Basel III: what degree of constraint on banks' credit supply?

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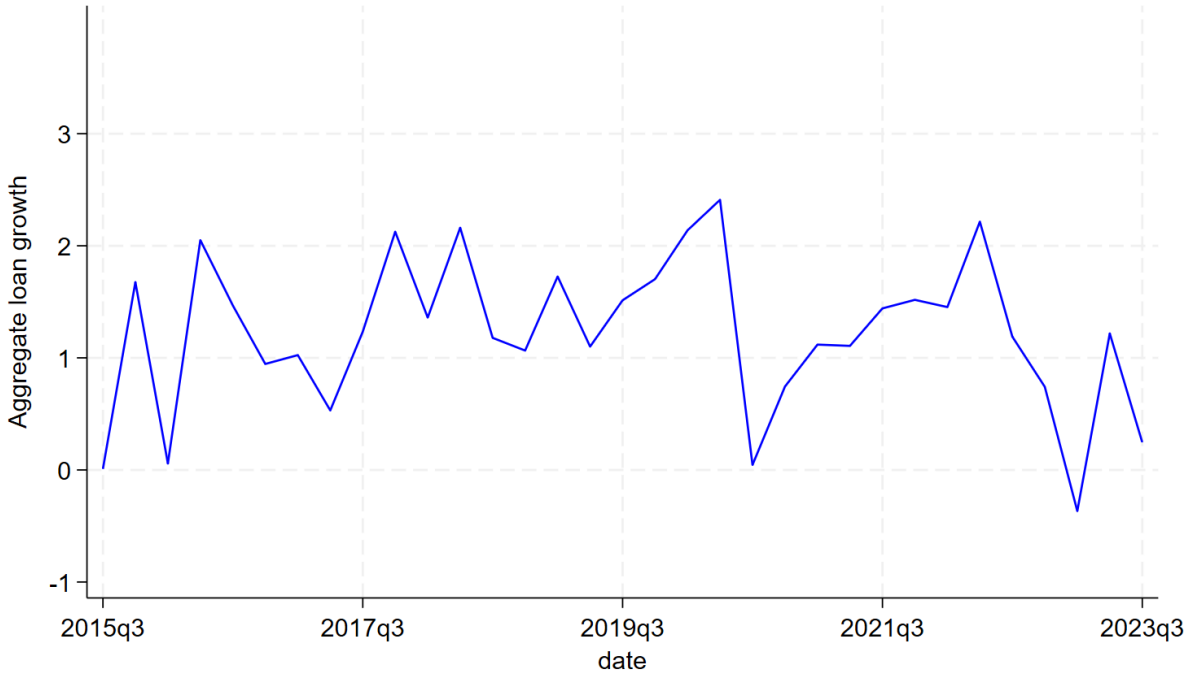
The Basel III agreement strengthened banking regulations after the 2008 crisis, by introducing new solvency and liquidity requirements. An estimate based on French data shows that these requirements have not restricted credit supply. Their interactions mitigated credit growth only in the case of the weakest banks during periods of financial stress.

Chart 1: Growth in loans to the non-financial private sector since 2015



Source: ACPR (54 French banks); authors' calculations

Note: Loans to households and non-financial corporations granted by banks (in %, quarterly growth).

Basel III, an agreement that strengthens the regulatory framework to ensure financial stability

The Basel III agreement, whose broad outlines were agreed upon in 2010 following the 2008 financial crisis and then gradually implemented from 2012, introduces for the first time at international level a combination of bank solvency and liquidity standards. In addition to the pre-

existing risk-weighted solvency ratio, for which the requirements have been tightened, it includes a leverage ratio aimed at preventing an excessive increase in banks' balance sheets relative to their equity, a short-term liquidity ratio aimed at ensuring that banks have sufficient liquid assets at 30 days to cover modeled cash outflows in stress situations (the Liquidity Coverage Ratio, LCR) and a one-year liquidity ratio (Net Stable Funding Ratio, NSFR), aimed at mitigating the transformation risk.

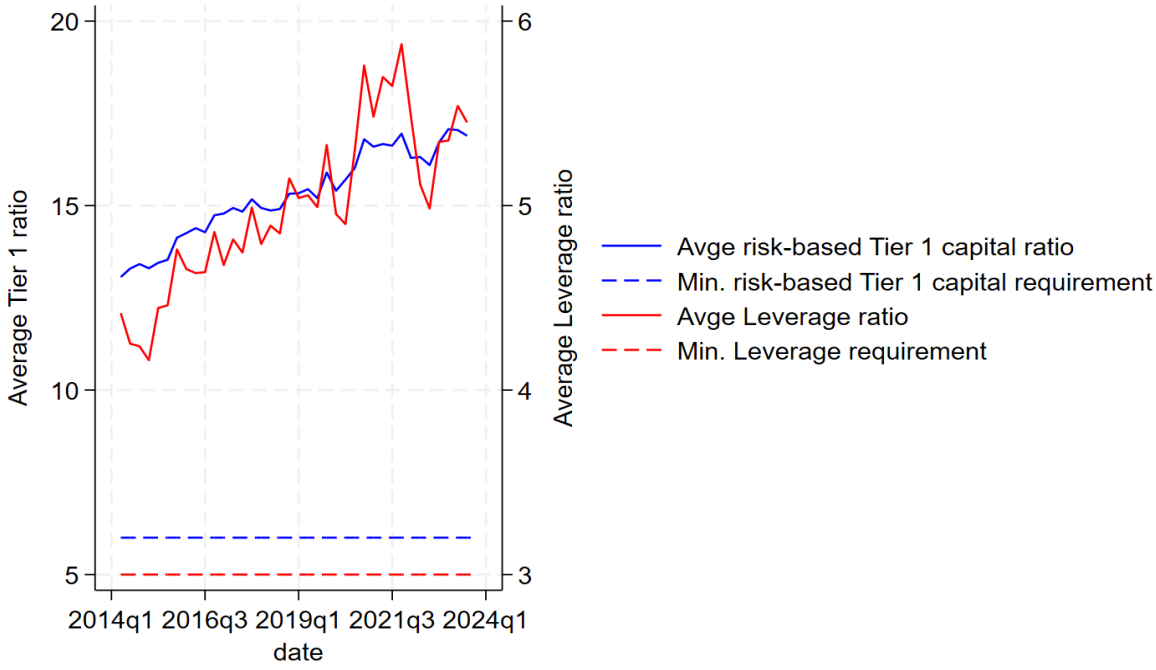
The banking industry has expressed fears about the potentially overly restrictive nature of these standards on banks' credit supply and about the risks of activity fleeing to less regulated sectors. The individual impact of the various ratios has been the subject of a number of studies (notably De Nicolo et al. (2014), Behn et al. (2019) and Covas and Driscoll (2014)) which, on the whole, concluded that the current calibration of the ratios does not appear excessive. However, the economic literature has paid little attention to the combined effects of solvency and liquidity standards, due to the limited historical depth of the data, the time lags and anticipation effects associated with the gradual implementation and the conceptual difficulty of capturing interactions that come in addition to the individual effects of each ratio. By way of illustration, the solvency ratio, which weights bank exposures according to risk, encourages banks to increase their capital when they hold riskier assets. But it can also incentivize banks to hold more assets with less capital-intensive risk-weights, such as real estate financing, thus diverting them from financing the most productive activities. The leverage ratio, which does not take into account assets' degree of risk, limits the excessive expansion of banks' balance sheets but also encourages banks to hold relatively more risky assets for a given amount of capital. This is why the leverage ratio is a complementary ratio to the solvency ratio (the "backstop"); applying the two ratios simultaneously therefore eliminates their counterproductive effects compared to a situation where they would be applied individually.

Ratios that are not supposed to be simultaneously constraining

In a recent working paper (Clerc et al., 2025), we propose a joint model of the regulatory constraints introduced by Basel III and an estimation of the effect of the interactions of these standards on banks' credit supply.

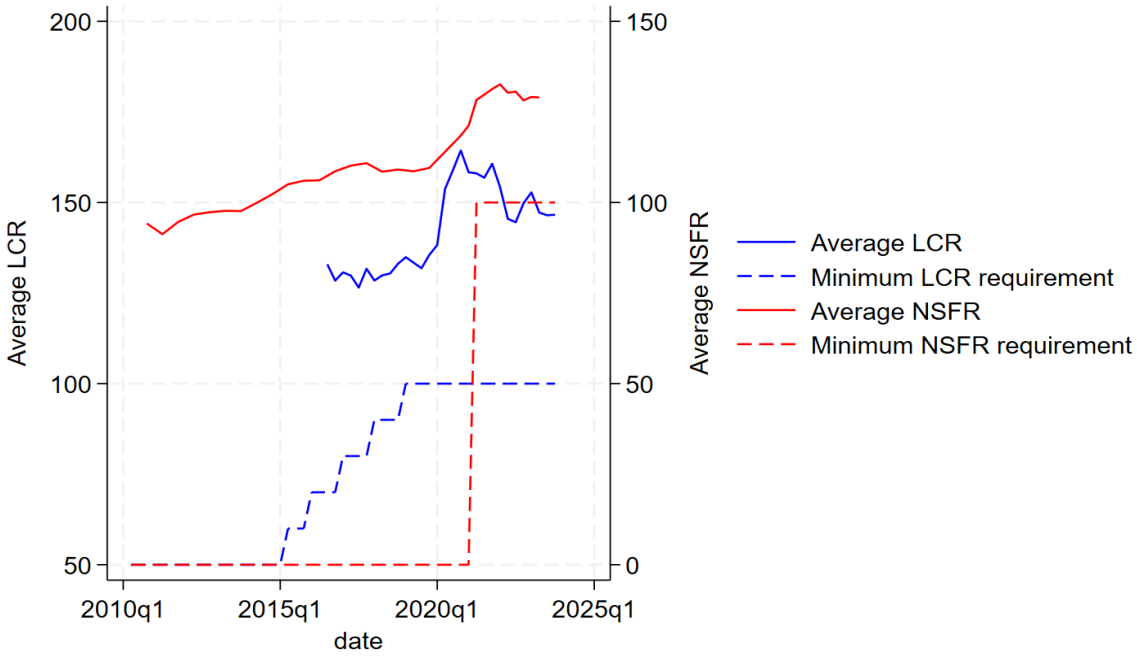
The idea that the implementation of Basel III would have led to significant credit rationing in France seems unlikely: with the exception of a few exogenous shocks such as the Covid-19 pandemic, the growth of credit to the private sector has been consistently positive since the start of the implementation of Basel III (Chart 1). In addition, at the aggregate level, the requirements have not proven excessively restrictive for French banks, since on average the observed solvency and leverage ratios have consistently been at levels well above the regulatory minimums, even at the start of the period (Chart 2), in particular since banks maintain a "management buffer" in order to permanently comply with the regulatory constraints. The same observation can be made for the two liquidity ratios (Chart 3).

Chart 2: Risk-weighted solvency ratio and leverage ratio since 2014 (%)



Source: ACPR (54 French banks); authors' calculations

Chart 3: LCR and NSFR liquidity ratios since 2010 (%)



Source: ACPR (54 French banks); authors' calculations

However, the degree of constraint may vary depending on the bank's business model, the distance to the regulatory minimums and its position in the financial cycle. Based on a theoretical

approach, we attempt to highlight the conditions under which one ratio would be more restrictive than another on the supply of credit.

As regards the interactions between the risk-weighted solvency ratio and the leverage ratio, our approach shows that the relative influence of these two ratios on credit supply depends on the average weighting of credit risks. Below a threshold value of the average risk weighting, the leverage ratio becomes more restrictive than the risk-based solvency ratio. Based on the available data, this threshold value is estimated at 35.3% (taking into account the capital conservation buffer of 2.5%, the other capital buffers and the Pillar 2 requirements, which vary according to each bank and over time), while the average risk weighting of French banks since 2014 has been between 28% and 34%. This result suggests that the leverage ratio is on average more restrictive than the risk-based capital ratio for French banks over the period. In the recent period, an analysis of the data on the distance of the observed ratios from the regulatory minimums shows that the risk-weighted solvency ratio (with its buffers) is more restrictive for certain French banks and that the leverage ratio is more restrictive for others. The same exercise can be carried out to compare the effects of the LCR and the NSFR.

The interactions between ratios only affected the weakest banks during periods of stress

In Clerc et al. (2025), we estimate an empirical model with fixed effects in order to analyse the joint effect of ratios taken two by two on banks' credit supply. Our data cover the panel of 54 French banks providing consolidated reportings on a quarterly basis for the period 2014-2023, i.e. 570 observations. We seek to explain the impact on the growth of loans to the non-financial private sector (households + non-financial corporations) of the Basel III ratios taken two by two and their interactions by controlling for a number of economic and financial variables (in particular variables specific to each bank - other regulatory ratios, size of the bank, share of loans in the balance sheet, non-performing loan ratio, profitability, macroeconomic variables, and individual and time fixed effects). We consider two ratios to be complementary when the combined effect of the two ratios, which takes into account their interaction, is greater than the sum of the individual effects. In this case, the coefficient of the interaction term is of the same sign as the coefficients of these same ratios taken individually. Otherwise, these ratios are considered (partially) substitutable. Given the expected positive effect of individual ratios on credit growth, it can be deduced that a positive effect of the interaction between two ratios reflects a complementarity relationship, while a negative effect of this interaction reflects a substitutability relationship between ratios.

Our results show that the interactions between the different Basel III ratios do not affect credit growth, except in the very specific periods of financial stress and only for the most fragile banks (i.e. the least capitalised and the least liquid). Indeed, these banks have lower management buffers above the minimum regulatory standards, and are therefore more constrained by the combined effect of the various ratios. As a result, they display less dynamic credit growth during periods of financial stress. In addition to the ratios taken into account in our study, the Basel III agreement has also introduced an "output floor", which limits banks' relative capital gains using the internal models approach. The implementation of this measure started in Europe in 2025. It could also interact with the leverage ratio since it consists in increasing the capital requirements of certain banks by limiting the effect of risk weighting.