



BOX III.1

THE EFFECT OF BANK LOAN PORTFOLIO COMPOSITION ON INTEREST RATES

Interest rates on bank loans by portfolio are calculated as a weighted average of their products, which can change significantly over a short period of time, particularly in the case of the commercial and consumer portfolios. This is due to the fact that because it is a weighted average of the different types of products, the portfolio change derives from both changes in the interest rates on each product (price) and changes in the product composition of the loan flows in the portfolio (quantity).

Because interest rates and product flows change over time, it is not possible to untangle the interest rate dynamics of each portfolio from the changes in its composition. Therefore, this box proposes a calculation methodology that controls for the effect of compositional changes in the portfolios on the average rates in the system, so as to be able to analyze the changes in the cost of credit with greater precision.

Types of product

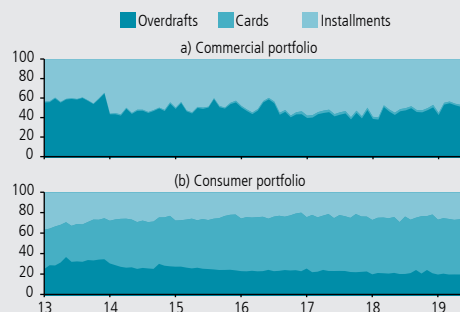
In general terms, the types of products by portfolio can be divided into two large groups: installment loans and revolving loans (credit cards and overdraft credit lines). In the case of installment loans, the associated interest rates, number of installments, and maturities are defined for the duration of the loan, whereas revolving loans are credit that can be freely withdrawn by the borrower and that does not have a preestablished amortization plan for repaying the debt (Briones and Filippi, 2018). Consequently, changes in portfolio flows, mainly due to the use of revolving credit, can trigger changes in the system's average rates, even when interest rates are stable.

Proposed adjustment

Credit flows exhibit variable dynamics and reporting characteristics within the month. For example, for credit card operations, the recording of flows tends to be concentrated around the billing data, which is usually in the first two weeks of the month (Briones and Filippi, 2018).

FIGURE III.23

Composition of flows by type of product (percent)



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

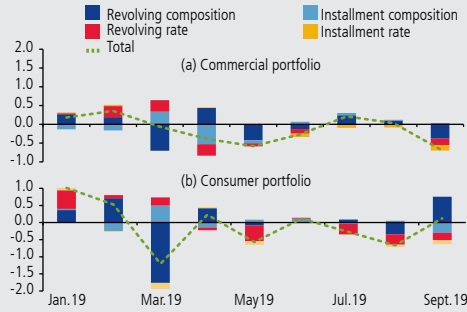
In order to correct for the daily variation described in the preceding paragraph, the monthly interest rate is calculated for each portfolio as a weighted average, using the flows in the last twelve months for each type of product as weights. This smooths the sharp changes in portfolio composition. When flows are kept stable over time, the change in average interest rates mainly reflects rate changes.

Results

In the commercial loan portfolio, the shares of installment and overdraft flows are similar, although they are highly variable over time (figure III.23). In the case of consumer loans, the use of credit cards is greater than the flow of installment loans, such that card rates have a bigger impact on the average rate.

In the recent period, the composition-adjusted rates display a downward trend, in contrast to the average rate, but consistent with the dynamics of the MPR. Thus, the increase in consumer and commercial rates in recent months reflects an increased use of revolving credit, despite the decline in reference rates (figure III.24).

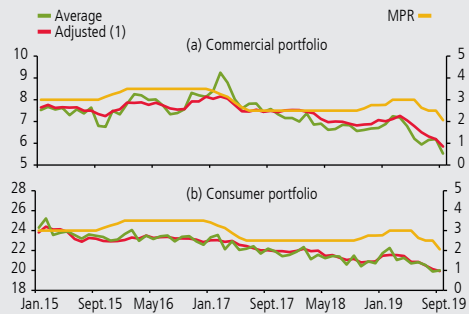
FIGURE III.24
Decomposition of the monthly change in interest rates (percent)



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

The dynamics of average interest rates for both commercial and consumer loans are more volatile than the composition-adjusted rate series (figure III.25). This greater variation is mainly associated with revolving credit, which has higher rates.

FIGURE III.25
Interest rates on bank loans (percent)



(1) Adjusted: Data corrected for composition effects: currency, amount, maturity, and product. Moving average of the composition in the last 12 months.

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

In sum, average interest rates, due to composition effects within each portfolio, contain information that precludes disaggregation to exclusively identify price changes. The proposed indicator delivers more precise information on interest rate dynamics and contributes to a better evaluation of the credit cost trend.