

CHRONIQUE N°1

Total return: between accounting and finance

The total return on a property asset can be assessed in two different and complementary ways.

First, from an accounting point of view, the total return on a property asset corresponds to the net income from that asset (total operating income minus total operating expenditure) plus the change in the price of the asset minus the capital expenditure during the period, divided by the purchase price including transaction costs and capital expenditure.

$$tr = \frac{(oinc - oexp) + (Sp - Pp - capex)}{Pp + capex}$$

with:

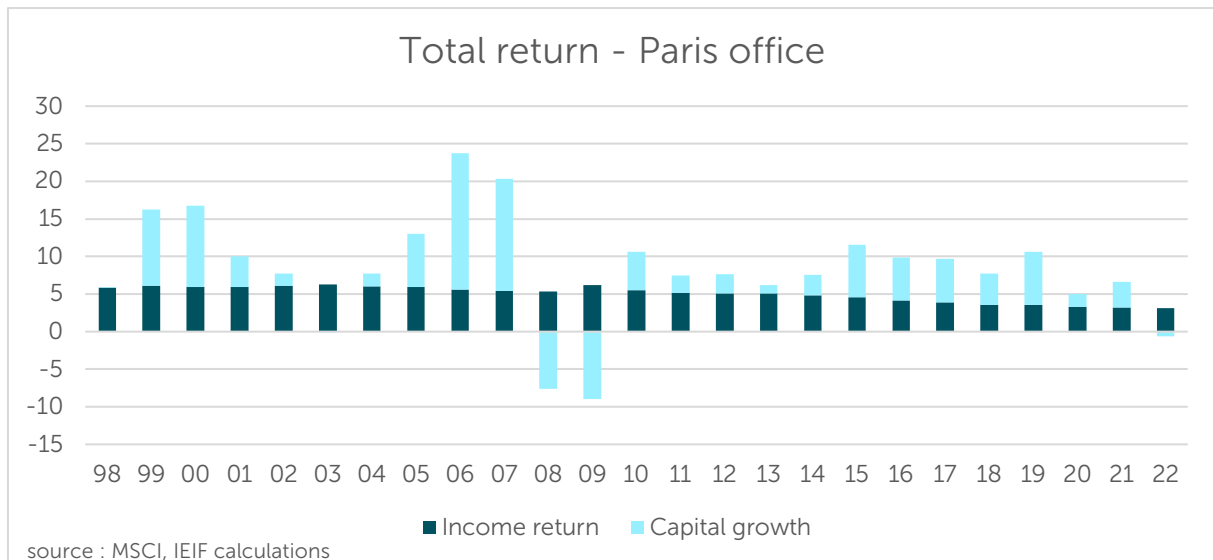
- tr : total return
- $oinc$: operating income (mainly rent)
- $oexp$: operating expenditure
- $capex$: capital expenditure
- Sp : selling price
- Pp : purchase price including transaction costs

Which can still be written as:

$$tr = nir + cr = \frac{noi}{Pp + capex} + \left(\frac{\Delta p}{Pp + capex} - \frac{capex}{Pp + capex} \right)$$

with:

- nir : income return $((oinc - oexp) / (Pp + capex))$
- cr : capital growth $((\Delta p - capex) / (Pp + capex))$
- noi : net income $(oinc - oexp)$
- Δp : price variation $(Sp - Pp)$



Secondly, from a financial point of view, the total return on a property asset also corresponds to the sum of the risk-free return (generally represented by the 10-year government bond rate) and a risk premium (necessary to remunerate the holding of a risky asset).

$$tr = rfr + \pi$$

with: tr : total return
 rfr : risk-free return
 π : risk premium

In the property industry, this risk premium is typically made up of a sum of risks that affect the expected rental income and the possibility of reselling the property easily (its liquidity).

Numerous factors can have an impact on the expected future income stream from the property, starting of course with the change in the rent received, which may change as a result of rent indexation, the market rent at the time of letting or lease renegotiation, the possible bankruptcy or difficulties of tenants who can no longer pay, the average time taken to re-let space that has become empty, changes in operating costs or capital expenditure, etc.

These income factors will intersect with the characteristics of the property, which will have an impact on the intensity of demand for it, both for rent and for sale. First, there is the location, but also the type of property (offices, warehouses, residential, etc.) and its intrinsic quality (functionality of the space, quality of the equipment, energy consumption, etc.).

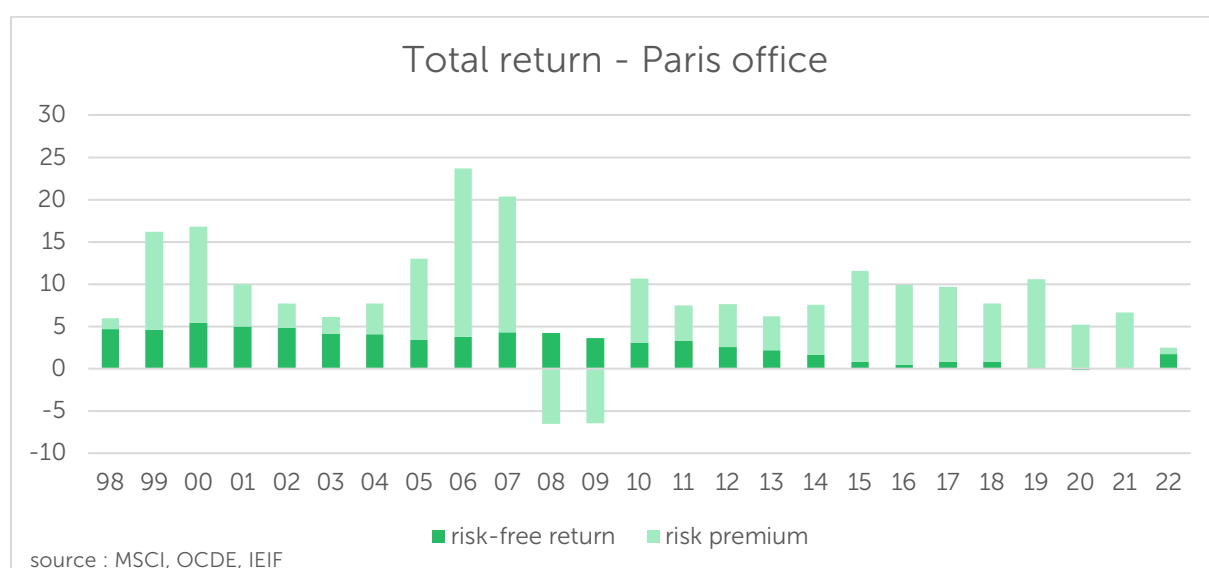
In short, several factors, often interdependent, have a significant impact on the risk carried by each property asset.

The equation then becomes:

$$tr = 10ygb + \sum_{i=1}^n \pi_i$$

With: 10ygb : 10-year government bond yields
i : risk factors involved in the "risk premium" π_i

Furthermore, the risk premium is only properly understood in the financial theories of portfolio analysis (Markowitz (1952)¹ or Sharpe (1964)²) in terms of expectation (we will deal with this concept in a forthcoming Chronicle). However, in real estate, each item in the time series of differences between the total return and the risk-free rate is often also referred to as a "risk premium".



At MSCI, one of the world's leading providers of services to investors and asset managers, this definition of total return can be found in their Methodology Guide: <https://bit.ly/3QIis1c>

$$TR_t = \frac{(CV_t - CV_{t-1} - CExp_t + CRpt_t + NI_t)}{(CV_{t-1} + CExp_t)}$$

With: TR_t : total return in month t
 CV_t : the appraised value (capital value) at the end of month t
 $CExp_t$: total capital expenditure (including purchases and construction of new assets) during the month t
 $CRpt_t$: capital receipts (including sales of goods) during the month t
 NI_t : the rent to be received in month t, net of management costs and other non-recoverable expenses (net income)

¹ Harry Markowitz. (1952) Portfolio Selection, Journal of Finance, 7, 77-91.

² Sharpe, W.F. (1964) Capital Asset Prices: A Theory of Market Equilibrium under Conditions of Risk. Journal of Finance, 19, 425-442.

At INREV, the European association of investors in unlisted property and Europe's leading platform for sharing knowledge about the unlisted property sector, their Guidelines give the following definition: <https://bit.ly/4a7khMc>

$$TR_{pk} = \frac{(MV_{kp} - MV_{kp-1} + \sum D_{kp} - \sum A_{kp} - CAPEX_{kp} + NOI_{kp})}{(MV_{kp-1} + \sum A_{kp} + CAPEX_{kp})}$$

with:

- TR* : Total return
- MV* : market value at the end of the period
- D* : sales, net of selling costs
- A* : purchases, including acquisition costs
- CAPEX*: Capital Expenditure
- NOI* : Net Operating Income)
- p* : la période
- k* : l'actif

These chronicles are linked to my activity at the IEIF, a Paris based think tank on real estate where I conduct research into the modelling of major property variables.

For those less familiar with property analysis, these chronicles can be a source of information and a knowledge base. For experts in the field, their purpose is to launch discussions and exchanges on the various subjects I cover. Some of the chronicles will be based on known and familiar elements, while others will deal with research elements and present some of the results of my work.