Box 2

Euro area corporate default probabilities by sector of activity and firm size

Weak economic growth coupled with a high aggregate level of indebtedness has implied challenges for euro area non-financial corporations (NFCs) in recent years. Accounting for more than one-third of banks' total non-bank loan portfolio, the health of NFCs, in particular that of small and medium-sized enterprises (SMEs) which form the backbone of the euro area non-financial corporate sector, is crucial for the soundness of the euro area banking sector. The riskiness of underlying non-financial corporate loan portfolios is not uniform though, as expected default frequencies[4] (EDFs) strongly depend on the sector of activity and firm size.

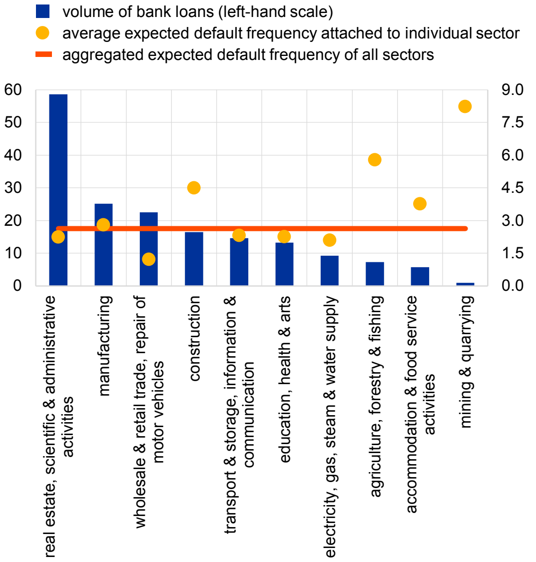
NFC sectors with high bank exposures appear to be less risky, and vice versa. In terms of the sector of activity of NFCs, euro area banks are currently mostly involved in lending to real estate (and related) activities, manufacturing and trade. These sectors of activity account for more than half of total loans to euro area NFCs and currently exhibit default probabilities at or slightly below the average based on data for listed companies from Moody's CreditEdge. By contrast, exposures to sectors of activity which are particularly dependent on commodity markets, overall property market developments and weather conditions (i.e. mining, construction and agriculture, respectively) rank among those with relatively high EDFs (see **Chart A**).

Chart A

Bank exposures and corresponding EDFs differ widely by sector of activity

EDFs of non-financial firms and respective bank exposures by NACE category

(Q4 2015; percentages of banks' total capital and reserves; percentages)



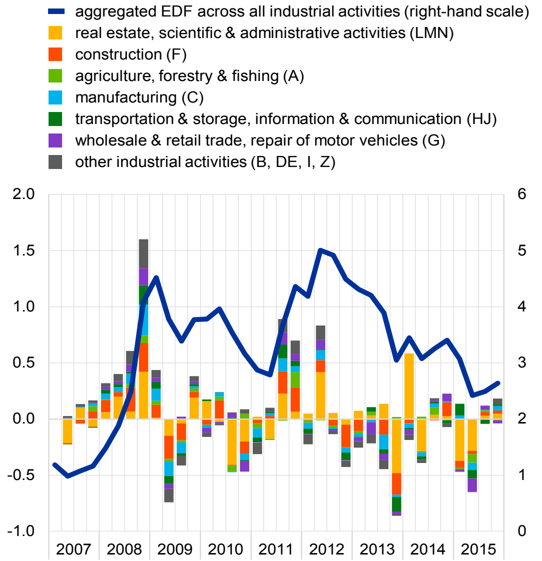
Sources: ESCB, Moody's CreditEdge and ECB calculations.
Notes: Loan volumes are ECB estimates based on national contributions. NACE categories reflect those used in the ESCB Balance Sheet Items (BSI) statistics and cover all NFCs. EDF measures are calculated based on granular data on EDFs within one year for listed companies in euro area countries except for Cyprus, Latvia, Lithuania and Malta. Aggregated EDF weighted by sectoral exposures.

Chart B

Aggregated EDFs are edging down, reaching levels last seen back in 2008

Aggregated EDF developments and contributions to change by sector of activity of NFCs

(Q1 2007 – Q4 2015; percentages; percentage point contributions)



Sources: ESCB, Moody's CreditEdge and ECB calculations.
Notes: EDF measures are calculated based on granular data on EDFs within one year for listed companies in euro area countries except for Cyprus, Latvia, Lithuania and Malta. Aggregated EDF weighted by sectoral exposures covering all NFCs. Letters in brackets represent the respective NACE categories. The category other industrial activities includes mining and quarrying (B), electricity, gas, steam and water supply (DE), accommodation and food service activities (I) as well as education, health and arts (Z).

The riskiness of bank lending to NFCs has overall fallen over the last year, but some sectors still appear to be vulnerable. After being broadly stable throughout 2014, the aggregated EDF of euro area NFCs (weighted by the corresponding sectoral bank exposures) started to fall in 2015, halving since its peak in mid-2012 and dropping to levels last seen in 2008 before the start of the global financial crisis (see **Chart B**). This development was underpinned not only by the ongoing

[4] According to Moody's, expected default frequency is a measure of the default probability of a firm over a certain period of time (typically one year), with default being defined as a failure to make scheduled principal or interest payments.

economic recovery, but also by improving financing conditions for non-financial corporates in terms of both the availability and the cost of funding following measures taken by the Eurosystem. By this metric, most sectors appear to have become less vulnerable by the end of 2015, with exposures often decreasing when EDFs rose, or vice versa, suggesting that banks' overall loan book became somewhat less risky. However, the increase of the median EDF at the turn of 2015-16 in some sectors, such as construction, may indicate a slight pick-up in sectoral risks amid relatively high bank exposures to these sectors (see **Chart C**).

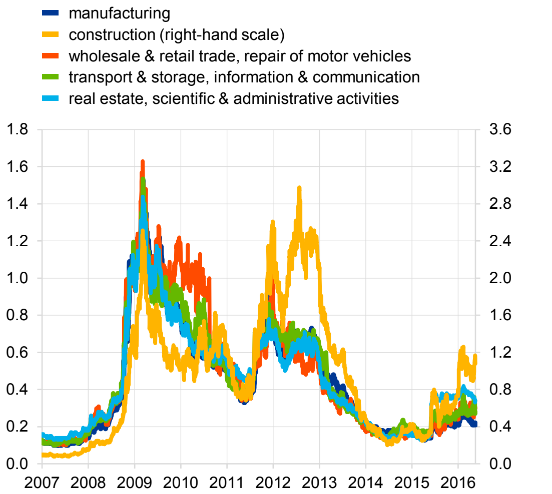
Beyond the sectoral aspects of lending, firm size is an important metric for riskiness too. Interestingly, according to firm-level EDFs based on Moody's RiskCalc for non-listed companies, risks in relation to SMEs have fallen to a similar level to those for larger firms. Moreover, the breakdown of SMEs by firm size indicates that EDFs have fallen gradually over the course of 2015 irrespective of firm size (i.e. micro, small and medium-sized enterprises). At the same time, micro firms still have the highest EDFs across the majority of industrial activities. Moreover, SMEs active in cyclical sectors, such as construction or consumer goods production, have the highest EDFs (see **Chart D**).

Chart C

Some sectors appear to have become more vulnerable recently

Median of EDFs within selected sectors

(Jan. 2007 – May 2016; percentages)



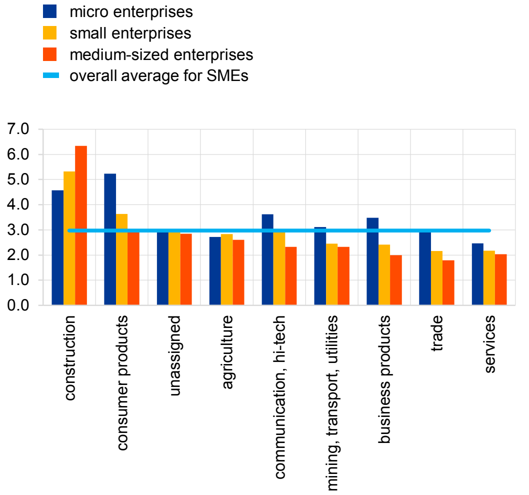
Sources: Moody's CreditEdge and ECB calculations.
Note: Median calculated based on granular data on EDFs within one year for listed companies in euro area countries except for Cyprus, Latvia, Lithuania and Malta.

Chart D

EDFs for SMEs are overall the highest in construction and for micro firms

EDFs of SMEs by sector and size category

(Q4 2015; percentages)



Sources: Moody's RiskCalc, BvD Amadeus, BvD Daphne and ECB calculations.
Notes: Based on the size of total assets, small and medium-sized enterprises were classified into micro firms (up to EUR 2 million), small firms (between EUR 2 and 10 million) and medium-sized firms (between EUR 10 and 43 million). Data are not available for Latvia and Lithuania. Average EDFs for SMEs are weighted by total assets.

All in all, with the economic recovery gaining traction, the risk metrics of euro area non-financial firms have tended to improve across sectors and firm sizes, but pockets of risk remain. The crisis has vividly illustrated the high cyclicality of the corporate sector which, together with a strong concentration of bank exposures in a few sectors, may suggest the need for close monitoring and – where warranted – the application of macroprudential instruments going forward.