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DEBrief

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Access to Credit and the Expansion of Broadband Internet in Peru

- Access to reliable, affordable, high-speed broadband internet is critical for boosting economic growth and reducing the digital divide. It can also boost access to credit for MSMEs.
- This study, jointly supported by the IDB and IDB Invest, analyzes the effects of the broadband expansion in Peru on the credit market.
- The results show that the effects are sequential: after broadband arrives, firm performance improves, followed by increased access to credit.
- Micro and small firms with limited credit histories benefited the most in terms of growth in total credit amounts and number of lenders per firm.
- The arrival of broadband also led to lower interest rates, driven by micro and small firms gaining access to the technology to improve their business and creditworthiness.

SUSTAINABLE DEVELOPMENT GOALS

8 DECENT WORK AND ECONOMIC GROWTH

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

CONNECTIVITY AND CREDIT FOR MSMES

Access to reliable, affordable, high-speed broadband internet is critical for boosting economic growth and reducing the digital divide. For micro, small, and medium-sized enterprises (MSMEs), which represent over 99% of firms in Latin America and the Caribbean, access to broadband has many potential benefits, from supporting uptake of new technologies and improving productivity and competitiveness to opening new e-commerce sales channels, among others.[1] Expansion of broadband can also play a role in increasing access to credit for MSMEs.

In Peru, only 9.4% of MSMEs have access to formal credit,[2] greatly hindering their ability to grow, invest, and create jobs. This gap is in part due to an information problem. The traditional credit screening approaches that banks use to assess loan applicants are not well-suited for MSMEs, many of which have limited or no credit history and insufficient collateral.

At the same time, fintechs are increasingly using alternative data sources, such as digital transaction histories to assess borrowers with low or no credit scores. Therefore, connectivity is critical for MSMEs to not only benefit from these advances, but also to enhance their ability to get loans from traditional lenders.

MORE BROADBAND, MORE CREDIT?

From 2014 to 2020, Peru rolled out its national broadband network of fiber optic cables. The main network connected 180 of the country's 196 provincial capitals, followed by the expansion of the private sector network, allowing consumers and firms to access the fastest available FTTX (fiber to the X) technology. The average cost in megabits per second (Mbps) dropped by 65% between 2015 and 2017.

This study, jointly supported by the IDB and IDB Invest, analyzes the effects of broadband expansion on the credit market, particularly for MSMEs. It takes advantage of the staggered roll out of the new technology, which arrived at bank branches and firms in different locations at different times, to analyze both the supply (banks) and demand (firms) effects on credit.

The study used data on broadband coverage at the *Centro Poblado* level, which is the smallest administrative area in Peru.

The analysis was based on a combination of data from the Peruvian taxpayer registry, including information on the geolocation of firms and an indicator for firm sales, and the credit bureau for information on firm loans and interest payments.

The sample of analysis included 21,600 firms (large and MSMEs) with positive outstanding credit and access to inferior DSL or copper cable technology (but not broadband) prior to the 2014 roll out. Overall, credit data was obtained for the period 2010-2020.[3] The counterfactual scenario was constructed using pre-roll out credit data (2010 to the first year of broadband arrival, 2014) and data for firms in areas that broadband never reached.

KEY FINDINGS

Results for the credit market

The study focused on the impact of fixed broadband on the following variables: total credit amount per firm, number of firm-bank relationships, number of loans per firm-bank relationship, and the entry/exit of firms to/from the credit market.

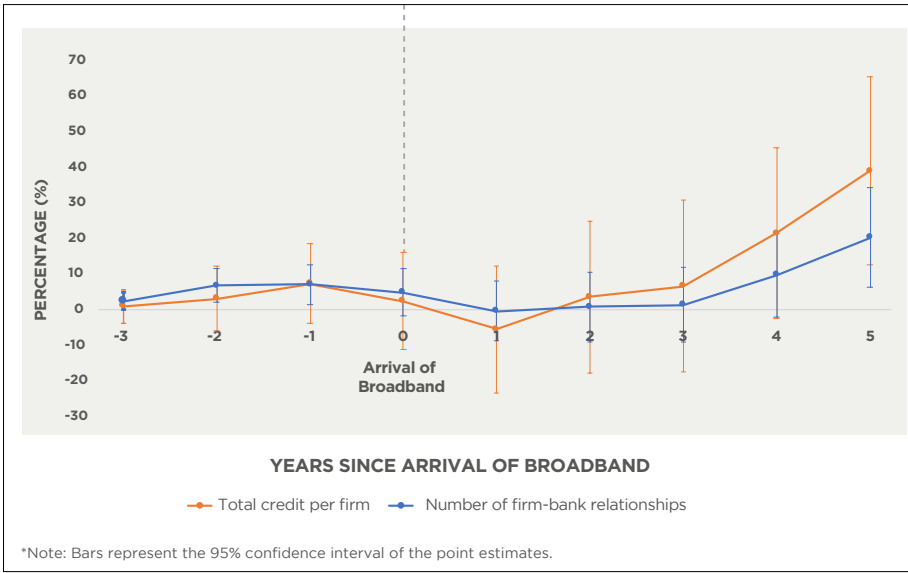
As far as total credit per firm, results appear in years four and five after the new technology arrives, indicating a lag between local availability of broadband and the effects over aggregate borrowing at the firm level.

1. IDB, 2023. Informe anual del Índice de Desarrollo de la Banda Ancha: brecha digital en América Latina y el Caribe.
2. OECD, 2022. Financing SMEs and Entrepreneurs 2022: An OECD Scorecard.
3. Data from 2020 was not included in the estimations, given the extraordinary measures taken by the Peruvian government to provide liquidity during the COVID crisis.

This sequential timing makes sense; after broadband arrives, it takes time for firms to adopt the technology and improve their performance, and only then are banks willing to lend them more.

As shown in Figure 1, in year five after the arrival of broadband, total credit per firm increases by 38%, and there is a 20% increase in the number of firm-bank relationships, signaling that firms are borrowing from more banks. The number of loans per firm-bank relationship also increases by 5%.

Figure 1. Total Credit per Firm and Number of Firm-Bank Relationships



*Note: Bars represent the 95% confidence interval of the point estimates.

Access to broadband also has effects on firms entering and exiting the credit market. In those *Centros Poblados* that gain access to the new technology, the share of new firms registering credit (entry) increases, while the share of firms that no longer register credit in subsequent periods (exit) decreases. The timing of these effects is consistent with the increase in total credit per firm mentioned in the previous section.

Micro and small firms with limited credit history benefit most

It is important to note that the effects on total credit are driven by micro and small firms with the least credit experience ("thin" credit histories).[4] Similarly, while firms of all sizes were able to access loans from a larger number of banks (firm-bank relationships), suggesting an increase in competition, growth was also driven by micro and small firms with "thin" credit histories. This suggests that the arrival of broadband helped reduce the information problems that inhibit banks from lending to micro and small enterprises and also allowed firms to "shop around" with multiple lenders.

4. Using 2013 information, a thin credit file includes firms with 1-2 loans (45% of firms), medium 3-4 loans (29% of firms), and thick 5-74 loans (26% of firms).

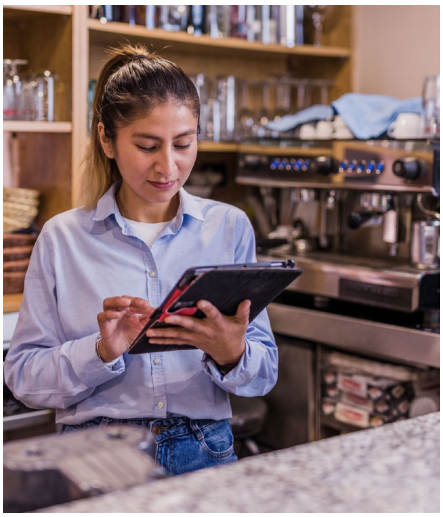
Differentiating supply and demand effects of broadband

To determine whether the effects of broadband on the credit market were driven by shocks to the supply of credit (broadband only reaching the bank branch) or shocks to the demand for credit (broadband reaching the firm's location), the analysis focused on pairs of firm-bank branch relationships in the same location, as well as pairs in different locations where broadband arrived only for firms or, alternatively, only for bank branches, in a three-year window. Location data is at the District level, which is a higher level of aggregation than the *Centro Poblado* level.

Two main variables were considered: total credit for the firm-branch relationship and a proxy of the average interest rate. While there was no effect on the average loan size per firm-branch pair, for those firms and branches in the same location and for those where broadband only arrived at the firm's location, interest rates dropped by 4 percentage points. There were no effects on interest rates when the technology only arrived at the bank branch's location, suggesting that the results are mainly driven by the demand side. This is likely because when broadband only arrives at the bank's location, firms miss the opportunity to adopt this new technology to improve their business and, potentially, their creditworthiness. The information problem between lender and borrower remains, and therefore there are no effects on interest rates.

Effects beyond the credit market

To better understand the credit market results, the study looks at the effects of the arrival of broadband on firm sales, entry to and exit from the market, and productivity. In the first two years after the arrival of broadband, firm sales gradually improve, peaking in year three. The gains in terms of increased sales are completely reversed in year four. Similar timing of effects is observed for firm entry and exit to markets aggregated at the District level. For productivity, given data limitations, the study only looks at a sample of large firms. It shows that the ratio between firm value added and number of workers (a proxy measure for productivity) follows the same pattern as the other variables. Therefore, broadband first affects real activity and then affects the credit market.



CONCLUSION

Tackling the region's huge MSME financing gap calls for action on many fronts. As these results illustrate, expanding fixed broadband networks to reach more MSMEs can help them improve their businesses and in turn, their creditworthiness in the eyes of lenders. Continuing public and private sector investment in fixed and mobile broadband infrastructure and digitalization is therefore a critical piece of promoting financial inclusion and business growth in the region. ■

Additional Information

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