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One-off “Fit-for-55” Climate Scenario Analysis - Key Results

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WHAT IS THE FF55 EXERCISE?

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- The **"Fit-for-55" package** is a set of legislative proposals aimed at **reducing net GHG emissions by at least 55% by 2030**, compared to the 1990 levels.
- On 8 March 2023, the EU Commission invited the ESAs and the ECB to conduct a one-off "Fit-for-55" climate scenario analysis exercise focusing on banks, investment funds, occupational pension funds (IORPs) and insurers.
- **The exercise aims at assessing the resilience of the financial sector** to climate and macro financial shocks. It also focuses on the **capacity of the financial system to support the green transition.**
- In all three scenarios considered, the **"Fit-for-55" package is assumed to be implemented as planned.**
- **Both direct losses** ("first round losses") **and amplification effects** ("second round losses") **are estimated.**
- The results **will not contribute** to the definition of micro- or macro-prudential capital requirements for financial institutions.

HOW WAS THE EXERCISE RUN?

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Joint exercise

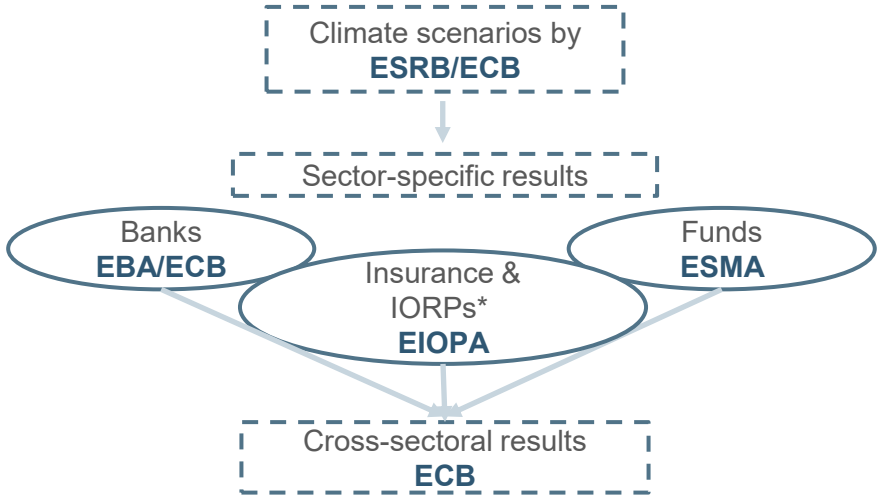
This exercise is the **first EU-wide cross-sectoral climate stress test for the entire financial system**. It goes beyond the assessment of individual sectoral vulnerabilities (**first-round losses**) to consider the broader EU financial system, including the modelling of contagion and amplification effects across sectors (**second-round losses**).

Main features of the exercise

A novel project set-up:

- Cross-sectoral and system-wide exercise
- Top-down modelling
- 8-year horizon (from 2023 to 2030)
- Focus on transition risk
- **Three scenarios in line with the Fit-for-55 package**, which were developed by the European Systemic Risk Board

Structure of the exercise



*IORPs: Institutions for Occupational Retirement Provision

WHICH ARE THE SCENARIOS CONSIDERED?

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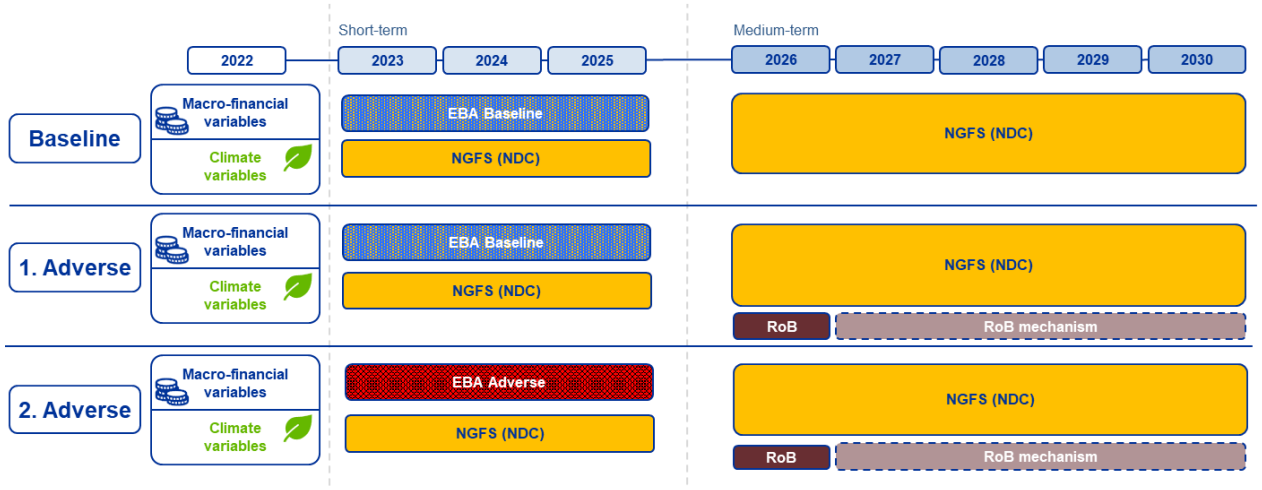
The exercise considers **three scenarios** focusing on **transition risk**. All three scenarios assume that the "Fit-for-55" package will be fully implemented and that its objectives will be achieved by 2030. To this end, significant energy-related investments are needed.

- The **baseline scenario (B)** reflects a green transition in which the "Fit-for-55" package is implemented as planned and within the economic environment as forecasted at the launch of the exercise. It includes upfront costs that are needed to avert the impact of climate change in the future.
- A **first adverse scenario (A1)** focuses on climate-change related risks that materialize in the near term, in the form of asset price corrections triggered by a sudden reassessment of transition risks - "Run-on-brown"(RoB).
- A **second adverse scenario (A2)** combines climate-change related risks with other macroeconomic stress factors, namely the ones included in the EBA's EU-wide stress test 2023.



Note. More details are available in ESRB, "Climate-related scenarios for the one-off Fit- for-55 scenario analysis exercise", November 2024.

DATA AND ASSET IN SCOPE

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EBA and ECB Banking Supervision collected granular data on banks' exposures to run estimates for the banking sector. EIOPA and ESMA relied on data already available for their respective sectors.

Banks

110 banks in the data collection, representing 83% of total assets of the EU banking system

- Credit risk exposures: EUR 4.67 tn, ~35% of total
- Market risk exposures: EUR 1.2 tn, ~26% of total

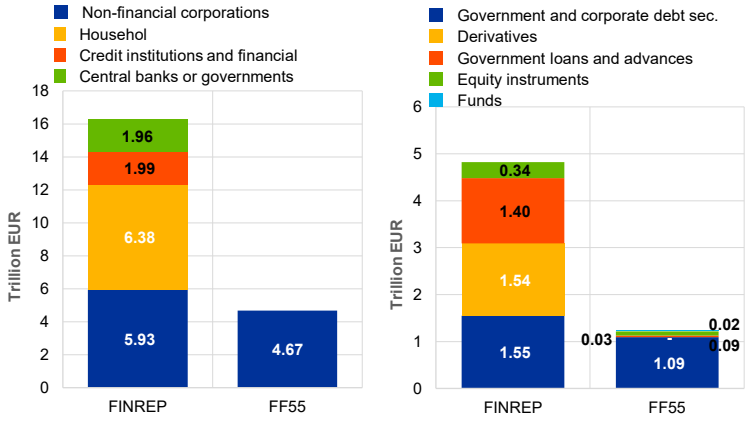
Insurers and IORPs

- Insurers' investments: EUR 6.8 tn, ~81% of total
- IORPs' investments: EUR 1.8 tn, ~76% of total

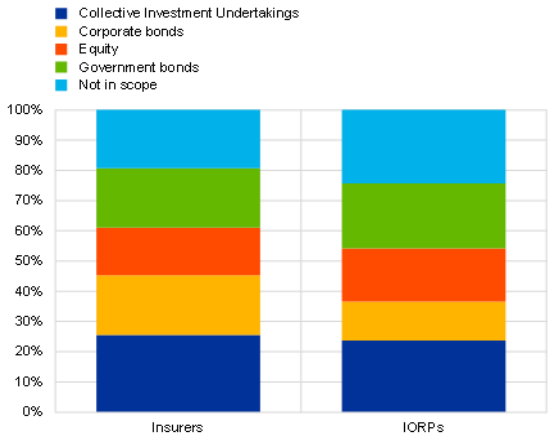
Investment funds

- 22.000 EU-domiciled investment funds, representing ~85% of the sector by asset values
- Assets in scope (bond and equity holdings): EUR 10 tn, ~68% of such holdings by EU funds

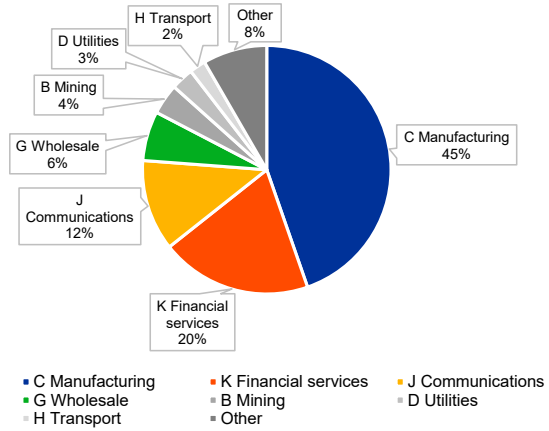
(EUR trillion; end-2022)



(Percentages; end-2022)



(Percentages; end-2022)



RESULTS
FIRST-ROUND LOSSES FOR INSURERS AND IORPS

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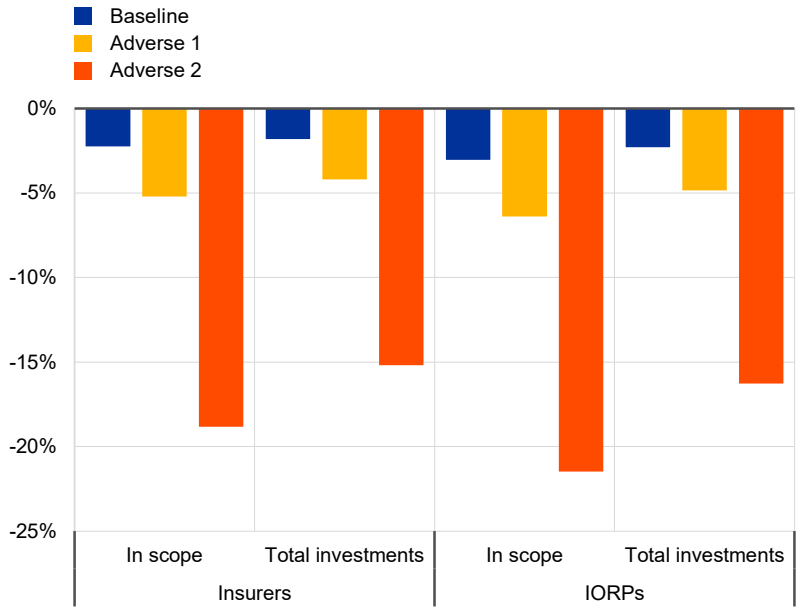
- Losses are contained under the **baseline and first adverse scenario**, ranging from **2.2% to 5.2%** of investments in scope for insurers and **3.3% and 6.4%** of investments in scope for IORPs. Under the **second adverse scenario**, insurers and IORPs experience a decrease in the value of their investments in scope of **18.8% and 21.5%,** respectively.

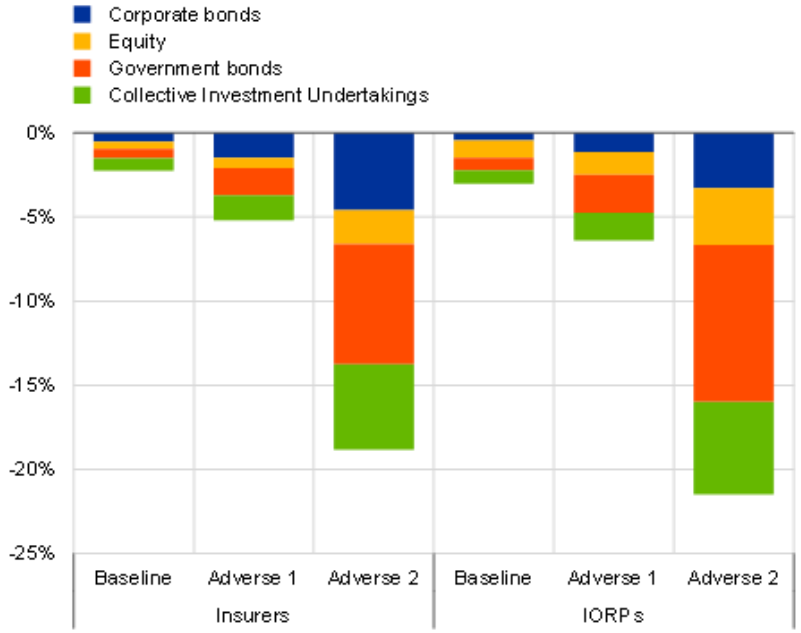
First-round losses under the three scenarios

(as % of investments in scope/ % of total investments)



First-round losses by asset category

(as % of investments in scope)



The **sharp increase in swap rates and credit spreads in the second adverse scenario** leads to significant decreases in market value, especially on corporate and sovereign bonds. **Sovereign bonds alone account for around 40% of the impact.**

SUMMARY OF THE RESULTS

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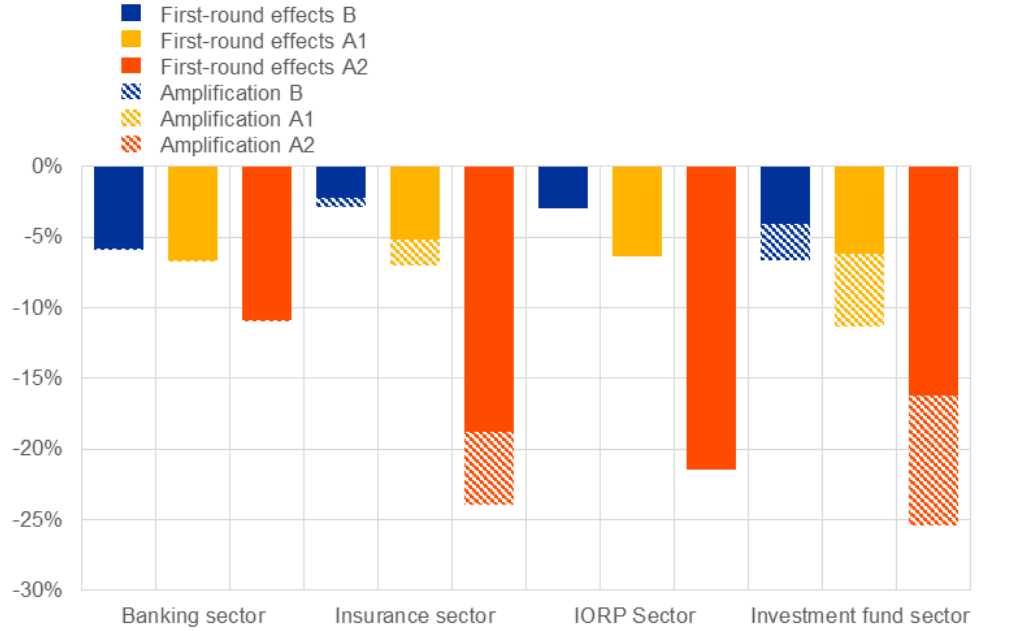
- **Under the baseline scenario, aggregate losses over the 8-year horizon are relatively contained.**
- First-round losses stemming from a **"Run-on-Brown"** have **a limited impact on the financial system**, indicating that perceived changes in climate risks are not a source of financial stability concerns per se.
- The **combined effects** of adverse macro-financial developments and transition risk substantially **increase financial institutions' losses and could disrupt the evolving transition.**
- **Amplification can lead to further losses** if market conditions worsen liquidity stress, **but the shocks do not threaten the overall safety of the financial system**;

Total losses, and breakdown between first and second round losses, relative to exposures in scope by sector



Source: EBA, EIOPA, ESMA and ECB calculations. B refers to the baseline scenario, A1 to the first adverse ("Run-on-Brown") scenario, and A2 to the second adverse scenario. Notes: "Exposures in scope" refers to the assets covered for each sector in this exercise: 35% of total credit risk exposures and 26% of total market risk exposures for banks, 81% of total investments for insurers, 76% of total investments for IORPs, and 77% of total assets for investment funds. IORPs are not included in the model employed to assess cross-sectoral amplification.

SECOND-ROUND RESULTS: AMPLIFICATION EFFECTS

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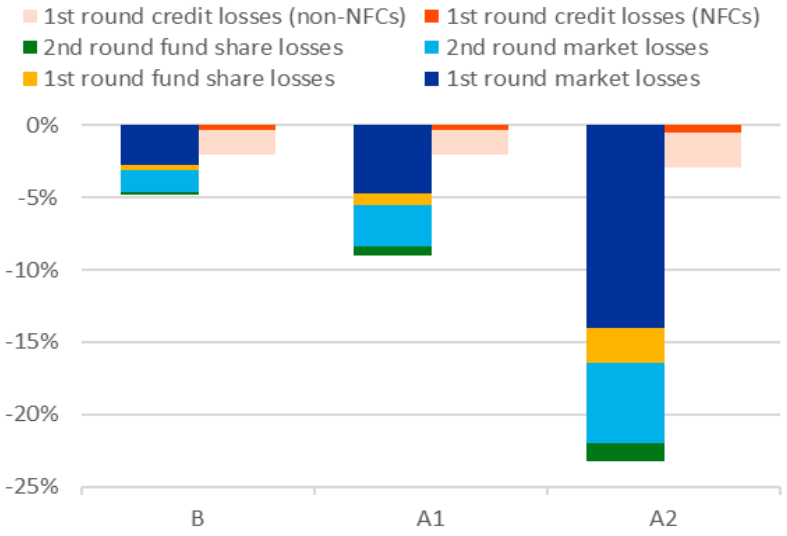
- **Amplification effects can lead to up to 50% greater losses when a recession, together with a "run on brown", worsens liquidity conditions.**
- **For banks, second-round market losses** are **marginal, as they are partially offset by hedging strategies.**
- **Investment funds face greater liquidity stress caused by redemptions**, forcing them into fire sales of portfolio assets. In the simulation, the market impact of this process drives subsequent losses elsewhere in the financial sector.
- Insurers have a higher exposure to investment funds, so that a **loss of value of their fund shares is the primary driver of second round losses.**

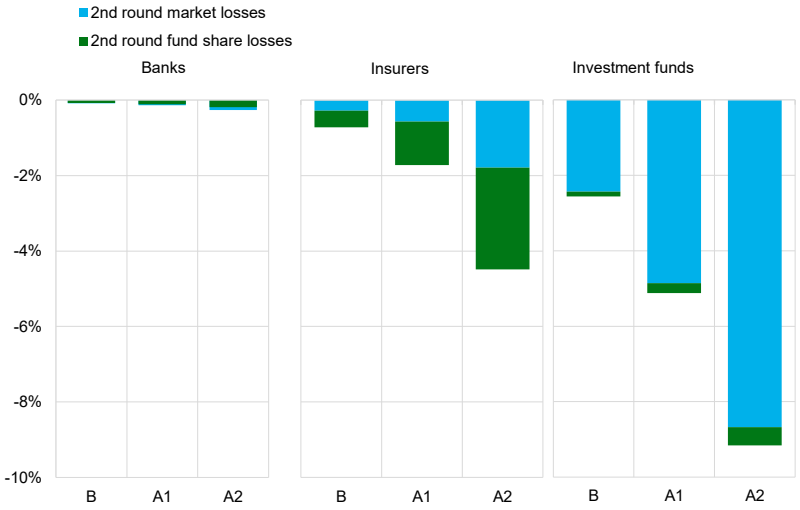
First- and second-round losses at the system-level

(as a share of 2022 exposures; percentages)



Second-round losses by sector

(as a share of 2022 exposures; percentages)



LIMITATIONS AND CAVEATS

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- The **outcomes are subject to inherent uncertainty** given the novelty of the climate stress testing approaches, **especially in the cross sectoral model.**
- **Heterogeneity in the data coverage** and data quality add to this uncertainty.
- **Banks income** and **insurance/IORP liabilities are not modelled**. This leads **to conservative loss estimates**, especially in high-interest rate scenarios where relatively higher income and reduced future obligations could offset losses.
- **Losses are expressed as a percentage only of those assets modelled as subject to price shocks**. For funds, the losses would appear smaller if cash reserves were included in the calculation, for example.
- **Hedges are considered only for banks** due to their relevance for the banking sector.
- Market risk exposures are assessed with **an instantaneous shock and static balance sheet, limiting realism** over an 8-year horizon.

CONCLUSIONS

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- **The Fit-for-55 exercise has provided** valuable insights into key vulnerabilities to climate-related risks, their concentration and potential contagion effects.
- Under the scenarios examined, **transition risks alone are unlikely to threaten financial stability**. However, **when transition risks are combined with macroeconomic shocks, they can increase losses for financial institutions**, thereby hampering the green transition.
- **Ongoing monitoring of how financial institutions in the EU are financing the green transition is essential**. This should be also complemented with broader assessments of financial risks across the system.
- **Coordinated actions by policymakers are crucial** to mobilize capital for the green transition, while supervisors should stay vigilant to risks that could hinder the EU's climate goals.

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Thank you!

HOW DO THE SCENARIOS LOOK LIKE?

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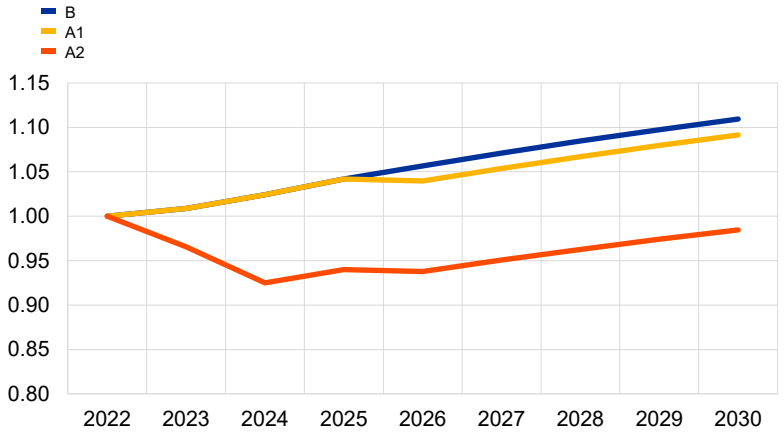
- The scenarios describe the **yearly evolution of macroeconomic variables** (i.e. GDP, inflation, real estate prices) over the 8-year horizon and the one-off **shocks to the financial variables** (i.e. equity prices, bond spreads, SWAP rates, residential mortgage-backed securities spreads). They differ across countries and economic sectors.
- The variables reflect the structural changes to the economy expected during the green transition, including **EUR 3.7 tn of investments** to **transform polluting businesses** and **reduce the consumption of fossil fuels** in favour of renewables and electricity.

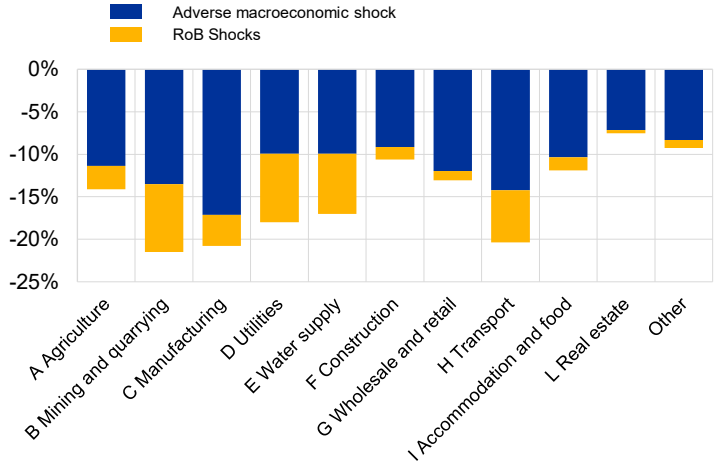
Evolution of EU's Gross Domestic Product under the three scenarios

(index = 2022)



Aggregate change in Gross Value Added by economic sector and source of impact under A2 scenario

(2023-2030, percentages)



Shocks to corporate bond spreads by economic sector under the three scenarios (credit quality step 1-2)

(2023-2030, difference to starting point in basis points)