Discussing Debt-at-Risk

Maximilian Schröder
European Central Bank[1]

ECB, 23rd March 2026

[1]This presentation should not be reported as representing the views of the European Central Bank (ECB). The views expressed are those of the authors and do not necessarily reflect those of the ECB.

Discussion: Debt-at-Risk

- I always find it particularly valuable when papers **bring a risk and uncertainty perspective into new fields**
  $\rightarrow$ this paper does that for fiscal policy

- Overall:
  - Very timely and policy-relevant
  - Introduces a **useful object**: debt-at-risk
  - Strong empirical/policy focus

- What I will focus on:
  - What is the **core contribution**, in my view?
  - What is actually **driving asymmetry**?
  - How should we **interpret the results**?

Core Contribution (in my view)

- The key contribution is the **object**, not the machinery:
  - Debt sustainability as a **distribution**, not a point forecast
    → Lessons from the broader at-risk literature
  - Focus on **tail risk**
    → A quantitative measure of fiscal vulnerability
- Takeaway:
  - A **structured way to think about tail outcomes**
  - **Debt-at-risk as a policy-relevant metric**

1. Data vs. Framework: What Drives the Results?

- Key question:
  - Is the paper extracting truly **new information**, or **effectively summarizing existing predictors**?

- How to address this:
  - Inputs are standard: debt, growth, spreads, uncertainty, etc.
  - Use same inputs + transformations directly in **flexible models** (RF, logit)
  - Compare performance **with debt-at-risk**

- How this strengthens the paper:
  - ⇒ Clarifies where the information comes from: **method vs. data**
  - ⇒ Helps position the framework within the literature
  - ⇒ Even as transformation, delivers a **powerful summary statistic of fiscal risk**

2. Parallel vs. Joint Estimation

- Key question:
  - Why estimate predictors **separately** and combine ex post, rather than estimating a **joint model**?

- The current setup:
  - Separate models for each predictor
  - Combine via **weighted densities**
  - Motivation: **data availability**

- A more in-depth discussion would add to the paper:
  - ⇒ Standard approaches exist (unbalanced panels, regularization, imputation)
  - ⇒ Joint interactions are **not directly modeled**
  - ⇒ Replaced by a **weighting scheme** that is hard to interpret

3. What Drives Asymmetry?

- Key question:
  - What is actually **driving asymmetry** in the debt distribution?
- The current setup:
  - Baseline asymmetry from the **residual distribution**
  - In the **location-scale model**, predictors stretch/compress the distribution but do **not alter its shape**
  - **Skewed-t smoothing** imposes a parametric form
    → could instead estimate this distribution directly
  - **Density aggregation** reintroduces nonparametric asymmetry
- How this could further strengthen the paper:
  ⇒ Making explicit how **asymmetry arises across model layers**
  ⇒ Clarifying the relative roles of:
    - state dependence
    - distributional rescaling
    - aggregation
  ⇒ In what way do **economic predictors really affect the tails?**

4. Risk vs. Vulnerability

- Key question:
  - What kind of **uncertainty** is debt-at-risk actually capturing?

- Breaking it down:
  - Debt dynamics reflect three components (roughly speaking):
    - Planned fiscal path (**budgets**) → largely fixed
    - **Macro-financial variation** (predictable) → risk
    - **Rare event shocks** (crises, contingencies) → true uncertainty
  - The framework primarily captures **state-dependent variation**

- How this could strengthen the narrative:
  - Large debt increases are often driven by **discrete, hard-to-predict shocks**
    - ⇒ Debt-at-risk reflects **baseline vulnerability**, not full tail realizations
    - ⇒ Strengthened interpretation as a **lower-bound/a measure of systematic tail risk, excluding extreme shocks**

Stepping Back

- Debt-at-risk is a **compelling way to think about fiscal vulnerability**
- The framework could be further strengthened by:
  - clarifying the **incremental information content** of debt-at-risk
  - benchmarking the **layered approach**
  - clarifying where asymmetry/uncertainty is coming from in terms of model structure
  - making the **interpretation of asymmetry and tails** more explicit
- **Overall:** a paper that rewards a careful read!