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Investment Institute Macroeconomics

Understanding the fiscal drivers of French sovereign bond yields

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Key points

- We examine the main drivers of French sovereign 10-year bond (OATs) yields, focusing on the impact of fiscal deficits
- We find a 'basic' linear relationship leading to a 17-bp rise in yield for each 1 point of GDP increase in the deficit
- But we also highlight non-linearities in how bond yields respond to deficit, as well as evidence of a particularly detrimental effect of fiscal surprises (when the actual deficit significantly deviates from the initial budget forecasts)
- France has displayed signs of benefiting from 'privileged' market perceptions in periods of fiscal stress, when compared with other Eurozone national bond markets. But such enduring privilege cannot be taken for granted

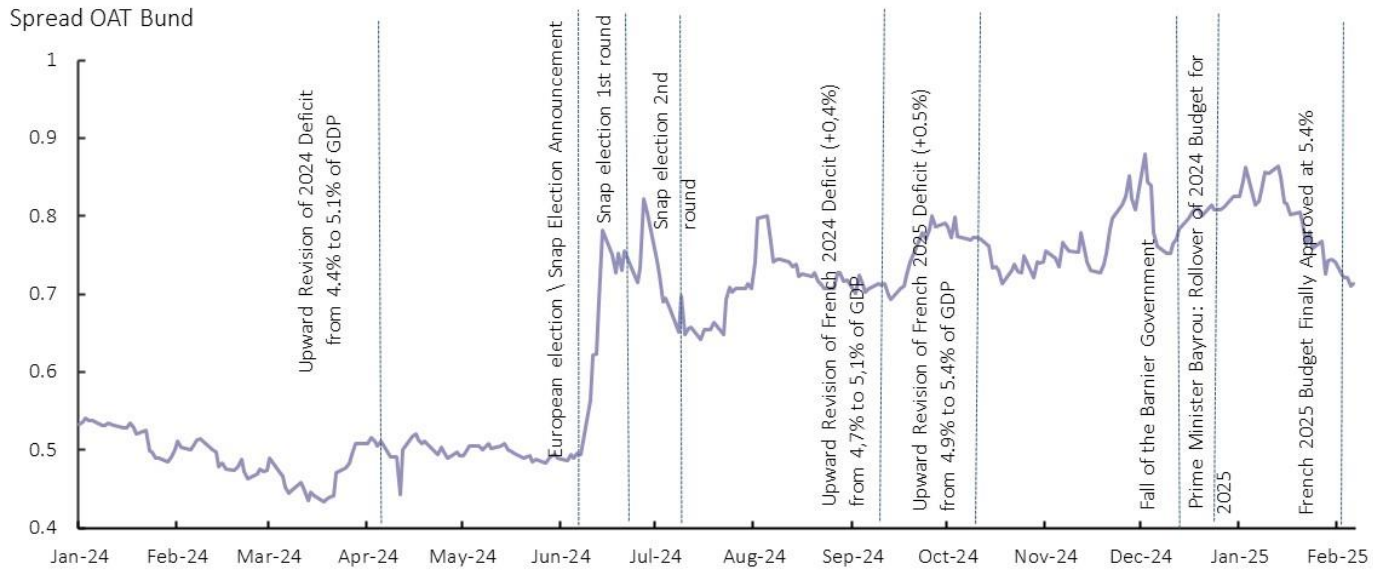
Since the emergence of political uncertainty around July 2024's snap parliamentary elections (Exhibit 1), the risk premium on the French bond market – reflected in the 10y spread relative to Germany – has unsurprisingly increased. Most recently, the government's success in passing a 2025 budget bill has triggered some narrowing of the spread, though it remains above its pre-election level. In this paper, we aim to look beyond the political 'noise' to provide a fundamental, macroeconomically grounded evaluation of the French 10-year OAT fair value against a background of a deteriorating fiscal outlook.

We estimate a model explaining the gyrations of the French government bond (OAT) 10-year bond yield with a selection of macro-financial variables[1] including the French fiscal deficit, but also:

- the Eurozone's core inflation (year-on-year in percentage terms)
- the euro interbank rate (as a percentage)
- the European Central Bank (ECB)'s excess liquidity (as a percentage of GDP)
- the 10-year US rate (in percentage terms)

[1] Further details can be found in Appendix A

Exhibit 1: Spread OAT Bund



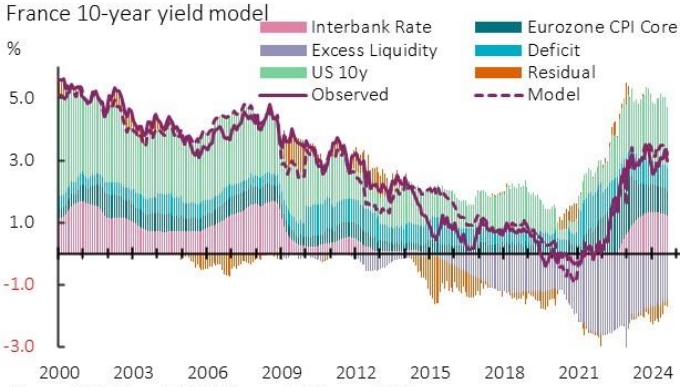
Source: Refinitiv and AXA IM Research, February 2025

For the fiscal deficit (% of GDP), we look at the vintages. This variable specifically represents the deficit announced by the French government in its finance bill[2] for the following year, reflecting the official projections available to investors when making their decisions.

Assessing the influence of fiscal deficits on French bond yields

We begin with the simplest version of our model, by analysing the linear effects of fiscal deficits on the 10-year bond yield. This provides a foundational understanding of how the French bond yield respond to changes in macro fundamentals (Exhibits 2 and 3).

Exhibit 2: Contribution to the OAT 10-year yield



Source: Refinitiv and AXA IM Research, February 2025

Exhibit 3: The 10-Year OAT Yield's Explanatory Variables
From January 2000m01 to 2024m12

Variable	OAT Yield Coefficient
Interbank rate (%)	0.34***
Excess liquidity (% of GDP)	-0.07***
Eurozone core inflation (yoy %)	0.31***
US 10-year yield (%)	0.47***
Fiscal deficit/excess (% of GDP)	**-0.17*** **
Adjusted R^2	0.92
p_values <1%=***; <5%=**; <10%=*	

Source: Refinitiv and AXA IM Research, February 2025

As shown in

Exhibit 3, the French fiscal deficit variable has a coefficient of -0.17, indicating that, all else kept equal, a fiscal deficit of 1% of GDP pushes up the yield on the 10-year OAT by 17 basis points (bps). With a 6% deficit – the likely 2024 outcome – we can account for roughly 100 basis points, or approximately 30% of the current French 10-year bond yield.

Looking at our residuals (Exhibit 2, orange bars), our model proved to be fairly accurate, despite the absence of a variable capturing the current political uncertainty. That suggests that the deterioration in the deficit would have triggered an increase in French yields anyway.

[2] Projet de Loi de Finance

Studies corroborate the deficit/yield relationship

Our results are a bit stronger than those of Reinhart and Sack (2000), who found that a one percentage point (ppt) increase in the budget deficit raises long-term interest rates by 9 to 12 basis points for OECD and G7 economies. However, more recent findings suggest the impact of fiscal deficits on bond yields can vary. For instance, Kumar and Baldacci (2010) estimated that a 1ppt deterioration in the fiscal balance could raise bond yields by approximately 17bps to 20bps in advanced and emerging markets. This is in line with our result for France, especially when accounting for inflation, initial debt levels, and growth.

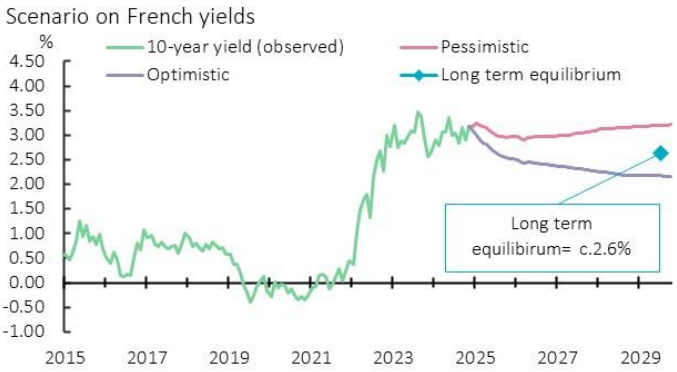
The next few years will be crucial

While this linear model provides a robust framework for assessing how fiscal imbalances influence OAT yields, what really matters is where we go from here. With France navigating a delicate fiscal path and the ECB adjusting its monetary stance, the next few years will be crucial in shaping the cost of sovereign borrowing. Let's assume two scenarios, which depend on the country's fiscal trajectory and the pace at which excess liquidity in the Eurozone[3] is reduced, show in Exhibit 4 below:

- An optimistic scenario (purple line), where France gradually adjusts its deficit to 3% of GDP by 2029, while benefiting from no push from the ECB on excess liquidity after 2026 (stable around 20% of Eurozone GDP). In this scenario, our model suggests the 10-year OAT yield would settle at around 2.17%.

- A pessimistic scenario (pink line) where we maintain the deficit in the 'red zone', only allowing very gradual convergence from the current level to 5% of GDP by 2029. We also assume that the ECB would pursue its quantitative tightening policy, bringing excess liquidity down to around 10% of Eurozone GDP (a level comparable to 2017-2018). Our model estimates that the OAT 10-year yield would remain at its current level of around 3.2%.

Exhibit 4: Different scenarios for the OAT until 2029



Source : Refinitiv and AXA IM Research, February 2025

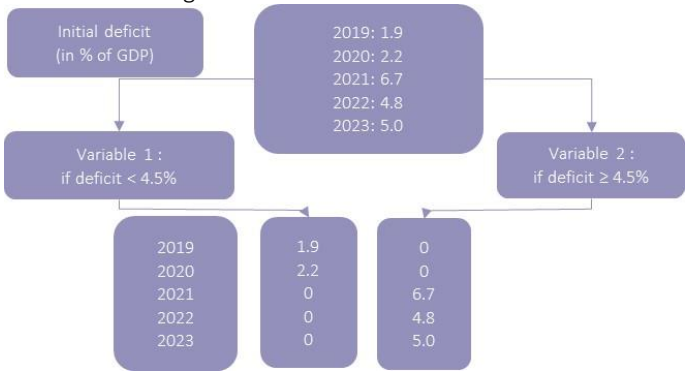
It is worth highlighting that under equilibrium conditions[4], and using the coefficients derived from our model for each variable, we estimate the French 10-year bond yield would settle around 2.60%, very close to the 2.63% average yield observed from 2000 to October 2024.

Examining yield reactions to deficit thresholds

While these scenarios provide a broad view of how fiscal policy and monetary conditions might shape the 10-year OAT yield, by assuming a linear relationship between deficits and borrowing costs, market reactions are rarely so predictable. Investors may not treat a deficit of 3% of GDP the same way as one of 6%. Thus, we introduce a threshold-based approach to assess whether the impact of fiscal deficits on bond yields follows a non-linear pattern – i.e. the impact becomes stronger once a certain level of deficit is reached.

To test this hypothesis, we choose a threshold that will split deficit into two sub-variables, both respecting a condition (below an above the deficit threshold) or it will take the value 0 (Exhibit 5).

Exhibit 5: Building two sub variables from deficit



[3] In both scenarios, other macroeconomic assumptions remain unchanged. The US 10-year yield is assumed to converge to 3.75% by the end of 2029 (what we believe would be a fair long-term average). Similarly, Eurozone core inflation is expected to stabilise at 1.85%, while the ECB neutral rate would settle at 2%. These conditions provide a neutral backdrop against which the impact of fiscal policy and liquidity conditions can be isolated.

[4] An interbank rate of 2%, a CPI inflation rate of 2%, a fiscal deficit of -3% (Maastricht Criteria), a US 10-year yield at 2.75% (long-term average), and excess liquidity at 15% of Eurozone GDP (pre-COVID-19 levels).

We note that the impact is nearly double when the deficit rises above 4.5% of GDP (-0.19 versus -0.10, Exhibit 6)[5]. Concretely, for a deficit above 4.5%, each point increase raises yield by around 20bps against 'only' 10bps if deficit is kept below 4.5%.

Exhibit 6: The 10-year OAT yield's explanatory variables
From 2000m01 to 2024m12

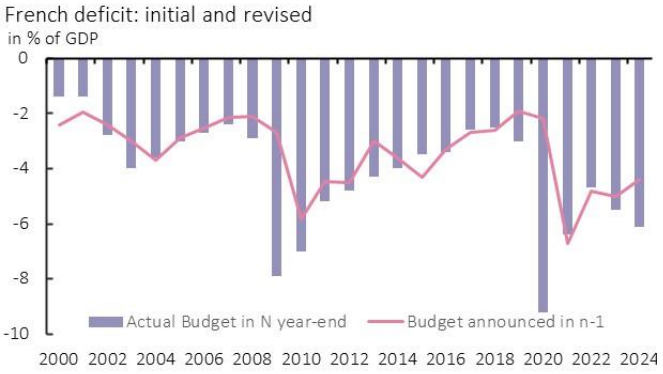
Variable	OAT Yield Coefficient
Interbank rate	0.31 ***
Excess liquidity	-0.07 ***
CPI	0.28 ***
US 10-year	0.56 ***
Variable 1 = Deficit below 4.5% of GDP ***(if deficit < 4.5%=value, otherwise 0)***	-0,10 ***
Variable 2 = Deficit above or equal to 4.5% of GDP ***(if deficit > 4.5%=value, otherwise = 0)***	-0.19 ***
Adjusted R^2	0.93
p_values <1%=***; <5%=**; <10%=*	

Source: Refinitiv and AXA IM Research, February 2025

Managing expectations as crucial as managing the deficit itself

During last summer, the projected French deficit for 2024 became a central focus after being revised twice, increasing by 1.7ppt in the latest estimate. We test whether such deviation matters for the OAT yield. To do so, we construct a variable that captures the difference between the projected fiscal balance in year 'n' – as stated in the finance law of that year (voted on in September of the year before, i.e. n-1) – and the actual fiscal balance recorded at the end of year n (Exhibit 7). We measure the discrepancies between ex-ante fiscal planning and ex-post fiscal realisation and whether it influences bond market reactions.

Exhibit 7: Projected and actual public balances in the stability programmes as a percentage of GDP



Source: Projet de Loi de Finance, European Commission and AXA IM Research, February 2025

We set the threshold for fiscal surprises at -0.3%, which corresponds to the average of all deviations between the initially projected and realised budgets from 2000 to 2024, excluding 2009 and 2020 – years that endured a market crisis, and can be considered unpredictable.

In Exhibit 8, we highlight two key findings:

- An unexpected fiscal deviation (of at least 0.3ppt) impacts OAT yields by around +31bps
- However, it also depends on whether the deficit is below or above 4.5% of GDP
  - 35bps in total if deficit is below 4.5% of GDP
  - 47bps if deficit is above 4.5%

Managing expectations around budget execution is thus as crucial as managing the deficit itself.

Exhibit 8: The 10-year OAT yield's new explanatory variables
From 2000m01 to 2024m12

Variable	OAT Yield Coefficient
Interbank rate	0.28 ***
Excess liquidity	-0.07 ***
CPI	0.26 ***
US 10-year	0.59 ***
Deficit below 4.5% of GDP *(if deficit < 4.5%=value, otherwise 0)*	-0.04 *
Deficit above or equal to 4.5% of GDP *(if deficit > 4.5%=value, otherwise = 0)*	-0.16 ***
Fiscal surprise	**-0.31** ***
Adjusted R^2	0.93
p_values <1%=***; <5%=**; <10%=*	

Source: Refinitiv and AXA IM Research, February 2025

Spain deficits face steeper market penalties than France

When comparing spreads over the 10-year German government bonds (Bunds), French OAT yields have now risen above Spanish government bonds (Bonos), marking a notable shift.

Using a model similar to the one applied to France in Exhibit 3, we observe that Spain's 10-year Bonds yield coefficients exhibit nearly double the sensitivity as the French fiscal deficit (Exhibit 9)[6].

[5] We checked with thresholds at 4% and 5% but sub samples were unbalanced and not significant.

[6] It is also the case for the short-term rate, inflation and US rates but we are seeking to compare the impact of deficits all other things being equal.

Exhibit 9: The 10-year Bonos yield's explanatory variables
From 2000m03 to 2024m12

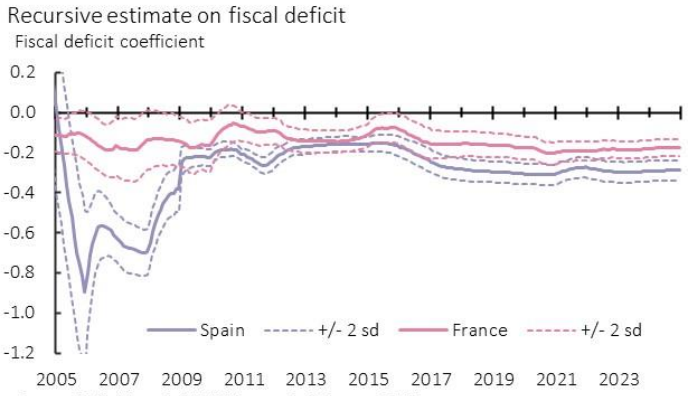
Variable	Bonos Coefficient	OAT Coefficient (from Exhibit 3)
Interbank rate	0.20 ***	0.34
Eurozone core inflation	0.52 ***	0.31
Excess liquidity	-0.09 ***	-0.07
Fiscal deficit/excess	**-0.28 *** **	**-0.17**
US 10-year	0.63 ***	0.45
Adjusted R^2	0.64	0.93

p_values <1%=***; <5%=**; <10%=*

Source: Refinitiv and AXA IM Research, February 2025

Looking at recursive simulations[7] for Spain (Exhibit 10), we observe that the current coefficient (-0.28) incorporates different periods that have affected average market sensitivity without necessarily being linked to budgetary slippages: current account crisis before the Great Financial Crisis (GFC) (up to -10% of GDP in 2007), sovereign and banking crisis in 2012, the political crisis over Catalan independence in 2017.

Exhibit 10: Long-Term Sensitivity of 10-year bond Yield to Fiscal Deficits in Spain and France



Source: Refinitiv and AXA IM Research, February 2025

In contrast, recursive simulations for France (Exhibit 10) show it was smoother over time. Such resilience most likely explains why financial markets have not been so responsive to recent turmoil in France Fiscal issues – although not new – have never been high enough or sufficiently divergent from the euro area average to be a real problem, while France has never experienced political crisis in its recent history.

But as the Spanish experience shows, if France does not send positive signals, "the legacy" of the past could be damaged, causing the market reaction to grow.

Conclusion

Without major surprises, rising deficit increase long-term yields. Using our linear estimates, we have modelled two scenarios showing 10-year OAT could fall to 2.20% in an optimistic scenario (based on fiscal discipline and the stabilisation of the ECB balance sheet). But it could also stabilise at its current level (3.20%) if the deficit remains high at 5% of GDP until 2029 (and the ECB continues to reduce its balance sheet).

We find a threshold – we identified 4.5% for France – at which the market reaction becomes much stronger. The outcome could be even worse if deficit exceeds initial target, as it happened in 2024.

Although the recent impact has been relatively mild – thanks to France's legacy of privilege and its status as the largest bond supplier for investors seeking euro-denominated bonds – we see risks of France damaging "the legacy" of the past if such a situation recurs.

[7] The recursive coefficient technique involves estimating a model's coefficients repeatedly over time by gradually adding new data points. This allows us to track how the estimated coefficients evolve, providing insight into the stability and time-varying behaviour of the relationship between variables, such as fiscal deficits and bond yields. The first data points are not relevant until the relation stabilises.

Literature review

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Appendix A Guidelines for the choice of our variables

The first key variable in our model is, quite classically, the **Eurozone's core inflation**, as higher observed inflation generally leads to higher inflation expectations, which in turn influences the premia demanded by investors to protect their real gain. We specifically chose the Eurozone core inflation rather than the national one as investors tend to read inflation through the prism of the ECB's reaction function.

We also incorporate the **interbank rate**, which reflects the monetary policy stance and the risk-free rate. Yet, since the financial crisis of the late 2000s monetary policy has ceased to be "only about rates", as central banks – including the ECB – have increasingly engaged in quantitative action, often intervening directly on the bond market. We chose to represent this in our model by using the ECB's excess liquidity (in % of EMU GDP). When central banks expand their balance sheets, this tends to suppress risk premia by increasing price-inelastic demand for sovereign bonds.

We include the **10-year US yield** to include the influence of international rates. By adding the US 10-year rate, along with Quantitative Easing (QE), short-term Eurozone rates, and inflation, we believe we capture the key factors influencing investor decisions, reflecting both the internal dynamics of the Eurozone and the dominance of US market movements, given the frequency of transatlantic "contagion effects".

Lastly, given the substantial role that fiscal plays in influencing bond yields as we witnessed in recent months, we look at **the vintages of French fiscal deficit (net borrowing – net lending as % of GDP)**. This variable specifically represents the deficit announced by the French government in the finance bill[1] for the following year, reflecting the official projections available to investors when making their decisions. Without major surprises and everything else equal, a rising deficit leads to higher nominal yields.

20 February 2025

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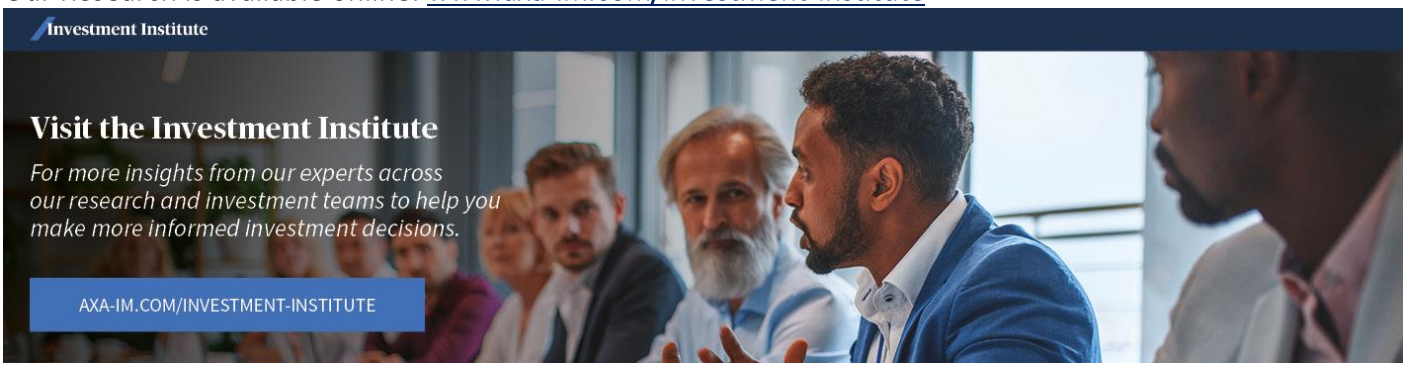

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