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Introduction

The Quarterly assessment of the financial cycle in Lithuania (formerly – the Credit and Real Estate Market Review) is a quarterly publication issued by the Bank of Lithuania that assesses the state of the financial cycle in Lithuania and the level of cyclical systemic risk: the sustainability of trends in the credit and real estate (RE) markets, imbalances in the financial sector and the risk of their build-up or widening. The information contained in this review forms the basis for a regular assessment of the applicable financial stability instruments: the level of the countercyclical buffer rate and the sectoral systemic risk buffer (applied for mortgage loan portfolio) rate.[1]

Explanation of the key terms used in in this publication:

Financial cycle. *The financial cycle refers to the development cycle of the financial system, comprising four phases: expansion (growth), deceleration, recession and recovery, defined by the overall evolution of the various indicators of the financial system (in particular, those reflecting trends in the credit and real estate markets), which are related, for example, to the perception of the value of financial assets and real estate, the perceived level of risk, the tightening or relaxation of lending standards and the resulting impact on the supply of credit, and the interplay between these phenomena. The literature generally considers that the financial cycle tends to last longer than the business cycle and can significantly amplify economic booms and deepen recessions. The application of CCyB aims at increasing the resilience of the financial system and, to some extent, reducing its pro-cyclicality and, within the meaning of financial cycle, at reducing the size of fluctuations in the financial cycle, especially in the recession phase.*

Cyclical (systemic) risk*. Systemic risk is the risk of a disruption to the financial system or a part of the financial system, which could have significant negative consequences for the financial system and the economy. Two types of systemic risk are generally distinguished: cyclical and structural*[2] *risks. Cyclical risk is related to the evolution of the financial cycle: it rises and falls as the financial cycle unfolds and is usually associated with changes in the supply of credit and in the risk assessment of financial system participants.*

Abbreviations

CCyB – counter-cyclical capital buffer

HPI – house price index

GDP – gross domestic product

HP – Hodrick–Prescott filter

NFC – non-financial corporation

RE – real estate

HH – households

MFI – monetary financial institutions (e.g. banks, credit unions)

HCPI – harmonised consumer price index

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[1] https://www.lb.lt/en/financial-stability-instruments-1.

[2] Structural (systemic) risk arises from the structural features of the financial system, such as the interconnectedness of financial system participants, concentration and the specific nature of business models.

Key messages

Although the financial cycle in Lithuania remained at a high level in the last quarter of 2022, mainly due to active peer-to-peer business lending and the still significant annual house price growth, the beginning of 2023 signals decelerating crediting and a possible shift of the cycle towards a slowdown. *The rapid pace of borrowing from MFIs until late 2022 did not create credit imbalances but as a result of intensive peer-to-peer business lending, the overall credit in the economy remained on the brink of creating imbalances in the third quarter of 2022. However, the results of the latest Bank Lending Survey*[3] *conducted by the Bank of Lithuania show a dampening of lending demand in all segments. The growth rate of loan portfolios in January 2023 also signals already decelerating lending, and the trends in the first quarter of 2023 may be on the downside. The declining need to borrow is also driven by the no longer widening current account deficit, while the loan-to-deposit ratio of MFIs remains relatively low (83%). Only limited imbalances in house prices, which remain slightly overvalued, have been observed.*

While corporate borrowing remained relatively strong during the last quarter of 2022, portfolio stabilisation trends are being observed and banks have projected lower corporate credit demand in the first quarter of 2023. The nominal annual growth in broad corporate credit (including peer-to-peer business loans) continued to outpace economic growth in the third quarter of 2022, and the annual growth in the corporate loan portfolio of MFIs remained at 18% in the last quarter of 2022. However, the annual growth rate of MFI loans to corporates slowed down markedly in January 2023, while quarterly trends showed the stabilisation of the portfolio. Due to abundant peer-to-peer business lending, the wide gap between the credit-to-GDP ratio and its long-term trend remained close to the threshold of imbalance formation in the third quarter of 2022, but credit imbalances were not present. A contraction in demand for corporate loans was reported by a third of the banks surveyed, with a decline in demand for SME loans and longer-term corporate loans expected to be the most pronounced in the first quarter of 2023.

While the household loan portfolio continued to grow quite rapidly, but new housing loan flows are starting to slow down, and banks also believe that demand for household credit will decline in the future. Despite the uncertain economic environment and rising interest rates, the nominal annual growth of the MFI housing loan portfolio was 13% in the fourth quarter of 2022 due to strong annual growth in house prices (16–19%). The flow of new housing loans has been declining significantly for a while, with the annual slowdown standing at 21% in January 2023. Overall, there are no household credit imbalances, with the gap between the MFI household loans to GDP ratio and its long-term trend remaining negative and broadly unchanged. Half and a quarter of the banks surveyed reported a decline in household demand for housing and consumer loans, respectively. In the first quarter of 2023, banks expected demand for new loans (mostly mortgages) to continue on a downward path.

The annual rate of nominal house price growth is slowing down, the overvaluation is declining and there are increasing signs that a slowdown in the cycle has been reached. According to the latest data, the annual rate of house price growth amounts to 16% and is declining slowly, while monthly frequency trends increasingly point to much slower price growth or even price stabilisation. At the house price level, there are still some limited imbalances, with prices overvalued by around 4% based on the median of 6 different estimates. Rising interest rates have a dampening effect on the demand for housing loans and the overall housing demand; it limits house price growth and has a positive impact on housing affordability, while from the beginning of the fourth quarter of 2022, wages have been rising at a faster pace than house prices. Expectations for the future developments in house prices have not changed

[3] Review of the Bank Lending Survey: https://www.lb.lt/en/reviews-and-publications/category.40/series.196.

significantly, with surveys showing that banks and other financial market participants mostly expect a stabilisation of prices or a small price decrease of 5–10% over the next year.

Although there is an increasing likelihood of a sharper downturn of the financial cycle, having regard to the recent trend of strong crediting and housing price growth, the CCyB is left unchanged for the first quarter of 2023, with banks and groups of central credit unions being subject to a consolidated CCyB rate of 1% from 1 October 2023. In the event of a significant economic or financial shock, the CCyB requirement would be relaxed and would help credit institutions to absorb credit losses and sustain lending. At the same time, the 2% sectoral systemic risk buffer for the portfolio of housing loans to natural persons, which entered into force on 1 July 2022, remains in place.

Financial cycle assessment

The financial cycle remains at a high level, with the overall corporate credit growing at a robust pace and housing credit and prices continuing to grow quite rapidly. Only house prices are showing limited imbalances, as they are slightly overvalued.

Chart 1. Cyclical risk assessment matrix

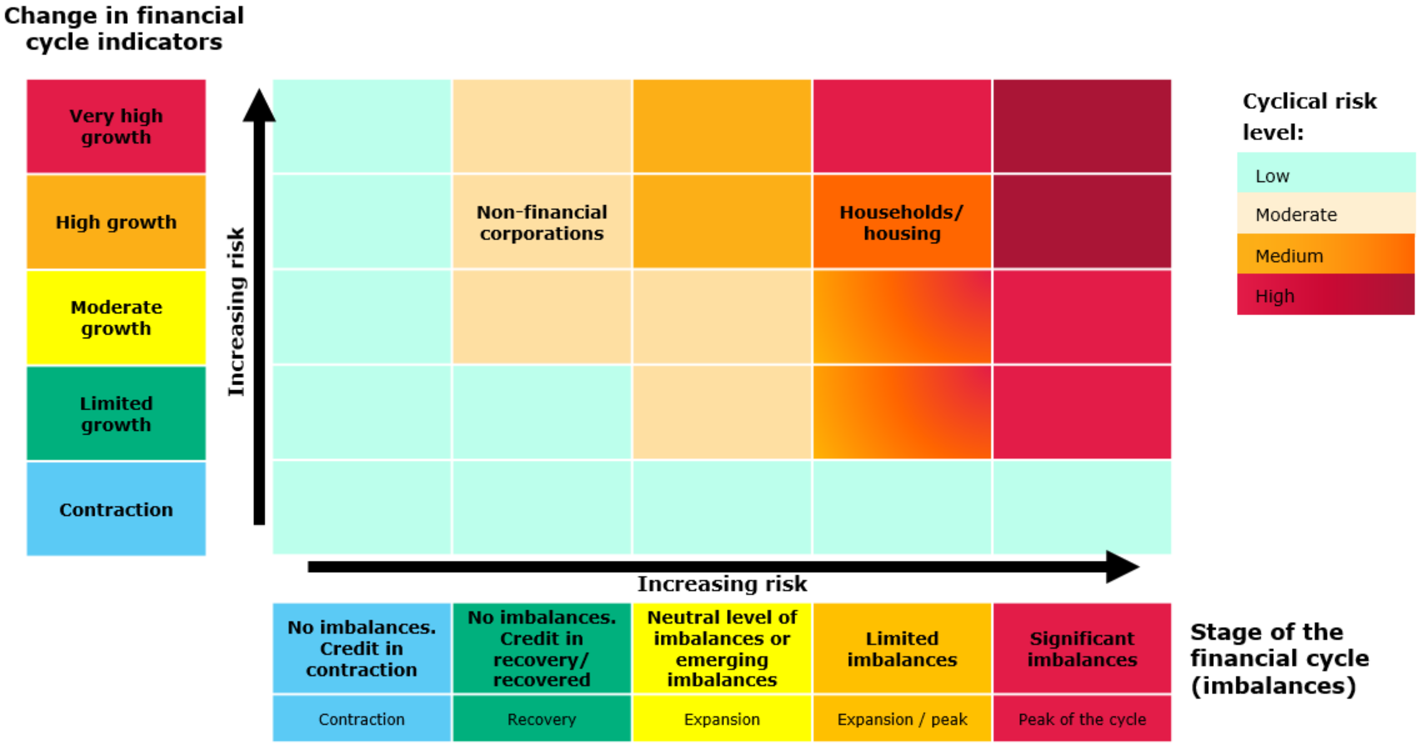


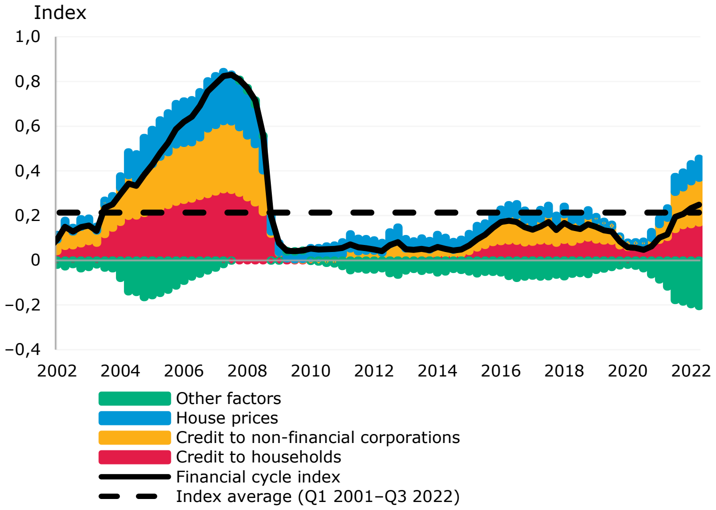
Chart 2. Heatmap of non-financial private sector credit growth, credit imbalances and composite financial cycle indicators (Q4 2016–Q4 2022, the latest data are marked by the black dashed line on the right).

	2018 I	2018 II	2018 III	2018 IV	2019 I	2019 II	2019 III	2019 IV	2020 I	2020 II	2020 III	2020 IV	2021 I	2021 II	2021 III	2021 IV	2022 I	2022 II	2022 III	2022 IV
Non-financial private sector																				
Growth indicators																				
Composite indicators																				
Domestic systemic risk indicator (d-SRI; real GDP, broad credit, house price index, new MFI loans' interest rates, population)	-0,07	-0,06	-0,11	-0,11	-0,16	-0,17	-0,22	-0,26	-0,31	-0,42	-0,43	-0,41	-0,34	-0,30	-0,20	-0,06	0,02	0,07	0,12	
Financial cycle index (new MFI loans, house prices, debt burden, interest rate spread, current account balance)	0,12	0,11	0,10	0,08	0,08	0,05	0,04	0,03	0,03	0,03	0,03	0,05	0,07	0,08	0,11	0,13	0,13	0,13	0,13	
Financial cycle index (broad credit, house prices, debt burden, interest rate spread, current account balance)	0,13	0,17	0,15	0,14	0,16	0,15	0,13	0,13	0,08	0,06	0,06	0,05	0,06	0,10	0,12	0,19	0,21	0,23	0,25	
Multivariate unobserved components filter for credit (real GDP, broad credit and house price index)	-0,10	-0,10	-0,11	-0,10	-0,11	-0,11	-0,13	-0,14	-0,15	-0,16	-0,15	-0,14	-0,15	-0,14	-0,14	-0,16	-0,17	-0,18	-0,18	
Band pass filtered financial cycle indicator (real broad credit, house price index, and credit to GDP ratio medium-term changes)	-0,07	-0,06	-0,06	-0,06	-0,06	-0,06	-0,06	-0,06	-0,06	-0,06	-0,06	-0,06	-0,06	-0,07	-0,07	-0,07	-0,07	-0,06	-0,06	
Nominal growth																				
1-year nominal growth of broad credit	8,0	10,3	8,7	7,3	9,2	8,2	7,0	6,4	2,8	-2,6	-2,2	-2,6	1,6	6,6	7,9	18,0	18,2	23,7	26,0	
1-year nominal average growth of broad credit (2-year annual average)	8,4	9,1	8,8	9,4	8,9	9,7	8,2	7,1	6,1	2,6	2,3	1,8	2,2	1,9	2,8	7,5	10,0	15,9	18,0	
1-year nominal MFI credit growth	6,2	9,0	5,6	6,1	5,3	2,5	3,9	3,2	3,2	-0,6	-1,2	-2,1	-1,4	3,1	5,8	10,6	13,3	13,9	16,0	14,1
1-year nominal average growth of MFI credit (2-year annual average)	7,1	8,1	6,6	6,4	5,9	5,9	4,9	4,8	4,3	1,0	1,3	0,5	0,9	1,3	2,2	4,1	5,9	8,7	11,3	13,1
Real growth																				
1-year real growth of broad credit	4,7	7,6	6,4	4,9	6,9	5,5	4,5	4,3	0,4	-3,3	-3,1	-2,9	0,8	3,4	2,5	7,9	3,7	4,4	3,7	
1-year real average growth of broad credit (2-year annual average)	5,0	5,7	5,1	5,8	6,0	6,7	5,6	4,7	3,7	1,0	0,6	0,7	0,6	0,0	-0,3	2,4	2,3	3,9	3,2	
1-year real MFI credit growth	3,0	6,3	3,3	3,7	3,1	0,0	1,6	1,2	0,7	-1,2	-2,1	-2,4	-2,1	-0,1	0,5	1,1	-0,6	-3,9	-4,5	-5,8
1-year real average growth of MFI credit (2-year annual average)	3,8	4,8	3,0	3,0	3,1	3,1	2,5	2,5	1,9	-0,6	-0,3	-0,6	-0,7	-0,6	-0,8	-0,6	-1,3	-2,0	-2,0	-2,4
Credit-to-GDP differences																				
1-year difference of the broad credit-to-GDP ratio	-0,3	1,1	0,8	-0,2	0,8	0,2	-0,7	-0,6	-2,5	-4,3	-3,4	-2,7	-0,1	0,1	-0,6	2,8	1,0	3,6	3,6	
1-year average difference of the broad credit-to-GDP ratio (2-year annual average)	0,8	0,9	0,5	0,5	0,3	0,7	0,0	-0,4	-0,8	-2,1	-2,1	-1,7	-1,3	-2,1	-2,0	0,0	0,4	1,9	1,5	
1-year difference of the MFI credit-to-GDP ratio	-0,9	0,2	-0,8	-0,6	-1,0	-2,1	-1,7	-1,7	-1,4	-1,9	-1,8	-1,5	-1,2	-1,2	-1,2	-0,8	-1,0	-0,9	-1,0	-1,7
1-year average difference of the MFI credit-to-GDP ratio (2-year annual average)	2,5	3,0	2,9	2,9	1,3	0,6	-0,3	-0,6	-0,9	-1,7	-1,5	-1,7	0,4	-1,0	-1,1	0,5	0,6	0,0	0,1	0,0
Other indicators																				
Relative credit flow indicator (real 2-year broad credit to NFPS growth divided by 2-year moving sum of real GDP)	0,03	0,03	0,03	0,03	0,04	0,04	0,03	0,03	0,02	0,01	0,00	0,00	0,00	0,00	0,00	0,02	0,01	0,02	0,02	
1-year difference of broad credit to NFPS-to-GDP ratio (1-year moving sum of broad credit multiplied by 5, divided by 5-year moving sum of GDP)	8,7	10,5	10,9	8,0	8,6	6,8	5,1	4,0	-0,8	-7,4	-13,8	-19,2	-19,9	-15,2	-9,7	2,1	10,9	19,9	28,8	
1-year difference of MFI credit to NFPS-to-GDP ratio (1-year moving sum of MFI credit multiplied by 5, divided by 5-year moving sum of GDP)	2,5	3,3	2,6	2,1	1,5	-1,6	-2,7	-4,3	-5,5	-6,3	-8,5	-10,4	-12,3	-11,7	-9,4	-5,1	-0,1	3,1	5,8	6,2
Ratio of pure new loans (4 quarters sum) to GDP (4 quarters sum)	10,6	10,2	9,9	8,8	9,2	8,6	8,2	7,8	7,1	6,4	6,2	6,9	7,5	8,5	8,9	9,4	9,3	9,4	9,1	8,3
Ratio of new loans with rollovers (4 quarters sum) to GDP (4 quarters sum)	15,0	14,7	14,6	13,6	13,9	12,9	12,3	11,6	11,2	11,6	11,3	12,4	12,5	12,7	13,3	13,8	13,9	13,6	13,2	12,6
Non-financial private sector credit impulse (loan portfolio, first version)	-0,2	4,3	-5,2	0,9	-1,4	-4,5	2,2	-1,1	0,0	-6,0	-1,1	-1,3	1,0	6,8	3,6	6,4	3,1	0,6	2,2	-2,3
Non-financial private sector credit impulse (loan portfolio, second version)	-1,4	2,4	-1,5	-0,2	-0,9	-6,5	-1,7	-3,0	-2,1	-3,1	-5,2	-5,3	-4,6	3,7	7,0	12,7	14,7	10,8	10,2	3,5
Non-financial private sector credit impulse (flow of new loans)	-3,2	-1,6	-0,5	-3,6	1,3	-4,1	-2,5	-2,6	-1,5	1,5	-1,0	4,1	0,5	0,7	2,6	1,5	1,0	-1,2	-1,4	-2,5
1-year difference of the non-financial private sector debt service to income ratio	1,8	3,8	1,3	1,2	0,5	-0,7	0,8	0,5	-1,1	-2,4	-2,1	-2,1	-0,9	-0,3	-0,3	1,8	1,3	2,6	2,5	
2-year difference of the non-financial private sector debt service to income ratio	1,4	2,1	0,9	1,1	1,1	1,6	1,0	0,9	-0,3	-1,5	-0,7	-0,8	-1,0	-1,4	-1,2	-0,1	0,2	1,1	1,1	
Imbalance indicators																				
Gap between the broad credit to the NFPS-to-GDP ratio and its long-term trend (Basel method)	-12,8	-10,9	-10,3	-11,4	-10,8	-9,6	-9,8	-10,8	-11,9	-12,3	-11,5	-11,7	-10,2	-10,4	-10,4	-7,3	-7,7	-5,5	-5,7	
Gap between the broad credit to the NFPS-to-GDP ratio and its long-term trend (LT method)	-4,8	-3,3	-3,1	-4,4	-4,0	-3,1	-3,6	-4,6	-5,6	-5,7	-5,0	-5,3	-4,2	-4,7	-4,8	-2,5	-3,2	-1,7	-2,4	
Gap between the MFI credit to the NFPS-to-GDP ratio and its long-term trend (LT method)	-5,1	-4,1	-4,6	-5,3	-5,3	-5,1	-5,1	-5,6	-5,5	-5,6	-5,4	-5,7	-5,3	-5,5	-5,3	-5,2	-5,1	-5,3	-5,0	-5,6
Gap between the broad credit to the NFPS-to-GDP ratio and its long-term trend (State Space method)	-3,4	-2,5	-2,9	-5,1	-5,5	-5,3	-6,6	-8,7	-11,0	-12,7	-13,1	-14,6	-14,3	-15,7	-16,9	-15,0	-16,5	-15,3	-14,7	
Other indicators																				
Capital adequacy ratio	19,6	19,0	18,8	18,6	19,7	19,6	19,0	23,7	23,1	23,1	22,5	24,0	24,5	23,1	22,6	23,5	22,7	21,3	20,1	
Leverage ratio of banks	8,6	8,4	8,3	8,0	7,6	7,6	7,4	8,3	8,2	7,8	7,3	7,4	7,4	6,9	6,8	8,6	6,5	6,0	5,9	
Loan-to-deposit ratio	103,2	103,5	100,8	98,2	95,9	95,9	94,1	92,6	88,0	80,7	76,4	71,3	68,5	68,6	69,7	74,2	78,0	80,2	81,1	80,0
Current account balance-to-GDP ratio	0,5	0,4	0,3	0,3	1,3	1,7	2,4	3,5	4,8	6,2	7,3	7,3	6,6	4,7	3,0	1,1	-1,5	-2,9	-4,3	

Notes: Values are rounded; stages of some indicators are evaluated based on the percentiles of their values, hence in some instances cells that have the same value may be coloured differently.

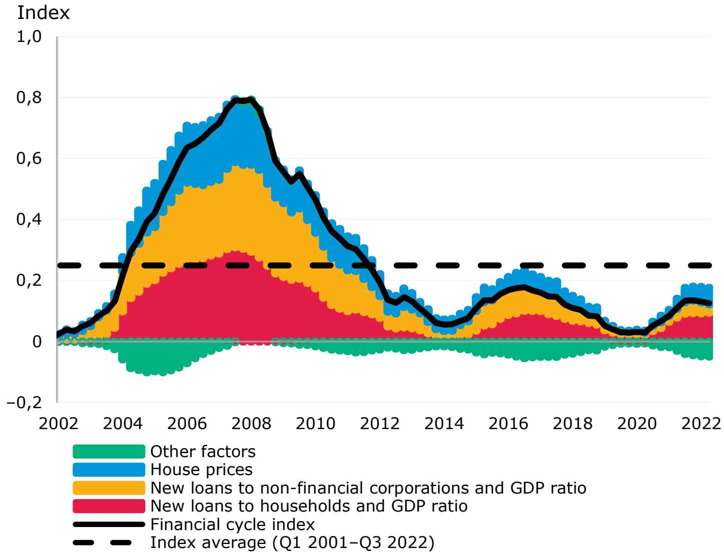
Due to the still intense peer-to-peer business lending the financial cycle remained at a high level as measured by total credit, but the financial cycle index based on the MFI credit has stabilised.

Chart 3. Lithuania's financial cycle index and its drivers (total credit, Q1 2001–Q3 2022)



Sources: State data agency and Bank of Lithuania.
Note: the assessment uses a broader definition of credit to non-financial businesses and households, regardless of the credit provider.

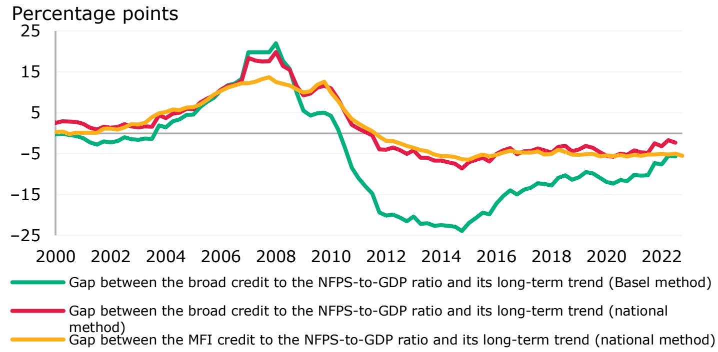
Chart 4. Lithuania's financial cycle index and its drivers (MFI loans, Q1 2001–Q3 2022)



Sources: State data agency and Bank of Lithuania.

Extremely rapid peer-to-peer business lending led to an increased credit amount in the economy, but there were no credit imbalances observed.

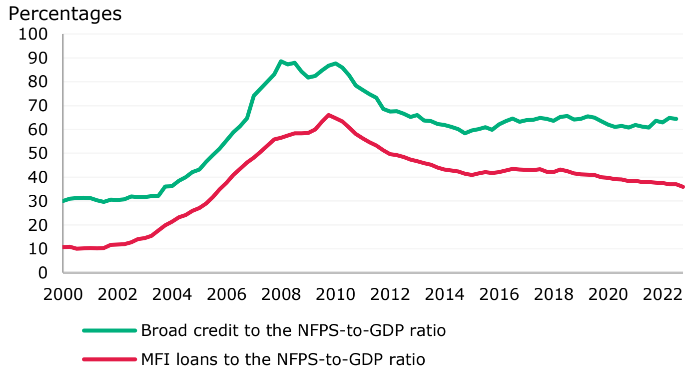
Chart 5. Credit and MFI loans to the non-financial private sector to GDP ratio gap (Q1 2000–Q4 2022)



Sources: State data agency and Bank of Lithuania.
Notes: long-term trend is computed using a one-sided HP filter with a smoothing parameter of 400,000; for the national method, before applying the filter, the ratio is modelled for the next 5-year window using a 4-quarter weighted average.

Private sector indebtedness to MFIs declined, but total indebtedness rose.

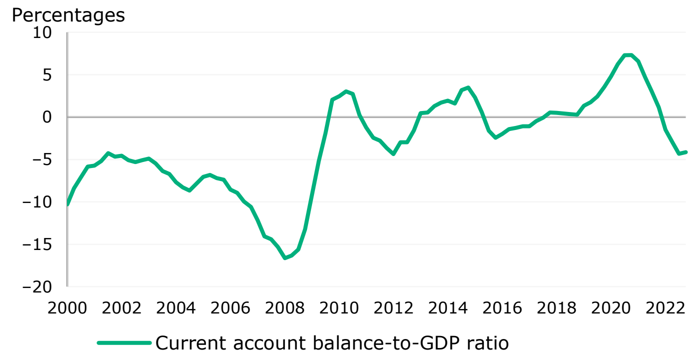
Chart 6. Credit and MFI loans to the non-financial private to GDP ratios (Q1 2000–Q4 2022)



Sources: State data agency and Bank of Lithuania.

The current account deficit stopped widening, reducing the economy's need to borrow.

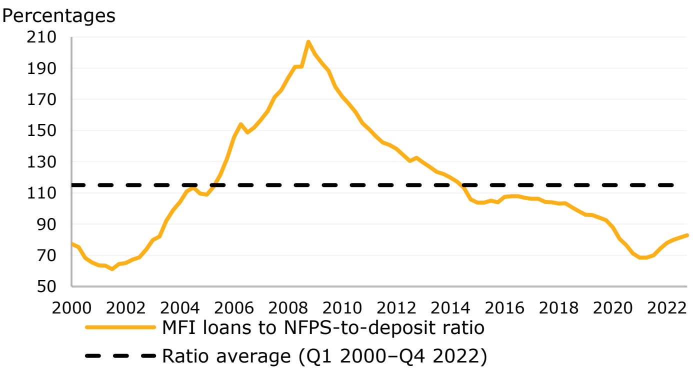
Chart 7. Current account balance to GDP ratio (Q1 2000–Q4 2022)



Sources: State data agency and Bank of Lithuania.

Rapid credit growth and a negative current account balance led to a rising but still low MFI loan-to-deposit ratio.

Chart 8. Ratio of MFI loans to the non-financial private sector to deposits (Q1 2000–Q4 2022)



Sources: State data agency and Bank of Lithuania.

Non-financial corporation sector

Corporate borrowing continued to grow rapidly, but there was no excess credit in the economy.

Chart 9. Map of growth and imbalance indicators in the corporate sector (Q4 2016–Q4 2022, the latest data are marked by the black dashed line on the right)

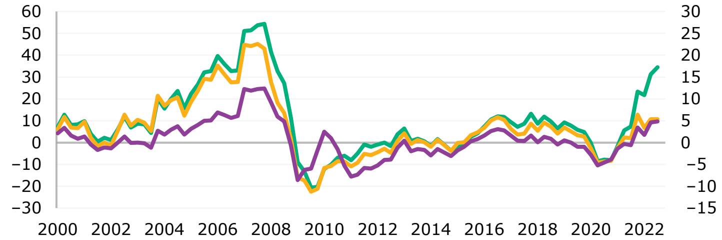
Non-financial corporations sector	2018 I	2018 II	2018 III	2018 IV	2019 I	2019 II	2019 III	2019 IV	2020 I	2020 II	2020 III	2020 IV	2021 I	2021 II	2021 III	2021 IV	2022 I	2022 II	2022 III	2022 IV
Growth indicators																				
Nominal growth																				
1-year nominal growth of broad credit	8,6	11,9	9,6	6,5	9,2	7,7	5,8	4,9	-0,2	-8,5	-7,9	-8,1	-1,8	5,6	7,3	23,4	21,7	31,2	34,5	
1-year nominal average growth of broad credit (2-year annual average)	9,4	10,0	9,5	10,2	9,3	10,2	8,0	5,8	4,5	-0,7	-1,3	-1,8	-1,0	-1,7	-0,6	6,7	9,7	19,3	22,2	
1-year nominal growth of broad and trade credit	8,4	12,4	9,3	5,9	9,4	4,8	3,7	2,2	1,0	-5,5	-2,6	-1,4	5,1	13,1	13,1	23,4	20,7	20,7	22,4	
1-year nominal average growth of broad and trade credit (2-year annual average)	9,1	10,4	9,6	9,8	9,3	8,9	6,7	4,1	5,3	-0,5	0,5	0,4	3,1	3,4	5,1	10,8	13,4	18,3	19,2	
1-year nominal MFI credit growth	5,1	10,6	3,9	3,5	1,9	-3,5	-0,8	-1,3	-2,0	-9,0	-10,1	-12,4	-11,3	-3,8	1,2	10,6	16,2	17,5	21,3	17,7
1-year nominal average growth of MFI credit (2-year annual average)	6,1	8,2	5,2	4,4	3,5	3,4	1,5	1,1	-0,1	-6,1	-5,4	-6,8	-6,5	-6,2	-4,5	-1,6	1,6	6,5	11,4	15,1
Real growth (adjusted for HICP)																				
1-year real growth of broad credit	5,4	9,1	7,3	4,0	6,9	5,0	3,4	2,8	-2,6	-9,1	-8,7	-8,3	-2,6	2,3	2,0	12,8	6,8	10,7	10,7	
1-year real average growth of broad credit (2-year annual average)	6,0	6,6	5,8	6,5	6,3	7,3	5,4	3,5	2,1	-2,3	-2,8	-2,9	-2,5	-3,5	-3,4	1,7	2,0	6,6	6,5	
1-year real growth of broad and trade credit	5,1	9,6	7,0	3,5	7,2	2,2	1,3	0,2	-1,4	-6,1	-3,5	-1,6	4,3	9,7	7,5	12,8	5,9	1,8	0,7	
1-year real average growth of broad and trade credit (2-year annual average)	5,7	7,0	5,8	6,2	6,3	6,0	4,2	1,8	2,8	-2,0	-1,1	-0,7	1,4	1,5	1,9	5,5	5,2	5,8	4,1	
1-year real MFI credit growth	1,9	7,8	1,6	1,1	-0,2	-5,9	-3,1	-3,2	-4,4	-9,6	-10,9	-12,7	-11,9	-6,7	-3,8	1,1	2,0	-0,9	-0,2	-2,9
1-year real average growth of MFI credit (2-year annual average)	2,8	4,9	1,7	1,1	0,9	0,8	-0,7	-1,1	-2,3	-7,5	-6,8	-7,7	-7,9	-7,8	-7,2	-5,8	-5,1	-3,8	-2,0	-0,9
Credit-to-GDP differences																				
1-year difference of the broad credit-to-GDP ratio	0,1	1,3	0,8	-0,5	0,5	0,0	-0,9	-1,0	-2,8	-5,2	-4,5	-3,9	-1,4	-0,3	-0,6	3,4	1,8	4,6	4,8	
1-year average difference of the broad credit-to-GDP ratio (2-year annual average)	0,8	0,9	0,6	0,6	0,3	0,6	-0,1	-0,7	-1,1	-2,6	-2,7	-2,5	-2,1	-2,8	-2,6	-0,3	0,2	2,1	2,1	
1-year difference of the broad and trade credit-to-GDP ratio	0,0	2,7	1,3	-1,2	1,1	-2,1	-3,1	-3,5	-4,0	-6,8	-4,1	-2,1	2,2	4,2	2,5	6,2	2,7	2,4	2,0	
1-year average difference of the broad and trade credit-to-GDP ratio (2-year annual average)	1,3	1,8	1,1	0,8	0,5	0,3	-0,9	-2,4	-1,5	-4,4	-3,6	-2,8	-0,9	-1,3	-0,8	2,0	2,5	3,3	2,2	
1-year difference of the MFI credit-to-GDP ratio	-0,7	0,4	-0,7	-0,8	-1,1	-2,3	-1,7	-1,6	-1,6	-2,5	-2,5	-2,6	-2,3	-1,6	-1,2	-0,3	0,0	0,1	0,3	-0,2
1-year average difference of the MFI credit-to-GDP ratio (2-year annual average)	-0,2	0,1	-0,5	-0,8	-0,9	-0,9	-1,2	-1,2	-1,4	-2,4	-2,1	-2,1	-2,0	-2,0	-1,8	-1,4	-1,2	-0,8	-0,5	-0,3
Other indicators																				
1-year difference of broad NFC credit-to-GDP ratio (1-year moving sum of broad NFC credit multiplied by 5, divided by 5-year moving sum of GDP)	7,1	8,8	9,3	6,1	6,2	4,3	2,3	1,2	-3,3	-10,1	-16,2	-21,3	-21,8	-16,3	-10,4	1,2	9,3	18,0	26,7	
Ratio of pure new loans (4 quarters sum) to GDP (4 quarters sum)	6,5	6,1	5,8	4,7	5,2	4,8	4,5	4,1	3,3	2,9	2,6	3,2	3,7	4,2	4,4	4,8	4,7	4,9	4,5	3,9
Ratio of new loans (including rollovers) to GDP	10,2	9,9	9,8	8,8	9,3	8,5	7,9	7,4	6,9	7,4	7,1	8,0	8,0	7,7	8,2	8,6	8,8	8,5	8,0	
NFC credit impulse (MFI loan portfolio)	-0,1	4,2	-5,1	-0,2	-1,3	-4,4	2,2	-0,2	-0,6	-5,4	-0,9	-1,4	0,9	5,7	2,9	5,4	2,8	0,6	1,8	-1,7
NFC credit impulse (flow of new MFI loans)	-3,0	-1,2	-0,6	-3,6	1,7	-3,2	-2,1	-2,2	-1,8	1,9	-1,1	3,4	0,0	-1,2	2,2	1,3	0,8	-1,0	-1,8	-1,9
1-year difference of NFC debt to income ratio	2,3	3,6	2,8	2,1	1,5	1,0	-0,9	-1,8	-4,0	-7,8	-5,8	-7,0	-4,4	-2,0	-1,6	0,5	0,7	4,2	5,4	
1-year difference of ratio of NFC liabilities to assets	2,1	0,9	-2,7	-4,7	-8,7	-7,1	-3,7	-4,5	-1,5	-10,3	-12,0	-12,8	-12,3	-5,5	-1,9	4,5	4,5	15,9	19,1	
1-year difference of the NFC debt service to income (profit) ratio	3,3	6,8	2,7	2,6	1,4	-0,4	2,0	1,9	-1,0	-3,5	-3,4	-3,5	-1,6	-0,4	0,3	3,9	3,1	5,4	7,3	
Imbalance indicators																				
Gap between the broad credit to NFC-to-GDP ratio and its long-term trend (Basel method)	-5,6	-4,2	-3,8	-5,1	-4,5	-3,6	-4,1	-5,4	-6,5	-7,7	-7,3	-7,9	-6,3	-6,5	-6,4	-3,2	-3,4	-1,1	-1,0	
Gap between the broad credit to NFC-to-GDP ratio and its long-term trend (LT method)	-2,4	-1,2	-1,1	-2,4	-1,9	-1,2	-1,7	-2,9	-3,7	-4,5	-3,9	-4,3	-3,0	-3,4	-3,4	-0,9	-1,6	0,1	-0,3	
Gap between the MFI credit to NFC-to-GDP ratio and its long-term trend (LT method)	-3,0	-2,2	-2,8	-3,4	-3,4	-3,3	-3,3	-3,8	-3,7	-4,3	-4,1	-4,5	-4,2	-4,2	-3,8	-3,7	-3,3	-3,4	-3,0	-3,3
NFC to equity ratio	44,2	46,3	46,2	45,4	45,7	47,3	45,3	43,6	41,7	39,5	39,5	36,7	37,3	37,5	37,9	37,2	38,1	41,6	43,4	
NFC short-term liabilities to short-term assets ratio	45,8	45,6	40,8	38,8	37,1	38,5	37,1	34,3	35,6	28,3	25,2	21,5	23,3	22,8	23,3	26,0	27,8	38,7	42,4	
NFC debt service to income (profit) ratio	21,0	22,7	21,0	20,5	21,5	22,0	21,7	21,1	20,4	19,6	19,6	19,0	19,5	19,3	19,3	20,8	20,8	21,9	21,8	

Notes: values are rounded; stages of some indicators are evaluated based on the percentiles of their values, hence in some instances cells that have the same value may be coloured differently.

Total corporate borrowing continued to accelerate, but borrowing from credit institutions slowed slightly.

Chart 10. Developments in broad corporate credit (Q1 2000–Q3 2022)

Percentages / Percentage points

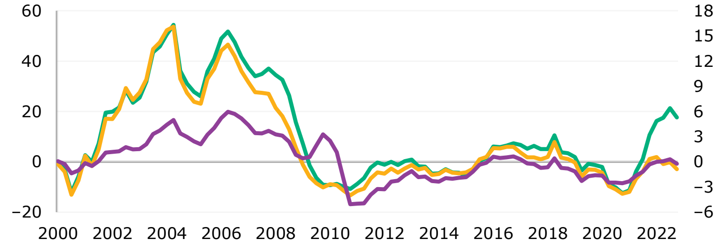


1-year nominal growth of broad credit
1-year real growth of broad credit
1-year difference of the broad credit-to-GDP ratio (right-hand scale)

Sources: State data agency, Bank of Lithuania and Bank of Lithuania calculations.

Chart 11. Developments in corporate borrowing from MFI (Q1 2000–Q4 2022)

Percentages / Percentage points



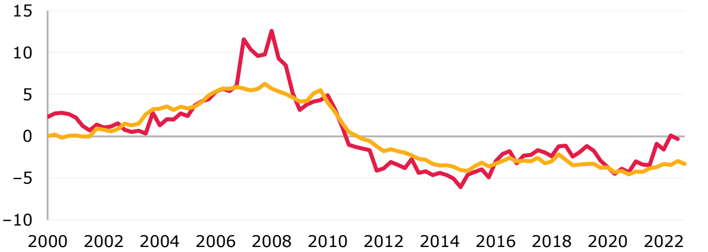
1-year nominal MFI credit growth
1-year real MFI credit growth
1-year difference of the MFI credit-to-GDP ratio (right-hand scale)

Sources: State data agency, Bank of Lithuania and Bank of Lithuania calculations.

No excess corporate borrowing from credit institutions, but broad credit levels have approached the limit of imbalances.

Chart 12. Corporate credit imbalances (Q1 2000–Q4 2022)

Percentage points



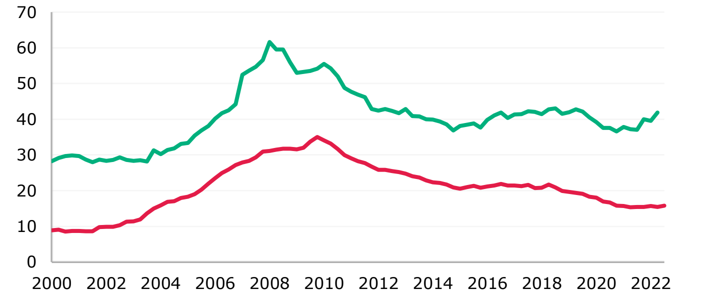
Gap between the broad credit to NFC-to-GDP ratio and its long-term trend (national method)
Gap between the MFI credit to NFC-to-GDP ratio and its long-term trend (national method)

Sources: State data agency and Bank of Lithuania.
Notes: the long-term trend is computed by applying a one-sided HP filter with a smoothing parameter of 400,000; before applying the filter, the ratio is modelled for the next 5-year window using a 4-quarter weighted average.

Corporate indebtedness to credit institutions remained low, while total indebtedness slightly rose.

Chart 13. Corporate credit-to-MFI loans-to GDP ratios (Q1 2000–Q3 2022)

Percentages



Broad credit to NFC-to-GDP ratio
MFI loans to NFC-to-GDP ratio

Sources: State data agency and Bank of Lithuania.

Household/housing sector

Housing credit and prices continued to grow rapidly, with limited imbalances in the house price segment.

Chart 14. Map of household / housing sector growth and imbalance indicator (Q4 2016–Q4 2022, the latest data are marked by the black dashed line on the right)

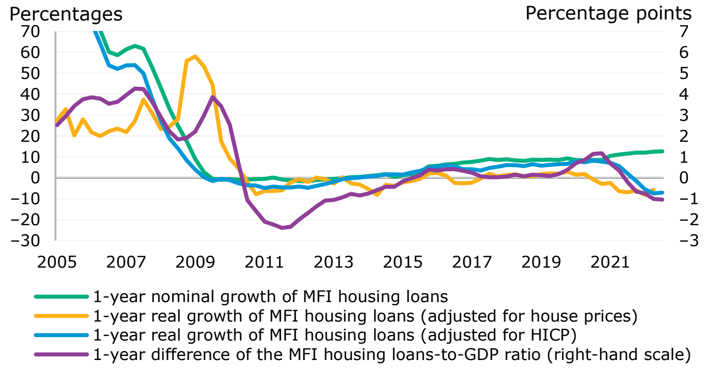
	2018 I	2018 II	2018 III	2018 IV	2019 I	2019 II	2019 III	2019 IV	2020 I	2020 II	2020 III	2020 IV	2021 I	2021 II	2021 III	2021 IV	2022 I	2022 II	2022 III	2022 IV
Household / housing sector																				
Growth indicators																				
Credit																				
1-year nominal growth of MFI housing loans	8,6	8,8	8,4	8,2	8,7	8,5	8,7	8,6	9,3	8,6	8,4	8,5	8,6	10,5	11,2	11,6	12,1	12,0	12,4	12,7
1-year nominal average growth of MFI housing loans (2-year annual average)	8,2	8,6	8,6	8,9	9,0	9,1	8,9	8,7	9,4	8,9	8,9	8,9	9,4	10,0	10,2	10,5	10,9	11,9	12,5	12,9
1-year real growth of MFI housing loans (adjusted for housing prices)	0,7	1,3	1,7	0,7	0,8	1,8	2,1	2,0	2,9	1,5	1,8	-0,8	-3,0	-2,5	-6,5	-6,9	-5,9	-8,2	-5,7	
1-year real average growth of MFI housing loans (2-year annual average, adjusted for housing prices)	-1,0	-0,5	0,7	1,3	0,7	1,6	2,0	1,3	1,9	1,7	2,0	0,6	-0,1	-0,5	-2,4	-3,8	-4,4	-5,2	-5,9	
1-year real growth of MFI housing loans (adjusted for HICP)	5,3	6,1	6,1	5,7	6,5	5,8	6,2	6,5	6,7	7,9	7,4	8,2	7,8	7,1	5,7	2,0	-1,6	-5,5	-7,4	-7,0
1-year real average growth of MFI housing loans (2-year annual average, adjusted for HICP)	4,9	5,2	5,0	5,3	6,1	6,2	6,4	6,3	6,8	7,1	7,1	7,6	7,5	7,8	6,7	5,2	3,0	0,6	-1,1	-2,6
1-year difference of the MFI housing loans-to-GDP ratio	0,0	0,1	0,1	0,1	0,1	0,1	0,1	0,2	0,4	0,7	0,9	1,1	1,2	0,7	0,4	-0,2	-0,7	-0,8	-1,0	-1,0
1-year average difference of the MFI housing loans-to-GDP ratio (2-year annual average)	0,2	0,2	0,1	0,1	0,1	0,1	0,1	0,1	0,3	0,4	0,5	0,7	0,8	0,7	0,6	0,5	0,3	0,0	-0,3	-0,6
Other indicators																				
Gap between the housing loan flow and its fundamentals (2-markets disequilibrium model)	-14,9	-12,3	-12,1	-12,3	-12,9	-14,4	-13,1	-15,3	-16,9	-14,4	-11,2	-3,2	6,0	11,5	18,6	22,0	25,3	29,0	26,7	
1-year difference of the broad HH credit-to-GDP ratio (1-year moving sum of broad HH credit multiplied by 5, divided by 5-year moving sum of GDP)	1,6	1,7	1,6	1,9	2,4	2,6	2,9	2,8	2,5	2,7	2,4	2,1	1,8	1,2	0,8	0,9	1,6	1,9	2,1	
Ratio of pure new housing loans (4 quarters sum) to GDP (4 quarters sum)	2,8	2,8	2,8	2,8	2,9	2,8	2,7	2,7	2,8	2,6	2,6	2,8	3,0	3,4	3,5	3,5	3,5	3,4	3,4	3,2
Ratio of new housing loans including rollovers (4 quarters sum) to GDP (4 quarters sum)	3,1	3,1	3,2	3,2	3,2	3,1	3,1	3,0	3,1	3,0	3,0	3,2	3,3	3,7	3,8	3,9	3,9	3,8	3,8	3,6
Housing credit impulse (loan portfolio)	-0,1	0,1	0,1	0,4	0,3	-0,1	0,0	-0,1	0,5	0,1	0,0	0,3	0,1	0,7	0,4	0,2	0,2	-0,2	0,1	
Housing credit impulse (new loans)	-0,1	-0,2	0,3	0,2	-0,1	-0,3	-0,1	-0,2	0,3	-0,4	0,0	0,7	0,6	1,7	0,5	0,2	0,0	-0,4	0,1	-0,7
1-year difference of the household debt service to income ratio	-0,1	0,0	-0,1	0,0	0,0	0,0	0,0	0,0	-0,1	0,0	0,1	0,1	0,1	0,0	-0,1	-0,1	-0,1	-0,1	0,0	0,0
House prices																				
1-year nominal growth of house prices	7,8	7,4	6,6	7,4	7,9	6,6	6,4	6,5	6,2	7,0	6,4	9,4	12,0	13,3	18,9	19,8	19,2	22,1	19,3	
1-year real growth of house prices (adjusted for HICP)	4,6	4,7	4,3	4,9	5,7	3,9	4,0	4,4	3,7	6,3	5,5	9,1	11,1	9,8	13,0	9,5	4,6	3,0	-1,8	
1-year real average growth of house prices (3-year annual average, adjusted for HICP)	5,0	5,0	4,6	5,5	6,1	5,3	4,2	4,2	4,9	5,2	4,8	6,5	7,3	7,1	8,0	8,3	6,8	6,7	5,7	
1-year difference of the house price-to-rent ratio	-2,3	-2,2	-0,5	-0,8	-0,5	1,0	-3,4	-3,0	-1,9	-2,1	3,1	2,1	3,2	5,3	4,7	7,7	3,4	-6,0	-4,1	
1-year average difference of the house price-to-rent ratio (3-year annual average)	0,0	-0,4	-0,1	-0,2	0,1	-0,2	-2,0	-1,7	-1,6	-1,1	-0,3	-0,6	0,3	1,4	1,5	2,3	1,6	-0,9	1,2	
1-year difference of the house price-to-income ratio	-2,0	-2,0	-2,9	-2,2	-1,5	-3,1	-3,1	-3,4	-3,3	-0,9	0,0	3,0	5,3	3,4	5,0	4,7	2,4	5,1	4,3	
1-year average difference of the house price-to-income ratio (3-year annual average)	-2,0	-2,3	-2,5	-1,7	-1,1	-1,8	-2,5	-2,8	-2,3	-2,0	-2,0	-0,9	0,2	-0,2	0,7	1,4	1,5	2,5	3,1	
Imbalance indicators																				
Credit																				
Gap between the broad credit to HH-to-GDP ratio and its long-term trend (Basel method)	-7,2	-6,8	-6,5	-6,3	-6,3	-6,0	-5,7	-5,4	-5,5	-4,6	-4,2	-3,9	-3,9	-3,9	-4,0	-4,2	-4,3	-4,4	-4,7	
Gap between the broad credit to HH-to-GDP ratio and its long-term trend (LT method)	-2,4	-2,1	-2,0	-2,0	-2,1	-2,0	-1,8	-1,7	-1,9	-1,3	-1,1	-1,0	-1,2	-1,3	-1,4	-1,6	-1,7	-1,8	-2,0	
Gap between the MFI credit to HH-to-GDP ratio and its long-term trend (LT method)	-2,1	-1,9	-1,8	-1,8	-2,0	-1,8	-1,8	-1,8	-1,8	-1,3	-1,3	-1,2	-1,1	-1,3	-1,4	-1,6	-1,8	-1,9	-2,1	-2,3
Gap between the MFI housing loans to HH-to-GDP ratio and its long-term trend	-0,7	-0,6	-0,6	-0,6	-0,6	-0,6	-0,5	-0,5	-0,3	0,0	0,0	0,2	0,3	0,1	-0,1	-0,2	-0,4	-0,5	-0,8	-0,8
House prices																				
Median of house price overvaluation indicators	-4,4	-3,6	-2,0	-2,3	-1,6	-1,9	-0,9	-0,9	-1,3	1,6	3,3	4,3	5,7	7,0	9,0	8,8	6,5	6,2	4,1	
Gap between the nominal HPI and its long-term trend (HP filter)	-0,4	0,8	1,4	2,0	3,1	3,3	3,9	4,1	4,7	5,8	6,2	8,6	11,3	13,3	17,6	20,3	22,7	27,1	27,7	
Gap between the real HPI and its long-term trend (HP filter)	-5,2	-4,7	-3,4	-3,2	-1,7	-2,5	-0,9	-0,9	-0,2	1,5	2,6	5,3	7,5	7,6	10,5	9,7	7,6	6,4	4,2	
Gap between the house price-to-income ratio and its long-term trend	-9,3	-9,6	-9,6	-10,0	-14,3	-14,8	-14,8	-15,3	-16,6	-15,9	-17,3	-16,7	-14,8	-14,2	-10,2	-8,6	-8,8	-5,7	-3,9	
Gap between the house price-to-rent ratio and its long-term trend	-15,5	-14,8	-14,8	-14,5	-14,5	-15,6	-15,3	-14,2	-12,9	-11,0	-10,2	-7,9	-3,8	-0,7	4,0	7,8	5,3	6,0	3,9	
Gap between house prices and their long-term trend (1-market disequilibrium model)	-3,6	-2,6	-0,6	-1,3	-1,5	-1,2	-0,9	-0,3	-2,3	1,7	5,5	3,4	4,3	9,0	9,9	18,2	22,1	27,1	28,5	
House price panel model	0,0	0,5	0,4	-0,3	-0,5	-0,9	-0,1	-0,9	-0,1	5,9	4,1	6,1	7,0	6,4	8,2	7,9	5,3	5,5	2,1	

Notes: Values are rounded; stages of some indicators are evaluated based on the percentiles of their values, hence in some instances cells that have the same value may be coloured differently.

Nominal housing lending remained intense, but the economy and house prices grew faster, so there was no excess borrowing.

Chart 15. Housing credit developments

(Q1 2007–Q4 2022)

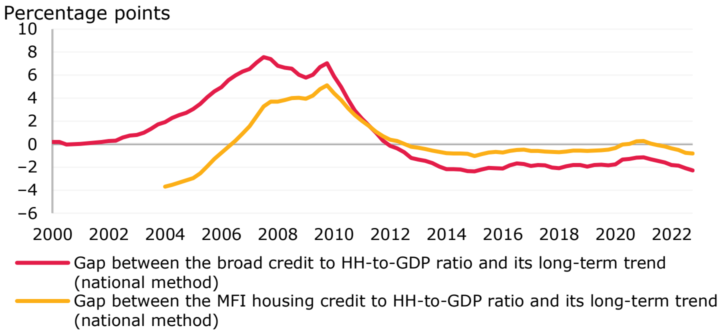


Sources: State data agency, Bank of Lithuania and Bank of Lithuania calculations.

There is no excess housing lending.

Chart 16. Household credit imbalances

(Q2 2001–Q4 2022)



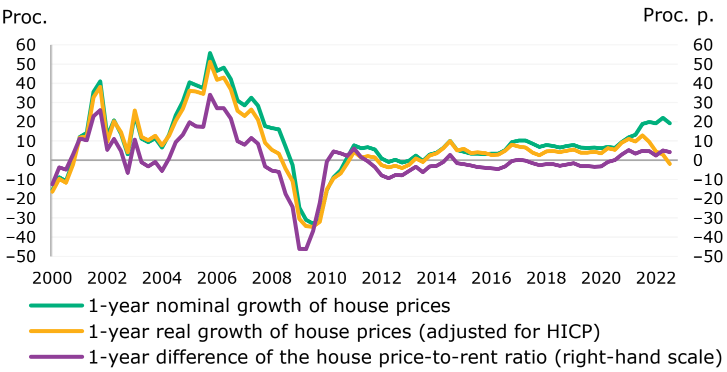
Sources: State data agency and Bank of Lithuania.

Notes: the long-term trend is computed by applying a one-sided HP filter with a smoothing parameter of 400,000; before applying the filter, the ratio is modelled for the next 5-year window using a 4-quarter weighted average.

Wages began to rise faster than house prices, slightly improving housing affordability.

Chart 17. House price developments

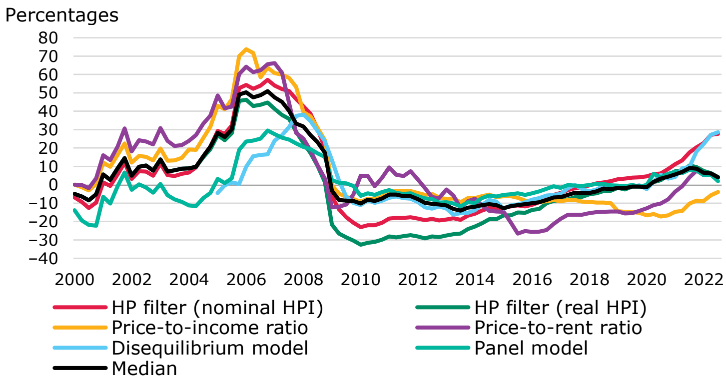
(Q1 2005–Q3 2022)



Sources: State data agency and Bank of Lithuania calculations.

House prices remain slightly overvalued, but overvaluation has decreased in recent quarters.

Chart 18. Gap between actual house prices and their fundamental values (Q1 2000–Q3 2022)



Source: Bank of Lithuania calculations.