Box 2
RECENT INTEREST RATE PASS-THROUGH

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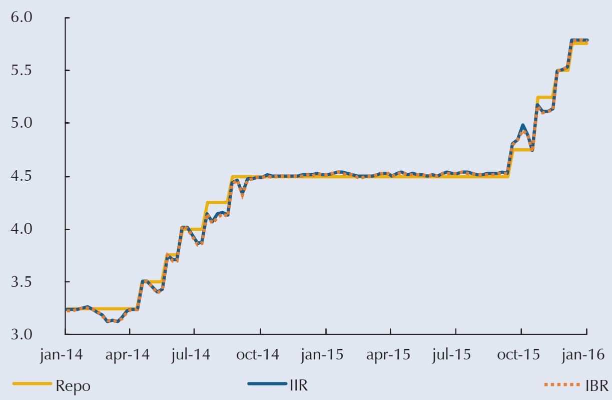
The literature on the inflation targeting strategy[1] highlights four channels for monetary policy pass-through: inflation expectations, the exchange rate, aggregate demand and credit. It is through these channels that changes in the central bank's benchmark rate manage to affect aggregate demand with the objective of achieving price stability.

In that context, this box offers an analysis of the pass-through of recent changes in the benchmark rate to deposit and lending rates in the financial system from the standpoint of the credit channel.[2] Some of the reasons that might explain the particular behavior of interest rates are presented as well, by categories.

The Board of Directors of *Banco de la República* (BDBR) decided, at its meeting on 25 April 2014, to embark on a series of increases in the one-day repo rate. This action was considered necessary to lead it into less expansionary territory in order to encourage convergence of inflation to the target (3%). From that point and until 16 January 2016, the BDBR raised the benchmark rate[3] nine times: by 25 basis points on eight occasions and by 50 bp[4] on one occasion. These hikes took the benchmark rate from 3.25% to 5.75% and were implemented in two stages separated by a period of 13 months, from August 29, 2014 to September 25, 2015. Throughout that interval, the interest rate was left unchanged at 4.50%.

During the same 21-month period when the benchmark rate was being raised, all the interest rates (deposit and lending) charged by credit institutions increased as well, although to a different extent. As shown in Graph B2.1, the interbank rates – overnight rates (IIR) and the benchmark index (IBR) – adjusted quickly to the policy rate and in equal magnitude.

Graph B2.1
Policy Rate, IIR and IBR
(Weekly)



Source: *Banco de la República*'s calculations.

In the case of interest rates on deposits, pass-through increased as of the fourth quarter of 2015, when the BDBR resumed its policy rate hikes. Since April 2014, the monthly average of the overall total rate on time certificates of deposit (CDs) has increased by 187 bp, including 91 bp in the last three months of 2015 (Graph B2.2). Nevertheless, throughout the entire period, the change in this rate was still less than the increase in the policy rate (231 bps), representing nearly 81% of the rise in the benchmark rate (Table B2.1).

In the final quarter of last year, the acceleration in rates was most noticeable for deposits over ninety days: the rate for deposits over 12 months increased by 174 bp as opposed to 83 bp for fixed term deposits (DTF).[5]

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Blejer, Ize, Leone, and Werlang (eds.). Inflation Targeting in Practice: Strategic and Operational Issues and Application to Emerging Market Economies, pp. 1-7 International Monetary Fund.

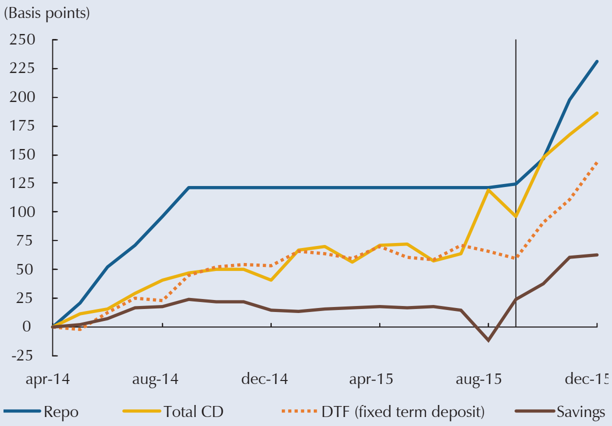
2 For an explanation of the operating mechanism of the credit channel, see Huertas et al. (2005). "Algunas consideraciones sobre el canal de crédito y la transmisión de tasas de interés en Colombia." (Considerations on the Credit Channel and Interest Rate Pass-through in Colombia). *Borradores de Economía*, No. 351, p. 2, *Banco de la República*.

3 The interest rate *Banco de la República* charges on expansionary repos.

4 The decision was taken at the BDBR meeting on 30 October 2015.

5 Fixed term deposit: indicator of deposits at ninety days with credit establishments.

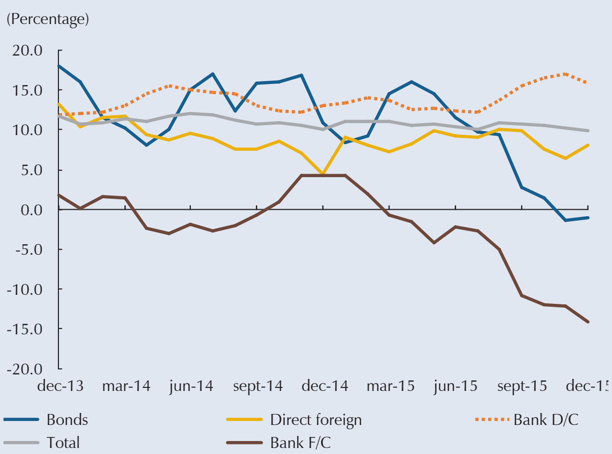
Graph B2.2
Deposit Interest Rates
(Accumulated variation[a/] since April 2014)



a/ Variation in monthly nominal interest rates
Source: *Banco de la República*'s calculations

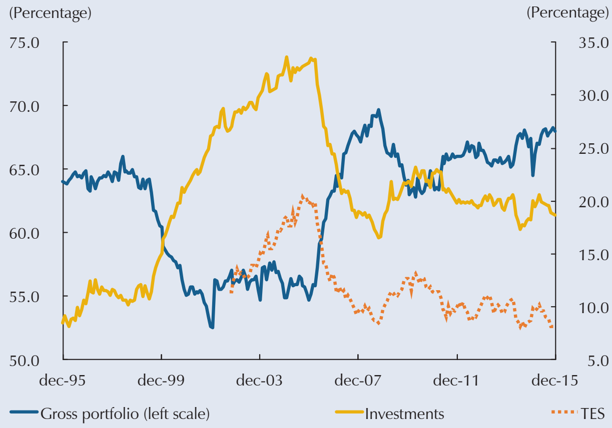
Several facts point to an acceleration in policy rate pass-through to deposit rates. On the deposit supply side, rising inflation and inflation expectations, coupled with the prospect of further increases in the exchange rate, prompt savers to demand higher yields. On the other hand, financial institutions have increased their demand for deposits to finance credit. In fact, the growth in commercial loans in domestic currency, partly due to the decline in other sources of corporate borrowing, such as corporate bond issues and the foreign currency portfolio, has added to the funding needs of credit institutions (Graph B2.3). The fact that credit institutions have lower levels of investment to liquidate and substitute them with loans is also a factor (Graph B2.4).

Graph B2.3
Commercial Borrowing
(Annual variation)[a/]



a/ Monthly average
Source: Financial Superintendence of Colombia; *Banco de la República*'s calculations

Graph B2.4
Loan Portfolio, Investments and TES as a Percentage of Assets

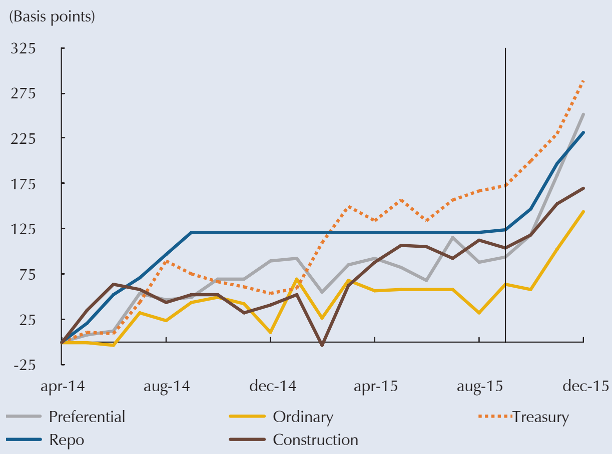


Source: Financial Superintendence of Colombia; *Banco de la República*'s calculations

As for lending rates, the increase in recent months was concentrated largely in preferential rates for commercial loans (Graph B2.5). Interest rates on this type of lending accumulated an increase of 252 basis points as of April 2014; in other words, 109.2% of the increase in the benchmark rate. The preferential rate rose by 158 basis points in the final quarter, as opposed to 94 bp in the preceding stage (Table B2.1).

The maturities on preferential disbursements[6] registered uniform increments, with the exception of those granted

Graph B2.5
Commercial Interest Rates
(Accumulated variation[a/] since April 2014)



a/ Variation in monthly nominal rates
Source: Financial Superintendence of Colombia; *Banco de la República*'s calculations

6 Preferential, ordinary and consumer disbursements' terms are classified into four categories: less than one year, between one and three years, between three and five years, and more than five years.

Table B2.1
Policy Rate Transmission to Interest Rates Charged by Credit Institutions

Date	Apr-14 (a)	Sep-15 (b)	Dec-15 (c)	Variation (b-a)	Variation (c-b)	Variation (c-a)	Pass-through (Percentage) (c-a) VABR)[b/]
	Monthly Average (percentage)			Basis Points			
Policy rate	3.29	4.53	5.60	125	106	231[b/]	
Interbank interest rates							
IIR	3.25	4.57	5.60	131	104	235	101.9
IBR	3.24	4.55	5.59	131	104	235	101.8
Deposit interest rates							
Total Certificate of deposit	4.18	5.14	6.05	96	91	187	80.9
DTF – fixed-term deposit	3.81	4.41	5.24	60	83	143	62.0
180 days	4.23	4.89	5.98	66	110	175	75.9
360 dayss	4.59	5.77	6.80	118	103	221	95.8
More than 360 days	4.96	6.70	8.44	174	174	348	150.8
Savings	2.19	2.43	2.82	24	39	63	27.4
Lending interest rates							
Commercial							
Preferred	6.88	7.82	9.40	94	158	252	109.2
<= 1 year	6.47	7.46	9.07	100	160	260	112.7
> 1 year to 3 years	7.27	7.54	9.23	27	169	196	85.0
> 3 years to 5 years	6.93	8.32	9.32	139	100	238	103.3
> 5 years	8.08	8.34	9.84	25	150	175	76.0
Ordinary	10.50	11.14	11.94	64	80	144	62.3
<= 1 year	10.79	11.22	11.67	43	45	88	38.1
> 1 year to 3 years	10.99	11.84	12.90	86	106	191	83.0
> 3 years to 5 years	11.19	11.77	13.25	58	148	207	89.5
> 5 years	9.28	10.13	11.08	86	94	180	78.0
Treasury	6.83	8.57	9.71	173	115	288	124.9
Construction							
Non-LIH (non-low-income housing)	8.75	9.78	10.45	103	67	170	73.7
LIH[a/] (low-income housing)	9.54	10.07	10.70	53	63	117	50.5
Homes							
Consumer	17.19	16.88	17.64	(31)	77	46	19.7
<= 1 year	20.82	20.03	19.57	(79)	(46)	(124)	(53.8)
> 1 year to 3 years	22.01	21.79	22.26	(23)	47	24	10.6
> 3 years to 5 years	17.67	17.77	18.60	10	82	93	40.2
> 5 years	15.10	14.83	15.74	(27)	90	64	27.5
Credit card	27.82	27.22	27.98	(60)	76	16	6.9
Usury	29.45	28.89	29.00	(55)	10	(45)	(19.5)
Mortgage							
Non-LIH (non-low-income housing)	11.11	10.85	11.30	(26)	44	19	8.1
LIH[a/] (low-income housing)	11.95	12.45	13.29	50	83	133	57.8

a / Low-income housing
b / VABR: Accumulated variation in *Banco de la República's* policy rate.
Source: Financial Superintendence of Colombia; *Banco de la República's* calculations.

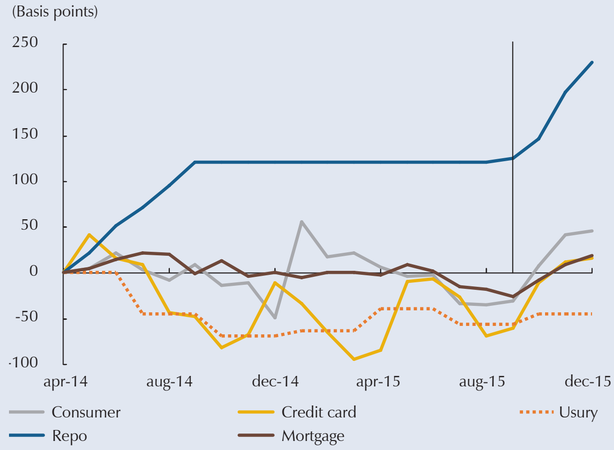
at three to five years, in which case the change was more moderate. As for the amount, they represented 51% of the commercial loans in domestic currency disbursed during the year, of which those at three to five years accounted for less than 8%.

Interest rates on ordinary loans (Graph B2.5), which rank second in importance in the commercial category (accounting for 42% of disbursements), were also more dynamic in the fourth quarter of the year. During that period, the interest rate on these loans increased 80 bp vs. 64 bp in the first period, for an accumulated variation of 144 basis points, which is equivalent to 62% of the policy rate adjustment(Table B2.1). With loans of this type, the rates for longer maturities increased the most.

In contrast, the other two components in the commercial category: treasury credit and construction loans, which account for a small share of the disbursements in this category (5.2% and 1.8%), experienced rate increases, but they were less pronounced in the final quarter of 2015 compared to those on record between April 2014 and September 2015 (Graph B2.5). By periods, the increases in rates on cash credit were 115 vs 173 bp, in that order, and 67 versus 103 bp for construction loans, with an accumulation of 288 and 170 bp, respectively. Therefore, with respect to the change in the policy rate, the reaction of interest rates on cash credit came to 124.9%, while the response from interest rates on construction loans amounted to only 73.7% (Table B2. 1).

The acceleration in commercial interest rates can be attributed to several factors; namely, the change in *Banco de la República*'s stance, the increase in interest rates on deposits, and more demand for commercial loans in domestic currency. This last factor is associated, on the one hand, with the rising cost of external financing, given a tighter monetary stance in the United States, the increase in the country risk premium and peso devaluation. On the other hand, conditions for issuing bonds have become more difficult,[7] given the uncertainty derived from the volatility on financial markets, the reduced availability of resources directed to the mining-energy sector,[8] and the increase in risk premiums for the emerging economies.

Graph B2.6
Household Interest Rate
(Accumulated variation[a/] since April 2014)



a/ Variation in monthly nominal rates
Source: Financial Superintendence of Colombia; *Banco de la República*'s calculations

As for interest rates on household loans (Graph B2.6), pass-through of the policy rate hikes has been witnessed only as of September 2015. In fact, during the previous phase, these rates tended to decline slightly. The fourth quarter of 2015 saw interest rates on consumer loans increase by 77 bp, and by 76 bp for those disbursed through credit cards. During that same period, interest rates on home mortgages rose by 44 bp (Table B2.1).

There are several factors that might explain this performance. In 2014, the strength of the job market and the appreciation in housing prices led to optimism about future household income, as would be expected, and raised the value of the collateral used to back loans to families. Moreover, there was a great deal of available liquidity in the financial system during the second half of 2014, largely due to foreign sales of TES by domestic agents.[9]

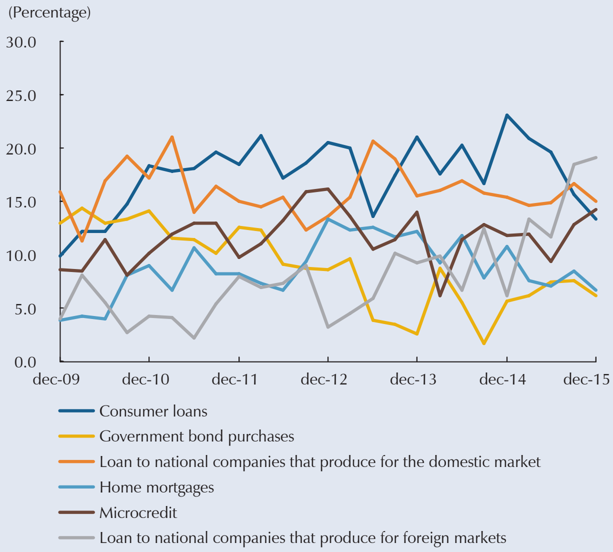
The favorable outlook for household credit risk, coupled with abundant resources (which included the reinvestment of profits in the banking system), would have stimulated the preference among lenders to allocate more resources to households, as revealed by the results of surveys in the financial sector (Graph B2.7). So, despite the increase in the policy rate, the growing supply of loans to households kept interest rates on consumer loans

7 This situation prompted companies to suspend bond issues, and lenders marketed only enough to offset the equivalent maturities.

8 The cutback in resources is due to the drop in oil prices.

9 On 19 March 2014, JP Morgan published its decision to increase the ratio of Colombian debt in the GBI-EM Global Diversified index (from 3.2% to 8%), in GBI-EM Global (from 1.81% to 5.60%), and in GBI-EM Global Diversified 15% (from 3.07% to 8.26%). This process evolved gradually between 30 May and 30 September 2014.

Graph B2.7
Main Uses of Bank's Surplus Resources



Source: *Banco de la República* (*Survey on the Credit Situation in Colombia*, June 2015).

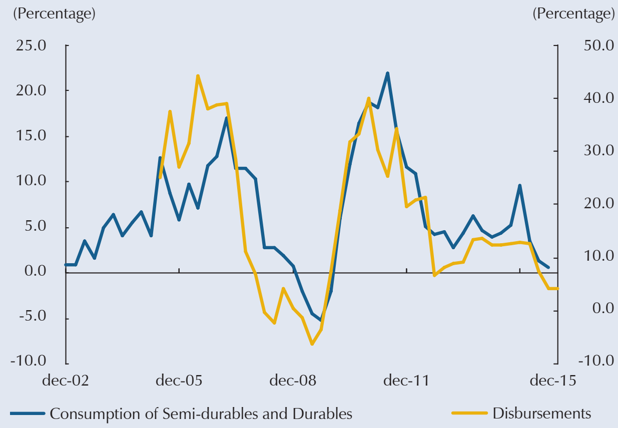
and home mortgages relatively stable, and even reduced those applicable to cards credit, pressured by the reduction in the usury rate. As explained below, these trends were less favorable after mid-2015.

On the demand side, the unemployment rate (seasonally adjusted) ceased to decline and housing prices –relative to the consumer price index (CPI) – experienced more modest increases. Household debt (consumer loans plus mortgages) relative to output reached historically high levels, while real household income weakened a result of rising inflation. Disbursements on consumer loans slowed, accompanied by less growth in spending in the economy on durables and semi-durables (Graph B2.8). The indicators of consumer confidence warned that households are less willing to spend on a car or a home (Graph B2.9).

On the supply side, the surveys done by lending institutions suggest the requirements for granting consumer loans have increased, default indicators have deteriorated somewhat, and the levels of TES (relative to assets) in the portfolios of these institutions are low compared to what they were historically. Therefore, it is unlikely these investments will continue to be substituted to finance the loans (Graph B2.4).

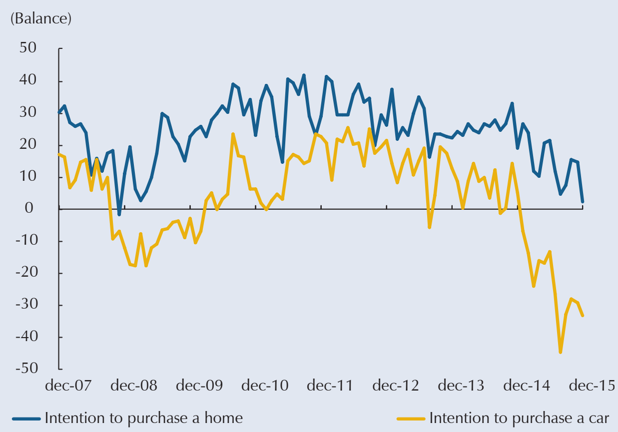
These credit supply and demand factors led to an increase in consumer interest rates as of the final quarter of 2015, when *Banco de la República* again began to raise the benchmark rate. In the case of interest rates on

Graph B2.8
Consumption of Semi-durables and Durables and Disbursements for Consumer and Credit Card Loans
(Annual real change)[a/]



a/ Order 2 smoothed quarterly disbursements
Source: Financial Superintendence of Colombia; *Banco de la República*'s calculations

Graph B2.9
Intention to Purchase a Home and a Car



Source: Fedesarrollo (Consumer Opinion Survey)

home mortgages, low policy rate pass-through would be due, in part, to competition among lenders for the resources being made available through government programs that offer an interest-rate subsidy for the purchase of low-income housing, [10] especially since in one of the tranches[11] the government imposed limits on how much interest banks could charge the benefi-

10 For further details on these programs, see "ReTable 3: Programa de cobertura de las tasas de interés para la adquisición de vivienda," (Box 3: Interest Rate Coverage Program for Home Purchase). p. 69-72, *Reporte de Estabilidad Financiera*, March 2014.

11 It is known as the FRECH Counter-cyclical Coverage Program and regulated under Decree 0701/2013 and resolutions 1263/2013 and 015/2014.

ciaries of these subsidies. This scheme has favored the purchase of 101,512 homes since 2013.

In conclusion, the pass through of policy rate changes to interest rates on deposits and lending in the economy accelerated during the fourth quarter of 2015. A number of factors contributed to this behavior, such as the onset of action to tighten monetary policy in the United States, the deterioration in the country risk premium and devaluation of the peso, which raised expectations of external profitability and made the cost of external financing more expensive. In addition to fueling the increase deposit rates in the Colombia, these factors also boosted corporate demand for loans in domestic currency and pressured the rise in interest rates on commercial loans.

In the case of consumer loans and home mortgages, the reduction in real disposable household income, as a result of rising inflation and the added financial burden due to higher debt levels, has limited household creditworthiness and affected the perception of risk. This is clear in the surveys applied to lending institutions, which have increased their requirements for granting loans. This perception would also be associated with the reduction in the rate of growth in housing prices.