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Quantifying the fiscal costs from corona virus

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- The German government has responded quickly and decisively to the economic fallout from the corona pandemic. Altogether, Germany's anti-crisis measures – consisting of extra spending, guarantees and loan/participation programs – sum up to an astronomic value of around EUR 1.9 tr (well above 50% of GDP in 2019). This gives the government huge scope to fight the pandemic and economic crisis.
- Germany enters the corona crisis with a stronger government budget balance and a lower debt ratio compared to the situation prior to the global financial crisis. Also, Germany has sizeable financial reserves it can use to partly finance the corona-related fiscal costs, in particular at the level of the social security funds where buffers amount to roughly to EUR 96 bn.
- In this note we try to quantify Germany's fiscal costs from the corona crisis. They are a function of the corona-related (discretionary) revenue/spending and off-budget measures and the cyclically-driven deterioration in public finances, which is itself determined by the duration of the lockdown. We estimate that every additional week of shutdown costs 0.6 pp of growth and leads to a widening of the fiscal deficit by 0.3 pp of GDP.
- In our baseline scenario – which assumes GDP to contract by 5.3% this year – the headline fiscal deficit will peak at almost 7% of GDP in 2020. Despite a V-shape recovery in 2021 the debt ratio would jump close to 75% of GDP by end-2021. In our worse case scenario, the budget deficit would even soar to almost 10% in 2021 and the debt ratio to 86.5% by end-2021. By the end of next year, Germany's debt ratio could be almost 20 pp of GDP (baseline) and more than 30 pp of GDP (worse case) higher compared to our pre-Covid forecasts.
- It will very likely take years, if not more than a decade, to regain the fiscal space that will be lost because of the corona pandemic. Although low or negative interest rates/yields on German government debt will clearly help to keep the debt-to-GDP trajectory under control in the coming years, weakening potential growth, the imminent fiscal burden from population ageing as well as the rising costs from the digital and ecological transformation will complicate the government's task to secure medium-/long-term public debt sustainability.

1. Introduction: Quick and decisive fiscal response to the crisis

The German government(s) – both at the federal and the state levels – have responded quickly and decisively to economic fallout stemming from the corona pandemic. Since March, the government has implemented various rescue programs that are unprecedented in size and scope to mitigate the financial strains of corporates, employees and self-employed persons which have been hit heavily by the crisis. Finally, on 23rd March the federal government consolidated its various anti-crisis measures in a so-called "Shield for Employees and Corporates" which has been supplemented by further measures since then.

In this note we try to quantify Germany's fiscal costs from the corona crisis, which are a function of the government's corona-related (discretionary) revenue/ spending and off-budget measures and the cyclically-driven deterioration in public finances. In a first step we review and quantify both the federal government's ("Bund") as well as the state governments' ("Länder") discretionary responses to crisis. In a second step, we proxy the general government sector's cyclical costs from recession due to lower revenues (taxes, social contributions) and higher expenditures (unemployment benefits, guaranteed minimum pension). In a third step, we arrive on that basis at our updated fiscal and debt stock projections for Germany's general government sector in 2020/21. Given the high degree of uncertainty regarding the economic growth outlook we project the likely path for the government's headline fiscal deficit and gross debt level under a baseline and an alternative worse case (protracted pandemic) scenarios.

2. An overview of Germany's anti-crisis measures

Germany's fiscal response to the crisis consists of a broad range of measures and instruments (both the federal and state levels) that all aim at (a) securing the financing of the direct costs of the government in fighting the pandemic, (b) mitigating the economic strains on affected employers and employees and (c) protecting the economy from a potential wave of corporate insolvencies and economic depression. The government's toolkit used to overcome the crisis does not only involve a mixture of public subsidies, extra health spending and tax relief measures but is also based on sizeable government guarantees as well as loan and equity participation programs for large German corporations. While some fiscal measures will have an immediate direct effect on both the government's fiscal balance and debt stock (e.g. subsidies paid to small firms and self-employed persons, spending for health equipment and protective clothing), other measures will solely affect the government's debt stock (but not the budget) (e.g. financial transactions from loan and/or equity participation programs) or will affect the budget/debt stock only if they materialise (e.g. government guarantees). In the following, we summarise the major fiscal measures that have been taken so far.

Supplementary federal budget for 2020

The national parliament (Bundestag) decided on 25 March 2020 on a supplementary federal budget for 2020 with a volume of EUR 156 bn (or 4 ½% of GDP in 2019). As part of the supplementary budget, federal government spending will rise by EUR 122.5 bn to reach a new target level EUR 484.5 bn (+33.8% vs. the original target and +41% vs. actual spending outcome in 2019). As a result, the share of federal government expenditures in nominal GDP is set to rise strongly from 10% in 2019 to clearly more than 14% in 2020. At the same time, the government expects tax revenues to drop by EUR 33 ½ bn to a new level of EUR 325 bn (previous tax estimate: EUR 291.5 bn). Because of higher federal spending and lower tax revenues the government is confronted with a budget gap of EUR 156 bn which it will close by new credit market borrowing in the same amount. In order to clear the legal way for this extraordinary large borrowing the federal parliament has suspended the national debt brake by making use of an emergency clause. Therefore, the structural credit limit (0.35% of GDP) does not apply for now and the government can exceed the borrowing limit by almost EUR 100 bn in 2020. Also, with adoption of the supplementary budget the federal government has finally given up on the grand coalition's long-standing budget goal of no new borrowing ("black zero").

On the spending side, the extra funds of EUR 122.5 bn will be used for:

- Paying a one-time subsidy to small companies and self-employed ("Solo-Selbstständige") as part of an immediate action program ("Soforthilfeprogramm") (EUR 50 bn or 1.5% of GDP in 2019)[1] ,
- easing the access to basic income support without means testing ("Hartz IV") (e.g. for self-employed) (EUR 7.7 bn or 0.2% of GDP) and,
- funding additional health care spending (e.g. for equipment, protective clothing) (EUR 3.1 bn or 0.1% of GDP).

In top of that, the government has provisioned EUR 5.9 bn (0.2% of GDP) for the materialisation of federal government guarantees. To fund any further forthcoming spending to fight the pandemic, the government has allocated EUR 55 bn (1.6% of GDP), which is budgeted in a so-called "global spending item" that can be quickly and flexibly utilised. Moreover, the federal government has also decided to financially support Germany's health system. Specifically, hospitals will be compensated by the government for delaying scheduled operations and treatments to keep free capacities for COVID-19 patients. Furthermore, hospitals will receive some extra amounts to pay for protective clothing. In order to increase the capacity of the health system to cure COVID-19 patients, the government will also pay hospitals a fixed bonus for every additional intensive care bed they set up. The above additional costs are estimated at EUR 9.1 bn (0.3% of GDP in 2019) and will be partly funded out of the federal budget (EUR 2.8 bn in 2020) as well as by the public health care system (EUR 6.3 bn).

Raising the upper limit for federal (budget) guarantees to EUR 822 bn

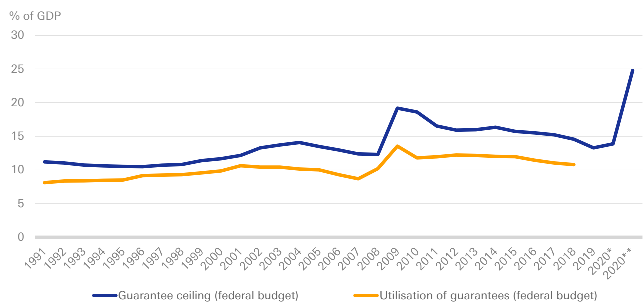
As part of the supplementary budget the government has also raised the budgetary guarantee ceiling for the year 2020 to EUR 822 bn (23.9% of GDP in 2019) from a previous EUR 465 bn (13.5% of GDP). This marks a substantial increase of EUR 357 bn (+76.8%). At the same time, the government has widened the flexibility clause from 20% to 30%, which means that the upper guarantee limit could be raised quickly by a further EUR 246.6 bn (7.2% of GDP) to reach EUR 1.07 tr (31.1% of GDP in 2019). To get a better understanding of the sums involved, one could compare the 2020 guarantee ceiling to the levels seen in previous crisis years. In 2009, when the government had to cope with the fallout from the global financial crisis, the guarantee ceiling stood at EUR 469.5 bn (19.2% of GDP in 2009) – an increase of EUR 155.6 compared to EUR 313.6 bn in 2008 (12.3% of GDP).[2] Hence, the 2020

1 The subsidy is meant to help firms covering their running expenses for the next three months. Firms will not have to pay back this subsidy. Firms with up to 5 employees will receive up to EUR 9,000. Firms with up to 10 employees will receive up to EUR 15,000.

2 See Federal Board of Auditors.

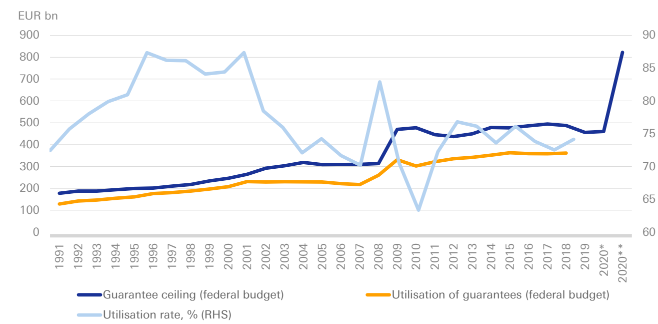
federal budget guarantee ceiling of EUR 822 bn is already by now almost 5 percentage points of GDP larger than the one during the global financial crisis.

Figure 1: Guarantee ceiling and utilisation level according to the federal budget



* According to the initial budget. ** According to the supplementary budget.
Source : Federal Board of Auditors, Destatis, Deutsche Bank Research

Figure 2: Guarantee ceiling and utilisation level (ratio) according to the federal budget



* According to the initial budget. ** According to the supplementary budget.
Source : Federal Board of Auditors, Destatis, Deutsche Bank Research

Supporting firms' access to affordable bank loans

Another key element of the federal government's protective shield is to give liquidity assistance to businesses facing severe liquidity shortages by expanding and supplementing existing KfW liquidity assistance programs. Specifically, the provision of government guarantees should facilitate firms' access to affordable loans (via their house banks, guarantee banks, the promotional bank KfW). To this end, the government has also taken various measures to make KfW credit instruments available to an increasing number of firms (for more see our research article Government support for German companies in the corona crisis from March 19).

On April 6, the federal government launched a more extensive "Quick Loan Program" for small and medium-sized firms.[3] Instant loans will be provided at 3% interest with a maturity of 10 years. The program is open to financially stable firms which recorded a profit in 2019 (or on average over the past 3 years). It is run by the government's promotional bank KfW which will cover 100% of the quick loan, backed up by a government guarantee. Previously, commercial banks involved in any KfW liquidity assistance program had to bear at least 10%, sometimes 20% of the credit risks. The volume of a quick loan equals up to three months of a firm's revenue in 2019 but is capped at EUR 0.5 m for firms with up to 50 employees and EUR 0.8 m for firms with over 50 employees, respectively.

Foundation of an "Economic Stabilisation Fund"

In order to support large corporates the federal government has founded an "Economic Stabilisation Fund" ("Wirtschaftsstabilisierungsfonds"; WSF). The WSF has a financial firepower of EUR 600 bn (17.5% of GDP in 2019) and is intended for corporates with 250 or more employees by supplementing the existing liquidity assistance programs by the KfW, which is mainly targeting smaller companies.

The WSF is provided by federal credit authorisations and guarantees with:

3 A key point of the quick loan program is that the commercial banks can broadly abstain from a detailed and lengthy credit risk assessment thanks to the government guarantee applied to 100% of the eligible loan amount.

- a credit authorisation of EUR 100 bn (2.9% of GDP in 2019) usable for capital measures (e.g. direct recapitalisation such as purchases of shares, silent partnerships, drawing participation rights or subordinated debt),
- a credit authorisation of up to EUR 100 bn to finance already agreed KfW programs and,
- a guarantee volume of up to EUR 400 bn (11.6% of GDP) e.g. to facilitate the issuance of corporate debt by supplying government guarantees.

Overall, the size of the WSF is 1.75 times larger than last year's federal budget.

Easing the conditions for short-time allowance ("Kurzarbeitergeld")

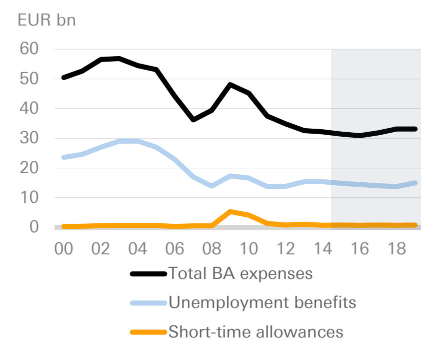
The government has eased the conditions for firms to receive short-time allowance. Short-time allowances cover 60% of a crisis-driven shortfall in working hours / compensation of employees (67% for employees with a child). The compensation applies to the part of an employee's net compensation that is lost because of short-time working. Specifically, the Federal Employment Agency ("Bundesagentur für Arbeit", BA) is already allowed to pay short-time allowance to firms that report one tenth of their workforce to be affected by a crisis-induced reduction in working hours (before this hurdle was a higher one third). Moreover, affected firms will not have to pay any more social contributions on the amount of the short-time allowance (before they had to do that – now the BA will pay for them). In addition, short-time allowance should be also made available to contract workers. The new regulations have come into effect in April and will apply retroactively as of March 1st.

Thanks to large financial reserves worth EUR 25.8 bn (0.7% of GDP) by the end of 2019, the BA appears to have some buffers to combat the crisis. In mid-March the federal government predicted the number of short-time workers to spike to EUR 2.35 m persons, implying additional fiscal costs of EUR 10 bn (0.3% of GDP in 2019).[4] In this context, the BA's additional expenditures related to the easing of the "Kurzarbeitergeld" are estimated at EUR 3.9 bn in 2020, according to the latest Joint Economic Forecast report.[5] However, current labour markets dynamics point to much higher numbers. According to preliminary data by the BA, around 725 thousand firms have applied for short time working (as of 13 April), which is more than ten times the level seen during the global financial crisis. Assuming that on average 5 (10) employees per firm will work under the short time scheme, this would already result in around 3.6 (7.3) million short time workers.

The fiscal costs related to "Kurzarbeitergeld" are however not only a function of the number of workers but also depend on the duration of "Kurzarbeit" as well as the magnitude of work reduction (i.e. 10%, 50%, 100%, etc.). Based on the BA's rule of thumb, an additional 100k people working 50% of their normal working time lead to extra costs of EUR 79 m per month. Hence, an additional 5 million people working 50% short-time for around 6 months would involve an extra cost to the BA of EUR 23.7 bn (0.7% of GDP in 2019). Therefore, the BA's financial reserves could be more quickly depleted than currently imagined. Further costs to the BA could also stem from further raising the level of "Kurzarbeitergeld". In this context, the SPD has proposed to raise the compensation level to 80-87%. The Greens have even opted

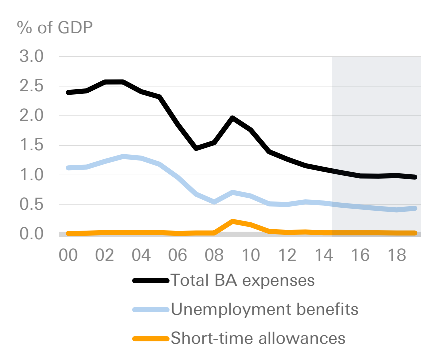
4 For comparison: In 2009 the number of people working short time averaged 1.1 m and the cost reached EUR 5.3 m or 0.2% of GDP in 2009.
5 The economic think tanks assume the number of people working short time to spike to 2.4 million. At the same time, they forecast the number of unemployed persons to rise by almost 250k. Based on these projections, the BA's financial reserves are expected to fall by EUR 16 bn.

Figure 3: Expenditures by the Federal Employment Agency (financial statistics)



Source : Deutsche Bundesbank, Destatis, Deutsche Bank Research

Figure 4: Expenditures by the Federal Employment Agency (financial statistics)



Source : Deutsche Bundesbank, Destatis, Deutsche Bank Research to raise the level to up to 90%, albeit following a staggered approach that is linked to the income of a beneficiary. Meanwhile, the CDU/CSU have suggested to grant an absolute minimum compensation level that is based on the minimum wage ("Mindest-Kug"). To sum up, the government's projected costs of EUR 10 bn appear to be far too low given current labour market dynamics.

Tax relief measures to support firms' liquidity

Until the end of 2020 the government will also support the corporate sector's liquidity situation through tax relief measures, including a moratorium of tax payments, downward adjustments of pre-tax payments as well as the suspension of tax enforcement measures. The above tax relief measures potentially involve billions of euros and hence will reduce the government's tax revenues in 2020 noticeably. At this stage, the government is also preparing further tax relief measures such as allowing firms to reduce their 2019 tax payments by partially considering the expected losses for 2020. This would further depress the 2020 revenue level.

Further measures to ease the strain on affected firms and self-employed persons

In addition to the above measures, the federal government has agreed on a wide set of further measures to support firms and self-employed persons:

- moratorium of rental payments in the next 3 months (limited until end-June 2022),
- suspension of a business' obligation to file for insolvency in case of illiquidity (limited until end-Sep 2020),
- providing financial support to start-up firms (EUR 2 bn),
- extending the state's export credit guarantees towards exports into other EU and certain OECD countries (e.g. the US or the UK) and,
- providing a federal guarantee of EUR 30 bn to credit insurers to secure a smooth functioning of the insurance market in goods trade.[6]

Moreover, the federal government is working towards a legislation that will allow organisers of e.g. music concerts, sport events as well as leisure/theme parks, gyms, swimming pools or museums to compensate clients through issuing vouchers (instead of paying cash). As a prerequisite, clients must have purchased entrance tickets or subscriptions before March 8. Furthermore, the government is considering to guarantee the value of vouchers, according to press reports. In that case, the government would have to compensate consumers if such vouchers became worthless due to a firm's insolvency. Meanwhile, the federal government has approached the European Commission to allow touristic firms and air carriers to compensate package holiday tours and airplane tickets by issuing such vouchers.

6 For this, the federal government – in collaboration with credit insurers – has established a protective shield with a volume of EUR 30 bn. Background: Credit insurers insure suppliers against buyers' default risks. Due to the drastic increase in default risks, credit insurers were hesitant to provide insurance – bearing the risk that supply chains get further interrupted. Now, the government provides for 2020 a guarantee of EUR 30 bn for potential compensation payments by credit insurers. In turn, credit insurers transfer 65% of 2020's insurance premiums to the federal government, promise to cover default losses of up to EUR 0.5 bn and take the default risks that go beyond the guarantee. Thanks to the leverage effect of the guarantee, this measure is expected to secure a transaction volume of around EUR 400 bn.

Financial assistance and protective shields by the German federal states

In addition to the federal government's protective shield, many of the 16 German federal states – including the four economic heavyweights North-Rhine Westphalia (NRW), Bavaria, Baden-Württemberg (BW) and Hesse, which generate more than 60% of Germany's GDP – have launched separate financial assistance programs to support their local economies. To our understanding these programs partly upgrade and/or supplement the federal support programs.

For instance, the most populous and largest federal state NRW has set up a debt-financed extra-budgetary "rescue umbrella" ("NRW-Rettungsschirm") with a total volume of EUR 25 bn (0.7% of Germany's GDP in 2019). Bavaria has established a financial support fund ("BayernFonds") with a total volume of EUR 60 bn (1.7% of GDP). As part of this, the Bavarian state government is authorized to borrow EUR 20 bn in credit markets and to grant guarantees of up to EUR 40 bn. To fight the pandemic and support small firms and self-employed BW has allocated a total volume of EUR 6.2 bn (0.2% of GDP) – of which EUR 5 bn should be borrowed in credit markets and EUR 1.2 bn could be financed from tapping financial reserves. Meanwhile, Hesse has set up a protective shield with a volume of EUR 8.5 bn (0.2% of GDP). The Hessian protective shield consists of state guarantees (EUR 5 bn), a supplementary budget (EUR 2 bn) and immediate tax relief measures with regard to the value added tax (EUR 1.5 bn).

The German economic think tanks estimate in their recent "Joint Economic Forecast" report (as of 8 April 2020) that the 16 federal states will altogether provide an amount of EUR 110 bn (3.2% of GDP in 2019) to cushion the corona crisis. That said, the bulk of the total volume stems from state guarantees (EUR 50 bn) and loan/participation programs (EUR 50 bn). Hence, only a relatively small part of EUR 10 bn (0.3% of GDP) is related to extra-budgetary spending.

Conclusion: Fiscal response is unprecedented in scope and size

Overall, the government's fiscal response to the crisis is unprecedented in scope and size. Just at the federal government level it involves corona-related extra spending of EUR 122.5 bn (3.6% of GDP in 2019) as part of the 2020 supplementary budget. For the federal states, immediate budgetary extra spending is estimated at around EUR 10 bn (0.3% of GDP). Further extra spending will be carried out at the social security funds (in particular by health insurance and the BA). As regards guarantees, the general government (federal, states, WSF) is authorised to give guarantees of up to EUR 1,272 bn (37% of GDP in 2019). The guarantee level could be further raised in case of need to more than EUR 1,519 bn (44.2% of GPD) by activating the flexibility clause at the federal level. As regards the loans/participation programs at the federal and state levels, Germany can use a further EUR 250 bn (7.3%) to support small, middle-sized and large corporations to make it through the crisis.

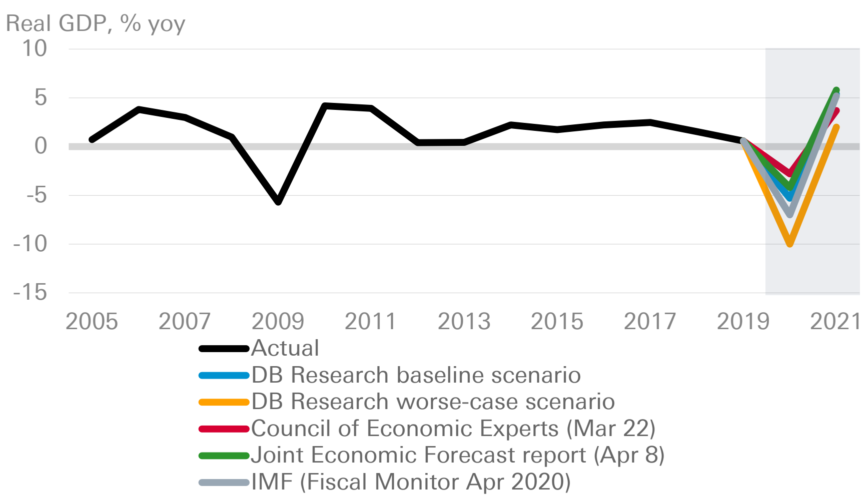
Altogether, the above amounts sum up to an astronomic value of EUR 1.9 tr (more than 50% of GDP in 2019) that could possibly be utilised by the government. That said, it is ex-ante unknown if the government will actually have to fully utilise the above sums. This is particularly true for the guarantees. However, regarding budgetary spending it appears not unlikely to assume that the government will (have to) spend even more as it might be required to implement a sizeable stimulus package to foster the recovery in 2021 in light of demand weakness.

Moreover, further fiscal gaps at the municipal level might have to be closed. According to the German County Association, the corona crisis will put a burden of around EUR 16 bn on the municipal budgets due to extra spending and revenue shortfalls. At an estimated EUR 12 bn largest part of the fiscal gap at the local government level will be stemming from lower excise tax revenues ("Gewerbesteuer"). But also higher spending on basic income support (EUR 1 bn) as well as a drop in concession taxes and contributions for e.g. nurseries and museums will affect the local budgets. Taking last years' budget surplus of EUR 4.5 bn into consideration, municipalities would still have to close a financial gap of EUR 11.5 bn. Municipalities have already called for financial help by the federal government and the states.

3. Calculating the cyclical effects on the budget balance

In addition to the above discretionary fiscal measures, of which only parts are related to budgetary extra spending and tax relief, the adverse economic effects from the pandemic will be mitigated by the functioning of "automatic stabilisers". As the name suggests, these stabilisers operate automatically in a counter-cyclical way through both a disproportionate decrease in tax receipts (wage and corporate taxes) – due to the progressive taxation system in Germany – as well as an increase in government spending for social and transfer payments (e.g. short-time allowances, unemployment benefits, guaranteed minimum pension).

Figure 5: Real GDP growth projections for 2020/21 in comparison



Source : Destatis, Deutsche Bank Research, IMF, Council of Economic Experts, Joint Economic Forecast report

As regards the German general government sector (including the federal government, the states, municipalities and social security funds) the European Commission estimates the budget semi elasticity – hence the sensitivity of public finances, i.e. the response of the latter, to the business cycle – at the moment at roughly 0.504.[7] By this Germany's budget sensitivity is roughly at the average of EU

7 See European Commission. The Semi-Elasticities Underlying the Cyclically-Adjusted Budget Balance: An Update & Further Analysis. May 2019. The semi elasticity of the budget is an indicator to measure the sensitivity of public finances to business cycle developments. Specifically, it measures by how many percentage points (of GDP) the financial balance would change if GDP increased by one percent.

countries (EU-27: 0.51) but below these of other large Euro area countries like France (0.63) or Spain (0.60). The number for Germany implies that a widening of the output gap by one percentage point causes a deterioration of the government's budget balance by around ½% (of GDP). Or in other words: A widening of the output gap by EUR 10 bn leads to a cyclically-driven deterioration of the general government budget balance of around EUR 5 bn.

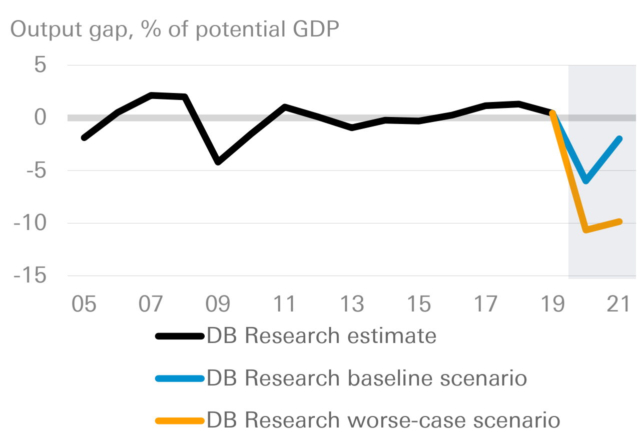
Economic growth assumptions in the baseline and "protracted" scenarios

In our baseline scenario – which is based on the assumption that the economy will begin to normalise well before the end of the second quarter – we project Germany's real GDP to contract by 5.3% in 2020. In 2021, real GDP is projected to expand by 5.4% (V-shape recovery). In our worse, protracted pandemic scenario – for which we assume a longer-lasting shutdown period) – we project the German economy to shrink by 10% in 2020. In 2021, the economy would recovery only slightly with growth of around 2% (U-shape recovery). That said, there is a significant risk that we are currently moving from the baseline towards the "protracted" scenario. As regards the annual change in the GDP deflator, we assumed in both scenarios an increase of +1.9% in 2020 and +1.3% in 2021, which is based on the latest forecasts by the economic think tanks in the "Joint Economic Forecast" report.

Baseline scenario: 2020 output gap of 6% leads to cyclical deficit of 3%

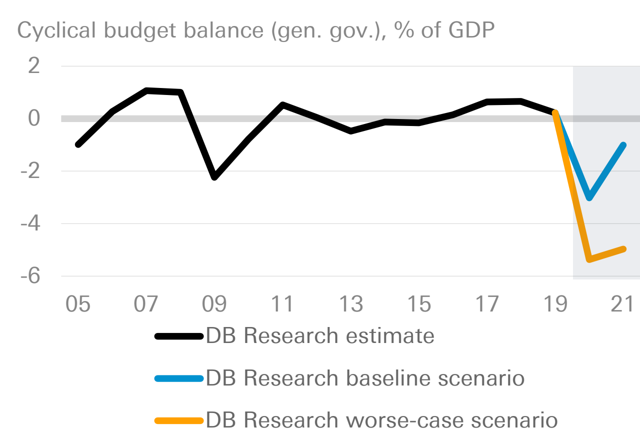
Based on the above growth scenarios, we calculate the likely pattern of Germany's cyclically-driven fiscal deficit. In the baseline, Germany's output gap would deteriorate from +0.4% of potential GDP in 2019 to -6% in 2020 (2009/10: -4.2% and -1.5%). As a result, the general government's cyclical deficit – i.e. the budgetary part that is solely determined by the business cycle – would account for 3% of GDP in 2020. In 2021, the cyclical deficit would narrow considerably to just 1% of GDP thanks to the V-shape recovery. Overall, Germany's cyclical budget balance would be hit this time more severely than during the global financial crisis (2009/10: -2.2% and -0.8% of GDP).

Figure 6: Output gap in the baseline and worse-case scenarios



Source : Destatis, Deutsche Bank Research

Figure 7: Cyclical budget balance in the baseline and worse-case scenarios



Source : Destatis, European Commission, Deutsche Bank Research

"Protracted" scenario: 2020 output gap leads to cyclical deficit of 5 ½%

In the worse case scenario, the output gap would widen to -10.7% in 2020 and stand at very large -9.9% in 2021. Hence, the cyclical balance would post extraordinary large deficits of 5.4% in 2020 and 5.0% in 2021. Compared to 2009/10, the cyclical budget balance would be affected considerably stronger, i.e. more than twice in the year of the shock and more than 6 times in the subsequent year. That said, given that the corona shock is unprecedented with regards to the depth and breadth of recession it might well be the case that the above rule of thumb to calculate the cyclical deficit (using a semi-elasticity of 0.504) is underestimating the true cyclical costs on the budget balance.

Every additional week of shutdown costs 0.6 pp of growth and lets the fiscal deficit widen by 0.3 percentage points of GDP

To illustrate the sensitivity of our growth and cyclical budget balance projections to the further development of the Pandemic we arrive at some simple rules of thumb to calculate the GDP losses and fiscal costs for every additional week/month of economic lockdown. In 2019, Germany's nominal GDP stood at EUR 3,436 bn. Hence, on average Germany generated in 2019 a GDP worth EUR 66/286 bn per week/month. Assuming that the current shutdown implies an economic activity level of 70% (instead of the usual 100%), the weekly/monthly loss would amount to EUR 20/86 bn. In other words: Every additional week/month of economic lockdown would depress (annual) economic growth by around 0.6 and 2.5 percentage points.

Based on the Germany's semi-elasticity of 0.504 the cyclically-driven fiscal costs per week/month amount to 10/43 bn. In other words: Every further week/months of shutdown will lead to an automatic deterioration of the fiscal balance by around 0.3/1.25 percentage points of GDP.

4. Bringing all pieces together into one picture: Projecting the future fiscal path and public debt trajectory

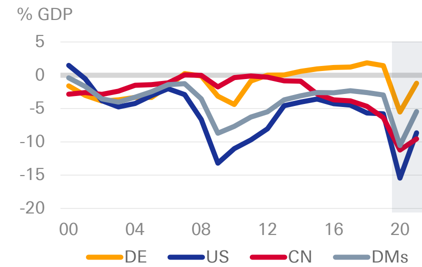
The good thing: Germany enters the corona crisis with a large budget surplus, a moderate public debt ratio and large fiscal reserves

Thanks to the large fiscal surpluses over the last six years (2014-19) and a rapidly declining government-debt-to-GDP ratio to just 59.8% Germany's public finances remain very solid in an international comparison. The IMF also expects Germany's public balance sheet to continue remaining much stronger after the crisis than in most other large advanced and euro area countries.

Therefore, Germany has large fiscal buffers that it can now utilise. In this context, it is worth noting that Germany enters the corona crisis with a stronger public budget balance than ahead of the global financial crisis (+1.4% of GDP in 2019 vs. -0.1% in 2008) and lower (gross) government debt ratio (59.8% of GDP in 2019 vs. 65.5% in 2008).

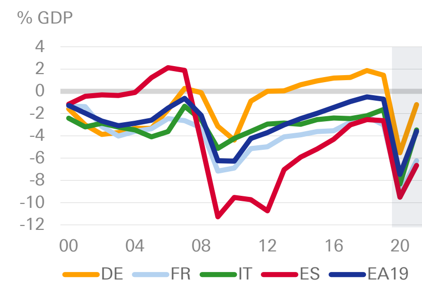
Moreover, Germany has at this time sizeable financial reserves it can use to at least partly finance the corona-related fiscal costs, in particular at the level of the social security funds which are confronted with falling social contributions and rising

Figure 8: Fiscal balance projections for 2020/21 by the IMF



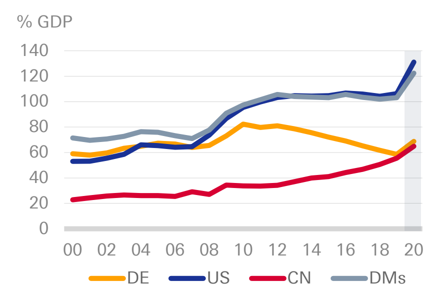
Forecast: IMF
Source : IMF

Figure 9: Fiscal balance projections for 2020/21 by the IMF



Forecast: IMF
Source : IMF

Figure 10: Public debt projections for 2020 by the IMF



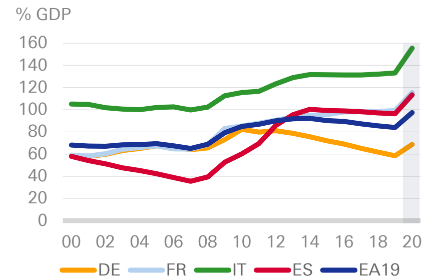
Forecast: IMF
Source : IMF

expenses (this is especially true for the BA and the health insurance).[8] That said, the financial reserves of the social security system are estimated at roughly EUR 96 bn (2.8% of GDP) (end-2019), of which EUR 40½ bn are held by the public pension insurance ("Gesetzliche Rentenversicherung"), EUR 30 bn by the public health insurance ("Gesetzliche Krankenversicherung") and a further EUR 25.8 bn by the BA.

Baseline scenario: Fiscal deficit is set to peak at close to 7% of GDP in 2020, gross debt ratio to jump to almost 75% of GDP by end-2021

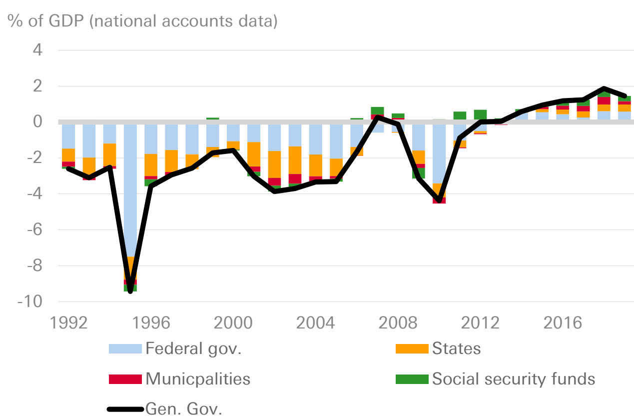
Given both the breadth and depth of the economic crisis – which will considerably hit Germany's industrial and services sectors as well as the labour market at the same time – and the decisive fiscal response to crisis, we project Germany's general government budget (federal government, states, municipalities and social security funds) to post a deficit of 6.7% of GDP in 2020 and 4.5% in 2021.

Figure 11: Public debt projections for 2020 by the IMF



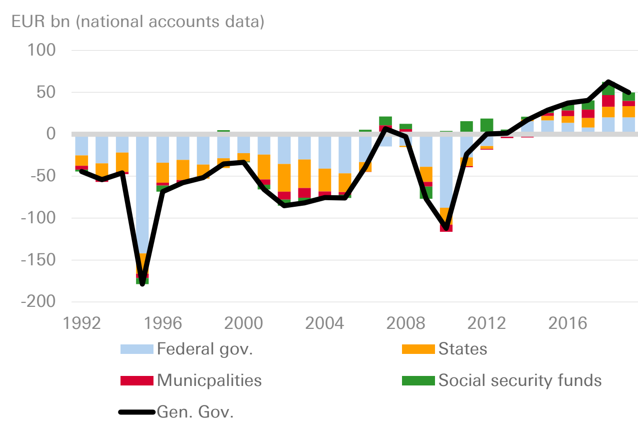
Forecast: IMF
Source : IMF

Figure 12: General government financial balance



Source : Destatis, Deutsche Bank Research

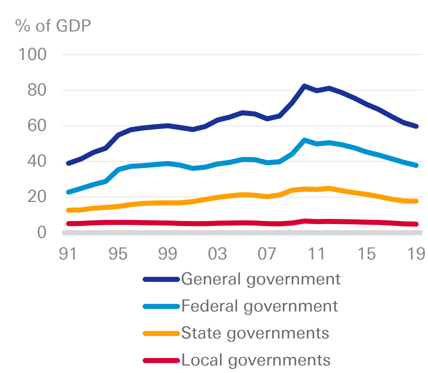
Figure 13: General government financial balance



Source : Destatis, Deutsche Bank Research

Germany's fiscal deficit in 2020 will be mainly the result of the large cyclical deficit of roughly 3% of GDP as well as the adverse one-off effects on the budget (of around 3.9% of GDP). The large negative one-off effects on the budget balance relate to the federal and state governments' (discretionary) fiscal response to fight the pandemic and to mitigate the strain on corporates, self-employed and employees. On the revenue side, it includes the drop in tax revenue due to the temporary tax relief measures (which could reach EUR 38 bn in 2020, according to the latest "Joint Economic Forecast" report).[9] On the spending side, the one-off effects account for almost EUR 90 bn) and comprise the extra spending related to the immediate action program (EUR 50 bn), additional health care spending for equipment and protective clothing, subsidies paid to hospitals as well as the costs related to the easing of the conditions to receive short-time allowance. Although the structural budget balance (fiscal balance adjusted for cyclical and one-off/temporary effects) is still expected to post a surplus of around 0.2% of GDP, it will deteriorate by a full percentage points

Figure 14: Gross government debt (Maastricht definition)



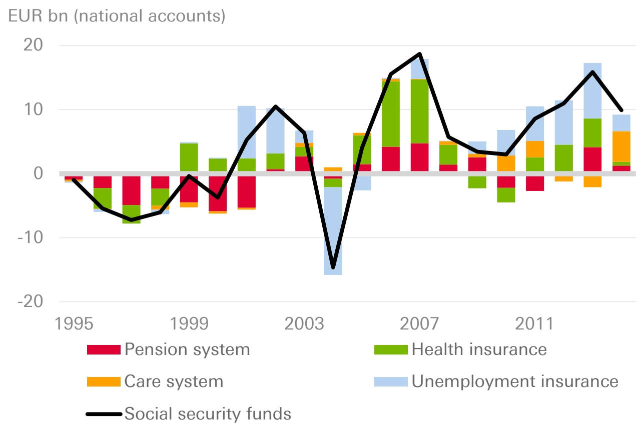
Source : Deutsche Bundesbank

8 Although the federal government will tap its so-called "refugee/asylum reserve funds" ("Asylrücklage") of more than EUR 48 bn (1.4% of GDP in 2019) to fund its fiscal deficit, this would not help to limit the rise in public debt as these "reserves" are no deposits but just an accumulation of unused credit authorisations stemming from past budget years. Therefore, using these "reserves" will push Germany's debt up as they involve borrowing in credit markets.

9 Although the government's tax relief measures will lead to a temporary (extraordinary) fall in tax revenue in 2020, back-payments will lead to a temporary boost in revenues in 2021.

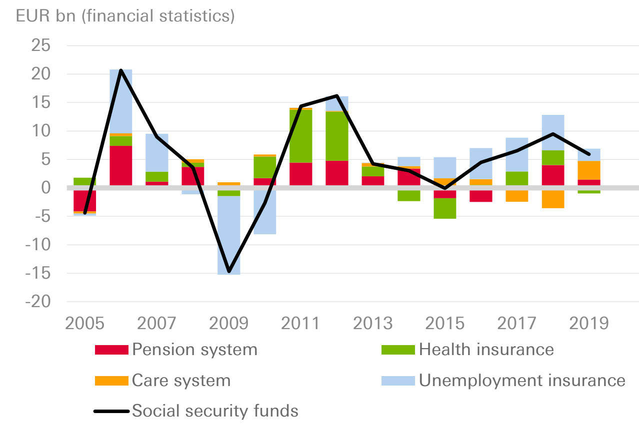
because of the federal government's expansionary fiscal policy path agreed on long before the corona crisis hit the country.

Figure 15: Financial balance of social security funds



Source : Destatis, Deutsche Bank Research

Figure 16: Financial balance of social security funds



Source : Deutsche Bundesbank, Deutsche Bank Research

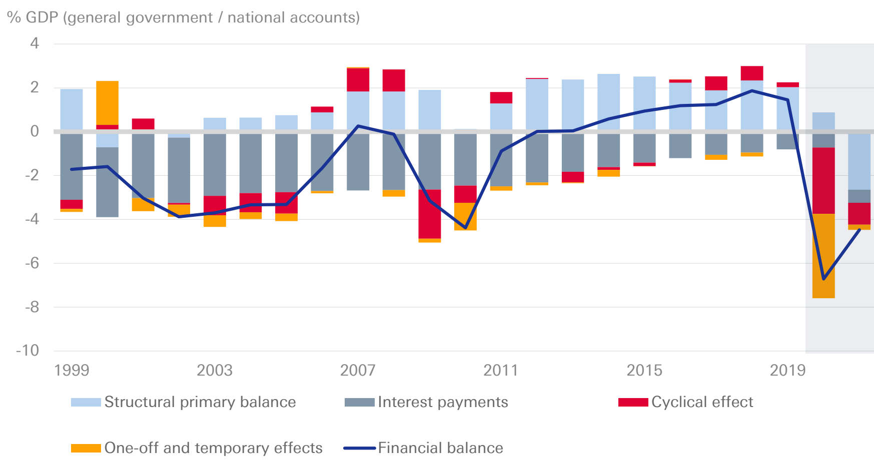
For 2021, we project the general government's fiscal deficit to narrow to 4.5% of GDP as the economy rebounds strongly (V-shape recovery) and the corona-related adverse budgetary one-off effects from a likely materialisation of contingent liabilities (credit losses and drawing of government guarantees are estimated at roughly EUR 40 bn) will be largely offset by back-payments of the 2020 tax deferrals.[10] That said, our 2021 deficit projection explicitly considers an additional discretionary fiscal stimulus with a total volume of EUR 100 bn (2.9% of GDP in 2019) to support the economic recovery. As a result of the large fiscal deficits and the sizeable credit market borrowing stemming from the government's loan and equity participation programs[11] we project the general government's gross debt stock to climb by almost 15 percentage points of GDP to around 74.6% of GDP by the end of 2021 (from just 59.8% in 2019). Our gross debt projection is explicitly based on the assumption that one half of the amount of EUR 250 bn – which is provided by the federal government and the states for loan/participation programs[12] – will be borrowed in markets in 2020 and the other half later in 2021.

Benchmarking our baseline public deficit and gross debt projections Our baseline deficit projections are overall higher than those by the German Council of Economic Experts ("Sachverständigenrat") (-0.8% in 2020 and -1% in 2021), the German economic think tanks in the "Joint Economic Forecast" report ("Gemeinschaftsdiagnose") (-4.7% in 2020 and 0% in 2021) or by the IMF in its April 2020 Fiscal Monitor (-5.5% in 2020 and -1.2% in 2021). The relatively large differences in fiscal deficit projections can be largely explained by considerable differences in the economic growth assumptions. While we assume real GDP to contract by 5.3% in 2020 and to rebound by 5.4% in 2021, the Council of Economic Experts expects a much less severe drop of just 2.8% in 2020 followed by a rise of 3.7% in the next year. In the "Joint Economic Forecast" report, economic think

10 In line with the Joint Economic Forecast report we assume that 75% of tax deferrals (EUR 28.5 bn) will be paid back in 2021.
11 Mainly taking place via the WSF which is set to buy equity stakes in large German corporates and will provide the necessary funds to finance the agreed KfW loan programs.
12 EUR 200 bn at the WSF and EUR 50 bn at the level of the federal states.

tanks expect Germany's GDP to shrink this year by 4.2% only and to expand by a strong 5.8% in 2021.

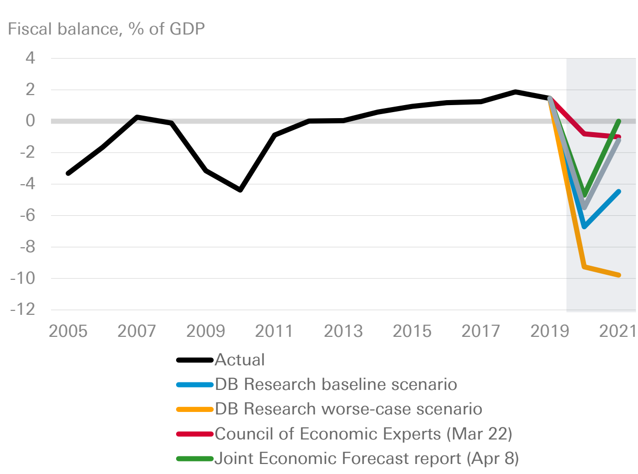
Figure 17: General government budget outlook in the baseline scenario



Source : Federal Statistical Office, AMECO, OECD, Federal Ministry of Finance, Deutsche Bank Research

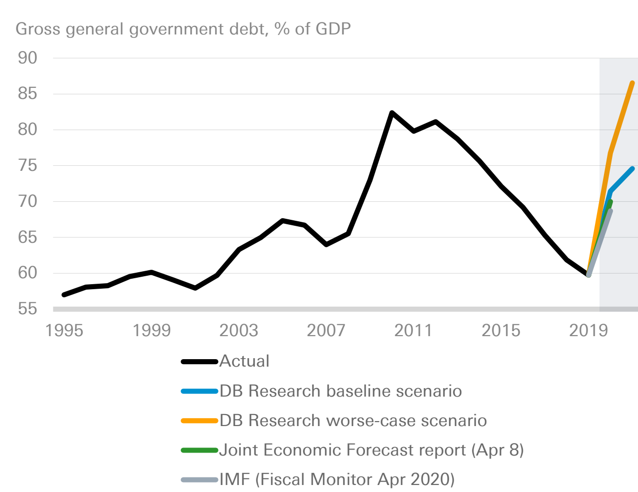
That said, the large variance in the fiscal projections can be also explained in parts by different assumptions regarding the materialisation of contingent liabilities (e.g. the drawing of guarantees, losses from loan defaults or write-off on equity stakes) and the need for further discretionary fiscal spending in 2021. As the likelihood of a materialisation of contingent liabilities is at this junction arguably hard to assess, the economic think tanks have not considered any adverse effects on the budget/ debt trajectory from this end. Also, the think tanks did not assume any further fiscal stimulus for the next year (which we do, see below). Finally, the IMF's deficit projection is the closest to ours (though still smaller) – despite a more negative real GDP growth forecast of -7% in 2020.

Figure 18: Fiscal balance projections for 2020/21 in comparison



Source : Destatis, Deutsche Bank Research, IMF, Council of Economic Experts, Joint Economic Forecast report

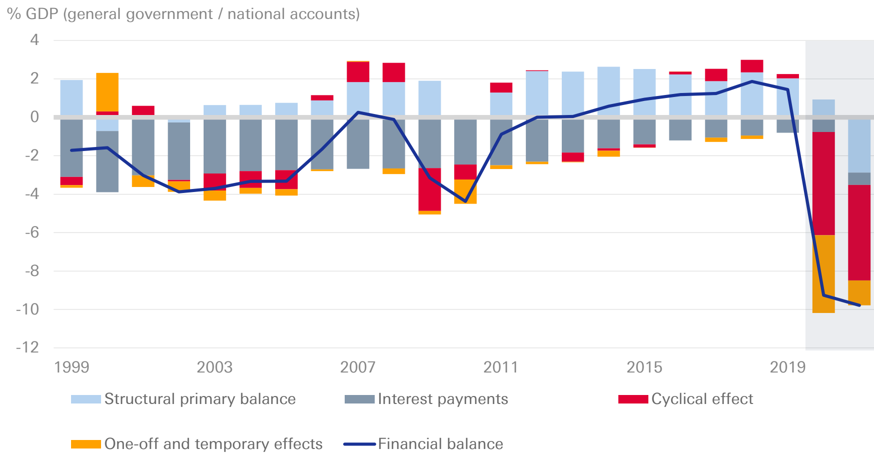
Figure 19: Public debt projections for 2020/21 in comparison



Source : Destatis, Deutsche Bank Research, IMF, Joint Economic Forecast report

Also, our projections for Germany's gross-debt-to-GDP ratio (71.4% in 2020 and 74.6% in 2021) are higher than the forecasts by the Council of Economic Experts (60.5% in 2020 and 58.6% in 2021), the "Joint Economic Forecast" (70% in 2020) and the IMF (68.7% in 2020).

Figure 20: General government budget outlook in the worse-case ("protracted pandemic") scenario



Source : Federal Statistical Office, AMECO, OECD, Federal Ministry of Finance, Deutsche Bank Research

Worse case scenario: Budget deficit at almost 10% in 2021, debt ratio soaring to 86.5% by the end of 2021

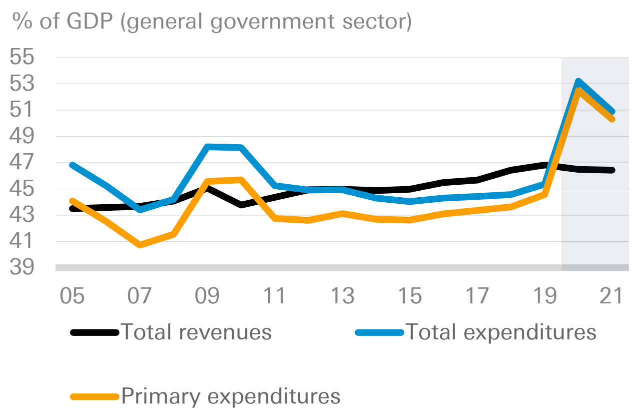
In the worse case scenario, Germany's fiscal deficit would widen even more drastically, to an estimated 9.3% of GDP in 2020. Moreover, in 2021 it would widen even further to 9.8% of GDP. The worse outcome in the protracted pandemic vs. the baseline scenario is largely the result of a much wider cyclical deficit (because of a much larger negative output gap). In addition, it is also driven by higher fiscal losses in 2021 due to the materialisation of contingent liabilities (EUR 75 bn in the worse case instead of roughly EUR 40 bn in the baseline scenario). Consequently, the gross-government-debt-to-GDP ratio would rise in this case to almost 77% of GDP already by end-2020 and jump further to 86 ½% of GDP by the end of next year. Therefore, in the worse case scenario the debt ratio would jump by almost 27 percentage points of GDP and thus far more than during the global financial crisis when it increased from 65.5% of GDP in 2008 to 82.4% in 2010 (i.e. by 16.9 pp of GDP). Arguably, the fiscal deficit and debt numbers could turn out even weaker than our worse case scenario projections suggest as the government could be forced in the U-shape recovery scenario to increase the fiscal stimulus program for 2021 beyond our assumed volume of EUR 100 bn.

5. Conclusion: Corona shock will intensify pressures on medium-/long-term public debt sustainability

The German economy is currently undergoing an economic shock that is unprecedented in post-war history. The fiscal response to the crisis has been quick and decisive and appears appropriate. However, they will lead to a drastic rise in government expenditures and a stronger role of the government in the economy.

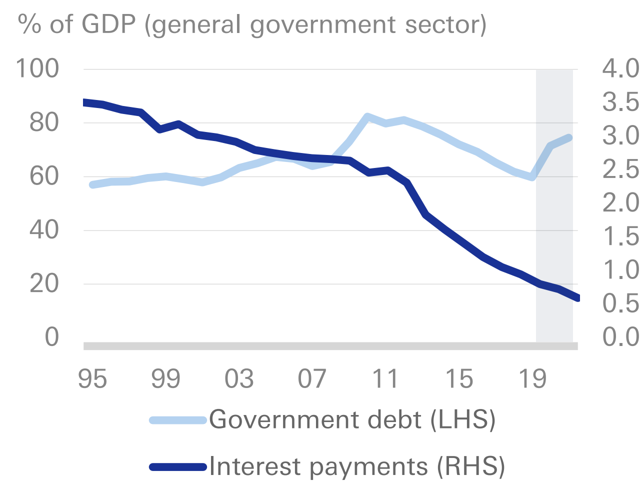
However, as a result of the deep recession and the government's extensive and sizeable fiscal support, Germany is facing a massive deterioration in the public budget balance and a considerable rise in the level of its public debt. Fortunately, Germany is one of the few countries that rebuilt its fiscal scope that it had lost between 2008 and 2010. Not only Germany's public finances remain very solid in an international comparison. Also, Germany enters the corona crisis with a stronger public budget position and a lower debt ratio than prior to the global financial crisis more than ten years ago.

Figure 21: Public revenue and expenditures (baseline scenario)



Source : Destatis, Deutsche Bank Research

Figure 22: Public debt and interest payments (baseline scenario)

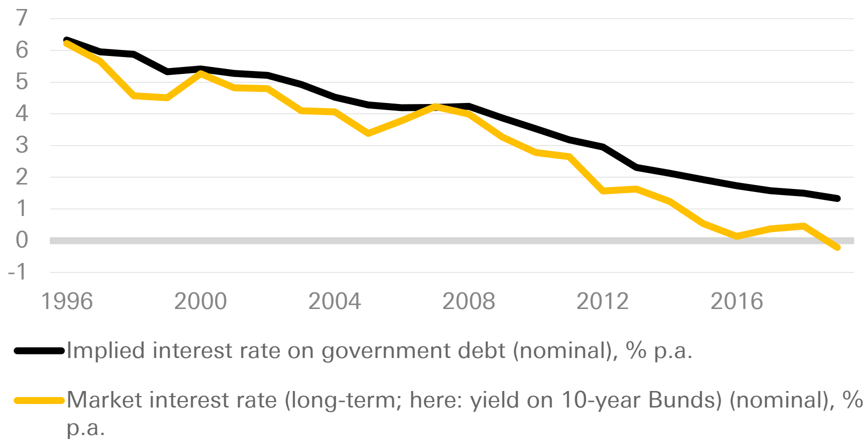


Source : Destatis, Eurostat, Deutsche Bundesbank, Deutsche Bank Research

Our projections show that Germany could post a fiscal deficit of between 6.7% of GDP (baseline) and 9.3% of GDP ("protracted" scenario) in 2020. In 2021, the fiscal deficit could reach between 4.5% of GDP in the baseline and 9.8% of GDP in the "protracted" scenario. Hence, Germany's 2020 fiscal balance could turn out much worse than what we were forecasting prior to the corona pandemic: it would be more than 7 pp of GDP weaker in the baseline scenario and almost 10 pp of GDP in the worse case scenario. As regards public debt dynamics, Germany's government-debt-to-GDP ratio are projected to jump by the end of 2021 to 74.6% in the baseline and to 86 ½% in the worse case scenario. Consequently, Germany's debt ratio would be by the end of next year almost 20 pp of GDP (baseline) and more than 30 pp of GDP (worse case) higher compared to our pre-COVID forecasts.

Still, strengthening the public balance sheet, once the worst of the crisis is over, will require drastic budgetary adjustments on both the revenue and spending sides. It will very likely take years, if not more than a decade, to regain the fiscal space that will be lost because the corona pandemic. Although low or negative interest rates will clearly help the German government to keep the debt-to-GDP trajectory under control in the coming years, weakening potential growth, the imminent fiscal burden from population aging on the public pension system (starting to intensify by mid-2020) and the rising costs stemming from the digital and ecological transformation of the economy will complicate the government's task to secure medium-/long-term public debt sustainability.

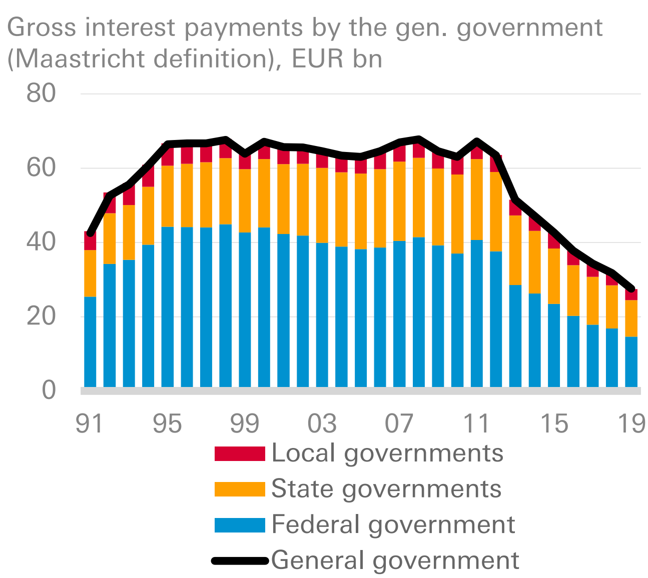
Figure 23: Low interest rates will support public debt sustainability in Germany



The implied interest rate on government debt is calculated as the ratio between interest payments for a year and the gross government debt stock of the preceding year.
Source : Eurostat, AMECO, Bloomberg, Deutsche Bank Research

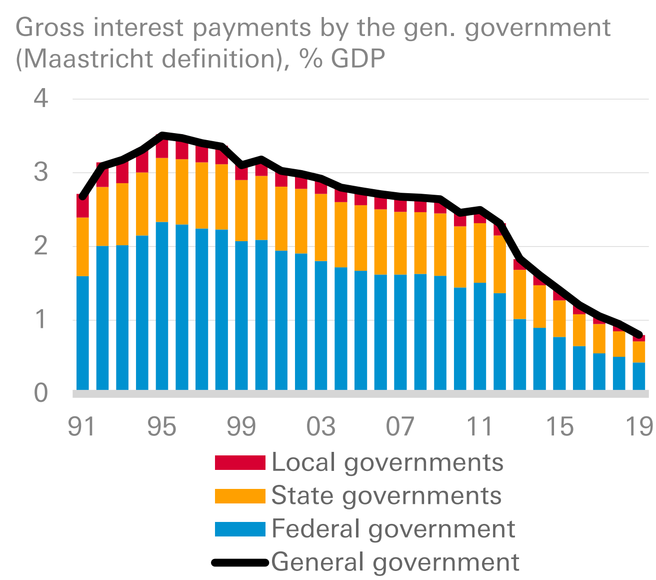
Although our baseline and worse case fiscal forecasts have to be taken with caution as the economic growth path is subject to high uncertainty and the actual materialisation of state guarantees ex-ante unknown, they clearly highlight that the fiscal burden from the corona crisis could easily turn out at least as bad as the one from the global financial crisis. Moreover, given that the materialisation of the worse case scenario become increasingly likely, there is a significant risk that public finance will be hit much more heavily than any other economic/financial crisis that had occurred after WWII.

Figure 24: The German government sector's interest burden has retreated to a record low since re-unification



Source : Destatis, Deutsche Bank Research

Figure 25: The German government sector's interest burden has fallen below 1% of GDP



Source : Destatis, Deutsche Bank Research

Appendix 1

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