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Rethinking Debt Sustainability?

RUBRICHE

A post-Covid-scenario analysis of Italy's public debt ratio dynamics

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Flavio Padrini[***]

Abstract

This paper illustrates possible scenarios for Italy's post-Covid public debt as a ratio of GDP using the main tool by Italy's Parliamentary Budget Office (PBO) to assess public debt dynamics in the short-to-medium term, i.e. the deterministic DSA framework. The results of the illustrative scenarios show that in the 2022-25 period, using the PBO macroeconomic projections employed to endorse the government's forecast in the 2022 Stability Programme, the debt ratio should continue to decrease after the fall recorded in 2021. In the period after 2025, with a neutral fiscal stance and assuming that interest rates gradually return to higher historical levels, projections of the debt ratio depend crucially on the assumptions of post-pandemic trend GDP. If it is assumed that GDP returns to pre-pandemic or higher trend levels, the decline of the debt ratio should continue in the medium term. Conversely, if it is assumed that the pandemic has inflicted a permanent negative "shift" on trend levels, the debt ratio would stabilise at high levels. If it is assumed that, in addition, the trend GDP growth rate converges to the lower Consensus medium-term forecast, rising public debt dynamics cannot be excluded. As a result, a neutral fiscal stance from 2025 would not suffice to ensure declining debt dynamics in more conservative but still realistic scenarios. On the other hand, a significant structural fiscal consolidation

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from 2025 (half a percentage point each year) could ensure a declining debt ratio in all scenarios except that with lower trend levels and growth. Thus, effective use of the NGEU funds contributing to both a strong recovery and higher trend growth in the medium term than the current Consensus projections would be key to guaranteeing a declining path for the public debt ratio.

Sintesi - Un'analisi di scenari post-Covid per la dinamica del debito pubblico in rapporto al PIL dell'Italia

Questo lavoro illustra possibili scenari per il debito pubblico italiano in rapporto al PIL post-Covid utilizzando lo strumento principale dell'Ufficio parlamentare di bilancio (UPB) per valutare la dinamica del debito pubblico nel breve-medio termine, ovvero il framework DSA deterministico. I risultati dell'analisi mostrano che nel periodo 2022-25, utilizzando le proiezioni macroeconomiche PBO impiegate per validare le previsioni del Governo nel Programma di Stabilità 2022, il rapporto debito/PIL dovrebbe continuare a diminuire dopo il calo registrato nel 2021. Nel periodo successivo al 2025, ipotizzando un orientamento di bilancio neutrale e che i tassi di interesse tornino progressivamente su livelli storici più elevati, le proiezioni del rapporto debito/PIL dipendono in maniera determinante dalle ipotesi di trend del PIL post-pandemia. Se si ipotizza che il PIL torni ai livelli di trend pre-pandemici o più elevati, il calo del rapporto debito/PIL dovrebbe continuare nel medio termine. Viceversa, se si assume che la pandemia abbia inflitto uno "shift" negativo permanente sui livelli di trend, il rapporto debito/PIL si stabilizzerebbe su livelli elevati; se si assume che, inoltre, il tasso di crescita del PIL di trend converga alla previsione a medio termine di Consensus forecast (inferiore alla crescita di trend pre-pandemica), non si può escludere un ritorno verso dinamiche crescenti del rapporto debito/PIL. Di conseguenza, un orientamento di bilancio neutrale a partire dal 2025 non sarebbe sufficiente a garantire una dinamica discendente del rapporto debito/PIL in scenari più prudenti, ma comunque realistici. Un significativo consolidamento strutturale di bilancio a partire dal 2025 (mezzo punto percentuale all'anno) potrebbe garantire un rapporto debito/PIL in calo in tutti gli scenari tranne quello con livelli di trend e di crescita più bassi. Pertanto, un uso efficace dei fondi NGEU, che contribuisca sia a una forte ripresa che a una crescita di trend più elevata nel medio termine rispetto alle attuali proiezioni di Consensus, sarebbe fondamentale per garantire una dinamica discendente per il rapporto debito pubblico/PIL.

JEL Classification: H62, H63, H68, E62.

Parole chiave: *Debito Pubblico; Analisi sulla sostenibilità del debito pubblico; Politica fiscale; Regole di politica fiscale; Area euro.*

Keywords: Public debt; Sovereign debt sustainability analysis; Fiscal policy; Fiscal policy rules, Euro area.

Introduction

One of the main challenges facing governments is ensuring that their policy decisions are viable in the short term and sustainable in the medium term[1]. Safeguarding the sustainability of public debt is indeed one of the main constraints facing fiscal policy. Such an important objective is even more difficult in the period following Covid-19. Italy's public debt as a ratio of GDP (henceforth, debt ratio) has increased to very high levels, and interest rates have been rising rapidly because of higher inflation.

This paper aims to assess the dynamics of Italy's public debt ratio in the post-Covid period through a "scenario analysis", taking as an initial point of reference the Parliamentary Budget Office (PBO) projections used to assess the government's 2022 Stability Programme[2]. The scenario analysis is carried out by illustrating different paths for the public debt ratio up to 2031 according to alternative assumptions on the fiscal and non-fiscal determinants of public debt dynamics in the medium-term[3].

Such scenario analysis is carried out through one of the tools used by the PBO to assess public debt sustainability in the short-to-medium term for Italy: the "deterministic" debt sustainability analysis (DSA) framework. The tool is labelled as "deterministic" as it only has light use of statistical or econometric methods. However, the framework tries to take into account, at least partly, the call for greater consideration of the links between the variables that are key for public debt dynamics, as highlighted, for example, by Corsetti (2018). Furthermore, these links are calibrated internalising the econometric tools used by the PBO to carry out other tasks; for example, the econometric

1 For a review of methodologies for debt sustainability analysis, see Debrun et al. (2019).
2 See PBO (2022).
3 For a similar exercise covering a number of euro area countries, see Network of the EU IFIs (2021).

model used to perform the endorsement process of the government's macroeconomic forecasts. For this and other characteristics, although building on the frameworks used by international organisations, in particular on that of the European Commission[4], the PBO deterministic DSA framework departs in important ways from them to take into account Italy's macro-fiscal specificities.

The rest of the paper is organised as follows. Section 1 briefly describes the model used to assess the public debt ratio dynamics. Section 2 presents some ad-hoc simulation exercises that provide an assessment of Italy's public debt in the post-Covid period under different assumptions on the variables affecting public debt dynamics. Section 3 contains some concluding remarks.

1. A brief description of the PBO framework

This section, briefly describes the framework used by the PBO for assessing public debt dynamics. For a full model description, see Gabbriellini, Nocella and Padrini (2021).

The medium-term projections and simulations on Italy's public debt are based on the dynamic equation of its evolution over time:

$$D_t = D_{t-1} - PB_t + IE_t + SFA_t \tag{1}$$

where:

4 See for example European Commission (2014).

D_t = public debt stock at the end of year t;
PB_t = primary budget balance (i.e. overall budget balance net of interest expenditure) in year t;
IE_t = interest expenditure on public debt at year t;
SFA_t = stock-flow adjustment (i.e. the part of debt change that is not acounted for by the overall budget balance as defined in the European system of national accounts, ESA2010) at year t.

From Eq. (1), the dynamics of the debt ratio can be formulated as:

$$d_t = \frac{d_{t-1}}{(1+g_t)\cdot(1+\pi_t)} - pb_t + ie_t + sfa_t \qquad (2)$$

where:

d_t = debt ratio at the end of year t;
g_t = real GDP growth rate at year t;
π_t = GDP deflator growth rate at year t;
pb_t = primary budget balance as a ratio of GDP (henceforth primary balance ratio) at year t;
ie_t = interest expenditure as a ratio of GDP (henceforth interest expenditure ratio) at year t;
sfa_t = stock-flow adjustment as a ratio of GDP at year t.

The primary balance ratio is assumed to be the sum of a structural component (i.e. determined by potential or trend output and net of one-off mea-

sures), a cyclical component that depends on the output gap, and the amount of one-off measures.

1.1 Assumptions on the macro-fiscal variables in sensitivity analyses

When carrying out sensitivity analyses, real GDP growth is expected to respond negatively to a positive shock on the structural primary balance ratio induced by a fiscal restriction for the latter's detrimental impact on aggregate demand.[5] This means that "feedback effects" are considered in the PBO framework, i.e. a higher *structural primary balance ratio* does not imply a one-to-one increase of the *primary balance ratio* because of the negative effect on GDP growth and the output gap that, in turn, has a detrimental impact on the cyclical component of the primary balance ratio.

In general, the impact of fiscal measures on real GDP growth is modelled through the average multiplier as derived from the PBO macro-econometric model. However, if enough information is available on the discretionary budgetary measures being implemented, more detailed simulations can be carried out by using the specific multipliers of the PBO macro-econometric model.

Moreover, it is assumed that the structural primary balance ratio is positively influenced by shocks in prices, hence by the inflation rate. The impact of a price shock on the structural primary balance ratio is expected to be positive as the effect of inflation on public spending should be generally lower

5 Notice that the structural primary balance can be expected to be higher not only as a consequence of a fiscal restriction but also if potential or trend GDP is assumed to rise more than in the baseline scenario. In this case, such a change of the structural primary balance does not have a detrimental effect on real GDP and the output gap.

than that on nominal GDP (the denominator). This is because not all spending is fully indexed (at least automatically) to inflation.

1.2 The treatment of interest expenditure

Building on the method used by the European Commission (2021), interest expenditure is expressed as the sum of three components. The first component (IE^{S}) is the interest expenditure paid on the short-term portion of public debt.[6] This portion includes both the short-term debt of the previous year, which is renewed and the part of any new borrowing needs arising during the year financed by new short-term debt issues. The second component ($IE^{L,M}$) is the interest expenditure paid both on the long-term debt that matures during the year and renewed, and on the part of any new borrowing needs arising during the year and financed by new long-term debt issues.[7] Finally, the third component ($IE^{L,NM}$) is represented by the interest expenditure paid on part of the long-term debt that does not mature during the year.

In formulas, interest expenditure can therefore be expressed as:

$$IE_t = IE_t^S + IE_t^{L,M} + IE_t^{L,NM} = \\ = i_t^S \cdot \gamma^S \cdot (D_{t-1} + \Delta D_t) + i_t^L \cdot (\gamma^{L,M} \cdot D_{t-1} + \gamma^L \cdot \Delta D_t) + i_t^{L,NM} \cdot \gamma^{L,NM} \cdot D_{t-1} \quad (3)$$

where:

6 Short-term debt is assumed debt with an (original) maturity of one year or less.
7 Long-term debt is assumed debt with an (original) maturity of more than one year.

γ^S = share of short-term public debt over the total;
γ^L = share of long-term public debt over the total;
$\gamma^{L,M}$ = share of long-term public debt over the total maturing during the year;
$\gamma^{L,NM}$ = share of long-term public debt over the total not maturing during the year; given the above definitions, notice that $\gamma^L = \gamma^{L,M} + \gamma^{L,NM}$;
i_t^S = short-term interest rate in year t;
i_t^L = long-term interest rate in year t;
$i_t^{L,NM}$ = implicit interest rate on the share of long-term public debt not maturing during the year.

Extending and refining the European Commission method, the share of long-term debt not maturing during the year is further decomposed into four components, one related to the debt issued at fixed interest rates, one related to the debt issued at interest rates indexed to the EURIBOR rate, one related to the debt issued at interest rates indexed to the euro area inflation rate and, finally, one related to the debt issued at interest rates indexed to the Italian inflation rate[8].

In projections and simulations, it is assumed that the implicit interest rate on fixed-rate long-term debt not maturing in year t is a weighted average of the same implicit rate and the long-term rate in the year $t-1$. Furthermore, the long-term implicit interest rates of the government debt not maturing in year t linked to the euro area or Italian inflation rates are modelled as the sum of implicit (ex-post) real interest rates and the relevant inflation rates. The

8 See Gabbriellini et al. (2021), op. cit., for details.

implicit (ex-post) real interest rates are estimated as a weighted average of the same implicit rates and the (ex-post) real interest rates on long-term debt in the previous year $t-1$. Finally, the long-term implicit interest rate of government debt not maturing in year t indexed to the EURIBOR is modelled as the sum of the 6-month EURIBOR plus an implicit term premium. In turn, the implicit term premium in year t is estimated as a weighted average of the same implicit term premium and the term premium in the preceding year $t-1$.

Replacing the expression of the debt from Eq. (1) into Eq. (3), after some arithmetic steps and expressing the variables as a ratio of GDP, the following expression for interest expenditure as a ratio of GDP (ie_t) is obtained:

$$ie_t = \frac{1}{1 - i_t^S \cdot \gamma^S - i_t^L \cdot \gamma^L} \cdot \left[(i_t^S \cdot \gamma^S + i_t^L \cdot \gamma^{L,M} + i_t^{L,NM} \cdot \gamma^{L,NM}) \cdot \frac{d_{t-1}}{(1+g_t)(1+\pi_t)} - (i_t^S \cdot \gamma^S + i_t^L \cdot \gamma^L) \cdot (pb_t - sfa_t) \right] \tag{4}$$

where the implicit interest rate on the share of long-term public debt not maturing during the year $i_t^{L,NM}$ is obtained as a weighted average of the estimated implicit interest rates of each of its components as described above.

2. Scenario analysis of public debt dynamics in the post-Covid period

2.1 Debt ratio dynamics in the short term

The assessment of public debt ratio dynamics in the post-Covid period starts with a sensitivity analysis up to the year 2025 of the government's official forecast presented in the 2022-25 Economic and Financial Document (EFD, Italy's Stability Programme) published in April 2022[9]. In particular, by using the framework presented in section 1, the sensitivity of the official forecasts is assessed with respect to alternative assumptions for the inflation rate and the real growth rate.

Thus, the baseline scenario for the analysis (the "EFD scenario") is represented by the policy evolution of the debt ratio outlined by the EFD for the 2022-2025 period. In the official forecast, the debt ratio would decrease from 150.8 per cent registered in 2021 to 141.4 per cent in 2025 (Figure 2.1).

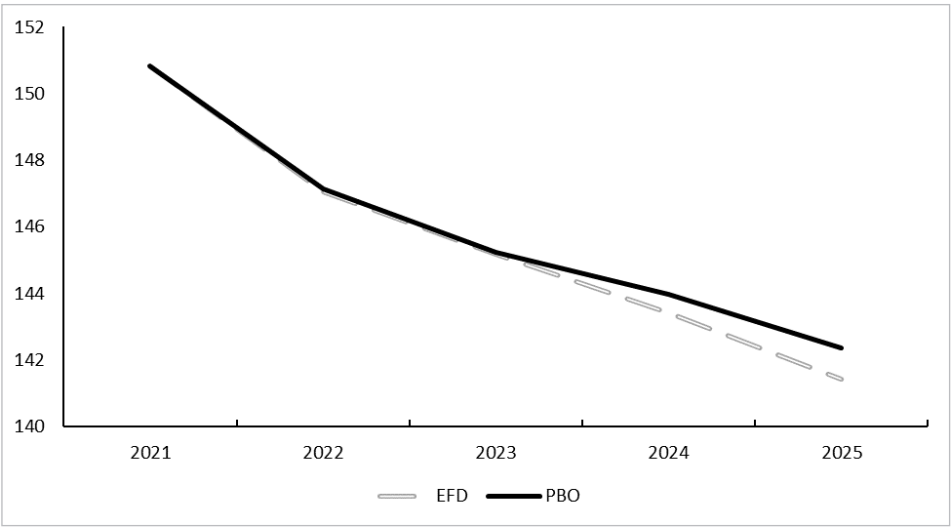
The alternative scenario (the "PBO scenario") is based on the growth forecasts for real GDP and the GDP deflator developed by the PBO up to 2025 as part of the endorsement procedure for the official policy scenario in the EFD.

The PBO scenario is characterised by slightly lower real GDP growth rates (with a difference between 0.2 and 0.3 percentage points in 2022-24 compared to the government forecasts) and by a more sustained GDP deflator dynamic over the entire forecast period, in particular in 2023 (with a difference of 0.6 percentage points compared to the government forecast). Overall, the evolution of nominal GDP growth rate is quite similar in the two scenarios.

9 For a detailed analysis of 2022 EFD see PBO (2022).

With these assumptions, the trajectory of the debt-to-GDP ratio in the PBO scenario is slightly higher than the one forecasted by the government, especially in 2024-2025, where the level of the debt ratio in the PBO scenario would be 0.6 percentage point higher in 2024 and 1 percentage point higher in 2025 than in the EFD scenario.

Figure 2.1 **Debt/GDP ratio scenarios for 2022-25** ***(percentages)***



Source: based on EFD data.

2.2 Scenarios for the debt ratio in the medium term

The PBO scenario for the period 2022-25 illustrated in the previous subsection is the starting point for projections of the debt ratio in a time horizon up to 2031. Then, alternative simulations based on illustrative scenarios are used to assess the medium-term risks for the dynamics of the debt ratio in a

period of high uncertainty. In particular, we focus on the impact of uncertainties of the pandemic crisis and the international geopolitical crisis on one hand, and the EU recovery initiatives on the other, on Italy's trend GDP in the medium term.

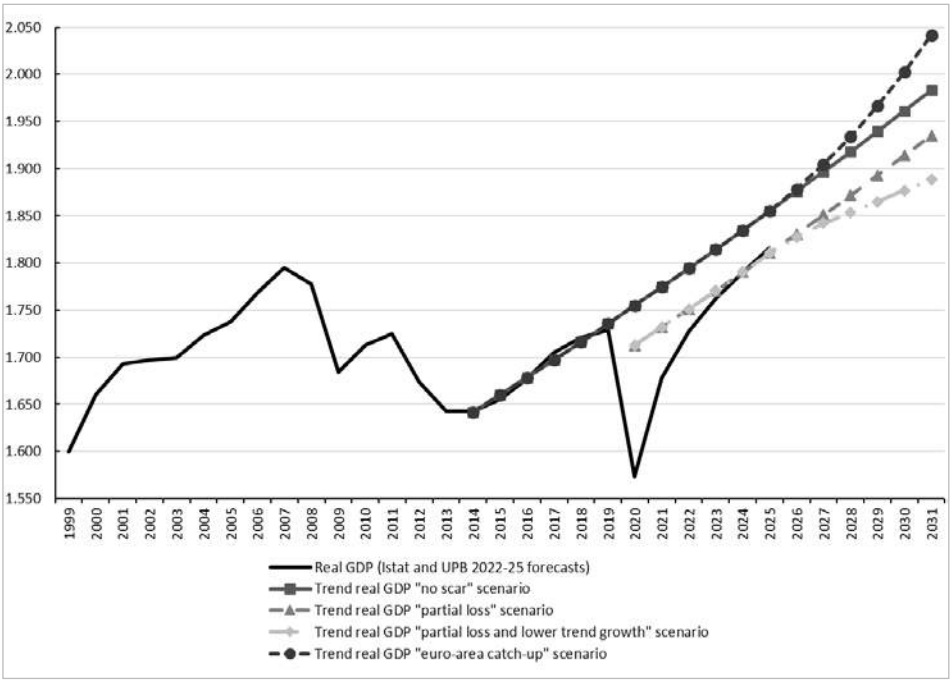
More specifically, since commonly-used estimates of potential GDP are considered particularly uncertain because of the impact of the crisis, alternative assumptions on simpler measures of "trend GDP" were used in the scenario analysis. The following four alternative scenarios for trend GDP are thus considered (Figure 2.2):

1) a "**no-scar**" scenario, in which trend growth is assumed to remain the same observed in the period 2014-19, i.e. the years after the financial crisis and preceding the Covid crisis. Such trend growth rate is equal to around 1.1 per cent; this scenario could be consistent with the assumption that the measures implemented by the government in 2020-21 have been successful in protecting Italy from the economic consequences of the pandemic;
2) a "**partial loss**" scenario, in which the level of trend GDP is assumed below that projected in the "no-scar" scenario by 2.4 percentage points; such a number approximately corresponds to the annual average loss of trend GDP following the 2008-2013 crisis; this less optimistic scenario could be the result of government measures being only partly successful in protecting Italy's economy from the damages of the pandemic, at least in the short term;
3) a "**partial loss and lower trend growth**" scenario, in which the level of trend GDP is the same as in the "partial loss" scenario until 2025;

from 2026, it is assumed that the growth rate converges to a lower value, equal to 0.6 within 2028, consistent with the current Consensus medium-term forecasts;

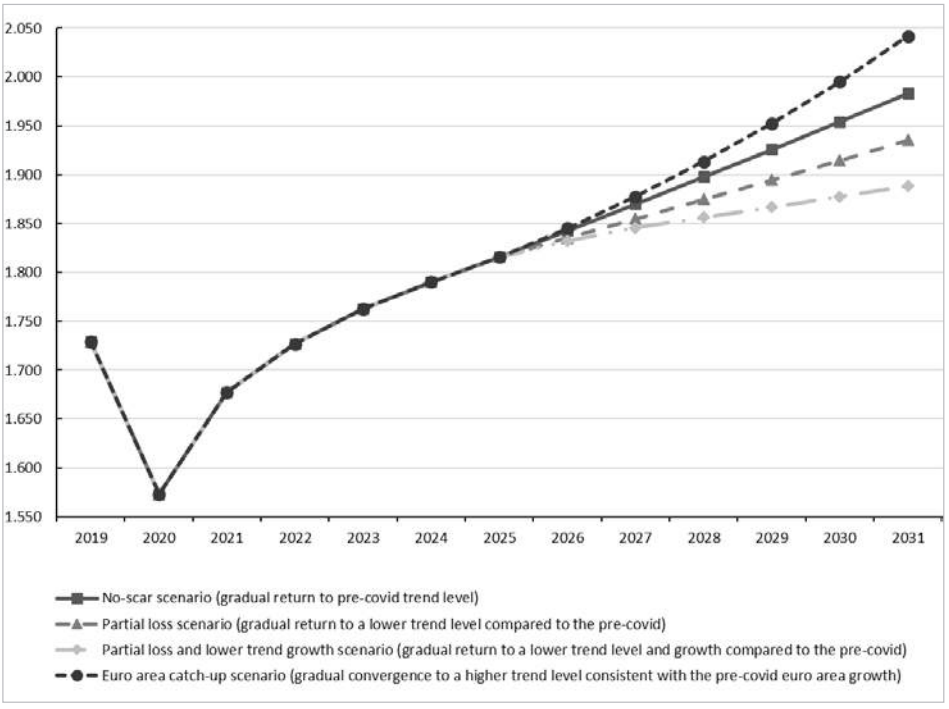
4) a "**euro area catch-up**" scenario, in which trend GDP is the same as in the "no-scar" scenario until 2025, after which its growth rate gradually converges to the euro area trend GDP growth preceding the pandemic (i.e. around 2 per cent). This more optimistic scenario could be consistent with very effective implementation of the EU recovery initiatives in Italy (in particular, Next Generation EU).

Figure 2.2 **Trend real GDP in alternative scenarios** ***(billions of euros)***



The corresponding path for the level of real GDP in each scenario is obtained by considering the additional assumption of the gradual linear closing of the output gap in 6 years, from 2026 to 2031. The implications of the above assumptions for the projections of real GDP levels in the medium term are illustrated in Figure 2.3. In the "no-scar" scenario, average annual real GDP growth would be projected to around 1.5 per cent in the period 2026-2031, to around 1.1 per cent in the "partial loss" scenario, to 0.7 per cent in the "partial loss and lower trend growth" scenario and to 2 per cent in the "euro-area catch-up" scenario. In this latter scenario, GDP would accelerate over time, reflecting the delayed assumed effect of reforms and investments on trend growth.

Figure 2.3 **Real GDP in alternative scenarios *(billions of euros)***



As for the other non-fiscal determinants of the debt ratio dynamics, the projections assumptions are the following: *a)* the gradual convergence of the GDP deflator growth rate to the ECB's inflation rate target of 2 per cent in 6 years, from 2026 to 2031; *b)* the gradual convergence of the short-term interest rate to around 1.8 per cent given by the sum of the ECB's inflation target and the consensus long-term GDP growth rate forecast (+0.6 per cent), adjusted for a "risk premium" of -0.8 per cent (based on historical data[10]); *c)* the gradual convergence of the long-term interest rate to around 3 per cent given by the sum of the short-term rate as determined above and a term premium of 1.2 percentage points (based on historical data[11]); d) the stock-flow adjustment amounting, in each year, to the median value recorded between 1999 and 2021 (0.3 per cent of GDP)[12].

As a result of these assumptions, the difference between the average cost of debt and nominal GDP growth (i-g) would remain negative in all scenarios during the projection period, except for the "partial loss and lower trend growth" scenario. However, the difference would grow from -3.8 percentage points estimated for 2022 to -0.7 projected in 2031 in the "no scar" scenario,

10 This risk premium is calculated as the median of the difference between the short-term interest rate and the nominal GDP growth rate from 1999 to 2021.

11 The term premium is calculated as the median of the difference between long-term interest rate and short-term interest rate from 1999 to 2021.

12 Assumption d) is a prudential one, since a positive value of the stock-flow adjustment (SFA) means that the government debt increases more than the annual deficit (or decreases less than implied by the surplus). In particular, the median value observed for Italy in 1999-2021 (0.31 per cent of GDP) and used in the projections is higher than the median value observed for EU-27 in the same period (0.11) and it is in line with that observed in Germany (0.47), France (0.16) and Spain (0.38). Looking at SFA components in more detail, the net acquisition of financial assets played an important role for Italy in 1999-2021 (median 0.62 per cent of GDP), reflecting the accumulation of currency and deposits (0.20) and loans granted by government to non-governmental units (0.16); also the acquisition of equity and investment fund shares in the form of equity injection played a role (0.10). Another important category of the SFA – valuation effects – had an impact in the opposite direction and of a smaller magnitude (median value of –0.11 per cent of GDP).
For further details on SFA accounting, please refer to Eurostat (2022).

to around -0.3 in the "partial loss" scenario and -1.7 in the "euro area" scenario; in the "partial loss and lower trend growth" scenario, the difference would turn positive in 2028 and would reach 0.2 in 2031.

Finally, starting from 2026, it is assumed that public finances follow a neutral fiscal stance, i.e. a "no-policy-change assumption". For the "no scar" and "partial loss" scenarios, this assumption implies a constant structural primary balance at the level estimated for 2025. This is approximately equivalent to assuming that primary expenditure growth equals trend GDP growth and that no discretionary measures are implemented on the tax and social contribution side. For the "euro-area catch-up" scenario, it is assumed that the higher potential growth compared to the "no scar" scenario translates into an improvement of the structural primary balance without the need for any fiscal restriction. Conversely, the "partial loss and lower trend growth" scenario implies a worsening of the structural primary balance without the implementation of expansionary measures[13].

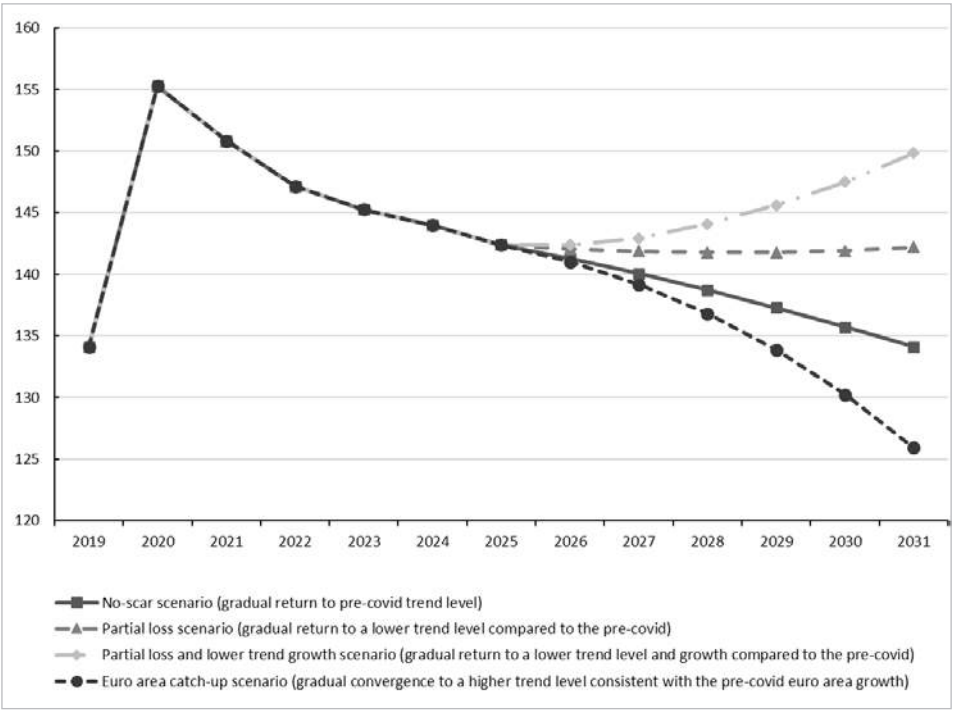
With these assumptions, in the"no scar" scenario, the structural primary balance would remain at 0.9 per cent in the 2026-2031 period. Instead, in the

13 Operationally, these higher (lower) structural balances are obtained by applying to the percentage difference of trend GDP between the "euro-area catch-up" ("partial loss and lower trend growth") scenario and the "no-scar" scenario the semi-elasticity of the budget with respect to GDP used to estimate the cyclical component of fiscal balances (equal to 0.544, see Mourre et al. (2019)). It is important to stress some limitations of this approach that would need to be improved in future work. Indeed, using this estimate of the Italian budget semi-elasticity is not a completely satisfactory choice, since the estimation procedure adopted to quantify this parameter is based on the identification of the elasticity of budget items exposed to the economic cycle. For example, in Mourre et al. (2019) the only item considered on the expenditure side is the unemployment-related expenditure. But it is conceivable that a structural change in GDP dynamics could have an impact also on other budget items (for example, a structural change in the healthcare system and, more in general, a radical revision of the welfare model), and it can have a different impact than a cyclical fluctuation in GDP on the same budget items (for example, the impact on direct taxes revenue may be different in the presence of a cyclical slowdown in output compared to a structural reduction in production capacity). On the other hand, it is likely that the "deep" effects on the budget structure induced by potential GDP dynamics would take several years to materialize.

"partial loss" scenario, due to a lower level of trend GDP, it would be negative and equal to -0.4 per cent. In the "partial loss and lower trend growth" scenario, the structural primary balance would show a deterioration throughout the period from -0.4 per cent to -1.7 per cent in 2031. In contrast, in the "euro-area catch-up" scenario, the structural primary balance would gradually improve over the years to end up at +2.6 per cent in 2031.

The debt ratio dynamics resulting in the different scenarios are illustrated in Figure 2.4. In the "no scar" scenario, the debt ratio would continue to decrease at an almost constant rate (1.4 points of GDP per year) after 2025, to reach a value of 134.1 per cent at the end of the projection horizon (the same value recorded in 2019, i.e. the pre-Covid level). In the "partial loss" scenario, the debt ratio would be stable at around 142 from 2025 until the end of the projection period; instead, in the "partial loss and lower trend growth" scenario, the debt would show an increasing path from 2026 to reach 149.8 per cent in 2031. Finally, in the "euro area catch-up" scenario, the debt ratio would decrease to around 125.9 per cent at the end of the projection period: in this scenario, the objective - repeatedly declared by the Government - to bring the debt ratio to the pre-crisis level by 2030 would be achieved one year in advance.

Figure 2.4 **Developments in the debt/GDP ratio in alternative macroeconomic scenarios** ***(percentages)***

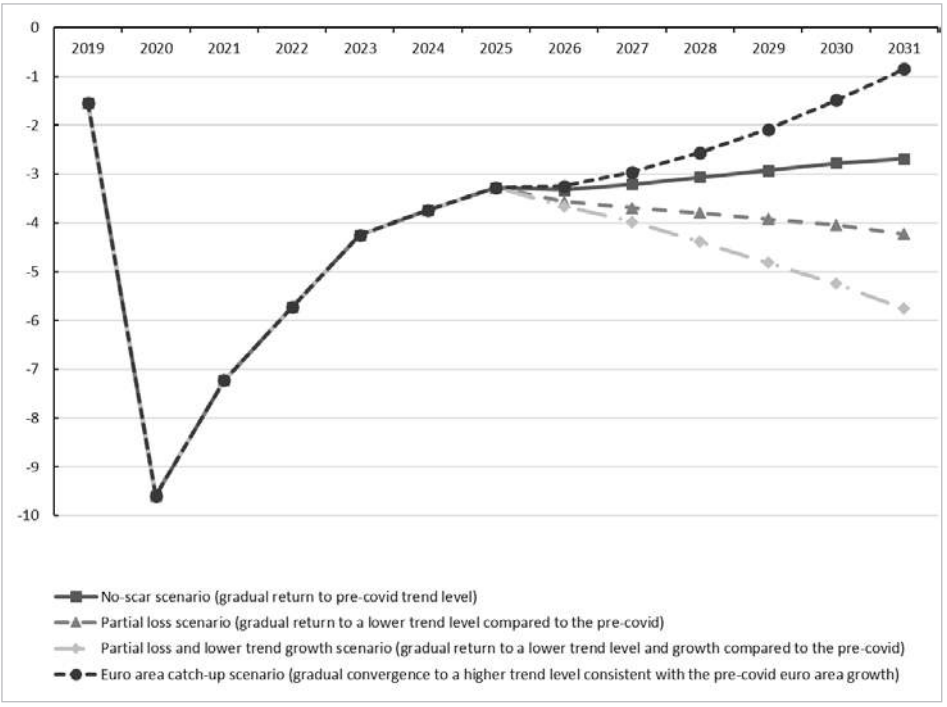


To interpret these results, notice that the assumption of a neutral fiscal stance starting from 2026 implies an overall nominal deficit as a ratio of GDP (henceforth, deficit ratio) that would decrease from 3.3 per cent in 2026 to 2.7 per cent in 2031 in the "no scar" scenario. In contrast, it would deteriorate from 3.6 per cent in 2026 to 4.2 in 2031 in the "partial loss" scenario (Figure 2.5)[14]. In the "partial loss and lower trend growth" scenario, the wors-

14 Given the higher trend GDP level, the output gap (the percentage difference between the actual and the trend GDP level) in 2025 is negative in the "no scar" scenario (-2.1 per cent), whereas it is positive in the "partial loss" scenario (0.3 per cent). Hence, the linear closing assumption implies an improvement of the cyclical component of the budget balance from the 2026 onward in the former scenario and a worsening in the latter. For the "partial loss and lower trend growth" and the "euro-area catch-up" scenarios, the nominal budget balance dynamics are driven also by the evolution of the structural component as described before.

ening of the deficit ratio would be even more marked, reaching 5.8 per cent at the end of the projection period. Therefore, in the latter two scenarios, the overall nominal deficit ratio would remain higher than the 3 per cent threshold established by the Stability and Growth Pact. In the case of the "euro-area catch-up" scenario, the deficit would be continuously improving, reaching 0.8 per cent in 2031.

Figure 2.5 **Overall budget balance as a ratio of GDP in alternative macroeconomic scenarios *(percentages)***

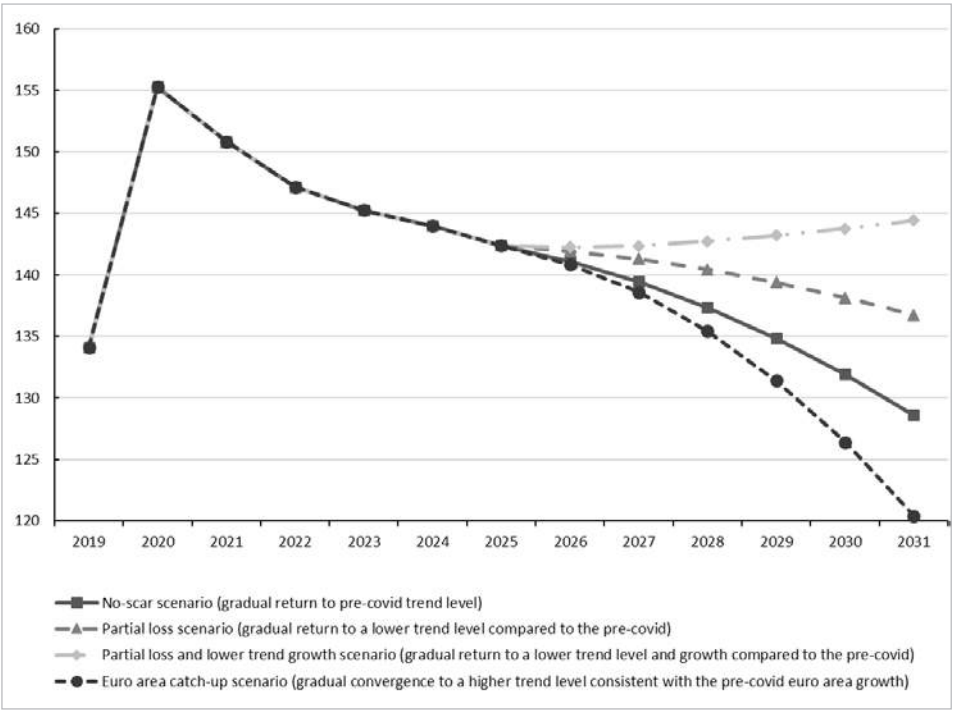


It is thus interesting and probably more realistic in the case of the "partial loss" and "partial loss and lower trend growth" scenarios to assess debt developments when fiscal policy is restrictive rather than neutral. Specifically, a

structural fiscal restriction of half a percentage point each year is considered starting from 2026. This assumption implies that in the"no scar" scenario, the structural primary balance would reach 3.9 per cent at the end of the forecasting period. In comparison, in the "partial loss" scenario, it would turn into a surplus by 2026 and reach 2.6 per cent. Even in the"partial loss and lower trend growth" scenario, the structural primary balance would improve and reach 1.3 per cent in 2031. Finally, in the "euro-area catch-up" scenario, the fiscal restriction would add to the improvement in the structural primary balance linked to the higher potential growth so that the structural primary balance would be 5.6 per cent by 2031.

Figure 2.6 illustrates the implications of this fiscal consolidation assumption on the estimated debt projections. In all scenarios, the dynamics of the debt ratio would be more favourable compared to the neutral fiscal stance assumption, despite the detrimental impact of fiscal consolidation on real GDP growth. In particular, in the "partial loss" scenario, the debt ratio would follow a declining path to reach 136.7 in 2031. The "partial loss and lower trend growth" scenario would continue to show an increasing debt path from 2027, reaching around 144 per cent in 2031. In the "no-scar" scenario, the debt ratio decline would be more substantial and, at the end of the projection period, the ratio would be around 6 percentage points lower than the pre-Covid level. Finally, in the "euro-area catch-up" scenario, the structural balance adjustment would lead the debt ratio to reach a level of around 120 per cent by 2031.

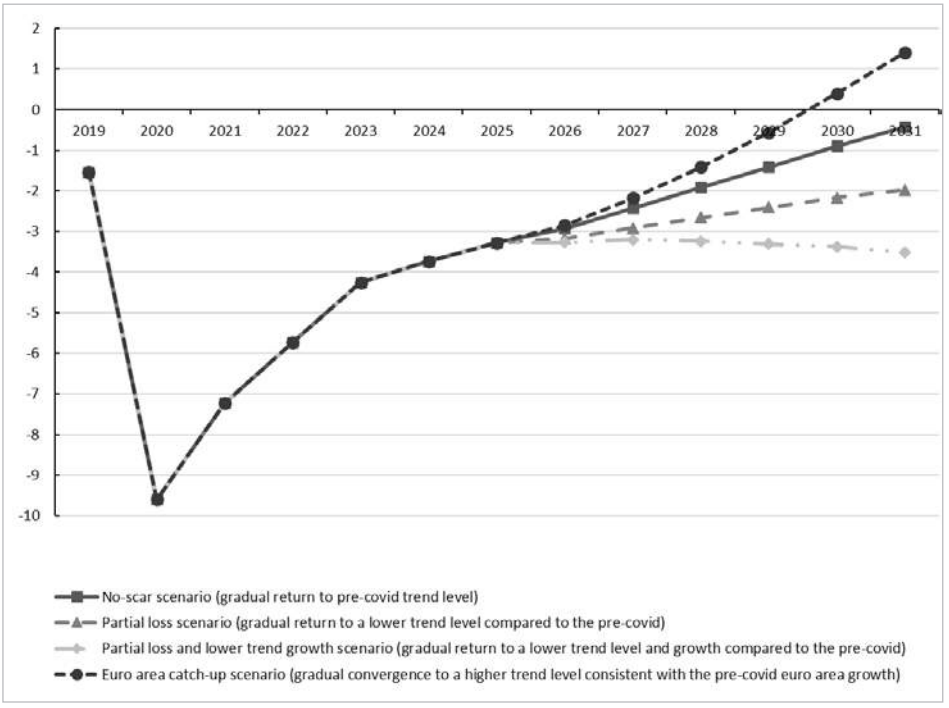
Figure 2.6 **Developments in the debt/GDP ratio in scenarios with fiscal adjustment** ***(percentages)***



In the "no-scar" scenario, the budget would be almost in balance by the end of the projection period. In the "partial loss" scenario, the deficit would be under 3 per cent by 2027 (Figure 2.7); instead, in the "partial loss and lower trend growth" scenario, the deficit would remain slightly above the 3 per cent threshold until 2028 after which it would start to increase again, also because of rising interest payments linked to the hypothesis of gradual "normalization" of interest rates. Finally, in the more favourable "euro-area catch-up" scenario, the budget would be positive by 2030[15].

15 In the interpretation of the results, it is important to stress again that the improvement in the dynamics of the

Figure 2.7 **Overall budget balance as a ratio of GDP in scenarios with fiscal adjustment** ***(percentages)***



3. Concluding remarks

The objective of this paper was to illustrate scenarios for Italy's post-Covid public debt ratio in the short-to-medium term using the main tool by the PBO to assess public debt dynamics in the short-to-medium term, i.e. the

debt ratio is lower than expected by considering the structural adjustment per se. Indeed, the latter has an unfavourable impact on the cycle (i.e. on the output gap in the DSA framework described in Section 1) and this results in a detrimental feedback effect on the deficit.

deterministic DSA framework. The main characteristic of this framework is to consider the feedback effects between fiscal consolidations/expansions and the macroeconomic scenarios. Thus, sensitivity analyses are not fully mechanical but take into account, at least partially, the interactions between the fiscal and non-fiscal determinants of public debt dynamics. Moreover, the treatment of interest expenditure considers a relatively wide range of instruments characterising Italy's public debt. This should improve the projections of interest expenditure in the medium term when interest rates are assumed to return closer to historical levels.

Using this framework, in the 2022-25 period, the path of the debt ratio would be similar to that predicted by the Government. In the period after 2025, with a neutral fiscal stance and assuming that the current low interest rates return to higher historical levels, projections of the debt ratio depend crucially on the assumptions of post-pandemic trend GDP.

If it is assumed that GDP returns to pre-pandemic or higher trend levels, the decline of the debt ratio should continue in the medium term. However, if it is assumed that the pandemic has inflicted a permanent negative "shift" on trend levels, public debt would be on a stable path but at very high levels. If it is assumed that, in addition, the trend GDP growth rate converges to the Consensus forecast medium term forecast, a reverse towards rising public debt dynamics cannot be excluded.

Thus, a neutral fiscal stance from 2026 would not suffice to ensure declining or stable public debt dynamics in more conservative but still realistic scenarios. In illustrative projections assuming a significant structural fiscal con-

solidation from 2026 (half a percentage point each year), the debt ratio would decline in all scenarios except in the "partial loss and lower trend growth". This would happen despite the detrimental impact of fiscal consolidation on real GDP growth. Thus, effective use of the NGEU funds contributing to both a strong recovery and higher trend growth in the medium term than the current Consensus projections would be key to guarantee a declining path for the public debt ratio in all scenarios.

Finally, this exercise shows that the Government objective of returning below pre-Covid levels for the debt ratio by 2030, as stated again in the 2022 EFD, could be achieved only if Italy's trend growth gradually converges towards the pre-pandemic euro-area average, or if Italy's trend growth returns to pre-pandemic trend level and, at the same time, a significant and prolonged fiscal consolidation is carried out.

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ECONOMIA ITALIANA 2022/2

Rethinking Debt Sustainability?

This issue of *Economia Italiana* – **editors Lorenzo Codogno, LSE, and Pietro Reichlin, Luiss** - deals with public debt sustainability and fiscal rules. Many beliefs about the benefits of current fiscal and monetary policies could change because of the risks associated with the energy crisis, the war in Ukraine, the return of inflation and the green transition. The volume contains several contributions by leading experts on the following questions: *Is debt sustainability a cause of concern within the Euro Area? How should we consider revising the Stability and Growth Pact in the European Union? Are the energy transition and the pandemic risks good reasons to build up EU-level fiscal capacity?* In the introduction to this monograph, we will touch upon some of these issues and discuss why they are important.

Ripensare la sostenibilità del debito?

Questo numero di Economia Italiana – **editor Lorenzo Codogno, LSE, e Pietro Reichlin, Luiss** - tratta della sostenibilità del debito pubblico e delle regole fiscali. Molte convinzioni sui benefici delle attuali politiche fiscali e monetarie potrebbero cambiare a causa dei rischi associati alla crisi energetica, alla guerra in Ucraina, al ritorno dell'inflazione e alla transizione verde. Il volume contiene diversi contributi dei maggiori esperti sulle seguenti questioni: *La sostenibilità del debito è fonte di preoccupazione nell'area dell'euro? Come dovremmo considerare la revisione del Patto di stabilità e crescita nell'Unione europea? La transizione energetica e i rischi di pandemia sono buone ragioni per costruire una capacità fiscale a livello europeo?* Nell'introduzione di questa monografia, gli editor trattano alcuni di questi temi e spiegano perché sono importanti.

Essays by/Saggi di: Lorenzo Codogno, and Pietro Reichlin; Carmine Di Noia; Ludger Schuknecht; William R. Cline; Lorenzo Codogno, and Giancarlo Corsetti; Martin Larch; Cecilia Gabriellini, Gianluigi Nocella, and Flavio Padrini; Marzia Romanelli, Pietro Tommasino, and Emilio Vadalà; Angelo Baglioni, and Massimo Bordignon; Paul Van den Noord.

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