

## CHRONICLE N°31

### Income return: “Measuring” the uncertainty associated with assumptions about long-term inflation trends

Let's start by defining “deflated OAT.” This is the yield on 10-year French government bonds, our risk-free rate, adjusted for long-term inflation.

$$(1) \text{OATd} = rfr - inf \leftrightarrow \text{OATd} = \text{OAT} - inf$$

with:            *OATd* : 10-year OAT deflated: the French risk-free rate adjusted for inflation  
                  *rfr*    : risk-free return  
                  *inf*    : the average long-term inflation rate  
                  *OAT*    : 10-year OAT: the French risk-free rate

In **Chronicle 26**, we examined why it was more appropriate to use the deflated OAT rather than the nominal OAT when analysing net income return.

Furthermore, we will refer to the difference between the net income return and the deflated risk-free rate as the deflated yield gap; see **Chronicles 26**:

$$(2) \text{nir} = \text{OATd} + \text{dyg} \leftrightarrow \text{dyg} = \text{nir} - \text{OATd}$$

with:            *nir*        : net income return  
                  *OATd* : 10-year OAT deflated: the French risk-free rate adjusted for inflation  
                  *dyg*        : deflated yield gap

**Chronicle 30** examined the nature of the change that occurred between the 2000s and the 2010s: was it a break or an evolution? This question led us to assess just how crucial the hypothesis of the long-term inflation rate is and why it must now be explicitly discussed.

Indeed, we have so far implicitly assumed that the surge in prices observed in 2022 and 2023 was due to inflation. Was this a sound assumption? To answer this question, we must first clarify what we mean by inflation, distinguishing it from mere price increases.

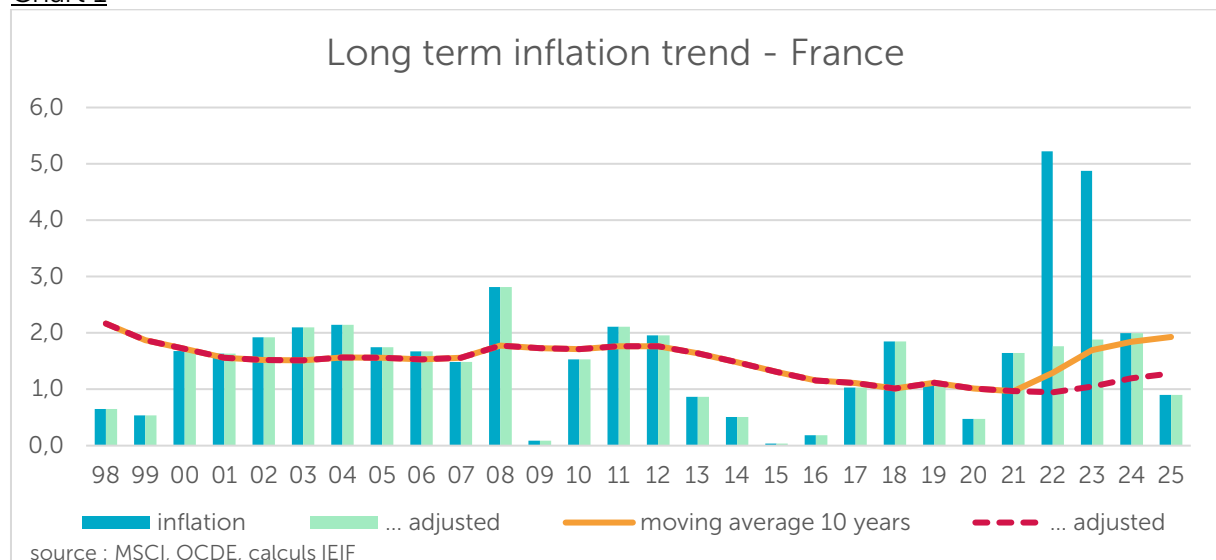
A classic definition holds that **inflation corresponds to a sustained and widespread rise in the price level**, resulting from a persistent macroeconomic imbalance. It must be distinguished from transitory price fluctuations linked to exogenous shocks—such as energy shocks—which correspond to short-term, often sector-specific increases.

From this perspective, the price increases observed in 2022 and 2023 do not appear to fully qualify as inflation in the strict sense. In hindsight, they did not prove to be sustained. It therefore appears necessary to exclude these two years to correctly estimate the long-term inflation rate used in the analysis.

To this end, a linear interpolation was performed between 2021 and 2024. The “adjusted” inflation thus evolves steadily over this period, rising from approximately 1.6% to 2.0% (see Chart 1), rather than peaking at over 4% or even 5%.

Consequently, when this adjusted inflation rate is used to calculate long-term inflation—measured as a 10-year moving average—the result changes significantly: in recent years, the rate shifts from a level close to 2% to a level slightly above 1% (see Chart 1).

**Chart 1**



Moreover, the 0.9% inflation rate recorded in 2025 appears to support this argument. To accurately define long-term inflation, it is necessary to filter out the short-term price surges observed in 2022 and 2023.

This raises the broader question of the inflationary regime in which we are operating. Most of the deflationary forces at work during the 2010s remain present: globalisation, digitalisation, industrial overcapacity, particularly in China. Conversely, new inflationary forces are emerging: the energy transition, relocations (deglobalisation), and rising labour costs in China. Nevertheless, at this stage, the latter seem capable only of partially offsetting the structural factors driving low inflation.

In the context of an analysis of long-term inflation based on the average of the past ten years, the hypothesis of persistently low inflation — in the region of 1%, or even between 1% and 1.5% — appears to be the most plausible.

This conclusion, however, holds only under the assumption of infrequent price shocks, an assumption that is open to debate. Indeed, in an environment where price shocks were to occur every two or three years, regularly disrupting the upward trend in inflation, it would no longer be rational to use only long-term core inflation (measured over the past) as a benchmark for our calculations.

If, beyond strictly economic considerations, we enter a phase of heightened conflict over access to scarce resources (fossil fuels, certain raw materials), it is likely that the associated price shocks will become both more frequent and more intense, making their neutralisation questionable.

Thus, whilst it remains very difficult to predict the exact trajectory of inflation in the coming years, it is, however, possible to establish a range of plausible levels. In the context of our analysis, we therefore use two calculation methods as upper and lower bounds for long-term inflation.

The upper bound fully incorporates inflationary shocks, assuming they will recur with high frequency. Conversely, the lower bound neutralises these shocks by using 'adjusted' inflation, which reflects underlying dynamics.

Consequently, for the analysis of yield gap, the introduction of an adjusted inflation rate – lower than observed inflation – automatically leads to an increase in the adjusted deflated OAT relative to the initial deflated OAT:

$$(3) \text{OATda} = \text{OAT} - (\text{inf} - \text{adj}) = \text{OATd} + \text{adj}$$

with:      *OATda* : 10-year OAT deflated adjusted  
               *OATd*  : 10-year OAT deflated  
               *inf*   : the average long-term inflation rate  
               *adj*    : the adjustment related to price shocks

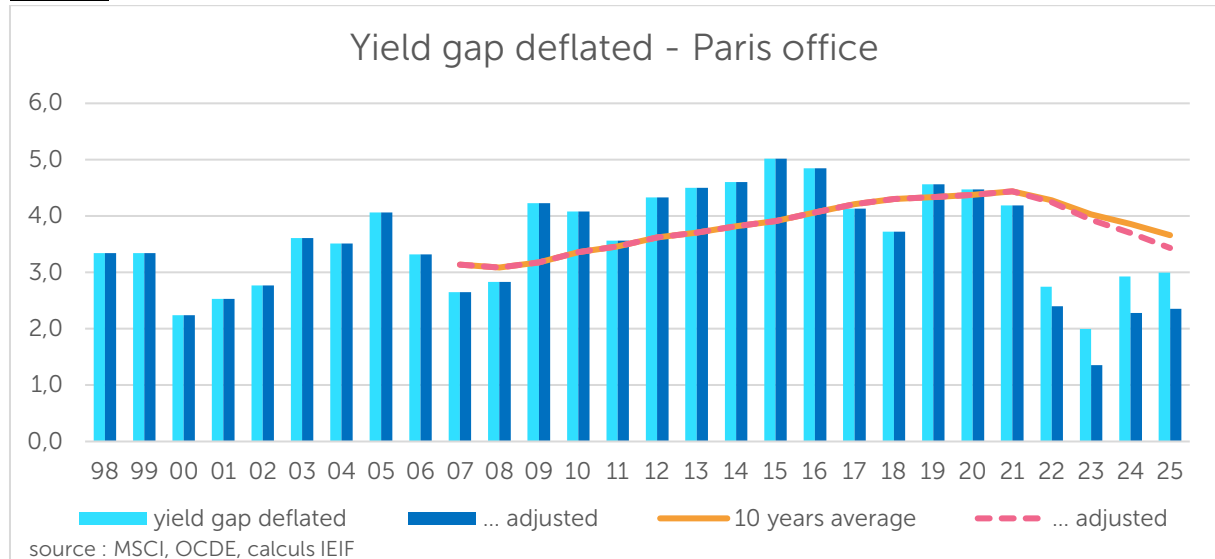
Consequently, this adjustment results in a reduction in the deflated yield gap, adjusted for inflation, compared with the initial deflated yield gap:

$$(4) \text{ygda} = \text{nir} - \text{OATda} = \text{nir} - (\text{OATd} + \text{adj}) = \text{ygd} - \text{adj}$$

with:      *ygda*  : yield gap deflated adjusted  
               *nir*    : net income return  
               *ygd*    : yield gap deflated

This mechanism is illustrated by the gap between the light blue and dark blue bars in Chart 2.

Chart 2



Furthermore, it is logical to observe that the 10-year moving average of the yield gap is falling more rapidly to the point of approaching the levels seen in the late 2000s.

However, the gap remaining in 2025 between this 10-year average and the annual yield gap suggests two possible trajectories: either a rise in the yield gap, or a continued decline in the average towards levels lower than those seen in the late 2000s.

Such a development could then be interpreted as a lower reward for real estate risk, even though the risks associated with the Paris office market have, in principle, not decreased significantly... We will, however, return to this issue in more detail once we have completed the analysis.

The next Chronicle will be devoted to examining the relevance of the 10-year average of past inflation as an indicator of long-term inflation.

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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.