But there is also evidence that **the strong growth in nominal income has slowed the increase in the percentage of vulnerable indebted households and firms**. In the case of households, the strong increase in income reflects both the rise in nominal wages and the favourable performance of employment, which has grown by more than we had expected[14]. In the case of firms, sound corporate earnings have also kept the increase in the percentage of vulnerable indebted firms in 2023 at very moderate levels.

Finally, as regards the impact on the euro area banking sector, the contained increase in the financial vulnerability of households and firms is also reflected in the **limited**

[14] In the Spanish case, for example, according to estimates drawing on our Survey of Household Finances, the share of vulnerable indebted households rose moderately, from 10.5% in 2020 to just 11.2% in 2023 Q3.

materialisation of credit risk, even if default rates and NPLs are increasing in some sectors and customer segments, most notably for exposures to commercial real estate, SMEs and consumer loans[15].

As a result, credit risk still falls short of the deterioration that could be expected, based on historical regularities, following a deteriorating economic outlook, higher interest rates and increases in bankruptcies. In this regard, there is evidence that the build-up of credit risk on banks' balance sheets has been dampened by banks pre-emptively rebalancing their loan and securities portfolios towards safer assets.

The rise in interest rate margins, as a consequence of the interest rate increase, together with the limited materialisation of credit risk has led to a recovery in banks' profitability and banks have remained well capitalised.

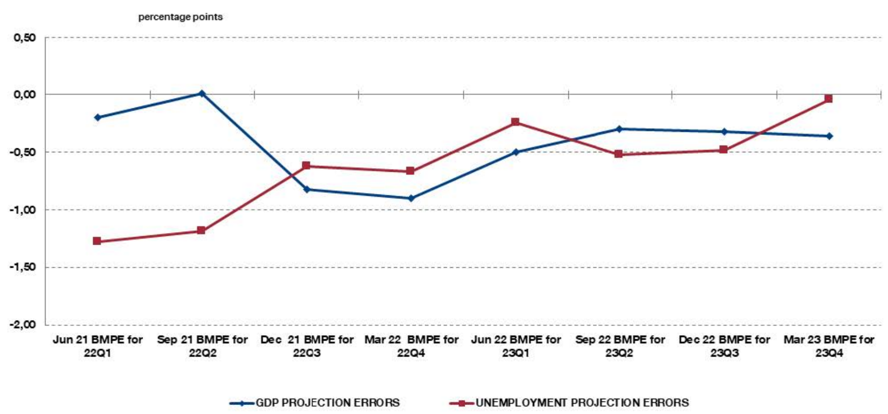
All in all, these results suggest the lack of amplification mechanisms through the banking system in the transmission of the tightening of monetary policy in the current cycle.

How have tighter financial conditions been transmitted to activity, employment and prices?

WEAKER THAN EXPECTED GDP GROWTH BY ECB/EUROSYSTEM STAFF MACROECONOMIC PROJECTIONS, BUT LABOUR MARKET HAS SYSTEMATICALLY PERFORMED BETTER THAN EXPECTED

BANCO DE ESPAÑA Eurosistema

4-QUARTER AHEAD EURO AREA GDP AND UNEMPLOYMENT PROJECTION ERRORS



SOURCE: European Central Bank.
a. The error is obtained as the difference between the observed GDP growth and unemployment and that included in the corresponding ECB projection exercise from 4 quarters earlier.

As to the evidence on the second leg of our monetary policy, from financial conditions to activity and prices, it is of course very difficult to assess in real time. However, some available analyses are useful in order to make a preliminary assessment.

First, since the start of the current monetary policy tightening cycle, the Eurosystem staff **macroeconomic projections have systematically overestimated GDP growth** and these

[15] In the Spanish case, the stock of Stage 2 household loans grew between end-2022 and 2023 Q1, but has fallen thereafter. And non-performing household loans increased slightly between 2023 Q1 and 2023 Q3 (the latest available data). In the case of loans to non-financial corporations, NPLs in banks' credit portfolios continued to fall, while Stage 2 loans picked up in 2023 Q3. In any event, the total stock of problem loans (NPLs and Stage 2 loans) to both households and firms on banks' balance sheets fell slightly during the first three quarters of 2023.

downward surprises do not seem to be fully explained by errors in the technical assumptions, including the changes in the stance of fiscal and monetary policy. In these projections the impact of financial variables on activity and inflation is largely based on historical correlations and linear models. Therefore, this evidence might be signalling a stronger transmission of monetary policy to macroeconomic variables than in the past.

But, of course, we cannot rule out that other factors apart from monetary policy may explain these systematic errors in the projections. And, in this regard, **the labour market has demonstrated remarkable resilience over the past two years**, as illustrated by lower than expected unemployment rates, compared to staff projections. Even though those projections were directionally correct in predicting a slowdown in employment growth, the latter has been much higher than expected, more than compensating for stronger than expected increases in the labour force. The persistent underestimation of employment growth could be attributed, at least to some extent, to labour hoarding by firms in a context of a very tight labour market and an economic slowdown largely perceived as transitory.

In the case of inflation, Eurosystem projection errors were significant in 2022 but their accuracy has significantly improved since the end of 2022. And **projection errors have been mainly related to surprises in energy commodity prices and global supply chain disruptions**[16].

TIGTHER FINANCIAL CONDITIONS HAVE TRANSMITTED MORE FORCEFULLY TO ACTIVITY AND (ALTHOUGH NOT SIGNIFICANT TO) INFLATION THAN IN PREVIOUS CYCLES ON AVERAGE

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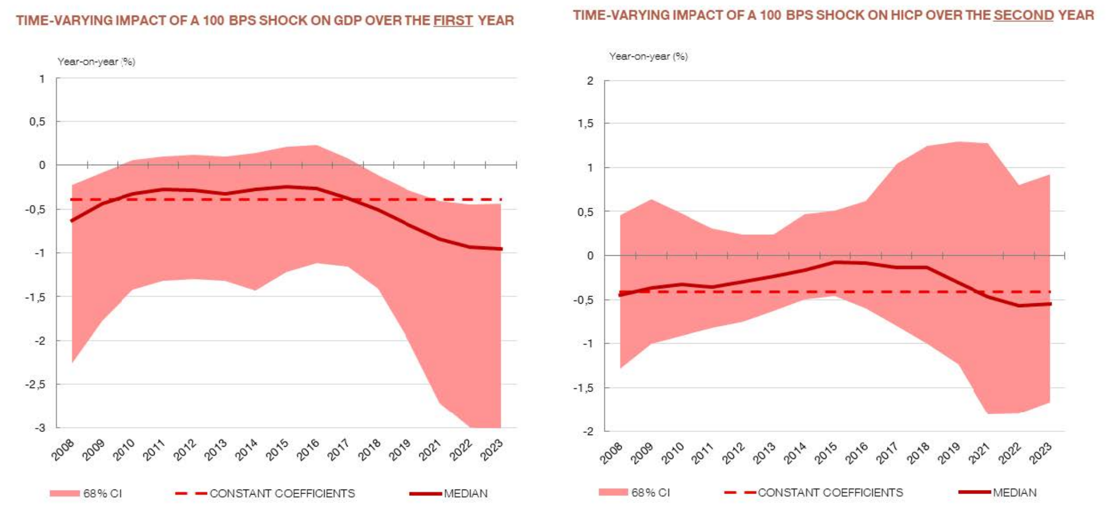

SOURCE: Banco de España.
NOTES: Impact of a 25 bps (non-systematic) monetary policy shock based on recursive estimates of a Structural VAR (SVAR) model extension from Brandt et al (2019). Structural shocks are identified through sign restrictions.

Second, Banco de España evidence based on recursive estimates of the impact of (non-systematic) monetary policy shocks by means of a structural VAR (SVAR) model shows that, in the current tightening cycle, **the transmission of monetary policy to GDP growth and inflation would have been somewhat more intense** than that observed - on average -

[16] Chahad, M., Hofmann-Drahonsky, A.-C., Meunier, B., Page, A. and Tirpák, M. (2022), "What explains recent errors in the inflation projections of Eurosystem and ECB staff?", Economic Bulletin, Issue 3, ECB; Chahad, M., Hofmann-Drahonsky, A.-C., Page, A. and Tirpák, M. (2023), "An updated assessment of short-term inflation projections by Eurosystem and ECB staff", Economic Bulletin, Issue 1, ECB.

before this unprecedented tightening cycle. **This is especially the case for growth, whereas the evidence for inflation is less conclusive.**[17]

Conclusions

All in all, the evidence I have presented today suggests that the transmission of **the current monetary policy tightening cycle to private-sector financing conditions has been forceful** and, in some cases, **stronger than would be expected on the basis of historical regularities.** This reflects some specific features of the current tightening cycle, such as the origin of the inflationary episode in adverse and longer-than-expected supply shocks and the unprecedented intensity and speed of the hiking that seems to have given rise to non-linear effects on the credit supply.

By contrast, **there is no evidence of amplifications effects** through the banking system **linked to the deterioration of private sector balance sheets.** The strong growth in the nominal incomes of households and firms seems to have limited the impact on credit risk. The positive evolution of employment has played a crucial role in this regard. Also, the implementation of Basel III reforms in the EU to all banks, regardless of their size, has improved the liquidity and solvency position of EU banks, thus helping the banking system to absorb and not amplify negative shocks.

As regards the second stage of monetary policy transmission, some of the available empirical evidence might be signalling a **stronger transmission to aggregate demand.** However, **we have persistently underestimated employment growth and we do not find conclusive evidence of a differential impact of our monetary policy on inflation in comparison with** previous tightening cycles.

This analysis confirms that a stronger than expected monetary policy impact remains a downside risk to the euro area growth outlook, as mentioned in our last monetary policy statement. Thus **we shall be closely monitoring the materialisation of such risks and calibrate accordingly the degree of monetary restriction**, in particular in a context in which our staff projections are currently anticipating a gradual return of inflation towards our 2% symmetric target in the medium-run and with the risks to the inflation outlook being, in my view, balanced.

[17] The in-house evidence is based on recursive estimates on the impact of (non-systematic) monetary policy shocks by means of a Structural VAR (SVAR) model extension from Brandt et al (2021) "What drives euro area financial market developments? The role of US spillovers and global risk", ECB Working Paper No. 2560 , identified through sign restrictions.