Debt sustainability and monetary policy: The ebb and flow of ECB asset purchases

Enrique Alberola (Banco de España)

5th Annual Conference of the European Fiscal Board

Brussels, 11 May 2023

Disclaimer: The views in this presentation do not necessarily reflect those of Banco de España or the BIS
Plan of the presentation

- Motivation and contribution
- Model and results
- Whither now?

- Based on

Debt sustainability and monetary policy: the case of ECB asset purchases

Joint work with Gong Cheng (BIS), Andrea Consiglio (University of Palermo), Stavros Zenios (University of Cyprus, Bruegel)

BIS WP 1034, July 2022
Motivation: Central Banks actions can impact on spreads, offsetting debt surges
Motivation: Central Banks actions can impact on spreads, offsetting debt surges

- Monetary and fiscal policy closely interacted to cushion the pandemic’s economic fallout
  - Central Banks deployed unconventional tools on an unparalleled scale
  - Asset purchases contained the spreads and supported fiscal expansion to face the pandemic shock.
  - Alleviate debt sustainability concerns in spite of the debt surge

- Focus on the ECB’s asset purchase programmes impact on debt sustainability
  - Purchase phase (2020-22)
  - Reversal phase (2024-)

- What are the implications of the reversal of purchase on debt sustainability?
  - How do these implication affect fiscal perspectives in the current context
  - And on monetary fiscal policy interactions?

- Now, it is a defining moment (fiscal rule debate, ECB hiking and unwinding)
Motivation: looking into the counterfactual

(A) Sovereign 10-year spreads

(B) Counterfactual for high debt countries
Stochastic DSA  

- Basic DSA with debt stock and flow dynamics
- Stochastic: Uncertainty in *scenario trees*
- Risk management introduced with *Conditional VaR*
- Debt management optimisation: trade-offs between costs and rollover risks

Macro framework  
(≈Hofmann et al., *BIS*, 2021)

- IS and Phillips curves
- An active central bank
- Conventional: Taylor rule
  - *Unconventional*: PEPP
- Affecting the yield curve through risk/term premia

**DSA simulations**

- PEPP vs. no PEPP. Exit strategies. Inflation shock.
- Debt management strategies
**Stochastic DSA**

- Basic debt dynamics equation (stock)
  \[ \Delta \text{Debt-to-GDP} = \text{Primary fiscal balance} + (i-\pi-g) \times \text{Debt-to-GDP} \]

- Basic gross financing needs equation (flow)
  \[ GFN_t = i_{t-1}D_{t-1} + A_t - PB_t \]

- Debt agencies issue debt at different maturities to cover GFNs
  - Financing strategy trades off: rollover risk (favour long-term), financing cost (favour short-term)
Stochastic DSA

- Projection of debt trajectories
  - Given forecasts of basic variables: primary balance, GDP growth, inflation
  - Financing costs are a result of monetary policy and credit risk premia
  - Optimization of debt issuance (maturity structure) for a given preference in the tradeoff
  - Factoring in correlation that provide probability map (fan chart)

- Debt sustainability assessment
  - Non-increasing debt trajectory with a given probability (75%) ten years ahead
Financing cost, credit risk premia and asset purchases

- Monetary policy affects (nominal) financing costs through 2 direct channels
  - Conventional policy: the policy rate $i_t$ shifts the yield curve, term premia assumed fixed
  - Unconventional: asset purchases depress the risk premium $\rho_{t,j}$
    \[ r_t(j) = i_t + \rho_{t,j} \]
  - No signalling or announcement effect
Cumulated PEPP purchases reduce the premium, non-linearly

- Risk premia estimation
  \[ \rho(d_{i,t}, p_{i,t}, j) = \rho_C(d_{i,t}, j) \times (1 - \rho_U(p_{i,t})) \]
  \[ \approx 3bp \times \Delta 1 \, pp \]
  \[ \text{debt/GDP} \]

- Supression function
  - Non linear estimation
  - Decreasing marginal impact
DSA simulations without PEPP: Debt is clearly unsustainable

- Fan charts depict probabilities
- Debt reduction at mid-point, but debt unsustainable at 75%
- N.B: fiscal balances are given (alternative is the fiscal balance adjustment = fiscal effort.)
Asset purchases lowers and instrumental to keep debt manageable

- PEPP depresses spreads...unwinding reverses the effect
- Unwinding assumption: maturing debt from 2024 drops from the balance
- Bridge effect: surfs pandemic until recovery facilitates debt reduction
- ...yet debt unsustainable at the margin in the long run.

**Spreads**

**Debt**
Pace of unwinding determines degree of debt sustainability

(A) Risk premia, EarlyQT
(B) Risk premia, LateQT
(C) Risk premia, QEternity
(D) Debt stock, EarlyQT
(E) Debt stock, LateQT
(F) Debt stock, QEternity

Prepandemic level
Fiscal effort

- A metric to (roughly) assess the fiscal gains of PEPP
  - Which is the primary balance adjustment (10 years) that renders debt sustainable
  - Differences in the fiscal efforts as proxy of the fiscal savings

![Fiscal effort that renders debt sustainable]
Whither now? Higher financing costs

- Unwinding has started slowly. Gradual reduction, similar to our assumption
- Spreads have not shot up in anticipation, but nominal financing costs rising
Whither now? Inflation flattering

- First, recovery and now inflation flatters debt picture
- But windfall from inflation is being largely spent
- Financing costs going up with risks to the upside

**Inflation is main driver of debt reduction last year**

*Advanced economies. Percent of GDP*

- Large revenue surprises... but matched by expenditures
  - Percent of GDP

- First, recovery and now inflation flatters debt picture
- But windfall from inflation is being largely spent
- Financing costs going up with risks to the upside
Whither now? Inflation flattery

- First, recovery and now inflation flatters debt picture
- But windfall from inflation is being largely spent
- Financing costs going up with risks to the upside
Whither now?. Monetary policy and interactions with fiscal policy

- Monetary policy tightening still some way to go (expected peak ≥4%)
- Unwinding is on, pace is uncertain, probably contingent
- Inflation effect to reverse, real rates becoming positive = higher effective financing costs
- Wither inflation? Expectations anchored, but...
- Debt sustainability concerns reawakening?

- Elements at play could reignite market tensions,...
  - ECB Transmission protection instrument (so far a signaling effect, not tested by markets)
  - Fiscal consolidation amid growing fiscal demands and ‘expansionary mood’.
  - Debate on New Fiscal rules

- ...as well as fiscal-monetary entanglement
Supporting slides
References

Calibrated scenarios

Path of state variables and monetary policy rate

Inflation

Primary balance

Output gap

Policy rate

Calibrated scenarios
Path of state variables and monetary policy rate

Inflation

Primary balance

Output gap

Policy rate
Implications of an inflation spike

1. Central bank looks through the shock does not raise rates: debt dynamics improve slightly
2. Central bank reacts by raising rates through the Taylor rule: debt stock will be slightly higher at the end of the horizon

• In either case, the impact of inflation is small