The Use of Rent Capitalisations in Real Estate Valuation in Areas with High Building Densities

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INTRODUCTION

These changes in plans cause an increase in the densities of the core regions of the city.

As a natural outcome of this increase, the way of use and densities of existing city blocks are also altered.

While such changes in plans increase the value of the real estate, they also cause changes in values in the district through local interaction.

The value of a real estate that increases through a change in plans increase still more with the implementation of the plan (The implementation of Art. 18, urban transformation, etc.).

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2   VALUATION
2.1 Definition

Real estate valuation is the process of determining the value of a real estate for a given date through assessing certain factors concerning the real estate in question, such as quality, utility, environment and conditions of use in an independent and objective way.

According to the Capital Market Board (SPK), valuation is the independent and objective assessment of the probable value of real estate, the real estate project and the rights and benefits attached to the property for a given date.

The main objective of valuation is to calculate the feasible *market value* by using the available data, which means the normal purchase and sale price.

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Definition

We can say that market value is the estimated amount which is expected to be exchanged for a real estate between an independent and willing buyer and seller without any pressure and under conditions through which the parties will not be influenced by any relationship and within the context of an agreement by which they act knowingly, thoughtfully and in good faith.

Market value is more of an appraisal of a price by which a sale is closed on the date of valuation within the conditions that constitute its definition.

Market value, within its definition, is the representation of a price which is not influenced by the fact that the buyer and the seller may have adequate time to seek other opportunities and alternatives in the market and the preparation of official documents and sales contracts takes time.

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2.2 Market Value in Real Estate Valuation

The market value of a parcel involves the soil and land together with the parts on it, particularly with buildings and other annex structures.

The extent to which the parcel and its building facilities will be included in value assessment depends on how they will affect the market price.

All the actual, legal and economic factors that affect the market price of a parcel in the regular market should be considered in the valuation process.

These factors are particularly location, quality, size, shape of the parcel, the state of the infrastructure and legally approved type of use.

Factors that determine the value are the rights that increase or decrease the value.

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2.3 Valuation in Turkey

In Turkey, real estate valuation started to be discussed at an academic level in 1975, but its use by the real estate market started in the 1990s. Its common use was with the Licensing Exams of the Capital Market Board (SPK). In the valuations carried out in the early years;

a) the sales comparison method,

b) the income method,

c) the cost method

were used.

In the early years, these methods were used alone or in combination in our country.

However, on the way to the present day, these methods started to provide inaccurate results in valuations performed especially in areas where mass valuation is required.

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Valuation in Turkey

The use of classical valuation methods together or alone would be inadequate in the central areas of the city and in settlements surrounded by attraction centres where buildings are dense.

Certain other data that provide a basis for valuation need to be known in such areas.

Probably the most important of these data is *rental income*.

3   RENT CAPITALISATION

3.1 Rent Capitalisation Interest Rate

Rent capitalisation interest rate is the ratio of the one-year rental income of a property (residence, store, office, factory, land) to its market value.

That is, the rate of return that the investor expects is the capitalisation rate, which is stated as the ratio of the annual rental income derived from the property and the value of that property.

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Rent Capitalisation Interest Rate

This can be expressed as a mathematical equation through the following relation:

$$k = \frac{D_{rental}}{D_{sale}}$$

3.2 Calculation of Rent Capitalisation Interest Rates

First of all, it is necessary to quite carefully determine the borders of the district whose rental income will be calculated.

As there cannot be a single capitalisation rate that represents a large district, a calculation should not also be made for a small district.

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Calculation of Rent Capitalisation Interest Rates

The following should be as identical as possible for real estates located in the district for which the rent capitalisation rate will be calculated;
a) Types of use,
b) Sizes,
c) Age of buildings,
d) Unit rent values,
e) Unit sale values,
f) Distance to attraction centres,
g) Social status and incomes of renters,
h) Lengths of rental contracts.

After the borders of the district are determined, the *rental values* and *feasible sale prices* of properties should be obtained from the following in a controlled manner;
a) Local real estate agencies,
b) Construction companies,
c) Credit agencies.

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Calculation of Rent Capitalisation Interest Rates

After the rental and market values of properties are added (or calculated), net income and net sale value should be calculated for each property.

The necessary expenses for renting (ZG_{kira}) can be listed as:
a) Estate agent's commission,
b) Collection difficulty,
c) Property tax,
d) Contract expenses,
e) Inventory expenses.

The ratio of the sum of all these expenses to annual income is 6% on average for Konya province.

The necessary expenses for sale $(ZG_{satış})$ are:
a) Estate agent's commission,
b) Sales tax,
c) Income tax.

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Calculation of Rent Capitalisation Interest Rates

The ratio of the sum of all these expenses to market value is 4% on average for Konya province.
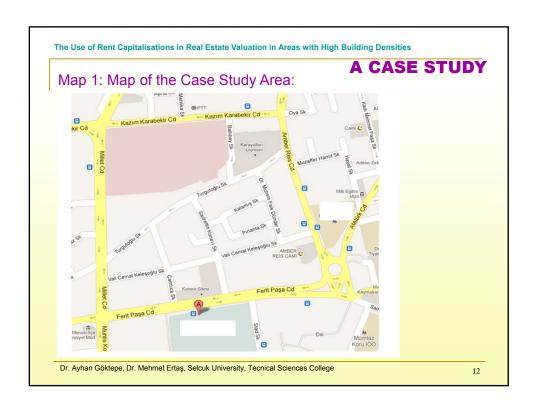
When the annual net rental value and net market value is calculated for each property, the relation in 3.1.1 turns into:

$$k = \frac{D_{rental-net}}{D_{sale-net}}$$

4. A CASE STUDY

The case study was conducted in a 26 da district located 1 km away from the city centre of Konya province with approximately 40-year-old, 5-storey blocks of apartment buildings inhabited by people whose average annual net income is 50 000 TL (Map 1).

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A CASE STUDY

Map 1: Map of the Case Study Area:

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A CASE STUDY

There are no empty parcels in this completely built-up district. Furthermore, the ground floors of some apartment buildings are small places of business.

The district is surrounded by attraction centres .

In short, the real estates located in the district where the data was collected from are not superior to one another in terms of distance to attraction centres, building age and type of use (Map 2).

The distinction among;

a) Ground floor,

b) Top floor,

c) Mid-floor

was taken into account in the data collection process (Map 3), because a customer who rents or buys an apartment as a residence also takes this distinction into account.

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Map 2: Map of The Growth Centres   **A CASE STUDY**

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Map 3: Map Of Housing To Compare   **A CASE STUDY**

A CASE STUDY

We can calculate the annual net rental value (D_{knet}) by using this data as follows:

$$D_{knet} = D_k - ZG_{kira} \qquad (4.1)$$

By dividing this value by area, we can find the unit rental value (D_{kbr}) as;

$$D_{kbr} = \frac{D_{knet}}{F} \qquad (4.2)$$

In a similar way, net sale value (D_{snet}) can be calculated by way of;

$$D_{snet} = D_s - ZG_{satış} \qquad (4.3)$$

By dividing this value by area, we can find the unit sale value (D_{sbr}) as;

$$D_{sbr} = \frac{D_{snet}}{F} \qquad (4.4)$$

Afterwards, we can calculate the *rent capitalisation interest rate* by way of relation (3.2.1).

We obtain the raw data given in Table 4.1, Table 4.2 and Table 4.3.

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A CASE STUDY

Table 4.1: Ground floor data

Flat No	F	D_k	D_s	CY
12	100	350	50000	N-S
14	180	500	150000	E-W-S
15	70	300	40000	W-N-S
18	80	300	45000	N-S
25	90	250	35000	N-S
31	90	400	50000	N-S-E-W

Table 4.2: Top floor data

Flat No	F	D_k	D_s	CY
4	140	450	65000	E-W
13	130	450	60000	N-S
21	120	450	65000	N-S-E
23	110	350	55000	N-E-W
28	110	350	55000	N-S
30	130	400	55000	N-S-E

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Table 4.3: Mid floor data

A CASE STUDY

Flat No	F	D_k	D_s	CY
1	100	400	85000	N-S-E-W
2	140	500	100000	N-S
3	140	550	130000	N-S-E-W
5	140	600	150000	E-N-S
6	210	900	350000	N-S-E
7	180	700	250000	N-S
8	150	500	130000	N-S
9	130	500	130000	N-S-E-W
10	180	750	200000	N-S-E-W
11	170	500	210000	N-S

Flat No	F	D_k	D_s	CY
16	180	700	300000	E-W
17	110	500	100000	N-S-W
19	90	350	55000	N-S
20	130	500	90000	N-S
22	110	400	65000	N-E-W
24	110	450	70000	E-W
26	100	400	60000	N-S
27	100	350	65000	E-W-S
29	90	400	55000	N-S
32	90	450	75000	N-S-E-W

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A CASE STUDY

By using these data given in 4.1, 4.2, 4.3, 4.4 and the equation given in 3.2.1, the;

a) Unit rent (D_{kbr}),

b) Unit sale (D_{sbr}),

c) Rent capitalisation interest rate k

of each real estate is calculated for each flat on its own (Table 4.1.1 – 4.2.1 – 4.3.1) and written in the mean value tables (Table 4.1.2 – 4.2.2 – 4.3.2) given below.

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Table 4.1.1: Ground floor data operations

Flat No	F	D_k	$D_{kyıl}$	D_{knet}	D_{kbr}	D_s	D_{snet}	D_{sbr}	k (%)	CY
12	100	350	4200	3948	39.48	50000	48000	480	8.23	N-S
14	180	500	6000	5640	31.33	150000	144000	800	3.92	E-W-S
15	70	300	3600	3384	48.34	40000	38400	548.57	8.81	W-N-S
18	80	300	3600	3384	42.30	45000	43200	540	7.83	N-S
25	90	250	3000	2820	31.33	35000	33600	373.33	8.39	N-S
31	90	400	4800	4512	50.13	50000	48000	533.33	9.40	N-S-E-W

Table: Ground, Top, Mid floors mean values

Means	Ground floor
D_{kbr}	40.49
D_{sbr}	545.87
k (%)	7.76

Means	Top floor
D_{kbr}	37.35
D_{sbr}	462.49
k (%)	8.10

Means	Mid floor
D_{kbr}	42.44
D_{sbr}	894.42
k (%)	5.54

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4.2 Conclusion and Suggestions

We create Table 5 in order to examine the data given in Table 4.1.2, Table 4.2.2 and Table 4.3.2 together.

Table 5: Mean values for the district

	D_{kbr}	Index	D_{sbr}	Index	k (%)	Index
Top floor	37.35	100	462.49	100	8.10	146.21
Ground floor	40.49	108.41	545.87	118.03	7.76	140.07
Mid floor	42.44	113.63	894.42	193.39	5.54	100

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Conclusion and Suggestions

The following conclusions can be drawn from the data given in Table 5:

a) The floors are ordered respectively as top floor, ground floor and mid floor based on unit rental values,

b) The same conclusion given in **a can be drawn for unit sale values,**

c) However, the order of rent capitalisation interest rates is in the *opposite direction,*

d) The difference between floor values increases 13% for rent, whereas this increase is 93% for market value,

e) Although the most ideal floor for investments seems to be the *middle floor,* **it is the worst investment because it has the lowest rent capitalisation interest rate,**

f) The ideal floors for rent are *the top floor* **and the** *ground floor,* **because they are 40% and 46% more valuable than the mid floor.**

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Conclusion and Suggestions

It is generally presumed that only one rent capitalisation interest rate method can be applied in an integrated fashion for the whole of each apartment block valued.

However, as it can be seen in the present study, a single rent capitalisation interest rate cannot be determined for each apartment block.

Instead, it emerged in this study that it is necessary to determine individual **rent capitalisation interest rate**s **on district basis by taking a number of apartment blocks**

and the top floor-ground floor-mid floor differences into consideration.

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Conclusion and Suggestions

Based on these conclusions, the feasible market value of an apartment can be calculated considering the *floor* on which it is situated by using:

For top floor,

$$D_s = F \times 461.11$$

For mid floor,

$$D_s = F \times 521.78$$

For ground floor,

$$D_s = F \times 766.06$$

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ABBREVIATIONS

W	: West	**D_sbr**	: Unit sale value (TL)
CY	: Facade direction	**D_snet**	: Net sale value (TL)
E	: East	**F**	: Area m²
D_k	: Rental value (TL)/month	**S**	: South
D_kbr	: Unit rental value (TL)	**N**	: North
D_knet	: Annual net rental value (TL) / year	**k**	: Rent capitalisation interest rate (%)
D_kyıl	: Annual rental value (TL) / year	**ZG_kira**	: Necessary expenses for renting
Ds	: Sale value (TL)	**ZG_satış**	: Necessary expenses for sale

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THANKS ...
QUESTIONS ?

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