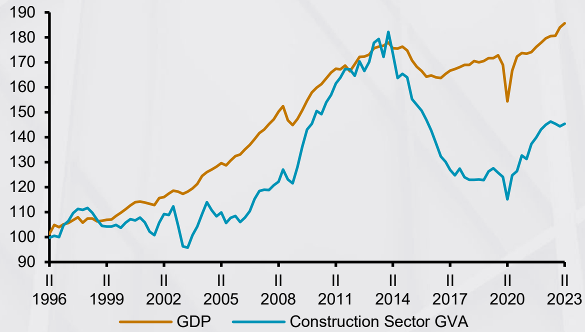
Recent performance and prospects for residential construction

Firstly, this box shows an overview of the latest construction cycles in Brazil and of the share of residential construction within the sector. Then, the recent performance of residential construction – including exercises on the role of some of its determinants – and its short-term prospects are more deeply discussed.

Recent performance of construction

Construction is characterized by long cycles that, in general, coincide with economic activity cycles. In Brazil, the Gross Value Added (GVA) of the construction sector has grown modestly from 1996 to 2006, partly due to high interest rates and low earmarking of resources to real estate financing in the period[1]. From 2007 to 2013, the construction sector GVA expanded strongly, driven by the economic activity expansion, microeconomic reforms that promoted credit market deepening[2], and government incentives[3]. From 2014 to 2019, a downturn in the sector's activity was observed in the wake of the economic crisis in an environment of reduced government incentives[4], higher interest rates, and increased uncertainty (Figure 1).

Figure 1 – GDP and Construction Sector GVA
1996Q1 = 100, s.a. 3MMA



Source: IBGE/National Accounts

From 2020 to 2022, construction expanded again, favored by a reduction in real estate financing interest rates, increased household savings resulting from restrictions on consumption of services imposed by the health crisis, and the high volume of government transfers to households. It is worth noting that the fast expansion took place despite the sharp rise in construction costs and difficulties in acquiring some inputs. The construction sector GVA had its growth interrupted in late 2022, but, in 2023Q2, it remained15.6% above

1/ See Rodrigues (2009), chapter 3, for details of the Brazilian housing issue at that time, focusing on the challenges related to real estate financing and on legislative innovations – such as fiduciary alienation, patrimony of affectation, and the resolution of the issue involving FCVS (*Fundo de Compensação de Variações Salariais*) credits – that contributed to the subsequent growth in real estate financing.

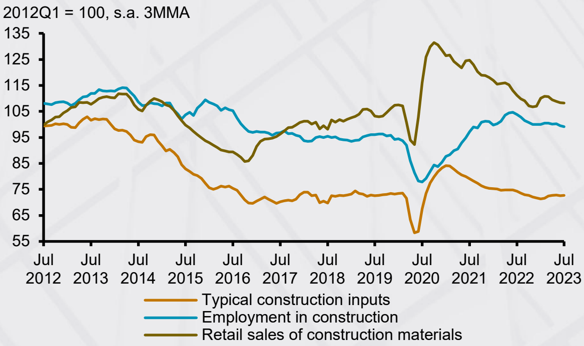
2/ See BCB (2010) for more details on the factors that led to the acceleration of real estate credit from 2005 onwards, with more emphasis from 2008 onwards.

3/ For example, one can mention government incentives gathered in the Growth Acceleration Program (PAC), including projects related to the 2014 FIFA World Cup and the *Minha Casa Minha Vida* Program (MCMV). See Nunes (2018) for the program's details.

4/ As shown in the box Recent evolution of gross fixed capital formation of the September 2019 Inflation Report, Gross Fixed Capital Formation (GFCF) recovery after 2016 was driven by investments in machinery and equipment, with the construction sector following a downward path until the second half of 2019.

the pre-pandemic level. Other indicators that may be used as proxies for economic activity of construction – such as production of typical construction inputs (ITCC)[5], retail sales of construction materials[6], and number of people employed in construction[7] – fell more than the GVA and stabilized at levels close to those seen in the pre-pandemic period (Figure 2).

Figure 2 – Construction indicators

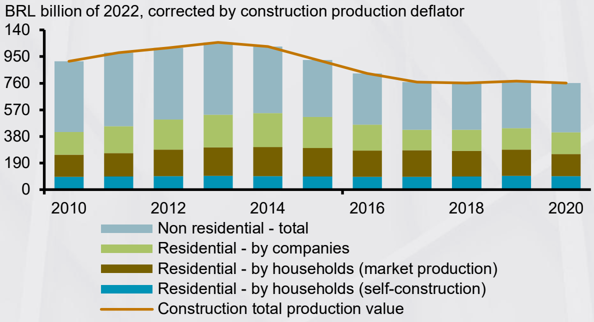


Source: IBGE (PIM, PMC, PNAD Continuous)

Residential construction

Residential construction in Brazil (including renovations) accounts for approximately half of the production value (PV) of the sector (Figure 3) and almost 30% of the GFCF[8]. Of the total PV of residential construction, nearly 38%[9] comes from construction carried out by companies, 39% from market production by households[10], and 23% from household production for own final use (self-construction). Moreover, from 2010 to 2020, the importance of residential construction in total construction increased, as shown in Figure 3.

Figure 3 – Construction production value, by companies and households



Sources: IBGE (National Accounts, PAIC), BCB estimates

5/ Series from the Monthly Industrial Survey (PIM) of the Brazilian Institute of Geography and Statistics (IBGE).
6/ Series of the Monthly Survey of Trade (PMC), from IBGE.
7/ Series from the Continuous National Household Sample Survey (PNAD Continuous - IBGE).
8/ Division of the gross value of residential production (by companies and households) by the total value of the GFCG. The average from 2019 to 2020 was 28%, and from 2010 to 2020, 31%.
9/ BCB's estimate based on the Annual Construction Survey and the 2020 National Accounts. The following values were considered:

- The value of strictly residential construction carried out by companies, which accounted for 25.2% of the total value of the sector in those years.
- The value of construction carried out by companies, which can be residential or not, such as "plaster finishing", multiplied by the importance of strictly residential construction (25.2%).

The sum of these two groups resulted in the estimate that 32.4% of the companies' PV referred to residential construction in this period. The value was divided by the total PV, from which it was concluded that residential construction carried out by companies accounted for nearly 20% of the sector's PV in those years (and 38% of residential construction PV).

10/ The value of construction production by households was obtained from the National Accounts. It is assumed that 100% of self-construction and nearly 88% of market production by households refers to residential construction. For more details on the methodology for estimating construction activity, including self-construction, for the National Accounts, see IBGE (2015).

The evolution of residential construction activity from 2010 to 2022 had a positive impact on the stock of homes, which increased by 34.4%, from 67.5 million in 2010 to 90.7 million in 2022 (+ 23.2 million homes). The housing average quality also improved (Figure 4): the number of homes with an exclusive bathroom of good quality[11] increased by 63%, while the number of homes without a bathroom or with bathrooms of inferior quality fell by 42%.

Figure 4 – Number of households, by occupation status and quality

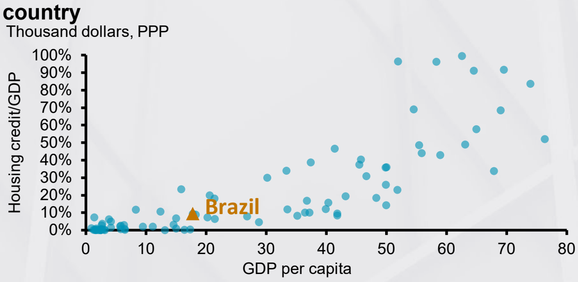
Source: Demographic census[1]

[1] For 2022, Census data for the number of occupied and unoccupied households and PNAD 2022 for the quality distribution of occupied households.

The relevance of real estate financing to residential construction

In the international comparison, Brazil still has a relatively low real estate credit/GDP ratio (Figure 5). This factor, combined with informality (both of the income of potential borrowers and of the properties that could be financed[12]), contributed to the 23.2 million increase in the national housing stock between 2010 and 2022 occurring mainly through the use of households' own resources[13, 14], i.e. without financing for their purchase or construction.

Figure 5 – Housing credit/GDP and per capita GDP, by country



Source: CAHF (2021), EMF (2022), BCB, Wolrd Bank, central banks. Most recent data (between 2019 and 2023) of 91 countries for which data is available.

For better visualization, values for the horizontal axis were truncated at 80k and the vertical axis at 100%. As a result, 4 countries no longer appear on the chart.

11/ The presence of an exclusive bathroom of good quality (connected to the rainwater sewage system or with a septic tank) was used as a proxy for the property quality. The use of other measures, such as the presence of durable walls and roofing, does not change the conclusion that the average quality of homes has improved. It should be noted that home quality is only observed in occupied homes.

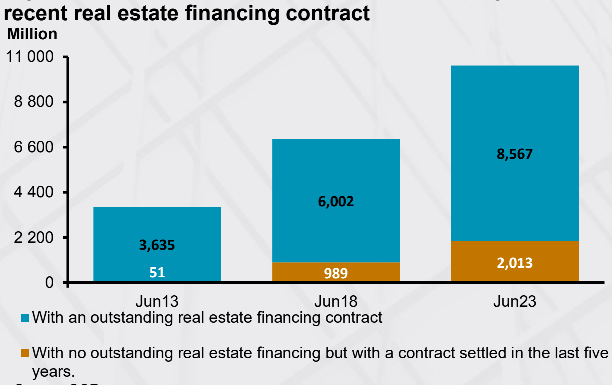
12/ Krause et al (2022) researched informal urban centers in Brazil. The study did not carry out a survey of real estate registries, but one can presume that many properties in these centers are in a situation of land irregularity (without a deed title, with a deed title in the name of someone other than the actual owner, built without a certificate of occupancy and other situations that prevent real estate financing). According to the study, these households in informal urban centers represent between 14% and 48% of the total number of permanent private households in each region surveyed (the lowest percentage was observed in Porto Alegre, and the highest in Recife). The study did not investigate real estate informality in neighborhoods that are not in informal urban centers.

13/ During this period, 10.6 million housing units were financed, both new and used, with funding from savings deposits and the Employment Compensation Fund (FGTS). Data may contain double counting (a housing unit may have been financed twice, as it may have been sold and refinanced during this period). But even if the financing referred only to new units and there was no double counting, the 10.6 million units financed do not even represent half of the increase in the stock of properties observed in the period (23.2 million).

14/ The comment refers to the financing of the individual purchaser of the property and not to the activity of the construction company.

However, in the formal segment, in which properties usually have higher values, acquisition often takes place through real estate financing. In the last decade, the importance of real estate financing increased, from 3.4% to 9.4% of the GDP, with the number of households with outstanding real estate financing rising from 3.6 to 8.6 million (+136%)[15]. The increase has been more intense from 2020 onwards, when financing conditions became more favorable, as discussed below.

Figure 6 – Individuals (CPFs) with an outstanding or recent real estate financing contract

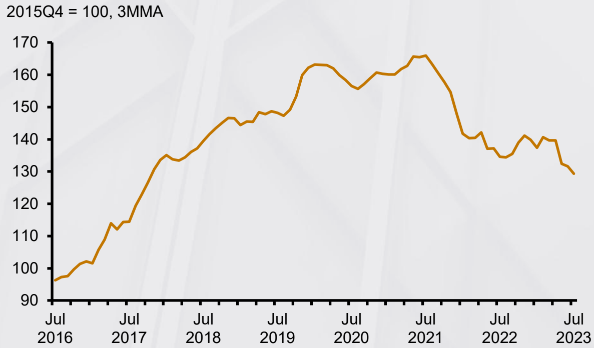


Source: SCR

In some cases, the same financing is listed twice because there is more than one borrower (for instance, a couple).

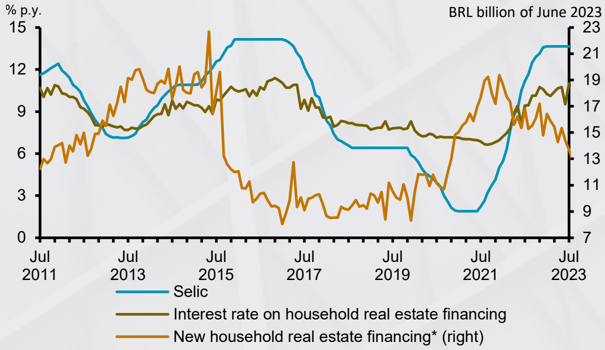
The affordability of real estate financing installments is influenced by the following factors: (i) housing price[16]; (ii) maturity; (iii) interest rate applicable to the financing; and (iv) household income, especially formal income. The first three factors together determine the installment to be paid by the borrower. The latter is the main source of funding for the financing payment. A housing affordability index was elaborated using the factors listed above, dividing the formal overall labor income by the installment value of a hypothetical property[17]. Figure 7 shows the evolution in time of this indicator, which peaked in July 2021 and has since declined by 22%, helping to explain the decline in real estate credit granting (Figure 8).

Figure 7 – Housing affordability index



Sources: BCB, using data from SCR, Fipezap, and PNAD Continuous

Figure 8 – Interest rates and new real estate financing



(*) Seasonally adjusted prices of July 2023 (IPCA).

Figure 9 shows the cumulative change in the housing affordability index, broken down by the contribution of its components. The fall in the affordability index since mid-2021 is essentially due to the rise in the interest rate on real estate financing. This effect more than offset the increase in the average maturity of these loans, the increase in the formal overall labor income from 2022 onwards, and the fall in property real prices[18] (Figure 10).

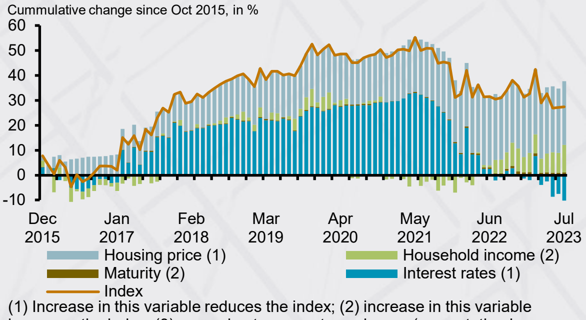
15/ Figures do not include properties fully subsidized with non-onerous resources ("Track 1"), as these, by definition, are not financed by the Brazilian National Financial System (SFN).

16/ Price perceived by the customer, i.e., the property's price minus any subsidy received. Subsidies are common in low-income housing.

17/ Monthly installment to be paid for a two-bedroom property (40m²), considering the interest rate and the average maturity in force each month, a uniform installment (Price table), and the average square meter price series for Brazil calculated by Fipe/Fipezap from advertised properties. Overall labor income is computed using PNAD Continuous information.

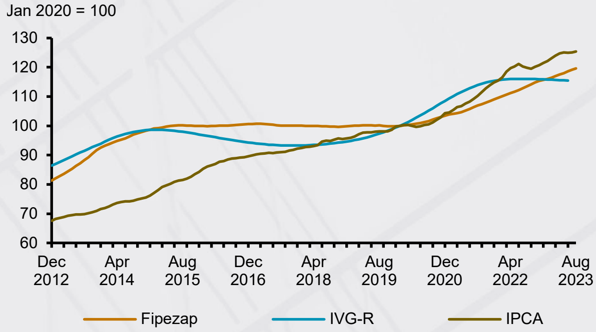
18/ The housing affordability index was calculated using the Fipezap Index, based on property sales advertisements on the Zap portal (www.zapimoveis.com.br) in 50 cities. However, Figure 10 also shows the Real Collateral Value Index (IVG-R), which estimates the long-term price trend of housing values in Brazil using information from the BCB's Credit Information System (SCR). Both show that housing prices increased less than the IPCA over the last two years. A third index, Abecip's IGMI-R, not shown in Figure 10, stands out from the others by indicating housing prices increasing above inflation.

Figure 9 – Housing affordability index and components' contribution



(1) Increase in this variable reduces the index; (2) increase in this variable increases the index; (3) approximate percentage change (computation in logarithms).

Figure 10 – Real estate price indexes and IPCA



Sources: BCB, Fipezap, and IBGE

The housing affordability index influences the demand for real estate, causing companies in the sector to react by adjusting the supply of real estate. An econometric exercise suggests that the housing affordability index movement anticipates the number of housing projects that will be started (launches)[19]. Consistently, the recent fall in the index was accompanied by a 19.1% drop in housing projects started in the first half of 2023, compared with the first half of 2022[20] (Figure 11). However, considering that it takes time to build a residential property and the large number of launches in recent years, the number of properties under construction is expected to remain above the pre-pandemic level, contributing positively to the level of economic activity in the segment in the short term[21].

Figure 11 – Residential real estate – launches and ongoing housing projects

Sources: CBIC and BCB estimates (for the period before 2021Q2)
¹ Seasonally adjusted

Demand for residential property is also affected by factors that do not make up the housing affordability index. Among them are the historically high levels of household debt service ratio[22] and delinquency[23], which can have a negative influence on sales and launches of residential property, particularly medium and high-

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19/ The econometric exercise suggests that the housing affordability index Granger causes launches with a one-quarter lag, and that the inverse relationship does not hold. This exercise used a Vector autoregressive (VAR) model, with quarterly data (from 2016Q3 to 2023Q1), a lag of one quarter, endogenous variables (starting projects and housing affordability, with logarithmic transformation), and exogenous variables (constant, a dummy variable for 2020Q2, and three seasonal dummy variables for the quarters). The short sample suggests caution when interpreting the results.

20/ The Brazilian Chamber of Construction (CBIC) series was used, which includes data for 207 Brazilian cities. Other available sources of data on real estate launches include: (a) Abrainc (Brazilian Association of Real Estate Developers), which together with the *Fundação Instituto de Pesquisas Econômica*s (Fipe) publishes indicators for a group of 20 national developers and (b) São Paulo Housing Union (Secovi-SP), which publishes data for São Paulo-SP.

21/ The number of properties under construction has been estimated in this box as the sum of projects started in the last 36 months according to CBIC. The assumption is that vertical residential constructions take around three years to complete (between launch and delivery).

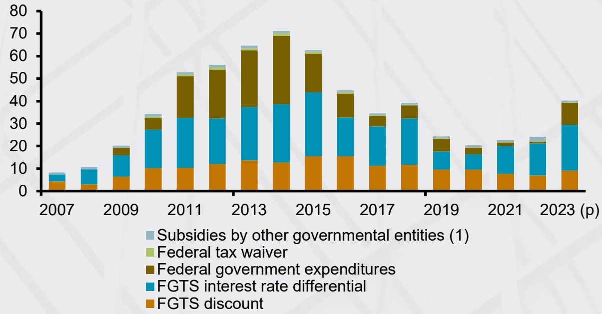
22/ In June 2023, households debt service ratio with the SFN reached 28.3% of their monthly income, above the average for the last ten years (23.9%).

23/ In July 2023, 4.2% of households' credit portfolio were overdue for more than 90 days. This value is higher than the average for the decade (3.7%).

end properties. In turn, total subsidies (implicit and explicit) for low-income housing are expected to grow significantly in 2023[24], to the highest level since 2016 (Figure 12)[25]. The increase in subsidies corresponds to 2.1% of the gross value of construction projects in 2022 and nearly 10%[26] of the PV of residential construction carried out by companies[27] – significant magnitudes, suggesting that there will be a significant stimulus to the construction sector in the coming quarters.

Figure 12 – Housing subsidies

BRL billion of 2022 adjusted by IPCA



Sources: Ministry of Cities, Federal Revenue Office, Annual Budget Law, responses to LAI requests
(1) 11 states and municipalities.

Conclusions

The set of indicators presented in this box shows ambiguous signs for the evolution of demand for residential construction over the next quarters. The high level of interest rates on real estate financing has reduced the affordability of purchasing properties, reducing demand and new construction projects in the medium and high-end market, affecting the number of projects under construction. In turn, affordable construction projects should benefit from the increase in subsidies for low-income housing. The expectation of a reduction in the degree of monetary tightening in the Brazilian economy, conditional on the disinflation process and the reanchoring of inflation expectations, could also contribute positively in the future.

24/ Provisional Measure 1,162/2023, that regulates the MCMV, outlines that the program's objectives include expanding the supply and promoting the improvement of housing quality. Furthermore, the FGTS Board of Trustees decided to reduce interest rates and increase subsidies for housing purchases.

25/ The popular housing subsidies considered were:

- FGTS discount: a FGTS subsidy offered as a discount on the down payment for housing purchases. Data obtained via the Access to Information Law (LAI) from the Ministry of Cities and public notice (for 2023).
- FGTS differential of interest rates: calculated as the difference between the "present value of monthly loans using the ten-year interest rate" and the "present value of monthly loans using the interest rate on real estate financing with FGTS funding". Calculated by the BCB.
- Federal funds: funds from the General Federal Budget (OGU) intended to subsidize the production and purchase of housing by households in the "subsidized acquisition" (Track 1) and "financed acquisition" (Tracks 1 and 2) modalities of the MCMV. The subsidy percentage varies per household. Data obtained via LAI from the Ministry of Cities and LOA (for 2023).
- Federal tax waivers: tax waivers directed at *Minha Casa Minha Vida/Casa Verde e Amarela* Program. Source: Brazilian Federal Revenue Office (RFB) (tax expenditures).
- Subsidies from other entities: funding for low-income housing production by 11 federal units, including the Federal District, and 2 municipalities. Data obtained via LAI or in the federal unit website.

Other subsidies to the real estate and construction sector, such as differential of interest rates on loans using savings funding, and the exemptions on the Tax on Financial Operations (IOF) and on the income tax, were not included because they are not restricted to low-income housing. In addition, spending on social rentals (concentrated in federal units) was not considered.

26/ PV estimate for residential construction carried out by companies using the same methodology as for Figure 3. It assumes that the PV of residential construction carried out by companies in 2022 corresponds to 20.4% of the total PV of construction (same percentage observed in 2020; data for 2021 and 2022 have not yet been released).

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