Box 2.1

IMPACT OF THE PUBLIC GUARANTEE SCHEME ON LENDING RELATIONSHIPS BETWEEN FIRMS AND BANKS

The main aim of the ICO guarantee scheme, set in place under successive Royal Decrees (RDL 8/2020, RDL 25/2020 and RDL 34/2020), is to enable firms[1] to draw on the funds needed to deal with the fall-out of the crisis brought about by the sudden emergence of COVID-19. While such guarantees have had great success in providing liquidity to prop up and ensure firms' survival during the initial phases of the crisis,[2] their effects will be felt beyond 2020. Thus, this scheme may have longer-term consequences – analysed in this box – for the lending relationships between non-financial corporations and the banking sector. In particular, the characteristics of the firms and banks involved in ICO transactions are analysed, and the impact of the ICO scheme on the level and structure of banking relationships.

Firm-bank characteristics associated with the granting of ICO loans

To analyse the likelihood of a firm receiving an ICO-backed loan, all firm-bank pairings on the Banco de España's Central Credit Register (CCR) in respect of new financing transactions arranged between March and December 2020 are identified. Firm-bank pairings in respect of new financing transactions requested by firms in that same period from banks with which they had no prior relationship have been added to this group. The database also includes all banking relationships at December 2019 involving the firms that have obtained and/or requested funding identified in the two preceding steps. Lastly, the database is completed with economic and financial information on this set of firms at end-2019, drawing on the Banco de España's Central Balance Sheet Data Office (CBSO) and using figures from banks' end-2019 balance sheets and income statements taken from their regulatory reporting to the Banco de España. As a result, the group of firms that have actively sought funding is identified, and their associated structure of pre-existing banking relationships and the characteristics of the lending banks.

Drawing on all this information, a linear probability model is estimated to ascertain which variables have most influence (and with what outcome) on the likelihood of a firm having received an ICO-backed loan between March and December 2020.[3] The firm-specific explanatory variables include size, ex-ante credit risk score based on firms' financial ratios, and economic sector indicators and postcode. The bank-specific explanatory variables include their size, capital ratio, profitability, and liquidity and NPL ratios. Lastly, the closeness of the firm-bank relationship is measured according to each bank's share of a firm's overall bank borrowing.[4]

As can be seen in Chart 1, the characteristics of firms most likely to have been granted ICO guarantees are size (being an SME increases their chances by 28.5%), level of ex-ante risk (the chances increase by 10.1% for each standard deviation by which the score decreases) or belonging to a sector affected by the pandemic (increase of 11.1%). Larger banks, those with more liquid assets, with a higher NPL ratio or lower profitability are also associated with a greater likelihood of an ICO guarantee being granted (increasing, respectively, by 30.7%, 5.6%, 7.9% and 7.5% for each standard variation by which the explanatory variable worsens). Moreover, the closer the prior banking relationship (measured by the share of financing), the higher the probability (increase of 10.7% per standard deviation). These results are confirmed where the analysis is limited to firms that have relationships with several banks, including fixed firm-specific effects. It is thus possible to fully control for firm characteristics, including demand for financing.[5]

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1 The analysis uses accounting and financial ratios of firms in 2019 and is thus restricted to non-financial corporations (referred to generally as firms in the rest of the box), excluding sole proprietors.

2 See, for example, Alves et al. (2020), Recent developments in financing and bank lending to the non-financial sector, Analytical Article, Economic Bulletin 4/2020, Banco de España, in particular Box 1, and R. Blanco, S. Mayordomo, Á. Menéndez and M. Mulino (2020), Spanish non-financial corporations' liquidity needs and solvency after the COVID-19 shock, Occasional Paper No 2020, Banco de España.

3 The dependent variable of the analysis takes the value of 1 in the observations where an ICO loan has effectively been obtained over this period. By contrast, the dependent variable takes the value of 0 in observations relating to: (a) new lending without an ICO guarantee; (b) loan applications rejected; and (c) previous bank-firm relationships not resulting in new financing, whether or not ICO-backed.

4 To prevent possible endogeneity problems, all the explanatory variables were measured at end-2019. Standard errors are corrected at bank and firm cluster level, both in this estimation and in all others described in this box.

5 This additional analysis includes interactions of the share in financing variable with other explanatory variables, revealing that a closer pre-existing relationship entails a higher likelihood that ICO financing will be granted where a firm with greater ex-ante risk, from an affected sector, or banks with lower capital and higher NPL ratios, are involved.

Impact of the ICO guarantee scheme on the level and structure of bank-firm financing relationships

The impact of the ICO guarantee scheme on the closeness of bank-firm financing relationships was also analysed, and the extent to which the continuation of such relationships has depended on the use of ICO-backed loans. To this end, a difference-in-differences analysis was conducted, comparing (for each firm-bank pairing) changes in their share of financing between

Chart 1
IMPACT OF FIRM-BANK CHARACTERISTICS ON THE LIKELIHOOD OF ICO-BACKED LOANS BEING GRANTED
March-December 2020 (a)

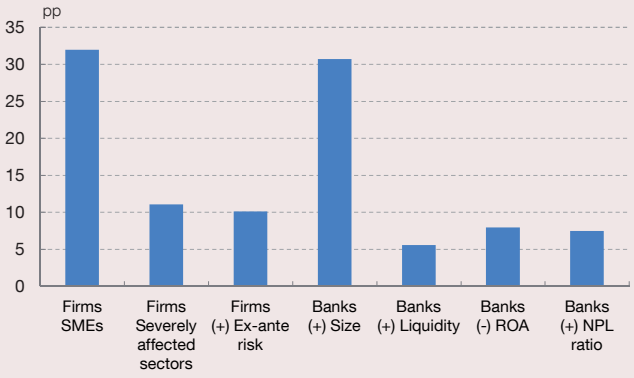


Chart 2
IMPACT OF THE GRANTING OF AN ICO-BACKED LOAN ON THE SHARE OF THE FIRM'S FINANCING WITH THE LENDING BANK (b)
December 2019-June 2021

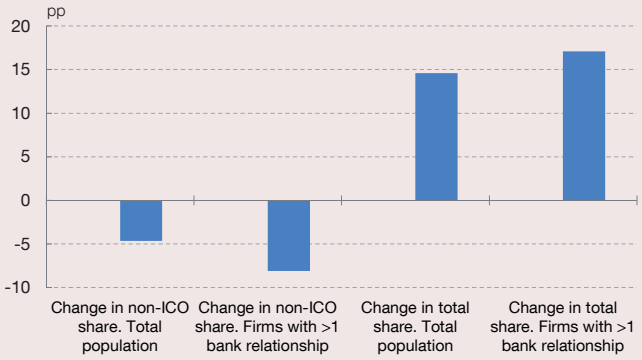
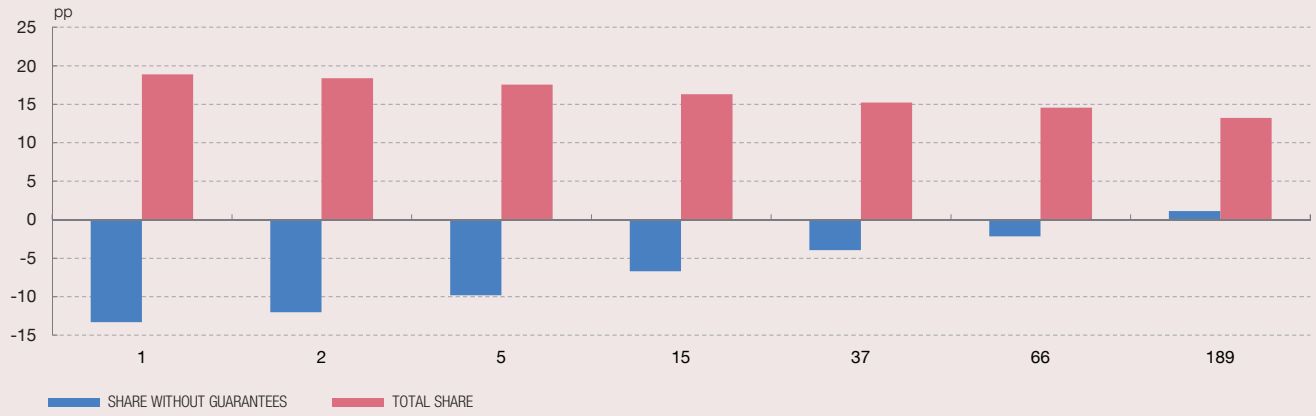


Chart 3
IMPACT OF THE GRANTING OF AN ICO-BACKED LOAN ON THE CHANGE IN THE LENDING BANK'S SHARE OF FINANCING, ACCORDING TO THE BORROWING FIRM'S PRE-EXISTING RESIDUAL BANK DEBT MATURITY (c)



SOURCE: Banco de España.

a Each bar denotes the relative change in the average probability of a non-financial corporation having received at least one ICO-backed loan between March and December 2020 as the variable indicated in the x axis increases, from a standard deviation if it is continuous or shifting from zero to one if it is discrete (Firms SMEs, Firms Sector most affected). For this calculation a linear probability model was estimated using CCR data, cross-matched with CBB data on firms, and bank data extracted from their regulatory reporting to the Banco de España at end-2019. Firms' ex-ante risk is captured with a variable obtained from a scoring model, calculated based on a high number of its financial ratios. The severely affected sectors by the crisis are defined as those whose turnover decreased by more than 15% in 2020. Bank size is measured in terms of the logarithm of total assets.

b Each bar denotes the impact (in percentage points) that a bank's arranging with a firm at least one ICO-backed loan between December 2019 and June 2021 has on the change in the share of financing of the bank and the firm between those dates, estimated using a difference-indifferences model drawing on CCR, CBB and regulatory reporting data.

c Each bar denotes the impact (in percentage points) that a bank's arranging with a firm at least one ICO-backed loan between December 2019 and June 2021 has on the change in the share of financing of the bank and the firm between those dates, according to the residual maturity (in months) of the firm's pre-existing loans with the bank at December 2019. The bank's share of the firm's total financing and its share of financing without ICO guarantees are considered. The impact has been estimated using a difference-in-differences model drawing on CCR, CBB and regulatory reporting data, with fixed firm-specific effects (limited to firms with more than two bank relationships).

December 2019 and June 2021. This share is defined as the amount of loans obtained from each bank as a proportion of the bank funding the firm obtains. Two definitions of this share are analysed, for firms' total bank funding and for financing excluding ICO-backed loans. In the terminology used in this type of study, firms with some type of ICO-backed loan during the period studied make up the treatment or study group, while all other observations make up the control group.[6] As in the previous section, the characteristics of the firms and the lending banks are also taken into account.

Chart 2 shows that the grant of an ICO-backed loan by a bank to a firm is associated with a reduction in that bank's share of bank loans without an ICO guarantee which that firm receives. Specifically, the change in the share of financing in loans without an ICO guarantee from December 2019 to June 2021 is 4.7 percentage points (pp) lower on average in this case. This effect is even more pronounced (8.1 pp lower) when the sample is restricted to firms with more than two bank relationships. When the impact of granting an ICO-backed loan on the bank's share of the firm's total financing (including the financing guaranteed) is analysed, the opposite effect is observed: the change when an ICO-backed loan is granted is 14.6 pp higher for the total sample. Once again, the impact is greater (17.1 pp higher) when the sample is restricted to firms operating with more than one bank.

These results suggest that granting ICO-backed loans makes the overall firm-bank relationship closer, although it weakens when only the group of loans without public guarantees is considered. Consequently, it may be concluded that the granting of an ICO-backed loan is associated with different loan supply behaviour by the lending bank, which seeks to reinforce its relationship with the firm, but via loans with guarantees, reducing its exposure through other transactions.

As regards financing without an ICO guarantee, the above-mentioned reduction in share has been particularly sharp among firms with short residual bank debt maturities at end-2019. This suggests that banks and firms have replaced loans that have matured or are close to maturity with new ICO-guaranteed loans (see Chart 3). The fall in the share of financing without an ICO guarantee is also sharper for firms with a greater ex-ante risk, belonging to sectors hardest hit by the pandemic, and for banksthat had lower capital ratios at the start of the crisis. As regards the share of total financing, which includes ICO-backed loans, the presence of short residual maturities at December 2019 is associated with a more positive change (owing to the granting of new ICO-backed loans), albeit to a lesser extent for firms with a poorer ex-ante risk score.

6 The intensity of the treatment was also analysed using a continuous variable calculated as the guaranteed amount as a proportion of the firm's assets at December 2019. The results obtained reinforce those described here, observing stronger effects for a more intense treatment (greater weight of the guarantees as a proportion of total assets).