

Is lack of credit a barrier to green investment?

By Antonio Accetturo, Giorgia Barboni, Michele Cascarano, Emilia Garcia-Appendini and Marco Tomasi

The EU's ambitious goal to achieve net-zero emissions by 2050 has pushed many firms to invest in reducing their environmental footprint. Almost half of firms in the European Investment Bank Investment Survey had invested in energy efficiency in 2020, a ten percentage point increase relative to the year before.

Yet, according to the same survey, climate-related investments also faced financial barriers, particularly in the EU: more than one quarter of firms indicated the availability of finance as a major obstacle. Is lack of credit supply a barrier to green investment?

In our paper, we find that green investments are more sensitive to bank credit supply than other capital investments. The relationship between credit availability and sustainable investments is more pronounced in regions where local environmental preferences are stronger and local governments subsidise the green transition.

Milton Friedman (1970) famously argued that a firm's social responsibility is to make as much money as possible for its shareholders. A large literature since then has argued that, as green investments are partly motivated by benefiting others, better credit supply would not necessarily encourage an increase in green investments, because the credit would be used for other profit-maximising activities.

Yet, recent research finds that shareholders' environmental and social preferences are increasingly being incorporated into firms' investment decisions (Hart and Zingales, 2017), making sustainable investment decisions more sensitive to external funding.

Can bank credit help firms overcome financial obstacles on the path to decarbonisation? We address this question by studying the actual investment behaviour of almost 30,000 Italian firms between 2015 and 2019.



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We use dictionary-based text-mining to read through the comments to the financial statements of Italian firms and identify those that carried out green investments (such as installing photovoltaic panels or adopting electric vehicles). We match this measure with detailed information about the firms’ financials and information on borrowing activity from banks during this period.

We estimate the extent to which the availability of bank credit affects decisions to make a green investment. We use the variation of bank willingness to lend at sectoral and provincial level as a way to measure bank credit supply at firm level.

Our results show that a one standard deviation increase in the amount of credit supply increases the likelihood of making green investment by between 1.9 and 3.4 percentage points. Interestingly, we do not find this to hold for general investments (Figure 1). This suggests that during the period under consideration investment decisions were not in general constrained by credit availability.

We explore differences in several firm characteristics to understand whether they drive the elasticity of green investments to credit supply. We find that more liquid and more profitable firms display higher sensitivity of green investments to credit supply. This means they are more likely to make green investments if there is more credit available. As better firms can access external finance to a larger extent, this evidence suggests that green investments may absorb larger financial resources, making them more reliant on external financing than other investments.

Next, we explore the roles of preferences, public subsidies and polluting intensity for green activities.

While we are unable to observe individual firm preferences, we can look at the preferences of the areas where their headquarters are located. We use the 2017 European Value Study to measure the share of the population placing a higher weight on environmental protection, and we use information on Google searches to measure the prominence of climate change as an issue.

We find that where environmental awareness is higher, firms are more likely to carry out green investments when credit is available, and where awareness is low, they do not pursue them.

Another potential driver of green investments are public subsidies, the effects of which can be measured at the regional level. We find that only firms located in high-subsidy regions show a statistically significant tendency to invest in green assets when their credit supply increases.

When we include the environmental consciousness of the local population in the analysis, we find that only firms located in regions belonging to both the high-green subsidy and high-environmental awareness groups are more likely to carry out green investments (Figure 2). These results suggest the existence of a complementarity between bank credit and public subsidies in stimulating sustainable investments.

We might expect that firms in industries that emit large amounts of greenhouse gases benefit more from receiving credit for sustainable investments, as they are more exposed to the risks linked to the transition to a green economy. ►

We assign firms to either high- or low-emission groups, according to the sector in which they operate. We find that the estimated effect of credit supply is larger among the most polluting sectors, but it is statistically significant only for industries with low emissions (Figure 3).

In summary, we find that bank credit does play a role in financing investments in cleaner technologies. Our findings show that green investments respond strongly to credit supply, because these investments are more capital intensive. This implies that credit crunches have the additional negative consequence of slowing down the adoption of more environmentally friendly technologies.

We also show that the relationship between credit availability and green investments is more pronounced in regions where local environmental preferences are stronger and local governments provide additional public resources. By encouraging firms to use external funds to make sustainable investments, environmental advocacy among citizens and policymakers plays an important role in speeding up the green transition. ◀

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References

Friedman, M. (1970). The social responsibility of business is to increase its profits. *New York Times Magazine*, p. 32.
 Hart, O. and Zingales, L (2017). Companies Should Maximize Shareholder Welfare Not Market Value. *Journal of Law, Finance and Accounting*, 2: 247-274.
 Kalantzis, F., Dominguez, S. and Amati, A. (2021). European firms and climate change 2020/2021. European Investment Bank.

Figure 1: Impact of bank credit supply on the likelihood to carry out green and general investment (90% confidence interval)

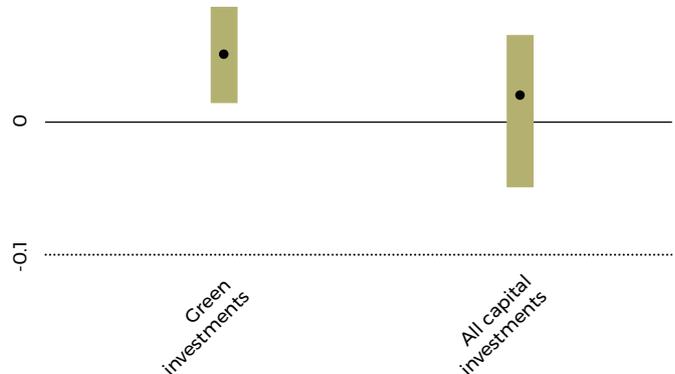


Figure 2: The impact of bank credit supply on the likelihood to carry out green investments, in the whole sample and by level of green subsidies and environmental awareness

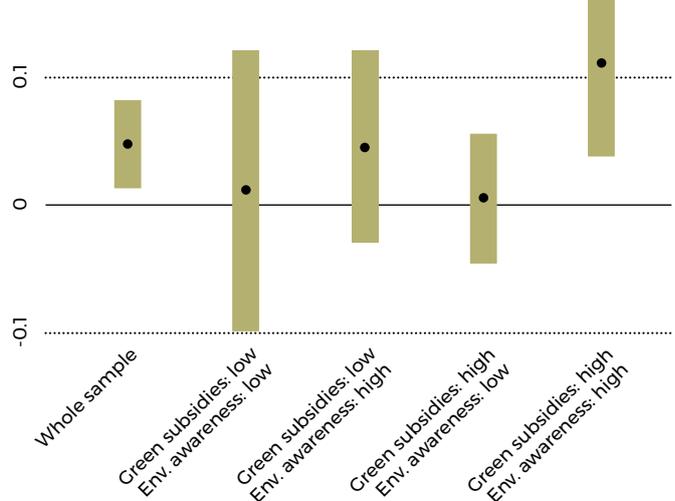


Figure 3: The impact of bank credit supply on the likelihood to carry out green investments, in the whole sample and by level of sectoral CO2e emissions (90% confidence interval)

