Box 2

THE IMPACT OF INTEREST RATE HIKES ON FIRMS' FINANCIAL PRESSURE

Market rate hikes are passed through gradually to the average cost of firms' debt, although how quickly this occurs depends on the maturity structure of the debt, the type of interest accrued (fixed or variable) and the frequency of interest rate reviews. According to the results of Box 1, the average cost of firms' outstanding debt rose moderately in 2022. This trend appeared to intensify in 2023, but is expected to stall in 2024, and to even reverse in the case of variable-rate loans.

This box assesses the impact this gradual increase in the average cost of firms' debt has had to date, and the effect it could have in the future, on their capacity to meet interest payments using ordinary earnings for the year. To this end, firms under high financial pressure are defined as those whose interest expenses exceed the sum of their gross operating profit (GOP) and financial revenue. Such information for 2022 is already available for the sample from the Central Balance Sheet Data Office integrated database (CBI), which comprises nearly 600,000 firms.

Chart 1 shows the deviation in the percentage of firms under high financial pressure and their share in employment between 2019 and 2022 vis-à-vis the 2016-2019 average. As can be seen, as a result of the pandemic, the percentage of such firms increased significantly in 2020, owing chiefly to the strong decline in corporate earnings and, to a lesser extent, the rise in business debt, reflecting growing demand for credit to meet ordinary payments and build up liquidity reserves. Thanks to a recovery in corporate earnings and deleveraging, the percentage of firms under high financial pressure fell back in 2021, and – despite the average cost of debt rising by 29 basis points (bp), according to Central Credit Register (CCR) data (see Chart 2) – this trend continued in 2022, helped by the sound performance of corporate earnings in that year. Indeed, the percentage of such firms in 2022 appeared to fall slightly below the 2016-2019 average. For its part, the share in employment of firms under high financial pressure performed similarly, with decreases in both 2021 and 2022.

In the case of 2023, as accounting information is not yet available to calculate the percentage of firms under high financial pressure and their share in employment, simulations are conducted for both 2023 and 2024. These simulations draw on the CBI and CCR, the latter of which contains the characteristics of all outstanding bank loans in each month to November 2023 (latest data available at the cut-off date for this box). Specifically, three assumptions are made regarding the stock of firms' debt, their GOP and the cost of their debt:

1 As regards *firms' debt,* two alternative scenarios are envisaged:

   a) *With full debt rollover:* firms roll over all their debt upon maturity, but do not arrange further debt, meaning that the stock of their debt remains constant.

   b) *With no debt rollover:* firms do not arrange new debt, nor do they roll over their debt upon maturity, leading to a gradual reduction in the stock of debt as it is repaid. As the CBI only provides information about the amount of interest-bearing debt[1] maturing within one year, and not the exact due date, the maturity structure of interest-bearing debt is assumed to be the same as that of bank debt, for which such information is available in the CCR.[2]

2 Since financial information is only available to 2022, assumptions need to be made about firms' *GOP and financial revenue.* Two scenarios are considered:

   a) *Constant GOP:* both GOP and financial revenue in 2023 and 2024 remain constant at 2022 levels, enabling the effect of higher financing costs to be examined in isolation.

   b) *Uniform growth in GOP:* all firms post GOP growth at the same year-on-year rate in 2023 as between January and September 2023 (9%), based on State tax revenue service data. Growth of 4.5% is considered for 2024, in line with the Banco de España's forecast for nominal growth in the gross

1 Interest-bearing debt includes financing from credit institutions, bonds and other fixed-income securities, and interest-bearing loans from group companies.

2 Specifically, for 2023 it is assumed that all short-term interest-bearing debt (i.e. with a maturity of less than one year) included in the CBI for a given firm is repaid. The repayment date within the year is calculated so as to be consistent with the average maturity period of that firm's bank debt in December 2022, based on the CCR. The amount of interest-bearing debt maturing in 2024 is calculated by multiplying the long-term debt included in the CBI in December 2022 (i.e. debt which has a maturity of more than one year and, therefore, did not mature in 2023) by the percentage of the outstanding balance of bank debt maturing in 2024, drawing on CCR data. The 2024 repayment date is calculated so as to be consistent with the average maturity period of that firm's bank debt in November 2023, based on the CCR.

Box 2

THE IMPACT OF INTEREST RATE HIKES ON FIRMS' FINANCIAL PRESSURE (cont'd)

operating surplus of the Spanish economy. Financial revenue remains constant under this scenario as well.

3 To calculate the *interest rate* applicable to each firm, CCR loan-level data are used and a projection made drawing on market expectations[3] for the path of the

Chart 1
Firms under high financial pressure (a)

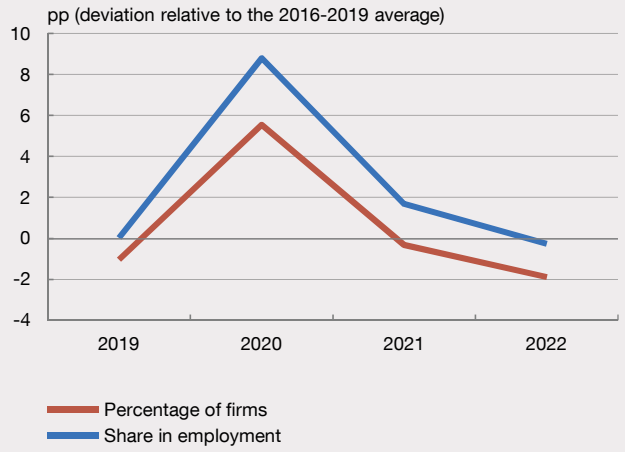


Chart 2
Average interest rates of the stock of non-financial corporations' debt (b)

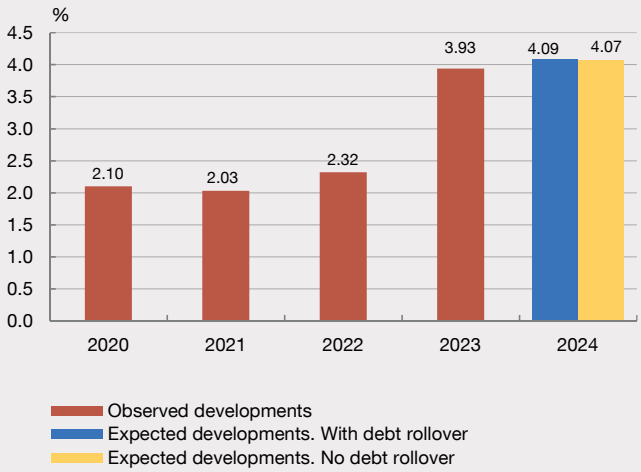


Chart 3
Expected developments in the percentage of firms under high financial pressure (a) (c) (d)

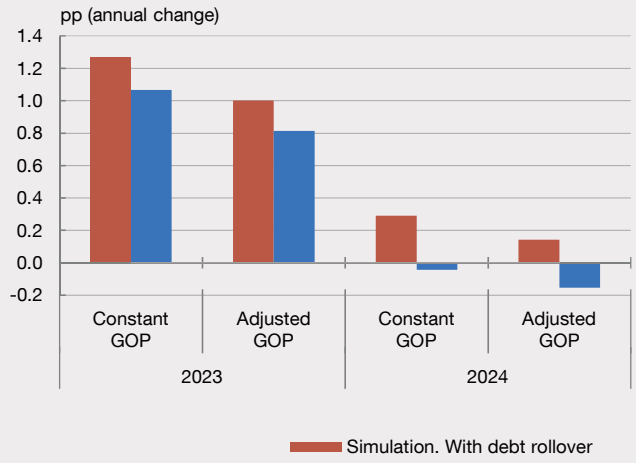
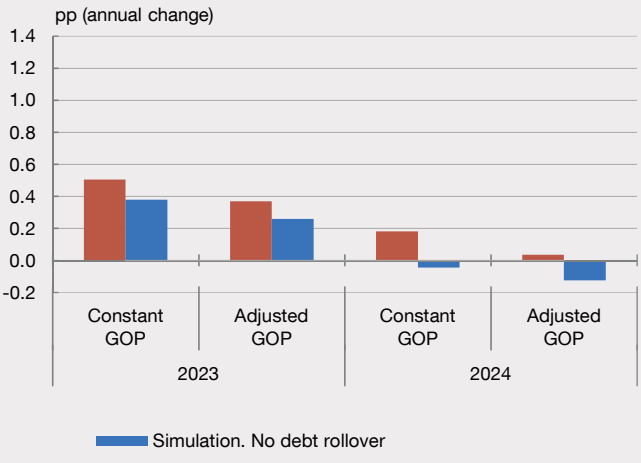


Chart 4
Expected developments in the share in employment of firms under high financial pressure (a) (c) (d)



SOURCE: Banco de España.

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a A firm is considered to be under high financial pressure if its interest coverage ratio is below one. The interest coverage ratio is calculated as (GOP + financial revenue) / financial costs.
b Weighted annual average of monthly interest rates.
c Calculated drawing on a sub-sample of firms for which information is available in the CCR or, if such information is not available, on the basis of firms operating in the same province and sector (at NACE Rev. 2 class level) and of a similar size (based on the European Commission's classification), to which the average cost of financing of the group of comparable firms for which such information is available in the CCR is assigned. The financial costs of each firm for 2023 and 2024 are proxied drawing on the balances of interest-bearing debt at the start of each year and the expected path of interest rates. Two scenarios are considered: full debt rollover and no short-term debt rollover. Further, two alternative assumptions are made about firms' GOP: that it remains constant at its 2022 level or that it increases, for all firms, by 9% in 2023 and 4.5% in 2024.
d Holding companies, head offices and dormant firms are excluded, as are firms with misreported data concerning employment, financial costs or interest-bearing debt.

3 Proxied drawing on derivative contracts linked to interbank rates. For 2023, CRR data to November 2023 are used.

Box 2
THE IMPACT OF INTEREST RATE HIKES ON FIRMS' FINANCIAL PRESSURE (cont'd)

reference interbank rate, using the same procedure as in Box 1. In the case of non-bank debt (for which no information is available in the CCR), its cost is assumed to vary by the same amount as bank debt. For those firms not included in the CCR, the cost of their debt is calculated drawing on the data for similar firms for which such information does exist.[4]

Once the debt maturity structure has been defined and the associated interest rate projected, the interest expenses of each firm are calculated by multiplying its debt by the related cost.

Chart 2 shows the changes in the annual average interest rates of firms' outstanding debt up to 2023 and the projection for 2024, based on the foregoing assumptions, for the two rollover scenarios (although the differences between these are very small). According to these results, the annual average cost of debt increased by 162 bp in 2023, and will rise by around a further 14 bp in 2024.[5]

Chart 3 shows the annual change in the percentage of firms under high financial pressure drawing on the simulations conducted for all combinations of the assumptions described above. Under the assumption that firms roll over all their debt (bank and non-bank alike) upon maturity and that their GOP remains constant, the proportion of those under high financial pressure rises by 1.3 percentage points (pp) in 2023 compared with 2022, to levels close to the 2016-2019 average. However, there would be hardly any change in the percentage of such firms in 2024 (increase of 29 bp) because monetary policy should have almost fully passed through to financing costs in 2023, as described in Box 1 of this report.

The percentage of firms under high financial pressure increases slightly less in 2023 under the assumption that growth in GOP is uniform than if corporate earnings are assumed to remain constant (27 bp and 15 bp less in 2023 and 2024, respectively). If, in addition to assuming uniform growth in GOP, debt is not rolled over upon maturity, the percentage of firms under high financial pressure increases by 0.8 pp in 2023 with respect to 2022.

Lastly, Chart 4 shows changes in the share in employment of firms under high financial pressure. Although the pattern observed is similar to that of Chart 3, the impact in terms of employment is more subdued, suggesting that the firms affected have comparatively fewer workers. Specifically, under the most adverse scenario considered (all debt is rolled over and GOP remains constant), the share in employment of firms under high financial pressure rises by 0.5 pp in 2023 and 0.2 pp in 2024.

In sum, this box shows that the more adverse effects associated with higher interest expenses materialised in 2023 and were limited. In 2024 the degree of corporate vulnerability associated with the interest rate trajectory is expected to stabilise somewhat or improve, as monetary policy should have almost fully passed through to financing costs in 2023, based on the assumptions applied. Lastly, as regards the share in employment of the firms affected, the impact appears to be very reduced.

4 Specifically, considering similar firms operating in the same province and sector (at NACE Rev. 2 class level) and of a similar size (based on the European Commission's classification). This group of comparable firms enables an average cost of financing to be assigned to firms for which no information is available in the CCR. Further, holding companies, head offices and dormant firms are excluded, as are firms with misreported data concerning employment, financial costs or interest-bearing debt. Applying such filters means that the sample of firms used in this analysis is smaller than that used in Chart 1.

5 Under the no-rollover scenario, the average cost of firms' outstanding debt would increase in 2024, despite the lower reference interest rates, owing to the higher relative weight of medium-term fixed-rate loans.