

Box 6

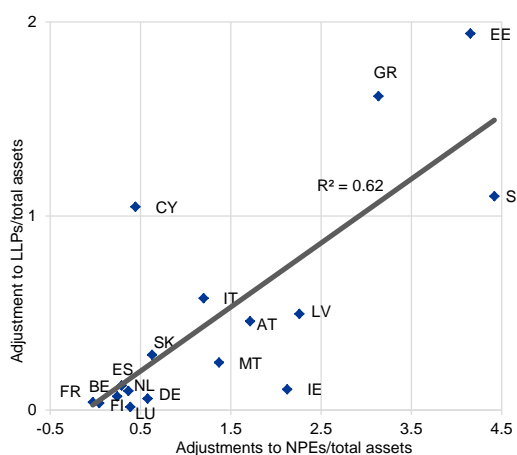
Evaluating the drivers of forbearance and underprovisioning

Chart A

Adjustments to non-performing exposures strongly correlated with adjustments to loan loss provisions

Scatter plot of normalised adjustments to NPEs and normalised adjustments to LLPs

(basis points)



Source: ECB.

Regression analysis using these two measures as endogenous variables can provide an insight into the main drivers of forbearance and underprovisioning. The regression analysis has to take into account specific features of these variables, namely potentially clustered deviations at the country level (via clustered standard errors) and truncation of the endogenous variables.²⁶ The analysis is conducted on variables normalised by bank size to make the measures comparable across banks.

The explanatory variables can be grouped as macroeconomic variables, indicators for the quality of banking supervision, measures of collateral valuation, balance sheet-based measures of bank profitability, balance sheet-based measures of bank weakness and market-based measures of bank weakness. Using this categorisation, the variables are aligned with commonly suspected drivers of underprovisioning and forbearance. While the endogenous variables were published in October 2014, the explanatory variables are lagged, referring to end of 2013 for balance sheet data, averages from 2011 to 2013 for macro-economic data and averages over 2013 for market based data.

Forbearance (or the renegotiation of a loan contract in the event that a borrower fails, or is likely to fail, to fulfil its obligations) is not captured on balance sheets and is therefore not straightforward to measure. It is closely related to underprovisioning, which – alongside forbearance – also includes insufficient provisioning for declared non-performing exposures (NPEs) as a main element.

The ECB's comprehensive assessment contributed to highlighting possible pockets of forbearance and underprovisioning. The results of the comprehensive assessment can be used as proxy variables for these concepts, to the extent that changes to NPEs act as a suitable proxy for forbearance, and the adjustments to loan loss provisions (LLPs) can be a measure of underprovisioning.²⁵ Chart A illustrates the connection between these two concepts.

Regression analysis using these two measures

²⁵ While the changes to NPEs and forbearance also include the results of the harmonisation of non-performing loan definitions, the asset quality review (AQR) adjustment to LLPs captures precisely the underprovisioning in European banks.

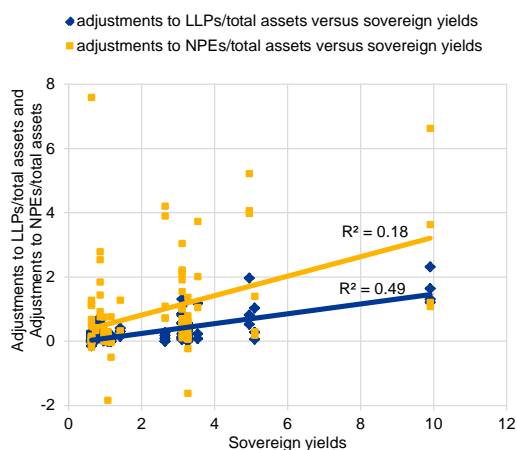
²⁶ The AQR adjustment to LLPs is taken to be non-negative and the adjustments to NPEs can also assume negative values. Therefore, Tobit methodology is used instead of ordinary least squares in the regressions involving the AQR adjustment to LLPs.

Chart B

Sovereign yields can be indicative of forbearance and underprovisioning in a country's banking sector

Scatter plot of sovereign yields, adjustments to NPEs and adjustments to LLPs

(x-axis in percentage points, y-axis in basis points)



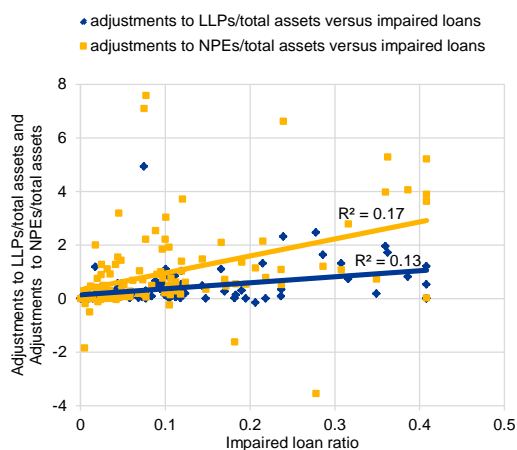
Sources: ECB and Bloomberg.

Chart C

Balance sheet-based measures of bank weakness contain significant information about forbearance and underprovisioning

Scatter plot of normalised adjustments to NPEs and normalised adjustments to LLPs

(y-axis in basis points)



Sources: ECB, SNL and Bankscope

Charts B, C and D illustrate the correlations between some of the explanatory variables with the highest univariate explanatory powers and the endogenous variables. High sovereign yields indicate weak backstops and a bad business environment for banks. Credit default swap (CDS) spreads reflect market perceptions of banks' weakness, while the impaired loan ratio is a key measure of the quality of the banks' loan books based on balance sheet information.

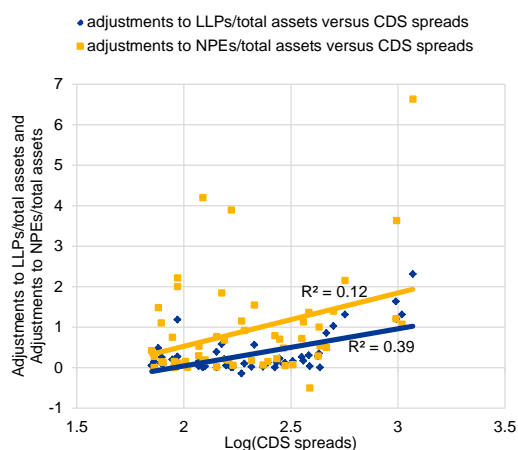
Multivariate regression analysis²⁷ confirms these relationships, revealing both their statistical and economic significance and robustness against different specifications. Overall, the empirical results suggest that weak macroeconomic conditions, moral hazard, a low valuation of collateral and individual bank weakness are the key drivers of forbearance and underprovisioning.

Chart D

Market-based measures of bank weakness can also draw attention to pockets of forbearance and underprovisioning

Scatter plot of CDS spreads, adjustments to NPEs and adjustments to LLPs

(CDS spreads measured in basis points, y-axis in basis points)



Sources: ECB and Bloomberg.

²⁷ The results of a detailed empirical analysis can be found in Homar, T., Kick, H. and Salleo, C., "What drives forbearance? Evidence from the ECB's comprehensive assessment", *Working Paper Series*, ECB (forthcoming).

Putting these results in a financial stability context, forbearance may be warranted for individual counterparties in the event of temporary liquidity-related problems. But it is not appropriate if: (i) it is used to deal with structural issues such as credit-related problems; or (ii) it becomes systemic, as widespread use entails externalities in the form of adverse selection. Likewise, underprovisioning can avoid excessive pro-cyclicality of capital requirements in a downturn; however, if widespread, it contributes to balance sheet opaqueness and ultimately undermines confidence in the banking sector as a whole. The findings here can provide guidance on where to expect pockets of forbearance and underprovisioning, based on publicly available information.
