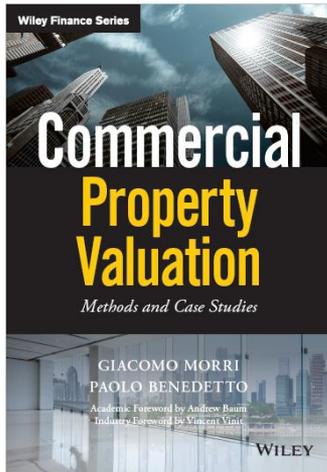


Commercial Property Valuation

Giacomo Morri & Paolo Benedetto

WILEY, 2019



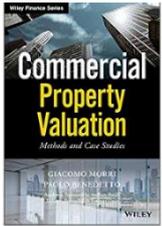
Office Property Appraisal

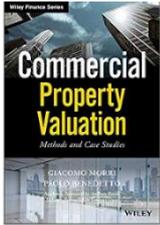
Chapter 9



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- Description of the Property
- Choice of the Valuation Method
- Market Analysis
- Valuation





Description of the Property

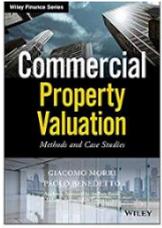
- *Located close to the centre of Milan*
- *Completed approximately **ten years** before the valuation date*
- *The property is part of a larger plan to regenerate a former industrial area which included the development of other office properties, as well as hundreds of residential units and a shopping centre*
- *Near to several **overground public transport routes** and **good availability of car parks in the surrounding area***
- *The **Building** has a supporting structure of reinforced concrete and continuous glass façades. It consists of a basement, which houses archives, storerooms and a car park, and five identical open-plan floors above ground. Additional features: lift and air conditioning*

Description of the Property

Net Lettable Areas and calculation of the Weighted Lettable Area

Tenant / Destination of use	Offices (m ²)	Storage rooms / Archives (m ²)	Uncovered parking spaces (m ²)	Covered parking spaces (m ²)	Weighted Lettable Area (m ²)
<i>Weighting factor</i>	<i>100%</i>	<i>50%</i>	<i>10%</i>	<i>25%</i>	
Tenant "A"	2,750	350	300	400	3,055
Tenant "B"	1,500	250	250	250	1,713
Tenant "C"	1,500	200	300	200	1,680
Tenant "D"	3,000	250	350	300	3,235
<i>Vacancy</i>	<i>6,000</i>	<i>450</i>	<i>400</i>	<i>350</i>	<i>6,353</i>
Total Net Lettable Area (m²)	14,750	1,500	1,600	1,500	19,350
Total Weighted Lettable Area (m²)	14,750	750	160	375	16,035

Surface weightings have been applied to the Net Leasable Area, already divided by tenant, in order to determine the Weighted Lettable Area for valuation purposes

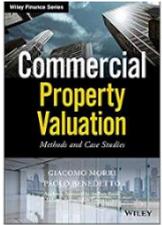


Description of the Property

- Each floor of the Building is an independent unit leased to different tenants, with lease agreements that differ in terms of timescale and rental amount
- As of the valuation date, two floors (the second and fourth) are entirely vacant
- Three of the four existing lease agreements are in the second six-year contractual period and it has therefore been assumed that they will remain in force until expiration date
- Attention to be paid to the agreement with tenant 'C': passing rent is higher than the rent paid by the other tenants.

Description of the Property: Rent roll

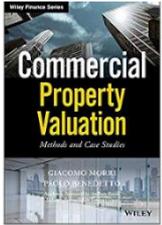
Tenant	Floor	Weighted Lettable Area (m ²)	Passing rent	Passing rent (€/m ² /year)	Indexation	Overall length	Residual length
<i>vacancy</i>	<i>B</i>	<i>353</i>					
Tenant "A"	G / B	3,055	€ 572,836	€ 187.5	75% CPI	6 years + 6 years	3.5 years (2nd six-year period)
Tenant "B"	1 / B	1,713	€ 309,549	€ 180.8	75% CPI	6 years + 6 years	5.5 years (2nd six-year period)
Tenant "C"	1 / B	1,680	€ 341,503	€ 203.3	75% CPI	6 years + 6 years	1.5 years + 6 years
<i>vacancy</i>	<i>2</i>	<i>3,000</i>					
Tenant "D"	3 / B	3,235	€ 591,443	€ 182.8	75% CPI	6 years + 6 years	4 years (2nd six-year period)
<i>vacancy</i>	<i>4</i>	<i>3,000</i>					
Total		16,035	€ 1,815,331				



Choice of the Valuation Method

- Subject property: category of **Flexible Commercial Properties**
 - usually hard to compare regarding physical characteristics
 - often presenting a sort of separation between Owners and Users
- Information
 - YES
 - Income: passing rents in the lease agreements and ERV as future or potential rent (Space Market)
 - market expected return: yields based on trading values (Investment/Capital Market)
 - NO
 - sale price of assets that are not easily comparable

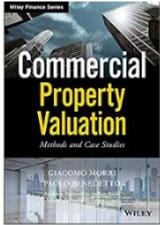
Best options for valuation purposes → Income Capitalisation Methods



Choice of the Valuation Method

1. Whether the property is fully leased
2. Whether the rents are in line with the ERV
3. Whether the Building needs any Capex to be refurbished and upgraded

As for the subject property, considering that around 40% of the space is vacant and that, therefore, the time and cost involved in re-leasing this space have to be considered, **the Discounted Cash Flow Approach is deemed to be the best way of estimating its Market Value**



Market Analysis

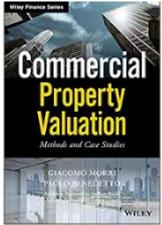
INVESTMENT MARKET

- *On the Investors' side, market evidence suggests that, while prime locations for class A properties leased to primary tenants continue to be favoured, because of lack of supply of assets with these characteristics, Investors seeking higher returns are also investing in secondary locations with excellent road and public transport connections and leased to good, creditworthy tenants*

SPACE MARKET

- *On the tenants' side, however, the space market remains relatively buoyant, with good demand for leasing spaces, provided that they are energy efficient buildings with low operating expenses, even if the demand is not so strong as in the previous years. Moreover, there is some expectation of an increase of time required to lease units*

Market Analysis



In addition, a survey was conducted via a number of real estate brokers in order to determine the ERV and the market yield to estimate the cap rate for the subject property. In particular, a number of transactions relating to recent leases of real estate units with similar characteristics in the same area and transactions of comparable properties were analysed

The data gathered show that the ERV is approximately € 185/m² which is consistent with the range of values shown by secondary sources

The average gross yield value is around 7%, based on gross rent definition

The net yield could not be determined because the cost structure of the comparable transactions was unknown and so it was not possible to estimate their Net Operating Income (NOI)

Based on the yield extracted from the market, a decision is made to use a base cap rate of 7%*

→ valuer's opinion

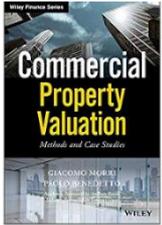
Market Analysis: ERV & Cap Rate

- Determining the ERV by comparison

Comparable Properties	Weighted Lettable Area (m ²)	Passing rent (€/year)	Passing rent (€/m ² /year)
1	3,425	€ 602,800	€ 176
2	2,630	€ 504,960	€ 192
3	2,890	€ 514,420	€ 178
4	2,570	€ 485,730	€ 189
5	2,240	€ 409,920	€ 183
6	2,940	€ 570,360	€ 194

- Determining the cap rate by comparison

Comparable Properties	Weighted Lettable Area (m ²)	Gross Rent (€/year)	Sale price	Gross Yield
1	13,480	€ 2,320,000	€ 32,910,000	7.05%
2	18,350	€ 3,560,000	€ 51,450,000	6.92%
3	17,620	€ 3,220,000	€ 46,130,000	6.98%
4	14,890	€ 2,740,000	€ 38,560,000	7.11%



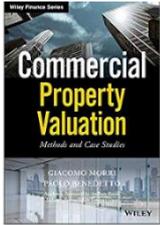
Valuation: Choosing the Time Horizon

The ideal time horizon is the minimum one beyond which the cash flows stabilise

- A six-month period **frequency** has been used as a unit of time in modelling the cash flows. A quarter frequency would have not significantly improved the precision of the appraisal
- In this case, 6.5 years is considered the most appropriate **time horizon**
 - passing rent of tenants 'B' and 'D' is in line with the ERV
 - the rent of tenant 'C' will presumably be renegotiated to reflect the lower market rent at the break option
- the minimum time required to obtain stabilised cash flows (assuming that vacant spaces are leased in the meantime) is equal to the residual duration of the longest existing contract (tenant 'B'), which is 5.5 years, plus the time (one year) required to refurbish and re-lease this unit once it has been vacated

Valuation: Estimating the Cash Flows

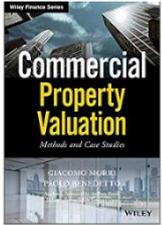
Income



- The main economic benefit generated by the property is the rental income
 - existing lease agreements for which the amount and residual duration are known
 - clauses which allow tenants to withdraw early (i.e. contractual or legal break-options)
 - predictions for the vacant property units based on the ERV
 - estimate the time needed to find a tenant and the rental level (ERV) determined by the market analysis
- The actual rents are indexed at 75% of the inflation index
 - assumptions made about future inflation rate are important
- In some cases, in addition to space rents, other potential sources of income may be considered, such as billboards or telecommunication masts

Valuation: Estimating the Cash Flows

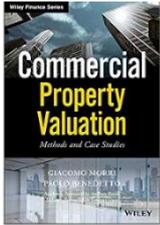
Vacancy and Credit Loss



- Revenues do not take into account any partially or completely vacant units
 - A rectification is made based on assumptions about how long some units may continue not to generate income
- **For currently leased units, no vacancy rate is assumed** during the term of the lease agreement
 - Assumptions on the fact that there being no break-options
- **Coherently with the Market analysis, for the two currently vacant units it is assumed that they can be leased within 12 month**
- The tenants currently present a solid credit position
 - Assumptions of no defaults before the expiry date
 - Similarly for new lease agreements

Valuation: Estimating the Cash Flows

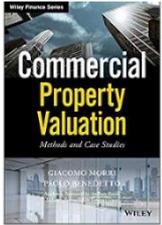
Determining Operating Expenses



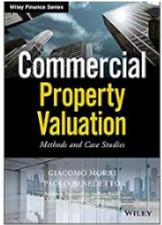
- **Property taxes:** the actual amount currently paid and indexed to inflation
 - Assumption on the possibility of a nominal variation in the future to keep the same real value
- **Insurance costs:** the actual amount currently paid and indexed to inflation
- **Stamp duty tax on rent:** at 0.50% of the actual rents according to the fiscal rules
- **Extraordinary maintenance costs:** annual amount corresponding to the 0.50% of the reconstruction cost of the Building
 - Assumption on a cost of construction of € 1.100/m² indexed to inflation
- **Property and facility management expenses:** 2.00% of the actual rents (market benchmark)

Valuation: Estimating the Cash Flows

Determining the Investments

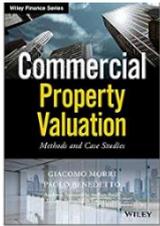


- **Capital expenditures:** € 300,000, during the first semester, for compulsory adaptation works required by Fire Prevention Certificate regulations
- **TIs (tenants improvements):** quantified at € 50/m² (indexed to inflation)
- **Leasing fee:** 10% of the first year headline rent as market benchmark



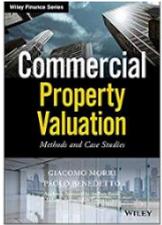
Valuation: Determining the Terminal Value

- **Terminal Value: determined by applying the Direct Capitalisation Approach to the income subsequent to the last period (time N+1)**
 - The Effective Gross Income (EGI) has been chosen, which makes it easier to extract a market cap rate from market gross yields
 - The EGI level is not the most precise income definition, but the valuer has no information about the cost structure of Comparables, so it represents the most effective solution
 - As alternative, a market benchmark amount of operating expenses may be used to estimate a net cap rate to apply to the NOI, starting from a gross cap rate based on the EGI extracted from market Comparables



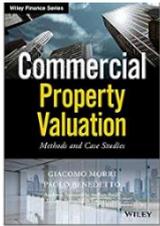
Valuation: Determining the Terminal Value

- **Going-out cap rate: estimated by adding a spread (+50 bps to the initial going-in cap rate - 7%)**
 - It is deemed prudent to use a going-out cap rate that does not include a potential increase in value due to a change in the Highest and Best Use
 - The positive spread considers a future loss of value of the property due to the obsolescence of the Building
- This theoretical value represents the gross Market Value expected at the end of the valuation time horizon
 - Transaction and brokerage costs (estimated to be 0.5% of the estimated sale price) need to be deducted from this amount



Valuation: Determining the Discount Rate

- **No Comparables** exist in the property market
- **The Discount Rate** represents the **Internal Rate of Return (IRR)** expected by market participants to invest in the subject property
- **The valuer has chosen the Build-Up Approach**, which allows the discount rate to be defined based on the specific risk components



Valuation: Determining the Discount Rate

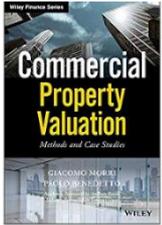
Financial structure:

- For the subject property, the financial structure commonly used by market participants at the valuation date is the following:
 - Debt (D%) = 60%
 - Equity (E%) = 40%

Cost of debt:

- This can be subdivided into two components:
 - Risk-free rate, estimated to be equal to the six-month average of five-year EURIRS values, publicly available data
 - Bank spread, estimated by conducting a survey of some banks

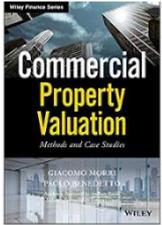
Kd = base rate + spread = six-month average of 5-year IRS rate + average spread surveyed on the market = 0.33% + 3.50% = 3.83%



Valuation: Determining the Discount Rate

Cost of equity

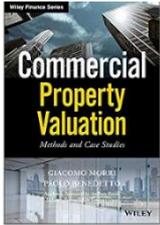
- As for debt, there is again the risk-free component and a return component of the specific risk premiums:
 - Risk-free rate: the total return on the 5-year BTP (based on the average returns for the previous six months) was used. The bond maturity is consistent with the valuation time horizon
 - Risk premium: various factors were identified and added, using as basis an ideal property with minimum level of risk



Valuation: Determining the Discount Rate

Risk Premium

- Property sector risk: represents the minimum level of risk required for real estate investments that do not involve other incremental risk factors specific to the property. As of the valuation date, this was estimated at 600 bps
- Location risk: this is the risk of the Use of Space demand in the specific market in which the property is located, related to the local economy. For the subject Property, this was estimated at 150 bps and was based on the market analysis
- Intended use and typology risk: this is the risk of a lack of Space Use demand for a specific purpose, owing to the nature of the property as opposed to the potential Users. For the subject property, this was estimated at 150 bps
- Physical and technical features risk: this is the risk associated, in a broader sense, with the quality of the Space, and therefore of the Building. This is inversely linked to the ease of finding a User. For the subject property, this was estimated at 100 bps
- Rental/contractual risk: this is the risk of vacancy or credit loss by tenants. For the subject property, this was estimated at 200 bps



Valuation: Determining the Discount Rate

WACC

- As of the valuation date, the cost of equity was quantified as follows:

$$\begin{aligned} \text{Ke} &= \text{base rate} + \text{risk premium} = \text{5-year BTP rate} + \Sigma \text{ specific risk factor} \\ &= 1.80\% + (6.00\% + 1.50\% + 1.50\% + 1.00\% + 2.00\%) = 13.80\% \end{aligned}$$

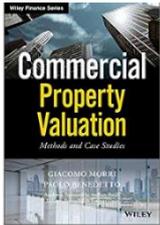
- After having determined the financial structure, the cost of debt (Kd) and cost of equity (Ke), the discount rate (WACC) can be determined as follows:

$$\text{WACC(K)} = \text{Kd} * \text{D}\% + \text{Ke} * \text{E}\% = 3.83\% * 60\% + 13.80\% * 40\% = 7.82\%$$

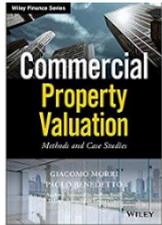
- The estimated WACC will be used to discount all the intermediate cash flows as well as the Terminal Value.
- Finally, in discounting the cash flows, it was assumed that the rents and costs were received and incurred respectively halfway through the six-month period, with the exception of the cash flow derived from the sale of the Property, for which the beginning of the period was considered

Valuation: Calculating the Market Value of the Property

- Only for a better representation of the valuation process, the model provides for two different cash flows: Intermediate cash flows, relating to the whole rental period (operational component), and a Terminal Value (divestment component). Discounting of the two cash flows separately leads to a breakdown of the total value of the property
- **The Market Value of the subject property at the valuation date is € 39,020,000**

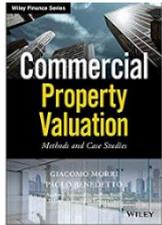


Valuation: full DCF model (1/2)



	semester	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Rents															
Tenant "A"		€ 286.418	€ 286.418	€ 289.640	€ 289.640	€ 292.681	€ 292.681	€ 297.072	€ 297.072	€ 302.592	€ 302.592	€ 307.131	€ 307.131	€ 311.738	€ 311.738
Tenant "B"		€ 154.775	€ 154.775	€ 156.516	€ 156.516	€ 158.159	€ 158.159	€ 160.532	€ 160.532	€ 162.939	€ 162.939	€ 165.384	€ 165.384	€ 176.472	€ 176.472
Tenant "C"		€ 170.752	€ 170.752	€ 172.672	€ 158.831	€ 158.831	€ 160.856	€ 160.856	€ 163.269	€ 163.269	€ 165.718	€ 165.718	€ 168.204	€ 168.204	€ 170.727
Tenant "D"		€ 295.721	€ 295.721	€ 299.048	€ 299.048	€ 302.188	€ 302.188	€ 306.721	€ 306.721	€ 311.322	€ 323.609	€ 323.609	€ 328.463	€ 328.463	€ 333.390
Vacant space (1)		€ 0	€ 295.998	€ 295.998	€ 299.217	€ 299.217	€ 303.032	€ 303.032	€ 307.577	€ 307.577	€ 312.191	€ 312.191	€ 316.874	€ 316.874	€ 321.627
Vacant space (2)		€ 0	€ 0	€ 298.210	€ 298.210	€ 301.341	€ 301.341	€ 305.861	€ 305.861	€ 310.449	€ 310.449	€ 315.106	€ 315.106	€ 319.833	€ 319.833
Potential Gross Income		€ 907.665	€ 1.203.664	€ 1.512.085	€ 1.501.463	€ 1.512.419	€ 1.518.258	€ 1.534.073	€ 1.541.032	€ 1.558.149	€ 1.577.498	€ 1.589.138	€ 1.601.161	€ 1.621.583	€ 1.633.786
Effective vacancy		€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 297.072	€ 311.322	€ 0	€ 0	€ 165.384	€ 0	€ 0
Effective Gross Income		€ 907.665	€ 1.203.664	€ 1.512.085	€ 1.501.463	€ 1.512.419	€ 1.518.258	€ 1.534.073	€ 1.243.960	€ 1.246.827	€ 1.577.498	€ 1.589.138	€ 1.435.777	€ 1.621.583	€ 1.633.786
Operating costs															
Property taxes	140.000 €/year	€ 70.000	€ 70.000	€ 71.050	€ 71.050	€ 72.045	€ 72.045	€ 73.486	€ 73.486	€ 74.955	€ 74.955	€ 76.454	€ 76.454	€ 77.984	
Property insurance	27.500 €/year	€ 13.750	€ 13.750	€ 13.956	€ 13.956	€ 14.152	€ 14.152	€ 14.435	€ 14.435	€ 14.723	€ 14.723	€ 15.018	€ 15.018	€ 15.318	
Stamp duty	0,50% % on rents	€ 4.538	€ 6.018	€ 7.560	€ 7.507	€ 7.562	€ 7.591	€ 7.670	€ 6.220	€ 6.234	€ 7.887	€ 7.946	€ 7.179	€ 8.108	
Extraordinary maintenance	0,50% % on reconstruction cost	€ 44.096	€ 44.426	€ 44.758	€ 45.070	€ 45.384	€ 45.836	€ 46.292	€ 46.753	€ 47.218	€ 47.688	€ 48.162	€ 48.641	€ 49.125	
Property & Facility Management	2,00% % on rents	€ 18.153	€ 24.073	€ 30.242	€ 30.029	€ 30.248	€ 30.365	€ 30.681	€ 24.879	€ 24.937	€ 31.550	€ 31.783	€ 28.716	€ 32.432	
Total Operating costs		€ 150.538	€ 158.267	€ 167.566	€ 167.613	€ 169.391	€ 169.989	€ 172.564	€ 165.772	€ 168.067	€ 176.804	€ 179.363	€ 176.008	€ 182.967	
Net Operating Income		€ 757.127	€ 1.045.396	€ 1.344.519	€ 1.333.850	€ 1.343.028	€ 1.348.269	€ 1.361.509	€ 1.078.188	€ 1.078.760	€ 1.400.695	€ 1.409.775	€ 1.259.769	€ 1.438.617	

Valuation: full DCF model (1/2)



Investments															
Capex		€ 300.000	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	
Tenant Improvements		€ 158.813	€ 159.999	€ 0	€ 0	€ 0	€ 0	€ 161.952	€ 173.200	€ 0	€ 0	€ 94.451	€ 0		
Leasing fees		€ 0	€ 59.200	€ 59.642	€ 0	€ 0	€ 0	€ 0	€ 60.518	€ 64.722	€ 0	€ 0	€ 35.294		
Total Investments		€ 458.813	€ 219.199	€ 59.642	€ 0	€ 0	€ 0	€ 161.952	€ 233.719	€ 64.722	€ 0	€ 94.451	€ 35.294		
Intermediate Cash Flow		€ 298.315	€ 826.198	€ 1.284.877	€ 1.333.850	€ 1.343.028	€ 1.348.269	€ 1.361.509	€ 916.236	€ 845.041	€ 1.335.973	€ 1.409.775	€ 1.165.318	€ 1.403.322	
Terminal Value															
Exit value (on GOCR)	7,25% GOCR	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 45.069.970	
Brokerage fees	0,50% % Terminal Value	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 225.350	
Final Cash Flow		€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 44.844.624	
Total Cash Flows to be discounted		€ 298.315	€ 826.198	€ 1.284.877	€ 1.333.850	€ 1.343.028	€ 1.348.269	€ 1.361.509	€ 916.236	€ 845.041	€ 1.335.973	€ 1.409.775	€ 1.165.318	€ 1.403.322	€ 44.844.624
<i>Time factor</i>		<i>0,25</i>	<i>0,75</i>	<i>1,25</i>	<i>1,75</i>	<i>2,25</i>	<i>2,75</i>	<i>3,25</i>	<i>3,75</i>	<i>4,25</i>	<i>4,75</i>	<i>5,25</i>	<i>5,75</i>	<i>6,25</i>	<i>6,5</i>
<i>Discount factor</i>	7,82%	<i>0,9814</i>	<i>0,9451</i>	<i>0,9102</i>	<i>0,8766</i>	<i>0,8442</i>	<i>0,8130</i>	<i>0,7830</i>	<i>0,7541</i>	<i>0,7262</i>	<i>0,6994</i>	<i>0,6736</i>	<i>0,6487</i>	<i>0,6247</i>	<i>0,6131</i>
Discounted Cash Flows		€ 292.754	€ 780.852	€ 1.169.506	€ 1.169.242	€ 1.133.806	€ 1.096.192	€ 1.066.073	€ 690.924	€ 613.701	€ 934.401	€ 949.602	€ 755.950	€ 876.722	€ 27.494.338
Sum of Discounted Intermediate Cash Flows	29,5%	€ 11.529.726													
Discounted Final Cash Flow	70,5%	€ 27.494.338													
Market Value		€ 39.024.063													
Market Value (rounded)		€ 39.020.000													

Market Value of the subject property at the valuation date is € 39,020,000



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