

ANALYTICAL ARTICLES

Economic Bulletin

2/2022

BANCO DE **ESPAÑA**  
Eurosistema

THE EFFECT OF TLTRO III ON SPANISH CREDIT  
INSTITUTIONS' BALANCE SHEETS

M.<sup>a</sup> Carmen Castillo Lozoya,  
Enrique Esteban García-Escudero  
and M.<sup>a</sup> Luisa Pérez Ortiz

## ABSTRACT

With the onset of the COVID-19 crisis, the ECB's Governing Council modified the conditions of the TLTRO III, aiming to facilitate the flow of bank credit to the real economy. The new conditions encouraged an unprecedented level of take-up of the Eurosystem's refinancing operations by credit institutions. In the case of Spain, all participating banks met the eligible net lending target (that is, loans to non-financial corporations and households, except loans to households for house purchases) established for the period March 2020 to March 2021. To ascertain the impact on banks' balance sheets of this huge liquidity injection via TLTRO III, this article identifies four strategies – lending, holding reserves at the Banco de España, purchase of government debt and substitution for market funding – that banks could implement after applying for TLTRO III funding. The conclusion drawn is that there is a significant relationship between participation in TLTRO III and eligible lending and reserve holding strategies.

**Keywords:** monetary policy, ECB, Eurosystem, TLTROs, COVID-19 crisis, Spanish banking system, bank lending, surplus liquidity.

**JEL classification:** E51, E52, E58.

The authors of this article are M.<sup>a</sup> Carmen Castillo Lozoya, Enrique Esteban García-Escudero and M.<sup>a</sup> Luisa Pérez Ortiz of the Directorate General Operations, Markets and Payment Systems.<sup>1</sup>

### Introduction

Targeted longer-term refinancing operations (TLTROs) are long-term loans that the Eurosystem offers banks at a favourable cost to enable them to continue or increase their bank lending to euro area non-financial corporations and households. To achieve this aim, TLTROs are conditional, that is, participating banks only obtain this favourable cost if they increase their volume of eligible net lending (i.e. loans to non-financial corporations and households, except loans to households for house purchases) over certain previously established levels.<sup>2</sup>

With the onset of the COVID-19 pandemic in Europe in March 2020, the Eurosystem faced a crisis which, being exogenous to the previous economic–financial situation and owing to the huge uncertainty it generated, was not comparable with any previous ones. There was no easy answer to the questions as to the possible course of the pandemic, the duration of the lockdown measures or the severity of the impact of the crisis on economic growth worldwide. As the situation worsened, the need arose to guarantee the supply of liquidity to agents in the real economy (non-financial corporations and households), and TLTROs were deemed to be the monetary policy instrument that specifically fulfilled that objective.

However, one singular characteristic of this crisis was that the euro area banking sector was enjoying good health, underpinned by highly favourable market funding conditions, against a backdrop of abundant liquidity. In consequence, in order to transform TLTRO III (which had been designed pre-pandemic as a prolongation of previous programmes) into refinancing operations that would prove sufficiently attractive to the banking sector<sup>3</sup> in this new setting, some of its parameters had to be recalibrated,<sup>4</sup> to ensure a high level of take-up that would make it an efficient instrument to support the flow of credit to the real economy.

---

1 The authors are grateful for the comments received from Juan Ayuso Huertas, Ricardo Gimeno Nogués, Emiliano González Mota, Pablo Lago Perezagua, Covadonga Martín Alonso, Sergio Mayordomo Martín, Elena Rodríguez de Codes Elorriaga and Carlos Thomas Borao.

2 For more information on TLTROs, see the [ECB website](#).

3 Other new operations, such as the PELTROs and LTRO-bridge operations, were also launched but they are not considered here owing to their small size compared with TLTRO III.

4 See ECB press releases of [12 March 2020](#), [30 April 2020](#) and [10 December 2020](#).

The key change made to attract banks was the enhanced cost of the refinancing operations, enabling participating banks to obtain funding at an interest rate of -1%,<sup>5</sup> that is, 50 basis points (bp) below the deposit facility (DF) rate at that time. Never before had a funding rate been below the DF rate<sup>6</sup>. This has enabled participating banks to obtain funds at a lower interest rate than that paid on their excess reserves<sup>7</sup> (understood as the liquidity that Eurosystem credit institutions hold in their accounts at their central banks, in the case of Spanish banks, at the Banco de España), provided they meet their eligible net lending targets. In addition, to encourage greater take-up, the total limit that each participating bank could apply for was almost doubled<sup>8</sup> and the collateral framework was temporarily eased.<sup>9</sup> Given the favourable conditions, no possible stigma could be associated with a bank's participation in this type of operations, and there was an unprecedented level of participation in the June 2020 and following Eurosystem TLTRO III operations.

This high take-up has had significant effects on the balance sheets of the participating credit institutions, which this article aims to analyse.<sup>10</sup> For this purpose, the relationship between TLTRO III funding and other possible funding strategies available to banks has been studied, using data taken from several Eurosystem internal sources, over the period running from 28 February 2020 to 31 March 2021.<sup>11</sup> The Spanish banks included in the sample account for 99.9% of the total increase in the amount of TLTRO funding in Spain over that period.

Following this introduction, the article is structured as follows. In the next section the possible effects of TLTRO III on banks' balance sheets are identified, analysing the balance sheets at the aggregate level for Spanish banks. There follows a study of each of the strategies identified, using individual balance sheet data. A regression analysis is then performed to ascertain the relationship between the increases in TLTRO III and the changes observed in other balance sheet items. This is followed, lastly, by the conclusions drawn.

## Effects identified on participating banks' balance sheets

As Figure 1 shows, the initial impact of TLTRO III take-up is an expansion of the bank's balance sheet, with the entry of the funding requested from the Eurosystem

---

5 Over one or two years, according to the level of eligible net lending. For more details, see [ECB/2019/21](#).

6 In Schnabel (2020), the author explained this new relationship between interest rates, saying that the introduction of a "dual rate" system, where the pricing of TLTROs deviates from the ECB's key policy rate, was the real TLTRO III revolution.

7 In the present negative interest rate environment this is -0.50%, which means that holding liquidity or reserves in current accounts at central banks entails a cost for credit institutions.

8 From 30% to 50% of eligible loans in [March 2020](#) and to 55% in [December 2020](#).

9 For more information in this respect, see [Escolar and Yribarren \(2021\)](#).

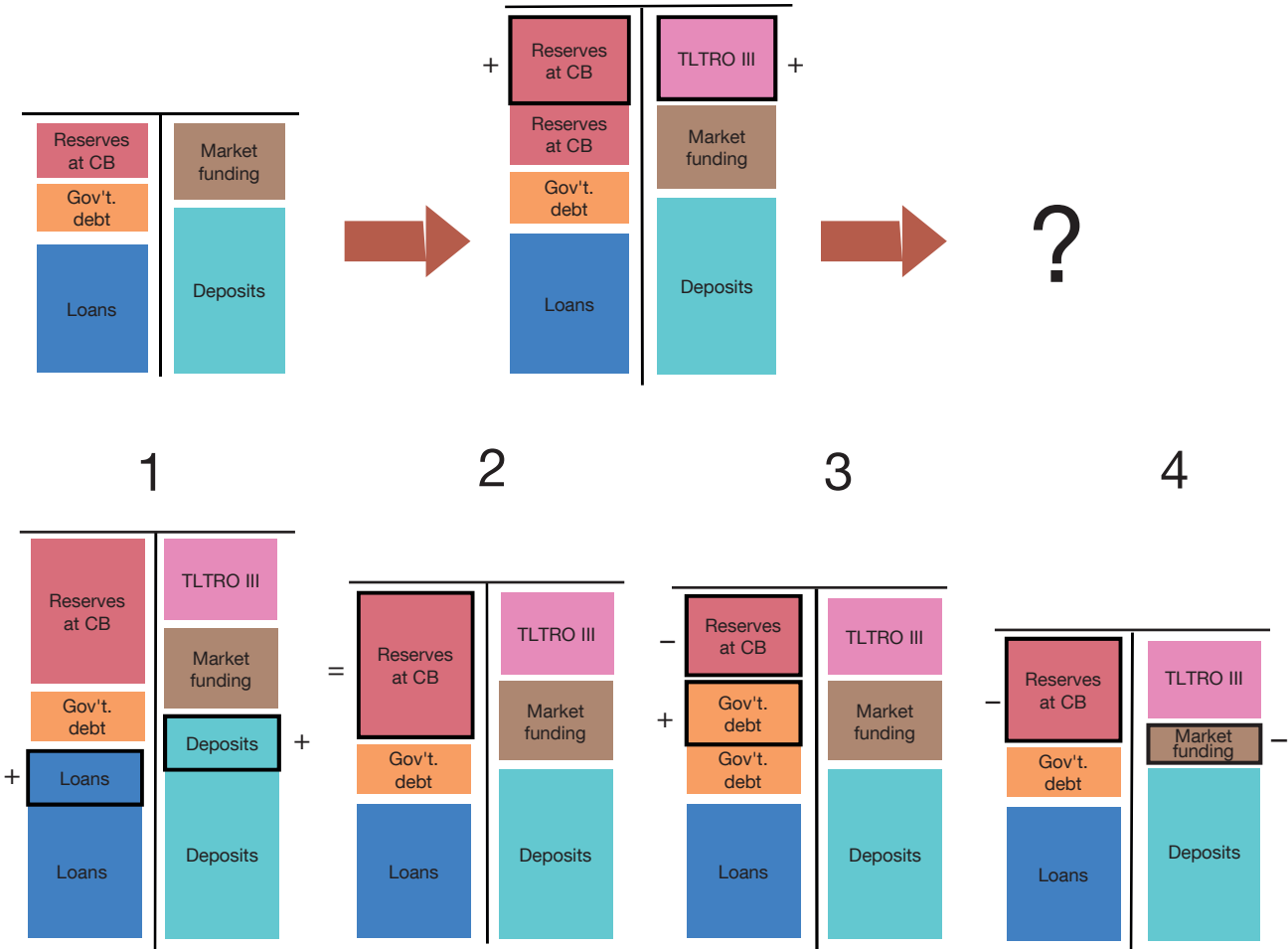
10 Other factors affecting other balance sheet items during the observation period include the ECB's purchase programmes (APP and PEPP), the public guarantee schemes, the significant increase in government debt issuance and the sharp growth in deposits against a highly uncertain backdrop. These factors are, however, beyond the scope of this article.

11 This period coincides with the TLTRO III special reference period. For more details, see [ECB/2019/21](#).

Figure 1

**IMPACT OF TLTRO III TAKE-UP ON A CREDIT INSTITUTION'S BALANCE SHEET (a)**

The immediate impact of receipt of TLTRO III funding is that the bank's balance sheet expands: the loan obtained appears on the liabilities side and the funds held as reserves at the central bank (CB) on the assets side. Subsequently, the different effects depend on the strategies adopted by the bank: 1) lending; 2) holding reserves at the CB; 3) purchase of government debt; and 4) substitution for market funding.



SOURCE: Banco de España.

a Representing these effects on stylised balance sheets is a simplification, but it permits greater compression.

on the liabilities side and, in consequence, an increase in reserves held at the central bank on the assets side. Subsequently, the bank must decide how to use its new balance sheet position. For this study, four possible strategies<sup>12</sup> were identified:

<sup>12</sup> For purposes of compression, the four strategies are presented separately, but they are not mutually exclusive, i.e. a bank may choose to use them all at once. In addition, there may be other strategies not identified in this article.

- 1 *Lending.* This is the main aim of TLTRO III and is essential in order to obtain the most favourable interest rate.<sup>13</sup> The initial impact on the balance sheet is greater expansion, as it increases the loans<sup>14</sup> on the assets side, and also the deposits on the liabilities side when the loan is paid into the customer's current account. Subsequently, if the deposit were transferred to a different bank, the reserves would be reduced by the same amount, offsetting the initial growth.
- 2 *Holding reserves at the central bank.* This strategy consists in not using the liquidity obtained from the TLTROs but in holding it in the bank's account at its central bank. Accordingly, there is no impact on the balance sheet. It is an especially interesting strategy once the bank has met its lending target, since the interest rate on funds obtained through TLTRO III is 50 bp lower than the DF rate which remunerates reserves held at the central bank. In other words, if the amount applied for under TLTRO III was held as reserves, the bank would obtain a positive spread of 50 bp<sup>15</sup> on that amount.
- 3 *Purchase of government debt.* The bank could seek a higher yield on its reserves – without increasing its capital charge by virtue of its risk profile<sup>16</sup> – by investing in euro area government debt, provided this offers a higher yield than the DF rate. In this case balance sheet size remains unchanged, with just a redistribution between asset items, with a decrease in reserves and an increase in government debt holdings.
- 4 *Substitution for market funding.* Another way for banks to obtain yield on their TLTRO III funding, taking advantage of the favourable conditions, is to use it as a substitute for part of their market funding, either by early repaying that funding or by not issuing new debt. This strategy will shrink the balance sheet, reducing not only reserves on the assets side but also market funding on the liabilities side when that funding is repaid. If the bank were to decide not to issue new debt, any debt not renewed at maturity would have the same impact on the balance sheet, although more gradually over time.

Following this conceptual explanation of the possible effects on the individual balance sheets of participating banks, and as an initial general overview, the effects on the aggregated balance sheets of Spanish credit institutions are analysed (see

---

13 Obtaining the favourable interest rate will make the other decisions more attractive from the bank's standpoint.

14 Importantly, for loans to be granted, it is not essential to have previously obtained TLTRO III funding. For more information in this respect, see [McLeay, Radia and Thomas \(2014\)](#).

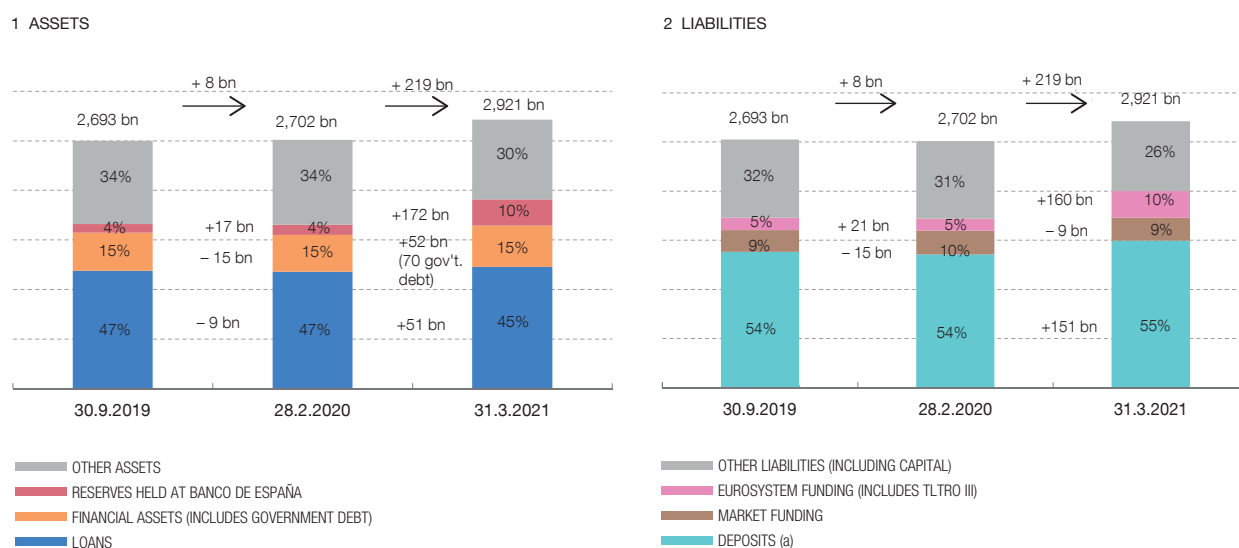
15 Over one or two years, according to the level of eligible net lending.

16 From a supervisory standpoint (CRR), euro area government debt is considered zero risk, i.e. as with reserves, there is no capital charge.

Chart 1

## AGGREGATED BALANCE SHEET OF SPANISH CREDIT INSTITUTIONS

Over the period analysed, Eurosystem funding increased substantially (owing to TLTRO III), while reserves grew even more so (as a result of TLTRO III and the asset purchase programmes). Loans and government debt holdings also rose, while market funding declined slightly.



SOURCES: BSI (ECB SDW) and Banco de España calculations.

a The liabilities side shows significant growth in deposits, but this is considered to be more related to the uncertainty owing to the crisis and, therefore, lies beyond the scope of this article.

Chart 1). Over the period analysed, European Central Bank (ECB) funding, obtained almost exclusively through TLTRO III, grew significantly (by €160 billion), and reserves even more so (by €172 billion).<sup>17</sup> Loans and government debt holdings also increased (by €51 billion and €70 billion, respectively). Lastly, market funding declined slightly (by €9 billion).<sup>18</sup>

## Individual analysis of each of the strategies identified

The above analysis drawing on aggregate data may mean that important information is lost owing to offsetting effects<sup>19</sup> between banks. To overcome this limitation, a more granular analysis is made below, studying each of the strategies identified with data taken from the individual balance sheets of each of the participating banks.

17 In addition to the liquidity injected through the TLTROs, over the period analysed liquidity also increased as a result of the ECB's two asset purchase programmes (APP and PEPP).

18 Deposits also increased on the liabilities side, but this is considered to be more as a result of the high level of uncertainty owing to the crisis and, therefore, is not analysed here.

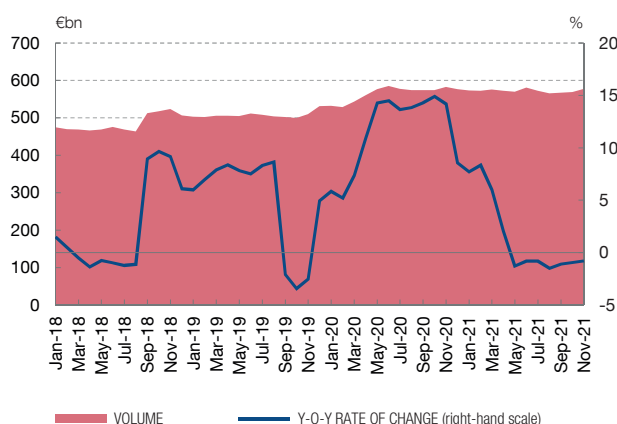
19 In the aggregated balance sheet of Spanish banks, some banks could increase one item, while others could reduce it, thus offsetting the changes and showing a neutral impact.

Chart 2

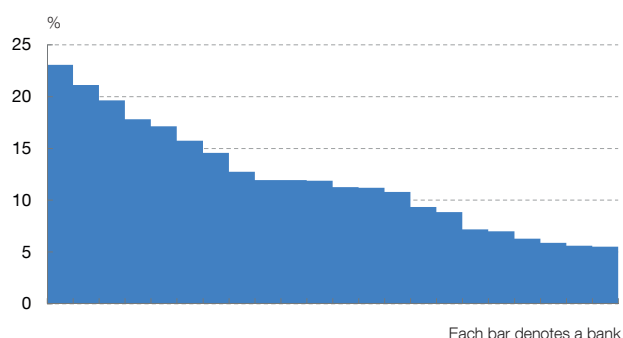
### LENDING GROWTH (a)

Over the period analysed the amount of loans grew, as all participating Spanish banks increased their lending, thus complying with the aim of TLTRO III.

1 LENDING GROWTH



2 LOAN GROWTH BETWEEN FEBRUARY 2020 AND MARCH 2021 (b)



**SOURCES:** IBSI (ECB SDW), statistical data submitted by TLTRO III participating banks and Banco de España calculations.

- a Spanish TLTRO III participating banks.
- b The bars denote the growth at each participating bank, sorted in descending order.

## Lending

The aim of the TLTRO III is to continue or increase bank lending in two segments: loans to non-financial corporations and loans to households (excluding loans for house purchases). In 2019, the outstanding amount of eligible loans<sup>20</sup> granted by Spanish banks held relatively steady (see Chart 2.1), falling slightly in the period from September to November, but recovering firmly in December. In 2020, despite the uncertainty created by the pandemic, banks increased their eligible net lending, primarily in the period from March to June, after which point it held steady. During the period analysed, eligible loans grew by €66 billion, a growth rate almost ten times higher than that recorded during the previous period between April 2019 and end-February 2020.<sup>21</sup>

Over the period analysed, all Spanish banks, considered individually, saw the amount of their eligible loans grow comfortably above their eligible net lending target,<sup>22</sup> with loan growth over 10% in most cases (see Chart 2.2). This growth, although observed in both segments, was steeper in the case of lending to non-financial corporations, in line

20 Eligible loans are loans to non-financial corporations and households (including non-profit institutions serving households) resident in Member States whose currency is the euro, excluding loans to households for house purchases.

21 Figures obtained directly from the statistical data sent by participating banks which show the changes in eligible loans between April 2019 and March 2021, distinguishing in this study between the pre-COVID-19 phase (1 April 2019 to 28 February 2020) and the COVID-19 phase (1 March 2020 to 31 March 2021).

22 For more information, see ECB/2019/21 or specifically Q15 and Q16 under “Interest and lending criteria”.

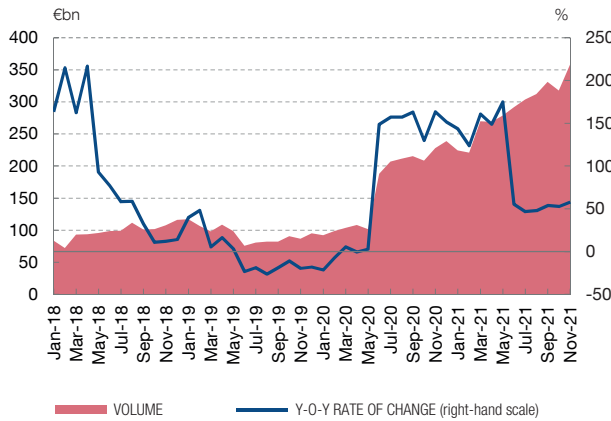


Chart 3

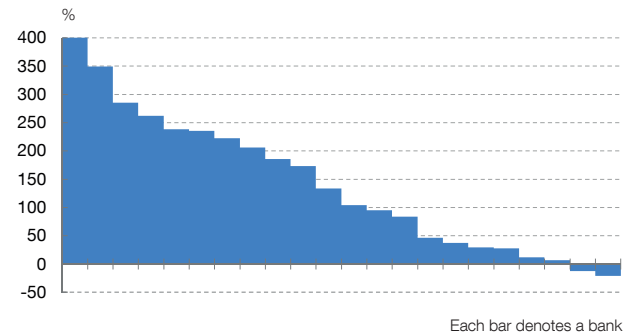
**GROWTH OF RESERVES HELD AT THE BANCO DE ESPAÑA**

Reserves held by Spanish banks at the Banco de España have tripled since banks took up TLTRO III funding with the new conditions (June 2020). Over the period analysed, most participating banks more than doubled their reserves.

1 GROWTH OF RESERVES (a)



2 GROWTH OF RESERVES BETWEEN FEBRUARY 2020 AND MARCH 2021 (b)



SOURCE: Banco de España.

- a The data refer to all Spanish credit institutions.
- b The bars denote the growth at each participating bank, sorted in descending order.

with the greater demand for liquidity at times of collapse in economic activity and peak pandemic-related uncertainty. It was also driven by the public guarantee schemes.<sup>23</sup>

**Holding reserves at the Banco de España**

In 2019, the reserves held by Spanish banks at the Banco de España fluctuated around €100 billion. However, the volume of reserves has tripled since June 2020, when the first major increase was observed owing to TLTRO III.4, the first opportunity for participation with the new more favourable conditions following the recalibration announced in March 2020. Another, albeit smaller, increase was observed as a result of the TLTRO III.7 in March 2021, when the take-up limit was raised from 50% to 55% of eligible loans (see Chart 3.1).

More than half of the banks doubled their level of reserves, with some of the large banks recording the highest increase. Also, as Chart 3.2 shows and by way of exception, a minority of banks slightly reduced their reserves.

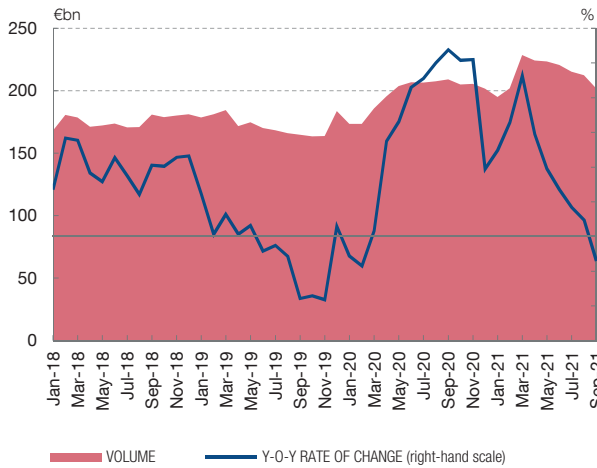
23 See Royal Decree Laws 08/2020 and 25/2020 (both Spanish version only). The public guarantee schemes reinforced the aim of the TLTROs, supporting new lending to non-financial corporations and mitigating the associated risk assumed by banks.

Chart 4

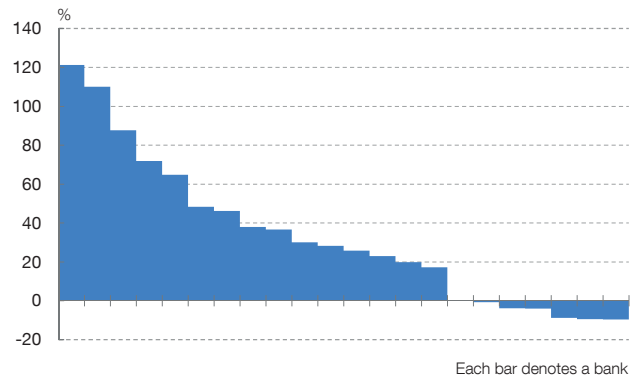
**GROWTH OF GOVERNMENT DEBT HOLDINGS (a)**

Since the emergence of COVID-19, Spanish banks' government debt holdings have risen, growing by more than 25% at half of all banks.

1 GROWTH OF GOVERNMENT DEBT HOLDINGS



2 GROWTH OF GOVERNMENT DEBT HOLDINGS BETWEEN FEBRUARY 2020 AND MARCH 2021 (b)



**SOURCES:** IBSI (ECB SDW) and Banco de España calculations.

- a Spanish TLTRO III participating banks.
- b The bars denote the growth at each participating bank, sorted in descending order.

**Purchase of government debt**

In the run-up to the COVID-19 crisis, Spanish banks' government debt holdings tended to gradually decrease, as Eurosystem purchase programmes increased. But this trend reversed completely following the onset of the pandemic (see Chart 4.1), coinciding with sharp increases in government debt issuance in various countries.

As Chart 4.2 shows, at the individual level most banks' government debt portfolios have expanded, growing by more than 25% at half the banks analysed. The highest rate of growth was observed at the small and medium-sized banks, which is clearly related to their more traditional business model, based on lower-risk investments. However, the opposite case is also important, as around a quarter of TLTRO III participating banks saw a decrease in their government debt holdings.

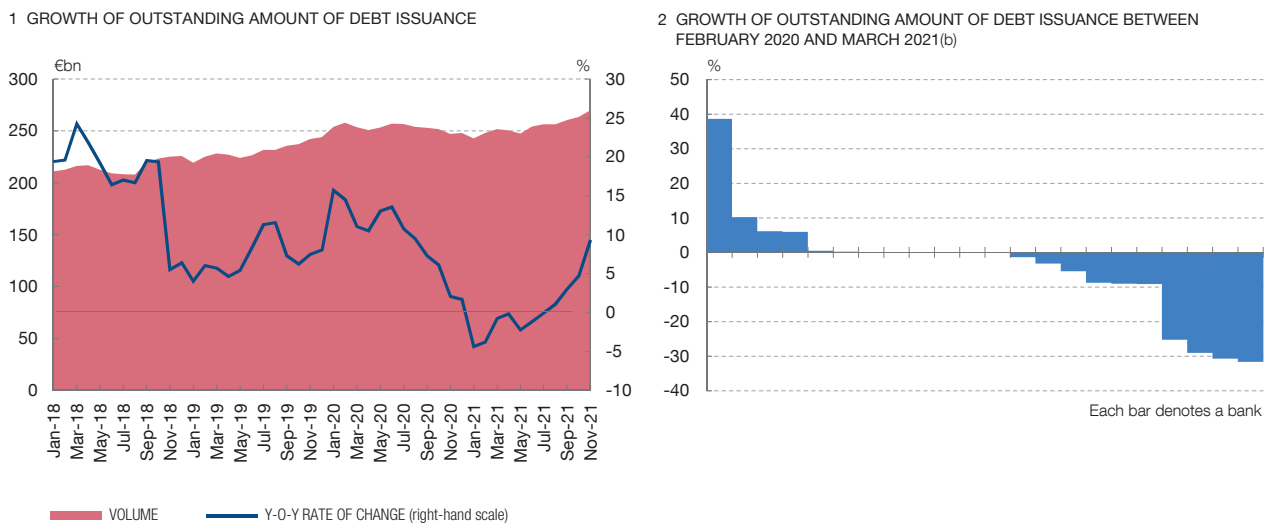
**Substitution for market funding**

In 2019, the aggregated balance sheet amount of debt issued continued to increase slightly, most likely as a result of the substitution of TLTRO II operations that were

Chart 5

**GROWTH OF OUTSTANDING AMOUNT OF DEBT ISSUANCE (a)**

Over the period analysed, the outstanding amount of debt issuance by Spanish banks declined, although somewhat unevenly across banks.



SOURCE: Banco de España.

- a Spanish TLTRO III participating banks.
- b The bars denote the growth at each participating bank, sorted in descending order.

being gradually repaid.<sup>24</sup> However, as from June 2020, when TLTRO III.4 was allotted, this pattern changed and the amount of debt issued began to decline up to year-end. This suggests a possible substitution effect, albeit with a minimum impact, in aggregate terms, for Spanish participating banks (see Chart 5.1).

A case-by-case analysis of the change in the balance sheet amount of debt issued confirms that some banks have reduced that amount, although the picture is quite uneven across banks (see Chart 5.2). Factors such as compliance with regulatory ratios (MREL and TLAC<sup>25</sup>) or the importance of maintaining a market presence, to ensure stable and continuing relationships with investors, may have affected issuance levels.

**Relationship between TLTRO III take-up and the strategies identified**

This section examines whether the level of TLTRO III take-up is determinant to explain which, if any, of the four strategies identified a bank decides to use. For this

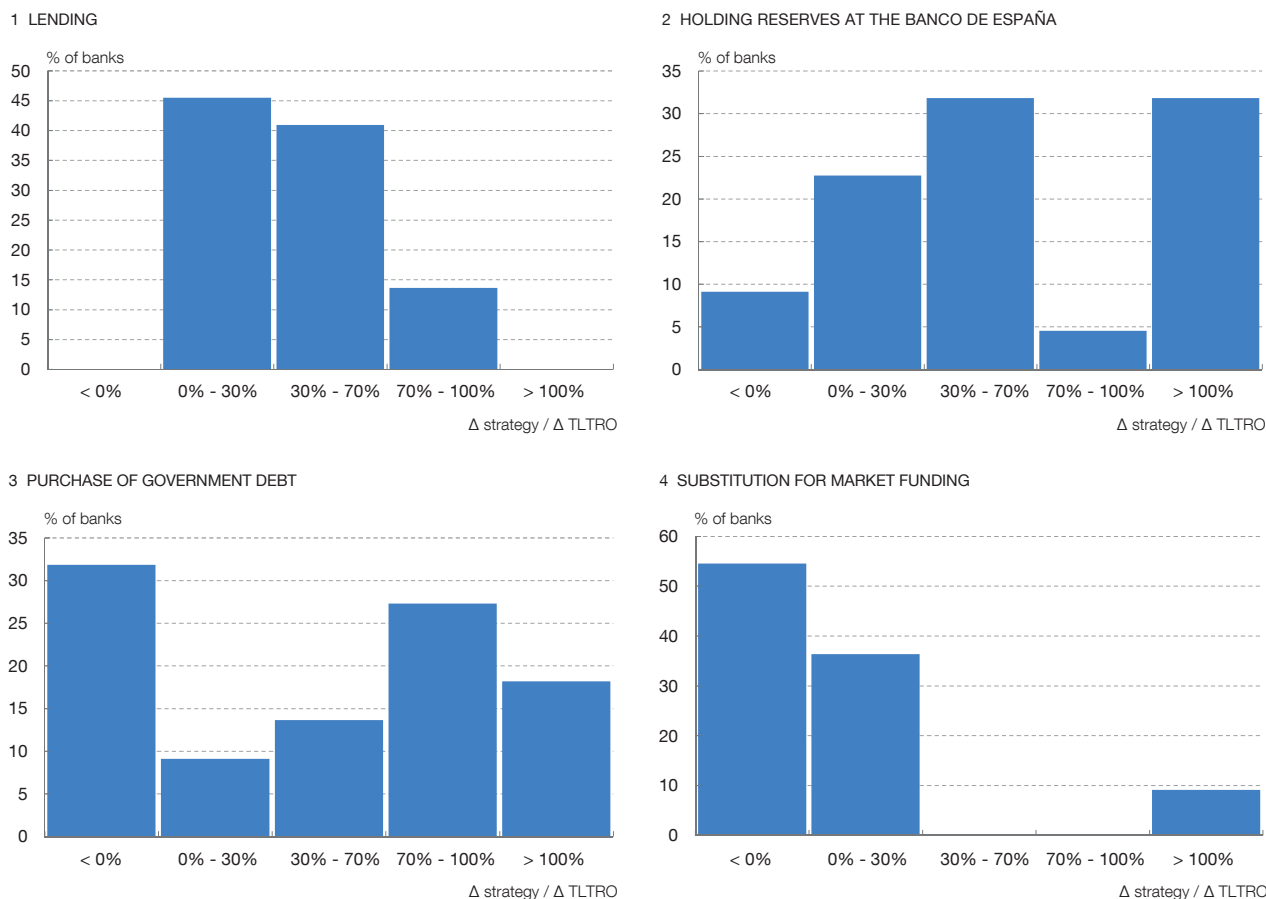
24 In June 2016 the ECB launched TLTRO II, a series of four operations to be conducted once a quarter, each with a maturity of four years. Banks were able to early repay the amounts allotted as from June 2019.

25 The MREL ratio is the minimum requirement for own funds and eligible liabilities. The TLAC ratio is the total loss-absorbing capacity. Both requirements aim to ensure that banks have sufficient capacity to absorb losses.

Chart 6

**DISTRIBUTION OF USE OF EACH STRATEGY (a) (b)**

Lending is the only strategy that has been used by all the banks analysed (there are none in the <0% use tranche). Moreover, around 30% have increased their reserves held at the Banco de España by more than the growth in their TLTRO funding. Meanwhile, 32% have not increased their government debt holdings and the majority have not used TLTRO funding as a substitute for market funding.



**SOURCES:** IBSI (ECB SDW), statistical data submitted by TLTRO III participating banks and Banco de España calculations.

- a The change in each balance sheet item is calculated for each bank, divided by the increase in TLTRO III take-up (x-axis). Thus, a higher percentage denotes greater use of that alternative according to TLTRO take-up, whereas a negative percentage indicates that the bank has not used that strategy. The y-axis shows the percentage of banks included in each interval.
- b To eliminate the size effect and, at the same time, relativise the change in each strategy according to the level of TLTRO take-up, the formula used is:  $\text{Change in balance sheet amount (31mar21-28feb20)} / \text{Change in TLTRO take-up (31mar21-28feb20)}$ . For the substitution effect, a negative sign is added at the beginning of the formula, thus:  $-\text{Change in balance sheet amount (31mar21-28feb20)} / \text{Change in TLTRO take-up (31mar21-28feb20)}$ . Hence, for each balance sheet strategy, a negative percentage denotes that the strategy analysed was not used by the bank.

purpose, as a general approximation, the distribution of the use of each strategy is first analysed, relating it to the level of TLTRO III take-up<sup>26</sup> (see Chart 6).

26 To eliminate the size effect and, at the same time, relativise the change in each strategy according to the level of TLTRO take-up, the formula used is  $\text{Change in balance sheet amount (31mar21-28feb20)} / \text{Change in TLTRO take-up (31mar21-28feb20)}$ . For the substitution effect, a negative sign is added at the beginning of the formula, thus:  $-\text{Change in balance sheet amount (31mar21-28feb20)} / \text{Change in TLTRO take-up (31mar21-28feb20)}$ . Hence, for each balance sheet strategy, a negative percentage denotes that the strategy analysed was not used by the bank.

The histograms show that lending is the only strategy that has been used by all Spanish banks, as they all lie within the intervals over 0%.<sup>27</sup> Moreover, only 9% of banks have maintained or lowered their level of reserves, while 32% have increased their reserves by even more than the increase in their TLTRO funding. At the other extreme, in the case of the two least used strategies, 55% of banks have not used their TLTRO funding as a substitute for market funding and 32% have not increased their government debt holdings.

Secondly, the relationship between TLTRO III take-up and each of the four strategies was analysed using a simple linear regression. For this purpose, four regression analyses were made. In each, the respective strategy was taken as the dependent variable and TLTRO III participation as the explanatory variable,<sup>28</sup> both taken as changes. Accordingly, the models analysed are as follows:

$$(i) \text{ Lending} = b_0 + b_1 \text{ TLTRO} + u_p$$

$$(ii) \text{ Holding reserves} = b_0 + b_1 \text{ TLTRO} + u_r$$

$$(iii) \text{ Purchase of government debt} = b_0 + b_1 \text{ TLTRO} + u_d$$

$$(iv) \text{ Substitution for market funding} = b_0 + b_1 \text{ TLTRO} + u_f$$

Ahead of the regression analysis, the relationships studied can be represented using dispersion charts, to provide a preliminary picture (see Chart 7). Accordingly, the trendline indicates the clear positive relationship between the TLTROs, on the one hand, and lending and holding reserves, on the other. In the case of purchase of government debt, the trendline is virtually flat, indicating that in this case the relationship, if any, is minimum. The substitution for market funding trendline is slightly positive, when the existence of a hypothetical significant substitution effect should be reflected by a clearly negative trendline; this suggests, therefore, that there is no relationship between the two.

Although these dispersion charts help form an initial idea of the degree to which the TLTROs may have influenced each strategy, the method deemed most appropriate to analyse these relationships is an individual significance test using the T-Student distribution for a confidence level of 90%, where the hypothesis to be tested for each of the four models (null hypothesis) is that the TLTROs have not had a significant impact on the respective strategy.<sup>29</sup>

---

27 This is consistent with the fact that all participating Spanish banks have complied with the TLTRO III objective which is at least to hold their lending volume steady.

28 Naturally there are other factors, in addition to TLTRO III take-up, that may also explain the use of each of the strategies, but they are not included in the analysis because they lie beyond the scope of this article.

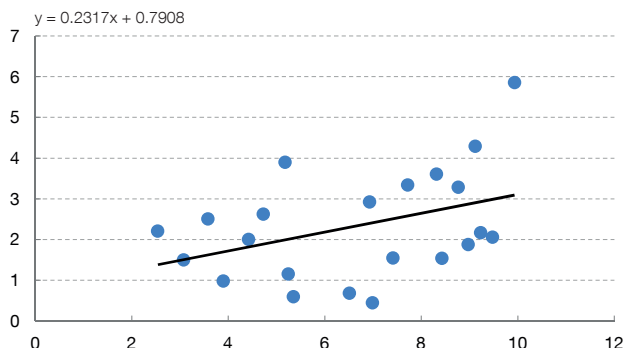
29 Rejection of the null hypothesis for a specific strategy indicates that the TLTROs have had a significant impact on that strategy.

Chart 7

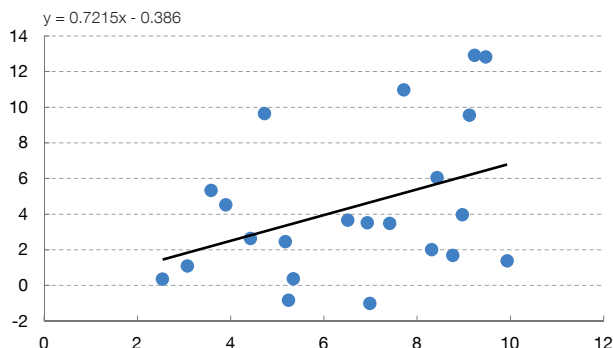
**RELATIONSHIP BETWEEN TLTRO III AND THE USE OF EACH STRATEGY (a)**

A positive relationship is observed between the TLTROs and the strategies involving lending and holding reserves at the Banco de España, suggesting a possible cause-effect relationship. The other two strategies – purchase of government debt and substitution for market funding – do not appear to be linked to participation in TLTRO III.

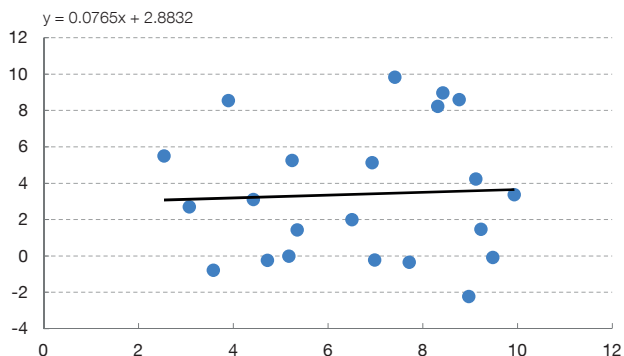
1 LENDING



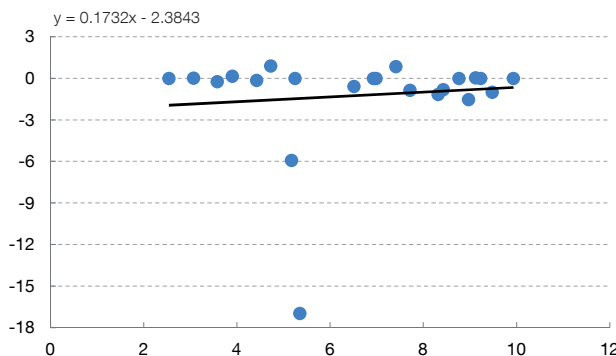
2 HOLDING RESERVES AT THE BANCO DE ESPAÑA



3 PURCHASE OF GOVERNMENT DEBT



4 SUBSTITUTION FOR MARKET FUNDING



**SOURCES:** IBSI (ECB SDW), statistical data submitted by TLTRO III participating banks and Banco de España calculations.

a The x-axis depicts the relative change in TLTRO take-up and the y-axis the change in the item corresponding to each strategy. In both cases the changes are between 28 February 2020 and 31 March 2021, divided by the size of the balance sheet at 31 March 2021.

The main results of the test, shown in Table 1, are consistent with the dispersion charts. According to the p-value, it is observed that the TLTROs had no significant impact on either the purchase of government debt or the levels of substitution for market funding,<sup>30</sup> as both have quite high p-values. Conversely, the null hypothesis could be rejected for the other two strategies, slightly more robustly in the case of lending.

Lastly, it is important to note that it was not possible to use non-participating banks as a control group, as they do not submit statistical information on lending (this

30 The results of the test do not change significantly when the two outliers identified in the respective dispersion charts are excluded. These values correspond to two medium-sized banks which, having a medium-low level of TLTRO III take-up, have recorded a significantly higher reduction in their amount of debt compared with the other banks.

Table 1

**RESULT OF SIGNIFICANCE TEST (a)**

The test results show that TLTRO III could have had a significant impact on lending and holding of reserves at the central bank, while the levels of purchase of government debt and banks' debt issuance have not been significantly affected.

	Coefficients	p-value (b)
Lending	0.232	6.73%
Holding reserves	0.722	7.19%
Purchase of government debt	0.077	83.30%
Substitution for funding	0.173	64.01%

**SOURCE:** Banco de España.

- a The coefficient denotes the relationship curve, while the p-value measures the strength of the evidence for the null hypothesis, which could translate as the probability that TLTRO III is not a significant factor for the strategy in question.
- b As it is a 90% confidence level test, only the probabilities (p-value) over 10% will be considered indicative of a significant impact of TLTRO III.

information is only required from participating banks). In consequence, the results as regards lending are not fully comparable, as total (not eligible) loan data on their balance sheets are the only approximation available. However, nor would this alternative have been sufficiently rigorous, since in the case of Spain there are very few banks that have not taken part in TLTRO III, and as they account for just 1% of the total aggregated balance sheet, they are not sufficiently representative to be considered a comparable group with the participating banks.

## Conclusions

This article aims to identify the effects of TLTRO III on Spanish participating banks' balance sheets. For this purpose, four possible strategies were identified (including lending to the real economy, which was the aim of the programme), and the use that banks made of the strategies, at both an aggregate and an individual level, was analysed. Lastly, to check whether TLTRO III take-up has had a genuinely significant impact on banks' behaviour, a simple linear regression analysis was performed for each of the four strategies.

It is important to note that this article focuses exclusively on the TLTROs, excluding some factors that may have influenced the changes observed, such as the ICO public guarantee scheme, which most certainly also affected lending to firms, and the Eurosystem's asset purchase programmes, which have also considerably boosted banking system reserves. In addition, it was not possible to use Spanish banks that have not participated in TLTRO III as a control group, since they are not sufficiently representative, neither by number of banks, nor by significance for the total Spanish banking sector.

As a result of the analyses performed, the following conclusions were drawn:

- 1 The TLTRO III have played a fundamental role in continuing lending by Spanish credit institutions. In the highly uncertain setting created by the pandemic, the recalibration of the TLTRO III sought to ensure that credit would continue to flow to the real economy. In the case of Spain, all participating banks complied with their eligible net lending target during the period analysed (from 28 February 2020 to 31 March 2021), and the vast majority even comfortably exceeded those objectives. Naturally, the public guarantee schemes have also fostered lending, as they reduce the credit risk assumed by banks.
- 2 The TLTRO III have also played a significant role in the strong growth of the reserves that Spanish credit institutions hold in their accounts at the Banco de España. In this case, however, there are other factors – specifically the ECB’s asset purchase programmes – that have also had a direct impact on changes in surplus liquidity.
- 3 In general, the TLTRO III have not made a significant contribution to increasing government debt holdings or reducing the amount of debt issued by Spanish credit institutions. The increase in government debt holdings appears to be consistent with the strong public sector primary market issuance in response to the crisis. As for the slight decline in the amount of debt issued by banks, there are other factors that could have played a part, such as the strong growth in deposits or the higher cost of issuance following the emergence of COVID-19.

27.4.2022.



## REFERENCES

- Escolar, J. and J. R. Yribarren (2021), “European Central Bank and Banco de España measures against the effects of COVID-19 on the monetary policy collateral framework, and their impact on Spanish counterparties”, *Occasional Paper* No 2128, Banco de España.
- McLeay, M., A. Radia and R. Thomas (2014), “Money creation in the modern economy”, Quarterly Bulletin 2014 Q1, Bank of England.
- Schnabel, I. (2020), “Going negative: the ECB’s experience”, speech given at the 35th Congress of the European Economic Association.