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NBB Economic Review

2022 / #19

How sustainable are the finances of
the federal government, the regions and
the communities in Belgium ?

by D. Cornille, M. Deroose, H. Godefroid,
W. Melyn, P. Stinglhamber and S. Van Parys



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Introduction

According to the European Commission debt sustainability analysis (DSA), the medium- and long-term risks to Belgian public finances are high¹. The general government debt-to-GDP ratio (109 % in 2021) is above that of other euro area countries and, most importantly from a sustainability perspective, it is expected to rise further in the medium term. As public debt cannot indefinitely rise faster than the economy's income, the DSA concluded that significant structural consolidation efforts will be needed to stabilise Belgian public debt and address pressures stemming from population ageing.

As in any federal or highly decentralized political system, multiple decisionmakers shape the state of public finances in general and sustainability risks in particular. This article takes a closer look at public finances in various government entities in Belgium. We analyse debt sustainability risks for the federal government (including social security), the Flemish Community, the French Community, the Walloon Region and the Brussels-Capital Region (consolidated with the Common Community Commission). All other entities are excluded. In any case, for the largest of these, local government, the sustainability risks are limited due to the application of strict budgetary rules.²

For a long time, Belgium's high public debt, which exceeded 100 % of GDP for the first time in the early eighties, was solely a matter of concern for the federal government. Although the communities and regions also recorded significant deficits in the first half of the nineties, in relation to the size of their budgets, they managed to reduce them significantly in the second half of the decade and, in the case of the Flemish Community, even to turn them into a generous surplus.³ On the eve of the global financial crisis in 2007, the combined debt of the communities and regions amounted to "only" 7 % of GDP, compared to 75 % for the federal government (including social security). At that time, the debt dynamics in the various government entities were trending downwards. In its guidance on the fiscal path to be followed by all entities, the High Council of Finance (Public Sector Borrowing

* The authors would like to thank Patrick Bisciari, Xavier Debrun, Ruben Schoonackers, Steven Vanackere, and Raf Wouters for useful comments and suggestions.

1 See EC (2022a and 2022c).

2 See Coppens *et al.* (2018), *De financiën van de lokale overheid in België* | nbb.be.

3 See Claeys *et al.* (2004), *Economisch Tijdschrift 4 2004 NBB*.

Requirements Section) has moreover consistently advocated for a balanced budget at all levels of government and consequently has never permitted an increase in the debt ratio at the regional level.

After 2007, the debt-to-GDP ratio of the various subsectors increased significantly, reaching 17 % for the communities and regions combined and 88 % for the federal government by 2021. In 2019, just before the start of the COVID-19 crisis, several entities, with the exception of the Flemish Community, were already running a structural budget deficit. The pandemic and the exceptional intervention by the government to deal with its consequences caused a historic increase in debt ratios and budget deficits at both federal and regional levels. Although economic activity had returned to pre-pandemic levels by the end of 2021, all parts of government continued to run deficits well above 2019 levels. Temporary assistance to cope with the energy crisis and – in Wallonia – flooding caused a further increase in public debt. What is most concerning, however, is that even after the lifting of these temporary measures, a structural deficit is still expected in the coming years assuming unchanged policy. As a result, debt is expected to trend upward. Moreover, since the beginning of 2022, the rise in government bond yields and the accompanying decompression of risk premia are putting additional pressure on public finances.

Although the lion's share of public debt is still at the federal level, the rising debt ratios at regional level are worrisome. Indeed, an important factor in maintaining the sustainability of public debt is the ability of a given government entity to control its revenue. In this regard, the federal government has far more discretion than the regions and the communities. The communities simply have no taxation powers.

Section 1 of this article provides a brief overview of the main characteristics of public finances in the selected government entities, including the size and composition of the budget balance and debt. Section 2 discusses the expected development of the budget balance in the entities concerned, from 2016, when the sixth state reform was fully rolled out, to 2027. Projections are based on the Federal Planning Bureau's July medium-term estimates. Section 3 contains a debt sustainability analysis. It is inspired by sustainability analyses carried out by international institutions at country level covering, in turn, medium-, short- and long-term risks, and by the external expert committee's report on the sustainability of public debt in Wallonia¹. To assess risks to public debt dynamics, the medium-term sustainability analysis uses narrative scenarios to project plausible debt paths under unfavorable assumptions for growth, interest rates and spending pressure (public investment). Section 4 then explores how a debt ceiling could be distributed across the various government entities and the fiscal efforts that would be required at each level. Finally, Section 5 sets out the conclusion.

1. Main characteristics of the selected government entities

In order to obtain a more accurate view of the size of the budget of the various government entities in Belgium, it is necessary to look at the breakdown of total final² spending between them. The federal government (including social security) accounted for 56 % of total spending in Belgium in 2020. At the level of the communities and regions, public spending in Flanders represented 19 % of the total, while this figure was 5 % in Wallonia and the French Community and 2 % in the Brussels-Capital Region. The rest is attributable to local authorities.

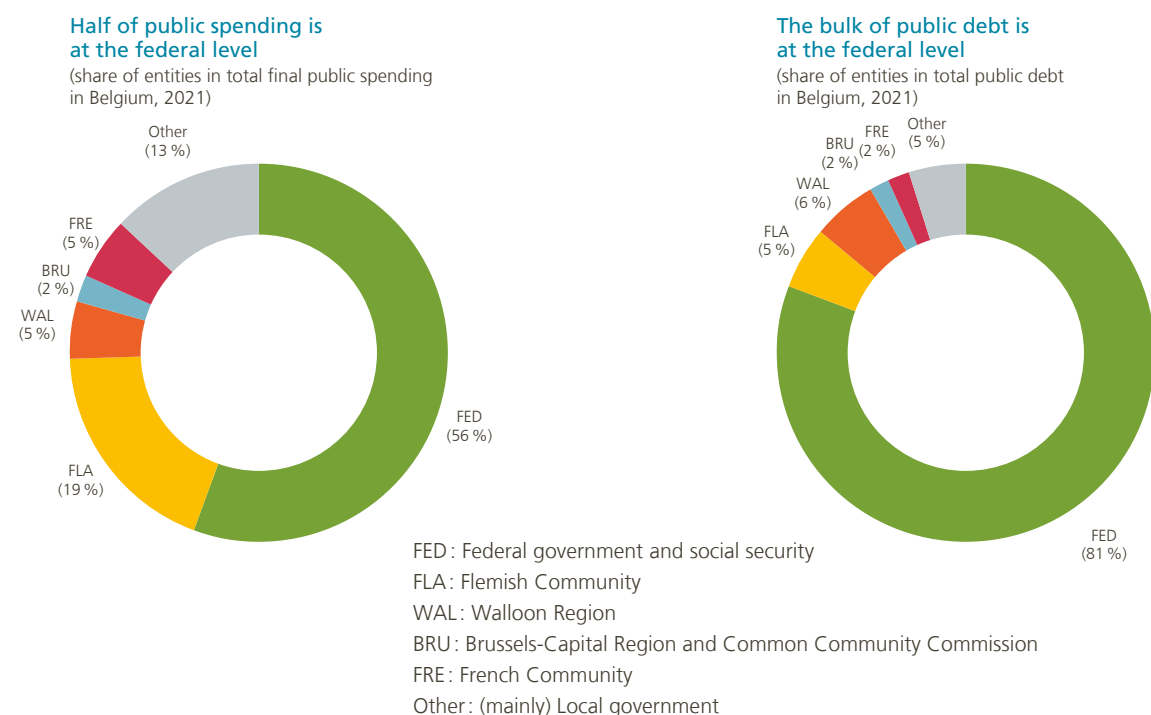
In terms of public debt, however, the breakdown between entities is not the same as for public spending. More specifically, public debt in Belgium is overwhelmingly (more than 80 %) concentrated at the federal level whereas at the end of 2020, Flanders and Wallonia accounted for only 5 % and 6 %, respectively, of total public debt. This figure was 2 % for both the Brussels-Capital Region and the French Community.

1 See Commission externe de la dette et des finances publiques (2021), *La soutenabilité de la dette de la Région Wallonne: Rapport Final*.

2 To avoid double counting, transfers paid to other administrations are subtracted from total spending.

Chart 1

Belgian public debt is overwhelmingly concentrated at the federal level



Sources: NAI and NBB.

Thus, it appears that the Belgian federal government's share of public debt is greater than its share of public spending. However, this finding is not an indicator of the sustainability of Belgian public debt given the significant differences in terms of revenue autonomy between the federal government and other levels of government in Belgium.

It is therefore also interesting to analyse the composition of revenue and the nature of public spending, in order to highlight the heterogeneity in this regard observed between various government entities.

In terms of public revenue, the situation of the communities and regions is very different from that of the federal government. The latter has full fiscal autonomy and more than 90 % of its revenue is made up of fiscal and parafiscal revenue. In contrast, public revenue in Flanders, Wallonia and Brussels is largely based (more than half) on transfers received from other public administrations, mainly the federal government. This reflects the limited revenue autonomy at the regional level, or the use thereof by the regions at this point in time. The Walloon Region's share of revenue from tax receipts is slightly higher than that of Flanders and the Brussels-Capital Region as Wallonia has no community powers (or competencies), which are financed almost exclusively by transfers. More specifically, the French Community has almost no revenue of its own, except for limited non-tax revenue.¹ More than 80 % of its revenue consists of transfers received from other public administrations.

¹ A majority of the French Community's non-tax receipts consists of imputed social security contributions, which are in fact fictitious tax receipts. The imputed social security contributions borne by employers are the "fictitious" counterpart to social contributions paid directly by the employer without the intermediation of a social insurance fund and therefore without the payment of effective contributions to such a fund. They include primarily the payment of pensions to former state employees, mainly teachers. Pension expenditure is financed by the federal government.

Chart 2

Sources of revenue and types of spending differ between government entities



Sources: NAI and NBB.

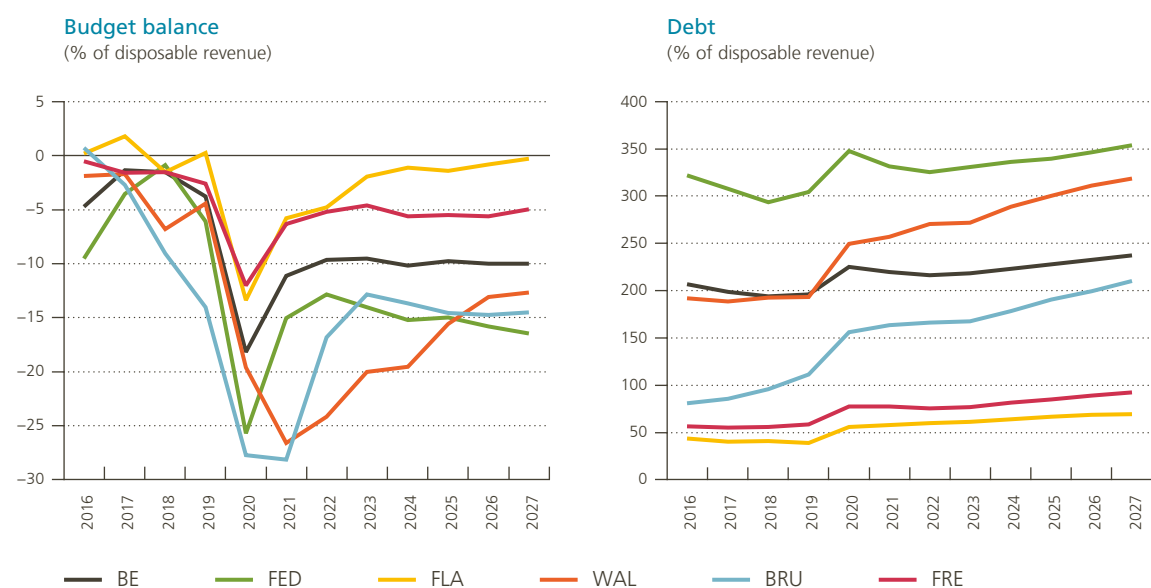
As far as public spending is concerned, two thirds of federal government spending is on social benefits. Indeed, social security spending is primarily concentrated at the federal level. As far as subsidies are concerned, these are mainly concentrated in the regions, to implement their economic policies. Gross capital formation, i.e. public investment, is also mainly a matter for the regions. Spending on wages is relatively more significant in the communities, especially for staff working in the education sector.

In this article, we analyse the budget balance and public debt of various government entities. Traditionally, these variables are expressed in relation to national GDP to supply the indicators used in sustainability analyses. Indeed, a government bond is essentially a right to receive a share of government revenue; GDP, a measure of the total revenue generated in the economy, represents a reliable approximation of the country's potential tax base. However, to allow for a suitable comparison between entities, absolute values should be expressed in relation to an indicator that better reflects the size of their respective budgets, which vary widely. That being said, referring to regional GDP would raise other problems; as this indicator characterises a territory, it is suitable for the regions but not the communities in Belgium. Moreover, the added value of the Brussels-Capital Region is inflated by many commuters who do not contribute directly to the region's finances.

Public revenue was therefore chosen as the reference. This constitutes a good approximation of the financial resources available to the various entities, sets the tone for the budget and determines *a priori* the level of spending that is acceptable without worsening the fiscal situation. In this instance, revenue has been adjusted by subtracting transfers paid to other public administrations. In this way, revenue ultimately intended to finance other entities is excluded, and the analysis is limited to that disposable revenue which is effectively available for policy implementation. This adjustment also makes it possible to avoid including the same resources in the

Chart 3

Since the COVID-19 crisis, debt ratios have been rising but are not equally under control in all government entities



Sources: BISA, FPB, IWEPS, Statistics Flanders, NAI and NBB.

ratios of two distinct entities. For Belgium as a whole, public revenue is equal to disposable revenue. At country level, public revenue represents about half of GDP. As a result, the debt-to-revenue ratio is twice as high as the debt-to-GDP ratio, thus exceeding the 200 % threshold.

The heterogeneity of fiscal positions is clear, not only between the federal level and federated entities but also between the various communities and regions. Although the pandemic increased deficits, it should be noted that some government entities (the federal government and social security, the Walloon Region and the Brussels-Capital Region) were already running a deficit before the crisis. It is precisely these entities that are expected, in the absence of consolidation, to continue to run up worrying deficits in the coming years. By 2027, according to the FPB's projections based on unchanged policy, these discrepancies could even surpass pre-pandemic levels.

This wide variance in terms of fiscal position is reflected in the level and dynamic of indebtedness of the various entities. Here, again, nominal values are expressed not in relation to national GDP but rather in relation to the respective level of disposable revenue. At unchanged policy, the debt ratios of the Walloon and Brussels-Capital Regions are likely to reach worrying levels. The sustainability of the French Community's debt seems at first glance less problematic, but in the absence of own revenue it relies almost entirely on transfers from the federal government. The latter, for its part, is expected to record a sustained debt increase, but it has full tax autonomy which gives it more room to manoeuvre and thus influence the trajectory. The debt ratio and dynamics of the Flemish Community are less worrisome.

2. Fiscal outlook at unchanged policy

This section analyses the public finances of the selected government entities between 2016 and 2027. We chose 2016 as our starting point as this was the year in which the full fiscal impact of the sixth state reform was first felt.

It is composed of three parts. The first part analyses the evolution and determinants of the primary balance by government entity. The fiscal outlook for 2022-2027 of primary balances, namely the budget balance excluding interest payments, is based on projections by the Federal Planning Bureau, published in the Regional Economic Outlook 2022-2027, released in July 2022 (BISA, FPB, IWEPS, Statistics Flanders (2022)), and in the national Economic Outlook 2022-2027, released in June 2022 (FPB (2022a)). These fiscal projections are based on a “no policy change” hypothesis, meaning that only those government measures that were already decided and sufficiently specified at the time of the projections are integrated¹. The second part takes a closer look at the evolution of transfers from the federal government to the regions and communities since 2016. Finally, the third part focuses on interest expenses. We did our own calculations of interest charges, based on the implicit interest rate on debt and the Belgian OLO rates observed in May 2022. This allowed us to recalculate interest payments more easily in all scenarios simulated in Section 3.1.

2.1 Primary balance of government entities

We start our analysis of the public finances of the selected entities with an examination of the primary balance, namely the budget balance excluding interest payments on public debt. As already mentioned, we used 2016 as our starting point. This has the additional advantage that the primary balance in all entities was close to balanced. For each entity, changes in the primary balance since 2016 are explained by analysing trends in the most important revenue and expenditure categories. More precisely, we show how the primary balance and each category of revenue and expenditure evolved compared to nominal potential GDP. An added benefit of this approach is that nominal potential GDP is used as a benchmark for expenditure growth in the European governance framework.

Federal government and social security

In 2016, the federal government, including social security, was running a small primary deficit of around € 700 million. In the three years preceding the COVID-19 crisis, the government even had a primary surplus, attributable to an increase in advance payments of corporate tax following the tightening of penalties for underpayment. The pandemic ended this streak, causing revenue to plummet and spending to rise. Public finances partially recovered in 2021, but a balanced budget is not expected during the projection horizon.

On the contrary, assuming unchanged policy, the deficit is expected to widen by 2027, mainly due to a spontaneous drift in current expenditure, which continues to bear the brunt of an ageing population (mainly via pensions and healthcare). Transfers to other public administrations are declining, but this will not be enough to rein in the widening of the deficit. As regards receipts, the tax shift enacted between 2015 and 2020 has undeniably slowed down their development since 2016, while the outlook is broadly stable for the duration of the projection horizon.

¹ We opt here to present the primary balance according to the “advance payment” approach, that includes the advance payments of additional regional surcharges on personal income tax in the year in which the related advance payments are transferred by the federal government to the regions. This contrasts with the ESA 2010 approach, which records regional personal income tax revenue only in the year in which it is fixed by way of a tax assessment. Therefore, the FPB-figures, compiled in accordance with ESA 2010, were adjusted to integrate advance payments of additional regional surcharges on personal income tax.

Flemish Community

The Flemish Community reported a small primary surplus in 2016 of close to € 550 million. In subsequent years, the primary balance remained in surplus or displayed a small deficit. As in the other government entities, the COVID-19 crisis caused an unprecedented primary deficit in the Flemish Community in 2020. This was reduced substantially in 2021, as revenue increased due to the economic recovery, with primary expenditure increasing only marginally.

For 2022-2027, projections at unchanged policy reveal a gradual improvement in the primary balance and a slight surplus by 2026. This improvement results from a lower growth in primary – mainly current – expenditure than in revenue over this period. The low growth rate in current expenditures is chiefly attributable to the phase-out of recovery measures and RRP expenditure and the incomplete or no indexation of some expenditure categories to inflation. At the end of the projection period, primary expenditure by the Flemish Community is forecast to be below its 2016 level, adjusted for nominal potential GDP growth. This is in contrast to the projections for the federal government and social security.

Brussels-Capital Region and the Common Community Commission

The Brussels-Capital Region and the Common Community Commission reported a small primary surplus of close to € 150 million in 2016. However, from 2017 onwards, driven by strong expenditure growth, the region ran an increasing primary deficit, which peaked during the COVID-19 crisis.

For 2022-2027, projections at unchanged policy foresee a halving of the deficit, driven by a more subdued increase in expenditure compared to revenue. The greatest improvement in the budget balance is foreseen for 2022-2023, due to temporary cuts in investment expenditure and the expiry of most government assistance measures. The deficit is expected to remain around € 600 million for 2024-2027, as both revenue and primary expenditure are projected to expand at a similar pace. In contrast to the Flemish Region, primary expenditure is not projected to fall below its 2016 level adjusted for nominal potential GDP growth.

Walloon Region

As was the case in all other government entities, Walloon finances suffered during the COVID-19 crisis. However, unlike other regions, the Walloon Region's deficit widened in 2021, mainly due to the devastating impact of heavy flooding that year. Nonetheless, although the region recorded a primary surplus of € 200 million in 2016, Walloon finances had already begun to deteriorate somewhat before the COVID-19 crisis.

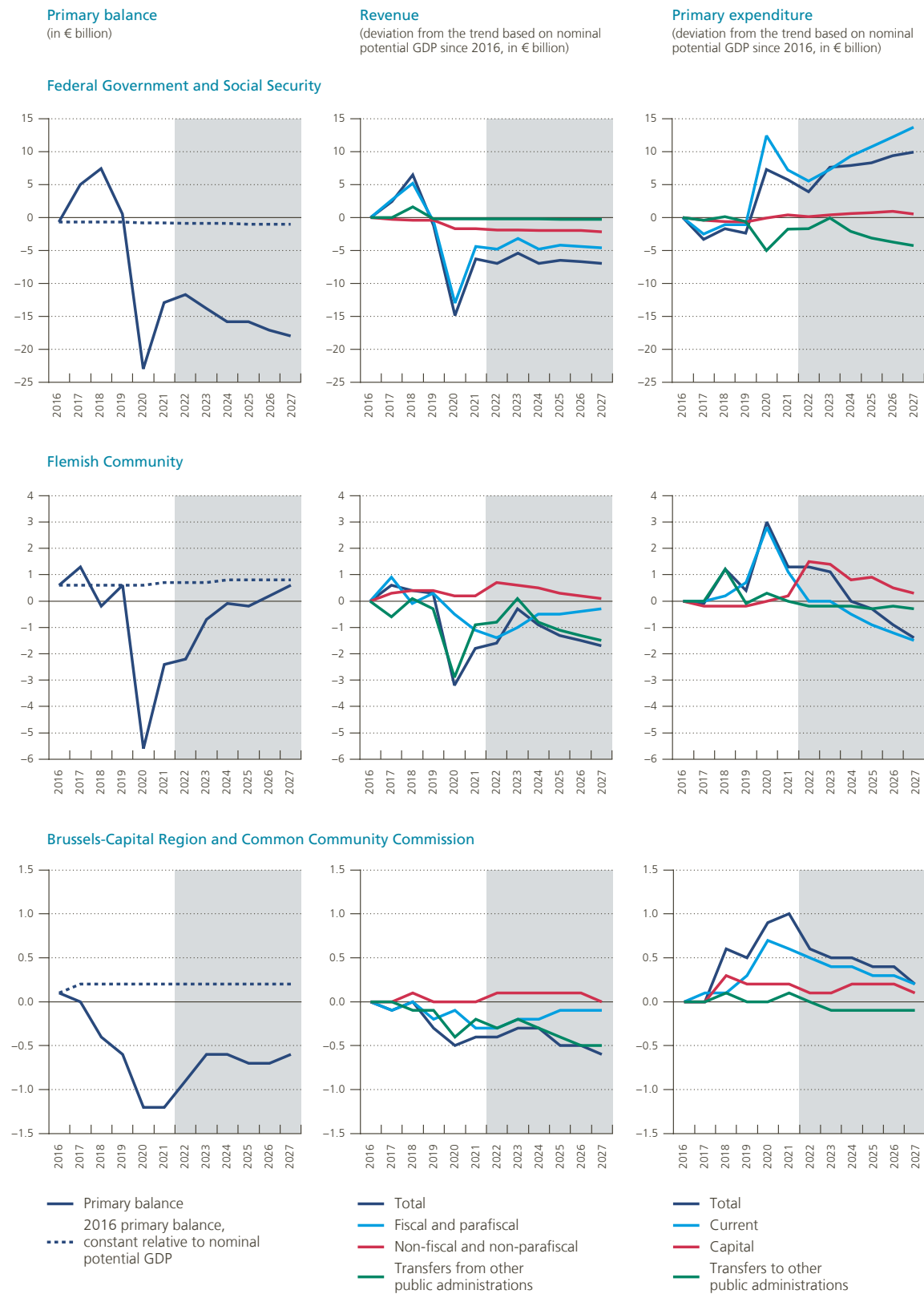
Assuming unchanged policy, the return to a balanced budget is likely to be gradual and incomplete. Until 2024, the comprehensive plan for recovery and, to a lesser extent, the reconstruction of infrastructure destroyed by floods will continue to weigh on the Walloon Region's capital expenditure. From 2025 onwards, this expenditure should in principle drop off, but this effect will be partially counteracted, on the revenue side, by a concomitant limitation on transfers received from the federal level, in particular the gradual disappearance of the transition mechanism provided for by the special financing act (see below). It should be noted that the FPB's projections do not include, beyond 2022, the cumulative structural effort of at least € 150 million per year (around 1 % of revenue) which the Walloon government is determined to make in response to the recommendations of the external debt commission.

French Community

Like the others, the French Community's finances were affected by the crisis but not because of expenditure, which scarcely increased in 2020, but rather due to a sharp decline in revenue as a result of the slowdown in economic activity and its repercussions on transfers received from the federal level. The primary balance, which was balanced in 2016, fell as a result of the pandemic and only partially recovered in 2021 and 2022.

Chart 4

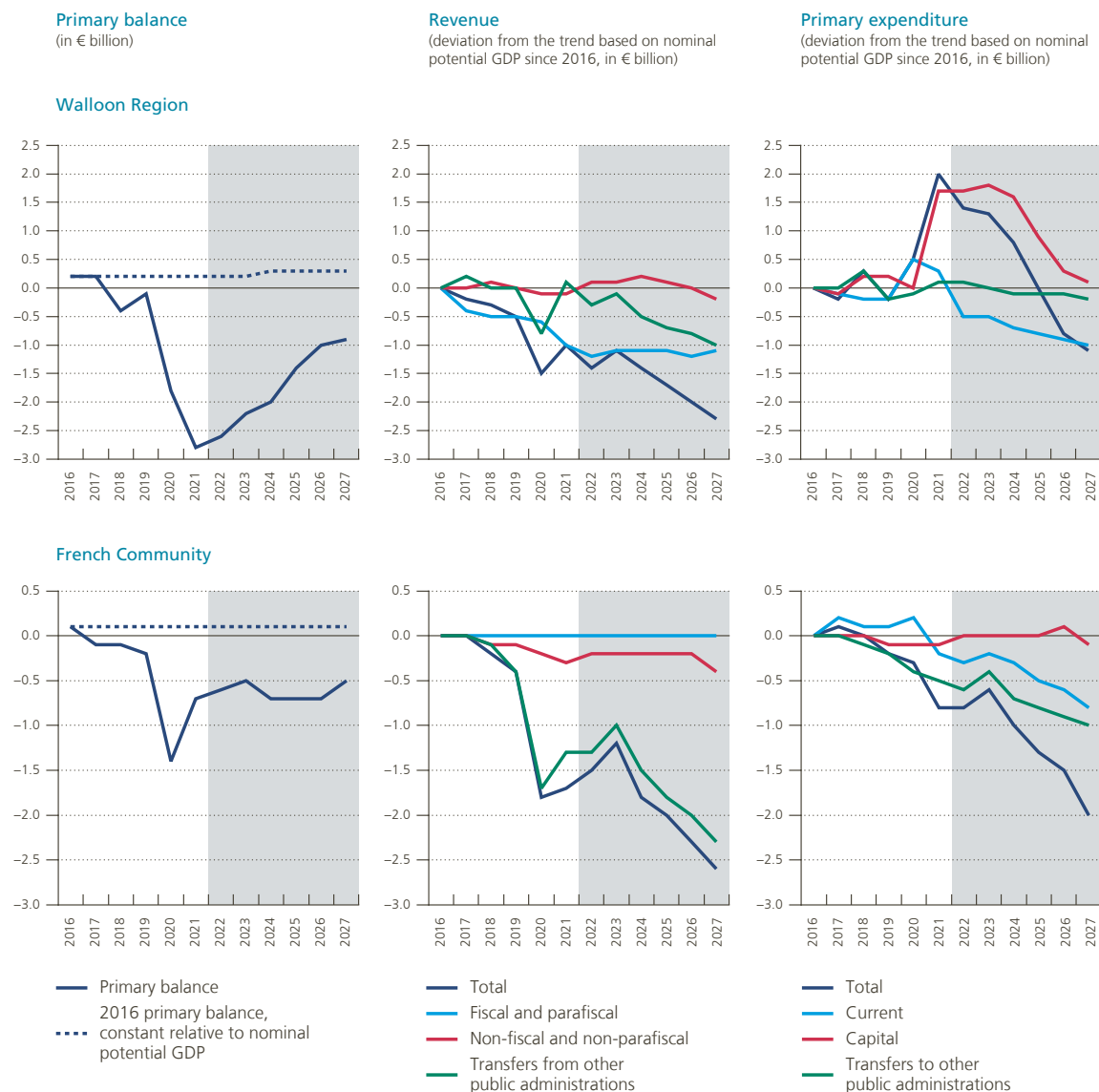
The fiscal outlook at unchanged policy of the government entities is heterogeneous



Sources: BISA, FPB, IWEPS, Statistics Flanders, NAI and NBB.

Chart 4 (continued)

The fiscal outlook at unchanged policy of the government entities is heterogeneous



Sources: BISA, FPB, IWEPS, Statistics Flanders, NAI and NBB.

Assuming unchanged policy, the FPB expects the deficit to remain fairly stable in the coming years, driven by a combined decline in revenue and expenditure (expressed as a percentage of potential GDP). The French Community's revenue is suffering in particular from a deterioration in the demographic parameters used to calculate the transfers it receives from the federal government (the demographic adjustment coefficient and the student-based allocation key), as well as from an increase in its contribution to cover pension liabilities (see below).

2.2 Transfers from the federal government to the regions and communities

This section sheds light on the downward trend in transfers from the federal government to the abovementioned entities. The focus is on transfers under the Special Finance Act of 16 January 1989 on the financing of the communities and the regions, enacted following the 6th state reform. Such transfers or grants from the federal

government to the regions and the communities include transferred tax revenues (the so-called VAT and personal income tax allocations) as well as current transfers (excluding regional personal income tax). The mechanisms used to determine these transfers include automatic linkage to consumer prices inflation, to real GDP growth and to population changes. For the sake of consistency, the indexation parameters are based on FPB and Study Committee on Ageing forecasts, defined as in the baseline macroeconomic scenario presented above.

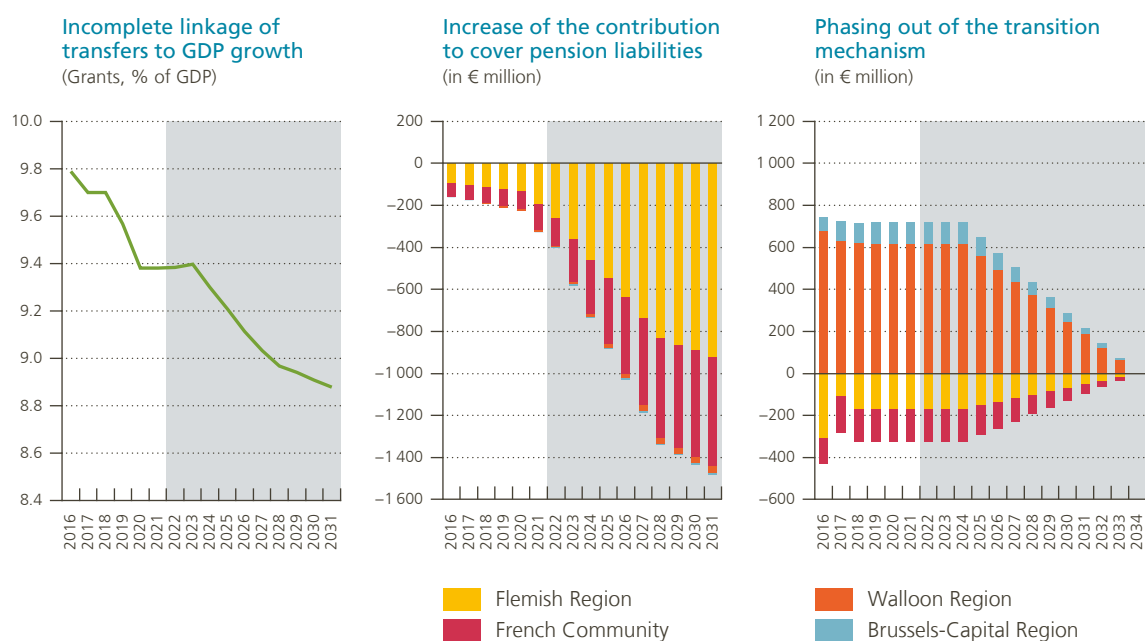
Transfers from the federal government to the communities and regions are expected to fall by almost 1 % of GDP between 2016 and 2031, for three main reasons. The first and most important is the uncomplete linkage of these transfers to GDP. Whereas the indexation formulas for transfers are fully linked to inflation, the link is only partial for real growth (with the exception of the percentage above 2.25 %). This uncomplete linkage is due to two factors. First, it was seen as a compensation for the increased tax autonomy of the regions through proceeds from personal income tax.¹ With no change of policy and therefore no change in the tax laws, this new financing was expected to grow faster than GDP due to the progressive character of the tax and population ageing (as pensions form part of the tax base but are not included in GDP). Second, the uncomplete linkage represents the contribution by the communities and regions to the consolidation of public finances and ageing costs. In addition to an upfront contribution of € 2.5 billion by 2016, the federated entities have been asked to make an additional effort by means of reductions in the link to economic growth for certain grants or transferred tax revenue.

The second explanation is an increase in the contribution by the regions and communities to cover the pension liability of their civil servants. The 6th state reform introduced a new mechanism whereby the federated entities will share in the costs of ageing. This means they will pay the federal government a contribution proportional to the salaries of their permanent staff; by 2030, this should match the rate applicable to contract workers (8.86 %). This represents between 10 % and 20 % of the total decrease and is almost exclusively borne by the Flemish Community and the French Community due to the large number of civil servants in the education sector at community level.

1 Additional percentage levy on personal income tax (representing about ¼ of personal income tax revenue).

Chart 5

Downward trend in transfers from the federal government to federated entities



Sources: BISA, FPB, IWEPS, Statistics Flanders, NAI and NBB.

The third reason for the drop in transfers is the progressive decrease in so-called “transition payments”. These are grants intended to ensure that no community or region gained or lost when the switch was made from the old law to the new one. The amounts remain constant in nominal terms for ten years, until 2024, at which time it will be reduced linearly for the next ten years, until disappearing in 2034. This effect is less significant at the federal level (where amounts partially offset each other) than at the regional level, as the Walloon Region lost more in relative terms.

2.3 Interest expenses

Interest expenses are projected as the sum of (i) interest paid on non-maturing debt, assumed to be financed at the implicit interest rate, (ii) interest paid on maturing debt,¹ assumed to be financed at the implicit interest rate for debt being rolled over in the first half of the year and at the average market rate for debt being rolled over in the second half of the year, and (iii) interest on new debt (namely, the sum of the primary balance, interest expenses and stock-flow adjustments), assumed to be financed at the average market rate.²

Market interest rates reflect the weighted average of one- and 10-year Belgian OLO rates as observed in May 2022.³ It should be noted that no spread is added to the market rates when calculating interest expenses on the public debt of the regions and communities. While it would make sense to add a spread – given differences in ratings and the average maturity of debt (see Section 6.2) – limited data availability makes it difficult to take a well-informed decision in this respect. Furthermore, the implicit interest rate is derived endogenously, i.e. it is the ratio of government interest payments in the current year to government debt stock the preceding year.

At unchanged policy and taking into account the rise in interest rates, the interest expenses of all general government entities should gradually increase in the coming years, thus putting more pressure on their budget balance. From a historical point of view, the evolution of interest expenses paid by the federal government is rather different from that of the communities and regions.

At the federal level, there has been a clear decrease in interest expenses over the last few years. The fall in interest rates and their maintenance at a low level until the end of 2021 were seen by debt managers as an opportunity to refinance large volumes of securities and thereby obtain much longer maturities and much lower rates than those applicable to the securities to be refinanced, which were typically in the range of 3 % or 4 %. This policy drove up the average maturity of the debt stock, thereby limiting annual refinancing volumes. As a result, the interest paid by the federal government should increase only very gradually and progressively over the next few years before reaching in 2027, at unchanged policy, a level close to that observed in 2016.

Unlike at the federal level, however, the communities and regions have not seen a marked decrease in their interest expenses. Indeed, in recent years, the debt of the communities and regions has increased proportionally more than at federal level. The financing of these proportionally higher public deficits in relation to the debt stock, combined with very long maturities for debt (re)financing, has mitigated the favourable effects of low interest rates. After several years of relative stability, interest expenses began to rise slightly in 2020. In the coming years, this increase is expected to accelerate. Between now and 2027, all communities and regions should expect, assuming unchanged policy, more than a doubling of interest expenses, although the rate of this increase will be attenuated by longer debt maturities.

1 See Section 3.2. for more information on the assumptions and the data on maturing debt in the various subsectors.

2 The interest payments equation is based on the one used in the ECB's DSA (Bouabdallah et al., 2017) and is defined as follows:

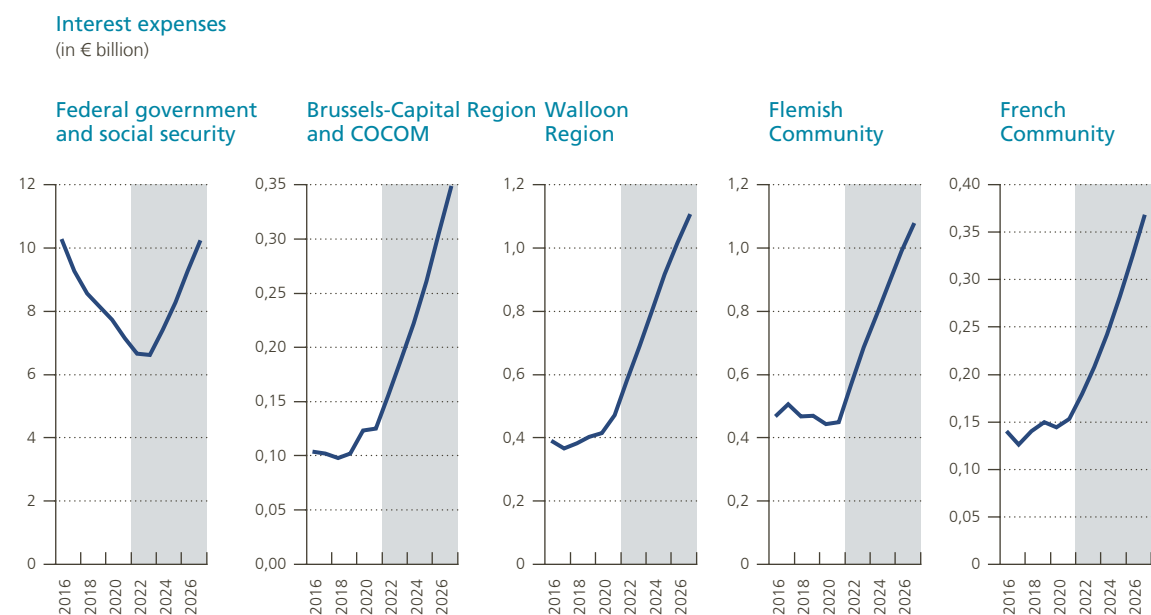
$$inp_t = (nmd_{t-1} * iir_{t-1}) + (md_{t-1} * \frac{1}{2} * (iir_{t-1} + amir_t)) + (\frac{1}{2} * (-pb_t + sfa_t + inp_t) * amir_t)$$

with *inp* being interest payments, *nmd* non-maturing debt, *iir* the implicit interest rate on debt, *md* maturing debt, *amir* the average market interest rate *pb* the primary balance, and *sfa* stock-flow adjustments.

3 In May, the 10y OLO rate was 1.6 % and expected to rise to 1.8 % in 2023, to 2.3 % in 2027 and to 2.4 % thereafter.

Chart 6

Interest expenses are expected to increase in the coming years



Sources: NAI and NBB.

3. Debt sustainability analysis

When is public debt sustainable, and when is this no longer the case? Unfortunately, this question is not easy to answer. An often-used definition of sustainability is given by the IMF (2013): *"In general terms, public debt can be regarded as sustainable when the primary balance needed to at least stabilise debt under both the baseline and realistic shock scenarios is economically and politically feasible, such that the level of debt is consistent with an acceptably low rollover risk and with preserving potential growth at a satisfactory level [...] The higher the level of public debt, the more likely it is that fiscal policy and public debt are unsustainable [...]"*.

This definition contains several elements which are typically assessed in a debt sustainability analysis. The analysis tends to incorporate various factors, reflecting the need to include as much relevant information as possible to account for the many uncertainties inherent in this type of analysis, but also to account for the sustainability challenges across different time horizons, from short to medium and long term.¹ A key component of a debt sustainability analysis is the central benchmark simulation of the debt path over a specific time horizon. As the baseline scenario is sensitive to the assumptions used, it is usually complemented by several alternative scenarios which test the sensitivity of debt paths to a change in assumptions and/or adverse shocks. Both the baseline scenario and the alternative scenarios allow for the evaluation of medium-term risks to debt sustainability, providing insight into (i) the debt level at the end of the projection horizon, (ii) the debt dynamics (e.g. the possibility of debt stabilisation over the period) and (iii) the fiscal efforts required to bring debt back to a certain level. In addition, a broad range of short-term liquidity and longer-term solvency indicators are also typically incorporated. As such, the tool acts as an early warning signal of potential future fiscal stress.

1 See for instance the elaborate DSA frameworks of the EC (2022b), ECB (Bouabdallah et al., 2017) and the IMF (2022).

The present analysis starts by assessing the medium-term risks to Belgian public debt sustainability under both a baseline scenario and alternative debt scenarios. Subsequently, a handful of other relevant indicators flagging short- and longer-term debt sustainability challenges are discussed.

3.1 Medium term: debt level and dynamics under various scenarios

To assess and compare the medium-term risks to debt sustainability in the government entities under consideration, we constructed for each one a plausible debt path for the next ten years. We also developed four alternative scenarios to illustrate the impact of various (adverse) shocks, namely a change in macro-economic conditions (lower real GDP growth at the national or regional level), a change in financial variables (a higher interest rate risk premium) and a discretionary fiscal policy decision (higher government investment expenditure).¹

3.1.1 Baseline scenario

Our public debt simulations start in 2022² and are based on the following debt accumulation equation:

$$debt_t = debt_{t-1} - primary\ balance_t + interest\ charges_t + stock-flow\ adjustment_t$$

where a primary deficit (negative primary balance) pushes up the debt and stock-flow adjustments represent other factors that affect debt but are not included in the headline budget balance (such as statistical discrepancies, the net acquisition of financial assets, valuation effects, etc.).

For 2022-2027, the macroeconomic projections and almost all fiscal projections were taken from the Federal Planning Bureau's June 2022 Economic Outlook (containing country-level data) and July 2022 Regional Economic Outlook. Projections regarding the primary balance and interest expenses are discussed in detail in Section 2.3. Finally, for the federal government and the Flemish Community, data on stock-flow adjustments were taken from the Monitoring Committee's July 2022 Multi-Annual Projections; for the other entities, the series was set to zero, which is a common assumption in debt sustainability analyses.

For 2028-2031, Belgian GDP growth projections were taken from the Study Committee on Ageing's 2022 Annual Report as were the Belgian GDP deflator growth projections, assumed to be constant at 2 %. In addition, growth of government revenue was calculated based on the revenue-to-GDP elasticity used by the High Council of Finance to determine the structural balances of the entities (see HCF, 2015). For the regions and communities, transfers under the Special Financing Act were simulated and included in the revenue projections. Based on the assumption that government primary expenditure will grow at the same pace as government revenue, the primary balance-to-national GDP ratio was kept constant as from 2028, aside from the cost impact due to population ageing (as projected by the Study Committee on Ageing) which was added on top. The stock-flow adjustment was set to zero for all entities. Based on the above assumptions, the baseline scenario projects debt to increase until the end of the projection horizon for all entities, aside from the Flemish Community which is expected to see its debt peak in 2027 and then gradually decline. Debt paths for the federal government and Walloon Region look particularly elevated, leaving little room to react to future shocks and challenges.

Chart 7 shows that the primary deficit is the main contributor to upward debt dynamics, except in the Flemish Community where the Federal Planning Bureau projects the dynamics to be close to balance as from 2024. Looking further ahead, the Flemish budget balance is expected to become even more favourable (and turn into a surplus). The other important determinant of debt dynamics is the contribution of the interest rate-growth

1 The alternative shock scenarios are based on a "narrative" interpretation reflecting plausible risks in the current context (in contrast to a standard-sized shock, e.g. 1 % of GDP).

2 For years prior to 2022, public debt data were taken from the NBB's online statistics database. The debt concept used is the subsector's contribution to the consolidated gross public debt for Belgium as a whole so that the debt figures for the various subsectors add up to the Maastricht definition of national public debt.

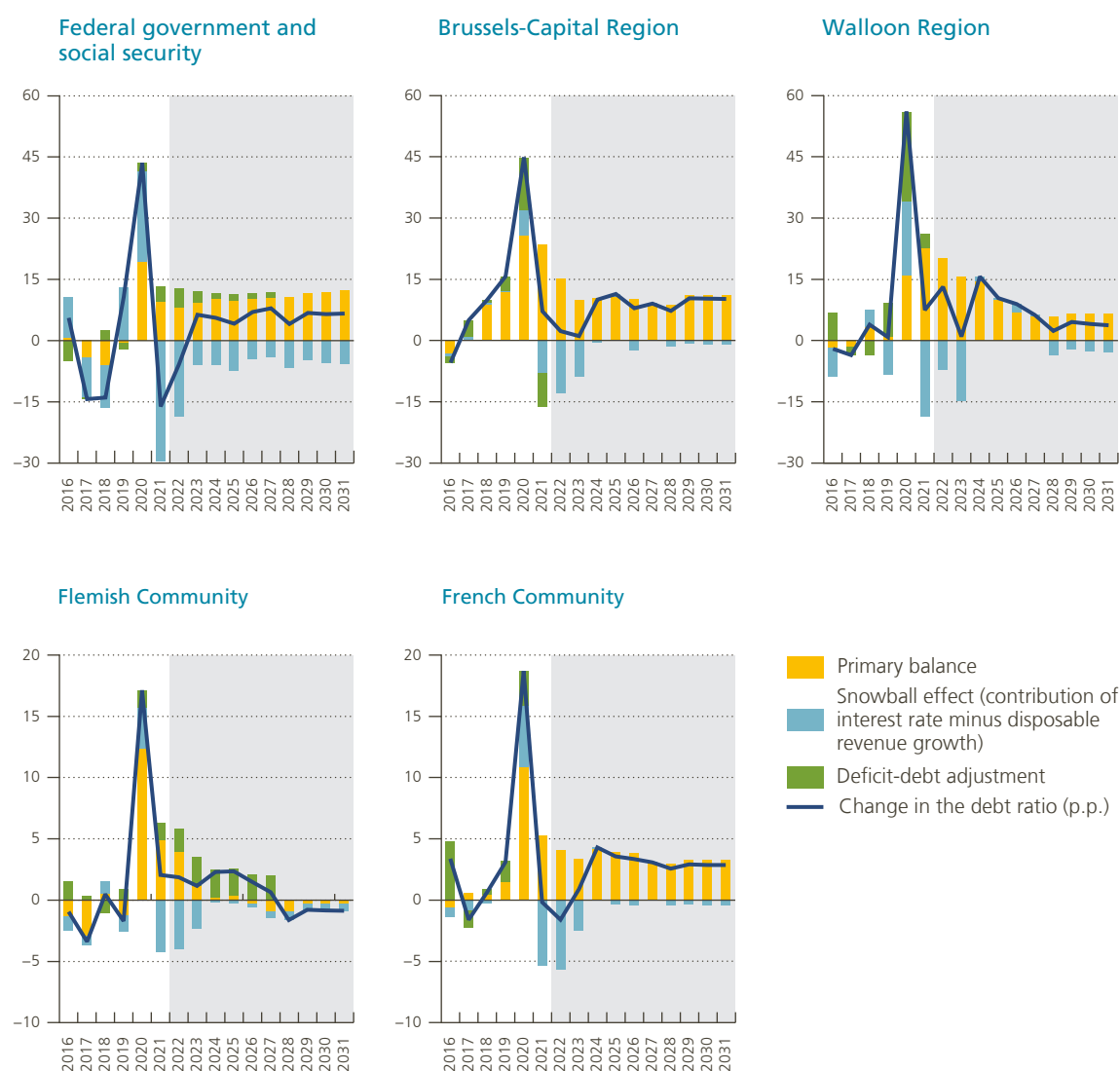
differential (known as the “snowball effect”), usually calculated as the difference between the implicit interest rate on government debt and nominal GDP growth multiplied by the debt ratio.¹ A persistent negative interest rate-growth differential will in principle lower debt ratios even in the absence of primary surpluses. In contrast, a positive differential will push debt up, hence a primary surplus will be required to reduce or stabilise public debt ratios. The higher the debt ratio, the stronger the (positive or negative) snowball effect will be. As a different debt denominator was used here, i.e. disposable revenue instead of nominal GDP, the snowball effect was calculated as the contribution of the difference between the implicit interest rate and growth in disposable revenue to debt dynamics. Chart 7 illustrates that the alternative snowball effect is projected to continue to play

1 The contribution of the snowball effect to the change in debt can be described as follows: $\Delta d_t = \frac{i_t - g_t}{1 + g_t} \times d_{t-1}$, where d represents the debt stock, i the implicit interest rate and g the nominal growth of GDP.

Chart 7

Drivers of change in the debt ratio

(as a % of disposable revenue)



Sources: BISA, FPB, IWEPS, Statistics Flanders, NAI and NBB.

out favourably and will have a debt-reducing impact at all levels of government but particularly for the federal government, which can be explained by the assumptions regarding the development of disposable revenue and the federal government's relatively high debt ratio. For the federal government, growth in disposable revenue is projected to be very similar to nominal GDP growth, implying that the two measures of the snowball effect are practically identical. For the regions and the communities, however, projected growth in disposable revenue is below Belgian nominal GDP growth, resulting in a less favourable contribution by the interest rate-growth differential to debt dynamics, which will be magnified the higher the debt ratio. The slower growth in disposable revenue reflects lower revenue-to-GDP elasticities for the regions and the communities as well as the incomplete linkage of transfers to GDP (see Section 2.1). Overall, in the next decade debt dynamics are most worrisome at the federal level and in the Brussels-Capital Region.

It should be noted that the baseline projections, on which the results of the following medium term analysis are based, date from June and are subject to high uncertainty and possibly large revisions, especially for the next few years. Since risks to the fiscal outlook compared to June are clearly to the downside, debt paths and related sustainability risks are likely to be higher than depicted in this analysis.

3.1.2 First alternative scenario: a symmetric real GDP shock

The first alternative scenario assumes a decline in Belgian real GDP growth by 0.25 percentage points per year as from 2023 with the shock affecting all regions symmetrically. This can be considered a structural shock scenario in which Belgian potential GDP growth softens compared to the baseline.

In this scenario, the primary balances of the regions and communities are negatively affected through two channels. First, given lower economic growth, government own revenue will decline (with the GDP impact estimated through the entity-specific revenue elasticity). Second, transfers from the federal government under the Special Financing Act¹ will decline as these amounts are automatically indexed to real GDP growth. In addition, their expenditure is assumed unchanged from the baseline scenario.² The decline in revenue further implies that the denominator, disposable revenue, will shrink, worsening the debt ratios, with the impact on debt dynamics being stronger for entities with a relatively high revenue elasticity and/or a high debt ratio, i.e. the Walloon Region.

The federal government will also see its revenue decline as a result of the negative GDP shock (with the impact being relatively stronger as it has the highest revenue elasticity). Federal expenditure will, on the one hand, decrease due to lower Special Financing Act transfers to the regions but, on the other hand, increase somewhat due to the inherent reaction of certain expenditure items to growth (e.g. unemployment benefits and other social expenditure, ...).

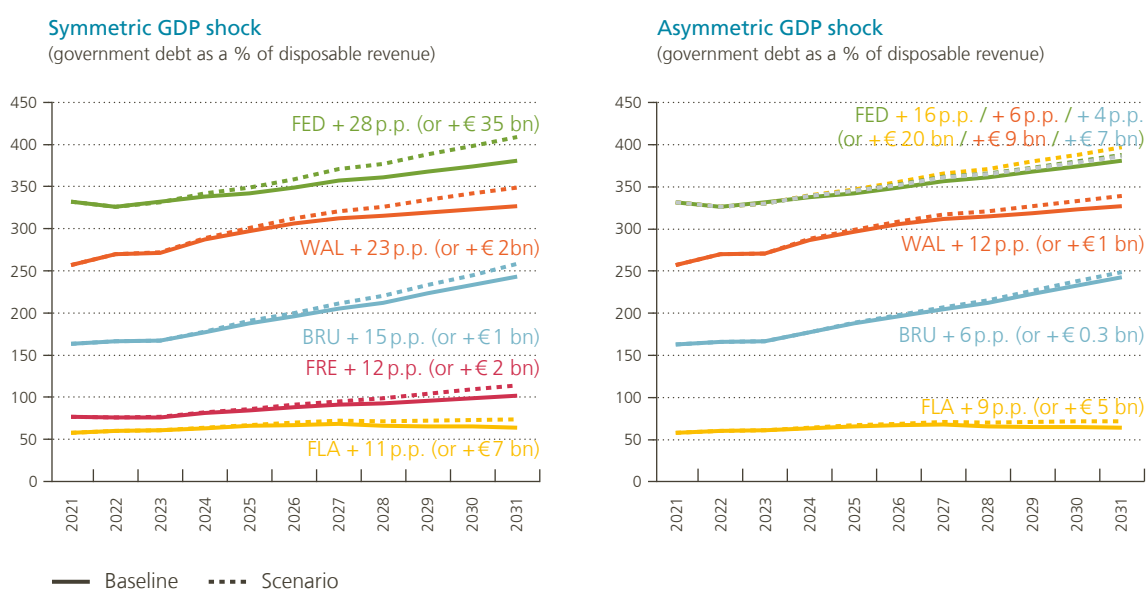
Chart 8 shows that, overall, the debt ratios of all entities appear to deteriorate significantly. Federal government debt is projected to rise the most, followed by that of the Walloon Region. The primary balances of these entities will be affected the most (due to more sensitive own revenue), and the impact of the denominator will be more unfavourable (also due to a higher debt ratio). The interest rate-disposable revenue growth differential will deteriorate slightly compared to the baseline but not enough to turn persistently positive. Overall, it is projected to continue to contribute negatively to the debt dynamics of the federal government, the Flemish Community and the Walloon Region and to have a neutral effect for the French Community and the Brussels-Capital Region. It should be noted that under this alternative scenario, the debt ratio of the Flemish Community also trends upwards, contrary to the baseline.

¹ It should be noted that simulations of Special Financing Act transfers assume no impact of the shocks on transfers between, on the one hand, the French Community and, on the other hand, the Walloon Region and the French Community Commission as stipulated in the Sainte-Emilie Agreement.

² Expenditure elasticities are zero according to the High Council of Finance's 2015 Report.

Chart 8

An adverse national GDP shock worsens all debt paths significantly, while the impact of an adverse regional GDP shock is cushioned^{1,2}



Source: NBB.

- 1 The baseline scenario reflects the Federal Planning Bureau's 2022-2027 macroeconomic and fiscal projections, except for government interest payments which were calculated based on the implicit interest rates on debt and the market interest rates on Belgian government bonds over May 2022. Beyond 2027, macroeconomic projections were taken from the Study Committee on Ageing's 2022 Report. The primary balance-to-national GDP ratio was kept constant as from 2028, to which the cost impact of population ageing (as projected by the Study Committee on Ageing) was added. Stock-flow-adjustments were set to zero.
- 2 The symmetric GDP shock scenario assumes that Belgian real GDP growth declines by 0.25 percentage points per year as from 2023 with the shock affecting all regions symmetrically. In contrast, the asymmetric GDP shock scenario assumes that regional real GDP growth declines by 0.25 percentage points per year as from 2023 with the shock hitting the three regions in turn. The primary balances are affected through entity-specific revenue and expenditure elasticities (GDP effect) and a related change in Special Financing Act transfers.

3.1.3 Second alternative scenario: an asymmetric real GDP shock¹

The second scenario models the impact of a decline in regional real GDP growth by 0.25 percentage point per year as from 2023. This scenario actually consists of three sub-scenarios as the shock hits each region in turn, leaving growth in the other regions unaffected. A regional shock affects national GDP in proportion to the size of the region, meaning that the magnitude of the shock on the national economy is not identical.

For the federal government, the impact of the economic deterioration on the primary balance and the debt denominator is calculated in the same way as under the symmetric GDP shock scenario. The greater the affected region's share of GDP, the more severe the deterioration in public finances will be. For the regions and communities, a regional GDP growth shock will have a slightly lower impact on government own revenue than a national GDP growth shock. Under an asymmetric GDP shock, the income of people living in the affected region but working in another region will, for example, not be impacted, thus personal income tax revenue will decline by less than under a symmetric GDP shock.² Consequently, we corrected the GDP impact on own government

1 The French Community is not included in this scenario as it has no own revenue linked to regional GDP developments; its revenue consists, for the most part, of transfers which mainly depend on national GDP developments.

2 This implies that regions whose GDP is unaffected are, to some extent, also impacted by the economic decline in the affected region since, for instance, the income of people living in these regions but working in the affected region will also be hit. These spillovers are not depicted on the graph.

revenue (again, estimated through the entity-specific revenue elasticity) by the affected region's share of extra-regional commuters¹. The Special Financing Act mechanism also influences the revenue of the regions, but under this scenario three channels are at play. First, as in the symmetric GDP shock scenario, lower national GDP implies a lower amount available to be transferred from the federal government. As a decline in Flemish GDP growth will lead to a relatively greater fall in Belgian GDP growth, transfers to the Flemish Community will decrease relatively more than those to the Walloon Region or Brussels-Capital Region under their respective GDP shocks. Second, the allocation of transfers depends on the region's share of total personal income tax revenue. The lower the share, the lower the transfers received. Hence, the asymmetric GDP shock will lower the affected region's share of transfers of PIT revenue. Third, for the so-called "national solidarity mechanism" transfers, the allocation of transfers depends on the deviation of per capita personal income tax from the national average. At present, the Walloon Region and the Brussels-Capital Region are below the national average, whereas Flanders is above, implying that only the first two regions receive this type of transfer. The mechanism is thus explicitly aimed at vertical solidarity. Intuitively, less heterogeneity between regions will result in lower transfers. This is exactly what happens in the event of a negative regional GDP shock in Flanders. On the other hand, a GDP shock in the Walloon Region or the Brussels-Capital Region will lead to a higher deviation of per capita personal income tax from the national average, given the less favourable starting position of these regions. Combining the three channels, Special Financing Act transfers to the Flemish Community will be lower compared to the baseline, but higher for the Walloon Region and the Brussels-Capital Region (when hit by a regional shock).²

Overall, the rise in government debt paths is less sizeable than under the adverse national GDP scenario (see Chart 8). It should be noted, though, that Flemish debt levels at the end of the projection horizon are similar under both adverse scenarios, as the gap between national GDP shocks is smallest and Special Financing Act transfers also contribute negatively to debt dynamics. In addition, while the increase in Walloon debt is much smaller compared to under the symmetric GDP shock scenario, the increase in its debt ratio by 2031 will be higher than that of the Flemish Community (+12 ppt versus +9 ppt). This is mainly due to the Walloon Region's higher revenue elasticity which worsens the debt ratio more via the denominator effect; the deterioration of the primary balance in both is comparable.

3.1.4 Third alternative scenario: a risk premium shock

This scenario illustrates the risk of a persistent increase in the risk premium which, over time, reverses the favourable interest rate-disposable revenue growth differential embedded in the baseline. More specifically, it is assumed that nominal market rates rise by 250 basis points from 2023 until the end of the projection horizon, for all entities. Compared to the last decade, interest rates under this alternative scenario are relatively high. By 2031, the ten-year OLO rate is assumed to rise to 5 % and implicit rates on government debt to around 3.5 %. It should be noted that inflation is left unchanged compared to the baseline (unlike in the current economic environment).

Higher interest rates will have a greater impact on the finances of entities with high debt (the snowball effect comes into play relatively more), short average debt maturity and a high projected deficit (as the new debt has to be financed at higher market rates so that a rise in market rates will be transmitted faster to the implicit interest rate).

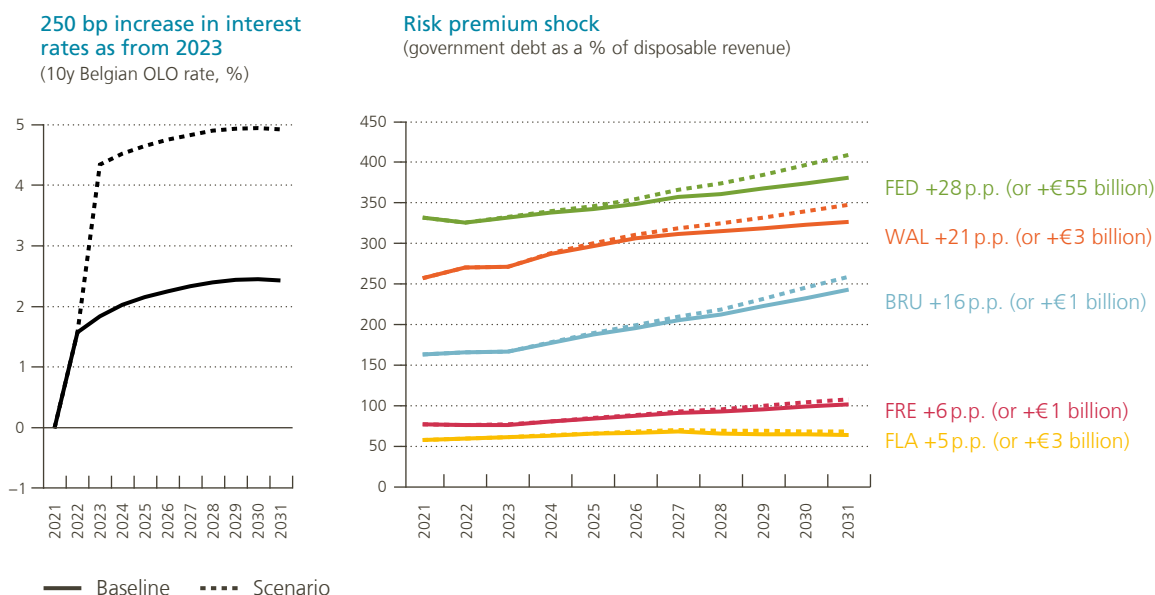
The simulations show that the initial impact on debt will be limited. As the average debt maturity is relatively long (see also Section 3.2), the increase in the implicit interest rate will be very gradual compared to the sudden increase in market rates. As past debt contracted at low rates is gradually refinanced with new debt, the projected path increases noticeably, especially in high-debt government entities. The interest rate-disposable revenue growth differential will turn positive as from 2024 in all regions and communities, putting debt trajectories on a steeper upward path compared to the baseline. The favourable interest-disposable revenue

1 According to Steunpunt Werk, extra-regional commuters made up 12 % of the labour force in Flanders, 20 % in Wallonia and 30 % in Brussels in 2019.

2 For the sake of completeness, it should be noted that disposable revenue (the denominator in the balance and debt ratios) also declines due to the elasticity of revenue to GDP and, in the regions and communities, lower transfers.

Chart 9

A continued rise in interest rates will significantly raise public debt projections for all entities¹



Source: NBB.

1 The baseline scenario reflects the Federal Planning Bureau's 2022-2027 macroeconomic and fiscal projections, except for government interest payments which were calculated based on the implicit interest rates on debt and the market interest rates on Belgian government bonds over May 2022. Beyond 2027, macroeconomic projections were taken from the Study Committee on Ageing's 2022 Report. The primary balance-to-national GDP ratio was kept constant as from 2028, to which the cost impact of population ageing (as projected by the Study Committee on Ageing) was added. Stock-flow-adjustments were set to zero.

growth differential also starts to fade for the federal government but will only turn positive by the end of the projection horizon. The average debt maturity seems to play less of a role in explaining differences in the interest rate sensitivity of individual entities.

3.1.5 Fourth alternative scenario: an investment shock

The federal government has set the goal of reaching a level of public investment for Belgium as a whole of 4 % of GDP by 2030.¹ Hence, the final scenario investigates the impact of a gradual increase in Belgian public investment expenditure from 3 % of GDP in 2024 (as embedded in the baseline) to 4 % in 2030.² The additional investment will be sizeable and allocated amongst the entities so that the fiscal effort of each is identical; as such, in 2030, the investment-to-disposable revenue ratio will be 3 percentage points higher compared to the baseline (see Chart 10, left panel).

Furthermore, the simulation assumes that the increase in public investment will result in an increase in Belgian GDP with the same amount. This corresponds to an investment multiplier of one in the short and long run, which lies rather at the upper end of the range of short-term multipliers found in the literature and rather at the lower end of the range of long-term multipliers.³ A multiplier below one could be the result of unproductive public investment, a crowding out of private investment by public investment or public investment being spent on foreign instead of domestic production (which is particularly important in a small open economy). A multiplier

1 See the Federal Government Agreement of 30 September 2020.

2 It should be noted that projections under the baseline scenario already incorporate a rise in public investment related to the implementation of recovery plans. The Belgian investment-to-GDP ratio is projected to increase from 2022 onwards and to peak in 2024 at 3 % of GDP.

3 See e.g. Abiad *et al.* (2015) and box 6 in ECB's Monthly Bulletin of December 2012.

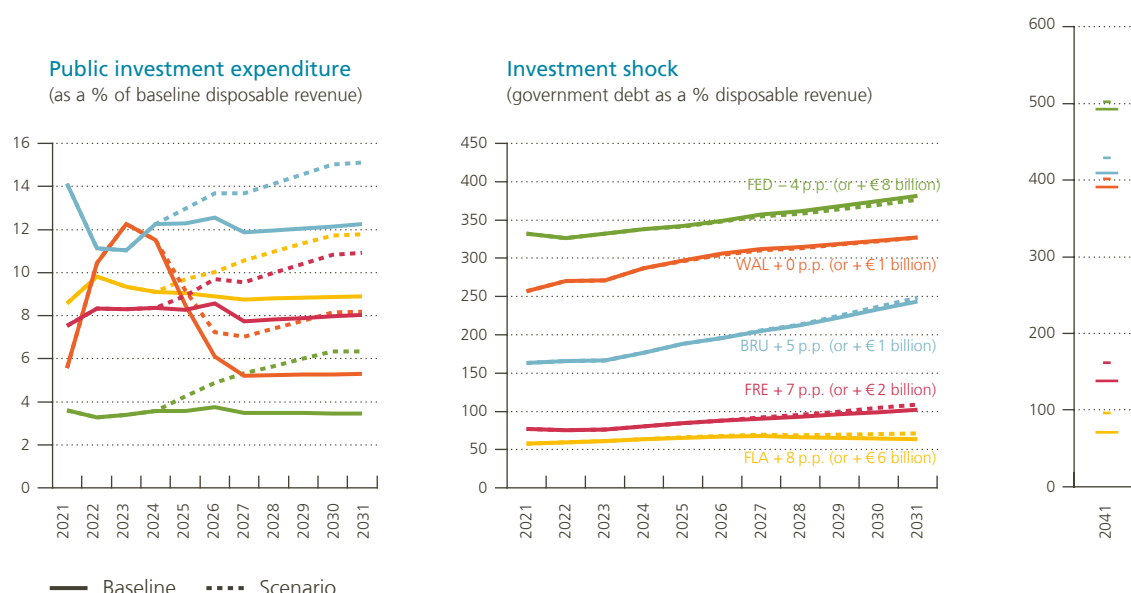
above one could be the result of more productive public investment generating positive second-round effects on the domestic economy. While a multiplier of one makes this exercise rather mechanical, it has the benefit of transparency. If a lower multiplier were used, the additional investment expenditure would push debt further up, while a higher multiplier could ultimately result in a downward debt path as the increased investment expenditure pays for itself.

All primary balances will deteriorate, to the same degree, due to the increase in investment expenditure. This negative effect will be cushioned by the improvement in government revenue as a result of the positive impact on GDP, with entities having the highest revenue elasticities (i.e. the federal government and the Walloon Region) benefitting the most. Higher Special Financing Act transfers resulting from the GDP increase will further improve the primary balances of the regions and communities but worsen that of the federal government. The denominator, disposable revenue, will also increase compared to the baseline, with the positive effect being stronger for entities with the highest revenue elasticities.

Chart 10 shows that the increase in debt ratios due to an increase in the numerator (i.e. a deterioration of the primary balance) is initially more or less offset by the positive denominator effect on debt dynamics. The latter is especially beneficial for the federal government and the Walloon Region due to their relatively high revenue elasticities and debt levels. After a while (not shown in the graph), though, all debt paths will start to rise more strongly than in the baseline scenario: once the increase in investment halts (i.e. after 2030), the unfavourable impact on debt dynamics from the budget balance will remain, while the favourable impact from

Chart 10

The increase in debt due to additional public investment expenditure is initially softened by the improvement in Belgian GDP^{1,2}



Source: NBB.

1 The baseline scenario reflects the Federal Planning Bureau's 2022-2027 macroeconomic and fiscal projections, except for government interest payments which were calculated based on the implicit interest rates on debt and the market interest rates on Belgian government bonds over May 2022. Beyond 2027, macroeconomic projections were taken from the Study Committee on Ageing's 2022 Report. The primary balance-to-national GDP ratio was kept constant as from 2028 to which the cost impact of population ageing (as projected by the Study Committee on Ageing) was added. Stock-flow-adjustments were set to zero.

2 The investment scenario assumes that public investment expenditure increases from 3% of GDP in 2024 to 4% in 2030. The short- and long-term investment multiplier equals one. The primary balances are affected through the increase in public investment expenditure, entity-specific revenue and expenditure elasticities (GDP effect) and a related change in Special Financing Act transfers.

the denominator will disappear (as GDP growth, and thereby revenue growth, returns to the baseline pace). The choice of the public investment multiplier is clearly key in driving the simulation results. Our assumption of a short-term multiplier of one reflects a rather optimistic view of the immediate impact of public investment on GDP: it implies that an investment scaling up over the period 2025-2030 does not have a meaningful impact on the debt ratio as GDP is boosted to the same extent. An investment multiplier below one, would result in higher debt ratios as of 2025 compared to the baseline.

Overall, the scenario simulations show that an increase in interest rates and a persistent softening in national GDP growth constitute the biggest risks to debt sustainability. A combination of the two scenarios – capturing some of the challenging developments characteristic of the current macroeconomic and financial environment – could bring debt dynamics onto an explosive path, especially in high-debt government entities. As far as public investment is concerned, only productive additional investment, with a fiscal multiplier far above one, would not enhance debt sustainability risks.

3.2 Short term: liquidity risk and market perception

In the short term, debt sustainability also depends on the level of market confidence in the debt. It is important that, even in the event of pressure on the financial markets, financing needs be met. While public debt may be sustainable in the medium and long term, a liquidity problem caused by excessive financing needs in a given year can, over time, lead to solvency issues for the government. To ensure short-term debt sustainability, it is desirable to minimise gross annual financing needs, insofar as possible. In practice, gross financing needs cover both the refinancing of maturing debt and the financing of the public deficit. The higher these amounts, the greater the amounts it is necessary to borrow on the financial markets.

In order to limit refinancing needs in the coming years, efforts have recently been made to extend the maturity of public debt. Low interest rates made it possible to do so at limited expense while spreading the refinancing schedule over several decades¹. At the federal level, the average debt maturity was over 10 years at the end of 2021. For direct debt² of the communities and regions, the maturity was around 15 years for Flanders and Wallonia, 16 years for Brussels and 17 years for the French Community at the end of 2021. In addition, it should be noted that controlling the public deficit makes it possible to limit gross financing needs. The more balanced the budget, the lower the level of borrowing required to finance public policies.

In order to compare the gross financing needs of the various entities, they are expressed below as a percentage of disposable revenue. At the federal level, gross refinancing needs will represent about 50 % of disposable revenue over the next few years³.

At the level of the communities and regions, gross financing needs are less substantial than at the federal level, although there are considerable differences between them. In Wallonia, gross financing needs represent around 30 % of disposable revenue. Deficit financing in Wallonia accounts for the bulk of gross financing needs, although it is also the region with proportionally the most refinancing. In Flanders, gross financing needs are much lower. With the exception of 2022, when they amounted to 10 % of disposable revenue, gross financing needs will reach barely 5 % of disposable revenue in the coming years. This is due both to a smaller deficit and to refinancing, albeit proportionally much more limited in scope. In Brussels, despite equally limited refinancing, the public deficit will push up gross financing needs to between 15 % and 20 % of disposable revenue in the coming years. In the French Community, gross financing needs will be between 5 % and 10 % of disposable revenue in the coming years, with the public deficit being the main driver.

1 More information on debt management at the level of the various subsectors can be found in their annual debt reports (see bibliography).

2 Direct debt represents 53 % of the debt of the Flemish Community, 65 % of the debt of Walloon Region, 73 % of the debt of Brussels-Capital Region and 100 % of the debt of the French Community. For indirect debt, we assume that 10 % is refinanced each year.

3 Short-term debt amounted to € 30.1 billion at the end of 2021. On this basis, we expect this amount to remain at the same level in the coming years.

Chart 11

Gross financing needs differ across government entities

(as a % of disposable revenue)



Sources: Belgian Debt Agency, Regional administrations and NBB.

In addition to gross financing needs, the perception of risk associated with the various entities is also important when it comes to the short-term sustainability of public finances. In this respect, rating agencies regularly assess public debt. Currently, all entities in Belgium have at least an A rating, i.e. a good quality sovereign rating, although the situation varies within this category. The federal government currently has the highest rating of all entities in the country and is rated AA by Standard & Poors, AA3 by Moody's and AA- by Fitch. Although not all rating agencies rate all entities, Moody's currently ranks Flanders at the same level as the federal government (AA3), while the ratings for Wallonia (A3) and the French Community (A2) are less favourable. For these entities, the outlook is currently stable. The Brussels-Capital Region is currently rated AA- by Standard & Poor's, a level below that of the federal government.

In March 2021, the ratings of the communities and regions were all downgraded one notch. In addition, in September 2022, the outlook for the Brussels-Capital Region was changed from "stable" to negative. The latest rating change for the federal government was in 2016 by Fitch (downgraded from AA to AA-).

Chart 12

Except for the Flemish Region, the debt ratings of the regions and communities in Belgium are less favourable than those of the federal government

Long-term rating

(based on latest available evaluation for each sub-sector)

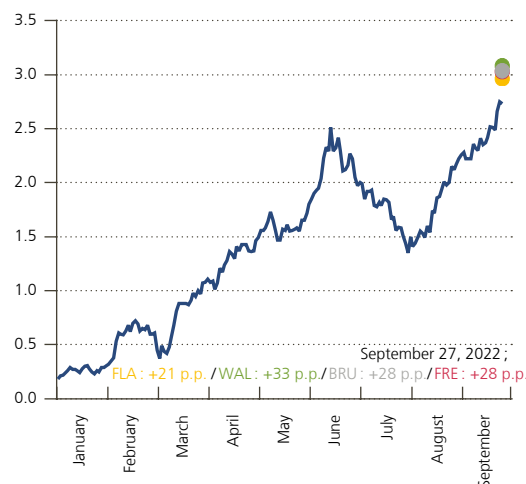
Standard & Poors		Moody's		Fitch Ratings		
Long-term	Short-term	Long-term	Short-term	Long-term	Short-term	
AAA	A-1+	AAA	P-1	AAA	F1+	Optimal security
AA+		AA1		AA+		Good quality at lower average quality
AA		AA2		AA		
AA-		AA3		AA-		
A+	A-1	A1		A+	F1	
A		A2		A		
A-	A-2	A3	P-2	A-	F2	Speculative
BBB+		BAA1		BBB+		
BBB	A-3	BAA2	P-3	BBB	F3	
BBB-		BAA3		BBB-		
BB+	B	BA1	NOT	BB+	B	
BB		BA2	PRIME	BB		Extremely speculative
BB-		BA3		BB-		
B+		B1		B+		
B		B2		B		
B-		B3		B-		
CCC+	C	CAA		CCC	C	In default
CCC		CA		CCC		
CCC-		C		CCC		
D		/		DDD		
				DD		
				D		

FED FLA WAL FRE BRU

Stable perspective for all sub-sectors, except BRU (negative)

Long-term interest trade

(10-year OLO and spread per sub-sectors, 2022)



Sources: Belgian Debt Agency, Regional administrations and NBB.

Market perception of liquidity and solvency risks will influence the risk premium associated with a given entity. The level of the risk premium of the communities and regions compared to long-term rates (10-year OLO) for the federal government is therefore an interesting indicator of the liquidity and solvency risk associated with the public debt of these entities. The spread associated with Flanders at the end of September was around 20 percentage points, slightly lower than that of Wallonia, the Brussels-Capital Region and the French Community, which had spreads of around 30 percentage points. Because of the limited volume of transactions, in terms of both the number and amount, these results should be interpreted with caution.

3.3 Long term: population ageing costs

In the discussion of the fiscal outlook by entity at unchanged policy, we found that the projected increase in current expenditure at the federal level is mainly due to the rising costs associated with population ageing (see Section 2.1). In this section, these costs are examined in more detail, with a long-term perspective.

In the coming decades, Belgium's public finances, like those of most other European countries, will be impacted by the effects of population ageing. This is a key challenge when it comes to ensuring the long-term sustainability of public finances. The impact of this factor is usually estimated based on projections of social benefits, as demographic changes have a significant effect. According to the Study Committee on Ageing

(SCA (2022)), social benefits in Belgium are projected to rise from 24.5 % to 29.5 % of GDP between 2019 and 2070. In other words, there will be a steady rise in the coming decades in the budgetary cost of ageing, with a peak being reached in 2049 at a cost of 5.2 percentage points of GDP.

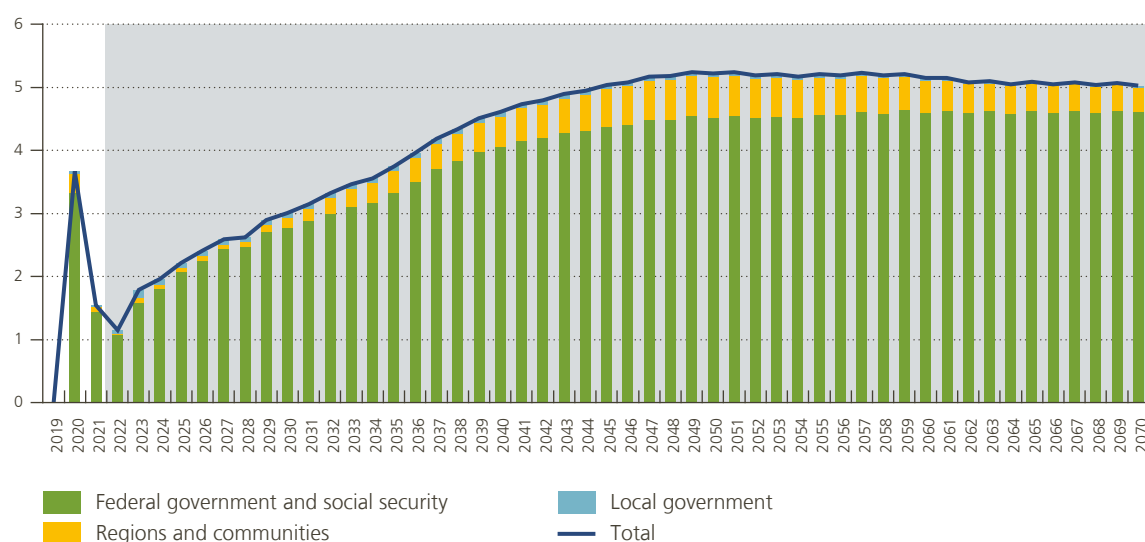
Detailed figures by entity clearly show that the majority of social benefits is situated at the federal level (the federal government plus social security), representing 20.4 % of GDP in 2019, projected to rise to 25 % of GDP by 2070. This increase represents more than 90 % of Belgian ageing costs and is mainly related to pensions. The regions and communities paid a much smaller share of social benefits in 2019, namely 3.6 % of GDP, projected to rise to 4 % of GDP by 2070. This mainly relates to healthcare and family allowances with a small share for public sector pensions, including pensions for employees of regional transport companies and bridging pensions in the education sector. Ageing costs at this level accordingly represent only 0.4 percentage points of GDP and are concentrated in the area of healthcare expenditure. Finally, the local government pays only around 0.5 % of GDP on social benefits and is projected to stay more or less at this level until 2070.

It is important to note that the SCA includes pension expenditure by the regions, communities and local government funded by the federal level in the social benefits paid at federal level. In doing so, it deviates from ESA 2010. Furthermore, it should be noted that the SCA's figures do not include certain transfers relating to social benefits, for example, the pension responsabilisation contributions paid by the regions and communities to the federal government for their civil servants (see Section 2.2). These account for 0.1 % to 0.2 % of GDP. Likewise, contributions by local governments to the social security administration to help finance the pensions of their civil servants are also not included.

Chart 13

Ageing costs are mainly situated at the federal level

(change in social benefits in percentage points of GDP compared to 2019)



Source: Study Committee on Ageing.

4. Towards public debt of 100 % of GDP in 20 years

While the previous section looked at the sustainability of the projected debt paths for various government entities, this section examines the budget balance required to stabilise these debt paths at a certain level.

Two assumptions are key to this analysis. First, we take a top-down approach, meaning we propose a ceiling for Belgian public debt which we then allocate amongst the various government entities. As there is no consensus in the literature on the exact debt level beyond which public debt is deemed unsafe,¹ we opted for a pragmatic approach and set the target debt ratio (for the Belgian government as a whole) at 100 % of GDP over a period of 20 years. On the one hand, this target appears to be below an upper safety boundary for Belgian Public debt², implying that with debt at 100 % of GDP, the Belgian government ought to maintain some margin to address high-frequency economic and financial disturbances. On the other hand, this target is a considerably less-demanding one than the 60 % debt cap specified in the EU's Stability and Growth Pact and should thus be considered a minimum requirement to bring Belgian public finances into safer waters. Second, we allocate Belgian government debt amongst the various entities based on their share in national "own revenue", defined as total government revenue corrected for transfers received from the government, imputed social security contributions and production for own final use. Own revenue thus reflects revenue over which an entity has a large degree of fiscal autonomy. Note that own revenue can only be considered as a (good) proxy of institutional revenue autonomy, since each region may fill in this revenue autonomy differently.

The targets obtained depend strongly on the choice of national debt target and the allocation key of the target. They should therefore in the first instant be considered a guide resulting from a preliminary exploration of a consistent normative debt and deficit framework for the Belgian government entities under consideration.

4.1 Own revenue as an allocation key

The graph below links, for each entity, its own revenue to its level of debt. The most favourable situations are in the bottom right corner: high own revenue coupled with low debt. Conversely, the upper left corner contains the least comfortable situations, namely limited revenue autonomy coupled with large debt. Of the entities studied, the French Community has a relatively low debt ratio but also few sources of own revenue, giving it the highest ratio of debt to own resources. Its debt is more than five times its annual own revenue. This means that the French Community has few levers on the revenue side to keep its debt in check. The federal government, on the other hand, has the highest debt but also the most own revenue (i.e., the largest degree of tax autonomy), meaning it has a fair amount of resources available to reverse its debt trajectory. The Flemish Community is in the most comfortable position: in 2021, it had the lowest debt-to-own revenue ratio.

Own revenue was selected as the preferred key to allocate the Belgian public debt target amongst the various government entities for several reasons. Debt is a claim on future revenue. Such a key implies that if a government entity does not have any revenue it can control, it should not have debt. More specifically, an own revenue key implies that an entity is only allowed to maintain a certain level of debt if it has some autonomous capacity to raise revenue. Entities without own revenue are – in the long run – constrained to spend what they receive in the form of transfers. Should they accumulate any debt, interest payments should be paid for with primary spending cuts.

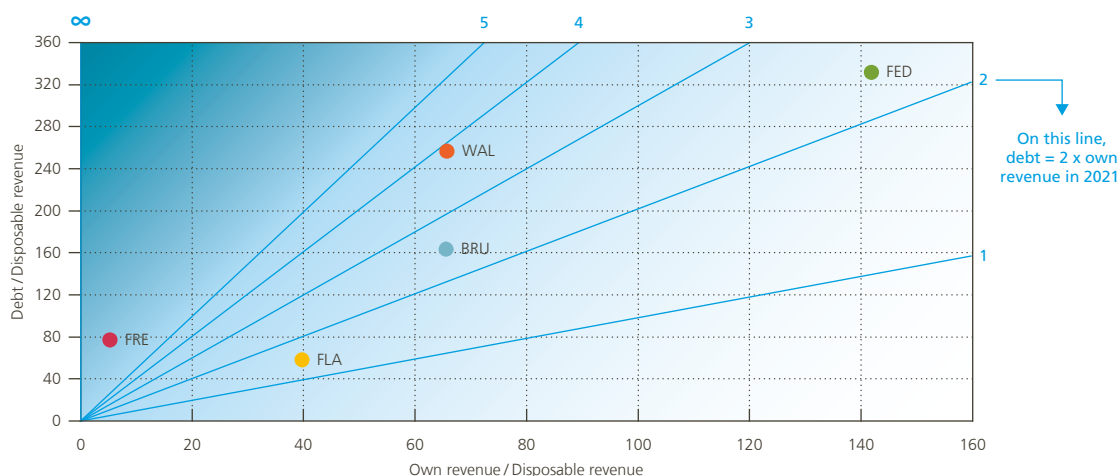
Own revenue differs from the previously used concept of disposable revenue in that it more narrowly defines an entity's financial capacity. Disposable revenue stands for the financial resources available to an entity; it covers almost all revenue sources. It should be recalled that this concept is used as an alternative to GDP as a

1 Debt thresholds are country- and time-specific and can be derived using multiple approaches.

2 For instance, Debrun *et al.* (2020) suggested a safe upper boundary for Belgian public debt of 120 % of GDP.

Chart 14

The federal government has the highest debt ratio but also the highest degree of revenue autonomy¹



Sources: BISA, FPB, IWEPS, NAI, Statistics Flanders and NBB.

1 Own revenue equals total government revenue less transfers received from the government, imputed social security contributions and production for own final use.

denominator in public finance ratios and thus facilitates comparison of deficit and debt levels relative to the budgetary size of each government entity. Own revenue includes only revenue over which an entity – pursuant to the current institutional agreements in Belgium – has direct control. For purposes of a normative analysis it makes sense to allocate the national debt target on the basis of each entity's institutional revenue-raising capacity: entities whose own revenue is relatively high compared to others are allocated a higher debt target as they have greater autonomy to raise revenue, if needed, to reduce or stabilise debt.

According to the own revenue key, a 100 % public debt-to-GDP ceiling for Belgium would imply a debt ceiling of 79.1 % of GDP for the federal government, 8.1 % for the Flemish Community, 3.4 % for the Walloon Region, 1.4 % for the Brussels-Capital Region and 0.4 % for the French Community.¹ As explained above, the latter will, in the long-term, practically not be allowed to hold any debt as – given the current institutional setting – it has almost no capacity to raise revenue. It should be noted that the allocation key is based on own revenue in 2016, as the average tax rate for taxpayers across the three regions (Flanders, Wallonia and Brussels) was well aligned in that year, meaning the effective tax rates are comparable, at least when looking at the period following the sixth state reform. In addition, by fixing the year of the key, the allocation is made exogenous: an increase in tax rates (which would alter the allocation key) does not result in a higher debt ceiling.

Indeed, own revenue is not the only lever available to a government entity to finance its debt; expenditure can also be adjusted. An alternative allocation key that takes into account own revenue and expenditure could therefore be considered. Such a key would result in a lower debt ceiling for the federal government and a somewhat higher debt ceiling for the regions and communities.² It should be noted, however, that subsequent

1 It should be noted that the target debt ratios expressed in terms of each subsector's own revenue in 2016 are identical, namely 209 % of own revenue. Furthermore, while this study does not discuss the debt sustainability of local government entities (cities and municipalities), the distribution of the 100 % debt-to-GDP limit for Belgian government debt implicitly also allocates a share to local administrations based on their share in national own revenue.

2 More specifically, an allocation key calculated as the average of the own revenue key and the own expenditure key would translate a 100 % debt-to-GDP target for the Belgian government as a whole, into a debt target of 68 % of GDP for the federal government, 13 % for the Flemish Community, 4 % for the Walloon Region, 2 % for the Brussels-Capital Region and 3 % for the French Community (with own expenditure being calculated as total expenditure less interest expenses, transfers to the government and direct benefits from employers).

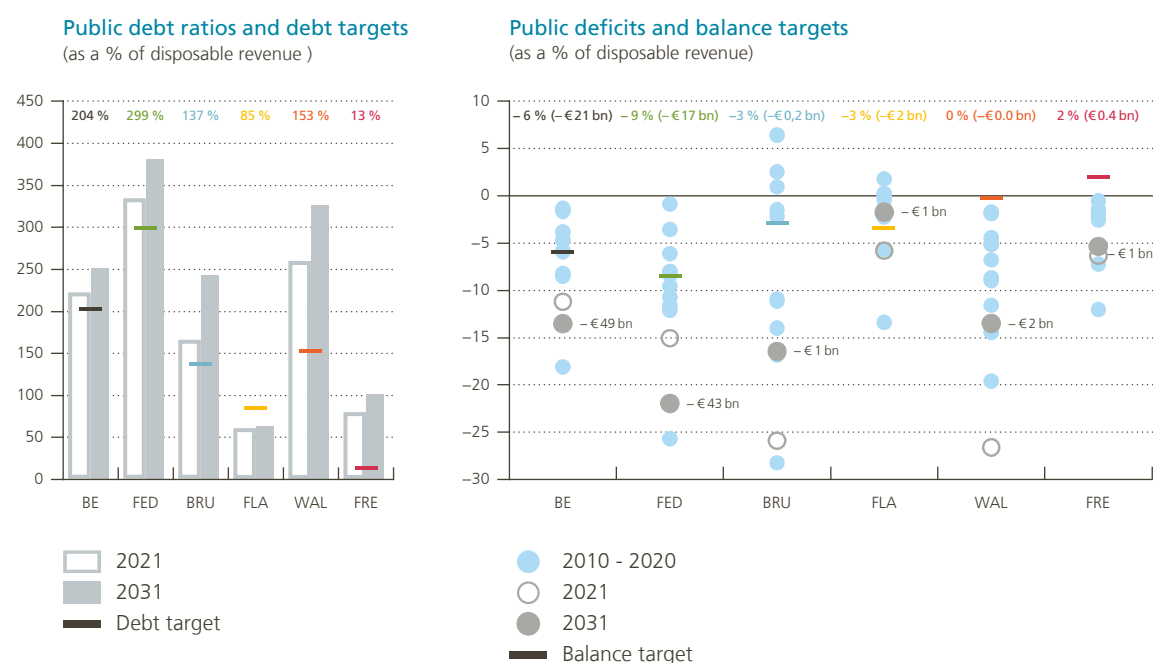
state reforms – which allocated more and more resources and powers to the regions and communities – did not redistribute Belgian public debt accordingly. In other words, the federal debt stock includes legacy debt, while that of the regions and communities does not. The more favourable debt starting position of the regions vis-à-vis the federal government can be raised as an argument in favour of an allocation key that is more lenient to the federal level, such as our preferred key based on own revenue. It should also be noted that the choice for own revenue as an allocation key should not refrain governments from also considering spending cuts to reduce sustainability risks.

4.2 Debt ceilings and deficit targets

For the sake of consistency, Chart 15 (left panel) expresses the above debt ceilings (based on the own revenue key) as a percentage of disposable revenue, rather than as a percentage of GDP. Regarding the debt ceilings, a few points are worth noting. First, the debt ratios of all entities, except for the Flemish Community, are projected to exceed the applicable limits. Second, the debt limits represented here should be considered a minimum target as they are based on a 100 % debt-to-GDP ceiling for the Belgian government which is far more favourable than the Stability and Growth Pact's 60 % target. The latter, for instance, implies a 51 % debt-to-disposable revenue target for the Flemish Community, thus below its actual debt ratio in 2021 and its projected debt ratio for 2031. Third, if the Walloon Region and the French Community are considered as a single entity, for instance, to facilitate comparison of the results with those of the Flemish Community, their joint debt target would be 78 %

Chart 15

Significant efforts are required by almost all government entities to bring Belgian public debt down to 100 % of GDP or, equivalently, 204 % of disposable revenue by 2041^{1,2}



Source: NBB.

1 The debt and deficit projections for 2031 are those obtained from the baseline scenario.

2 Balance targets show the headline balance required in 2031 to bring the debt ratio down to the debt targets (depicted in the left panel) by 2041.

of disposable revenue. Finally, the 85 % debt target for the Flemish Community seems higher than the norm of 65 % set by the Flemish government in 2016, but the latter is expressed as a percentage of current revenue).¹

The right panel in Chart 15 shows the headline budget balance (expressed as a % of disposable revenue) needed in 2031 to meet each entity's debt target by 2041 (horizontal lines). The analysis shows that substantial efforts will be required by most entities: in monetary terms, the federal government should reduce its 2031 projected deficit (grey dot) by € 26 billion, the Walloon Region by € 2 billion, and the French Community and the Brussels-Capital Region by more than € 1 billion each. The efforts required will be even greater if economic growth and interest rates develop less favourably than envisaged by the baseline scenario. A more demanding consolidation scenario, in keeping with the current European debt threshold of 60 % of GDP, appears overly ambitious for most, and – when considering budget balances over the past decade (blue dots) – especially challenging for the Walloon Region and the French Community.

Conclusion

The debt ratios of the federal government and the various regions and communities in Belgium have risen substantially in recent years. Expressed as a percentage of disposable revenue (i.e. revenue less transfers paid to other government entities), the debt ratio in 2021 was highest at the federal level including social security (332 %), followed by the Walloon Region (257 %) and the Brussels-Capital Region (163 %). It remained below 100 % in the French Community (77 %) and the Flemish Community (58 %). Moreover, all entities are currently running a budget deficit, with generally higher deficits for those with higher debt levels. This situation raises the question of how sustainable public finances truly are.

The Federal Planning Bureau's medium-term outlook for primary balances (i.e. budget balances excluding interest payments) shows that, at the federal level, the primary deficit will remain high and even increase, mainly due to steadily rising current expenditure driven primarily by population ageing costs. At the regional level, primary deficits are expected until 2027 in all regions except Flanders, generally as a result of subdued growth in transfers received from the federal government which do not keep up with spending growth. The below-trend-of-GDP growth of federal transfers to the regions is intended since the sixth State Reform to encourage the regions and communities contribute to Belgian debt consolidation efforts and help meet population ageing challenges. Besides primary deficits, interest expenses are expected to rise for all entities.

The projected deficits at unchanged policy will cause debt-to-disposable revenue ratios to rise further in the next decade, except in Flanders. At the federal level, the upward debt dynamics will be partially tempered by the denominator effect, as disposable revenue growth will remain higher than the implicit interest rate on debt (a reverse snowball effect). This will be less the case at the regional level. At the regional level, upward debt dynamics, an important indicator for debt sustainability risks, will be highest in the Brussels-Capital Region.

To assess debt sustainability risks in the medium term more thoroughly, we analysed how debt levels and dynamics will change compared to the baseline over the next decade under various adverse scenarios.

- A symmetric GDP growth shock of 0.25 percentage points (hitting GDP growth equally in all regions) will affect the primary balance of the federal government the hardest, due to its highly GDP-sensitive revenue. Further, the adverse denominator effect from reduced disposable revenue will increase the debt ratio more in entities with higher debt levels (such as the federal government, Wallonia and Brussels).

¹ Vlaamse Overheid (2016).

- An asymmetric GDP growth shock – on regional GDP growth – will have a more limited impact on regional debt ratios due to the solidarity embedded in the Special Financing Act (SFA). First, SFA transfers to the regions are linked to national – not regional – GDP. Second, the SFA's explicit solidarity mechanism compensates regions with below average per capita personal income tax revenue. Of the three regions, Flanders benefits least from these mechanisms owing to its higher share of the country's GDP and relatively higher household income.
- An interest rate shock of 250 basis points will again be most damaging to those entities with the highest debt ratios (the federal government, the Walloon Region and the Brussels-Capital Region). The regions and communities would see their implicit interest rate on outstanding debt exceed their disposable revenue as from 2024, causing a worrying snowball effect on debt dynamics.
- Finally, we simulated the impact of a gradual increase in public investment to 4 % of GDP in Belgium by 2030, assuming equal increases in all entities (in terms of their disposable revenue) and a fiscal multiplier of one. As long as investment is increasing, and assuming a rather optimistic short term public investment multiplier of one, the favourable impact on debt dynamics of enhanced GDP growth will more or less offset the unfavourable impact of worsening primary deficits, particularly for entities with more highly GDP-sensitive revenue (such as the federal government) and a higher debt ratio (the federal government, the Walloon Region and the Brussels-Capital Region). However, once investment stagnates at the higher level, only the debt-increasing impact of higher primary surpluses will remain, and the debt dynamics will turn less favourable in all entities compared to the baseline. This indicates that debt-financed public investment should be highly productive, with fiscal multipliers far above one, so as not to enhance debt sustainability risks.

In the short run, debt sustainability risks crucially depend on the annual gross financing needs to be absorbed by the financial markets. In the event of financial stress, liquidity problems may turn into solvency risks. In the past decade, all entities made commendable efforts to extend average debt maturities, thereby reducing annual refinancing risks. Nonetheless, considerable differences in gross financing needs still exist between entities. The federal government is most exposed with gross financing needs of around 50 % of disposable revenue in the coming years, followed by the Walloon Region at roughly 30 %. Given its size, the market for federal bonds is much more liquid than the market for regional debt. This helps explaining why financial markets require a higher interest rate on regional than on federal debt.

In the long run, one of the biggest fiscal challenges will be population ageing costs. In Belgium, these are borne primarily by the federal government which will see its social benefits increase by approximately 3.5 % of GDP between 2022 and 2050, according to the Study Committee on Ageing. The regions and communities will see social benefits rise by around 0.6 % of GDP over the same period. This gradual deterioration of primary balances at unchanged policy poses a high risk to debt sustainability in the long run, especially at the federal level.

Given the high level of debt sustainability risks in Belgium, it is advisable to decide on structural consolidation measures without delay to curb upward debt dynamics. A scenario in which the Belgian debt-to-GDP ratio is lowered from 109 % in 2021 to 100 % in 20 years can be considered as a minimum scenario to contain sustainability risks. To analyse the implications of such a ceiling for individual entities of the Belgian government, we opted to allocate the debt ceiling across entities based on their share of own revenue in total national revenue. Own revenue excludes transfers received from other entities, over which the receiving entity has no power, such as those made under the Special Financing Act. Our proposed allocation key can be justified by the basic principle that, in the long run, governments that rely exclusively on revenue from transfers should – on average – not spend more than what they receive and that governments should only be allowed to accrue debt to the extent they dispose of revenue autonomy. Based on this approach, the federal government would have to reduce its debt ratio to 299 % of disposable revenue in 20 years, the Walloon region to 153 %, the Brussels-Capital region to 137 %, the Flemish Community to 85 % and the French Community, which has very little own revenue, to 13 %. Currently, only the Flemish Community appears to be in a position to meet this minimum requirement based on its medium-term fiscal outlook at unchanged policy. The other entities will

have to take substantial additional consolidation measures, ranging from approximately 13 % of disposable revenue for the federal government, the Walloon Region and the Brussels-Capital Region to 7 % for the French Community. This could be more challenging for the latter, given its very limited power to raise revenue. Such a substantial consolidation effort would get the deficit of the Belgian government as a whole just below 6 % of disposable revenue or about 3 % of GDP. The effort required would become even bigger if economic growth and interest rates were to develop less favourably than the baseline scenario envisages. To build margins that could help absorb adverse shocks, a much lower deficit than the reference value of 3 % of GDP will be essential in the medium term.

It should be noted that the medium-term analysis results, that take the short and medium term projections dating from June as a starting point, are subject to high uncertainty and possibly large revisions, especially for the next few years. Since risks to the fiscal outlook compared to June are clearly to the downside, debt paths are likely to become higher than depicted in this article. This would not alter the direction of sustainability risks identified in this article; it would only make the need for policy action and coordination more pressing.

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Conventional signs

€	euro
%	per cent
bn	billion
e.g.	<i>exempli gratia</i> (for example)
<i>et al.</i>	<i>et alia</i> (and others)
i.e.	<i>id est</i> (that is)
p.p.	percentage point

List of abbreviations

Countries or regions

BRU	Brussels-Capital Region and Common Community Commission
FED	Federal government and social security
FLA	Flemish Community
FRE	French Community
WAL	Walloon Region

Abbreviations

BISA	Brussels Instituut voor Statistiek en Analyse
COVID-19	Coronavirus disease-19
DSA	Debt Sustainability Analysis
EC	European Commission
ECB	European Central Bank
ESA	European System of Accounts
FPB	Federal Planning Bureau
GDP	Gross domestic product
IMF	International Monetary Fund
IWEPS	Institut wallon de l'évaluation, de la prospective et de la statistique
NAI	National Accounts Institute
NBB	National Bank of Belgium
OLO	Linear bond
PIT	Personal income tax
RRP	Recovery and Resilience Plan
SCA	Study Committee on Ageing
SFA	Special Financing Act
VAT	Value added tax

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