

## Box 5

## FIRMS' LIQUIDITY MANAGEMENT DURING PERIODS OF FINANCIAL STRESS

It has long been argued that banks' liquidity problems can have a pernicious influence on the credit conditions of non-financial firms. Banks' inability to access market financing can contribute to the tightening of lending standards for firms – a situation clearly observed in the bank lending surveys conducted by the ECB in the wake of the financial crisis in 2007 and 2008.<sup>1</sup> Such a development can contribute to the transformation of non-financial firms' initial liquidity problems into solvency problems for the firms whose bank credit lines are cut, thereby increasing the likelihood of loan defaults and capital losses for banks.

Undeniably, a tightening of bank lending standards, whatever form it takes (e.g. higher borrowing rates, credit rationing, etc.), ultimately materialises in an adverse liquidity shock to non-financial firms. But one factor of central significance for governing the size of these second-round effects that are key for financial stability is the question as to whether firms are able to find alternative sources of funds and – more generally – how they manage their liquidity during periods of financial stress. Two common reactions of firms include, first, reducing activity at the firm level and, second, drawing on already existing explicit (i.e. pre-agreed) and implicit credit lines. Firms may react to credit constraints by curtailing their activity – cutting back on inventories, investment, workforce and, therefore, production. Recent evidence suggests that an important channel is international trade, where the decline in the credit supply during the 2008-09 crisis significantly reduced the volume of exports.<sup>2</sup> This box examines the second avenue, with a focus on the role of trade credit and its importance over the last few years. It argues that buffers were in place within the non-financial corporate sector that helped to mitigate the contraction of activity. For instance, financially constrained (i.e. small, private, non-investment-grade) European and US firms reportedly drew on credit lines available from their banks in 2008 and early 2009. During the crisis, these constrained firms also invested relatively more (or disinvested less) than those that did not have

1 See, for example, Box 1 in ECB, *Monthly Bulletin*, January 2009.

2 See D. Paravisini, V. Rappoport, P. Schnabl and D. Wolfenzon, "Dissecting the effect of credit supply on trade: evidence from matched credit-export data", December 2010 (available at: [http://pages.stern.nyu.edu/~sternfin/pschnabl/PRSW\\_Dec10.pdf](http://pages.stern.nyu.edu/~sternfin/pschnabl/PRSW_Dec10.pdf)).

any such credit line.<sup>3</sup> All in all, these results suggest that, as “options on liquidity”, credit lines help firms absorb adverse liquidity shocks and insulate their real activity from liquidity conditions. Lines of credit from banks, however, appear to be short-lived as their terms and availability deteriorate rapidly during financial crises, when banks themselves become financially strained.

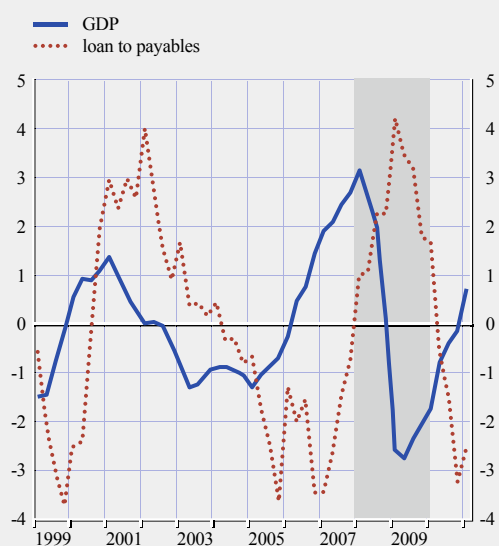
In addition to these explicit lines of credit, firms usually have the possibility to draw on implicit lines from their suppliers as well, by postponing the payment of trade payables that come due. Given that trade payables represent about one-fourth of firms’ liabilities in the EU, such lines of credit are potentially an important source of emergency funding for firms. For example, there is evidence that, because of a shortage of liquidity, more than 2% of French firms pay their trade debt later than initially agreed upon with their suppliers every quarter and that, when they occur, payment incidents amount to, on average, 8.5% of all trade payables.<sup>4</sup>

Estimates suggest that a sizeable fraction of the liquidity shocks faced by credit-constrained firms are thus passed on to suppliers along the trade credit chain. The chain of payment incidents, however, stops whenever it reaches firms that have access to outside finance (so-called “deep pockets”). Overall, these findings are consistent with the idea that firms provide liquidity insurance to each other in a way that alleviates the adverse consequences of credit crunches. The substitutability between bank loans and trade credit observed over the business cycle can be viewed as a consequence of this liquidity insurance mechanism (see the chart below).

During periods of financial distress, liquidity is re-allocated within the non-financial corporate sector from firms with access to outside finance along trade credit chains to credit-constrained firms. This re-allocation process goes beyond the mere bilateral relationships of constrained firms with unconstrained suppliers, however. In effect, all types of firms, including credit-constrained firms, supply liquidity insurance to their customers. The reason is that, when confronted with payment incidents, credit-constrained firms also have the option to postpone payments to their suppliers, and so on. In other words, they can afford to provide liquidity insurance because they are themselves insured by their suppliers. It follows that, by extending the maturity period of their trade credit, suppliers do not only ease the financial constraints faced by their direct customers, but ultimately also those faced by their customers’ customers and other firms they may not have direct business relations with. Only deep pockets ultimately inject fresh liquidity

#### Substitution effects between trade credit and bank loans during the 2008-2009 crisis in the euro area

(Q1 1999 – Q1 2011; percentage deviation from trend)



Sources: ECB, Eurostat and ECB calculations.  
 Note: The GDP series is the Hodrick-Prescott filtered series of real GDP. The loan-to-payables series is the Hodrick-Prescott filtered series of the ratio of bank loans to trade payables.

3 See M. Campello, E. Giambona, J.R. Graham and C.R. Harvey, “Liquidity management and corporate investment during a financial crisis”, November 2010 (available at: [http://faculty.fuqua.duke.edu/~charvey/Research/Working\\_Papers/W99\\_Liquidity\\_management\\_and.pdf](http://faculty.fuqua.duke.edu/~charvey/Research/Working_Papers/W99_Liquidity_management_and.pdf)).

4 See F. Boissay and R. Gropp, “Trade credit defaults and liquidity provision by firms”, *ECB Working Paper Series*, No 753, 2007.

into the system, however. For instance, a study based on French firms shows that firms that have unconstrained (notably listed) suppliers have 12% more payment incidents that are due to cash shortages than firms that do not have any unconstrained supplier.<sup>5</sup> They also keep significantly less cash as a precautionary provision on their balance sheet (11% of total assets) than other firms (16% of total assets). Accordingly, unconstrained suppliers face a disproportionate amount of payment incidents: on average, the findings suggest that French listed firms face 33% more payment incidents that are due to the illiquidity of their customers than similar but unlisted firms.

All in all, these results suggest that credit lines provide some means of mitigating adverse feedback loops between price- or quantity-rationed bank funding and firm-level activity. In the end, the extent to which listed firms accommodate payment incidents and inject liquidity into the rest of the economy depends, of course, on their ability to raise fresh funds. This box suggests that, ultimately, a factor contributing to alleviating financial stability strains may be an inbuilt backstop in the form of a vibrant and liquid market for non-financial corporate commercial paper, which would replace bank loans during periods of financial stress.

<sup>5</sup> Boissay and Gropp, *op. cit.*