Dual interest rates and the transmission of monetary policy*

By Francesca Barbiero (ECB), Lorenzo Burlon (ECB), Maria Dimou (ECB), and Jan Toczynski (University of Zurich and Swiss Finance Institute)

Keywords: unconventional monetary policy, dual interest rates, bank lending, risk-taking.
JEL codes: E51, E52, G01, G21.

The recent experience in the euro area with dual interest rates, that is, central bank funding at rates below the level at which central bank reserves are remunerated, showed that such a tool can constitute a new form of monetary accommodation. On top of supporting bank credit, central bank funding with dual interest rates enables an easing of bank lending conditions without the increased risk appetite that a standard rate cut might bring about, especially if considered after a prolonged period of low or negative interest rates.

Introduction

Whether a low monetary policy rate spurs excessive risk-taking by banks is a much debated question in academic and policy circles since the start of the Global Financial Crisis (Dell’Ariccia, Laeven, Marques, 2011). While the impact of a monetary policy easing sustains bank profits even in a low interest rate environment via larger intermediation volumes and lower provisioning costs (Altavilla et al., 2018; Rohde, 2021), a prolonged period of low or even negative policy rates may compress banks’ profit margins if banks were not able to lower deposit rates below their effective lower bound (Brandao Marques et al., 2021). This could in turn either reduce the room for maneuver for further monetary policy accommodation (Brunnermeier and Koby 2019) or raise financial stability concerns as banks try to recoup intermediation margins by lending to increasingly riskier borrowers (Bubeck et al., 2020).

*Disclaimer: This paper should not be reported as representing the views of the European Central Bank (ECB). The views expressed are those of the authors and do not necessarily reflect those of the ECB.
Funding for lending schemes by central banks may partially compensate for the challenges brought forth by a prolonged low interest rate environment (Minenna, 2019). The euro area version of such schemes, the so-called targeted longer-term refinancing operations (TLTROs), are an example of this design in action. The second series of TLTROs (TLTRO II) launched in 2016 leveraged on the negative interest rate policy (NIRP) by setting the lowest rate at which banks could obtain the funds, subject to conditions related to their lending performance, equal to the rate at which excess reserves are remunerated (the deposit facility rate, DFR, at that time -0.4%), thus shielding banks from excessive pressure on their margins (Rostagno et al. 2021). Similarly, the lowest borrowing rate under the third series of the operations (TLTRO III) launched in 2019 was indexed to DFR (which was lowered again to -0.5% at the inception of the programme). Yet, the fire power of the scheme was greatly increased with the adoption of so-called ‘dual interest rates’, that is, central bank funding with an interest rate below the interest rate on reserves (Lonergan, 2020; The Economist, 2020).

In a new paper (Barbiero et al., 2022), we look at the experience of TLTRO III during the pandemic, which offered an unprecedented example of dual interest rates on a large scale. We find that central bank funding with dual interest rates enables an easing of bank lending conditions without the increased risk appetite that a standard rate cut might bring about, especially if considered after a prolonged period of low or negative interest rates.

At the height of the COVID-19 pandemic, the TLTRO tool was recalibrated to further support the continued access of firms and households to bank credit (Altavilla et al., 2020). Crucially, the interest rate charged on borrowed funds could reach a minimum of 50 basis points below the DFR, which was well below the cost of any alternative funding source at the inception of the pandemic. The new design led to the largest liquidity injection in the history of the ECB and provided a large reduction in funding costs for euro area banks.

In the paper, we address two questions. First, we ask whether the recalibrations of the TLTRO interest rate to levels potentially below the remuneration of central bank reserves generated an increase in the supply of bank credit. Second, we investigate whether the policy affected the qualitative composition of this credit. To the best of our knowledge, this is the first paper that illustrates empirically the potential of a new form of monetary accommodation associated with dual interest rates.

**Empirical results**

We exploit the unexpected recalibration of the programme announced on 30 April 2020, which reduced the interest rate charged on borrowed funds to a minimum of 50 basis points below the deposit facility rate (DFR).\(^1\) We measure exposure to the policy using high-frequency bank bond yield reactions, which are an effective proxy of the bank funding cost relief conveyed by the policy. Central to our analysis is transaction-level information from the euro area credit register (AnaCredit), which allows us not only to disentangle credit supply and demand, but also to control for the riskiness underlying each credit contract.

The first empirical question relates to the effectiveness of central bank funding in stimulating bank credit. Recent work has highlighted the relevance of TLTROs and their targeting feature for sustaining the flow of credit to households and firms and for reducing fragmentation (e.g. Boeckx et al. 2020; Altavilla et al. 2020; Benetton and Fantino 2021). We find that the funding cost relief coming from the recalibration of TLTROs had a strong positive effect on bank credit provision during the COVID-19 crisis, helping to sustain economic activity. Exposure to the TLTRO shock is associated with a gradual increase in credit growth after the announcement and is robust to the inclusion of bank and firm characteristics (see **Figure 1**). Our baseline model shows that a standard deviation in the exposure to the funding cost relief coming from TLTROs translated into an impact on loan growth of around half of the actual lending registered over the six months after the announcement of the policy measure.

---

The second question relates to whether the TLTRO policy affected the qualitative composition of credit in the aftermath of the pandemic. In particular, we look at the riskiness of lending by banks more exposed to TLTROs and at the effect of the policy on the interest rates charged on corporate loans depending on their underlying risk. In this sense, our paper contributes to the literature on the risk-taking channel of monetary policy that emerged after the financial crisis and flourished during the period of low policy interest rates and central bank liquidity operations (Jiménez et al. 2014; Acharya and Steffen 2015; Crosignani et al. 2020; Andreeva and García-Posada 2021). At the inception of TLTRO III in September 2019, the policy rate had already been in negative territory for more than five years. Moreover, the unprecedented surge in loan demand at the onset of the pandemic, coupled with the large economic uncertainty and the sharp deterioration in borrower creditworthiness, bore the potential to generate a marked increase in the riskiness of banks’ loan portfolios and even a mispricing of the underlying risks. We find instead that banks exposed to TLTROs did not increase their supply of credit disproportionately more to ex-ante riskier borrowers, and we also do not find evidence of an increased mispricing of riskier loans (see Figure 2). Finally, we show that these results are particularly pronounced for banks with low intermediation margins to begin with. We interpret this evidence through the lens of the funding cost relief that TLTROs provide to banks in a low interest rate environment, allowing them to expand credit supply without necessarily having to scale up the risk profile of their loan portfolios to recoup intermediation margins.
Conclusions

The experience with TLTRO III during the pandemic points to a large potential for the monetary policy toolbox constituted by dual interest rates, that is, central bank funding at rates below the level at which reserves are remunerated. The increase in bank lending attributable to the impact of central bank funding with dual interest rates was not accompanied by excessive risk-taking. Banks with lower intermediation margins could extend more credit as a result of central bank funding and did not need to scale up the risk profile of their loan portfolio.

Contrary to a "standard" rate cut in negative territory, borrowing rates below the interest rate on central bank reserves imply that intermediation margins are not compressed despite the consequent general decrease in lending rates (Freriks and Kakes, 2021), affording a continued transmission of monetary policy even in presence of an effective lower bound on deposit rates. This partially shields the banking system from some potential side effects of monetary policy accommodation highlighted in the literature, as increases in lending volumes are not accompanied by heightened risk taking or changes in the pricing of underlying risks.

This illustrates how central bank funding with dual interest rates enables an easing of credit conditions without the increased risk appetite that a standard rate cut might spur under the same circumstances, especially if considered after a prolonged period of low interest rates.
References


Rohde, L. (2021), "Ultra low interest rates from the perspective of a central banker", SUERF policy note, No 256.


The Economist (2020), “Has the ECB found a way around the lower bound on interest rates?”, 13 August 2020.
About the authors

**Francesca Barbiero** is an Economist in the Monetary Policy Analysis Division of the European Central Bank. She is interested in empirical research in monetary and financial economics, with a particular focus on the real and financial effects of central bank policies. Francesca is completing a doctoral degree in Economics from Goethe University Frankfurt and holds a Master of Science from Bocconi University in Milan. Prior to joining the ECB, she worked at the think tank Bruegel in Brussels.

**Lorenzo Burlon** is a Lead Economist in the Directorate General Monetary Policy of the European Central Bank (ECB). Prior to joining the ECB, he worked at the Directorate General for Economics, Statistics and Research of the Banca d’Italia and at the University of Barcelona. He holds a Ph.D. from Universitat Autònoma de Barcelona. His research interests cover monetary policy and its transmission mechanism, empirical banking and structural modelling.

**Maria Dimou** is an Economist in the Monetary Analysis Division in the Directorate General (DG) Monetary Policy of the European Central Bank (ECB). Before joining her current department in 2017, she worked in the Monetary Policy Research Division in DG Research of the ECB and in the Research Centre of the Deutsche Bundesbank. In her current role, Maria contributes to the assessment of monetary policy transmission via banks, with a particular focus on the analysis of bank heterogeneity using firm/bank-level information and granular data from credit and security registers. She holds a M.Sc. in Economics from Stockholm School of Economics.

**Jan Toczynski** is a Ph.D. candidate in Finance at the University of Zurich and the Swiss Finance Institute. His research interests focus on household finance, empirical banking, and monetary policy. He holds an M.Sc. in Applicable Mathematics from the London School of Economics and Political Science.