A DISAGGREGATED ANALYSIS OF RECENT DEVELOPMENTS IN LENDING TO CORPORATIONS

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Introduction

The strong expansion in lending in the years prior to the financial crisis led the aggregate debt of non-financial corporations to rise to a very high level, far exceeding the figures, in terms of GDP, of other economies such as those in the euro area, the United Kingdom and the United States. Since 2009, the debt of this sector has moved on a declining path. Bank lending by resident institutions, which is the main means of financing of these corporations, especially smaller-sized firms, has since shrunk by 23%[1] to April 2014. However, this aggregate information masks differentiated behaviour within the sector which is relevant for understanding how the necessary process of corporate deleveraging is taking place.

This article analyses itemised information from companies in order to study the degree of heterogeneity in recent developments in respect of bank lending to companies. To do this it divides the sample of companies into two groups, depending on whether credit flow has been positive (or zero) or negative, and the differences in the behaviour of the main economic and financial variables between both groups of companies are investigated. In this connection, three Banco de Espana databases are used: the Central Credit Register (CCR), which offers information on bank lending at each company, and those of the Central Balance Sheet Data Office (CB)[2], which enable economic and financial developments at the corporations to be analysed. The combination of these databases results in a sample that contains around 400,000 companies on average each year, giving it a high degree of representativeness.

Following this introduction, the next section analyses to what extent the reduction in recent years in the debt of non-financial corporations as a whole has been compatible with the existence of a notable proportion of companies where bank lending has continued to grow (or held stable). The following two sections then compare, respectively, the activity and financial position of the two groups of companies into which the sample has been divided. There follows a presentation of the results obtained from estimating a simple model in which the impact the corporation's economic and financial position has on the likelihood of its increasing (or maintaining) its volume of loans is analysed. Finally, the main conclusions are drawn.

Disaggregated changes in lending to corporations

The upper panel of Chart 1, based on CCR data on credit drawn down[3] by non-financial corporations, reveals that the contraction observed at the aggregate level in this variable since 2009 has been compatible with the existence of a significant positive gross flow: for corporations in which this type of financing has increased, the increase in bank lending recorded stood between 6.8% and 13% of GDP (for each of these years), despite the adverse economic circumstances.

1 This figure is adjusted for loans written off and for the effects of the transfer of loans to Sareb.

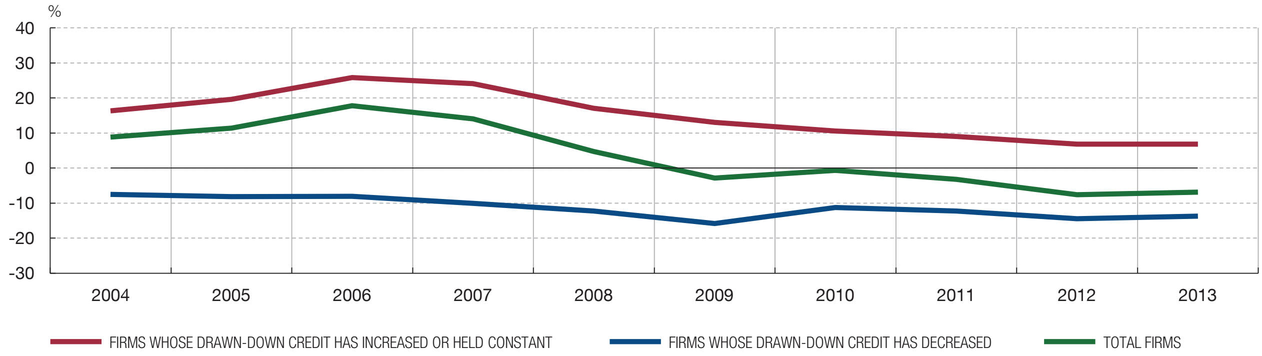
2 Two of the databases maintained by the Central Balance Sheet Data Office have been used in this article. The first (EBA) comprises large and medium-sized corporations, which voluntarily report information completing what is essentially an accounting questionnaire. The second (CBB) is constructed on the basis of the mandatory filing of accounts by companies at mercantile registries, and includes information on medium-sized and, above all, small companies.

3 All the analyses have been conducted using the CCR information on credit drawn down. The main conclusions do not change when total available credit is used.

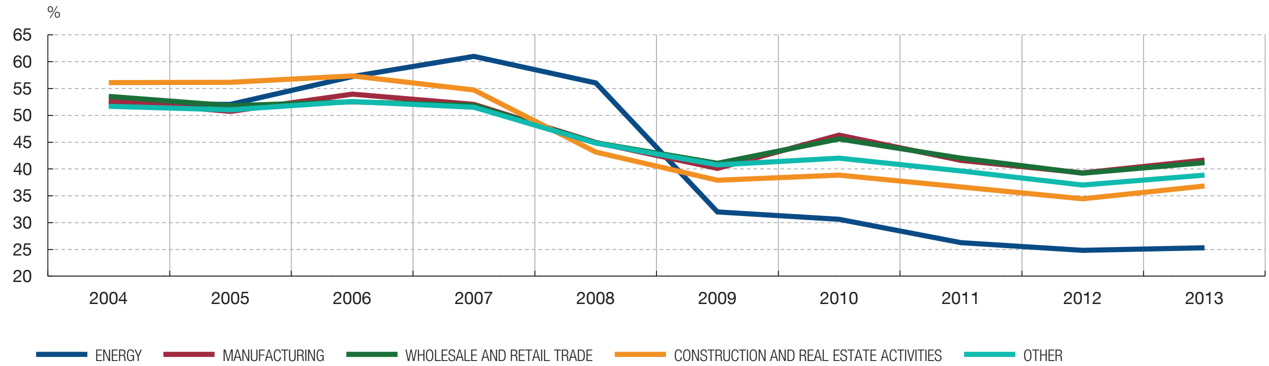
LENDING TO FIRMS (a)

CHART 1

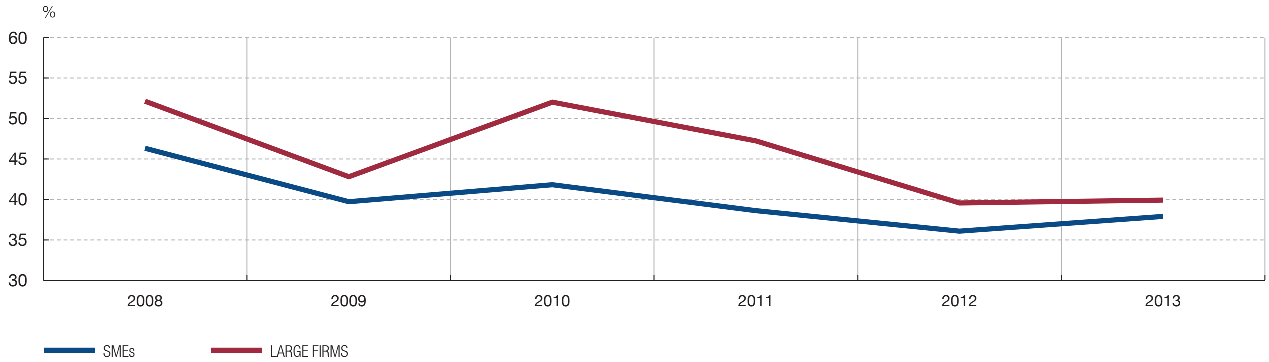
CREDIT DRAWN: FLOW EXPRESSED AS PERCENTAGE OF GDP



PERCENTAGE OF FIRMS WHOSE DRAWN-DOWN CREDIT HAS INCREASED OR HELD CONSTANT. BREAKDOWN BY INDUSTRY



PERCENTAGE OF FIRMS WHOSE DRAWN-DOWN CREDIT HAS INCREASED OR HELD CONSTANT. BREAKDOWN BY SIZE (b)



SOURCE: Banco de España.

a Calculations based on information from the CCR.
b Average, weighted by gross value added, of the percentages relating to each industry.

In terms of the number of corporations, it can be seen that from the start of the crisis (in 2008) to 2012, the proportion of companies that each year recorded an increase (or stability) in their bank financing progressively diminished, despite which it held at high levels – between 35% and 40% – for almost all the sectors of activity (see second panel of Chart 1).[4] The sectors in which the decline was more marked were construction and real

4 The proportion of companies that increased their bank debt was lower, but also significant (between 25% and 35%).

estate (which were more affected by the crisis), and energy, where the percentage fell rapidly down to 25% in 2012. The decline in this latter case can be explained both by the reduction in debt undertaken in recent years by some of the main groups in this sector[5] and by the sizeable cuts made, from 2008, to projects associated with renewable energies, following the strong rise in previous years. The latest data, from 2013, show a change in trend, and a slight increase can be seen in all sectors of the percentage of firms which maintained or increased their drawn down credit.

Finally, the bottom panel of Chart 1 shows a breakdown by size of the percentage of corporations with growth or stability in their bank debt. The decline observed since the start of the crisis affected both large and small-sized companies. For the latter, however, on which the economic crisis had a bigger impact, smaller percentages were recorded. The information for 2013 shows that the rise in this indicator was concentrated among SMEs, while the increase was very limited at large corporations. This result is affected, nonetheless, by the ongoing substitution of alternative sources of funding to lending witnessed at larger companies.

These results therefore testify to the existence of clear heterogeneity in the behaviour of companies in respect of lending in recent years. Thus, although the aggregate data show a reduction in debt levels for the non-financial corporations sector as a whole, there is at the same time a notable percentage of companies at which the outstanding balance of bank loans has continued to rise (or hold stable).

Developments in corporate debt and activity

As can be seen in the top two panels of Chart 2, companies with growing or stable bank financing recorded, on average, a more dynamic performance in sales than that of those in which the flow of bank financing was negative. This same pattern was observable both in SMEs and in larger companies. The breakdown by sector evidences a similar pattern in all sectors of activity.

As regards export activity[6] (see the central panels of Chart 2), practically throughout the period analysed, the percentage of SMEs with sales abroad was somewhat higher in the group of companies whose bank credit increased (or held stable), especially in the final years of the series. By contrast, for the larger corporations the differences between the two groups analysed are smaller. The different behaviour of SMEs and larger corporations is also discernible when a disaggregation by sector of activity is undertaken. This evidence might be indicative of the fact that, in the case of SMEs, the export factor is especially valued by financial institutions when granting financing if, given the lesser amount and quality of information on the economic and financial characteristics of these companies compared with large corporations, their export activity were to be interpreted as a sign of relative buoyancy. In any event, when interpreting the results of larger corporations, it should be borne in mind that financing from resident institutions – which is the variable under analysis in this article – only reflects a portion of their resort to debt.

Lastly, as the bottom two panels show, average staff numbers at companies whose lending did not decline performed overall more favourably than those whose bank financing contracted. This pattern was seen both in SMEs and in larger corporations, and also holds

5 For greater details, see the box on this subject included in the article “Results of non-financial corporations to 2012 Q4 and summary year-end data”, published in the March 2013 *Economic Bulletin.*

6 The analysis of the export performance of companies is based exclusively on the CBA, since details on the amount of sales abroad are only available for this sub-sample.

ACTIVITY AND CREDIT BEHAVIOUR (a)

CHART 2

SOURCE: Banco de España.

a Rates and percentages calculated as the weighted average, using as weights the gross value added of each industry.
b Calculated using CBA data.

in all the sectors analysed. Notably, too, in almost all years (except 2009, and 2012 for SMEs), the set of companies whose flow of bank debt was positive or zero evidenced net job creation in aggregate terms, compared with the negative change recorded by the aggregate of companies whose bank loans declined.

Lending and the financial position of corporations

To delve more deeply into the characteristics of the two groups of companies analysed, the differences between them in economic results and financial position are compared below. In particular, three ratios have been selected: the return on net assets, debt and the debt burden.[7] For each of these, the statistical distribution in the previous period is calculated.

The top two panels of Chart 3 show that, at corporations where bank debt was not reduced, the distribution of profitability shifts towards higher values in all years compared with that of companies in which debt shrank. The most marked differences are seen in the upper part of the distribution (75th percentile), where companies with higher levels of profitability are situated. Similar behaviour is observed in all sectors, with the exception of energy, where results are uneven and do not allow a clear conclusion to be drawn.

The central panels of Chart 3 likewise show that in the group of companies in which bank lending did not decline, the percentiles of the debt distribution are, in practically all cases, lower than those obtained for companies in the opposite situation; the differences are clearer in the 25th percentile, which is where companies with a lower level of deleveraging stand. This behaviour is more evident in the case of SMEs, in which, moreover, the distance between the median indebtedness of the two groups progressively widened. Thus, whereas in 2008 the difference was less than 2 pp, in 2013 SMEs with a zero or positive change in credit posted median debt of 38.6%, more than 9 pp below that of the corporations which showed a reduction in credit (47.8%). Similar conclusions are obtained when analysing behaviour in the different sectors of activity.

Finally, the bottom two panels of Chart 3 show the distribution of the debt burden for the two groups and sizes analysed. This ratio summarises very well the situation of financial pressure borne by corporations, relating the charge derived from borrowed funds to the level of ordinary revenue generated, thus combining the information of the two previous ratios (debt and profitability). As was to be expected, the results show the existence of a more comfortable position at corporations in which bank lending was not cut, as the distribution of this indicator stands at lower levels compared with that of those in which the flow of loans was negative. The differing behaviour between the two groups can be detected throughout the distribution, both in the median and in the 25th and 75th percentiles, although the distances widen in the higher zone of the former, where corporations with a higher burden stand. As was the case in the previous ratio, this behaviour is more evident in the case of SMEs. The data by sector of activity show that a similar pattern holds in all sectors.

As discussed in the previous section, the less clear results obtained for large corporations may be a consequence of the fact that bank lending granted by resident institutions – the variable analysed in this article – does not properly proxy the behaviour of their total financing, since this type of corporation has other alternative means of financing such as the issuance of bonds and equities or foreign loans.

An econometric analysis of the relationship between changes in lending and companies' economic and financial position

The descriptive evidence presented in the foregoing two sections would suggest the existence of a positive relationship between, on one hand, the buoyancy of economic activity and the soundness of companies' financial position and, on the other, changes in their credit balance. In order to corroborate this hypothesis, this section shows the results obtained by estimating a simple econometric model that enables a study to be made of

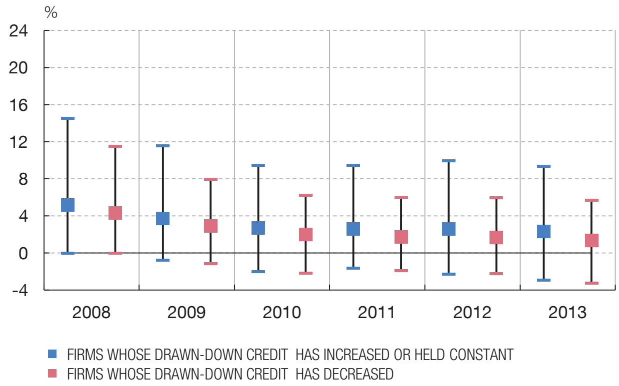
7 The return on net assets ratio is defined as "Ordinary net profit plus financial costs" divided by "Net assets". Debt is calculated as "Interest-bearing debt" relative to "Net assets". Finally, the debt burden ratio is obtained by dividing "Financial costs" by "Gross operating profit plus financial revenue".

CREDIT BEHAVIOUR AND FINANCIAL POSITION AT t-1. BREAKDOWN BY SIZE (a)

CHART 3

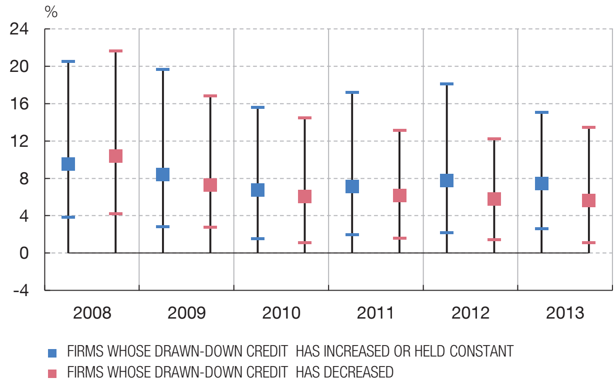
SMEs

RETURN ON ASSETS. 25th, 50th AND 75th PERCENTILES (b) (c)

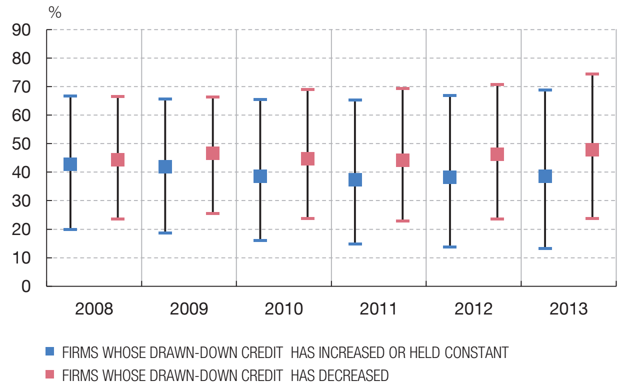


LARGE FIRMS

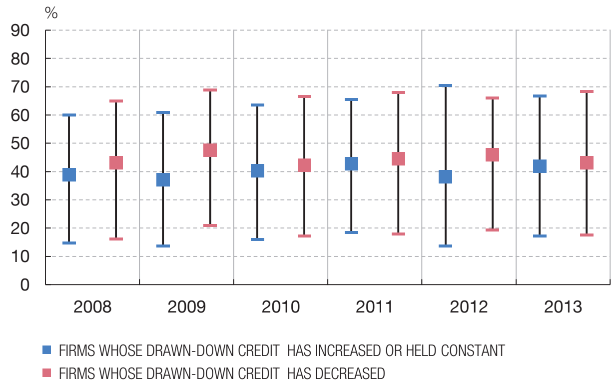
RETURN ON ASSETS. 25th, 50th AND 75th PERCENTILES (b) (c)



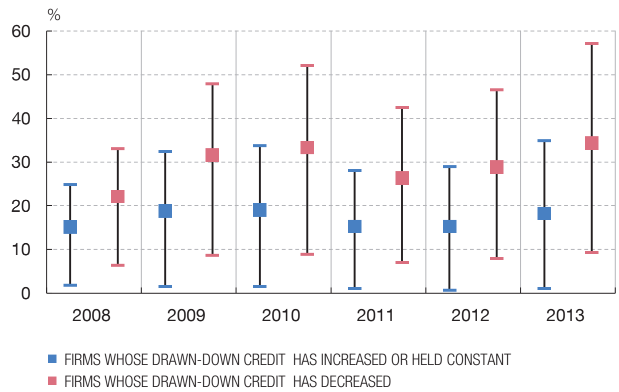
DEBT RATIO. 25th, 50th AND 75th PERCENTILES (b) (d)



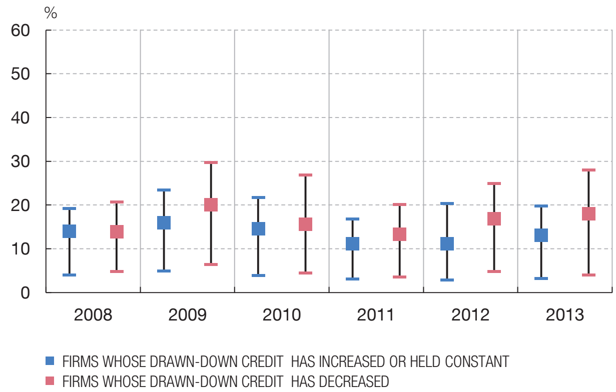
DEBT RATIO. 25th, 50th AND 75th PERCENTILES (b) (d)



DEBT BURDEN. 25th, 50th AND 60th PERCENTILES (e)



DEBT BURDEN. 25th, 50th AND 60th PERCENTILES (e)



SOURCE: Banco de España.

- **a** Percentiles weighted by the industry's gross value added.
- **b** Net assets defined as total assets – non-interest-bearing liabilities (equal to interest-bearing borrowing + equity). Net assets are calculated from final balances adjusted to current prices. The adjustment has been approximated by inflation in tangible fixed assets and in own funds (the balancing entry).
- **c** Return on assets defined as ordinary net profit / net assets.
- **d** Ratio defined as interest-bearing debt/net assets.
- **e** Ratio defined as financial charges/(gross operating profit + financial revenue).

MARGINAL IMPACT ON THE PROBABILITY OF A CORPORATION INCREASING OR MAINTAINING ITS LEVEL OF CREDIT (a)

TABLE 1

	Coefficient	P-value
Return on assets (t–1)	0.0238	0.0000
Debt burden (t–1) (b)	-0.0080	0.0000
Indebtedness (t–1) (c)	-0.1529	0.0000
Growth rate of employment (t–1)	0.0043	0.0040
Growth rate of sectoral employment (t–1)	0.0034	0.0640
Level of dependence on banks undergoing restructuring (t–1) (d)	-0.0293	0.0000

SOURCE: Banco de España.

a Results obtained from a linear probability model with fixed effects at firm level.
b Defined as financial charges/(gross operating profit + financial revenue).
c Defined as: interest-bearing debt / net assets.
d Ratio of credit received from banks undergoing restructuring to the corporation's total volume of loans.

the impact that each of the indicators of economic and financial position considered has on the likelihood that a company will increase (or maintain) its volume of credit, having controlled for the influence that the rest of the attendant determinants have on this variable.

Specifically, a linear probability model has been estimated for the period spanning the years 2008 to 2013 in which the dependent variable is a binary indicator that shows whether a corporation has increased (or maintained) its volume of outstanding loans with credit institutions or not. The explanatory variables include the following: the debt and profitability of the company (measured relative to assets), the debt burden (in proportion to ordinary revenue), the growth rate of its employees (proxying the dynamism of its activity) and that of the sector in which it operates. The specification also includes an indicator that reflects the degree of dependence on institutions undergoing restructuring, defined as the ratio of lending received from these institutions to the company's total volume of bank loans. All these variables are lagged one period to correct potential problems of endogeneity or inverse causality. Finally, fixed effects – at the firm, sectoral and time levels – are introduced.[8]

Table 1 presents the coefficients estimated for each of the expansionary variables included in the specification. These measure the impact that a unit change in each such variable has on the probability of the company increasing or maintaining its volume of credit. All the variables are significant at a confidence level of 95%, except the growth rate of sectoral employment, which is so at 90%. The results are as expected. Thus, the greater dynamism of the company's activity or that of the sector in which it operates results in a higher probability of the company increasing its bank debt. Conversely, greater financial pressure (whether resulting from higher debt, from lower profitability or from a greater proportion of income generated being absorbed by financial charges) lessens this probability.[9] The degree of dependency of institutions subject to restructuring plans also has a contractionary influence on this probability, a result that is in line with those obtained in previous Banco de Espana work which shows that companies linked to these institutions were able to

8 Given that the information relating to the company's export dimension is available for a small number of companies present in the sample used for this analysis (those that report to the CBA), this variable has not been incorporated into the regression, since this would involve substantially reducing the size of the sample available (from almost 1 million observations to fewer than 35,000).

9 When the default rate is introduced into the model, it proves significant, although its quantitative impact is very limited: a 10 pp increase in this variable translates into a 0.008 pp increase in the probability of the company increasing its credit.

replace a substantial portion of the funds they ceased to receive from their habitual lenders with financing from other, sounder institutions, but that this replacement was not full in its extent.[10] Quantitatively, the indicator with the biggest impact on the variable subject to analysis is the level of debt; for a given level of the other determinants, the probability of a company increasing its bank debt falls by around 7.5 pp when its debt rises from the 25th to the 75th percentile of this indicator's distribution.

Conclusions

The evidence presented in this article shows that the decline in the aggregate debt of the non-financial corporations sector in recent years has been compatible with the presence of a prominent percentage (35-40%) of companies at which the outstanding balance of their bank financing has not fallen. This proportion, which moved on a declining trend from 2008 to 2012, rose last year, in line with the incipient economic recovery.

It has also been demonstrated that companies in which bank lending did not decline were generally more dynamic in terms of sales and employment, compared with those whose bank financing contracted. The proportion of such companies that are exporters was also higher among the former. Further, their profitability levels were higher and their financial position sounder than that of the group of companies with negative credit flows. The econometric analysis presented corroborates this descriptive evidence.

These results no doubt respond to the conjunction of both demand- and supply-side factors. Hence, the higher growth of activity at companies with an increase (or stability) in bank loans and their financial soundness will have contributed to raising their demand for funds as they have more leeway to do so. Moreover, the better economic and financial situation of these companies has smoothed their access to these funds since they are perceived by financial institutions to be more solvent. In any event, these results show that in recent years there has been a gradual reallocation of available financial resources, which have been earmarked to a greater extent for those companies in a better economic and financial position.

9.6.2014.

10 Box 6.1 of the 2012 *Annual Report* estimated that, on average, dependent companies were able to replace around 65% of the financing they ceased to receive from these banks. The updating of this exercise for 2013 confirms the validity of the results for the so-called "group 1" banks (those in which the FROB already had a stake at the time of the stress test). The contractionary impact of the restructuring plans on the growth rate of the dependent companies' financing from these banks is estimated at somewhat less than 2 pp in 2013. Given that the group 1 banks channelled 12% of the total credit of non-financial corporations at the beginning of this year, the incidence of these plans on the pace of decline in credit for the sector as a whole would be quantified at around 0.2 pp.