

CHRONICLE N°5

Foundations summary

In the first four Chronicles, we have laid the foundations, so to speak, on which I will build most of the next Chronicles, with the aim of analysing and modelling all the elements that contribute to an understanding of the overall return on commercial property.

For full explanations and demonstrations, please refer to the previous Chronicles available on the IEIF website:

<https://www.ieif.fr/actualites/theories-et-modelisations-immobilieres>

In **Chronicle 1** we set out the definitions of total return. From an accounting point of view, it can be understood as the sum of net income from lettings and net capital appreciation, divided by the purchase price plus capital expenditure during the period. From a financial point of view, it can be understood as the sum of the risk-free rate and the risk premium.

From an accounting point of view:

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

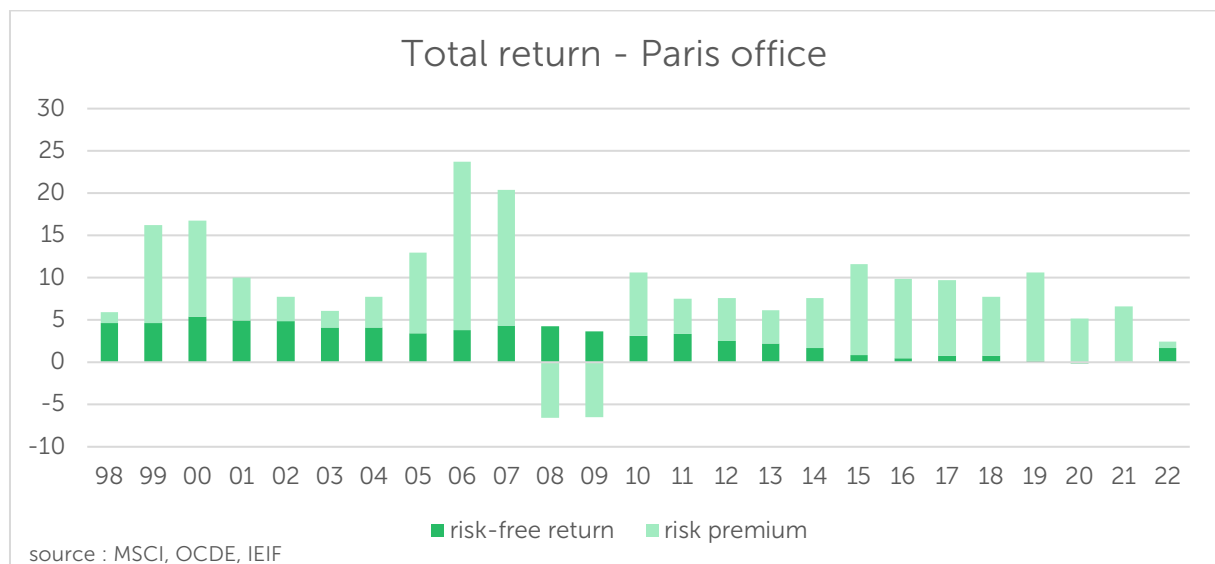
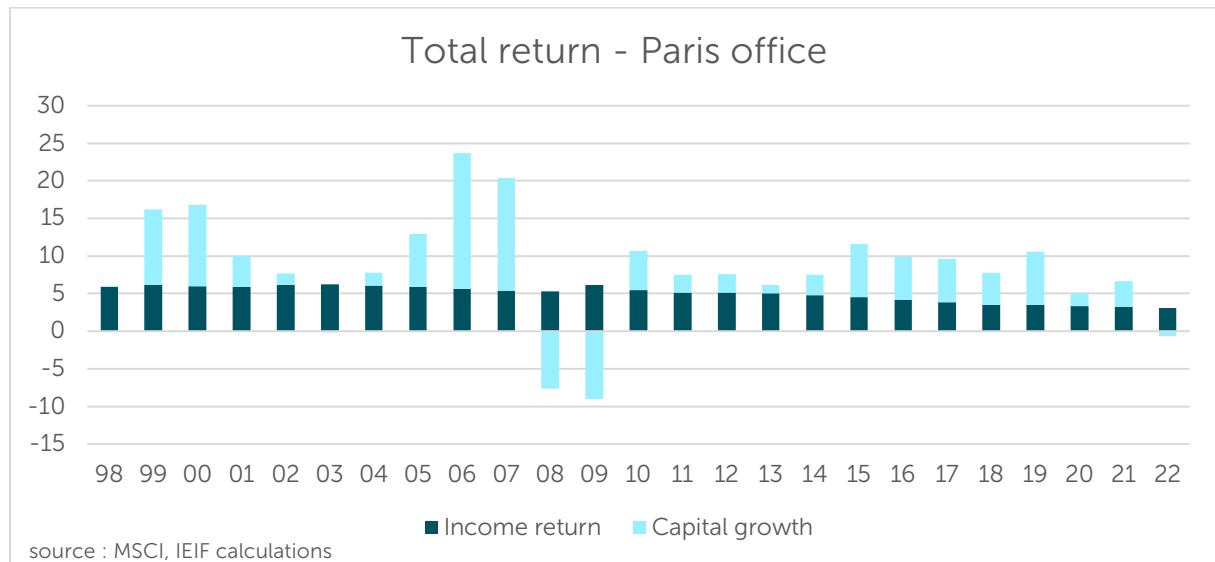
with:

<i>tr</i>	: total return
<i>ir</i>	: income return
<i>cr</i>	: capital growth
<i>noi</i>	: net operating income
Δp	: price variation
<i>capex</i>	: capital expenditure
<i>Pp</i>	: purchase price including transaction costs

From a financial point of view:

$$tr = rfr + \pi$$

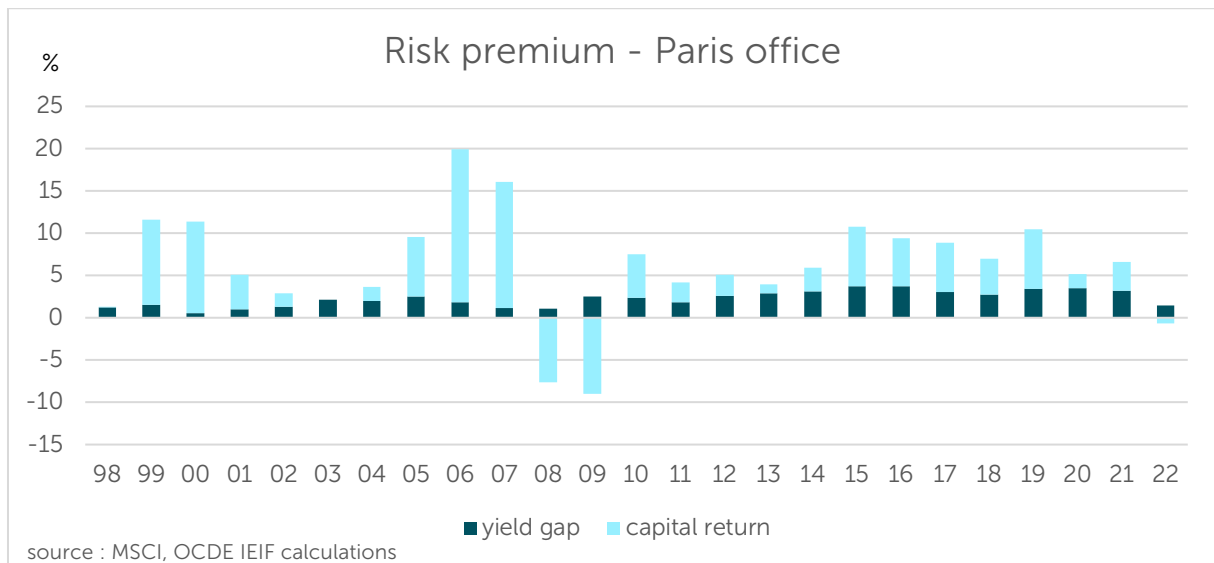
with: tr : total return
 rfr : risk-free return
 π : risk premium



In **Chronicle 2** we showed that the risk premium (the spread between the total return and the risk-free rate) is equal to the yield gap (the spread between the income return and the risk-free rate) plus the capital return.

$$\pi = yg + cr$$

with: π : risk premium
 yg : yield gap
 cr : capital return / capital growth



In **Chronicles 3 and 4**, we showed that the capital return is a direct function of the growth rate of the net rental value, the growth rate of the occupancy rate, the growth rate of the income return and the capex rate.

$$cr \cong (1 + \partial nrv) \cdot (1 + \partial occ) / (1 + \partial ir) - 1 - capex\%$$

with: cr : capital growth/return
 ∂nrv : the growth rate of net rental value
 ∂occ : the growth rate of occupancy rate
 ∂ir : the growth rate of income return
 $capex\%$: the capex rate

As a direct consequence of these first Chronicles, we find that the total return is a function of the risk-free rate, the yield gap, the growth rate of the net rental value, the growth rate of the occupancy rate, the growth rate of the income return and the capex rate.

$$tr \cong rfr + yg + (1 + \partial nrv) \cdot (1 + \partial occ) / (1 + \partial ir) - 1 - capex\%$$

It is therefore on the analysis and modelling of these different elements that our next Chronicles will focus. Occasionally, I'll take a few steps aside to deal with subjects that seem important to me and that always have a link, sometimes indirect, with this guideline.

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.