Chapter 30:

LEASES & LEASING STRATEGY:

Overview

30.1. COMMERCIAL PROPERTY LEASE TYPOLOGY & TERMINOLOGY

Defn: Contract betw holder of prop. rights ("**lessor**"), and consumer/user of prop.rights ("**lessee**", or **tenant**), covering specified period of time.

- Normally, only possession (usage) rights, not devlpt rights.
- Contract is exchange: rights for money.
- Money (price) is **rent**.

30.1.1 Handling of Operating Expenses . . .

Gross Lease ("Full Service") - landlord pays operating expenses.
Net Lease ("NNN", "Triple-net") - tenant pays operating expenses.
Expense-stops - tenant pays increases in operating expenses.

30.1.2 TYPES OF RENT CHANGES:

Flat or Fixed - no rent change.
Graduated - rent changes at times & $ amts specified in lease.
Revaluation - rent changes at times specified in advance, $ amt depends on mkt.
Indexed - rent changes at times specified in advance, $ amt based on a cost index.
Percentage - rent $ amt based on % of revenues or inc. earned by tenant in space.

30.2 LEASE CHARACTERISTICS AFFECTING VALUE OR RENT:

- **Space - location, size, shape, adjacent uses (synergy, externality).**
- **Lessee - credit quality, prestige, externalities.**
- **Date & Term (length of period covered).**
- **Rent terms.**
- **Concessions - e.g., free rent, tenant improvement allowance (TI), ...**
- **Covenants (who is responsible for what).**
- **Sublet (assignment) rights - permitted unless explicitly negated in contract.**
- **Options - e.g., renewal, cancellation, 1st refusal, etc.**

30.3 EFFECTIVE RENT

Defn: Level annuity with PV equal PV of lease E[CF]s.

- Either the landlord's or tenant's perspective.
- Useful for comparing leases, but watch out…
- Effective rent may not quantify all relevant issues.

[**Aside:** In common practice, "effective rent" often defined ignoring present value discounting, summing all lease CFs divided by the lease term. This is obviously incorrect and can give misleading comparisons.]

2.1 ***Procedure for calculating effective rent . . .***

Step 1) Compute PV of expected CF under the lease (LPV).

$$LPV = CF_1 + \frac{CF_2}{1+k} + \frac{CF_3}{(1+k)^2} + \Lambda + \frac{CF_T}{(1+k)^{(T-1)}}$$

where: T=the lease term;
CF_t = net cash flow to the landlord in year "t";
k=discount rate.

From tenant's perspective, CFs are tenant's gross cash outflows due to all space occupancy costs, inclu. bldg oper. expenses not covered by landlord (e.g., in a net lease).

In theory: k = Tenant's borrowing rate (loan similar duration to lease).

Here's a *"fine point"*: Use tenant's borrowing rate:

- On unsecured loan, from tenant's perspective,
- On secured loan, from landlord's perspective (space is like collateral, & LL owns it).

In practice:
k = 10% (!!!!) per annum, or (10/12)% per mo.

Caveat: if k not based on tenant risk (OCC), then effective rent does not measure impact of lease on value of the lessor's property.

Step 2) Calculate the Annualized Value ("Level Annuity Payment") of the LPV:

$$Effective\ \mathrm{Re}nt = k(LPV) \Big/ \left[(1+k)\left(1-1/(1+k)^T\right)\right]$$

30.3.2 EFFECTIVE RENT NUMERICAL EXAMPLES . . .

Lease "A": Term: 5 years
Rent: $20/SF, net
Concessions: 1 year free rent, up front.
Tenant still pays oper. expenses during rent holiday.

Lease "B": Term: 6 years
Rent: $25/SF, net
Concessions: 2 years free rent, up front.
Tenant still pays oper. expenses during rent holiday.

(Assume k=7%, rate tenant could borrow on a *secured* loan, 8% on *unsecured* loan.)

Effective rent from landlord's perspective:

Lease "A": Term: 5 years
Rent: $20/SF, net
Concessions: 1 year free rent, up front.
Tenant still pays oper. expenses during rent holiday.

$$LPV = \$0 + \frac{\$20}{1.07} + \frac{\$20}{(1.07)^2} + \frac{\$20}{(1.07)^3} + \frac{\$20}{(1.07)^4} = \$67.74$$

Effective Rent(A) = $67.74(.07)/{1.07[1-1/(1.07)^5]} = $15.44/SF

Lease "B": Term: 6 years
Rent: $25/SF, net
Concessions: 2 years free rent, up front.
Tenant still pays oper. expenses during rent holiday.

$$LPV = \$0 + \frac{\$0}{1.07} + \frac{\$25}{(1.07)^2} + \frac{\$25}{(1.07)^3} + \frac{\$25}{(1.07)^4} + \frac{\$25}{(1.07)^5} = \$75.97$$

Effective Rent(B) = $75.97(.07)/{1.07[1-1/(1.07)^6]} = $14.90/SF

Other things equal, the landlord would prefer Lease "A", because 15.44 > 14.90.

Effective rent from tenant's perspective:

Effective rent for same leases from tenant's perspective, assuming initial operating expenses are $10/SF, projected to grow at 2% per year . . .
Assume k=8% (rate tenant could borrow at on an *unsecured* loan)

Lease A (tenant's perspective):

Lease "A": Term: 5 years
Rent: $20/SF, net
Concessions: 1 year free rent, up front.
Tenant still pays oper. expenses during rent holiday.

$$LPV = \$10.00 + \frac{\$30.20}{1.08} + \frac{\$30.40}{(1.08)^2} + \frac{\$30.61}{(1.08)^3} + \frac{\$30.82}{(1.08)^4} = \$110.99$$

Tenant Effective Rent(A) = $110.99(.08)/{1.08[1-1/(1.08)^5]} = $25.74/SF

➔ ***Note: Tenant Eff.Rent always > Landlord Eff.Rent, due to Oper.Expenses*** ➔

Lease B (tenant's perspective):

Lease "B": Term: 6 years
Rent: $25/SF, net
Concessions: 2 years free rent, up front.
Tenant still pays oper. expenses during rent holiday.

$$LPV = \$10.00 + \frac{\$10.20}{1.08} + \frac{\$34.40}{(1.08)^2} + \frac{\$34.61}{(1.08)^3} + \frac{\$34.82}{(1.08)^4} + \frac{\$35.04}{(1.08)^5} = \$125.86$$

Tenant Effective Rent(B) = $122.13(.08)/{1.08[1-1/(1.08)^6]} = $25.21/SF

Other things equal, the tenant would prefer Lease "B", because 25.21 < 25.74.

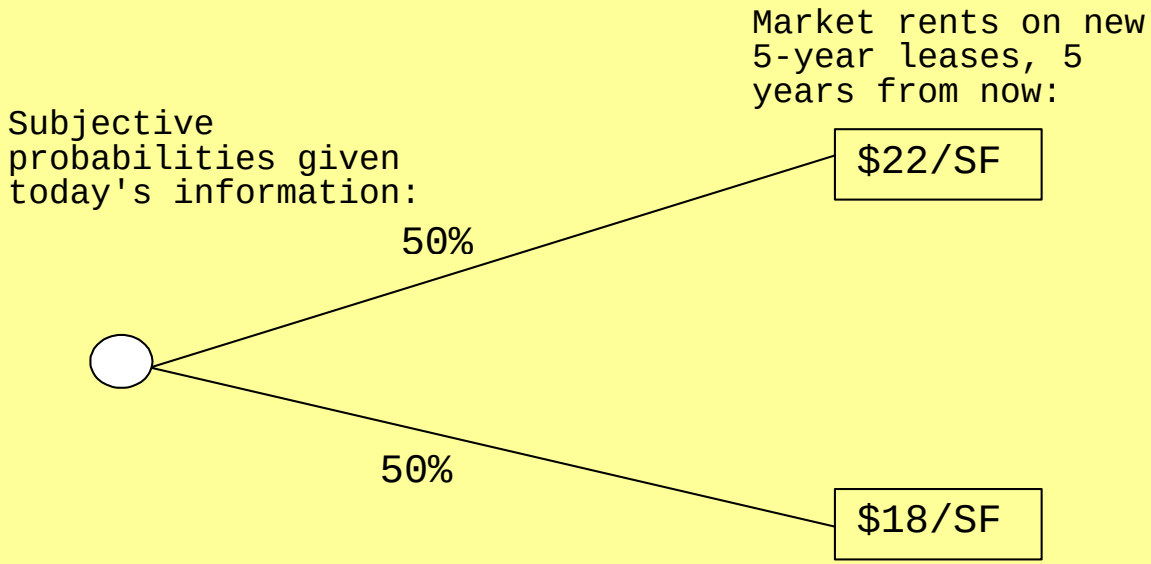
APPENDIX A. Valuing a Lease Renewal Option . . .

Consider again Lease "A"…

Suppose landlord adds tenant **option to renew** after 5 years, for another 5-years, **at $20/SF**.

Simple valuation approach: **"Decision Tree Analysis"**. . .

Step 1) **Describe Probability Distribution of Market Rents at time when option matures** (expiration of lease, 5 years from now)



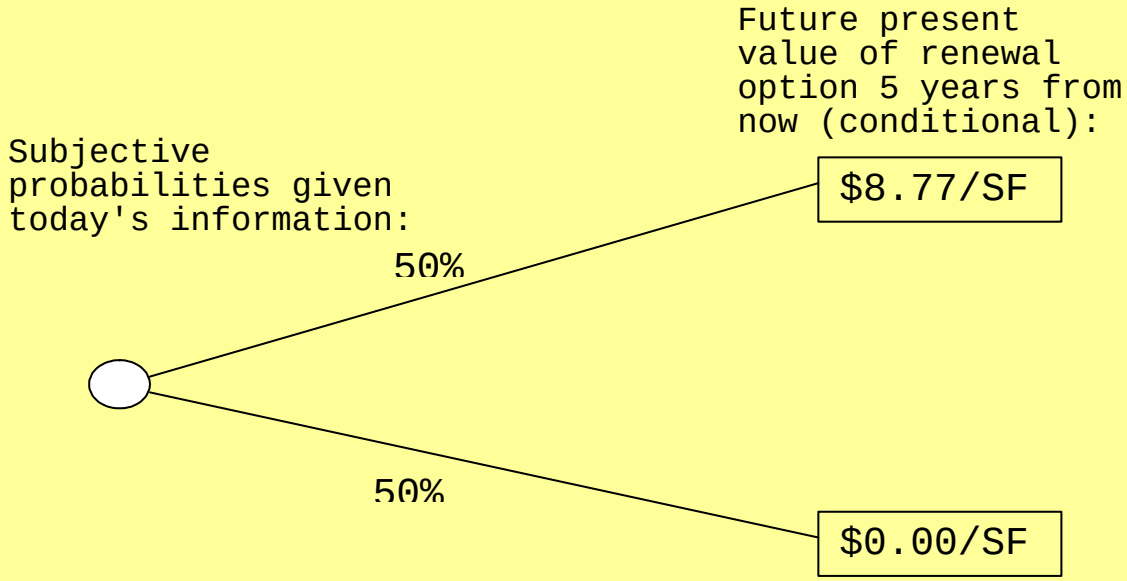
Step 2) **Quantify conditional (future) PV of Option to holder under each Future Scenario:**

Tenant holds option. If Market Rents are $22/SF then option will be worth (from LL perspective):

$$\$22-\$20+\frac{\$22-\$20}{1.07}+\frac{\$22-\$20}{1.07^2}+\frac{\$22-\$20}{1.07^3}+\frac{\$22-\$20}{1.07^4}=\$8.77$$

If Market Rents are $18/SF then the option will be worth nothing.

So we have:



Step 3) **Quantify the Risk-adjusted PV today of the Future Renewal Option Value . . .**

3a) Discount the future conditional option values back to present at a high discount rate, because options are quite risky.

e.g., 15%, but it depends on how risky the option is: the greater chance the option will be exercised, the less risky it is. And note, this risk will probably change over time as you get new information relevant to the likelihood of option exercise.

(The main problem with the "decision tree" approach is it does not tell you what the correct discount rate is.)

Suppose the correct discount rate is 15%…

$$PV(\$8.77 \text{ in 5 yrs}) = 8.77/(1.15)^5 = \$4.36$$

$$PV(\$0.0 \text{ in 5 yrs}) = 0/(1.15)^5 = \$0$$

3b) Sum across the possible scenario present values, weighted by their subjective probabilities of occurance:

$(.50)4.36 + (.50)0 = \$2.18.$

This gives PV today of Lease Renewal Option (neg. to landlord).

Step 4) **Convert the Renewal Option PV to Impact on Effective Rent:**

PV Annuity (5 years, at 7%, in advance):

$$\$0.50 = (7\%)(\$2.18) / \{(1+7\%)[1 - 1/(1+7\%)^5]\}$$

So the impact of the renewal option is to reduce the Effective Rent of Lease "A" from $15.44 down to $14.94 for the landlord.

Is a renewal option at "prevailing market rent" worthless? . . .

BROADER LEASING STRATEGY CONSIDERATIONS (aka: things left out of the effective rent calculation):

30.4. IMPLICATIONS FOR OPTIMAL TERM LENGTH & THE TERM STRUCTURE OF RENT...

Should you always choose the lease with the best effective rent?. . .

Answer: ***No!***

So, What's left out of the effective rent calculation ?. . .

Relating to lease term and rent:

Overview: **Interlease risk**
Releasing costs
Flexibility
Expiration timing strategy

30.4.1) Interlease risk...

Has risk been included at all in the effective rent calculation?...

(It depends on the "k" value that is used.)

If "k" based on tenant's borrowing rate, then risk factors included in loan OCC will have already been included and accounted for, that is, risk *within* the lease (relevant to "intra-lease discount rate"), including:

1. **Interest rate risk**
2. **Tenant default risk**

(**Note:** Default risk to the lessor may be less than default risk to lender: Landlord can lease space to another tenant.)

However, tenant's borrowing rate will not well reflect some other sources of risk for landlord (and tenant), in particular, sources which influence risk *between* leases (relevant for *inter-lease discount rate*)…

Sources of inter-lease risk (in OCC):

- **Space market risk (uncertainty re future contract rental rate in lease).**
- **Term structure of interest rates in bond market (duration *between* leases > duration *within* leases, due to level CFs in leases, no "balloon", & bond mkt yield curve usually rises with duration, reflecting "interest rate risk" & "preferred habitat").**
- **Note: The former is more important than the latter.**

Implication: longer-term leases reduce risk in a way that is not reflected in the effective rent calculation:

- **Cet.Par., landlord prefers longer-term lease at same eff. rent, or is willing to accept lower eff. rent for longer-term lease, relative to a projection of what the future short-term (or "spot") rents will be.**

- **Tenant feels same way.**

APPENDIX B: NUMERICAL EXAMPLE OF LANDLORD LEASE TERM INDIFFERENCE RENT

Suppose: Intra-lease disc. rate (tenant's borrowing rate) = 8%.
Inter-lease disc. rate (reflecting rental mkt risk) = 12%.
"Spot rents" (short-term leases) expected to be $100/yr, net.
No releasing costs or vacancy.

Bldg value to landlord is perpetuity of expected future rental payments.

[Annuity embedded in perpetuity using:
$a+ad+ad^2+ad^3+...+ad^{(N-1)} = a(1-d^N)/(1-d)$.
Here "g" = 0.]

1) Bldg val assuming short-term rental:

$$V = \frac{\left[\frac{1.08}{0.08}\left(1-\left(\frac{1}{1.08}\right)^{1}\right)\$100\right] \Big/ 1.12}{1-\left(\frac{1}{1.12}\right)^{1}} = \frac{\$100}{0.12} = \$833.33$$

2) Same bldg with 10-year leases.

$$V = \frac{\left[\frac{1.08}{0.08}\left(1-\left(\frac{1}{1.08}\right)^{10}\right)\$100\right] \Big/ 1.12}{1-\left(\frac{1}{1.12}\right)^{10}} = \$954.30$$

Long-term leases result in higher building value, even though expected rent is the same.

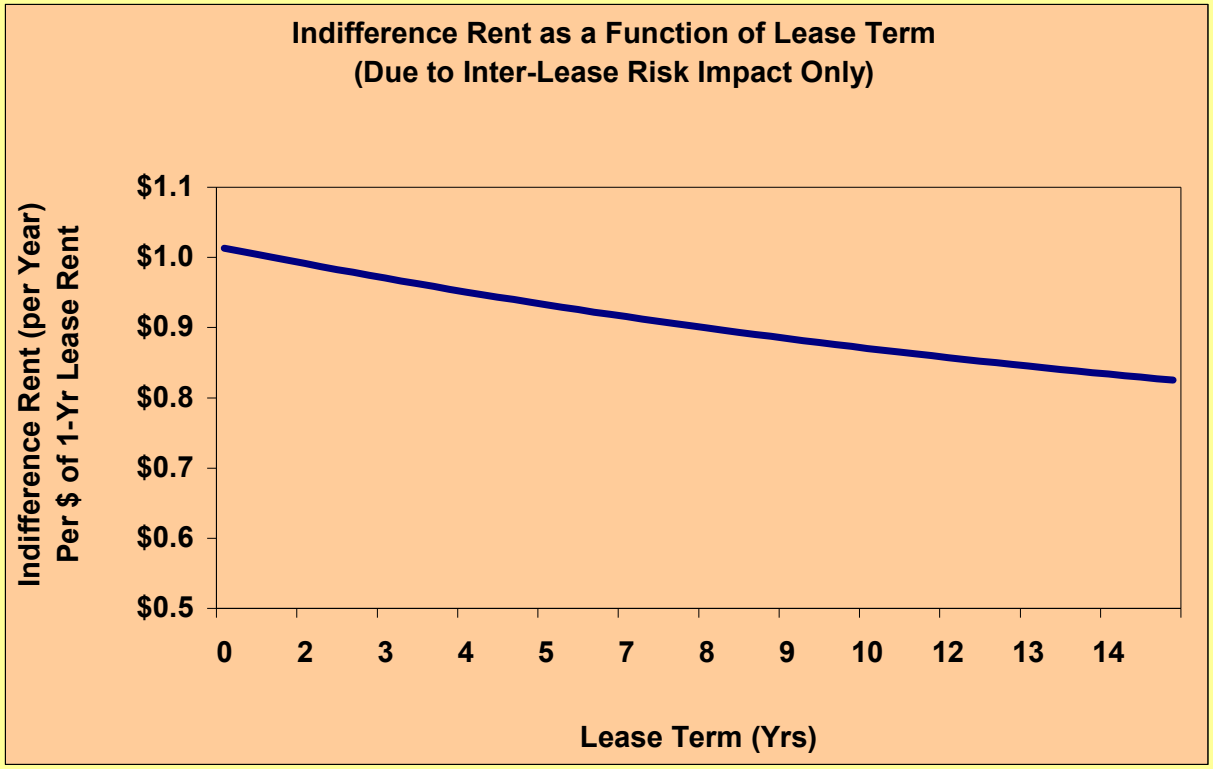
➔ Landlord is indifferent between shorter-term leases at higher rents and longer-term leases at lower rents (assuming constant expected spot rents):

- In above example, rent in 10-year leases could be 833/954 = 87% of short-term spot rent, and landlord would be indiff. betw 1-year lease and 10-year lease.
- If spot rents are expected to remain $100 (albeit with uncertainty as reflected in the 12% interlease discount rate), then the rent in a 10-year lease would be only $87.32 per year:

$$V = \frac{\left[\frac{1.08}{0.08}\left(1-\left(\frac{1}{1.08}\right)^{10}\right)\$87.32\right] \Big/ 1.12}{1-\left(\frac{1}{1.12}\right)^{10}} = \$833.33$$

Implication for landlord lease term indifference rents:

If future spot rents are projected to remain constant at the current level, then the indifference rent will assume a downward-sloping curve as a function of the lease term…



What about tenant's perspective? . . .

Tenants preferences are symmetric to landlords:

- At same rent, tenants prefer shorter-term leases (by same dollar amount as landlords prefer longer-term leases).

PV of perpetual stream of rent payments is same to tenant as to landlord (only it's a cost instead of a value: negative instead of positive).

So tenants have same downward-sloping lease term indifference rent curve (with constant spot rents)…

Example:

- **Tenant produces widgets which are sold for $1 each with a variable production cost of $0.50 each.**
- **Expected production is 1000 widgets per year in perpetuity.**
- **Opportunity cost of capital for widget production investment (apart from rent) is 10% per year.**

If rent is $100/yr then value of tenant firm is:

V = PV(widget net income) – PV(rent)
= $500/0.10 – PV(rent)
= $5000 - $833 = $4,167, if 1-yr leases @$100/yr
= $5000 - $954 = $4,046, if 10-yr leases @$100/yr

Tenant prefers short-term leases.

➔Equilibrium rent term structure that would allow both landlords and tenants to be indifferent across leases of different term lengths is downward-sloping.

Tenant firm value:

V = $5000 - $833 = $4,167, if 1-yr leases @$100/yr
= $5000 - $833 = $4,167, if 10-yr leases @$87.32/yr

30.4.2) Releasing costs:

1. Vacancy period (lost revenue)

2. Search cost (leasing commissions, own time)

3. Moving expenses (tenants inclu oper.disrupt., landlord reimburse?)

Landlord & Tenant affected in *same direction* by releasing costs:

Re-leasing is cost to both sides.

➔ Both sides prefer longer lease terms (to minimize re-leasing cost).

Hence:

- Releasing costs do not affect term structure of rents:
  - Tenants would pay higher rent for longer-term lease, but
  - Landlord's would accept lower rent for longer-term lease, therefore:
  - In equilibrium (negotiation betw tenant & LL), no impact.
- Releasing costs do have an equilibrium impact on preferred lease term:
  - ➔ Longer lease terms (more so, in markets where releasing costs are greater).

30.4.3) Flexibility Considerations

➔ *How does lease affect future decision flexibility? . . .*

1) Expectations about the future rental market:

- If you expect rising rents, then landlord's oppty cost rises with lease term, tenant's oppty value of savings rises with lease term.
  ➔ Rents must rise for longer-term leases (cet.par.).

This offsets (partly or completely) risk-based declining term structure of rent.

Opposite if rents are expected to decline.

Suppose landlord and tenant expectations differ regarding the future direction of spot rents. . .

"Complementary" expectations if:
- Tenant believes rents will *rise* and
- Landlord believes rents will *fall*.

➔ Then long-term lease agreement will be **easier** to negotiate.

"Conflicting" expectations if:
- Tenant believes rents will *fall* and
- Landlord believes rents will *rise*.

➔ Then long-term lease agreement will be **more difficult** to negotiate.

If space market expectations are *conflicting* and not reconcilable, then agreement will be facilitated by *reducing the lease term length*, thereby reducing the impact of future changes in market rents on the opportunity cost of the lease, and providing more flexibility to either side to take advantage of favorable developments in the rental market.

2) Tenant expectations about future space requirements:
Expectations regarding tenant future space requirements influence the ideal lease term length from the tenant's perspective.

- If tenant knows they need space for exactly 3 years, then 3-year lease term is best.

- If the tenant expects to grow steadily in size, then shorter-term leases may be preferred in expectation of a future need to expand.

- Explicit lease ***options*** on adjacent space or other space in the same building can help with such expectations.

- More uncertainty about tenant's future space needs ➔ greater value to tenant in retaining flexibility in space commitments ➔ greater value for **explicit lease options**, such as ***expansion options & cancellation options***.

- ***Sublease rights*** are also valuable for dealing with tenant flexibility needs.

- **Note:** Merely reducing lease term length does not by itself create "option value" (*"right without obligation"*), though it may increase flexibility and ability to conform space rent and usage to current market conditions and tenant requirements. *(Text is misleading on this point, p.815 ☹.)*

3) The landlord's redevelopment option:

- Lease encumbers property owner's right to redevelop.

- **Shorter term** lease reduces length of time for which this right is relinquished, thereby preserving more flexibility **(option value)** for landlord.

(This truly is **option value**, but it lies not in the lease, but in the lack of lease, temporally speaking.)

General "bottom line" from flexibility considerations:

Shorter lease terms increase flexibility value (though mitigated by explicit lease options and sublease rights).

30.4.4) Staggered lease expirations & releasing risk...

- Don’t just consider leases one at a time in isolation from each other.
- Do you want all the leases in a building expiring at the same time?...
- Volatility in building's future cash flow can be reduced by staggering lease expiration dates more uniformly across time.
- Depending on what the future lease expiration pattern looks like in a given building, this may cause the landlord to prefer either a longer or shorter lease term length than would otherwise be the case in a given deal.

30.4.5 Summary: Rent Term Structure & Optimal Lease Term Length

- ***Inter-lease rental market risk*** ➔ Landlord's prefer longer-term leases and tenants prefer shorter-term leases @ same rent. ➔ Equilibrium term structure of rents declining over lease term. Given such declining term structure of rents, ➔ lessors & lessees **neutral with respect to lease term length**.

- ***Releasing costs*** ➔ **longer-term leases preferred** by both lessors & lessees, no implication for term structure of rents.

- ***Flexibility*** ➔ **shorter-term leases preferred** by both lessors & lessees, no implication for term structure of rents; Also ➔ Important role for explicit **lease options** (cancellation, expansion) & **sublease rights**.

- ***Staggering expirations*** ➔ No general implication for term length or rent term structure.

Result:

1. **The equilibrium term structure of rents will tend to be characterized by a slight downward slope over the lease term (i.e., lower rents in longer-term leases), *relative to* the general trend in spot market rents (i.e., if rent expectations are sufficiently rising, then the term structure of rents will be upward-sloping).**

2. **Optimal lease term length is largely a trade-off between re-leasing costs versus the value of flexibility (mitigated by lease options & subleasing rights).**

3. **Based largely on (2), specific space sub-markets or market sectors (property usage types) will typically have characteristic lease term lengths that largely prevail within each market.**

Typical lease term length characterizes different types of space usage markets:

Hotel:	**1 day - 1 week**
Apartment:	**1 year**
Small retail:	**2-5 years**
Office:	**3-10 years**
Anchor retail:	**5-15 years**
Industrial:	**5-20 years**

Continuing with: BROADER LEASING STRATEGY CONSIDERATIONS (things left out of the effective rent calculation…)

30.5. OTHER LEASING & RENT ISSUES *(besides term structure)*

30.5.1) Microspatial Tradeoffs & Synergies:

"Microspatial Considerations":
Design & management of space *within* a single property or project.

- *Who is the best tenant for a given space? . . .*

(Not always the one willing to pay highest effective rent.)

- *What is relationship between space size, shape & rent? . . .*

Optimal space size:

- Rent/SF tends to decline with size of leased space.
- Smaller spaces (i.e., greater numbers of tenants) ➔ higher management costs (per SF) for the landlord.
- Difficult to find tenants for particularly small or irregularly shaped spaces.

Tenant mix synergies:

Some tenants generate positive **"externalities"** by enabling other nearby tenants to earn higher profits. (The opposite can also happen.) Examples:

- **Anchor** tenant in retail center draws customers who then shop at smaller tenants' stores.
- Anchor (**building name**) tenant in office building adds prestige to building.

Landlord can capture such positive externalities in rents charged to non-anchor tenants.

Therefore,

Landlord shares externality benefits with anchor tenant via LT lease @ low eff.rent, perhaps tenant gets equity in property.

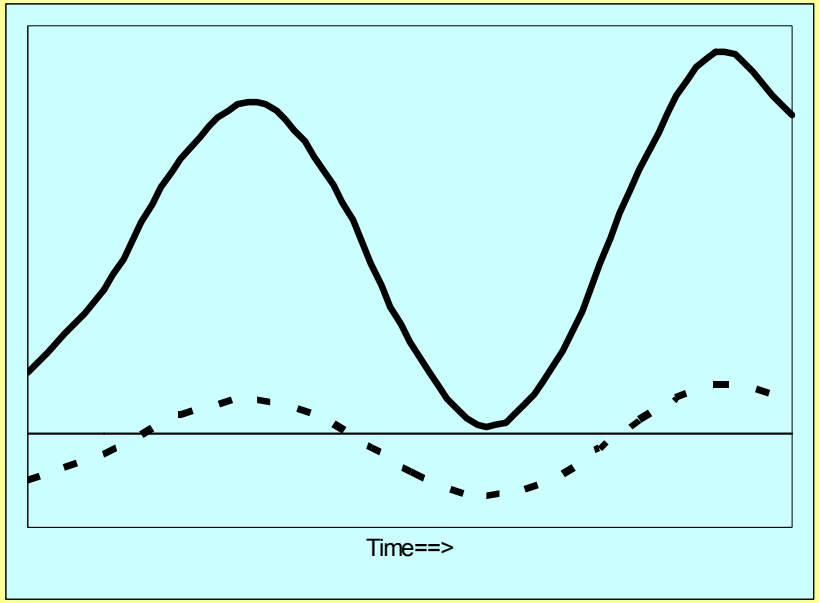
The art of tenant mixing extends not only to matching the right sort of anchors together with the right sort of non-anchor tenants, but also includes optimal mixing, matching, and location of the non-anchor stores. Use of short lease terms and/or renewal and cancellation options on both sides is common in many retail centers to enable tenant mix to be constantly optimized in the dynamic retail market where flexibility is particularly important.

30.5.2) Why percentage rents? (Optimal rent structure?...)

(a) **Incentive compatibility:** Percentage rents give the landlord a direct incentive to help maximize store revenues. Landlord's have some influence over store revenues because landlords control the **tenant mix** in the shopping center, and some mixes provide more synergy and positive externalities than others. Without sufficient incentive, landlords might not optimize the tenant mix. Percentage rents also incentivize landlord's to optimize the common area **maintenance**.

(b) **Risk reduction:** Many retail tenants are small businesses, and rent may be a larger portion of the total operating expenses of small retail businesses than in other types of firms. This makes such firms more sensitive to the leveraging up of their business operating risk caused by fixed rents. If rent is proportional to revenue, then this leveraging effect is reduced.

Heavy solid line = Tenant store operating margin
Light straight line = Fixed rent
Dashed line = Percentage rent



Note,

- By increasing the fixed base rent component and decreasing the variable percentage component,
- The resulting increased operating leverage places the retail tenant under more pressure and more incentive to maximize revenue.
- Landlord may want to place some tenants under such pressure and incentive,
  - if the tenants are financially strong enough to handle the risk, and
  - if by increasing their revenues the tenant will increase total shopper flow-through in the center, thereby bringing positive externalities to the other stores.
- This argument will tend to apply more to anchor tenants and tenants that are large national chains.

30.5.3) Why concessions?. . .

e.g., why does the $20/SF Lease "A" not simply charge the tenant $15.44/SF every year for 5 years starting immediately, rather than take no cash flow at all for the first year?...

Recall:

Effective rent from landlord's perspective:

Lease "A": Term: 5 years
Rent: $20/SF, net
Concessions: 1 year free rent, up front.
Tenant still pays oper. expenses during rent holiday.

$$LPV = \$0 + \frac{\$20}{1.07} + \frac{\$20}{(1.07)^2} + \frac{\$20}{(1.07)^3} + \frac{\$20}{(1.07)^4} = \$67.74$$

Effective Rent(A) = $67.74(.07)/{1.07[1-1/(1.07)^5]} = $15.44/SF

Reasons:

1) Ease tenant start-up or moving expense. Some up-front concessions match the timing of expenses incurred by the tenant, thereby making it easier for the tenant to move into the space (e.g., TIs, Moving allowances).

- ➔ Better match timing of tenant revenues & rent obligation.

30.5.3) Why concessions?. . .

2) Strategic timing of cash flow receipts. There may be some strategy in the timing of cash flow receipt.

- Higher ***future*** cash flows may make it easier to sell the building at a higher price or to refinance the loan on the building,
- *IF* these events are more likely to occur in the future than in the near-term:
- LL preference for long term future sale:
  - If LL currently more liquid than he expects to be in the future?, or
  - LL just recently purchased property (need long HP to mitigate transaction cost)?
- *AND* provided:
- Irrational R.E. asset market? (susceptible to rental "illusion"?):
  - Are property buyers or lenders are ignorant of the typical use of concessions on the part of property owners and sellers?
  - Not likely, but:
  - Even if only small chance of getting away with such illusion, why throw away that chance?

30.5.3) Why concessions?. . .

3) Value of private information in a thin market.

- Quoted rent (i.e., the $20/SF) is what gets reported to the public and to the other tenants.
- Concessions are usually much more a private matter between the lessor and lessee.
- Thus, concessions are a way of concealing from other existing or prospective tenants (and from competing landlords, or perhaps even potential investors), exactly how low a rent the tenant is paying and how soft is the demand for the building.

30.5.4) Optimal asking rent & optimal vacancy. . .

- *Isn't the optimal vacancy rate 0% vacant? . . .*

- *Why not? . . .*

Suppose, on average, 10% higher rents could be charged if landlord absorbed 5% average vacancy (by taking enough time to search for more eager or appropriate tenants when previous leases expire)?...

Result would be 5% higher net CF for building.

Optimal vacancy rate = Rate which results from value-maximizing management of the building.

Another way to focus on this same question:

What is **optimal asking rent**? . . .

Consider effect of:
"Noisy price information" . . .

Tenants & buildings are each (somewhat) unique.

This makes rental market "thin".

Thinness causes a lack of perfect information about the nature of the rental market for any given building at any given point in time.

In the absence of perfect information about the price at which a given space can rent, it makes sense to spend some time searching, probing the market.

APPENDIX C:
A SIMPLE MODEL OF OPTIMAL LANDLORD SEARCH FOR TENANTS

This appendix presents a simple numerical example of optimal landlord behavior searching for tenants, in the form of a model of **optimal asking rent**.

Consider the following simplified model of optimal asking rent for a landlord with an empty space...
1) Potential tenants "arrive" (or are found) randomly at an average rate of one per month. The expected wait time until the first potential tenant is found is 1 month, until the 2nd is found is 2 months, etc...
2) The ex ante probability distribution of the maximum rent each potential tenant will accept is a Normal probability distribution with mean $10/SF/yr and standard deviation ±$1/SF/yr (5-year lease terms, annual rent, payments at beginnings of years). The landlord only finds out what each tenant is willing to pay when that tenant "arrives".
3) If the tenant refuses the landlord's asking rent, the landlord has to wait until the next potential tenant arrives, and the space remains vacant during the wait time. When the space leases, it will always lease at the landlord's asking rent.
4) When a lease expires, this process repeats (no renewals), in perpetuity.
5) The intra-lease discount rate is 8%; the inter-lease discount rate is 12%.
6) What asking rent will maximize the present value of the building?...

Answer...

Let:

A=asking rent.

N(A;10,1)=Cumulative normal probability less than A when mean is 10 and STD is 1.

[Note: in Excel this is found by the formula "=NORMDIST(A,10,1,1)".]

p= Probability tenant refuses landlord's offer. = N(A;10,1).

w= Expected wait time (in years) until space is leased (average length of vacancy period between leases).

L= PV of each lease at time of signing (intra-lease discounting).

V=PV of building (perpetuity).

vac=Expected vacancy rate for building.

Then:

$w = (1/12)(1-p) + (2/12)p(1-p) + (3/12)p^2(1-p) + (4/12)p^3(1-p) + \ldots$

This is an infinite series but it has a simple finite value, namely:

$w = 1/((1-p)12)$.

$L = A(1.08)[1-(1/1.08)^5]/(0.08)$ = PV(.08,5,A,0,1) in Excel.

$V=[L/(1.12)^w] / [1 - (1/1.12)^{(w+5)}]$

$vac = w/(w+5)$

This model can be easily solved quantitatively in a computer spreadsheet.

Try some values of A until you find the one that maximizes V...

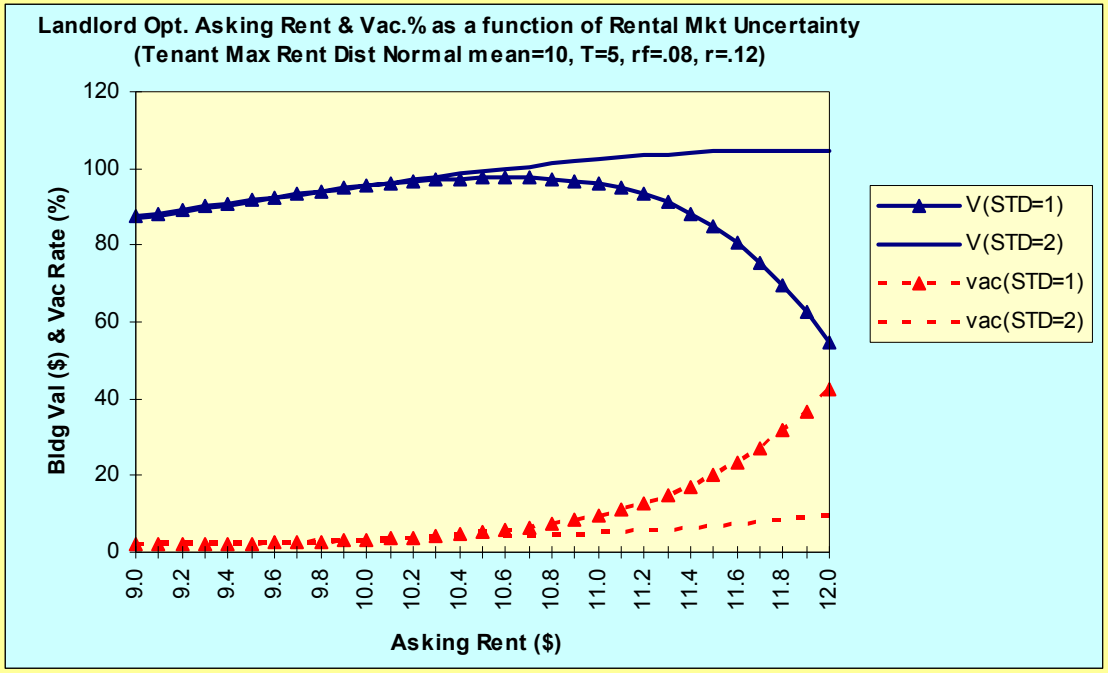
A	V
$10.00	$95.48
$11.00	$96.04
$12.00	$54.64
$10.90	$96.87
$10.80	$97.40
$10.70	$97.68
$10.60	$97.75
$10.50	$97.65

Thus, the optimal asking rent in this case is $10.60/SF (to the nearest dime), which gives a building value of $97.75/SF. At this rent the expected waiting time until you find a tenant that takes the rent (expected vacant period between leases) is: w=0.304 years, between 3 and 4 months. This implies an optimal (long-term average) vacancy rate of: vac=.304/5.304 = 5.7%.

Now repeat this example only suppose the landlord's ex ante uncertainty surrounding the rent the potential tenants will take is doubled. That is, assume everything is the same except the standard deviation of the normal probability distribution is \$2/SF instead of \$1/SF. Thus: p=N(A;10,2). Now we find that the optimal rent is \$11.80/SF, giving a building value of \$104.87/SF with an average vacant period of 0.453 years (about 5 months) and average vacancy of 8.3%.

Note that the optimal asking rent, the optimal vacancy rate, and the building value, all increase with the uncertainty or range in the maximum rent the potential tenants are willing to accept. This is a general result.

The two cases examined here are shown in the graph below. (The numbers on the left-hand vertical scale refer to \$/SF for the top (solid) lines indicating property value, and this same scale refers to average percent vacancy for the bottom (dashed) lines. The triangle markers indicate the case with the lower rent uncertainty.) The general shapes of the curves in this graph are also a general result for typical realistic numbers.



From the above analysis we can derive several results about the optimal asking rent for the landlord in this simple model:

i) Other things equal, the optimal asking rent is higher the more uncertainty there is about the rental market;

ii) The greater is the rental market uncertainty, the more "forgiving" is the negative impact on property value due to an equal dollar magnitude error on the landlord's part in not selecting the optimal asking rent (i.e., the curve is "flatter" for higher variance in the rent distribution).

iii) The effect on property value is relatively forgiving for erring on the side of asking too low a rent, while the negative value impact of asking too high a rent can be much more severe, especially when there is little uncertainty about the rental market;

iv) Other things equal (such as the mean expected rent), and assuming optimal landlord behavior, the property is more valuable the greater is the uncertainty in the rental market, but this value effect is small even though out model ignores the effect of rent uncertainty on the inter-lease discount rate (which might dampen or reverse this result).

Although the model on which these conclusions are based is a simplification of reality, the first three conclusions above are fairly robust if one interprets them broadly or "figuratively". For example, they can be paraphrased in the following two more general principles of optimal tenant search and leasing strategy for a landlord:

i) "Be a bit daring and aggressive in pursuit of good leasing deals if you have a lot of uncertainty about the rental market." [This is a generalization of both (i) and (ii) above.]

ii) "Be conservative and play it safe if the landlord is very risk averse or if the rental market is very obvious, with little uncertainty about market rents." [This is a generalization of (iii).]
inter-lease discount rate).