REAL ESTATE THEORY AND MODELLING

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CHRONICLE N°35

Income return: introduction of a monetary factor

Chronicle 34 summarises the results obtained since **Chronicle 26**. These results do not explain the substantial increase in the ten-year average yield gap between office income returns in Paris and the risk-free rate between the 2000s and the 2010s, regardless of the sophistication of the modelling approach used.

For this reason, drawing on some of the elements introduced in **Chronicle 28**, we will now develop an approach that explicitly incorporates a monetary factor to resolve this puzzle.

The yield gap equation then takes the following generic form:

$$(1)\ yg = yg(re) + yg(Mo) = ft(re) + ft(Mo)$$

where:

yg	: yield gap
yg(re)	: real estate impact explanations
yg(Mo)	: monetary impact explanation
ft(re)	: real estate risk factors
ft(Mo)	: monetary risk factor

The explanatory factors relating to the property market are standard. They generally draw on variables representing market liquidity, transparency, demand for office space (GDP or employment), supply of office space (vacancy rate), the equilibrium of the end-user market (rent) and/or financial risk (volatility of total return).

The real challenge lies in selecting an indicator that is simple enough to account for the impact of the money and bond markets on the property yield gap.

The idea is as follows: if, contrary to expectations, the consequences of monetary policies influence the property yield gap, it is undoubtedly because they also produce 'abnormal' effects on the government debt market, via the ten-year government bond yield, which constitutes our risk-free rate.

To be able to identify a possible 'anomaly', we must therefore begin by defining what a 'normal' situation would be.

I shall not go into detail here about the many controversies surrounding the dynamics of interest rates: real interest rates, interest rate targets, the Taylor rule(s), the golden rule, short- and long-term interest rates, the yield curve or the term premium. For an accessible introduction to the subject, I invite you to visit the website The Other Economy, which offers a concise and critical analysis (in French) of these various concepts. For an overview of research on the neutral interest rate, you may consult the Federal Reserve Bank of New York's website.

I would emphasise that, beyond the debates, at the heart of the definition of the interest rate lies the concept of the 'neutral' real interest rate, generally equated with the trend or potential rate of GDP growth.

$$(2)\ nritr = nitr - expinf = potGDP \leftrightarrow nitr = potGDP + expinf$$

with:
nritr : the 'neutral' real interest rate
nitr : the 'neutral' nominal interest rate
expinf : the 'expected' or 'trend' inflation rate
potGDP : the 'potential' or 'trend' GDP growth rate

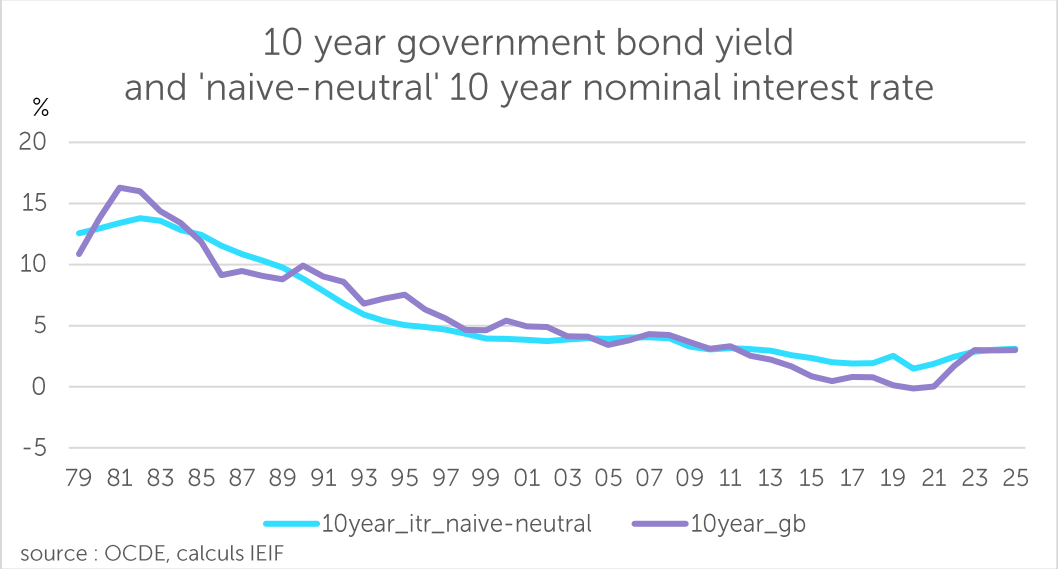
Within our analytical framework (see **Chronicle 34**), it is the yield on 10-year government bonds – our benchmark for the risk-free rate – that serves as the reference interest rate. We shall therefore analyse how this yield has evolved in relation to trend GDP and trend inflation.

As we showed in **Chronicle 32**, we initially adopt the assumption of so-called 'naive' expectations, whereby expectations are based on the average of past observations. As a first approximation, trend (or expected) inflation and trend (or potential) GDP growth are therefore estimated using the ten-year moving average of the inflation rate (10year_inf) and the GDP growth rate (10year_GDP), respectively. We are then able to estimate the 'naive-neutral' nominal interest rate, defined as:

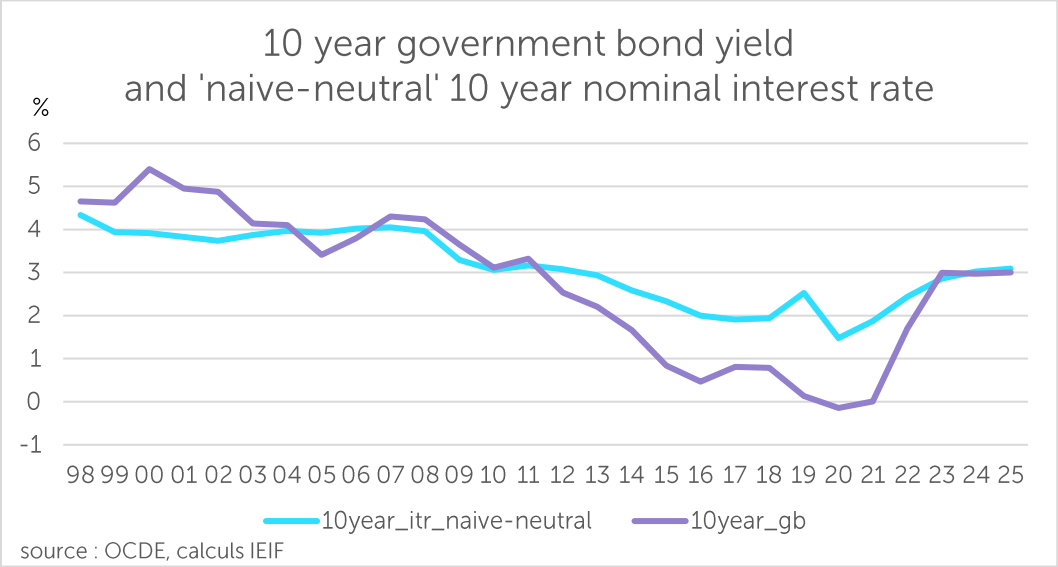
10year_itr_naive-neutral = 10year_inf + 10year_GDP

and to compare it with the actual yield on 10-year government bonds (10year_gb).

Graph 1: over a long period



Graph 2: over the period under review



The first finding is significant, even though it did not seem entirely obvious. Our 'naive neutral' rate, calculated on the basis of GDP growth and inflation (ten-year averages), clearly follows a similar trend to the 10-year government bond yield. Furthermore, there are periods of varying lengths during which the actual rate is consistently below or above the naive-neutral rate.

[*From an econometric perspective, the result remains ambiguous: the co-integration hypothesis is neither clearly rejected nor clearly confirmed. This ambiguity is probably linked, on the one hand, to the smoothing of the time series and, on the other hand, to the fact that interest rates have, on several occasions, been strongly and persistently influenced by active monetary policies, which have pushed them away from their 'neutral' level.*]

We are particularly interested in the period 1998–2025, for which we have MSCI data. We can see that, for several years, the effective rate remained significantly and persistently below the neutral rate. This period corresponds precisely to that of so-called 'unconventional' monetary policies, characterised by negative interest rates and massive bond-buying programmes.

We had already discussed this phenomenon in **Chronicle 28**, as well as in the article published in ***Réflexions Immobilières*** (1st quarter 2024), entitled 'Prendre en compte la prime de risque du taux sans risque… dans la modélisation du rendement locatif des bureaux en Île-de-France', which was recently posted on LinkedIn.

The second observation is just as important. The spread between the neutral rate and the effective rate was both high and persistent throughout the 2010s – precisely the period that poses a problem when modelling the property yield gap.

We must now examine whether the trend in this 'risk-free rate gap' can resolve the puzzle of the evolving gap between income returns and the risk-free rate, as summarised in **Chronicle 34**.

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.