Government debt dynamics in the EU after the pandemic: the role of the snowball effect

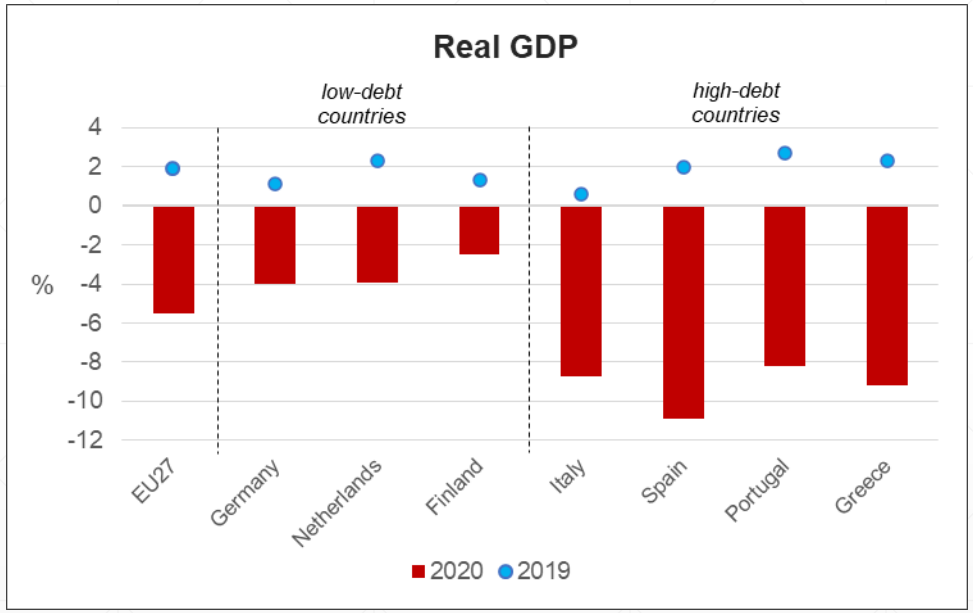
Mislav Brkić, Croatian National Bank

12 November 2026

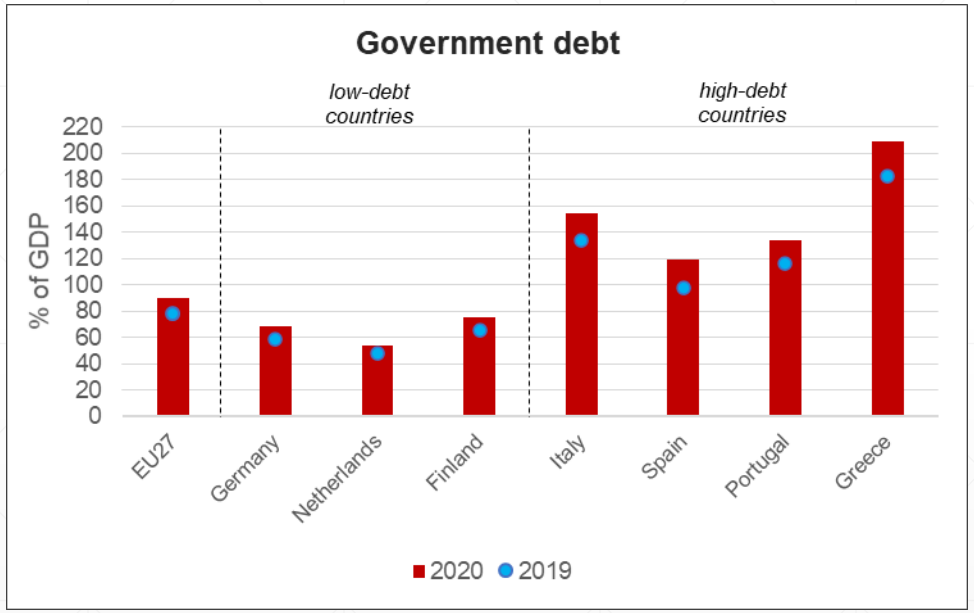
Outline

- Fiscal responses to the COVID-19 pandemic and the GFC
- Fiscal developments in the period 2021-2023
- The role of the snowball effect
- The role of primary fiscal balances

Highly indebted countries experienced the deepest recession and the strongest increase in debt ratios in 2020

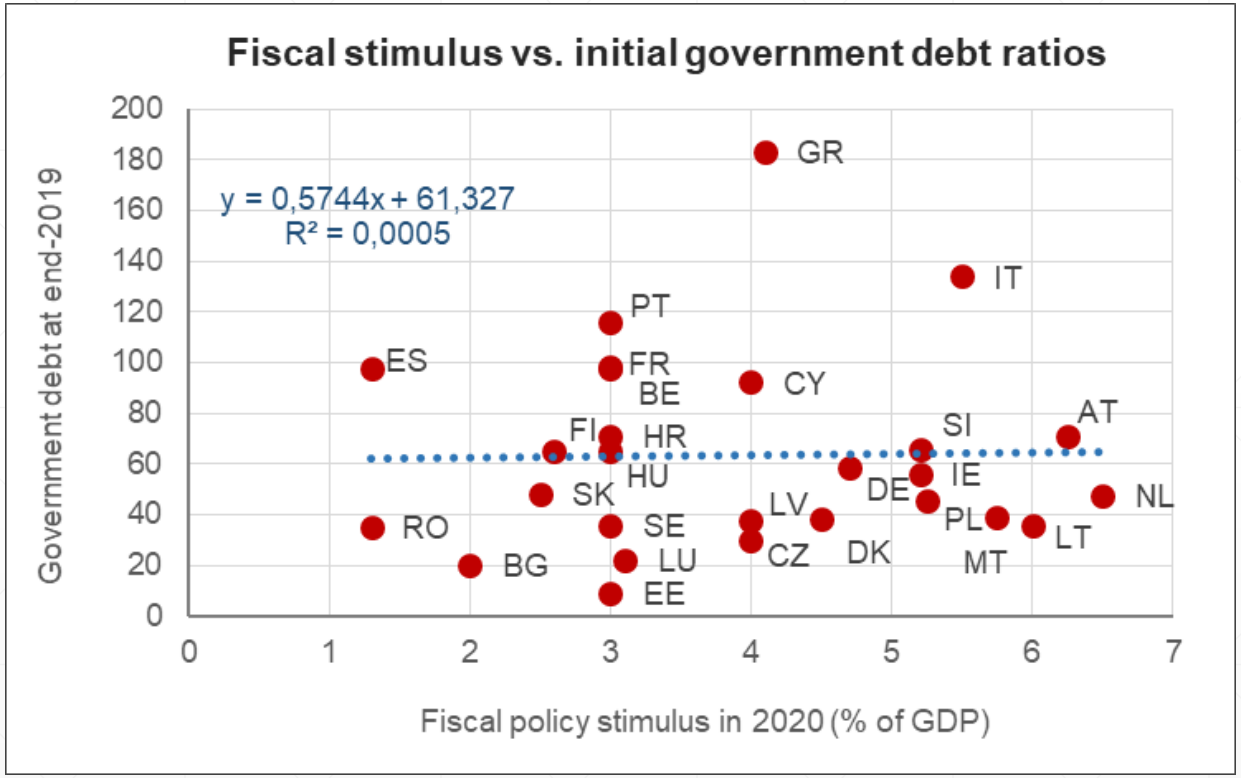


Source: Eurostat



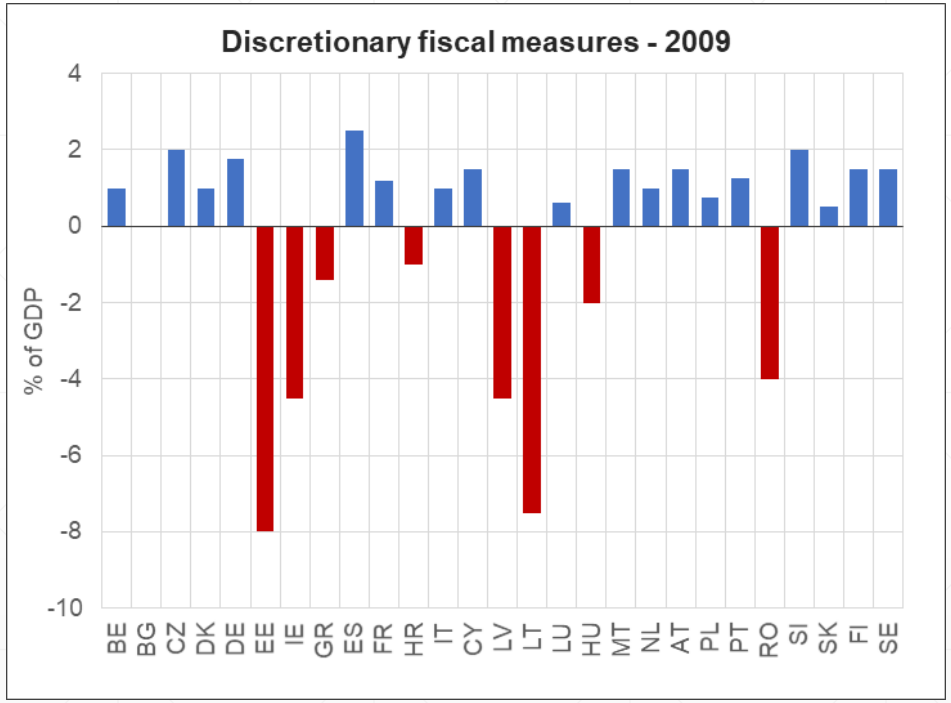
Source: Eurostat

The size of fiscal support measures in 2020 was not constrained by the available fiscal space

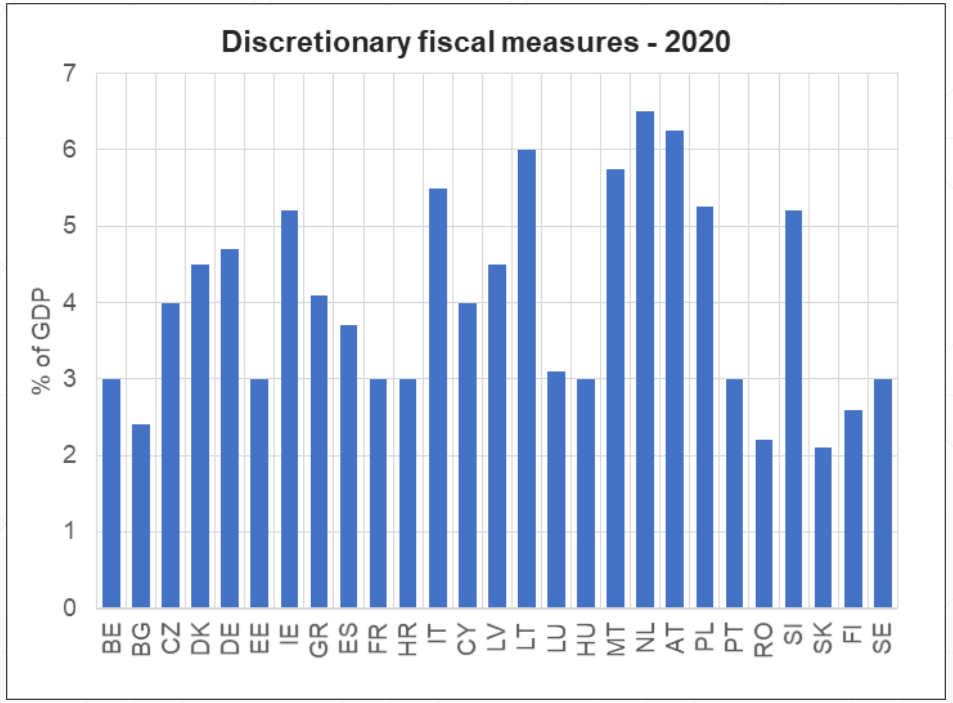


Sources: Eurostat, European Commission (2020)

In contrast, during the GFC, only fiscally sound EU member states could afford fiscal support measures



Sources: European Commission (2009), IMF country reports (2009)



Sources: European Commission (2020)

What explains the large difference in the scale of fiscal responses to the pandemic and the GFC?

nature of the crisis

- COVID-19 pandemic was a purely exogenous shock, it was not related to country-specific imbalances
- there was a strong case for government intervention and an EU-wide response

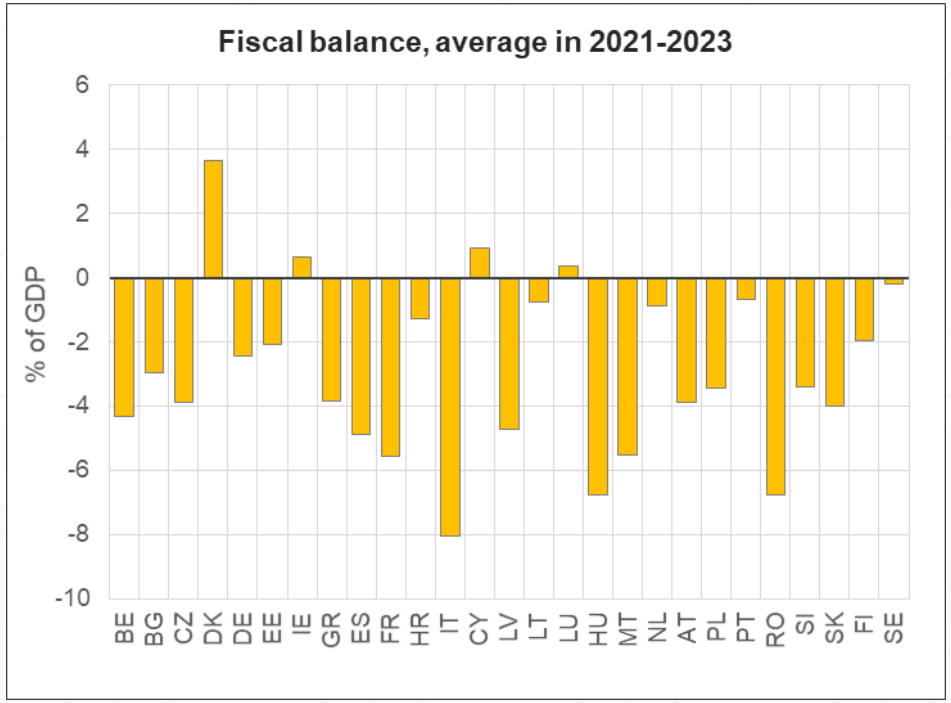
ECB's response

- a massive government bond purchase programme (PEPP) worth 1.8 trillion EUR
- it contained the risk of fragmentation and provided breathing space to euro area governments

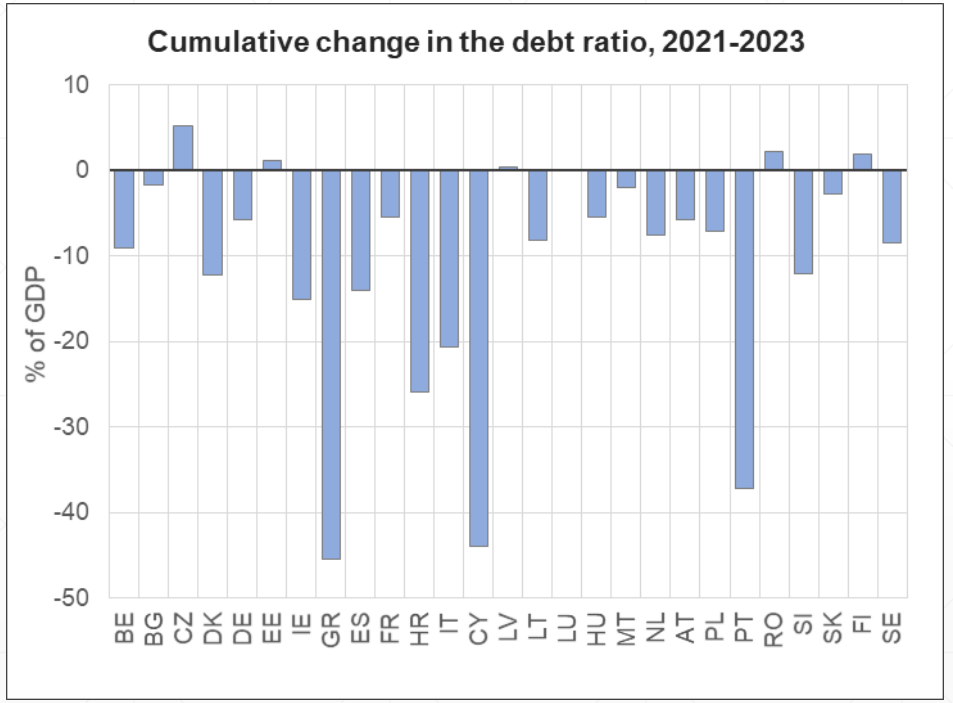
EU's joint fiscal response

- Next Generation EU (NGEU) worth 800 billion EUR proposed in mid-2020
- it improved the growth outlook for EU member states and mitigated concerns about their high indebtedness

In 2021-2023, most EU member states ran fiscal deficits, but they still managed to significantly reduce their debt ratios

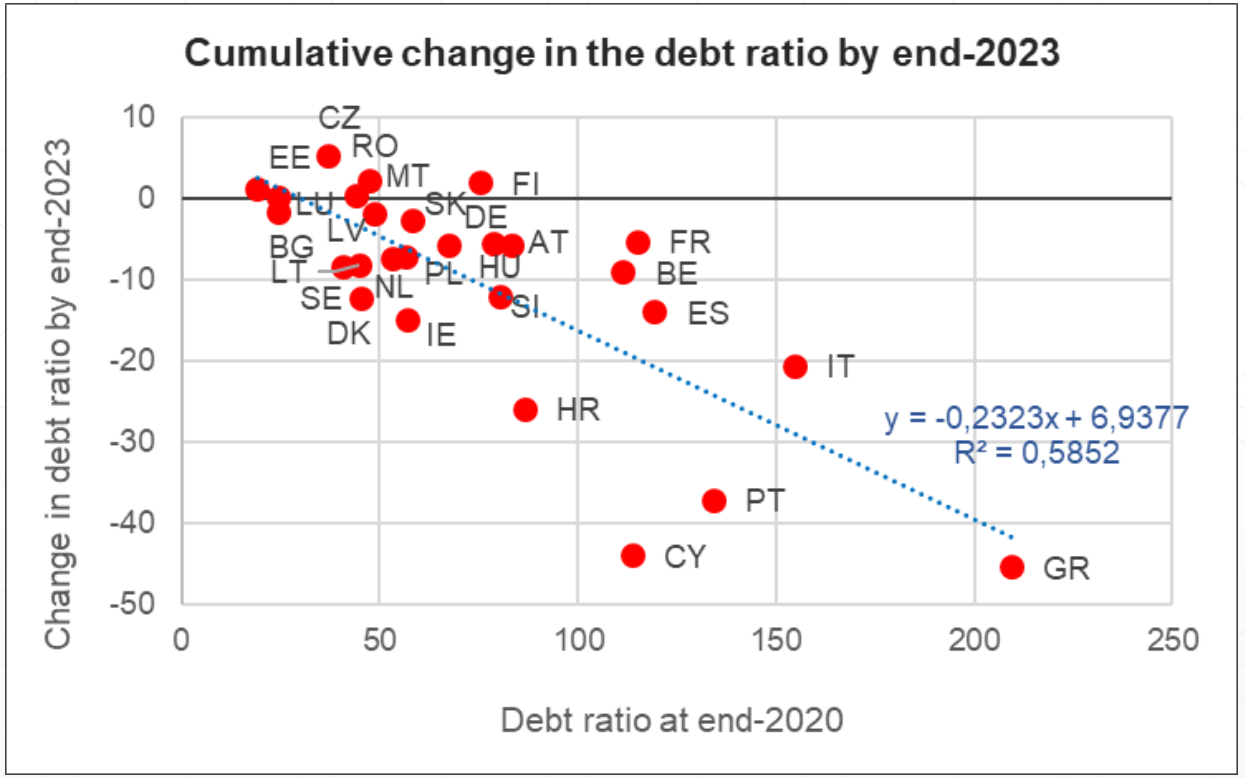


Source: Eurostat



Sources: Eurostat, author's calculations

The most indebted countries experienced the sharpest reduction in their debt ratios



Sources: Eurostat, author's calculations

Decomposition of annual changes in the debt ratio

The debt accumulation equation:

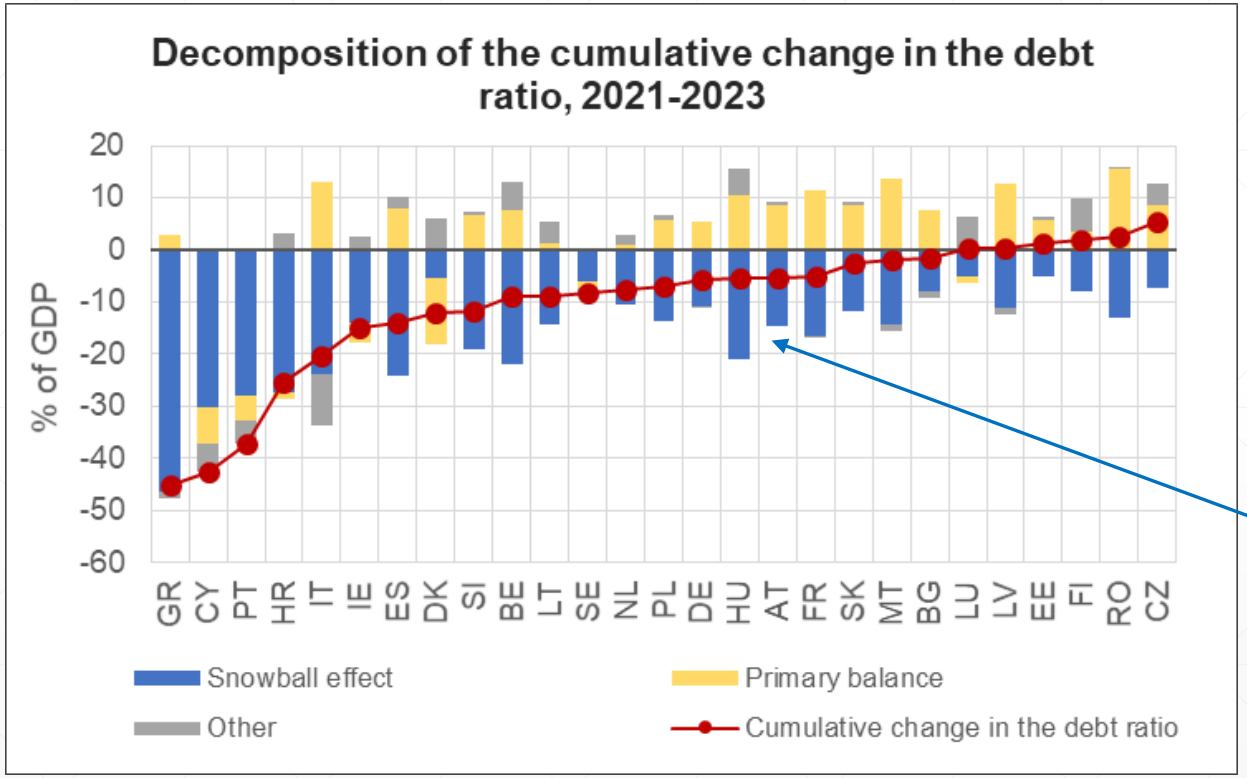
$$d_t = d_{t-1} * \left[\frac{(1+it)}{(1+gt)(1+\pi t)}\right] - pb_t$$

the snowball effect

primary fiscal balance

d_t – debt ratio at the end of year t
d_{t-1} – debt ratio at the end of year t-1
i_t – effective interest rate on debt
g_t – real GDP growth rate
π_t – inflation rate (GDP deflator)

The reduction in debt ratios was driven almost exclusively by a favourable snowball effect

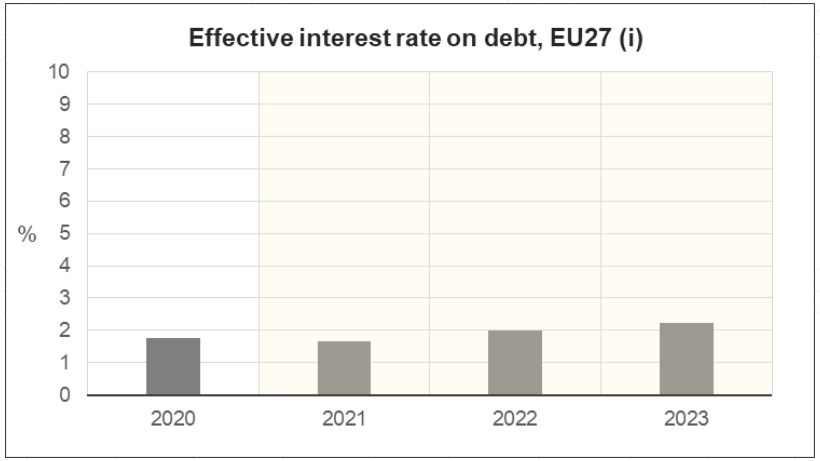


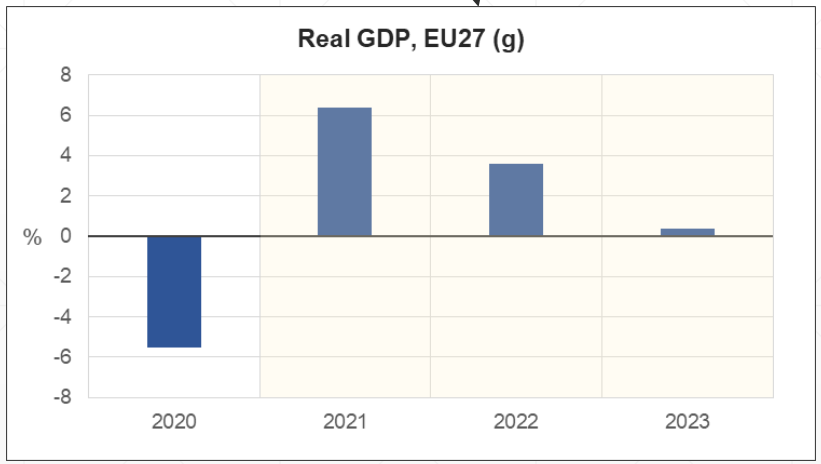
The snowball effect

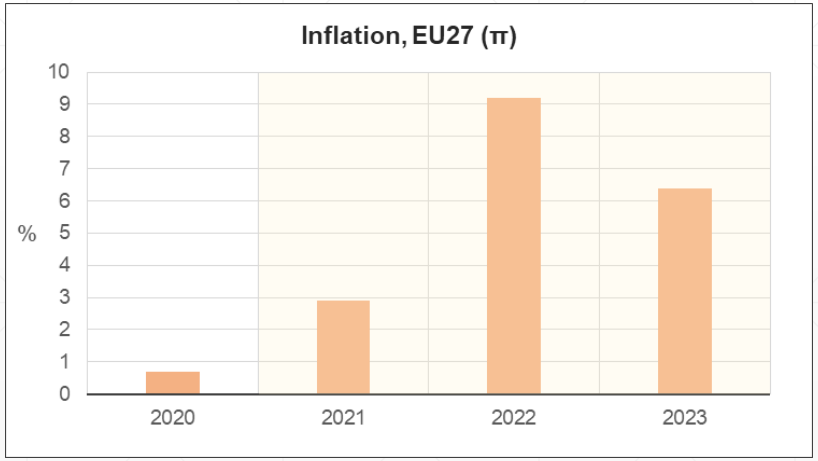
Sources: Eurostat, author's calculations

Why was the snowball effect so strong?

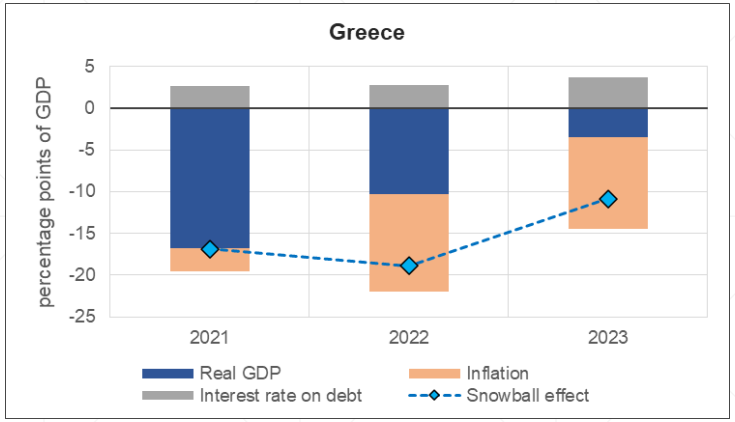
$$d_t = d_{t-1} * \left[\frac{(1+it)}{(1+gt)(1+\pi t)}\right] - pb_t$$

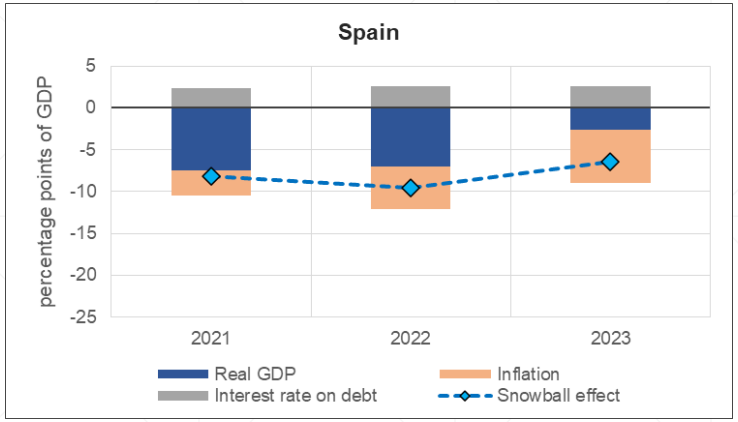


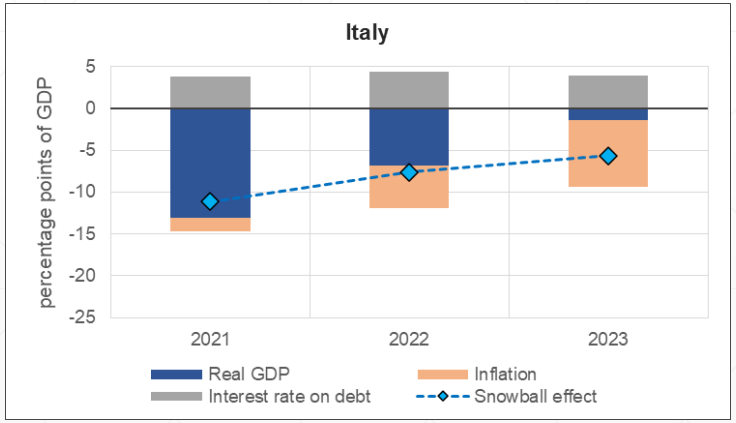


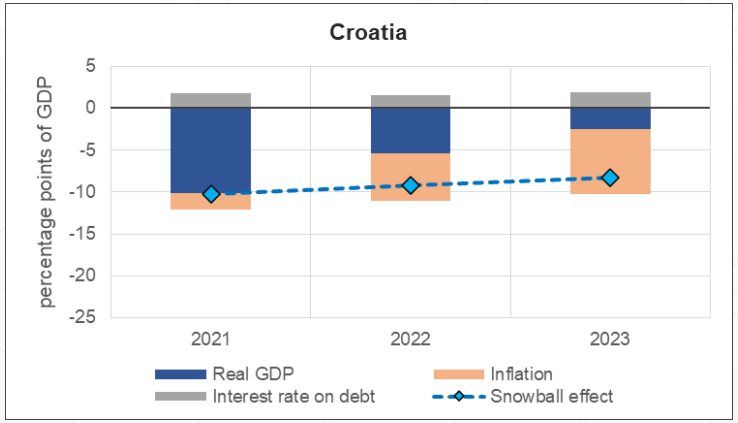


The composition of the snowball effect - examples



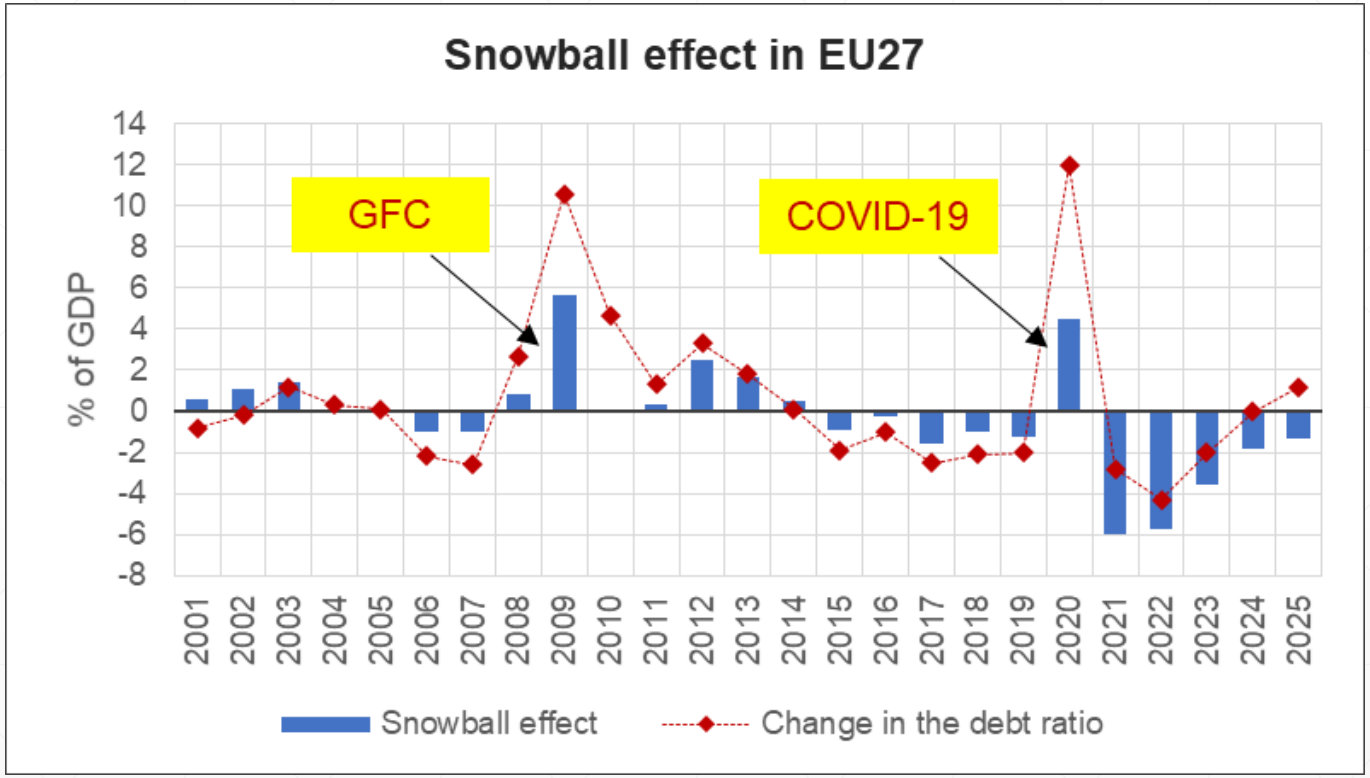






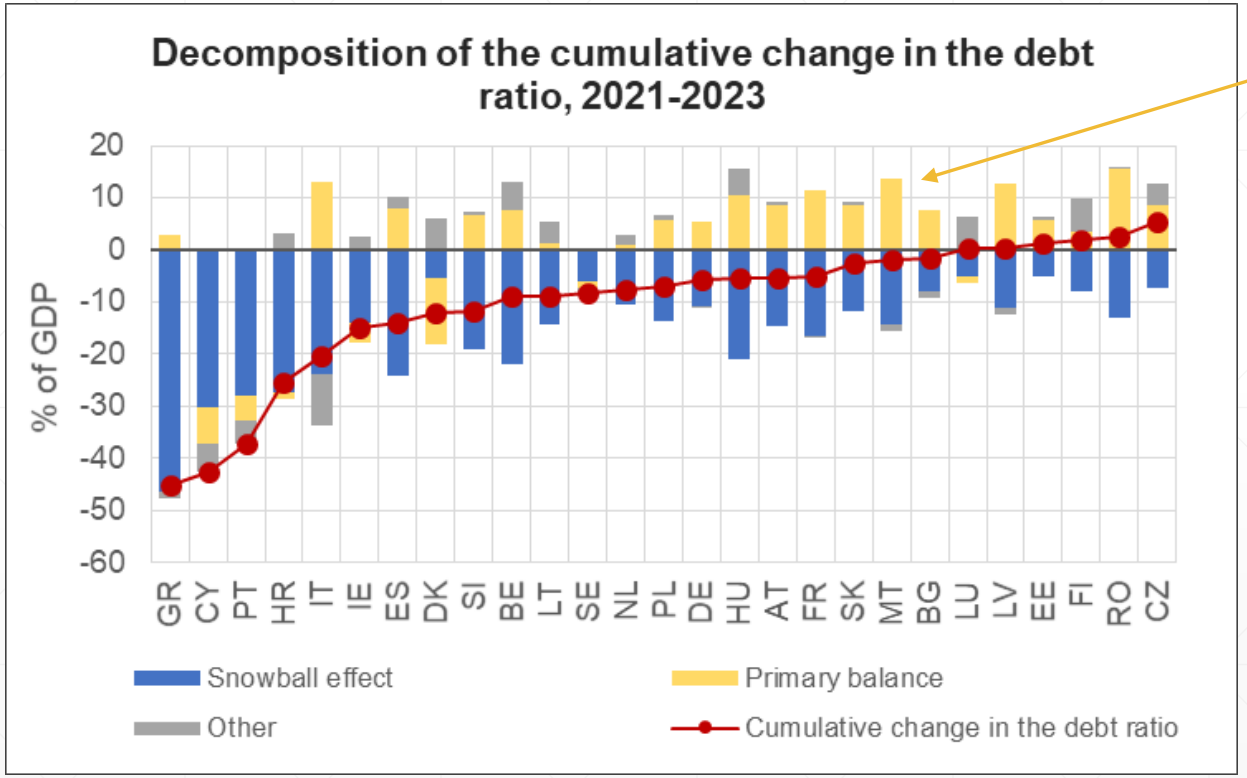
Sources: Eurostat, author's calculations

In the past, the snowball effect had a less favourable impact on government debt dynamics



Sources: Eurostat, author's calculations

Primary fiscal balances were mostly negative in 2021-2023, putting upward pressure on debt ratios



Primary fiscal balance

Sources: Eurostat, author's calculations

Key messages

- Fiscal response to the pandemic crisis in the EU was larger and more synchronized than the response to the global financial crisis of 2008-2009
- In the early post-pandemic period, EU member states' government debt ratios declined markedly despite the persistence of fiscal deficits
- The reduction in debt ratios was the result of a favourable snowball effect stemming from a large negative interest rate-growth differential
- High inflation contributed to the snowball effect to the same extent as real GDP growth
- Although primary fiscal balances were negative, fiscal policy did help reduce debt ratios, as expansionary fiscal policy supported nominal growth

Thank you for your attention!