Box 1

MONETARY POLICY TRANSMISSION TO INTEREST PAYMENTS ON THE BANK DEBT OF HOUSEHOLDS AND FIRMS

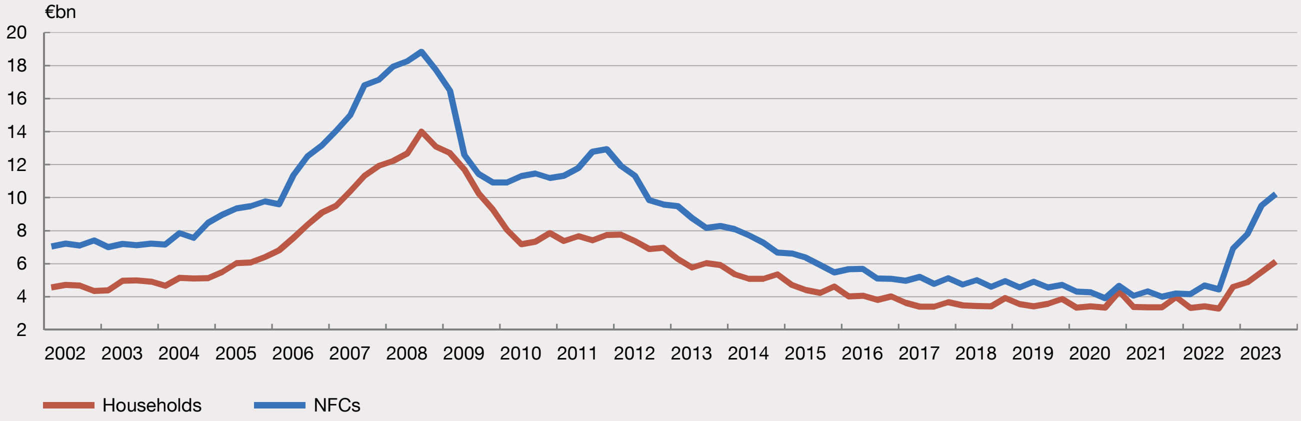
The European Central Bank (ECB) began to change its monetary policy stance in December 2021. This mainly manifested itself in a sharp increase in policy rates, which rose by 450 basis points (bp) between July 2022 and September 2023. As a result, interest payments made by indebted households and firms rose through what is known as the income channel of monetary policy transmission.[1] The sector accounts of the National Accounts reflect this change, as they capture a swift and significant increase in interest payments[2] from their record-low levels before the rate hiking cycle began (see Chart 1). Interest payments in September 2023 reached levels similar to those of a decade prior, below the highs of 2008-2009.

This box uses granular information from the Central Credit Register (CCR) on household mortgages and bank loans to non-financial corporations (NFCs)[3] to characterise the process of monetary policy transmission to interest payments on bank debt and map the future path drawing on market expectations for interest rates.

The speed with which monetary policy is passed through to interest payments on bank debt (whether mortgages or business loans) depends on the debt's contractual terms. Interest payments on variable-rate loans are reviewed at the frequency specified in the contract and in accordance with the development of the reference interest rate index. On CCR data, in November 2023 variable-rate loans[4] constituted slightly less than 70% of the outstanding stock of household mortgages and business loans (see Chart 2). In the case of mortgages, interest rates are most commonly reviewed annually (62%, compared with 30% that are reviewed half-yearly) while business loans are usually reviewed quarterly (52%, compared with 18% that are reviewed half-yearly and 17% reviewed annually).[5] The usual reference rate in these two lending segments is the 12-month EURIBOR (more than 90% of household mortgages and nearly 47% of business loans), although 24% and 12% of variable-rate business loans are indexed to the 3-month and 6-month EURIBOR, respectively.

Interest payments on fixed-rate loans are specified at inception. As a result, rising market rates would only increase the interest burden on the borrower if the loan is rolled over upon maturity, which is common in short-term

Chart 1
Quarterly interest payments by Spanish households and firms to September 2023 (a)



SOURCE: INE. Quarterly Non-Financial Accounts for the Institutional Sectors.

a Non-seasonally adjusted and prior to the allocation of FISIM.

[1] For more details on the ECB's response and monetary policy transmission channels, see Banco de España. (2023). "Chapter 3. The current episode of price pressures in the euro area, the monetary policy response and its effects". In Banco de España. Annual Report 2022, pp. 138-180.

[2] These concern interest payments associated with the total debt and before allocation of financial intermediation services indirectly measured (FISIM).

[3] Mortgage loans are identified as loans with collateral granted for housing. Only financial loans are considered for firms (i.e. excluding trade credit and credit cards, which account for around 10% of bank credit).

[4] Mixed-rate loans are considered to be variable-rate loans.

[5] The "other" category in Chart 2 covers loans with a monthly review frequency (8% of business loans and 1% of household mortgages), those with a review period longer than one year (16% of business loans and 6% of household mortgages), as well as other less-common types.

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Chart 2
Breakdown of bank loans (a). November 2023

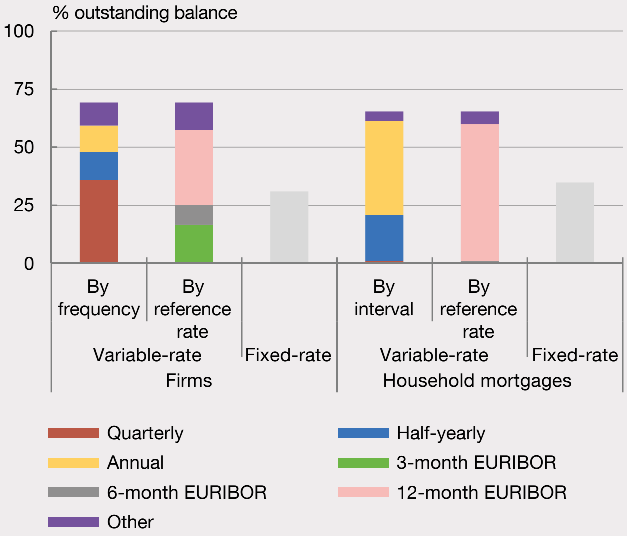


Chart 3
Bank loans to firms. Residual maturity structure (a). November 2023

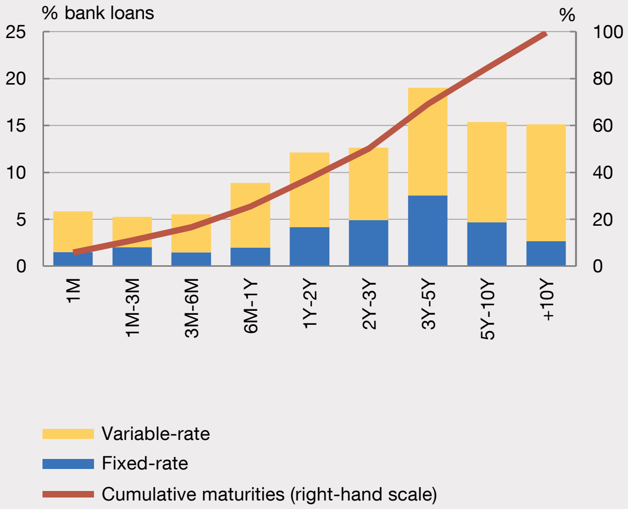


Chart 4
Interest rates (monthly average).
Latest data December 2023 and Market forecasts from 29.12.2023

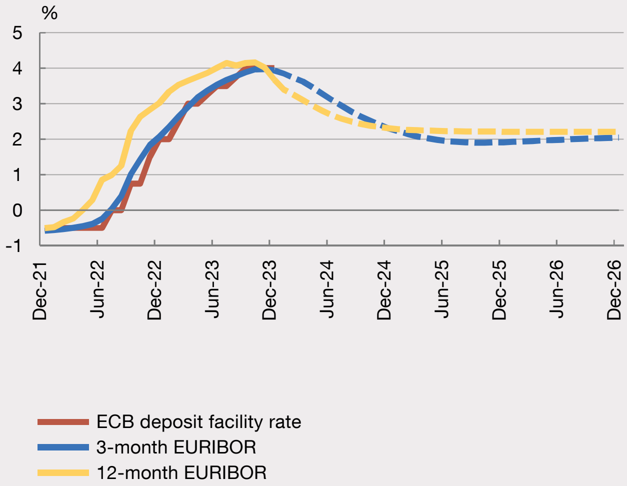
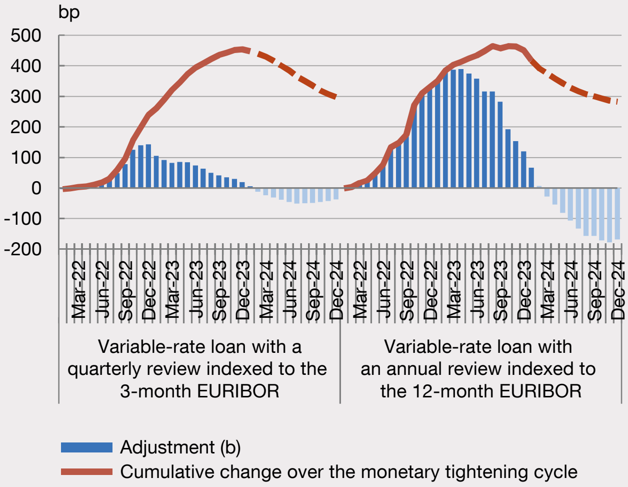


Chart 5
An example of changes in reference rates (b)



SOURCES: CCR, Refinitiv Datastream, ECB and Banco de España.

a Mixed-rate loans are considered to be variable-rate loans.

b For each month, the change in the interest rate applicable to a bank loan with a reset in that month is shown. The example distinguishes between a loan with a quarterly review indexed to the 3-month EURIBOR and a loan with an annual review frequency indexed to the 12-month EURIBOR. A delay of one month is used in both cases, i.e. the interest rate adjustment of a loan with a quarterly (annual) review with a review in January 2024 is based on the change in the 3-month (12-month) EURIBOR between September and December 2023 (December 2022 and December 2023). The latest observed data are from December 2023. Market expectations implicit in the yield curves are used for later months, estimated on the basis of the prices of financial derivative linked to interbank rates on 29 December 2023.

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lending to firms. CCR data show that the average residual maturity of bank loans to firms was around five years in November 2023, with one-quarter of this amount maturing within the following 12 months, of which nearly 30% are fixed-rate (see Chart 3).

As noted previously, variable-rate bank loans are commonly indexed to the EURIBOR, which is the first link in the chain of monetary policy transmission (see Chart 4). The EURIBOR is closely linked to policy rates and expectations for them in the reference period. In this monetary tightening cycle, 3-month and 12-month interbank rates peaked in October 2023 at a monthly average of 3.97% and 4.16%, respectively. From there, they began to decline, more steeply in the case of the 12-month EURIBOR, as expectations of policy rate cuts in 2024 were brought forward and heightened. The 12-month EURIBOR fell by 14 bp and 34 bp in November and December, respectively, to stand at 3.68%. Market expectations for the EURIBOR (proxied by the prices of financial derivatives at end-December) suggest that market rates will continue to drop in the coming months.

In this context, higher reference rates have been almost fully passed through to variable-rate loans. By way of example, Chart 5 shows changes in interest rate reviews of two representative types of loan: variable-rate loans with quarterly and annual review frequencies, based on the 3-month and 12-month EURIBOR rates and the projected rates drawing on the implicit market expectations at end-December. Reviews are applied with a one-month delay, i.e. the review in any given month depends on changes in the EURIBOR reference rate up to the previous month. Under these circumstances, loans with a quarterly review frequency and a rate adjustment in January 2024 (whether household mortgages or business loans) would see an increase of just 5 bp, with the total increase since the beginning of the tightening cycle amounting to nearly 450 bp. Loans with an annual review frequency and a rate adjustment in January 2024 would see an increase of around 65 bp – nearly 420 bp in total since December 2021. Based on current market expectations for interest rates, reviews will begin to move in a downward direction in March 2024 for loans with an annual review frequency that are indexed to the 12-month EURIBOR, with rates expected to decrease by more than 150 bp for reviews in the last part of 2024. In any case, the overall change over the course of the monetary tightening cycle will still amount to a significant rise.

CCR data enable the pending pass-through of market rates to the cost of outstanding loans to be evaluated on the basis of both the loan-specific terms and observed and anticipated changes to reference rates.[6] To perform this exercise, it is assumed that households do not roll over their loans upon maturity.[7] For firms, however, an extreme assumption is made that their outstanding bank debt is fully rolled over in the form of a new loan under the same conditions (term and interest rate type). The exercise includes no additional assumptions for new credit and draws on CCR data available up to November 2023.

As shown in Chart 6, between December 2023 and March 2024 the debt burden associated with variable-rate loans and mortgages may increase or decrease, depending on the agreement's specific terms. The simulation based on the CCR data shows that almost 7% of the outstanding stock of variable-rate mortgages would see a cost rise of 100 bp or more between December 2023 and March 2024. Only 2% of the stock of fixed-rate business loans would undergo a cost increase in excess of 100 bp if rolled over. By contrast, around 25% of the outstanding stock of variable-rate business loans and nearly 10% of variable-rate household mortgages show a cost decrease of at least 50 bp to March 2024. A significant portion of the variable-rate portfolio (between 60% and 70%) is not subject to any review in this four-month period, meaning that its cost is unchanged.

In aggregate terms and given current market expectations, tighter monetary policy impulses appear to have been almost fully passed through to interest payments on outstanding variable-rate loans to households and firms by the end of 2023 (see Chart 7). Throughout 2024, interest payments on variable-rate loans are expected to decline somewhat before stabilising in 2025 at higher levels than those seen prior to the tightening cycle. Some upward movement still remains for fixed-rate business loans upon maturity, given the assumption of complete rollover and the fact that the bulk of these loans were

[6] These changes are proxied by the market expectations implicit in the yield curves, which are estimated on the basis of the prices of financial derivatives linked to interbank rates.

[7] In addition, the outstanding balance remains constant until maturity, i.e. it is assumed that no principal repayments are made before maturity and new credit has no effect.

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signed before the current rate hiking cycle. As for households, the exercise performed does not cover potential future dynamics in new lending and assumes that households do not roll over mortgages upon maturity. As new loans are granted and fixed-rate mortgages are repaid, the interest payment burden will rise for the sector as a whole. This is because fixed-rate mortgages represented around 35% of the total outstanding stock of mortgages in November 2023 and most were agreed when interest rates were low.[8]

Chart 6
Bank debt exposed to by interest rate adjustments between December 2023 and March 2024

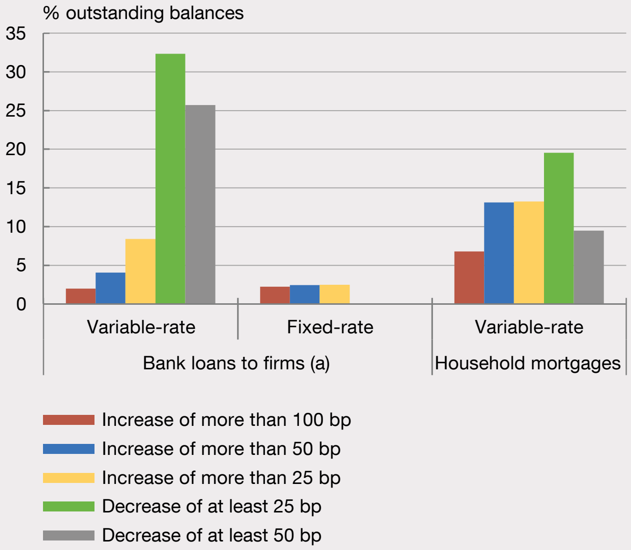
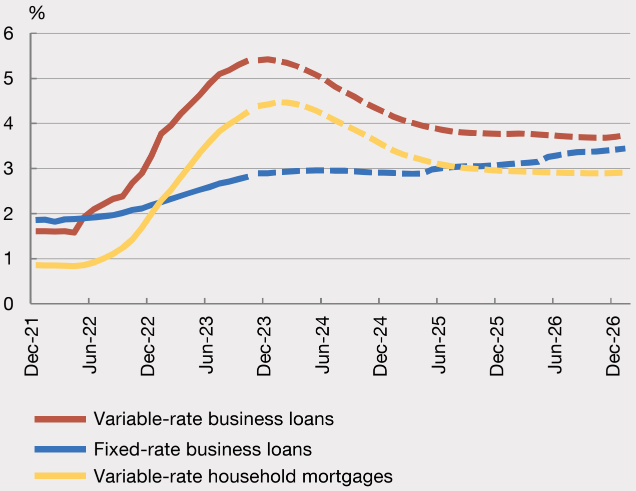


Chart 7
Interest rates by loan type based on CCR data
Observed and projected (b)



SOURCES: CCR, Refinitiv Datastream, ECB and Banco de España.

a The extreme assumption is made that the outstanding bank debt is fully rolled over in the form of a new loan under the same conditions (term and interest rate type).

b Observed rates to November 2023 show the average rate weighted by the outstanding balance at the end of each month. After December 2023, the expected cost is simulated using the implied forward rates of the overnight index swap (OIS) curve from December 2023. The estimated rates are weighted by the balances in November 2023.

[8] Specifically, in November 2023, 61% of the stock of fixed-rate mortgages were granted prior to 2022 with an average interest rate of around 2%, with another 16% signed between January and July 2022 with an average interest rate close to 1.6%. Fixed-rate mortgages agreed in the middle of the tightening cycle, between August 2022 and March 2023, accounted for 13% of the portfolio and those agreed at higher interest rates (above 3% on average) between March and October 2023 comprised just 10%. However, recently agreed mortgages may not all be new lending – some represent an amendment to the terms to opt for a fixed rate.