

## BOX II.1 MORTGAGE REFINANCING

Over the last decade, interest rates on mortgage loans have fallen systematically. After peaking in early 2009, amid the turbulence of the global financial crisis, the average mortgage rate has declined 375 basis points (bp). In the same period, long-term interest rates in UFs moved in the same direction, recording adjustment of a similar magnitude. In this climate of lower funding costs, borrowers have taken advantage of the opportunity to refinance their liabilities, thereby reducing their monthly payments. As counterpart, this has translated into lower income for the banks that originate these loans (chapter III).

This box presents a quantification of the share of bank mortgage loans that have been refinanced from 2013 to date; characterizes the refinancing decision as a function of its determinants; and estimates borrowers' earnings due to lower monthly payments.

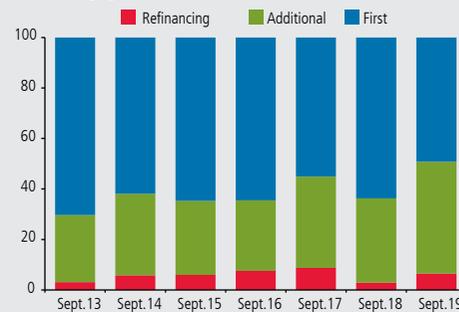
### The decision to refinance

Theory indicates that a borrower will decide to refinance a loan when the future benefit obtained is equal to or greater than the cost of the operation. In the context of mortgages, the benefits are given by the lower future installment payments after refinancing. According to option valuation theory, the greater the difference between the current available interest rate and the contracted interest rate on the loan, the greater will be the benefits. The potential gains are also larger when the outstanding balance is larger, the maturity longer, and the refinancing cost lower (McConnell, 1981; Agarwal et al., 2013). With regard to the latter, the costs are associated with the time required to process the transaction and the administrative costs—which can include property appraisal, title searches, deed correction, notary expenses, and real estate registry charges.

### Characterization of refinancing

Data from the bank credit registry—for the period between January 2013 and September 2019—can be used to indirectly identify refinanced loans. When a borrower obtains a mortgage loan that does not significantly modify the previous balance of outstanding debt, it is considered a refinancing operation. Internal estimates indicate that, on average since 2013, nearly 6% of loans in the monthly flow of bank mortgages (8% weighted by amount) were refinancing operations, while the remainder were granted to new borrowers and to existing borrowers who increased their debt with additional loans (64 and 30% of loans in the monthly mortgage flow, respectively) (figure II.18).

**FIGURE II.18**  
Bank mortgage flow by type of operation  
(percent of mortgage loans)



Source: Central Bank of Chile, based on data from the FMC.

The vast majority of people who refinanced lowered their interest rate without making any major changes to the amount owed or the residual maturity. Consequently, the refinancing operations have translated into a reduction in monthly installment

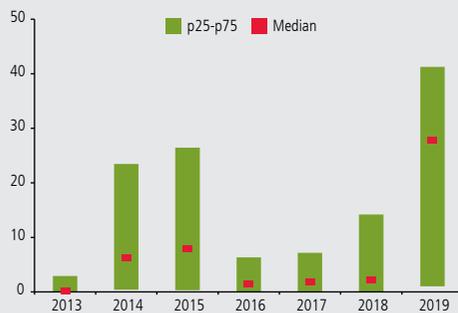
payments. Prior to 2019, the median borrower managed to reduce their monthly payment around 3% through refinancing. In 2019, the reduction for the median borrower reached 28%. This greater saving coincides with a sharp reduction in long rates in the last year, which is in line with the theory discussed above (figure II.19).

With regard to the motivations for refinancing, a probit model at the borrower level indicates that the reduction in the average mortgage rate is the primary factor increasing the probability of refinancing. The evidence also indicates that borrowers who live in higher-income areas are more likely to refinance, which could be related to their capacity to cover the costs associated with the operation. The estimate also confirms that the outstanding balance and residual maturity also raise the probability, albeit to

a technology that facilitated refinancing with an increase in debt—to extract equity by increasing the amount owed—led to an excessive leveraging of households, which had the effect of increasing systemic risk and aggravating the later recession. In 2006, 90% of U.S. mortgage refinancing operations were to increase debt. Furthermore, many studies show that a large share of the mortgage defaults during the house price bust period corresponded to borrowers who had previously refinanced in order to extract equity by increasing their debt, many of whom even accepted higher interest rates than originally contracted (Khandani et al., 2009; Laufer, 2018).

In contrast, under the Chilean institutional framework, refinancing operations are usually aimed at reducing the financial burden. Given the available financial products, equity extraction from price increases does not appear to be as prevalent as in the United States. In this context, the interest rate reductions have had a positive effect on household finances, by significantly reducing their debt service.

**FIGURE II.19**  
Reduction in monthly mortgage payments (\*)  
(percent, relative to the payment prior to refinancing)



(\*) Data for August of each year.

Source: Central Bank of Chile, based on data from the FMC.

a lesser extent.

### Implications for financial stability

In the United States—in the years preceding the global financial crisis—the combination of low mortgage lending standards, expectations that house prices would continue to rise, and

### Conclusions

In an international context of low long-term interest rates, which have permeated the local economy, the lower cost of mortgage financing has led to refinancing operations. The evidence indicates that the majority of borrowers who refinance do so in order to reduce their monthly payments, which lowers their total financial burden.

The reduction of monthly mortgage payments reduces the vulnerabilities that have been growing in households, which are related to the existence of a high financial burden—as analyzed in past FSRs, in particular in the thematic chapter of the last half. The maintenance of this positive effect on household finances is conditional on their not increasing their debt level through other types of liabilities.