LIETUVOS BANKAS
BANK OF LITHUANIA
EUROSYSTEM

COUNTERCYCLICAL CAPITAL BUFFER

BACKGROUND MATERIAL FOR DECISION

2016

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Abbreviations

CCB	counter-cyclical capital buffer
ECB	the European Central Bank
ESRB	European Systemic Risk Board
GDP	gross domestic product
MFI	monetary financial institutions (banks and credit unions)
RLR	Responsible Lending Regulations
p.p.	percentage point
VĮ	state enterprise

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Unless otherwise indicated, data up to 1 February 2016 were used. In addition, for the banking sector analysis, the consolidated data provided by banks operating in Lithuania, including foreign bank branches, were used unless otherwise indicated.

Periods indicated in chart subtitles also include data for the end of period (the year, quarter, etc.).

The decision basis for setting the countercyclical capital buffer rate

The Bank of Lithuania took the decision to set the CCB rate at 0 p.p., which will come into effect as of 31 March 2016. The decision was based on core and additional indicators for setting the CCB, as well as the latest analysis of the borrowing and housing markets.

A set of core indicators used to determine the CCB reference rate[ii] does not show a build-up of increasing imbalances in the credit market. In Q3 2015, the credit-to-GDP ratio stood at the 59.3 per cent, its gap to long-term trend remained negative and, subject to the method of assessment, amounted to –6.2 and –19.9 p.p. According to the data indicating lending from banks and credit unions, the credit portfolio of the private sector decreased by 0.4 per cent over the fourth quarter of 2015. The development of housing loans was different: over the fourth quarter this portfolio increased by 1.7 per cent. In spite of this, such growth is compatible with the trends of economic development of the country and growing household income.

Additional indicators for setting the CCB, which include external (foreign) factors of the credit market and developments in the housing market, do not indicate any unsustainable developments in the lending market either. At the end of Q4 2015 the loan-to-deposit ratio was 103.6 per cent and was significantly below its long-term average of 119 per cent. In Q3 2015 Lithuania's current account was in deficit, though MFI borrowing from abroad contributed little to its financing.

Residential property prices remained below their long-term equilibrium value, while the gap decreased slightly over the quarter. While trading in the real estate market was much more active in the fourth quarter of 2015 than a year ago, the number of real estate transactions over 2015 was almost 5 per cent less than in 2014. The supply and demand trends within the market indicate a low probability of inconsistent price growth in the near future. Various early warning indicators also show that in the nearest future the probability of the event of a systemic banking crisis is low.

[i] **Resolution of the Board of the Bank of Lithuania No 03-35 of 29 March 2016 on the application of the counter-cyclical capital buffers.**
[ii] **The calculation of deviations of the credit-to-GDP ratio from its long-term trends is based, inter alia, by taking into account growth of credit in the country and the ESRB recommendations currently in effect. For more information, see the Bank of Lithuania's Occasional Paper No 5, "*Anticiklinio kapitalo rezervo taikymas Lietuvoje*".**

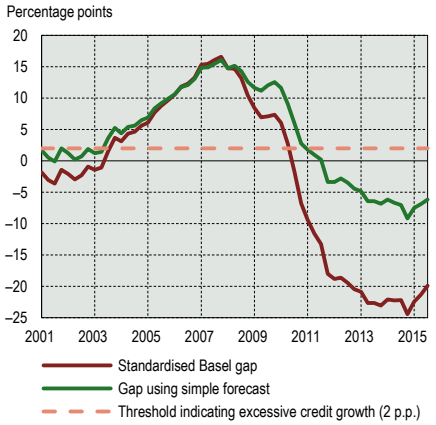
The credit market became more active, but development is sustainable

The gap between the credit-to-GDP ratio and its long-term trend remained significantly negative, though in recent quarters it decreased (see Chart 1). The reference rate for the CCB calculated by the Bank of Lithuania based on both the Basel method and the method augmented by a forecast[1] was 0 p.p. (see Chart 2). The CCB reference rate is computed using the data of credit to the private sector, which include all creditor-issued loans to non-financial corporations and households, as well as the debt securities issued by non-financial corporations. Depending on the assessment method[2], in the third quarter of 2015, the gap between the credit-to-nominal GDP ratio and its long-term trends remained negative and amounted to –6.2 p.p., and –19.9 p.p. Compared to second quarter of 2015, the gap between the credit-to-GDP ratio became respectively 0.7 and 1.4 p.p. smaller (over the year — 3.0 and 4.5 p.p.). The main reason for the decline — in the third quarter of 2015, the growth of nominal GDP was slower than credit increase (0.8 and 2.3% respectively). In the third quarter of 2015, 69.7 per cent of the credit portfolio (i.e. a total of loans issued to the private sector and securities issued by non-financial undertakings) was comprised of other MFIs' (banks and credit unions) loans issued to the private non-financial sector; the credit market analysis below is based on the latest loan data of other MFIs.[3]

In Q4 2015 the portfolio of loans issued to the private non-financial sector decreased, although the volume of new loan contracts increased.

Chart 1. Credit-to-GDP gap ratio and its long-term trend

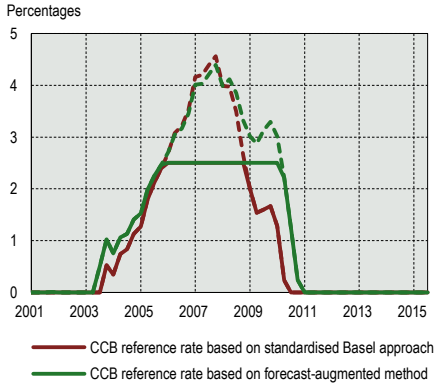
(Q1 2001–Q3 2015)



Sources: Statistics Lithuania and Bank of Lithuania calculations.

Chart 2. CCB reference rates

(Q1 2001–Q3 2015)

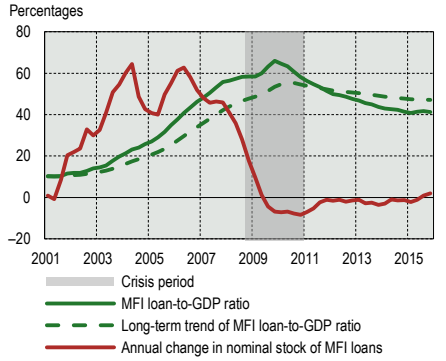


Source: Bank of Lithuania calculations.
Note: dashed lines indicate the CCB reference rates when no ceiling of the CCB rate (2.5%) is applied.

[1] "*Anticiklinio kapitalo rezervo taikymas Lietuvoje*", Occasional Paper Series No 5 2015, Bank of Lithuania.
[2] According to the ESRB recommendation (ESRB/2014/1) the Bank of Lithuania calculates the gap using two methods: standardised Basel method, defined in the first part of the Annex of this recommendation, and by applying credit-to-GDP forecast that more suitable method for Lithuanian data. The latter differs from the standardised Basel method since the long term trend is calculated by extending the ratio forward using a 4-quarter weighted average. For more information, see N. Valinskytė and G. Rupeika, "Leading Indicators for the Countercyclical Capital Buffer in Lithuania", Bank of Lithuania Occasional Paper No 4 2015.
[3] Using the data from MFI balance statistics, adjusted for bankrupting MFI elimination from statistical and other technical factors. For more information, see the December 2014 Lithuanian Economic Review's Annex 2, "MFI loan portfolio adjustment for technical factors".
(http://www.lb.lt/lietuvos_ekonomikos_apzvalga_2014_m_gruodzio_men). By taking into account the fact that the difference between the converted and the official data decreases, the next background material for a decision on the counter-cyclical capital buffer intends to use officially provided data.

Chart 3. Development of loans to the private non-financial sector

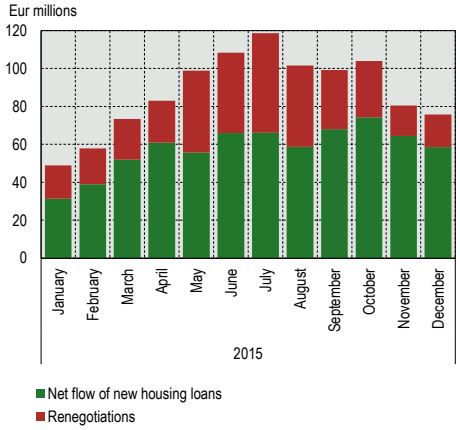
(Q1 2001–Q4 2015)



Sources: Statistics Lithuania and Bank of Lithuania calculations.
Note: the long-term trend is estimated by applying a one-sided HP filter with the smoothing parameter 400,000; before applying the filter, the ratio is modelled for the next five-year window using a four-quarter weighted average.
** Annual difference o of loan portfolio annual change as a percentage of GDP.*

Chart 4. Net flow of new housing loans

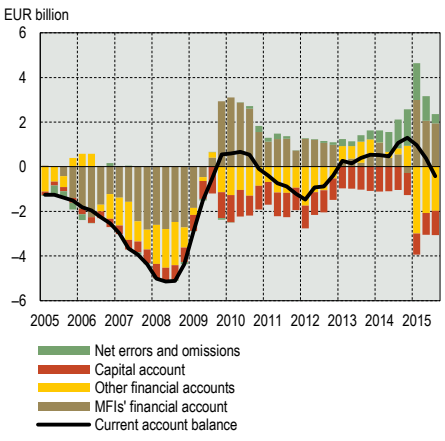
(January–December 2015)



Sources: ECB and Bank of Lithuania calculations.

Chart 5. Current account balance and its financing (4-quarter moving sum)

(Q1 2005–Q3 2015)



Source: Bank of Lithuania calculations.

Over the fourth quarter the loan portfolio decreased by 0.4 per cent and the annual nominal GDP grew by 0.7, therefore, the ratio of the private sector loan portfolio and GDP decreased over the fourth quarter of 2015 by 0.3 p.p. and amounted to 41.3 per cent (see Chart 3). Compared to the respective period a year ago, the loan portfolio was bigger by 1.9 and the credit impulse behind loans to the private sector (the loan portfolio's change acceleration) remained positive and indicated a moderately accelerating credit growth. The portfolio of loans to non-financial corporations decreased by EUR 150.1 million or 1.9 per cent over Q4 2015. The annual rate of change of this loan portfolio remained negative (–0.2%). In the fourth quarter of 2015, the portfolio of loans to households increased by EUR 87.5 million or 1.1 per cent (over the 2015 the change amounted to EUR 304.9 million or 4.1%). The volumes of new loan agreements (as well as renegotiations of previously granted loans) for private sector are characterised by seasonality; usually in the third and fourth quarter the volumes of new agreements are bigger. In the fourth quarter of 2015, the volume of these agreements was EUR 1.6 billion and was larger by a fifth compared to the respective period a year ago. This growth was driven by more active lending to non-financial undertakings and loan portfolio did not grow due to shortening loan maturities and faster repayment of loans. The ratio of the volume of new loan agreements (as well as renegotiations of previously granted loans) to GDP increased over the year by 2.3 p.p. to 15.5 per cent.

In the fourth quarter of 2015, lending to real estate and transport enterprises was increasing; and to trade, construction and production enterprises was decreasing. The loan portfolio to construction enterprises decreased by a fifth over the fourth quarter of the 2015. Seasonal factors have a significant influence to the activity of construction enterprises and this is partly reflected by the trend of loan repayment to banks: during the cold period of the year the activity of these enterprises declines and the need to borrow diminishes. Economic activities, related to the public sector (i.e. energy supply) or recovering consumption (i.e. transport), were funded by banks somewhat more actively: the loan portfolio provided to these activities over the fourth quarter increased by 5.8 per cent. Commercial banks, surveyed by the Bank of Lithuania, assessed the financial situation of enterprises as being average or good and foresaw that it should remain so over the first quarter of 2016.

The loan portfolio for house purchases continued to grow. The portfolio of housing loans over Q4 2015 increased by EUR 103.7 million or 1.7 per cent. In the aforementioned period, the net flow of new housing loans[4] amounted to EUR 197.6 million or 2.0 per cent more than a quarter ago (see Chart 4). The lending surveys of commercial banks, performed by the Bank of Lithuania, indicate that the portfolio of housing loans should grow by about 4.1 per cent in 2016. This growth would be compatible with the Bank of Lithuania's projected growth of average salary that in 2016 should comprise 5 per cent.

The portfolio of consumer and other loans to households granted by banks and credit unions moderately decreased, however the latter borrowed more actively from other loan providers. The portfolio of consumer and other loans to households granted by banks and credit unions over Q4 2015 decreased by EUR 16.8 million or 1.0 per cent. Households more actively borrowed from not credit institutions issuing consumer loans, i.e., from other consumer credit providers and leasing undertakings. In Q3 2015 the portfolios of loans of consumer credit lenders and financial leasing undertakings issued to households for consumption boosted by 6.2 and 5.9 per cent respectively (to EUR 410.8 million and EUR 158.8 million). The growing demand for these products is indicated by the growing number of enterprises that are on the list of consumer credit lenders: over Q4 2015 4 new enterprises started to provide consumer credits (in total there are 153). Moreover, in recent years borrowing between households (P2P lending) increased and there was growth in enterprises offering such services. For example, at the

[4] Difference between new agreements on loans and loans that were renegotiated.

end of January the balance of re-lent loans of *UAB Bendras finansavimas* (SAVY) amounted to EUR 2.9 million or EUR 1.0 million more than the quarter before (i.e. October of 2015). It should be noted that the amendments of the Law on Consumer Credits which entered into force on 1 February 2016 limit unsustainable development opportunities of this type of credits.

In Q4 2015 the loan-to-deposit ratio of banks operating in the country remained essentially unchanged. Over the aforementioned period growth in deposits with banks was somewhat stronger than growth in the portfolio of loans issued by banks, but this practically did not change the loan-to-deposit ratio. At the end of 2015 this ratio amounted to 103.6 per cent, or a quarter-on-quarter decrease of 1.4 p.p.[5] Compared to the long-term average (119%), the loan-to-deposit ratio was low and indicated that almost all of the loans issued to the private sector are comparable to deposits from the private sector.

In Q3 2015 Lithuania's current account was slightly in deficit and amounted to –1.7, compared to quarter GDP (see Chart 5). The main influence on that came from a growth in remittances from Lithuania related to reinvestments, portfolio investment and negative net export of goods. In respect of sustainability of development of loans, the financing sources of current account deficit are important. One of these sources is MFI that a few years before the economic downturn contributed significantly to the funding of current account deficit, i.e., the increased import of goods was funded by private sector that borrowed from banks and the latter borrowed from abroad. In Q3 2015, MFI contributed only slightly to the funding of current account deficit. Based on the Bank of Lithuania's macroeconomic forecasts for December 2015, the current account for 2016 should be in deficit (–3.5% compared to GDP) as a result of more rapid growth of imports and transfer of funds from Lithuania. It is expected that the capital transfers to Lithuania would cover a large part (1.9 p.p.) of the deficit of this account.

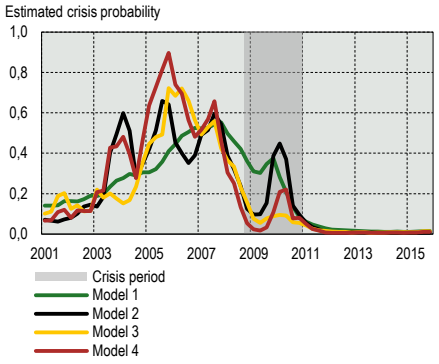
At the end of Q4 2015, the composite early crisis warning indicators suggested no build-up of imbalances in the financial sector (see Chart 6). The composite early crisis warning indicators, adapted for Lithuania, summarised the state of the credit market, housing affordability, the ability of borrowers to meet financial liabilities and the development of the equity market.[6] These indicators can be considered as estimates of the probability for a systemic bank crisis (approximately with a 5-year horizon). Since 2012, these estimates have been close to 0; therefore, the probability of the event of a systemic banking crisis due to excessive credit growth in the coming five years is estimated as low.

The level of indebtedness of the private non-financial sector in 2016 should remain essentially unchanged. In the survey of January 2016, compared to the survey of October 2015, the commercial banks surveyed by the Bank of Lithuania expected more rapid portfolio growth of private sector in 2016. Although, historical data shows that commercial banks are likely to overestimate the development of the loan portfolio; even with the optimistic projections of commercial banks coming to pass (3.7% growth of loan portfolio), the level of indebtedness would not change significantly (decrease by 0.2 p.p.) as the Bank of Lithuania-projected nominal GDP growth in 2016 should amount to 4.1 per cent.

Even if, in the near future, the funding of the private sector would grow slightly more rapidly, this would be compatible with the increasing income. One of the values indicating the households' debt burden — the ratio of the portfolio of loans for house purchase to total annual wages fund — in Q3 2015 amounted to 51.6 per cent, a year-on-year decrease of 1.5 p.p. Over

Chart 6. Composite early warning indicators for crisis in Lithuania

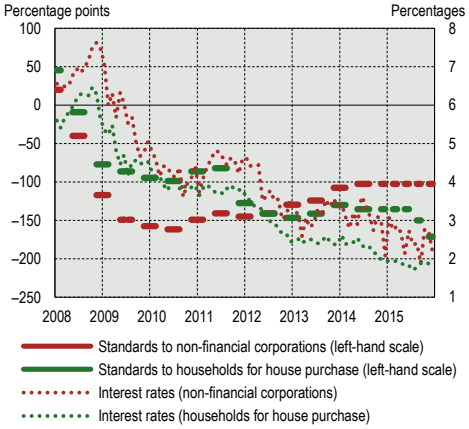
(Q1 2001–Q4 2015)



Source: Bank of Lithuania calculations.
Note: composite indicators are calculated based on logit models estimated in Detken et al (2014), Operationalising the countercyclical capital buffer: indicator selection, threshold identification and calibration options, ESRB Occasional Paper No. 5.

Chart 7. Bank lending conditions and loans to the private sector interest rates

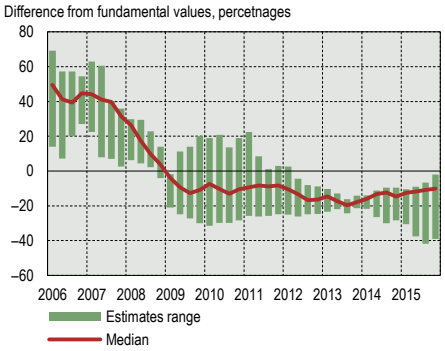
(January 2008–December 2015)



Sources: Bank lending surveys and Bank of Lithuania calculations.

Chart 8. Gap between housing prices and the long-term average

(Q1 2006–Q4 2015)

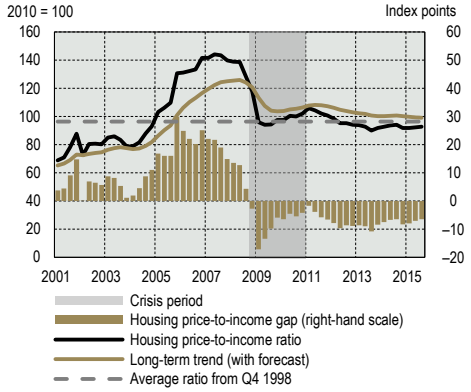


Source: Bank of Lithuania calculations.
Note: estimates are based on the price to rent ratio, price to income ratio, econometric model and HP filter (plačiau žr. Kulikauskas D. 2015: Measuring Fundamental Housing Prices in the Baltic States: Empirical Approach. – Proceeding of 22nd Annual European Real Estate Society Conference, 15–40.).

[5] Eliminating seasonal influence (see Chart F of the Annex).
[6] N. Valinskytė and G. Rupeika, "Leading Indicators for the Countercyclical Capital Buffer in Lithuania", Bank of Lithuania Occasional Paper No 4 2015. Indicators are formed based on econometric models, which reflect various combinations of these measures: gap between the loan-to-GDP ratio, housing prices and the annual change in the relationship between income, debt payments and receipts ratio, the annual change in the stock price. The composite indicators show the estimates for the future probability of a systemic financial crisis and it is likely that they are more accurate as early warning indicators than the single variables.

Chart 9. Housing prices-to-household income gap (forecast-augmented)

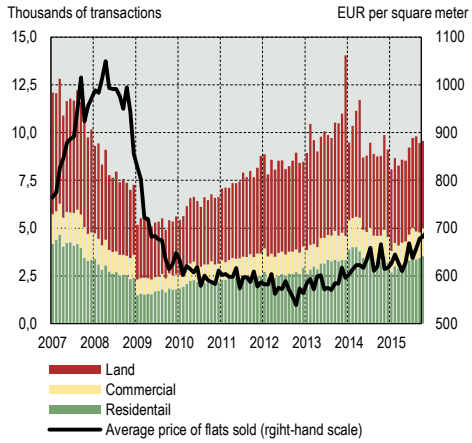
(Q1 2001–Q3 2015)



Sources: Statistics Lithuania and Bank of Lithuania calculations.
Notes: 1) income – household wages and salaries; 2) the long-term trend is estimated by applying a one-sided HP filter with the smoothing parameter 400,000; before applying the filter, the ratio is modelled for the next five-year window using a four-quarter weighted average.

Chart 10. Activity of the real estate market (seasonally adjusted)

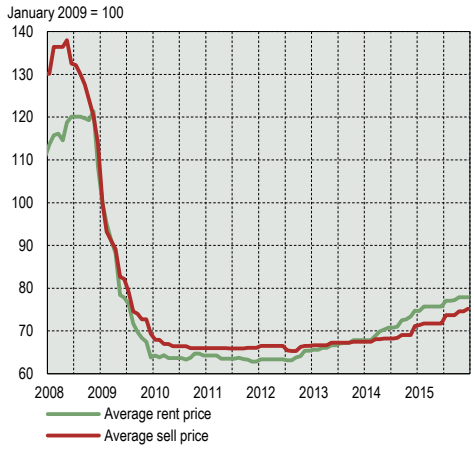
(January 2007–December 2015)



Sources: VĮ Registrų centras and Bank of Lithuania calculations.

Chart 11. Renting and selling prices of commercial property

(January 2008–December 2015)



Sources: UAB Ober-Haus and Bank of Lithuania calculations.

5 years (from the peak reached in Q3 2010) this ratio decreased by 14.6 p.p. Based on the Bank of Lithuania's projections for December 2015, in 2016 nominal wages in Lithuania will rise by 5.0 per cent, the number of employed persons will grow by 0.2 per cent, the unemployment rate will decrease by 0.4 p.p. In the opinion of the surveyed commercial banks, the growth of the portfolio of housing loans to households in 2016 will be 4.1 per cent, despite the remaining strict lending conditions (see Chart 7).

The number of transactions and the price of housing in the real estate market are increasing, yet the latter remains below their long-term equilibrium value

Residential property prices remained below their long-term equilibrium value, although the gap decreased for a fourth consecutive quarter (see Chart 8). Lending to households for house purchase and residential property prices are closely related. The growth of housing prices, too heavily based on borrowed funds and not on underlying factors, such as general economic growth, wage increases, employment growth, changes in the demographic situation, would be assessed as unsustainable. In Q4 2015, the indicator, based on the price to rent ratio, showed that the negative gap decreased. Other indicators show that the gap between housing value and the long-term equilibrium value did not change much, staying 2–15 per cent below it (in Q3 — 8–14%). The gap between the ratio of housing prices to household income (applying the projections) and long-term trend over Q3 2015 decreased due to the more rapid growth of housing prices compared to household income and amounted to –6.5 per cent (up from –7.1% in Q2; see Chart 9). The sale and rent prices of commercial real estate in the period under review increased by 2.0 and 0.9 per cent respectively (see Chart 10). Due to this, the profitability of office renting did not change much and at the end of Q3 2015 was 9.8 per cent — 0.3 p.p. lower than the average for 2014–2015.

In Q4 2015, the number of purchase-sale transactions in the real estate market increased (see Chart 11). In this period, eliminating seasonal influence, in total 2.0 per cent more real estate objects were assigned than in the previous quarter. Trading in apartments and private houses, taking into account seasonal influence, grew over the quarter, by 1.2 and 0.5 per cent respectively, and trading in non-residential real estate decreased by 3.8 per cent. The number of real estate transactions in total over 2015 was almost 5 per cent less than in 2014.

House purchase transactions with loans continued to moderately increase. In Q4 2015 the share of housing purchased at least in part with borrowed funds was 37.4 per cent or 1.5 p.p. more than in Q3 and 12.1 p.p. exceeded the 2009–2014 average. During the said period a share of new banking loans funded housing transactions accounted for 53.8 percent — the number close to the long-term average. Purchasing of housing for personal use or as investment (to rent or sell later at a higher price) in the low interest rate environment and better financial standing of households could make it more attractive. In Vilnius, the annual profitability of middle class housing nominal rent amounted to 4.9 per cent[7] at the end of Q4 2015 and was significantly higher than the average annual interest rates paid on loans for house purchase (1.9%).

The growth of flat prices in Vilnius is limited by the large supply. According to data provided by *VĮ Registrų centras*, in Q4 2015 the average prices of sold flats of the largest and the most liquid newly built housing market — Vilnius — increased by 2.4 per cent, however, was 4.0 per cent lower than in respective period a year ago. According to data from market participants, over the last quarter of 2015 more flats were bought than built in the capital; the number of new flats (unsold or reserved in homes that have already been built or are under construction) decreased by 14.3 per cent over the quarter.

[7] These calculations were performed using data from *UAB Ober-Haus*, as in official statistics sources the price of housing lease is not presented by city. It can be assumed that a 55 sq. m. flat intended for leasing is newly built and over a year 1 per cent of its value is spent on its maintenance.

In the end of 2015 there were 4.2 thousand unsold new flats in Vilnius, or 200 less than a year ago. Currently, the number of unsold new flats in the market is quite high; however, according to the evaluation of market participants the supply is not excessive: if the level of market activity will be the same as in 2015, all unsold new flats would be realised in 1.1 years. In 2016 real estate developers plan to build 3 thousand new flats in Vilnius; 17.8 per cent less than in 2015. However, the unexpected fall in real estate demand (e.g. due to slower than projected economic growth) could result in stronger pressure for prices of the new flats to decline.

Annex. CCB reference rates and early warning indicators of the need to raise the CCB rate

Core indicators:

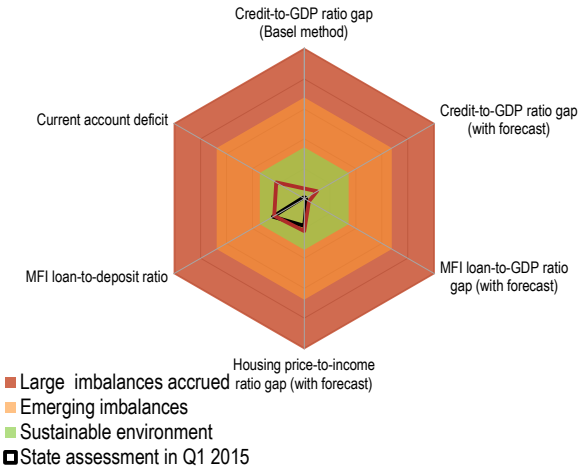
1. Credit to the private non-financial sector-to-GDP gap (calculated using standardised Basel method)
2. Credit to the private non-financial sector-to-GDP gap (calculated using forecast-augmented method)

Complementary indicators:

1. MFI lending to private non-financial sector-to-GDP gap (forecast-augmented)
2. Housing prices-to-household income gap (forecast-augmented)
3. MFI lending to private sector-to-private sector deposits (seasonally adjusted) ratio
4. Current account balance (deficit)-to-GDP ratio

Chart A. Evaluation of credit market imbalances based on core and complementary indicators

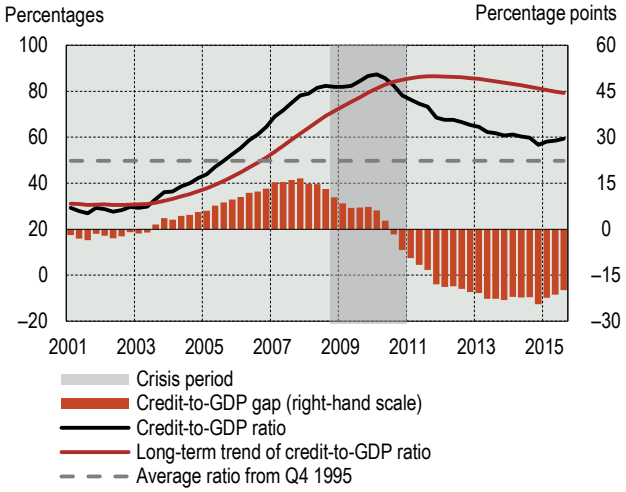
(evaluation carried out in Q1 2016)



Sources: Statistics Lithuania and Bank of Lithuania calculations.
Note: axes are scaled according to the range of a particular indicator: from its minimal value up to the maximal value.

Chart B. Core indicator I: credit to the private non-financial sector-to-GDP gap (calculated using standardised Basel method)

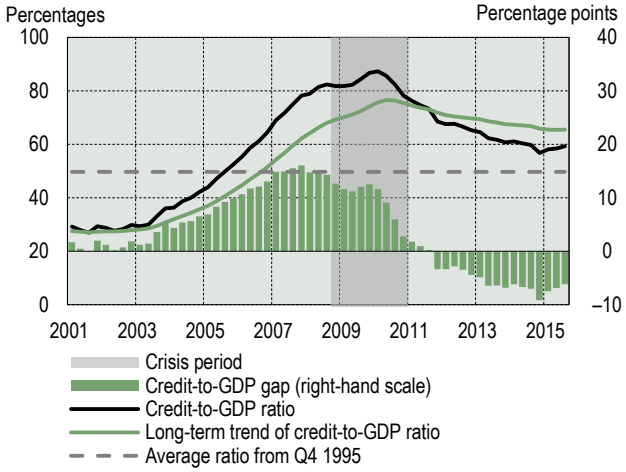
(Q1 2001–Q3 2015)



Sources: Statistics Lithuania and Bank of Lithuania calculations.
Note: long-term trend is estimated using one-sided HP filter with a smoothing parameter 400,000.

Chart C. Core indicator II: credit to private non-financial sector-to-GDP gap (forecast-augmented)

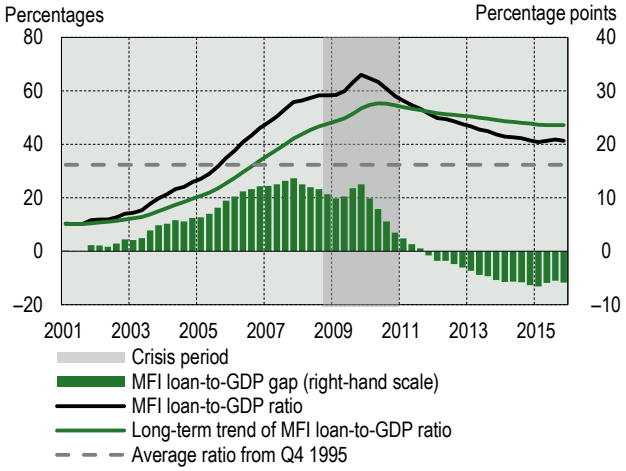
(Q1 2001–Q3 2015)



Sources: Statistics Lithuania and Bank of Lithuania calculations.
Note: the long-term trend is estimated by applying a one-sided HP filter with the smoothing parameter 400,000; before applying the filter, the ratio is modelled for the next five-year window using a four-quarter weighted average.

Chart D. Complementary indicator I: MFI lending to private non-financial sector-to-GDP gap (forecast-augmented)

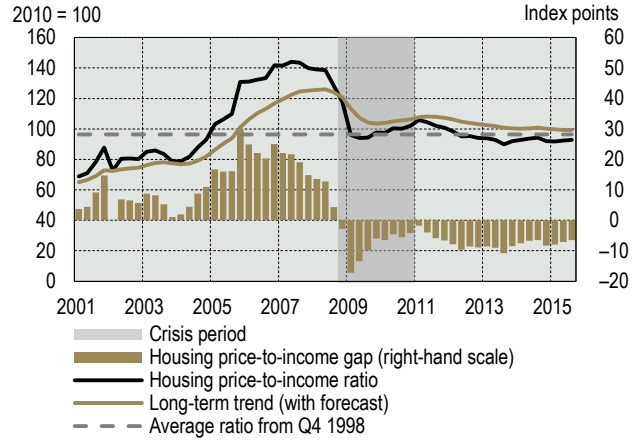
(Q1 2001–Q4 2015)



Sources: Statistics Lithuania and Bank of Lithuania calculations.
Note: the long-term trend is estimated by applying a one-sided HP filter with the smoothing parameter 400,000; before applying the filter, the ratio is modelled for the next five-year window using a four-quarter weighted average.

Chart E. Complementary indicator II: Housing prices-to-household income gap (based on forecast-augmented method)

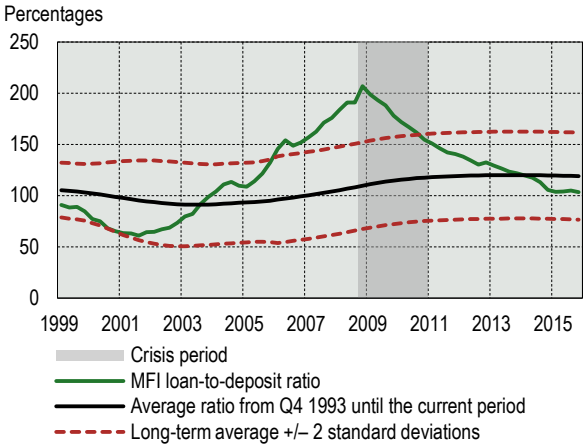
(Q1 2001–Q3 2015)



Sources: Statistics Lithuania and Bank of Lithuania calculations.
Notes: 1) income – household wages and salaries; 2) the long-term trend is estimated by applying a one-sided HP filter with the smoothing parameter 400,000; before applying the filter, the ratio is modelled for the next five-year window using a four-quarter weighted average.

Chart F. Complementary indicator III: MFI lending to private sector-to-private sector deposits (seasonally adjusted) ratio

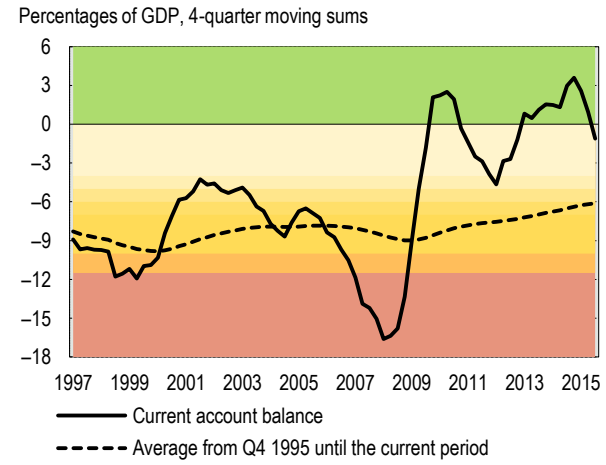
(Q1 1999–Q4 2015)



Source: Bank of Lithuania calculations.
Note: the ratio develops in a balanced way if it does not deviate from its long-term average by more than two standard deviations. Standard deviations are computed on the basis of Q4 1993–Q1 2006 data covering the period of moderate changes in the ratio.

Chart G. Complementary indicator VI: current account balance (percentages of GDP, 4-quarter moving sums)

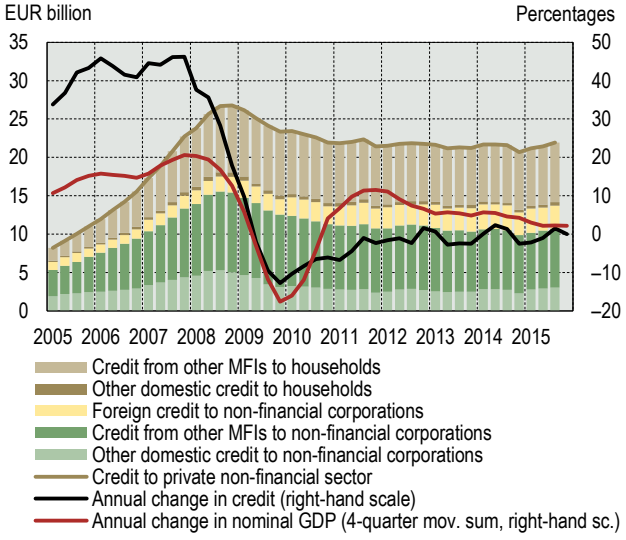
(Q1 1997–Q3 2015)



Sources: Statistics Lithuania and Bank of Lithuania calculations.
Note: colours indicate different levels of risk which have been set based on Reinhart S. M. and V. R. Reinhart (2008): "Capital flow bonanzas: An encompassing of the past and present", NBER working paper, 14321.

Chart H. Developments in credit and nominal GDP

(Q1 2005–Q3 2015; nominal GDP growth — until Q4 2015)



Sources: Statistics Lithuania and Bank of Lithuania calculations.