

Debt sustainability analysis for euro area sovereigns

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Main messages

- A comprehensive yet versatile framework; combines insights from different approaches and info sources
 - Conditional nature of exercise could be reflected in thresholds
 - Output in the form of a heat map leaves ample room for individual judgment
 - Operationalising for policy purposes would be a key challenge but a good basis for dialogue
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- Evaluating $\Delta b_t = \frac{i_t - g_t}{1 + g_t} b_{t-1} - p b_t - d d a_t$ on a certain time horizon – the core of all DSA

- Endogeneity of variables
- Uncertainty, including political risk
- Slow-moving trends

1. Need to choose time horizon
2. Need to combine relevant insights from several sources
3. Then operationalise and effectively communicate



1. Time horizon

- Debt dynamic evaluated on a 10-year horizon in the deterministic exercise (5-year horizon for stochastic)
- No correct choice for deterministic analyses – all horizons vulnerable to criticism
 - Some policies have very complicated long-term effects
 - Time-inconsistency an issue even over the medium term
- Framework to be used for policy purposes
 - Incentive compatibility is important
 - Implicit liabilities among 'other indicators'



An amalgam of approaches

2. A comprehensive yet versatile analysis

Overview of the enhanced DSA framework

	Deterministic DSA		Stochastic DSA	Other indicators
	Benchmark scenario	Shock scenarios		
DSA building blocks	Mechanical and rule-based central scenario	Narrative shocks around benchmark: i) No fiscal policy change with ageing costs ii) Historical iii) Macro (bank) stress test iv) Inflation shock v) Structural shock	Probabilistic way to assess uncertainty around benchmark based on VAR model	For short- and medium-term risks i) Liquidity risk ii) Debt structure iii) Contingent liabilities iv) Net financial position of the economy v) Governance and political risk
Evaluation criteria for traffic-light heat map	i) Debt level in t+10 ii) Debt dynamics (year of debt peak) iii) Fiscal fatigue (capacity to maintain primary surpluses; only in benchmark)		i) Probability debt ratio in t+5 > 90% ii) Probability debt ratio not stabilising by t+5 iii) Dispersion debt path in t+5	Thresholds (empirical literature) or Percentile of indicator distribution
Overall aggregation	4-colour heat map (green, yellow, orange, red)			

Source: own representation.



An amalgam of approaches

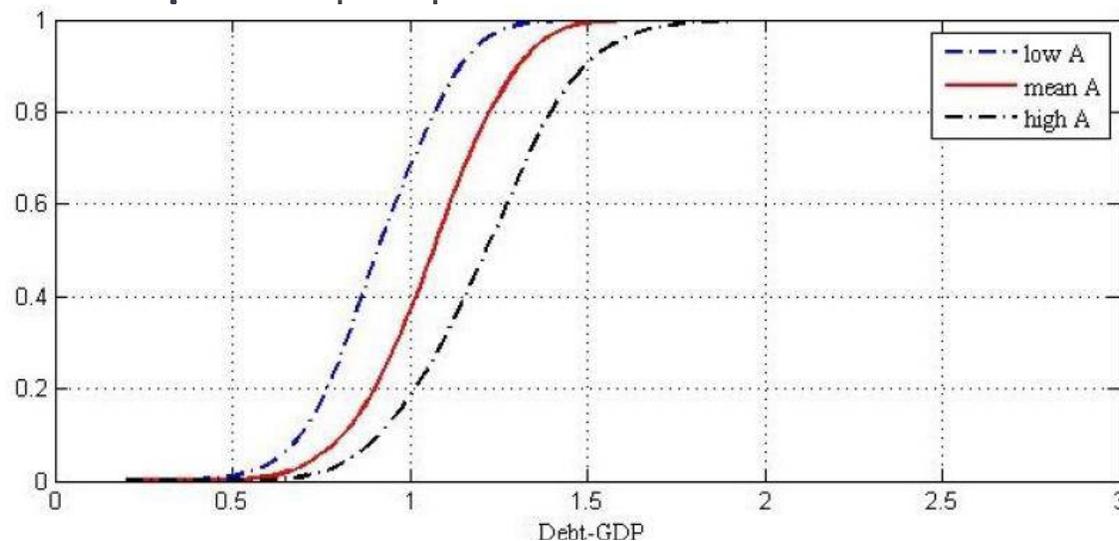
- **Combines**
 - Deterministic reduced-form model-based projections
 - Stochastic simulations
 - Market information (implied interest rate expectations, ratings)
 - Different models or insights from them
 - Input from other comprehensive evaluations
 - Non-economic factors

- **Caution here is warranted**
 - Other models' output may be conditional on a debt trajectory or a particular state of the economy



An (un)conditional evaluation

- The analysis is conditional in nature
 - The benchmark analysis meticulously captures the conditions likely to prevail over the foreseeable horizon
 - Some of the 'other indicators' aim to capture the state of the world
- Criteria for the heat map are unconditional
 - Debt limit simulations (and real life) suggest state-contingency is



Source: Mucka (2015)



3. Heat map

- Interesting to look at over time
- Visualises rather than aggregates information
- Too little aggregation for a non-specialist audience
- A good basis for an (inter-)institutional dialogue
- Leaves room for individual judgment
- Difficult to operationalise in a rule-based framework

