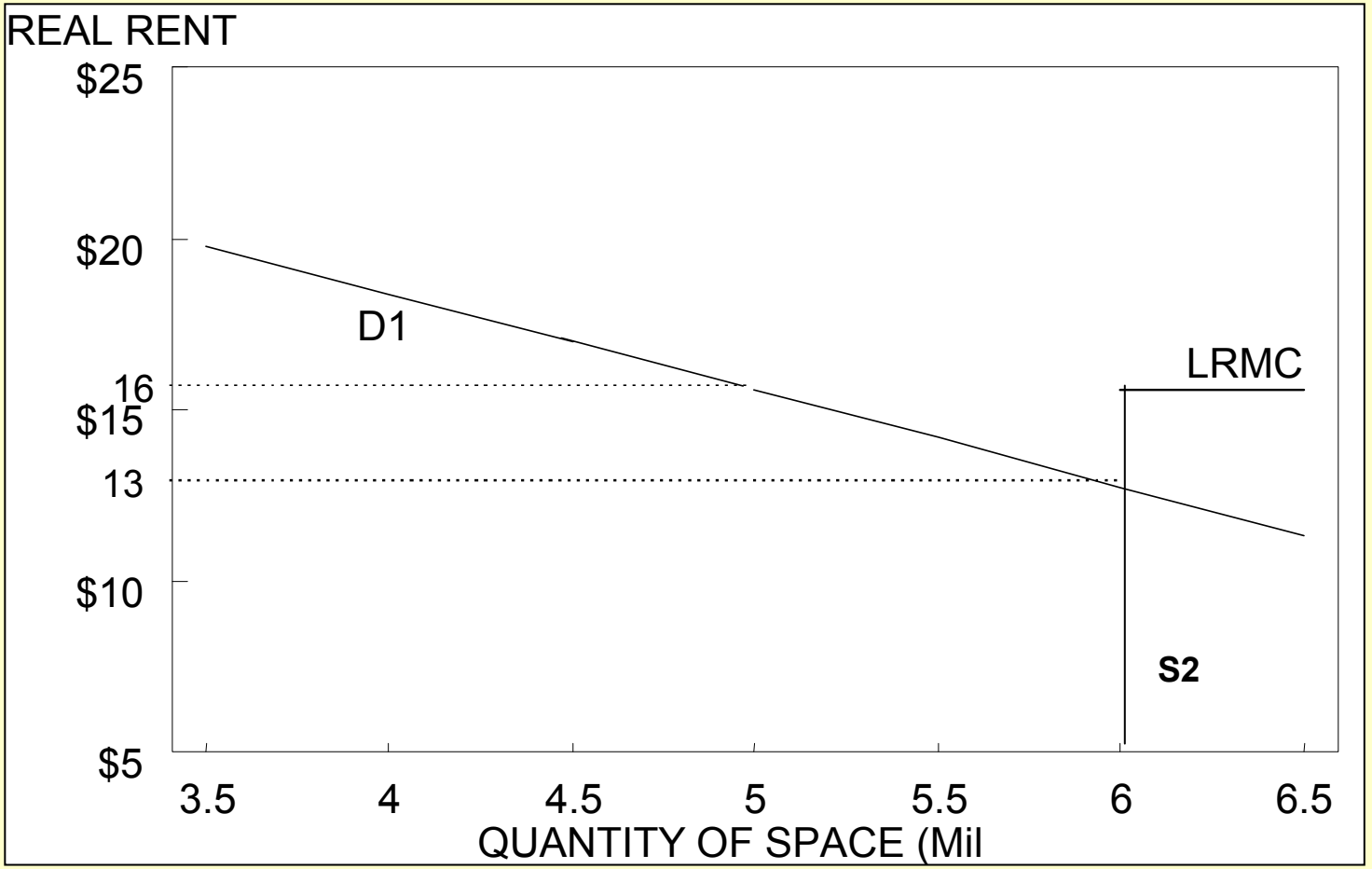
But what happened in reality is . . .

(2) Demand stayed stuck at D1.

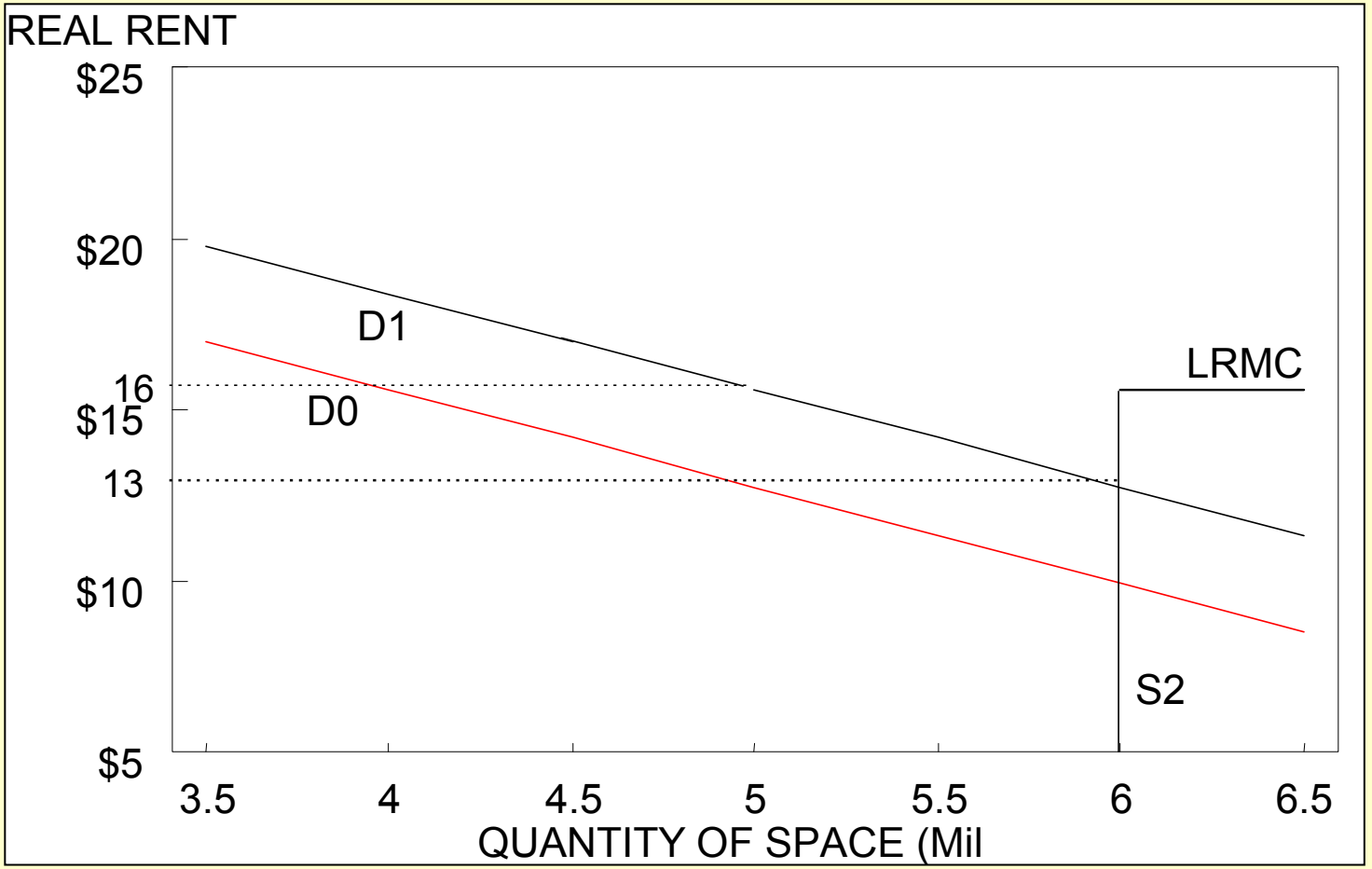


But what happened in reality is . . .

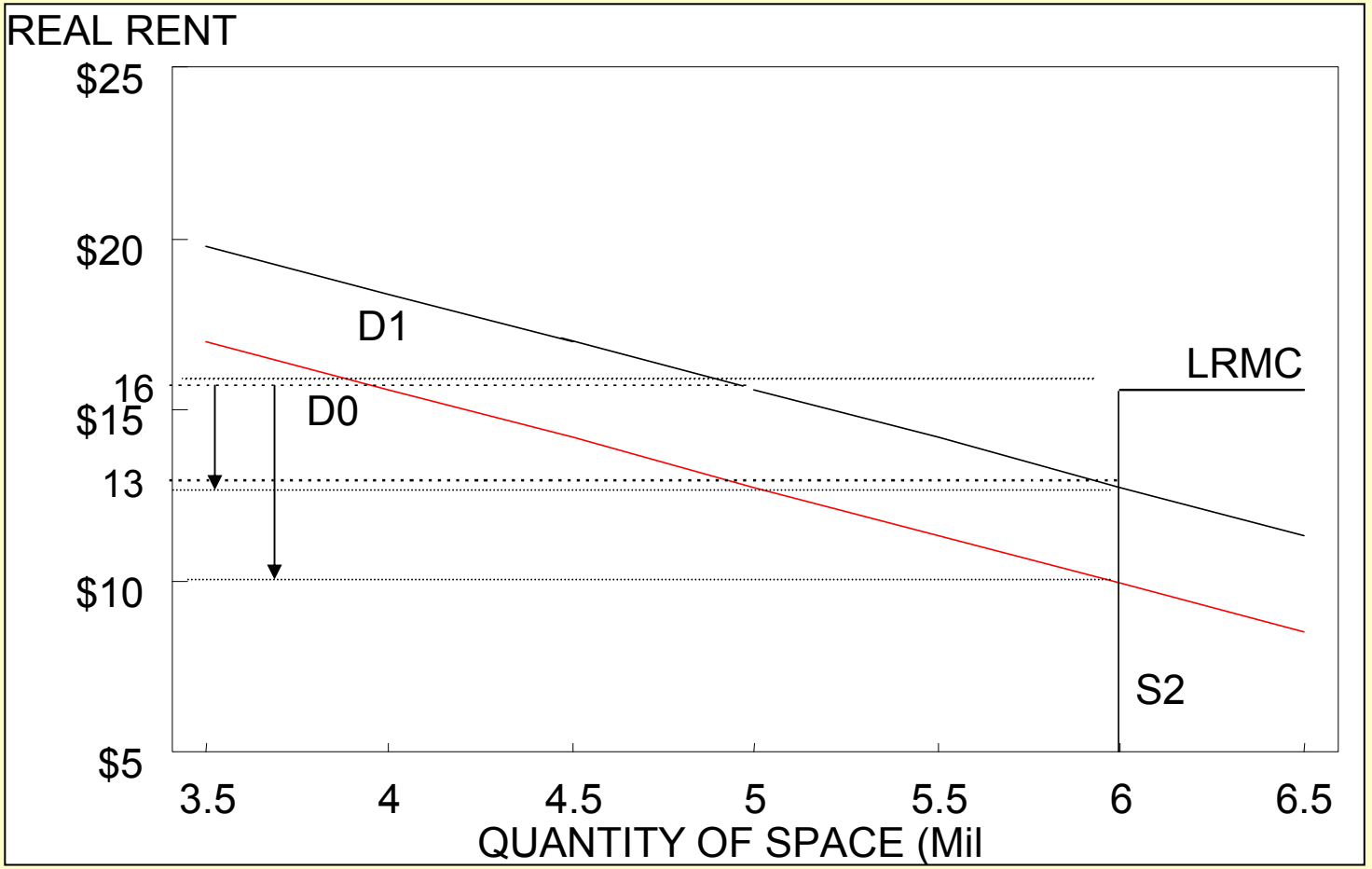
(2) Demand stayed stuck at D1.



(2) Demand stayed stuck at D1 (or even fell temporarily to D0, with recession of 1991).



(3) Net rents fell from $16/SF to $13/SF or even as low as $10/SF in the early 1990s.



(3) Net rents fell from $16/SF to $13/SF or even as low as $10/SF in the early 1990s. (They eventually recovered by the late 1990s.)

How?...

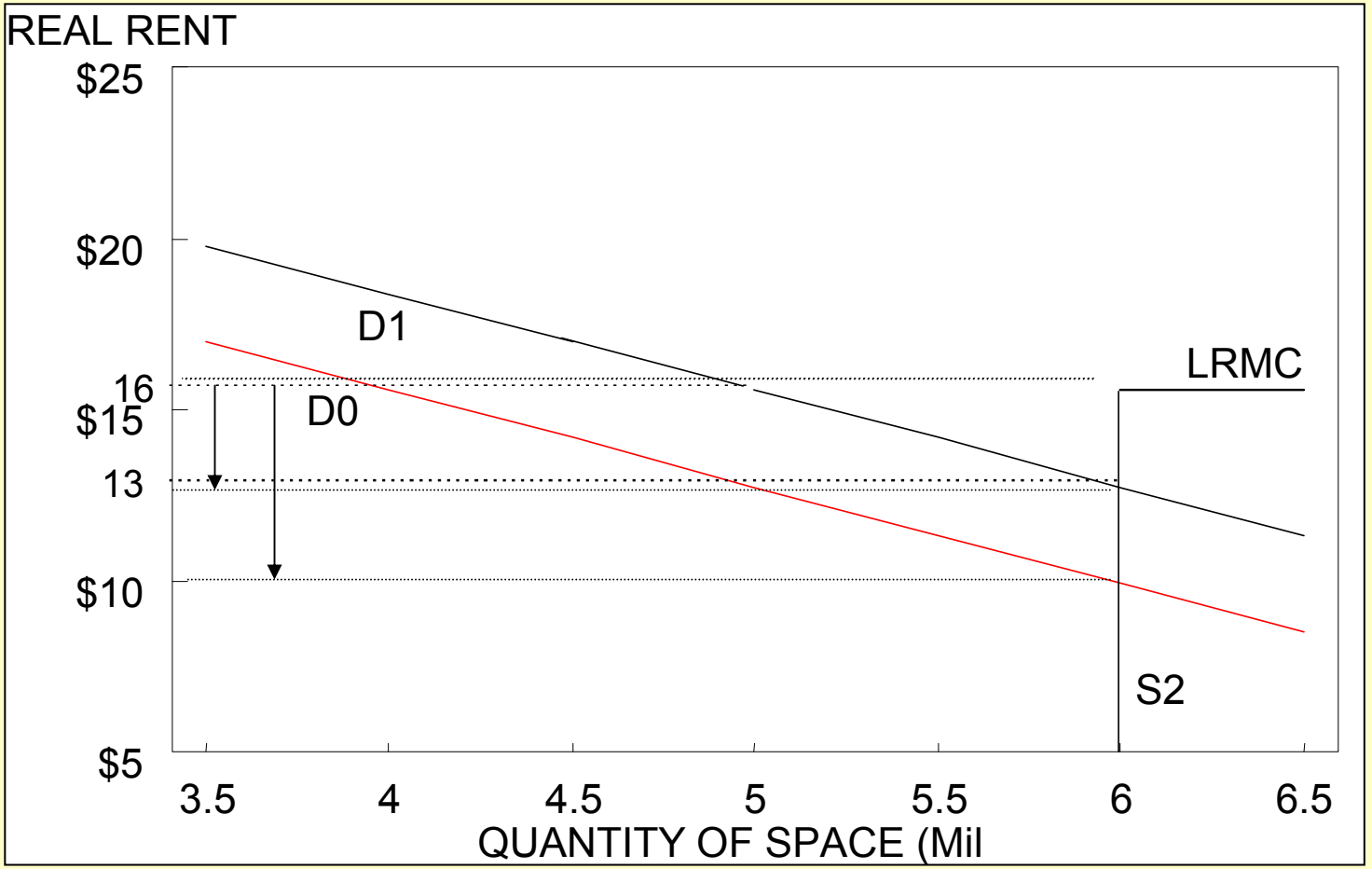
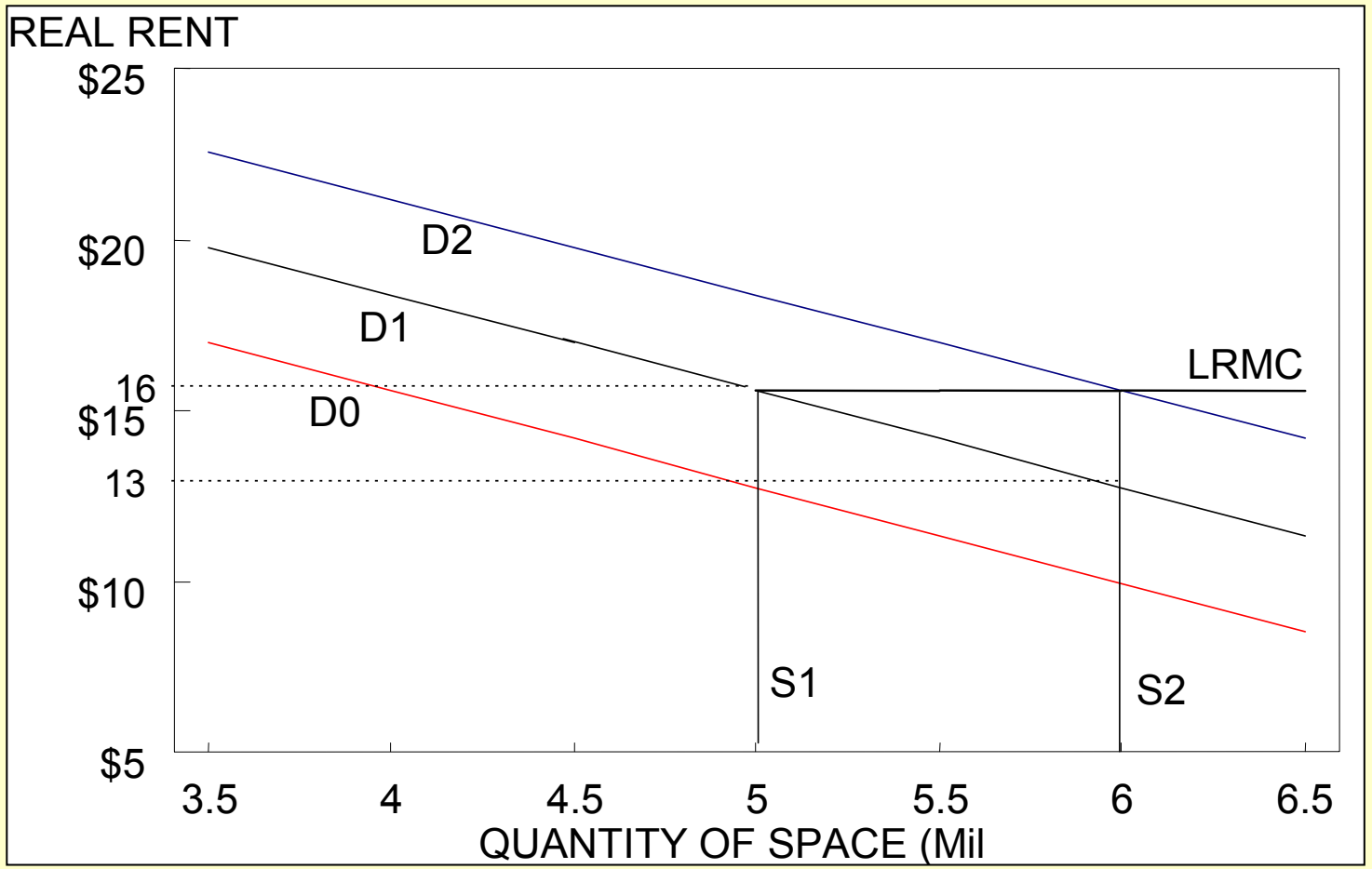
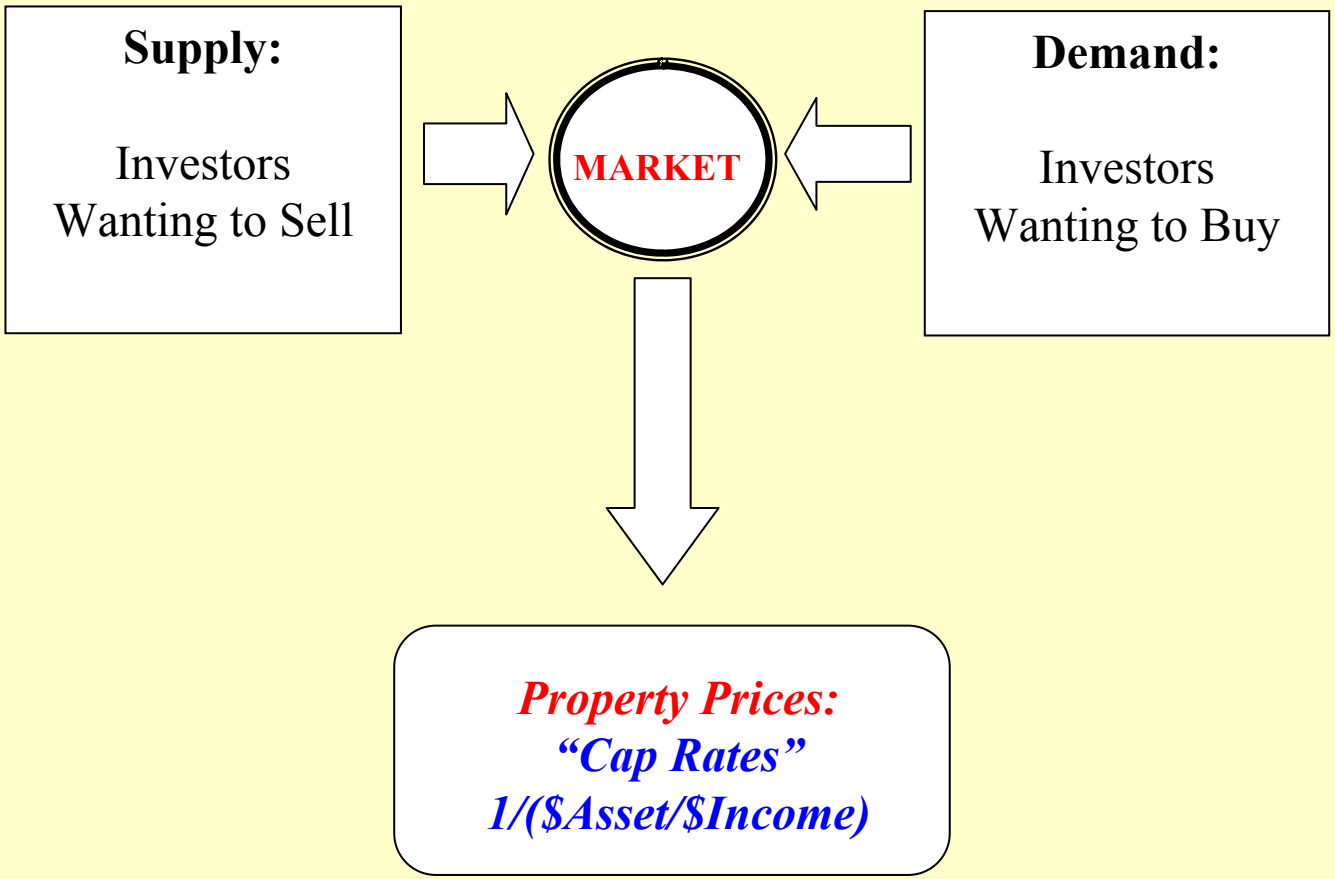


Exhibit 1-3: Change in Supply & Demand & Rent over Time



1.2 The Real Estate Asset Market (Property Market)…



For investors:

Real Estate Assets = Future Cash Flows

"*Cash is fungible*."

Cash is cash is cash, whether it comes from real estate, stocks, or bonds.

Real estate assets compete against stocks & bonds. The real estate asset market is part of the broader capital market .

Exhibit 1-5: Major Types of Capital Asset Markets and Investment Products

	Public Markets:	Private Markets:
Equity Assets:	**Stocks** **REITs** **Mutual funds**	**Real Property** **Private firms** **Oil & Gas Partnerships**
Debt Assets:	**Bonds** **MBS** **Money instruments**	**Bank loans** **Whole Mortgages** **Venture Debt**

Concept check…

1. What is the difference between "*equity*" and "*debt*" assets (investment products)?…

2. What is the difference between "*public*" and "*private*" asset markets?…

1.2.2. The Pricing of Real Estate Assets:

"*Cap Rates*"…

Commercial property prices are typically quoted in terms of "*Cap Rates*" (short for "capitalization rate"), AKA "OAR" (short for "overall rate").

$$CAP\ RATE \qquad \frac{Current\ Annual\ Net\ Income}{\text{Pr}\,operty \quad \text{Pr}\,ice}$$

The Cap Rate is like:

- Current yield on the investment.
- Inverse of “Price/Earnings” Multiple.

Property value can be represented (or estimated) as:

$$\text{Property Price} \qquad \frac{\textit{Current Annual Net Income}}{\textit{CAP RATE}}$$

Three major determinants of cap rates …

1) The ***Opportunity Cost of Capital*** (OCC).

- This comes from the capital market.
- How much return can investor's expect to earn in other types of investments, like stocks, bonds, money mkt?…
- Higher real interest rates or higher expected returns in other types of investments will require higher expected returns in real estate, and therefore higher cap rates, other things being equal.

Three major determinants of cap rates …

2) ***Growth Expectations*** in the property's future cash flows.

- This comes from the space market.
- How much can investor's expect that this property's net cash flow (rents - expenses) will be able to grow over the coming years?…
- Higher (realistic) growth expectations will allow a lower cap rate, as investors will be willing to pay more $ today for a given amount of *current* net income, in order to own the property (since this income is expected to grow).

Three major determinants of cap rates …

3) ***Risk*** perceptions and preferences among investors, regarding the property.

- This comes from *both* the space market and the capital market (risk is *relative*).
- How risky is an investment in this property, and how much do investors care about that risk?…
- Greater risk, and greater sensitivity to risk, will require higher cap rates (lower asset values per $ of current income).

Concept check…

Other things being equal, which would have the ***lower*** cap rate, Property "A", or Property "B"?…

1. A: An apartment building in a declining neighborhood.
   B: An apartment building in a growing neighborhood.

2. A: An office building with full of long-term tenants.
   B: An office building full of short-term tenants.

Concept check…

Other things being equal, which would have the ***lower*** cap rate, Property "A", or Property "B"?…

3. A: Real estate when LT bonds yield 6% (with 3% infla).

   B: Real estate when LT bonds yield 8% (with 3% infla).

4. A: A surface parking lot in a thriving downtown.

   B: A 10-story parking garage in a thriving downtown.

5. A: An office bldg with short-term below-mkt leases in a growing rental market.

   B: An office bldg with short-term above-mkt leases in a declining rental market.

1.2.3 Asset Markets Are Not (very) Segmented…

- "Physical Capital" = Real physical assets that produce real goods or services over an extended period of time.
- "Financial Capital" = Money.
- Physical capital is specific and relatively immobile.
- Financial capital is fungible (homogeneous) and very mobile.

Physical Capital and Financial Capital

- In the real estate asset market, financial capital is used to purchase physical capital assets.
- The real estate space market deals with physical capital.
- The real estate asset market deals with financial capital.

Financial Capital

Financial capital can quickly and easily flow from a Manhattan office bldg to a Chicago office bldg or a Dallas apt bldg. Returns are returns are returns, because $$$ are $$$ are $$$, whether those $$$ come from New York office rents, Chicago office rents, or Dallas apartment rents.

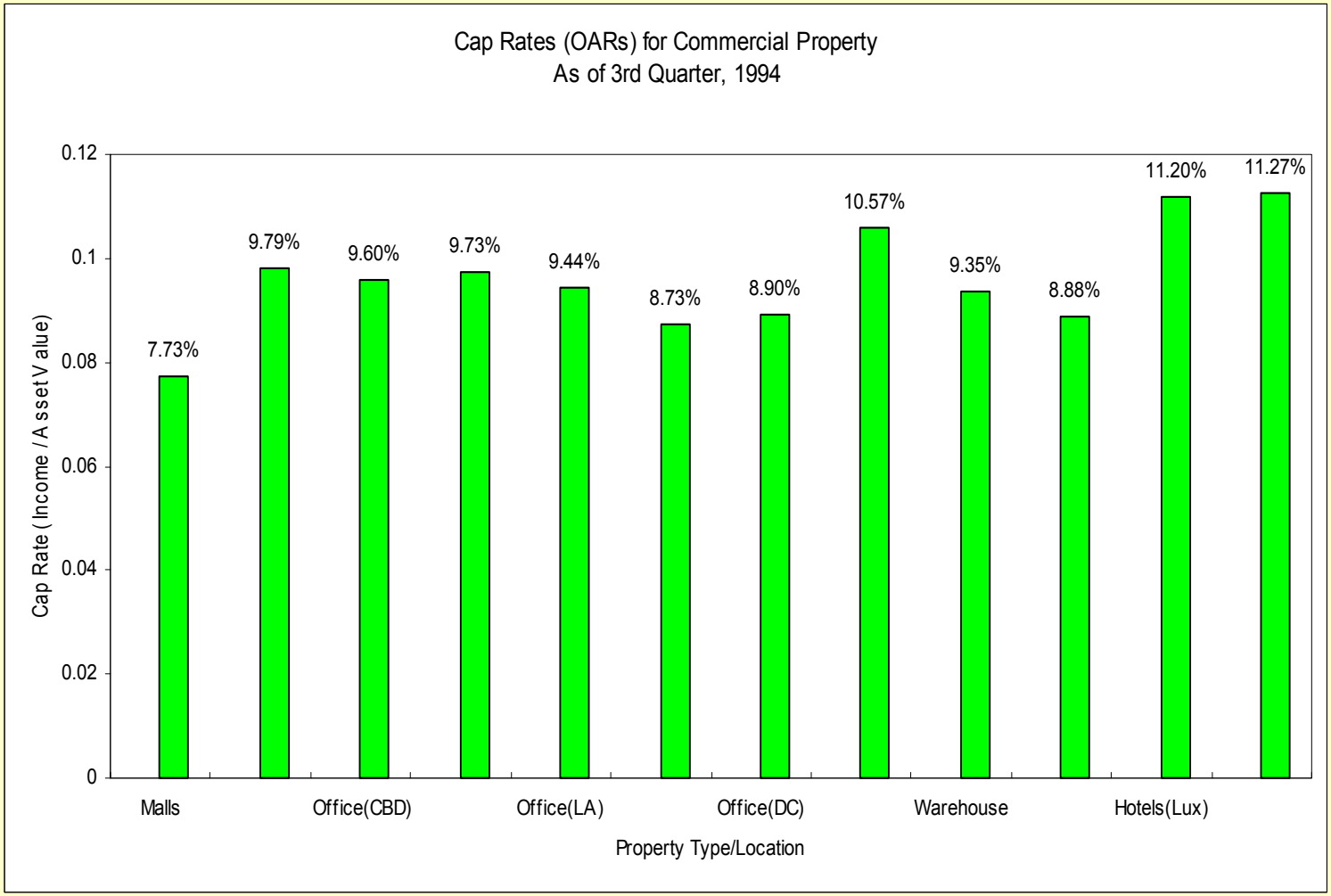
Therefore:

THE REAL ESTATE ASSET MARKET IS NOT SEGMENTED LIKE THE SPACE MARKET

Integrated (not segmented) real estate asset market

➔ Asset prices are such that expected ***returns*** are the ***same*** for properties with the ***same risk***, across ***different property market segments***…

Exhibit 1-6: Typical Cap Rates, 3rd Qtr 1994:



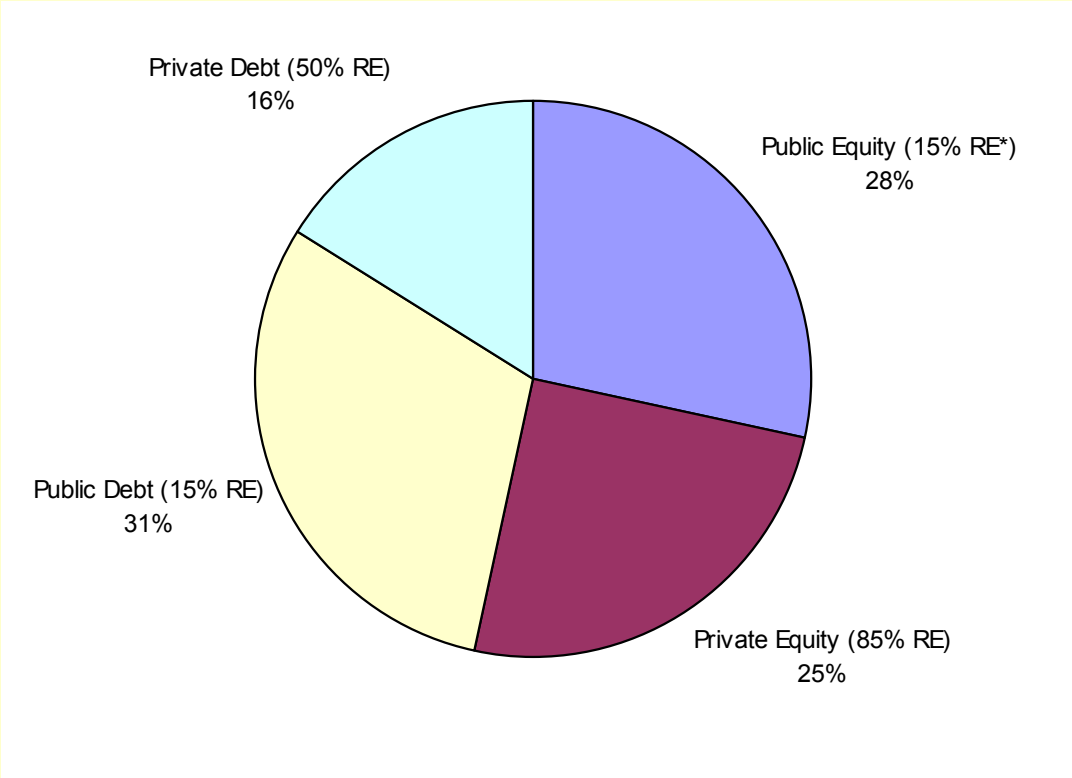
Concept check…

1) Why are the cap rates lower for mall?…

2) Why are the cap rates higher for hotels and offices in “oversupplied” markets?…

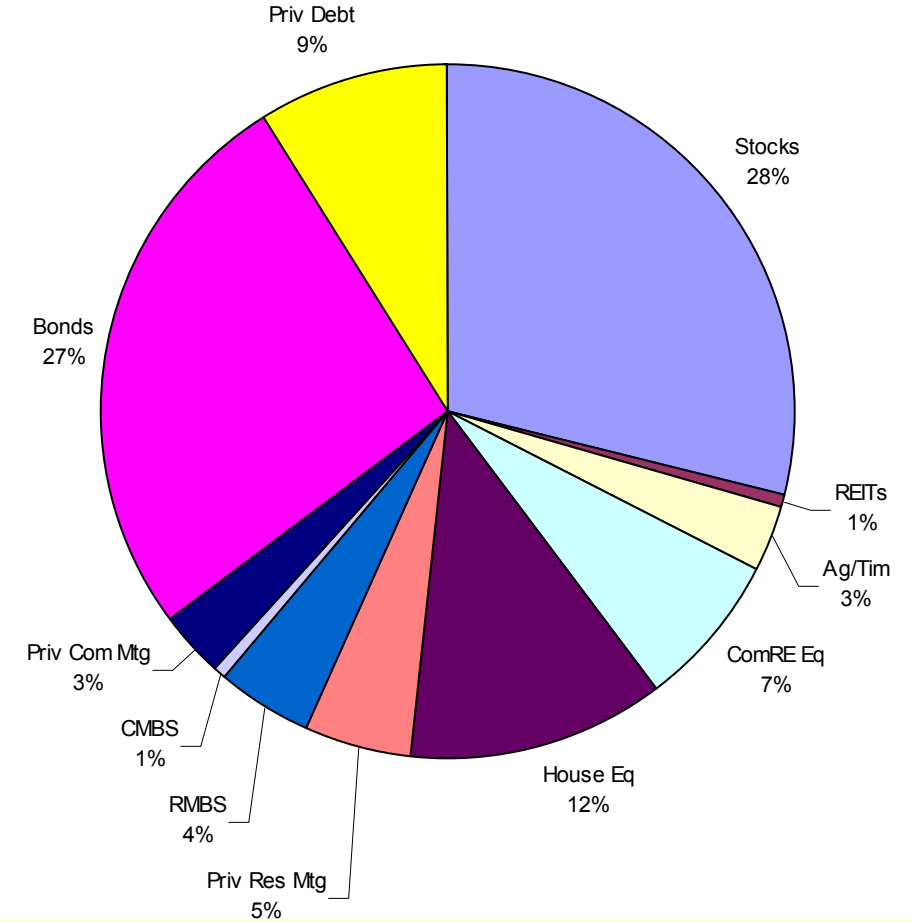
1.2.4 The Magnitude of Real Estate in the overall Capital Market…

Exhibit 1-7 US Capital Market Sectors, a $40 Trillion Pie…



* Corporate real estate owned by publicly-traded firms, plus REITs.
Source: Authors' estimates based on Miles & Tolleson (1997).

Exhibit 1-8: US Investible Capital Market with Real Estate Components Broken Out



Real estate asset classes are:

Private Commercial Mortgages (3%)

CMBS (1%)

RMBS (4%)

Private Residential Mortgages (5%)

House Equity (12%)

Commercial Real Estate Equity (7%)

Agricultural/Timberlands (3%)

REITs (1%)