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Spread between the euro short-term rate (€STR) and the deposit facility rate

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Rationale

This article analyses the factors that are contributing to the widening of the spread between the euro short-term rate (€STR) and the deposit facility rate, with a view to assessing monetary policy transmission in the Eurosystem.

Takeaways

- The key factors that explain the behaviour of this spread are the expansion of the Eurosystem's balance sheet and the change in the monetary policy stance.
- The pass-through of the recent interest rate hikes to money market rates has been effective and cannot explain the widening of the spread.
- Once the rate hiking cycle comes to an end, the contraction in the Eurosystem's balance sheet can be expected to curb or even reverse the trend observed in the spread.

Keywords

Euro short-term rate, deposit facility, monetary policy transmission, money market, money market statistics, Eurosystem balance sheet, excess liquidity, non-bank financial institutions.

JEL classification

E52, E58.

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SPREAD BETWEEN THE EURO SHORT-TERM RATE (€STR) AND THE DEPOSIT FACILITY RATE

Introduction

The primary objective of the Eurosystem is to maintain price stability in the euro area. Following the strategic monetary policy review that concluded in July 2021, the ECB Governing Council considers that price stability is best maintained through the adoption of a symmetric 2% inflation target over the medium term.[1] The key monetary policy tool used by the Eurosystem to achieve its target is steering policy interest rates.

Each time the Eurosystem changes policy rates, the monetary policy transmission mechanism is triggered. These changes are initially passed through to money market rates and then, via various channels, to interest rates on the funding obtained by governments, firms and households. These financing conditions affect their saving, investment and consumption decisions, impacting on the supply and demand of goods and services and, consequently, on final prices. Accordingly, to assess the correct transmission of monetary policy, the Eurosystem must monitor short-term market rates, as these are the first link in the monetary policy transmission chain. Of these short-term rates, the €STR is particularly significant.

The €STR is the overnight risk-free benchmark rate for the euro area. It reflects the wholesale euro borrowing costs of major euro area credit institutions in unsecured overnight transactions (deposits). The €STR has been calculated and published daily by the ECB since October 2019, and it replaced the EONIA on 3 January 2022, following a successful transition.[2] The ECB is the administrator of this benchmark index for the markets.

With a "floor" system such as that which has been operating *de facto* in the euro area since the financial crisis, interbank rates are pegged to the deposit facility rate (DFR).[3] The DFR is the interest rate set by the ECB on monetary policy counterparties' overnight deposits at the central bank.

Since its launch in October 2019, the €STR has been lower than the DFR. The reason for this negative spread is that the transactions used to calculate the €STR include not only those conducted by credit institutions that have access to the deposit facility and are, therefore, unwilling to lend at a lower rate, but also transactions with institutions that do not have access to the deposit facility and are willing to do so. In a setting in which credit institutions have abundant excess liquidity (which they place in the deposit facility), potential lenders with no access to

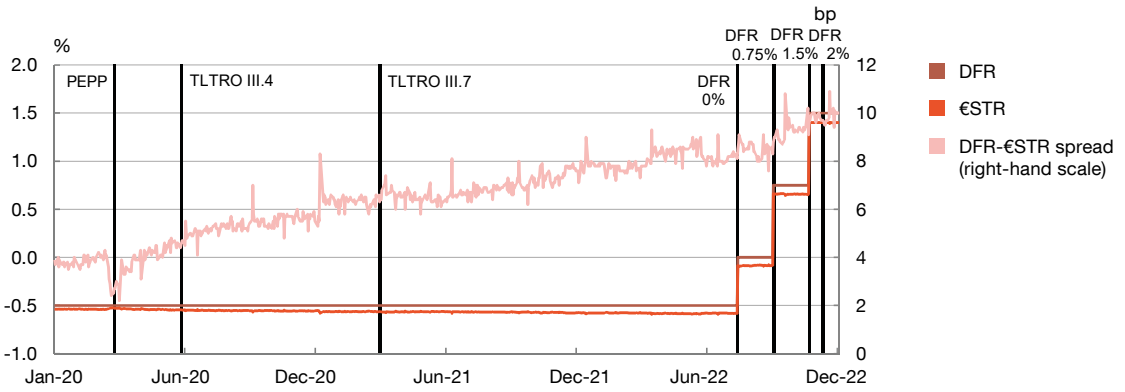
1 Before the strategic review of 2020-2021, the ECB's price stability target was below, but close, to 2%.

2 The euro overnight index average (EONIA), the average euro interbank offered rate, was the benchmark overnight rate for the euro area money market until it was replaced by the €STR. To ease this transition, the EONIA was calculated as €STR + 8.5 basis points from 1 October 2019 (when the €STR was first published) until 3 January 2022 (when the EONIA was discontinued).

3 In the pre-crisis liquidity situation, money market rates were within the interest rate corridor defined by the marginal lending and deposit facility rates, close to the rates applicable to the main refinancing operations ("corridor" system). As liquidity has increased, money market rates have moved down to align with the deposit facility rate ("floor" system").

Chart 1
The spread widened in 2022 H2

1.a €STR-DFR spread (a)



SOURCES: ECB Data Portal and Banco de España calculations.

a The spread is calculated as DFR–€STR to give a clearer picture of how it has evolved.

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the deposit facility will generally obtain an interest rate lower than the DFR on their wholesale market deposits.

The €STR-DFR spread has been gradually widening (see Chart 1). Whereas the average spread was 4 basis points (bp) in 2020 Q1, in 2022 Q4 it stood at 10 bp. The increase was gradual and smooth, but gained momentum in 2022 H2. From early 2020 to mid-2022 the spread widened by 0.8 bp per semester, while in 2022 H2, coinciding with the start of the Eurosystem policy rate hike cycle, it increased by a further 2 bp.

This article analyses the factors that appear to be contributing to the €STR-DFR spread widening. Following this introduction, the article is structured as follows: the second section examines the spread widening from early 2020 to mid-2022, while the third section focuses on the more pronounced increase in the spread in 2022 H2. The conclusions drawn from this analysis are set out in the final section.

Spread widening from early 2020 to mid-2022

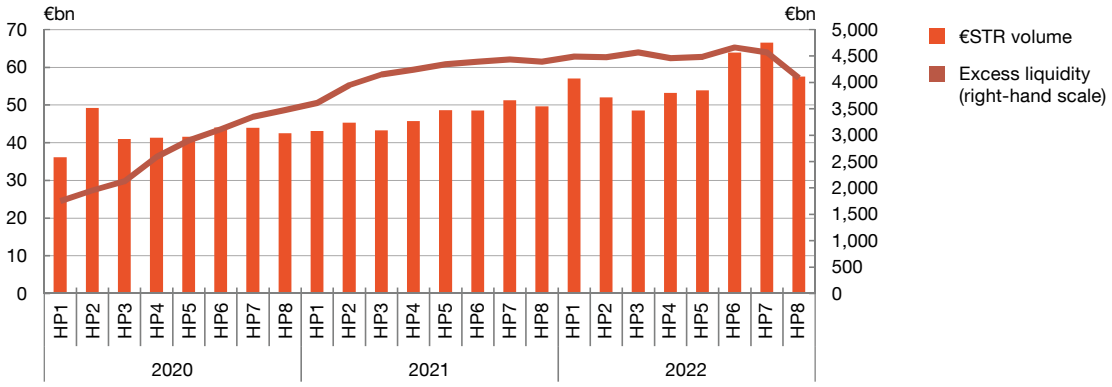
From the beginning of 2020 to mid-2022 the liquidity provided by the Eurosystem rose significantly as a result of the measures introduced to mitigate the impact of the pandemic on the euro area economy. These measures consisted mainly of asset purchase programmes (PEPP and APP) and targeted longer-term refinancing operations (TLTROs). Excess liquidity[4] in the Eurosystem rose

4 Excess liquidity is the sum of the reserves available in the banking system beyond the minimum reserve requirement. Excess liquidity is held in the current accounts that commercial banks hold at central banks or in the deposit facility.

Chart 2

Increase in activity in the shortest maturities in the deposit segment

2.a €STR volume and excess liquidity, on average by holding period



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SOURCES: ECB Data Portal and Banco de España calculations.

from €1,751 billion on average in the first holding period (for calculating minimum reserve requirements) of 2020 (29 January to 17 March 2020), to an average of €4,085 billion in the last holding period of 2022 (21 December 2022 to 7 February 2023).

The main effect of the rise in excess liquidity was an increase in the volume traded in the secured money market segment, but transactions in deposits at the shortest maturities also increased. The uncertainty generated by the pandemic and the war in Ukraine boosted trading in the shortest maturities in the deposit segment, to the detriment of longer maturities. Market participants opted to strengthen their liquidity buffers at these maturities to be able to withstand unforeseen events, such as repayments or margin calls. This tendency subsequently became more pronounced with the change of monetary policy stance, since expectations of interest rate rises again prompted market participants to accumulate short-term holdings to protect themselves against rate hikes while waiting for a change of cycle. As a result, the deposits used to calculate the €STR increased from a daily average of €36 billion in the first holding period of 2020 to a daily average of €53 billion in the fourth holding period of 2022 (15 June to 26 July 2022) (see Chart 2).

The high liquidity levels reached in the euro area, in a setting in which credit institutions no longer needed more reserves,[5] led them to lower the interest paid on the deposits received to offset the costs arising from their balance sheet expansion. Although such costs stem mainly from holding reserves in a negative interest rate environment and from the effect of the higher liabilities on the leverage ratio, they may also have other causes, such as an increase in the contributions to the Single Resolution Fund or in supervision fees.

5 Credit institutions had a level of reserves beyond the minimum requirements and the multiplier set in the two-tier system (six times the level of minimum reserves).

Credit institutions obtaining deposits in the unsecured segment were able to use their scant need for liquidity to their advantage, thanks to their greater bargaining power, which can essentially be explained by the fact that the economic agents with which they trade are mostly non-bank financial institutions that have no access to the deposit facility and use bank deposits to obtain interest on their liquidity spikes. Credit institutions obtaining this liquidity raised their margins especially at balance sheet reporting dates, when the volume and interest rates traded are significantly lower.

The spread widened more markedly in 2022 H2 as monetary policy normalised

In the second half of 2022, the start of the monetary policy tightening process in which the Eurosystem is currently immersed was accompanied by decisions that affected both money market volumes and interest rates. These decisions most notably included successive policy rate hikes, the end of net asset purchases and the recalibration of the terms of TLTRO III. Here we analyse how and the extent to which these decisions affected the €STR-DFR spread.

The first point to note is that the €STR response to the ECB's four policy rate hikes between July and December 2022 was immediate and strong, with the €STR reflecting 99.4% of the rate hikes, on average, on the date of the increase. Policy transmission in the euro area was therefore effective and cannot explain the spread widening.

Excess liquidity fell slightly in late 2022 H2, but the €STR volume traded rose again.[6] Although excess liquidity levels reached an all-time high of €4,748 billion on 14 November 2022, the discontinuation of net asset purchases and the subsequent TLTRO maturities and voluntary repayments reduced this level to an average of €4,085 billion in the last holding period of 2022 (21 December 2022 to 7 February 2023). However, there was no spread narrowing as a result of this decline in excess liquidity, which suggests that there are other factors contributing to the spread widening.

The shift to positive interest rates and their progressive and rapid escalation to higher levels resulted in more active liquidity management by market participants. In addition, this period saw a fresh shift in trading towards the shortest maturities in the unsecured segment, to the detriment of trading in the longer maturities. This shortening of maturities is consistent with the uncertainty regarding the future course of interest rates, and with the increase in precautionary liquidity buffers to meet derivatives margin calls in view of higher market volatility. These aspects gave rise to an increase in demand for bank deposits in excess of banks' requirements, meaning that banks applied less favourable rates to their counterparties to offset the growing marginal costs of new deposits.

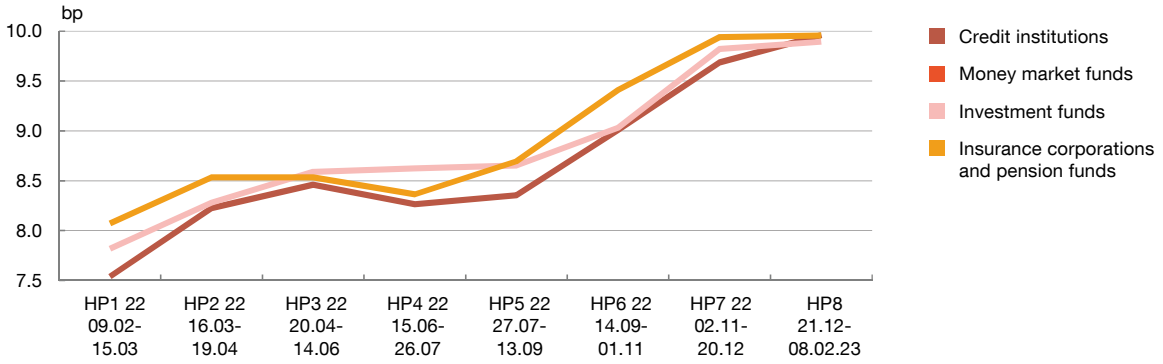
The average spread applied by credit institutions to their counterparties rose most markedly from the fifth holding period (27 July to 13 September 2022), irrespective of counterparty type and

6 €STR volume was 15% higher in 2022 H2 than in H1.

Chart 3

The change in the monetary policy stance gave rise to the widening of the average spread

3.a Average spread applied to credit institutions and main non-bank financial counterparties in 2022

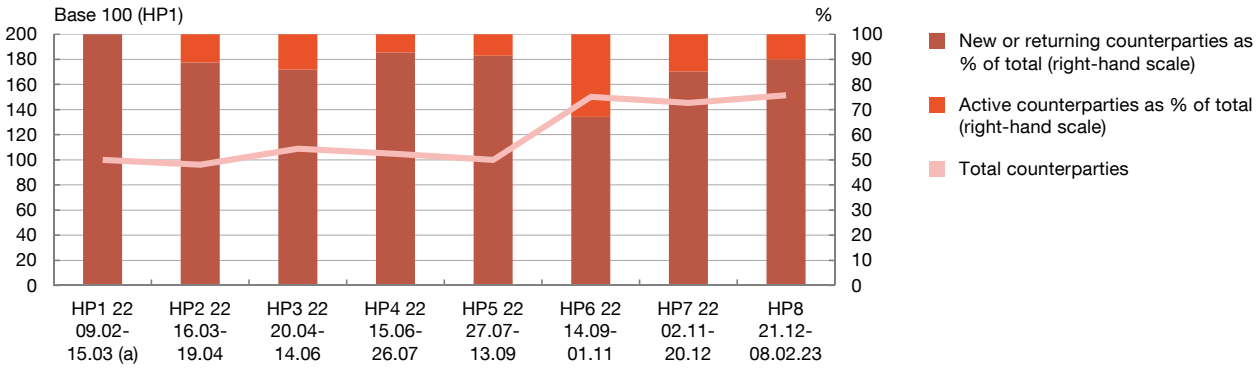


SOURCES: MMSR and Banco de España calculations.

Chart 4

Increase in the number of new market participants since 2022 H2

4.a Number of participants in the overnight unsecured deposit market



SOURCES: MMSR and Banco de España calculations.

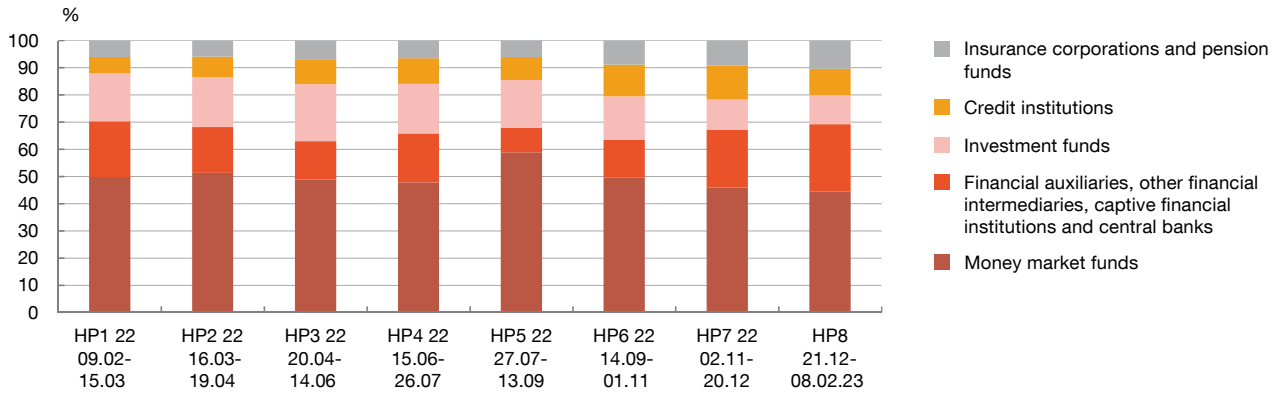
a All counterparties in HP1 22 are considered active counterparties. Counterparties are understood to mean market participants with which MMSR reporting banks make transactions that are used to calculate the €STR.

coinciding with the cycle of successive ECB rate hikes (see Chart 3). In general banks applied higher margins to all their counterparties, with no significant difference between spreads applied to credit institutions and those applied to the main types of non-bank financial counterparties.

This more active liquidity management was accompanied by an increase in the total number of participants in the market for unsecured deposits used to calculate the €STR (see the left-hand axis of Chart 4). The total number of counterparties of MMSR reporting banks rose considerably

Chart 5
Change in share by counterparty type

5.a Distribution of €STR volume by counterparty type in 2022



SOURCES: MMSR and Banco de España calculations.

(by more than 30%) and remained at that level from the sixth holding period (14 September to 1 November 2022), with the shift to positive DFR rates. Following this increase, 33% of all counterparties were market participants that had not traded with MMSR reporting banks in previous holding periods *(new* or *returning* market counterparties).[7] Their market entry partly explains the increase in the volumes used to calculate the €STR.

The increase in the number of market participants and in the volumes traded altered the share of the different types of counterparties of the MMSR reporting banks in the transactions used to calculate the €STR (see Chart 5). Specifically, compared with the fourth holding period, the proportion of insurance corporations and pension funds combined increased, as did that of financial auxiliaries, other financial intermediaries, captive financial institutions and central banks combined, while the proportion of investment funds declined. However, considering the general shift towards higher and more uniform interest rates in the semester, this change in share had no significant impact on the €STR-DFR spread.

In consequence, the shift to positive interest rates and their progressive and rapid escalation to higher levels resulted in: (i) more active liquidity management by market participants, which gave rise to the (re)entry of previously inactive ones; and (ii) a higher concentration of trading in the shortest maturities, owing to the uncertainty regarding the future course of interest rates and the terminal interest rate. Both these aspects contributed to the mismatch that already existed between liquidity supply and demand. The fact that the increase in volume traded remained concentrated on counterparties that had no access to the deposit facility afforded credit institutions greater capacity to apply higher margins to all their counterparties, irrespective of sector.

7 For the purposes of this analysis, *active* counterparties are understood as those that had already traded in some periods, taking as the reference period the first holding period of 2022 (HP1 22). Accordingly, all the counterparties in HP1 22 are considered *active.*

Conclusions

Since the €STR was first published in 2019, the spread with the DFR has always been negative. This is because the transactions used to calculate the €STR include transactions with financial institutions that have no access to the deposit facility. In a setting of abundant excess liquidity, banks receiving liquidity pay these financial institutions a lower interest rate than that which they may themselves obtain through the deposit facility.

The spread has gradually widened – although it gathered pace in 2022 H2 – from 4 bp in 2020 Q1 to 10 bp in 2022 Q4. The analysis performed shows that the main factors behind the spread widening are the expansion in the Eurosystem's balance sheet and the change in the monetary policy stance.

In the period from early 2020 to mid-2022, the principal factor behind the widening in the €STR-DFR spread was the increase in the Eurosystem's excess liquidity as a result of the monetary policy measures adopted following the outbreak of the COVID-19 pandemic. In a setting in which credit institutions did not need more liquidity, they lowered the interest paid on the increasingly higher deposits they received from other (especially non-bank) financial institutions that had no access to the deposit facility. This spread enabled banks to offset the costs stemming from their balance sheet expansion.

This spread widening, which was most pronounced in 2022 H2, coincided with a change in the monetary policy stance that was marked by rapid successive policy interest rate hikes. Although by late 2022 the excess liquidity had begun to subside, the shortening of investment periods led to an increase in overnight wholesale bank deposits, and thus in the €STR-DFR spread.

To conclude, in the fastest rate hike cycle in the history of the euro area, there has been effective pass-through to money market rates. However, the increasing concentration of demand for deposits on the shortest maturities, with growing regulatory costs for banks, has widened the €STR-DFR spread. In this setting, it is to be expected that once the rate hiking cycle comes to an end, the contraction in the Eurosystem's balance sheet will curb or even reverse the present tendency towards an increasingly negative spread between the two interest rates.

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