

CHRONICLE N°23

Net operating income: does property protect against inflation?

The first answer you'll get in France to the question 'Does property protect against inflation?' will inevitably be "yes". And there are good reasons for this.

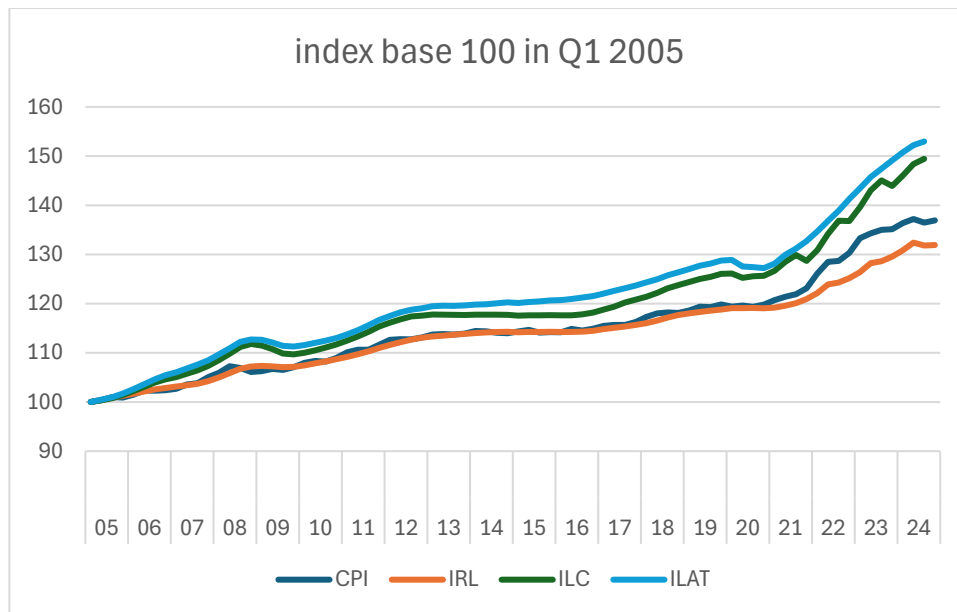
France is undoubtedly the country in the world with the largest number of indices for indexing property rents:

- the rent reference index (IRL), which is used as the basis for annual residential rent reviews. It is calculated on the basis of the consumer price index (CPI), excluding tobacco and rent,
- the commercial rents index (ILC) used to index commercial leases. It is constructed by taking into account the consumer price index (CPI) and the construction cost index (ICC),
- the service sector rental index (ILAT), which is used to index service sector leases other than commercial leases. It is the result of a weighted average of the consumer price index (CPI), the construction costs index (ICC) and the GDP value.

First of all, let's look at how these different indices behave in relation to inflation, i.e. the consumer price index (CPI). (see chart below)

We can see that the ILAT (the index we are interested in here) has risen much faster than the CPI over the last 20 years. So, structurally, office property more than protects against inflation if we only take into account the indexation effect.

As a geometric average, between 2005 and 2024, inflation rose by 1.6% a year, while the ILAT increased by almost 2.2% a year. The difference is truly significant. This is mainly due to the use of the ICC to calculate ILAT. The ICC is very sensitive to changes in the price of energy, which has regularly risen sharply over the period studied.



Thus, if we confine ourselves to analysing the dynamics of net operating income during the firm period of the lease, 3, 6 or 9 years depending on the case, there is no doubt: office property more than protects against inflation.

This follows directly from the results of **Chronicles 10 to 16**, which conclude that:

1. Under the simplifying assumptions of a single building leased in part (between 0 and 100% of the building) at the initial date t_0 , calculated over the firm term of the lease,
2. simultaneously taking into account the impact of rent indexation, support measures, management costs and vacancy,
3. then the net operating income is equal to the rent less the impact of average support measures, management costs and the vacancy rate (occupancy rate), and the rate of growth in net operating income is directly linked to the rate of rent indexation and the rate of growth in the occupancy rate.

$$(1) noi_{0,1} = (nr_{0,1} \cdot (1 - asm\%) - mc_{0,1}) \cdot occ\%_{0,1}$$

$$(2) \leftrightarrow noi\%_{t,t+1} \cong (1 + ri\%) \cdot \frac{occ\%_{t,t+1}}{occ\%_{t-1,t}} - 1$$

with:

- noi : net operating income
- $noi\%$: the growth rate of net operating income
- nr : net rental value
- $ri\%$: rent indexation
- $asm\%$: average support measures (as % of net rental value over the firm term of the lease)
- mc : management costs
- $occ\%$: occupancy rate

And since the indexation rate is equal to the growth rate of the ILAT (ilat%), which is itself structurally higher than the growth rate of the CPI (cpi%), i.e. inflation:

$$(3) \text{ri\%} = \text{ilat\%} > \text{cpi\%} = \text{inflation}$$

Combining equations (2) and (3), we logically find:

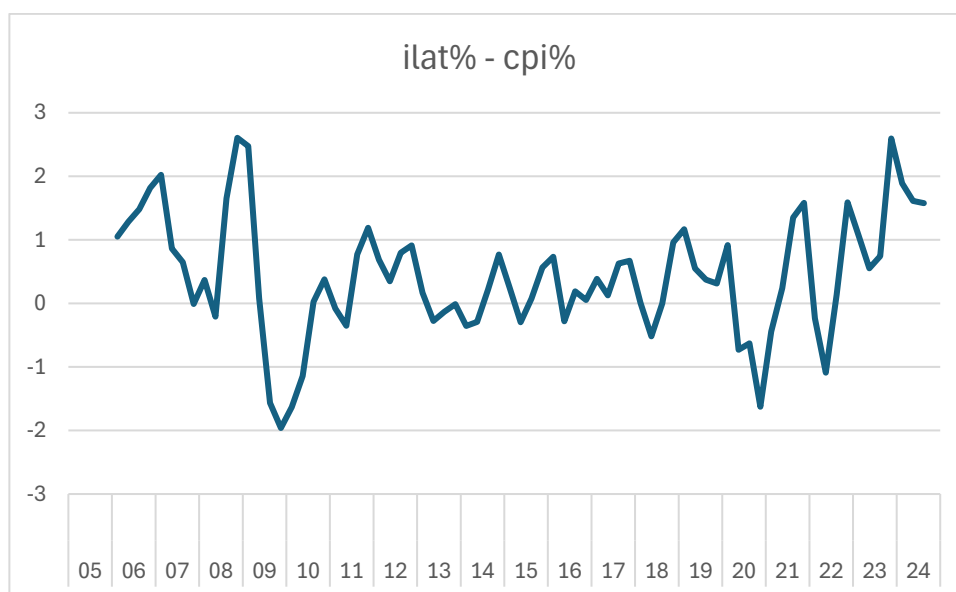
$$(4) \text{noi\%}_{t,t+1} > (1 + \text{cpi\%}) \cdot \frac{\text{occ\%}_{t,t+1}}{\text{occ\%}_{t-1,t}} - 1$$

On average over the long term, office property more than protects against inflation... over the firm term of the lease.

But is, what is true over the long term, true all the time?

Let's take a look at how the difference between the ILAT growth rate and the CPI growth rate calculated over a rolling year behaves for each quarter in the past.

Well, unsurprisingly, the ILAT is generally higher than the CPI, but not all the time... Over the period analysed, the ILAT growth rate exceeds that of the CPI 70% of the time. But this means that 30% of the time, mainly during periods of falling energy prices, inflation is higher than indexation, so office property is not fully protected against inflation. This has happened twice recently, in 2020 and 2022.



But what happens if we do not restrict the analysis to the firm term of the lease?

We then find ourselves back in the analytical framework of **Chronicles 17 to 21**, and the situation is much less straightforward.

The result depends closely on the relative dynamics of rent indexation and market rents, but also on the time horizon used, whether or not it is longer than the total term of the lease (9 years).

The conclusions we reached are presented in **Chronicle 22**. To illustrate the point, let's take the example of a standard 3/6/9 lease taken over 9 and 18 years.

Over a 9-year period (the term of the lease), when the growth rate of the market rent is greater than or equal to the indexation, then the average growth rate of the net operating income is equal to the indexation (blue and mauve zones).

3/6/9 lease over 9 years, if $(nrv\% \geq ri\%)$ then $(noi\% = ri\%)$

Over an 18-year period (the length of two successive leases), if the market rent beats the indexation, then the average growth rate of net operating income exceeds the indexation (mauve zone).

3/6/9 lease over 18 years, if $(nrv\% \geq ri\%)$ then $(noi\% > ri\%)$

Whether over a 9-year or 18-year period, if indexation beats market rent, then the rate of growth in net operating income is lower than indexation (green zone).

3/6/9 lease over 9 or 18 years, if $(nrv\% < ri\%)$ then $(noi\% < ri\%)$

and, logically, the greater the difference between the rate of increase in market rent and indexation, the less protected net operating income is against inflation.

We can therefore see that **property only provides full protection against inflation (or even over-protection) when the market rent growth rate is greater than or equal to indexation. Otherwise, property is not fully protected.**

Example for standard 3/6/9-year leases:

average growth rate of net operating income (noi%)
(over 9 years)

ri%							
5	1,43	2,11	2,81	3,53	4,26	5,00	
4	1,11	1,81	2,53	3,26	4,00	4,00	
3	0,81	1,53	2,26	3,00	3,00	3,00	
2	0,53	1,26	2,00	2,00	2,00	2,00	
1	0,26	1,00	1,00	1,00	1,00	1,00	
0	0,00	0,00	0,00	0,00	0,00	0,00	
	0	1	2	3	4	5	mrν%

average growth rate of net operating income (noi%)
(over 18 years)

ri%						
5	0,79	1,60	2,43	3,27	4,13	5,00
4	0,60	1,43	2,27	3,13	4,00	4,55
3	0,43	1,27	2,13	3,00	3,55	4,14
2	0,27	1,13	2,00	2,55	3,15	3,79
1	0,13	1,00	1,55	2,15	2,79	3,49
0	0,00	0,55	1,15	1,79	2,49	3,24
	0	1	2	3	4	5
mrv%						

In the end, property is not systematically protected against inflation. However, there are several situations in which property does more than protect against inflation:

- when the growth rate of indexation, taken over the firm term of the lease, is higher than inflation (this has been the case for ILAT 70% of the time over the last 20 years)
- when the growth rate of net rental value, over more than 9 years, is higher than the indexation index.

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.