# TLTRO outlook: end of the carry trade?

**ECB special**

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## Summary

- An extension of the current TLTRO-III discount remains unlikely, raising the odds of early repayments after June 2022.
- We estimate the amount of 'hot' TLTRO money around EUR 1,000bn. Actual repayments could come in short of that, depending on market conditions.
- December's TLTRO may give an indication of the amount of 'sticky' TLTRO-III borrowing.
- We don't expect early TLTRO repayments to impact banks' 2022 issuance.
- The liquidity drain may be large enough to have some upward effect on money market rates, and the unwinding of carry trades could add some widening pressure on sovereign spreads.

## TLTRO's future: no more discounts?

**The ECB is currently preparing and discussing options for the December policy meeting, but it seems unlikely that another extension of the TLTRO discount will be part of the policy mix. This will undoubtedly trigger early repayments, particularly to the extent that banks have borrowed the cheap money with the purpose of buying higher-yielding assets. We don't expect this to significantly impact bank issuance in 2022, but it could have some implications for money market rates and sovereign spreads.**

As part of its strategy review, the ECB did conclude that longer-term operations will remain part of the toolkit, and we do not think that the December allotment will be the last TLTRO operation conducted by the ECB. However, we believe that the role of any future (T)LTROs will likely shift back to that of funding backstop. The worst economic impact of the pandemic seems to be behind us and upside risks to the inflation outlook have increased. Unless the fourth Covid wave significantly changes this picture, we don't expect that the Governing Council will deem it necessary to add another discount period to the current TLTRO-III loans – certainly not at the rates that are being currently offered.

Additionally, we note that new TLTROs don't need to be announced in December. Assuming that banks use TLTRO-III.10 to roll over old TLTRO-IIIs, the maturity of outstanding TLTROs would stretch through 2024.[1] It shouldn't make a difference to TLTRO-III.10 demand either: the ECB decision takes place after the deadline for bids, so banks should assume there will be no new TLTROs at similar terms. And even if new pandemic-related measures substantially alter the outlook to warrant a new discount, we may not learn of this until March or April. That is still ahead of the expiration of the current discount, and by then the ECB can better assess the situation.

[1] There is one caveat that may limit demand for December rolls; see page 4.


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# Market impact

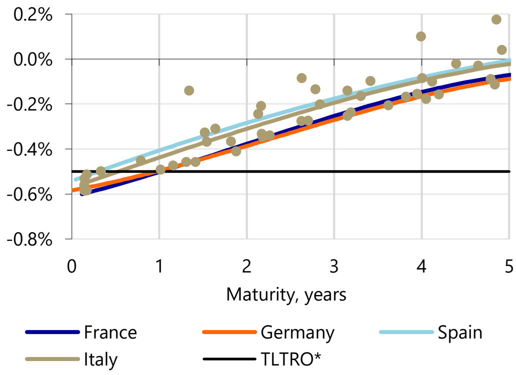
**As detailed below, we estimate that 2022 repayments could amount to EUR 1,000bn. Since early TLTRO-III repayments will only consist of borrowing that was used for profitability-enhancing reasons, we don't expect this to affect banks' funding plans. However, the unwinding of carry trades could have (limited) upward impact on money market rates and sovereign bond spreads.**

## Bank issuance

Even after the end of the discount period, TLTROs remain an attractive source of funding for most banks – especially for those banks that qualified for the discount, as that also affects the effective rate after the special interest rate periods end (figure 1).

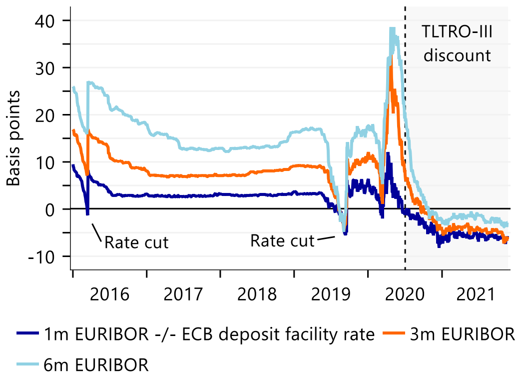
Indeed, based on the EBA's funding survey, our financials analyst forecasts a net issuance of debt securities of EUR 109bn in 2022, and EUR 266bn in 2023 – far less than the expected TLTRO repayments. Banks appear to be aiming to replace about a quarter of their maturing TLTRO volumes with market funding as they expire, while replacing another quarter with new public funding. The remaining 50% will likely be repaid without impacting funding needs. The latter roughly corresponds with our estimate of early repayments. As we outline below, this portion of TLTRO liquidity appears to have been borrowed for profitability-enhancing reasons and has likely been deposited straight back at the central bank for arbitrage, or used to buy government bonds.

**Figure 1: Covered bond yields versus TLTRO pricing (no discount)**




Note: *) Best possible TLTRO rate after the discounts end, assuming that the ECB policy rates remain unchanged.
Source: Bloomberg, Rabobank

**Figure 2: EURIBOR – ECB deposit rate spreads turned negative after TLTRO-III.4**




Source: Macrobond, Rabobank

## Money market rates

While the base rate on these TLTROs can still be quite attractive after the discount ends, that may no longer be the case for banks that used part of their TLTRO borrowing for carry trades – especially if that cash was immediately deposited back at the ECB's deposit facility rate: without any discount, that trade would at best net zero return. As we argue below, this may apply to a significant portion of TLTRO-III borrowing (figure 8).

If 2022 repayments are indeed as high as we estimate, this would be a significant liquidity outflow, to the extent that it may put some upward pressure on money market rates. Recall that EURIBORs fell below the deposit facility rate once the TLTRO discount started. So the TLTROs effectively acted as a shadow rate cut. Since this kicked in right after a period of money market stress, it is hard to gauge the exact impact. But in the period 2016-2019, the median spread between 3m (6m) EURIBOR and the ECB deposit rate was 8bp (15bp). Since 2020H2, this metric dropped to -4bp for 3m EURIBOR and -1.5bp for 6m EURIBOR (figure 2).

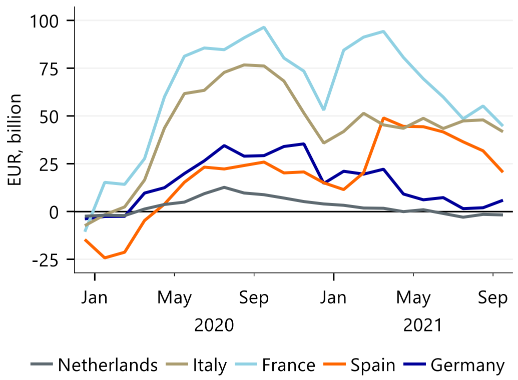
Repayments could (partially) reverse this spread compression. However, the upside for money market rates should remain limited as asset purchases have also added a significant amount of liquidity over the past two years, and retail deposits remain elevated. So even after repayments, banks' demand for liquidity should stay low, and the marginal rate may thus show a relatively smaller reaction to any outflow of TLTRO funds.

## Sovereign spreads

Peripheral spreads are the other potential victim of TLTRO repayments. Instead of depositing TLTRO-III borrowing straight back at the ECB for carry, banks may have also purchased short-term sovereign bonds for an additional yield pick-up. This of course mainly applies to higher-yielding peripheral issuers. Indeed, particularly French, Italian and Spanish banks have increased their sovereign bond holdings (figure 3). Moreover, these countries have largely added domestic bonds, while in core countries, holdings of domestic government bonds decreased (figure 4).

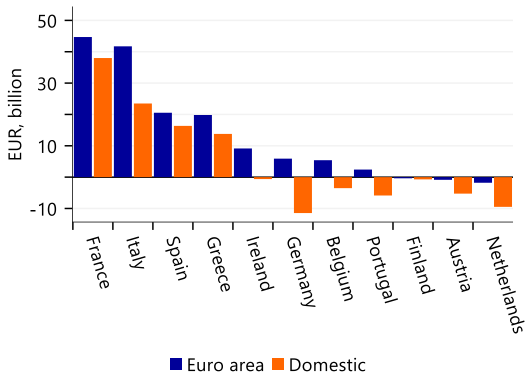
Repayments could therefore also reduce bank demand for government bonds. However, (TLTRO-related) fluctuations in bank holdings are several magnitudes smaller than the ECB's purchases, so the spread widening that this implies is probably much less significant than the impact that the end of PEPP will have on peripheral spreads. Moreover, even without the TLTRO discount, some peripheral bonds –particularly Italian issues– still offer a positive carry. That may see some banks hold on to their TLTRO-bond carry plays – which would also see repayments come in below our baseline estimate.

**Figure 3: Banks hold more sovereign debt...**




Note: Change compared to 2019 average
Source: ECB, Rabobank

**Figure 4: ...particularly of non-core issuers**



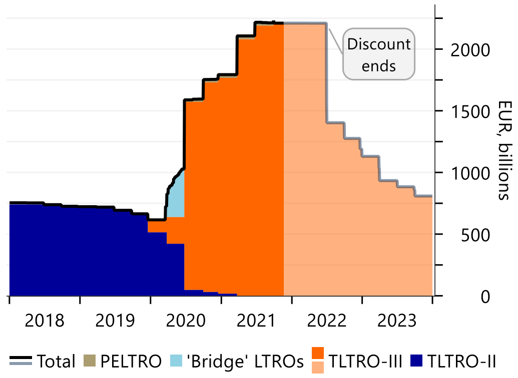

Note: Change in holdings between 2019 avg. and Sep 2021.
Source: ECB, Rabobank

# Estimating TLTRO-III repayments

**To get an idea of the potential size of early repayments next year, we estimated the share of 'hot' TLTRO-III money. Based on two different methodologies, we would estimate this amount at around EUR 1,000bn out of the EUR 2,200 that has been allotted so far. We expect that the December operation will provide more insight into the amount of repayments that we can expect in the second half of 2022.**

To estimate banks' future repayments, their motives for participating in the TLTRO-IIIs are key. We make the distinction between two rationales for participation: a *funding* motive, where TLTROs are used to substitute market-based funding; and a *profitability* motive, with the extremely low interest rate offering opportunities to earn a yield pickup. The latter motive is most likely to be 'hot' TLTRO-III money that may be repaid as soon as the discount ends.

Figure 5: Potential for significant 2022 liquidity outflows




Source: ECB, Rabobank

There is no solid data on the amount of TLTRO-III liquidity that is used for either purpose, so we employ two methodologies to estimate potential repayments. The first tries to exploit changes to the TLTRO's modalities, which leads to an estimate of EUR 1,100bn being borrowed for profitability reasons. Our alternative approach uses the results from the ECB's Bank Lending Surveys. Based on this data, we estimate a slightly lower EUR 930bn in 'hot' TLTRO-III liquidity. While both methods give a back-of-the-envelope estimate at best, they do come in at a similar magnitude (see below for the detailed analyses).

Comparing our results to the ECB's latest Survey of Monetary Analysts, we note that our estimate of about EUR 1,000bn is at the higher end of the consensus estimate, but not unrealistically so. For June 2022 alone, the median estimate is for EUR 584bn in repayments and the 75th percentile stands at EUR 800bn, but respondents also expect significant repayments in subsequent quarters (table 1).

Table 1: Consensus expectation of TLTRO-III repayments

| | *Jun 22* | *Sep 22* | *Dec 22* | *Mar 23* | *Jun 23* | *Sep 23* | *Dec 23* |
|---|---|---|---|---|---|---|---|
| Median | 584 | 150 | 200 | 150 | 365 | 137 | 75 |
| $75^{th}$ percentile | 800 | 228 | 301 | 202 | 665 | 174 | 150 |

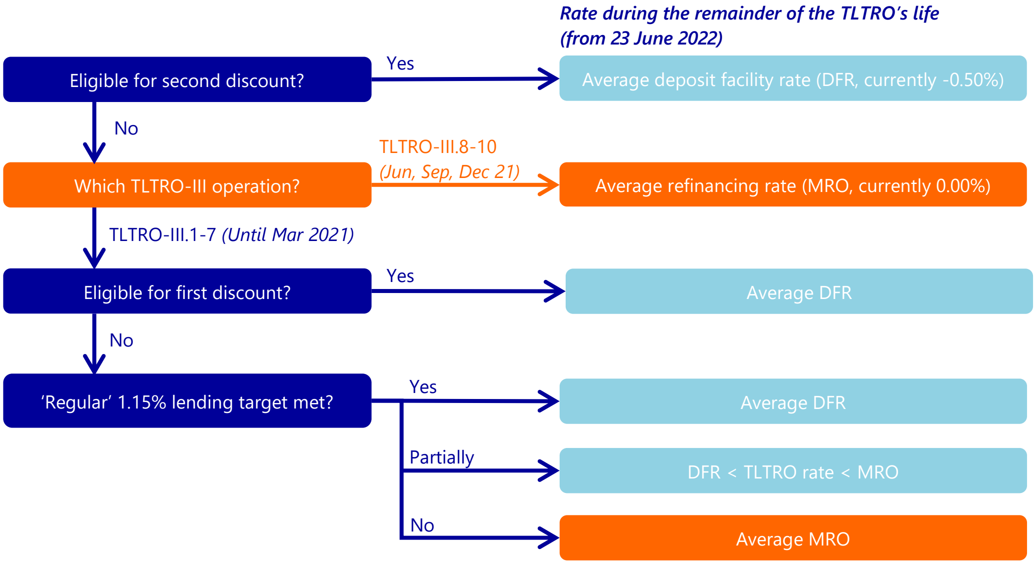
Note: amounts in EUR billion. Source: ECB Survey of Monetary Analysts, October 2021

## December TLTRO to give more insight?

We believe that December should give a good indication of whether our estimates are correct. As of the September operation, the oldest TLTRO-IIIs are now allowing early repayments, allowing rollovers into the newer ones – thus offering a maturity extension. The deadline to submit bids for TLTRO-III.10 is a day before the monetary policy announcement, and –as argued above– even if a new TLTRO is launched, the conditions are probably less generous. So it makes sense for banks to assume that this is their last opportunity, and therefore to roll over as much of their take-up in earlier operations as they plan to keep for funding use.

One caveat here is that some banks may decide not to roll over into TLTRO-III.10; specifically those that did qualify for the first special discount, but do not expect to meet their lending target for the second special interest period (0% net lending between October 2020 and December 2021). In this case, the interest rate on TLTRO-III.10 will reset to the average MRO rate for the remainder of the life of the TLTRO, but for all TLTROs allotted before March 2021, these banks will be charged the average deposit facility rate, which is (currently) 50bp lower (figure 6).

Figure 6: 50 reasons to not roll over in December



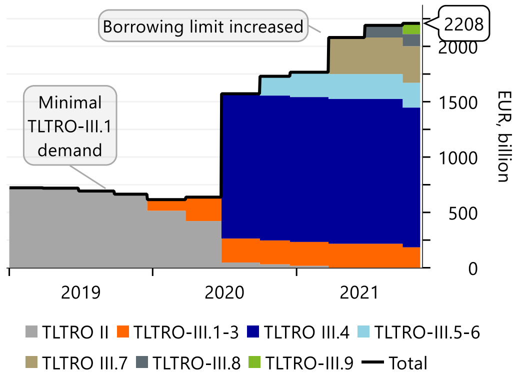

Note: Simplified schematic, see the ECB's [decision tree](decision tree) for the full calculation of final TLTRO rates.
Source: ECB, Rabobank

## Estimate 1: TLTRO-III modalities

**This first estimate seeks to exploit the fact that the ECB changed the modalities of the TLTRO-III operations several times throughout the life of the programme. Purely based on these modalities of the TLTROs, we would roughly estimate that EUR 1,100bn out of the EUR 2,200bn currently outstanding has been borrowed from a profitability motive.**

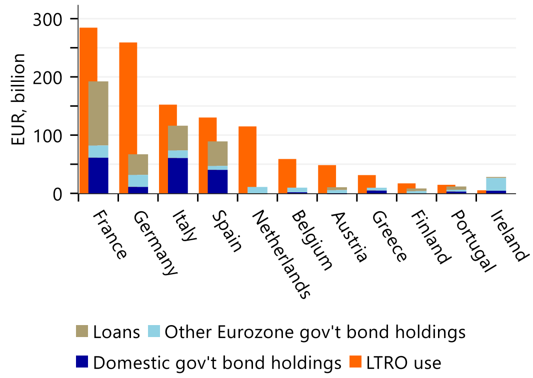
The TLTRO-IIIs were originally intended as a funding backstop. The terms were okay, but not extremely attractive (see Appendix A). Indeed, allotments in the first three operations were mirrored by TLTRO-II repayments (figure 7), suggesting that banks mostly used these initial operations to limit the need for market-based funding as TLTRO-IIs matured.

Figure 7: TLTRO-III allotments




Source: ECB, Rabobank

Figure 8: Estimated use of TLTRO-III.4 & 5




Note: change in values between March & Sept 2020.
Source: ECB, Rabobank

When the pandemic hit and the terms were eased significantly, demand for TLTROs skyrocketed. The ECB allotted EUR 1,308bn in the June 2020 operation, which coincided with the start of the first *special interest rate period*. Nearly all remaining TLTRO-II loans were repaid, but after accounting for this, the net allotment still totalled EUR 934bn. Part of this may have been borrowed out of precautionary reasons (given the huge uncertainty at the time) and as a substitute for market-based funding, but a large amount of this demand appears to have been driven by arbitrage opportunities: banks expecting to meet the special discount were able to borrow at -100bp, and deposit the money back at the ECB for just -50bp; earning a 50bp return.

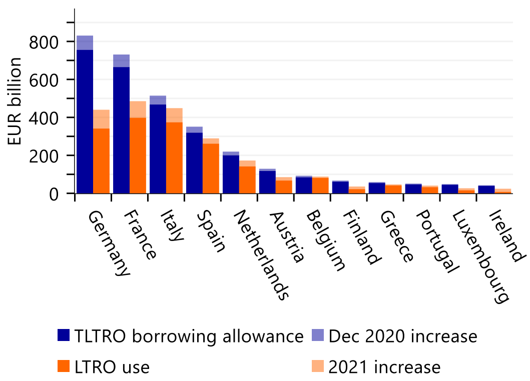
At zero risk! Riskier alternatives for this arbitrage, like short-term sovereign bonds, offered even better pickups. French and Italian banks in particular seem to have opted for the latter, while the large share of 'unexplained' use of TLTRO-III for German and Dutch banks suggests that they have mostly deposited the funds back at the central bank (figure 8).

Subsequent operations also drew significant demand. For operations 5 and 6 this was probably driven by banks getting more confident that they would meet their year-end lending targets – and would therefore qualify for the special discount. We therefore believe that these allotments were predominantly used for arbitrage purposes. But TLTRO-III.7 was the biggest after the massive June operation. This operation, conducted in March 2021, was the first one where the higher borrowing limit applied. At the same time, the ECB effectively tightened the conditions by taking the –higher– amount of loans outstanding in October 2020 as the benchmark for the second discount. Considering that core banks still had substantial room left before the increase while peripheral banks were nearer their borrowing limits (figure 9), this allotment may have included a relatively large amount of funding-driven demand.

Finally, we note that the EUR 97bn TLTRO-III.9 allotment coincided with the first voluntary repayments. Out of the total EUR 78bn in repayments, EUR 32bn was originally allotted in operations 1-3. This was allotted before the discount, and thus probably reflects maturity extensions. EUR 46bn originally came from TLTRO-III.4, which probably includes repayments by banks that didn't meet their lending targets. In aggregate, data point to Greek and Irish banks not meeting the target (figure 10). However, from anecdotal evidence we know that were also some banks in other countries that did not (fully) meet the required lending volumes.

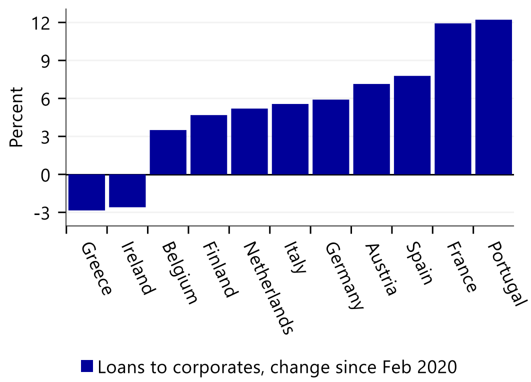
Taking these changing TLTRO-III modalities and the corresponding borrowing motives to the extreme, we can make a very crude estimate of TLTRO-III use. After assuming that all TLTRO-II repayments are simply rolled over, we simply assign the borrowed amount to the most likely use case per operation. Early repayments of TLTRO-III.4 funds are assumed to be due to banks not qualifying for the discount, whereas repayments of operations 1-3 are assigned to funding (since we assume that these operations didn't attract any arbitrage use yet). The result is a roughly 50/50 split between TLTRO-III money being used for funding and for profitability reasons.

**Figure 9: Estimated TLTRO allowance and use**




Source: ECB, Rabobank

**Figure 10: Most banks qualified for discount 1?**




Source: ECB, Rabobank

**Table 2: Estimated funding versus profitability use of TLTRO-IIIs**

| *Operation* | *Allotted* | | | *Repaid* | *Outstanding* | | |
|---|---|---|---|---|---|---|---|
| | *Funding* | *Arbitrage* | *Total* | | *Funding* | *Arbitrage* | *Total* |
| TLTRO-III.1-3 | 216 | 0 | 216 | -32 | 184 | 0 | 184 |
| TLTRO-III.4 | 374 | 934 | 1,308 | -46 | 374 | 888 | 1,262 |
| TLTRO-III.5-6 | 0 | 225 | 225 | 0 | 0 | 225 | 225 |
| TLTRO-III.7 | 330 | 0 | 330 | 0 | 330 | 0 | 330 |
| TLTRO-III.8 | 109 | 0 | 109 | 0 | 109 | 0 | 109 |
| TLTRO-III.9 | 97 | 0 | 97 | 0 | 97 | 0 | 97 |
| TLTRO-III.10 | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| **Total** | **1,126** | **1,159** | **2,285** | **-78** | **1,094** | **1,113** | **2,207** |

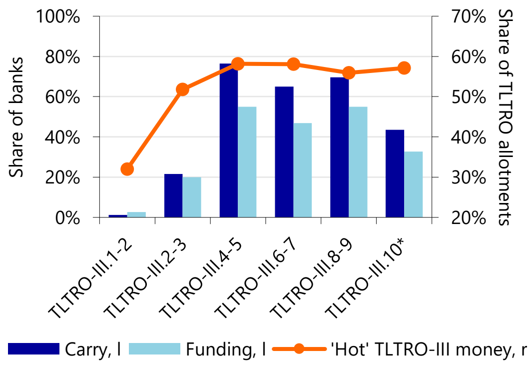
Source: Rabobank

## Estimate 2: Bank's reported use of funds

**An alternative way to estimate the share of 'hot' TLTRO money is by looking at the ECB's Bank Lending Survey. Based on banks' reported use of TLTRO-III funds, we estimate that EUR 930bn may have been borrowed purely from a profitability motive.**

Since the launch of TLTRO-III, the ECB has added questions on TLTRO participation into the April and October Bank Lending Surveys. One of these questions specifically asks banks to indicate their use of the borrowed funds over the past six months. Although the survey does not reference particular operations, assuming that money is immediately allocated to a use –particularly in case of an arbitrage motive– each BLS response should roughly match up with the two TLTRO-IIIs allotted immediately prior. Using these survey responses, we can thus divide the allotted amount in each operation based on the reported use case.

**Figure 11: Estimated 'hot' TLTRO-III money**




Note *) TLTRO-III.10 is based on banks 'expected' use of TLTRO-III, as surveyed in October 2021
Source: ECB, Rabobank

To distinguish between 'hot' TLTRO-III money and more durable demand, we aggregated the share of banks indicating they used TLTRO-III for either asset purchases or to hold liquidity with the Eurosystem into the "carry" motive, and similarly we aggregated answers that indicate substitution of market-based funding. "Granting loans" was excluded from this analysis, as this use case is arguably a grey area consisting both of a funding and profitability motive. Likewise, to avoid clouding the analysis, we have *ex ante* assumed that any outstanding TLTRO-IIs by this time have been substituted with TLTRO-III. The rolling over of outstanding TLTRO-II has therefore been removed both from the survey response and the TLTRO-III amounts these results were applied to (i.e. net allotments). Note that respondents were allowed to give multiple answers, so totals may not add up to 100%.

This exercise confirms what we inferred from the TLTRO modalities: the first operations were predominantly used for funding, but the profitability motive quickly gained importance after the conditions were eased. Interestingly, though, the ratio remains relatively stable after that. Perhaps this is the result of the survey not asking banks their use of the specific operations. But it also shows that the modalities-based approach was indeed over-simplified. Nonetheless, this estimate broadly confirms the amount of 'hot' TLTRO-III borrowing. When applying the ratios of the two use cases to the allotted amount of each operation, we estimate that EUR 930bn out of the outstanding EUR 2,200bn was borrowed from an arbitrage perspective.[2]

**Table 3: Estimated funding versus profitability use of TLTRO-IIIs**

| *Operation* | *Allotted* | | | *Repaid* | *Outstanding* | | |
|---|---|---|---|---|---|---|---|
| | *Funding* | *Arbitrage* | *Total* | | *Funding* | *Arbitrage* | *Total* |
| TLTRO-III.1-3 | 216 | 0 | 216 | -32 | 184 | 0 | 184 |
| TLTRO-III.4 | 766 | 542 | 1,308 | -46 | 766 | 496 | 1,262 |
| TLTRO-III.5-6 | 95 | 131 | 225 | 0 | 95 | 131 | 225 |
| TLTRO-III.7 | 139 | 191 | 330 | 0 | 139 | 191 | 330 |
| TLTRO-III.8 | 48 | 61 | 109 | 0 | 48 | 61 | 109 |
| TLTRO-III.9 | 42 | 55 | 97 | 0 | 42 | 55 | 97 |
| TLTRO-III.10 | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| **Total** | **1,305** | **980** | **2,285** | **-78** | **1,273** | **934** | **2,207** |

Source: Rabobank

[2] For comparison, if we repeat this exercise and do include "granting loans" as a more persistent use of TLTROs, the estimated amount of 'hot' TLTRO-III liquidity would drop to around EUR 700bn.

# Appendix: TLTRO modalities

Since the TLTRO-III operations were announced in March 2019, the modalities have been amended several times. Since a few of these changes are key to understanding our view on the use of TLTRO-III, we have summarized these changes in the table below.

**Table 4: TLTRO modalities over time**

| *Date* | *Modalities implemented / changed* |
|---|---|
| March - June 2019 | **TLTRO-III announced**<br>• 7 quarterly operations (September 2019 – December 2020)<br>• Borrowing allowance: 30% of the stock of eligible loans, minus outstanding TLTRO-II<br>• Bid limit (per operation): 10% of the stock of eligible loans<br>**Maturity**<br>• 2 year fixed maturity<br>**Interest rate**<br>• Average rate on marginal refinancing operations (0.00%) + 10 basis points, or as low as the average deposit facility rate (-0.50%) + 10 basis points over each operations' life, depending on lending performance |
| September 2019 | **Maturity extension**<br>• 3 year maturity<br>• Optional early repayment: on quarterly basis, 2 years after the allotment of each operation, with a first possible repayment in September 2021<br>**Interest rate reduction**<br>• The 10bp spread was removed, making the applicable rate the average MRO or as low as the average DFR (-0.50%) over the operations' life |
| March 2020 | **Lending target lowered**<br>• Lending performance threshold reduced to 0%<br>**Discount added**<br>• "Special interest rate period" (June 2020 – June 2021)<br>• A 25bp discount was added, making the applicable rate the average MRO - 25bp or as low as the average DFR - 25bp during this period, depending on net lending<br>• Evaluated based on net lending between March 2020 and March 2021<br>**Earlier optional repayments**<br>• Voluntary repayments are now possible 1 year after the allotment of each operation, starting in September 2021<br>**Borrowing allowance increased**<br>• Borrowing allowance increased to 50%<br>• Bid limit per operation removed |
| April 2020 | **Discount increased**<br>• Discount increased to 50bp, making the applicable rate the average MRO - 50bp or as low as the average DFR - 50bp between June 2020 and June 2021 |
| December 2020 | **Discount extended**<br>• "Additional special interest rate period" (June 2021 – June 2022)<br>• 50bp discount<br>• Evaluated based on net lending between October 2020 and December 2021<br>**Additional operations**<br>• 4 more quarterly operations (March 2021 – December 2021)<br>• Increased borrowing limit to 55% |

Note: This list provides a summary of key changes and may not be exhaustive.
Source: ECB, Rabobank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A summary of the methodology can be found on our website

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