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Are insolvent firms being kept afloat by excessively low interest rates?

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Since the crisis, interest rates on bank loans to firms have fallen sharply, but have also become more widely dispersed. This indicates that banks are discriminating more in the credit market on the basis of borrower risk. Lending to struggling firms at low interest rates remains rare. This tends to suggest there has been no significant rise in zombie lending, i.e. the provision of loans at artificially low interest rates to help keep otherwise insolvent companies afloat.

The 2008 financial crisis and subsequent tightening of prudential regulation could have affected credit allocation in France in a number of ways. On the one hand, the banking sector could have reacted by tightening credit standards. However, surveys of banks and firms, and recent studies, notably by the Banque de France (Kremp and Sevestre, 2013), do not support this hypothesis. Another possible response is stronger price differentiation based on the level of credit risk associated with each firm. This option is not particularly problematic, provided it does not undermine the flow of financing to the economy and that banks do actually discriminate on the basis of borrower risk.

The experience of Japan in the 1990s and early 2000s offers another possible alternative. Following the real estate crisis, Japanese banks supported insolvent or barely solvent companies by extending loans at artificially low rates. This allowed them to avoid recording losses that would otherwise have required them to increase their capital levels in order to meet the regulatory solvency ratio (Cooke ratio). This phenomenon is referred to as zombie lending, and the firms receiving the loans are known as zombie firms (Caballero *et al*., 2008, Hoshi, 2006, Peek and Rosengren, 2005). Loans to ailing firms were identifiable by their particularly low interest rates, which signalled that the bank was subsidising the borrower. After the 2008 financial crisis, there were fears that a similar phenomenon might emerge in other countries, notably in the United Kingdom (Broadbent, 2012).

This *Rue de la Banque* seeks to assess whether France has been affected by zombie lending. More generally, it looks at how corporate lending rates – notably the lowest – have evolved in relation to levels of borrower risk. The analysis covers short-term as well as investment loans, and takes into account the narrowly defined effective rates (NDER), which correspond to the interest component of the annual percentage rate of charge (APRC). It draws on several Banque de France databases, in particular the Sirius and M_Contran surveys of bank branches.[1]

1 *For further details on the data and calculations used, see Avouyi-Dovi* et al. *(2016).*

Since the crisis, corporate lending rates have declined sharply, but their dispersion has increased

The financial crisis, which began in the fourth quarter of 2008, marked a reversal in the upwards trend in bank lending rates seen since 2005. Median rates fell by 4.7 percentage points (pp) in less than a year on short-term loans, and by 2.8 pp over two years for long-term loans (see Charts 1). They subsequently rose again slightly in 2010 and 2011 as a result of the sovereign debt crisis in certain euro area countries (Greece, Portugal, Ireland, Spain); however, once the tensions began to ease, the downward trend in rates resumed. Overall, from end-2008 to end-2014, median rates fell by 3.5 pp for both short and long-term loans.

This decline in bank lending rates can be interpreted as resulting from lower inflation, and from the pass-through of Eurosystem monetary policy stimulus to firms *via* the banking system (Avouyi-Dovi *et al*., 2015).

Charts 1a and 1b show the rate spread between firms benefiting from the most favourable lending conditions (1st quartile in the rate distribution) and those with the worst (3rd quartile). The spread can be seen as reflecting the banks' perception of the credit risk on the loan: if a borrower is deemed high-risk, banks will charge a higher rate of interest to cover the potential loss in the event of default. However, it could also reflect differences in regulatory capital requirements. Under prudential regulations, banks are required to hold larger amounts of capital for loans deemed higher risk. Following the financial crisis, these regulations were tightened and the measurement of risk for determining capital requirements was refined.

The spread between rates in the first and last quartiles has widened since the crisis: between 2006 and 2008 it averaged 1.9 pp, while from 2010 to 2014 it averaged 2.8 pp for loans with a maturity up to one year and 1.0-1.3 pp for loans over one year.

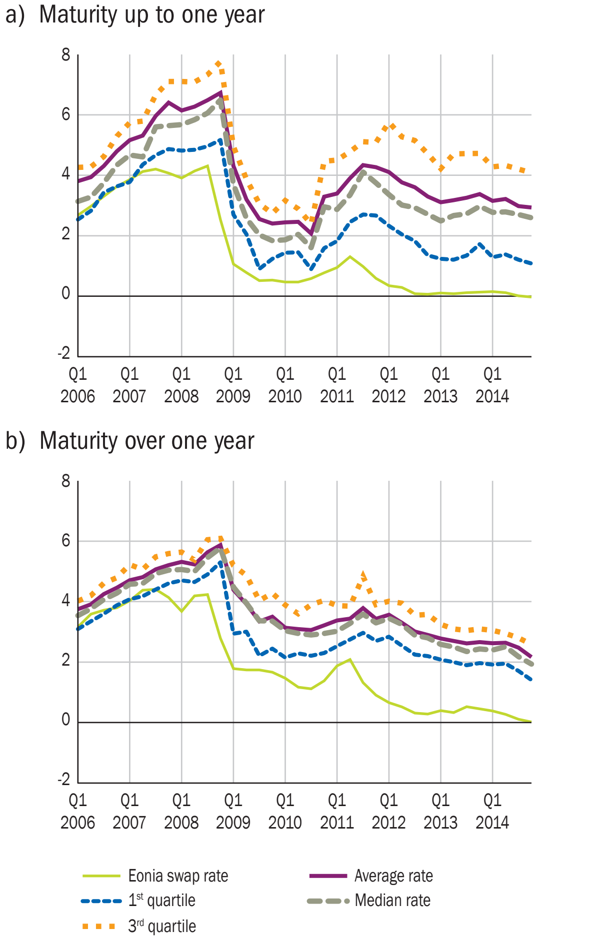
Since the crisis, banks have applied increasingly differentiated loan rates depending on borrower quality

To study the link between the increased dispersion of bank lending rates and credit risk, we break the available rates down according to two borrower characteristics: the company rating attributed to the borrower by the Banque de France, which reflects its ability to meet its financial commitments over a three-year horizon,[2] and the firm's size.

C1 Narrowly defined effective rates (NDER)

(new short-term and investment loans to non-financial corporations)

(in %)



Sources: Banque de France and authors' calculations.

According to our calculations, as detailed in Avouyi-Dovi *et al*. (2016), for each size category, average loan rates were lower for those firms with the best Banque de France rating, regardless of loan maturity. Moreover, the spread between rates granted to top-rated firms and those granted to lower-rated firms increased markedly over the period. More generally, the interest rate hierarchy was primarily determined on the basis of company size for loans up to one year, and company rating for loans over one year.

2 *For a detailed description of the Banque de France company rating system, see the* Guide de référence de la cotation *(Banque de France, 2015), and the articles by Avouyi-Dovi* et al. *(2016) and Schirmer (2014).*

How can we identify zombie loans or zombie firms?

The rate hierarchy described above reveals no particular anomalies: rates are set according to a hierarchy which takes into account the credit risk implied by the firm's rating or size. However, these are average rates: the rates within each business category and the level of risk are heterogeneous.

Excessively low rates are of particular interest as they can signal that credit allocation is sub-optimal from the point of view of the broader economy. They could, of course, be promotional rates, which the banks offset in other areas of the client relationship, through higher rates of interest on other loans, bank charges or a large volume of transactions. Nonetheless, studies of the financial crisis in Japan have highlighted another form of low-interest credit – zombie lending.

Caballero *et al*. (2008) have shown that zombie lending can have serious consequences for the economy: it prevents the reallocation of human resources and capital from impaired firms to more profitable players. As a result, the costs of labour and of capital are higher than if the reallocation had occurred, reducing the profitability of healthier firms or new entrants, and discouraging investment and business creation. Industries most affected by zombie lending tend to have lower labour flows and productivity rates than other sectors of the economy. Part of the downward trend in productivity witnessed in Japan in the 1990s can be attributed to the zombie phenomenon, as around 30% of firms – accounting for around 20% of corporate assets – benefited from this form of credit support (Bergeaud *et al*., 2015).

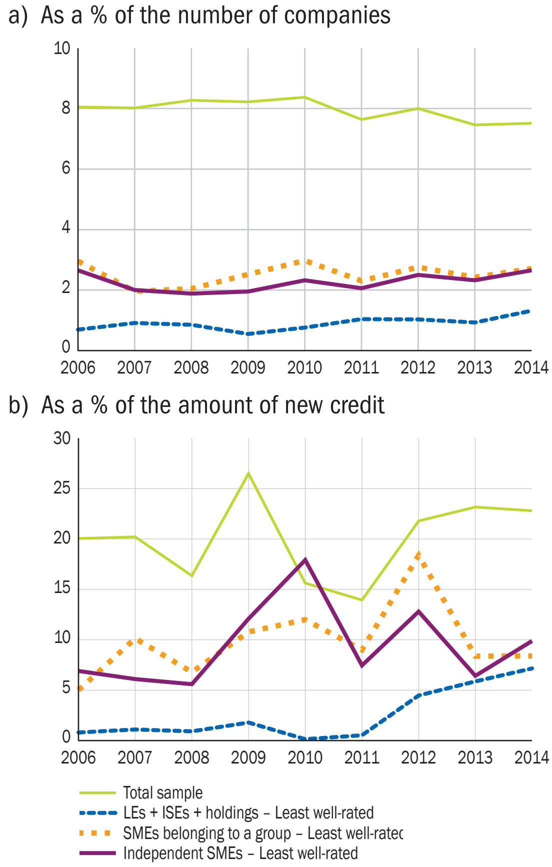
In order to identify zombies, Caballero *et al*. (2008) first define a hypothetical lower bound, below which they consider an interest rate to be exceptionally low. If a high-risk firm is granted a rate below this lower bound, it can be assumed to be receiving a subsidy from the bank. The authors estimate the average interest rate paid by a firm in a given year using balance sheet and income statement data. The Banque de France's Sirius and M_Contran databases provide interest rates on individual loans and therefore make it possible to directly identify low rates. A firm is assumed to have been granted particularly advantageous borrowing conditions if the rate on its loan is lower than the highest of the rates offered to the 10% of firms benefiting from the lowest rates and best Banque de France rating (i.e. the 1st decile of rates for companies rated 3++ to 4).

In France, the share of insolvent firms benefiting from particularly low interest rates remains limited

Chart 2a shows the share of French firms benefiting from particularly low interest rates, while Chart 2b shows low-interest loans as a share of overall new lending. Given that the definition of the lower bound is set in a relatively arbitrary manner, these percentages are normative and must be interpreted in terms of their trend. Over the whole sample, 8% of firms on average benefit from low-interest loans. This share increased to 8.4% in 2009, before falling to 7.5% in 2014. In addition, low-interest loans

C2 Prevalence of low-interest loans

(%)



NB: Calculations based on new short-term and investment loans to non-financial corporations; share of firms and share of new lending with rates below the first decile of rates granted to firms rated 3++, 3+, 3, 4+ and 4. The green line shows the share of all firms benefiting from low-interest loans, irrespective of their rating; the other lines show the share of less well-rated companies with low-interest loans among LEs, ISEs and holding companies, SMEs belonging to a group and independent SMEs in the sample. The lowest ratings are 5+, 5, 6, 7, 8, 9 and P.
Source: Banque de France and authors' calculations.

average around 20% of new lending over the entire period under review, reflecting the fact that low rates tend to be associated with larger loans. The proportion of low-interest new lending increased to about 26% following the crisis, before falling back to 22% in the recent period.

Given that the firms benefiting from low-interest loans can be financially sound, we look specifically at the share of low-interest loans extended to less well-rated companies, by business size. In these cases, the rates can be regarded as being exceptionally low, and the granting of such loans to these firms can be taken as an indication of zombie lending. In each size category, the share of less well-rated firms benefiting from low interest rates is more or less stable over the period: slightly over 2% of SMEs (independent or otherwise) and 0.9% of large enterprises (LEs), intermediate-sized enterprises (ISEs) or holding companies. However, as a share of new lending, low-interest loans are more volatile, reflecting the sensitivity of the indicator to large-value loans. For SMEs (independent or otherwise), the share of low-interest loans increased during the crisis but has since declined. For larger firms, the share is small, but has increased significantly since 2011:[3] in 2014, 7% of the total amount of credit extended to LEs, ISEs or holding companies was granted at particularly low rates to firms without a Banque de France rating of between 3++ and 4. However, given that these rates were mainly on large loans to large enterprises, the banks may have been trying to avoid recording losses. Consequently, zombie lending appears to be relatively rare in France.

Correlatively, low-interest loans are primarily extended to well-rated firms. This may indicate that competition between banks is leading them to grant particularly low rates in order to hold onto low-risk clients.

3 *This increase is mainly attributable to companies rated 5 and 5+, whose default rates are much lower than for firms rated 6 and above.*

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