As a result of the high level of indebtedness accumulated by non-financial corporations in the expansionary phase that preceded the start of the last crisis, interest expenses payable also rose significantly, amounting in 2008 to 11% of the gross value added (GVA) generated by the sector, more than double their level just five years earlier (4.9%). With the start of the downturn, a growing number of firms began to experience difficulties meeting their financial obligations with the income from their ordinary activity, forcing many of them to embark on deleveraging processes, allowing them to clean up their balance sheets and ease the excessive financial burden. In this setting, the decline in interest rates that began in 2009 considerably eased the financial pressure on the corporate sector. The Central Balance Sheet Data Office data confirm this pattern, showing how, for the Integrated Central Balance Sheet Data Office Survey (CBI, by its Spanish abbreviation) overall, the ratio that proxies the average cost of financial debt fell by more than 54% between 2008 and 2016 (the last year available in the database), taking its median value down from 5.9% at the start of 2008 to 2.7% in 2016. However, the disaggregated data reveal significant differences in the change in the average cost of financial debt in the period analysed. Thus, although this indicator fell at the vast majority of firms (around 80%, see Chart 1), the scale of the decline was very unequal, most commonly amounting to up to 2 pp (23% of firms), followed by between 2 pp and 4 pp (21%) and by between 4 pp and 6 pp (17%). For most firms, the savings generated by the cumulative reduction in the cost of borrowing had a positive impact on return on equity. Specifically, ROE rose by up to 2 pp at almost 60% of firms, and by more than 2 pp at 27% (see Chart 2).

Given the current level of the cost of borrowing, which is at an all-time low, and the possible normalisation of monetary conditions in the medium term, any further decline in this cost is now very limited and an increase in coming years cannot be ruled out. It is therefore timely to analyse the effects that such moves could have on the financial situation of Spanish non-financial corporations. To this end, a simulation exercise has been performed, considering, for purposes of illustration, two hypothetical scenarios of an increase in the cost of borrowing (by 100 bp and 200 bp, respectively) applied to the 2016 CBI figures (the last year available in the sample).[1] Specifically, the exercise leaves unchanged all balance sheet items and income statements, with the only changes made being in the cost of borrowing, in the amounts indicated. This approach tends to exaggerate the effects of an interest rate rise, since this would be expected to be accompanied, for example, by higher levels of activity and ordinary profit at firms that could moderate the impact. In addition, it is important to note that firms' current economic and financial situation is somewhat more favourable now than it was in 2016, which is the base year used, because there has been a gradual improvement since then and the cost of borrowing has continued to decline, albeit moderately. Accordingly, the findings should be taken as an upper bound of the expected effect. It should also be noted that, in practice, increases in market interest rates would not be passed through immediately but gradually (as outstanding debt matures or interest rates on variable rate loans are reset), although it is estimated that the time lag would be relatively short, given the predominance of short-term variable-rate borrowing among Spanish firms.[2]

Chart 3 shows that the impact of these increases on ROE[3] would be relatively moderate for the whole of the CBI sample, with a drop of 0.8 pp in the case of an increase in the cost of borrowing of 100 bp, and a drop of approximately 1.5 pp in the worst-case scenario considered. The breakdown by firm size shows that the decline in ROE would be rather more severe among large corporations, where it could fall by almost 2 pp if borrowing costs were to rise by 200 bp. This finding is linked to the higher level of indebtedness of these corporations. By sector of activity, the decline in ROE would be somewhat less than 1 pp in all sectors in the event of a 100 bp rise, and would range between 1.4 pp and 1.9 pp in the worst-case scenario, with the energy sector, the information and communications sector and the construction and real estate sector posting a rather more pronounced decline (see Chart 4).

It is also important to analyse the effects of an increase in the cost of borrowing on the proportion of firms bearing high financial pressure.[4] Chart 5 illustrates, first, that the proportion of debt in these firms, which in 2016 accounted for 14.7% of total sector indebtedness, would gradually rise as the cost of borrowing increased, to reach almost 20% in the worst-case scenario (a 200 bp increase).[5] In this case, the increase would be most marked in the SME segment, as the debt of financially vulnerable SMEs could amount to 24.4% of total SME indebtedness, while in the case of financially vulnerable large corporations, in the worst-case scenario, their debt would amount to 18.2% of total large corporation indebtedness. The reason for this is that, although the decline in ROE at SMEs would be less marked, as

1 The Central Balance Sheet Data Office Quarterly Survey (CBQ) has more recent data, but it was considered more appropriate to use the CBI for this purpose as it permits analysis of the impact of increases in the cost of borrowing on a broader corporate base, with a high number of SMEs.

2 See Box 7, "Sensitivity of the income of Spanish general government, non-financial corporations and households to interest rate rises", in the *Quarterly report on the Spanish economy*, June 2018.

3 ROE would be affected by an increase in the cost of borrowing through its numerator (ordinary net profit), the calculation of which includes financial costs.

4 Firms are understood to bear high financial pressure or to be financially vulnerable when, for two consecutive years, their income from ordinary activities (gross operating profit plus financial revenue) is lower than their financial costs.

5 For purposes of reference, during the crisis this indicator peaked, in 2013, at 22.8%.

IMPACT OF AN INCREASE IN THE COST OF BORROWING ON THE ECONOMIC AND FINANCIAL SITUATION OF SPANISH NON-FINANCIAL CORPORATIONS (cont'd) — BOX 1

EFFECT OF CHANGE IN COST OF BORROWING ON FIRMS' RATE OF RETURN AND FINANCIAL PRESSURE (a)

Chart 1
DISTRIBUTION OF CHANGE IN AVERAGE COST OF BORROWING, 2008 TO 2016

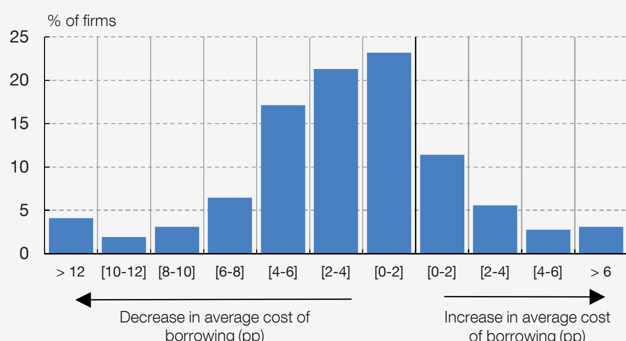


Chart 2
DISTRIBUTION OF IMPACT ON ROE OF CHANGE IN AVERAGE COST OF BORROWING, 2008 TO 2016 (b)

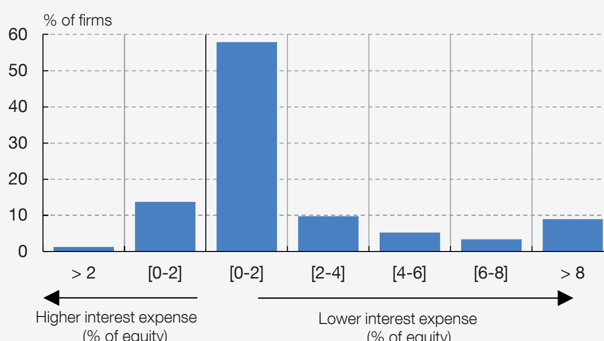


Chart 3
IMPACT ON ROE OF INCREASES IN COST OF BORROWING. BREAKDOWN BY FIRM SIZE (c)

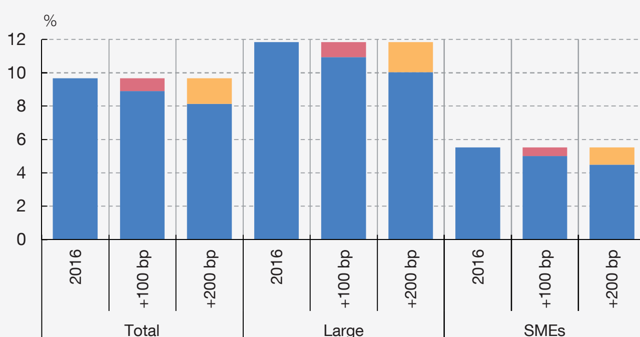


Chart 4
IMPACT ON ROE OF INCREASES IN COST OF BORROWING. BREAKDOWN BY SECTOR

DECLINE IN ROE OWING TO 200 bp INTEREST RATE RISE — DECLINE IN ROE OWING TO 100 bp INTEREST RATE RISE — ROE (AT BOOK VALUE) (b)

Chart 5
IMPACT OF INCREASE IN COST OF BORROWING ON PROPORTION OF FIRMS BEARING HIGH FINANCIAL PRESSURE. BREAKDOWN BY FIRM SIZE (c) (d)

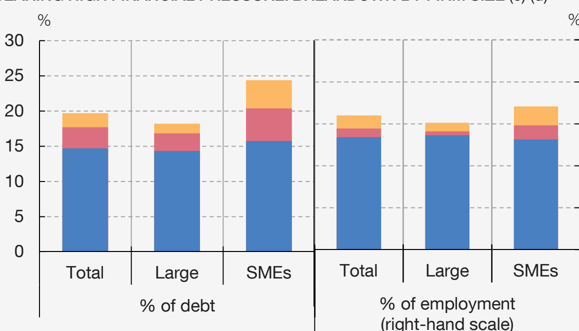
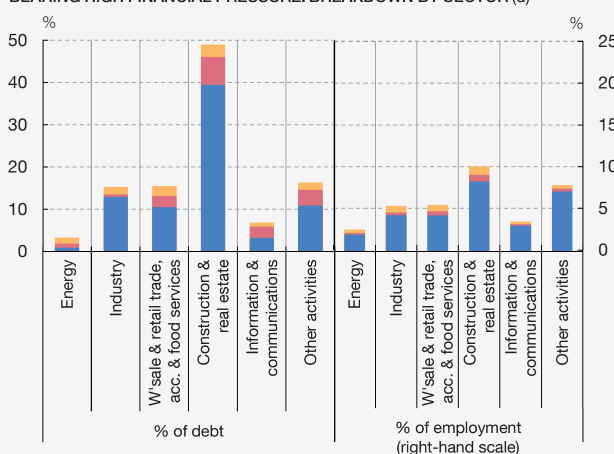


Chart 6
IMPACT OF INCREASE IN COST OF BORROWING ON PROPORTION OF FIRMS BEARING HIGH FINANCIAL PRESSURE. BREAKDOWN BY SECTOR (d)



+200 bp — +100 bp — LEVEL IN 2016

SOURCE: Banco de España.

a For the purposes of this analysis the CBI sample was used, excluding holding companies, newly created firms and construction and real estate sector firms with zero employment and zero turnover in two consecutive years (inactive).
b Return on equity (ROE), calculated as the ratio between ordinary net profit (ONP) and equity at book value.
c Definition of firm size in accordance with Commission Recommendation 2003/361/EC.
d Firms bearing high financial pressure are those where the ratio (Gross operating profit + Financial revenue) / Financial costs is less than 1 in the previous two years. The charts depict the debt (or employment) of firms bearing high financial pressure as a proportion of the total debt (or employment) of each group analysed.

noted above, their rate of return before interest is lower and, therefore, they would have less leeway to withstand higher financial costs. In terms of numbers of workers, the impact would be less severe: thus, as the result of an increase in the cost of borrowing, the proportion of employment concentrated at vulnerable firms could increase, from just over 5% in 2016 to a maximum of 6.4% in the worst-case scenario, with no significant differences perceived by firm size (see Chart 6). The analysis by sector of activity shows that construction would be one of the sectors most affected, both in terms of debt (with a maximum increase of 10 pp) and employment (which would rise by almost 2 pp). Accordingly, in general, these findings point to a larger impact in terms of debt than in terms of employment, which suggests that the weaknesses detected would have more significant implications in terms of financial vulnerability, owing to potential debt servicing problems, than in economic terms, owing to the risk of job losses. In this respect, although it is true that the deleveraging processes undertaken by many firms in the past decade have made them less vulnerable to a rise in their financial costs, the fact that profitability still remains below pre-crisis levels means that some firms have less leeway to absorb shocks of this kind.