



LIETUVOS BANKAS
EUROSISTEMA

COUNTERCYCLICAL CAPITAL BUFFER

BACKGROUND MATERIAL FOR
DECISION

2 0 1 6

June

Abbreviations

CCB	counter-cyclical capital buffer
ECB	European Central Bank
EEA	European Economic Area
ESRB	European Systemic Risk Board
GDP	gross domestic product
MFI	monetary financial institution (banks and credit unions)
RLR	Responsible Lending Regulations
VĮ	state enterprise

The publication has been prepared by the Economics and Financial Stability Service of the Bank of Lithuania. It is available in PDF format on the Bank of Lithuania website www.lb.lt.

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

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

Decision basis for setting the countercyclical capital buffer rate

On 29 June 2016, the Bank of Lithuania took the decisionⁱ to set the CCB rate at 0 per cent. The decision was based on core and additional indicators for setting the CCB, as well as the latest analysis of the lending and housing markets.

A set of core indicators used to determine the CCB reference rateⁱⁱ does not show a build-up of increasing imbalances in the credit market. The gap between the credit-to-GDP ratio, which stood at 58.7 per cent, and the long-term trend remained significantly negative and, having increased somewhat and subject to the method of assessment, amounted to -7.0 and -20.0 p.p. in the fourth quarter of 2015. For the credit-to-GDP ratio to reach its long-term value, lending (for example, in 2018) should grow very rapidly (by more than 20% per year). Overall, the domestic economy saw a recovery in credit, for example, the portfolio of loans granted to the private sector by banks and credit unions increased by 2.3 per cent in the first four months of 2016, posting a year-on-year increase of 4.9 per cent in April, whereas the annual portfolio growth was positive for ten consecutive months. The portfolio of household (annual growth in April was 5.7%) and enterprise (4.0%) loans increased (yet a few large loans for large-scale enterprises had a significant impact on the latter). Faster-growing lending to households is also determined by their improving financial situation.

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 the first quarter of 2016, the loan-to-deposit ratio (107.5%) increased somewhat; however, it was below its long-term average (119%). In the fourth quarter of 2015 Lithuania's current account was slightly in deficit (-1.7%) (it is projected that it will remain in deficit in 2016 as well); however, this mainly stemmed from factors other than MFI borrowing from abroad.

With a surge in residential property market activity, prices rise, yet they remain below their long-term equilibrium value. Year on year, trading in the property market was much more active in the first quarter of 2016; however, this was mainly attributable to the slowdown in the market due to the introduction of the euro at the beginning of 2015. Various early warning indicators confirm that the probability of a systemic banking crisis is low.

ⁱ Resolution No 03-87 of the Board of the Bank of Lithuania of 29 June 2016 on the application of the countercyclical capital buffer.

ⁱⁱ The calculation of this rate is based on deviations of the credit-to-GDP ratio from its long-term trend, taking into account, inter alia, the domestic credit growth and the ESRB recommendations currently in effect. For more information, see Bank of Lithuania Occasional Paper No 5, "Application of the Countercyclical Capital Buffer in Lithuania".

Crediting is picking up, its development is sustainable

The gap between the credit-to-GDP ratio and its long-term trend remained significantly negative, and in the fourth quarter of 2015 it slightly increased (see Chart 1.). The CCB reference rate, calculated by the Bank of Lithuania based on both the Basel method and the method augmented by a forecast¹, remained 0 per cent (see Chart 2.). The CCB reference rate is computed using the data on credit to the private sector, which include all creditor-issued loans to non-financial corporations and households, as well as the holdings of debt securities issued by non-financial corporations. Depending on the assessment method², in the fourth quarter of 2015, the gap between the credit-to-nominal GDP ratio and its long-term trend was -7.0 and -20.0 p.p. Compared to the third quarter of 2015, the gap was respectively 0.8 and 0.2 p.p. bigger (even though it decreased by 1.4 and 3.5 p.p. over the year). Since, in the fourth quarter of 2015, 70.6 per cent of the credit portfolio, i.e. total loans issued to the private sector and securities issued by non-financial undertakings, was comprised of other MFI (banks and credit unions) loans to the private non-financial sector, the credit market analysis below is based on the latest data on other MFI loans.³

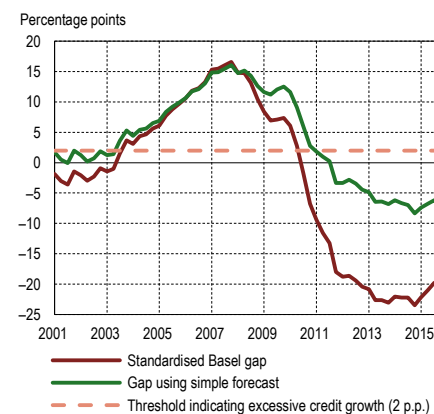
¹ See "Application of the Countercyclical Capital Buffer in Lithuania", Occasional Paper Series No 5, Bank of Lithuania (https://www.lb.lt/anticiklinio_kapitalo_rezervo_taikymas_lietuvoje).

² According to the ESRB recommendation (ESRB/2014/1), the Bank of Lithuania calculates the gap using two methods: the standardised Basel method, defined in the first part of the Annex to this recommendation, and by applying the credit-to-GDP forecast which is a more suitable method for the data on Lithuania. The latter differs from the standardised Basel method in that 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", Occasional Paper Series, Bank of Lithuania. (http://www.lb.lt/leading_indicators_for_the_countercyclical_capital_buffer_in_lithuania_1).

³ Statistical data from the MFI balance sheet is adjusted for the elimination of MFIs that went bankrupt from statistics and other technical factors. For more information, see Annex 2 "MFI loan portfolio adjustment for technical factors" of the December 2014 Lithuanian Economic Review (http://www.lb.lt/lithuanian_economic_review_december_2014). Taking into account the fact that the difference between the adjusted and the official data decreases, official data will be potentially used in the next background note for the decision on the application of the countercyclical capital buffer.

Chart 1. Gap between the credit-to-GDP ratio and its long-term trend

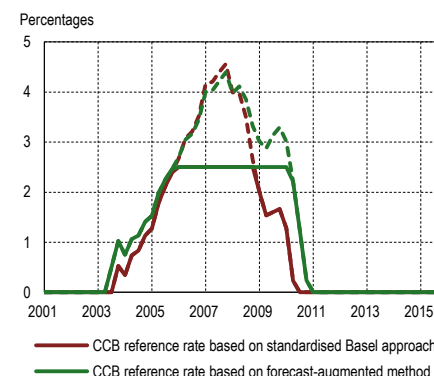
(Q1 2001–Q4 2015)



Sources: Statistics Lithuania and Bank of Lithuania calculations.

Chart 2. CCB reference rates

(Q1 2001–Q4 2015)

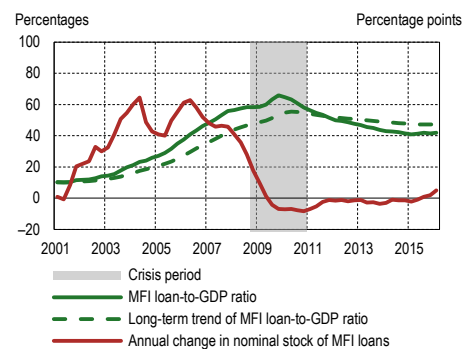


Source: Bank of Lithuania calculations.

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

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

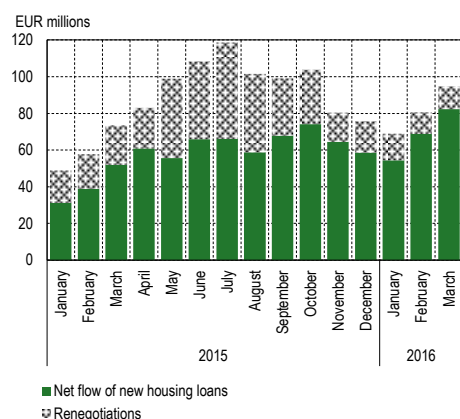
(Q1 2001–Q1 2016)



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 of loan portfolio annual change as a percentage of GDP.

Chart 4. Net flow of new housing loans

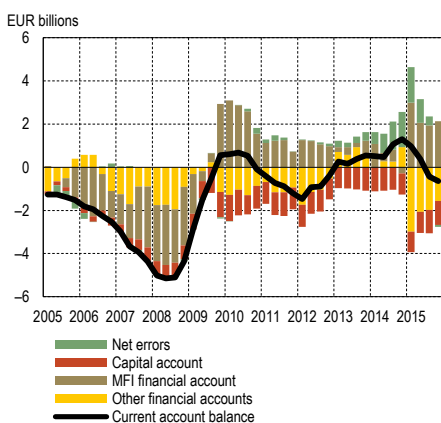
(January 2015–March 2016)



Sources: ECB and Bank of Lithuania calculations.

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

(Q1 2005–Q4 2015)



Source: Bank of Lithuania calculations.

In the first quarter of 2016, the portfolio of loans issued to the private non-financial sector increased. Over the first quarter, the loan portfolio increased by 1.7 per cent, whereas the annual nominal GDP grew by 0.6 per cent; therefore, the ratio of the private sector loan portfolio to GDP increased by 0.5 p.p. over the first quarter of 2016, amounting to 41.9 per cent (see Chart Chart 3.). In April 2016, the loan portfolio was 4.9 per cent bigger year on year, while the credit impulse behind loans to the private sector (the loan portfolio's change acceleration), which remained positive, indicated a robust annual credit growth (over the first four month of 2016, the credit impulse increased by 1.1 p.p.). The annual growth of the portfolio of loans to the non-financial sector has been positive for the tenth consecutive month. Over the first four months of 2016, the portfolio of loans to non-financial corporations increased by EUR 196.5 million or 2.6 per cent (4.0% over the year); however, several new large loans to telecommunication and energy corporations also added to stronger growth. In the period under review, the portfolio of loans to households increased by EUR 151.6 million or 1.9 per cent (5.7% over the year). With regard to the private sector, the volume of new loan agreements (excluding renegotiations of previously granted loans) was EUR 1.4 billion in April 2016, a year-on-year increase of 48.5 per cent. More than half (57.2%) of the increase in this flow was led by new loans to non-financial corporations, whereas 42.8 per cent — by loans to households (24.6% — housing loans).

In the first quarter of 2016, lending to production, construction and transport enterprises increased; conversely, lending to energy and trade enterprise decreased. Over the first quarter of 2016, the portfolio of loans to energy enterprises saw a 5.5 per cent decrease. This was driven by faster amortisation of loans granted. Trade enterprises also borrowed less, which could be led by a more rapid investment growth in the middle of last year. Crediting of production and transport enterprises saw a boost. Commercial banks, surveyed by the Bank of Lithuania, assessed the financial situation of enterprises as good, yet they admitted that they limited lending to some of them. Most often lending was limited to enterprises engaged in real estate activities.

The portfolio of loans for house purchases continued to grow. In the first quarter of 2016, the portfolio increased by EUR 65.2 million or 1 per cent (annual growth amounted to 6.1%). Nonetheless, the net flow of new housing loans⁴ amounted to EUR 205.8 million, a quarter-on-quarter increase of 4.3 per cent (see Chart Chart 4.). The lending surveys of commercial banks, performed by the Bank of Lithuania, show that in 2016 and 2017 the housing loan portfolio should grow by approximately 3.7 and 3.5 per cent respectively. This growth would be compatible with the average wage growth projected by the Bank of Lithuania, which in 2016 and 2017 should amount to 5.3 per cent, as well as the expected GDP growth (in 2016 and 2017 — by 2.6 and 3.4% respectively).

The amount of consumer loans granted by banks and credit unions increased moderately. In the first quarter of 2016, the loan portfolio encompassing consumer and other loans to households by banks and credit unions increased by EUR 21.4 million or 1.3 per cent. However, households borrowed less from non-credit institutions issuing consumer loans. Over the quarter, the portfolio of consumer loans for household consumption granted by consumer credit lenders fell by 4.0 per cent (up to EUR 418.4). The amount of new consumer credits, year on year, decreased by EUR 29 million (46.7%).

In the first quarter of 2016, the loan-to-deposit ratio of banks operating in the country increased. Such changes were determined by a decline in deposits and loan portfolio growth. At the end of the first quarter of 2016, this ratio amounted to 107.5 per cent, a quarter-on-quarter increase of 3.7 p.p.⁵ On the other hand, the loan-to-deposit ratio was below the long-term average (119%) and indicated that almost all loans granted to the private sector are comparable to deposits from the private sector.

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

⁵ Seasonally adjusted (see Chart F of the Annex).

In the fourth quarter of 2015, Lithuania's current account was in deficit and its balance amounted to -1.7 per cent, compared to quarter GDP (see Chart Chart 5.). A faster drop in exports compared to imports and negative primary investment income were the main contributors to the build-up of the deficit. Based on the macroeconomic projections published by the Bank of Lithuania in March 2016, the current account for 2016 should be in deficit (-1.9% compared to GDP) as a result of the more rapid growth of imports and primary income deficit. It is projected that capital transfers to Lithuania would cover the majority of the deficit.

At the end of the first quarter of 2016, the composite early crisis warning indicators showed no build-up of imbalances in the financial sector (see Chart Chart 6.). The composite early crisis warning indicators, adapted for Lithuania, summarise the situation in the credit market, housing affordability, the ability of borrowers to meet financial liabilities and equity market dynamics.⁶ Since 2012, these estimates have been close to 0; therefore, the probability of a severe banking crisis in the coming five years is assessed as low.

Should the buoyant credit development projection indicated in the bank funding plans⁷ come to pass, the debt level of the private sector would increase moderately over 2016. According to the assessment of banks, credit to the private sector should grow by 7.5 per cent in 2016.⁸ The enterprise portfolio would increase by 4.4 per cent, while the household portfolio — 10.8 per cent. Such projected growth in the loan portfolio would determine a moderate rise in the banking sector loan-to GDP ratio⁹ (from 38 to 39.5%). Nevertheless, estimations show that even in this case the credit-to-GDP gap would remain significantly negative in 2016; credit growth would need to be especially rapid for the gap to come close to 0 per cent (see Chart Chart 7.).

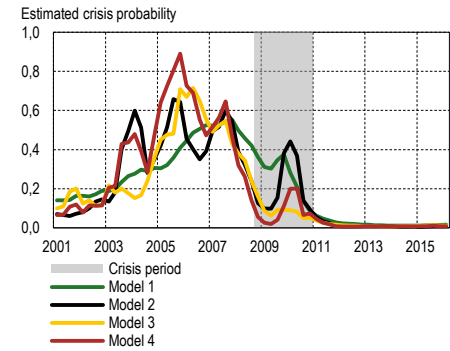
Improving financial situation of households contributes to the sustainable growth of the household loan portfolio. One of the values indicating the households' debt burden — the ratio of the portfolio of loans for house purchase to the total annual wages fund — amounted to 51.8 per cent in the fourth quarter of 2015, a year-on-year decrease of 0.9 p.p. Compared to the highest ratio recorded in the third quarter of 2010, it decreased by 14.4 p.p. According to March 2016 Bank of Lithuania forecast, in 2016 the nominal wage in Lithuania will rise by 5.3 per cent, employment will increase by 0.2 per cent, whereas the unemployment rate will drop by 0.2 p.p.

With a surge in residential property market activity, prices rise, yet they remain below their long-term equilibrium value

In the fourth quarter of 2016, housing prices in Lithuania were, on average, 3.4 per cent¹⁰ higher year on year. The new and old construction housing price dynamics varied in Lithuania: the prices of new construction housing decreased by 2.3 per cent, while the prices of old construction housing increased by 5.3 per cent over the same period. Amid increasing residential property prices, the gap between them and their long-term equilibrium value reduced (see Chart 8). The largest remained the housing prices-to-rent gap (39.8%) due to the fact that since 2011 rent prices have been rising much faster than housing prices. In the fourth quarter of 2015, the gap between the housing prices-to-household income ratio and the long-term trend (calculated

Chart 6. Composite early warning indicators of crisis for Lithuania

(Q1 2001–Q1 2016)

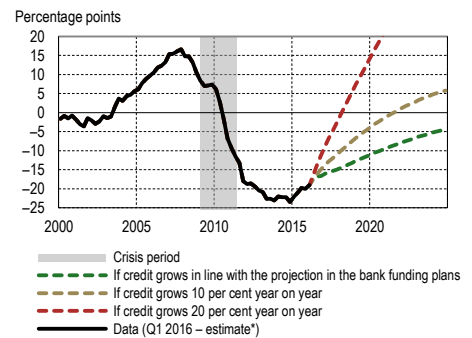


Source: Bank of Lithuania calculations.

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. Simulated future developments of the credit-to-GDP gap (calculated in accordance with the standardised Basel method) by scenarios

(Q1 2000–Q4 2024)



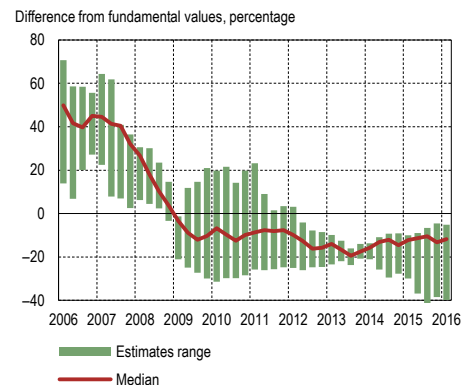
Sources: Statistics Lithuania and Bank of Lithuania calculations.

* Taking into account Q1 2016 data of the MFI loan portfolio and assuming that other credit constituents remain unchanged from Q4 2015.

Notes: 1) March 2016 Bank of Lithuania forecast of GDP at current prices is used; 2) the long-term trend is computed by applying a one-sided HP filter with the smoothing parameter set to 400,000.

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

(Q1 2006–Q1 2016)



Source: Bank of Lithuania calculations.

Note: estimates are based on the price-to-rent ratio, price-to-income ratio, econometric model and HP filter.

⁶ For more information, see N. Valinskytė and G. Rupeika, "Leading Indicators for the Countercyclical Capital Buffer in Lithuania", Occasional Paper Series, available on the Bank of Lithuania website (http://www.lb.lt/leading_indicators_for_the_countercyclical_capital_buffer_in_lithuania_1). Indicators are formed based on econometric models, which allow assessing various combinations of these measures: the loan-to-GDP gap, the annual change of the housing prices-to-income ratio, the debt payments-to-income ratio, the annual change in stock prices. The composite indicators show the estimate for the probability of a systemic financial crisis and it is likely that early warning indicators are more accurate than single variables.

⁷ Aiming for more sustainable bank funding, in 2012 the ESRB issued a Recommendation on funding of credit institutions (ESRB/2012/02) (hereinafter "Recommendation"). In implementing the Recommendation, as of 2015, the Bank of Lithuania regularly collects and analyses data on bank funding plans and assesses changes in credit to real economy. Data must be provided by all banks operating in Lithuania, except foreign bank branches, i.e. AB SEB bankas, AB DNB bankas, AB Šiaulių bankas, AB Citadele bankas, UAB Medicinos bankas and Swedbank, AB.

⁸ The data is expanded so that it covers the entire banking sector, assuming that the key asset and liability items of foreign bank branches grow at the same rate as the respective aggregates of banks that provided the data (at the end of 2015, the assets of banks providing financing amounted to 84.3 per cent of total banking sector assets).

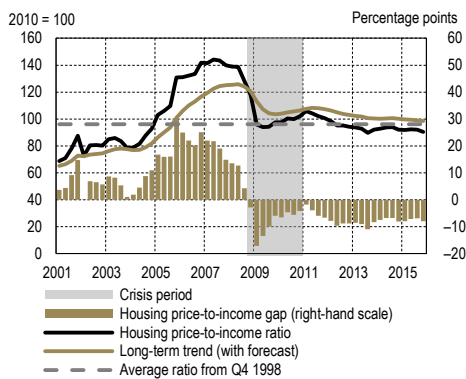
⁹ Annual GDP at current prices, March 2016 Bank of Lithuania forecast

(http://www.lb.lt/macroeconomic_forecast_march_2016).

¹⁰ According to the data of Statistics Lithuania.

Chart 9. Housing prices-to-household income gap (calculated in accordance with the forecast-augmented method)

(Q1 2001 to Q3 2015)

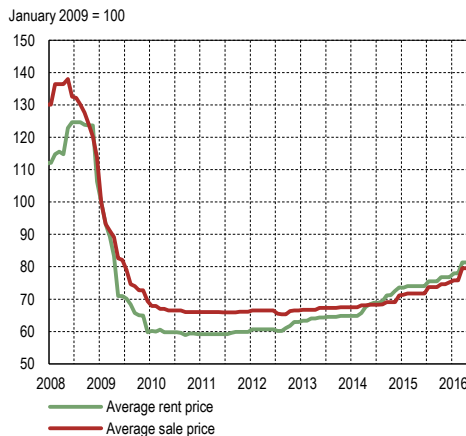


Sources: Statistics Lithuania and Bank of Lithuania calculations.

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. Rent and sell prices of commercial property

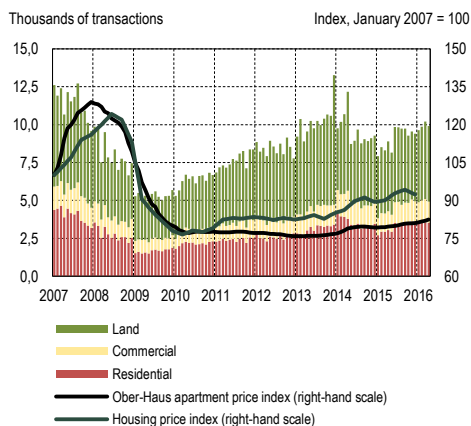
(January 2008–April 2016)



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

Chart 11. Real estate market activity (seasonally adjusted)

(January 2007–April 2016)



Sources: VĮ Registrų centras, Statistics Lithuania, UAB „Ober-Haus“ and Bank of Lithuania calculations.

in accordance with the forecast-augmented method) increased as a result of a more rapid growth of housing prices compared to household income, amounting to –8.0 per cent (in the third quarter — –6.9%; see Chart 9). In the period under review, the sale and rent prices of commercial real estate continued to increase — by 3.0 respectively (see Chart 10). As a result, the profitability of office renting remained basically unchanged over the quarter and amounted to 9.8 per cent at the end of the first quarter of 2016 — 0.3 p.p. lower than the average for 2014–2015.

The property market saw a boost in activity in the first quarter of 2016 (see Chart 11). In this period, after eliminating seasonal influence, 1.1 per cent more real estate objects were assigned than in the previous quarter. Trading in private houses increased by 8.2 per cent, while trading in apartments decreased by 1.6 per cent. Even though, according to the data provided by *VĮ Registrų centras*, 19.9 per cent more real estate objects were assigned in the first quarter of 2016 year on year, such a significant boost in market activity was largely influenced by a less significant base effect — after the introduction of the euro at the beginning of 2015, property market activity dropped.

Credit institutions finance increasingly more housing purchased. In the first quarter of 2016, the average share of housing purchased at least in part with borrowed funds, by number of transactions, was 31.3 per cent (a year-on-year increase of 7.0 p.p.¹¹). In the aforementioned period, the value share of housing deals financed with new bank loans accounted for 56.2 per cent, a year-on-year increase of 3.0 p.p. In Vilnius, the annual net rent profitability of middle class housing (4.6%¹²) was significantly higher than average annual interest rates paid on loans for house purchase (1.9%). As a result, purchasing of housing as investment (to rent or sell later at a higher price) or personal use, in the low interest rate environment and with improving financial situation of households, becomes more attractive.

Flat prices in Vilnius property market, which is the largest in the country, are rising moderately, while the supply of new flats is reducing. According to market participant data, in the first quarter of 2016 flat prices in Vilnius, the largest and most liquid newly-built housing market, increased, on average, by 1.0 per cent, a year-on-year increase of 4.3 per cent. Quarter on quarter, the average annual growth rate was 1.0 p.p. higher. In the first quarter of 2016, more flats were bought than built in the capital, hence the number of new flats unsold (unoccupied or reserved in buildings that have already been built) decreased by 7.8 per cent. In 2016, real estate developers plan to build 3.6 thousand new flats in Vilnius — basically the same as in 2015. Interest rates that remain at historical low levels and the improving residents' financial situation are likely to contribute to the further growth in the residential property market, whereas housing prices will approach fundamental indicator-based values. It is expected that in 2016–2018 Vilnius commercial real estate market will see a stronger growth in office space supply, thus tenants' negotiation positions should strengthen and office space prices rise moderately.

Assessment of third country materiality

The Bank of Lithuania sets the CCB rate for bank exposures in Lithuania, while rates set in other countries apply to positions in those countries. Banks operating in Lithuania must set their institution-specific countercyclical capital buffer by calculating its rate as a weighted average of CCB rates applicable in respective countries, taking into account their exposures in those countries.¹³ All EEA countries have already set the CCB rate with re-

¹¹ The housing market in Lithuania is characterised by seasonality, which is most prominent in the first quarter of the year. Due to a rather small data sample, application of seasonal comparison methods would be ineffective; thus, in this Survey, the share of housing purchases with loans is compared only with the respective period of the previous year.

¹² Calculations were performed using data from *UAB Ober-Haus* as in official statistics sources the price of housing lease is not presented by city. The yield on net annual flat rent is calculated as a ratio of the sum of 10-month payments to a hypothetical price of a 50 square metre flat (the annual sum of monthly payments is reduced due to provisions for home repairs, new tenants, larger-scale building and premise repairs, as well as tax on rent income).

¹³ The Rules for the Formation of Capital Buffers, approved by Resolution No 03-51 of the Board of the Bank of Lithuania on 9 April 2015 (http://www.lb.lt/2015-03-51_taisykles).

spect to credit and housing market dynamics. Currently only two EEA countries have set it above 0 per cent — Sweden and Norway (as of June 2016 — 1.5%); however, in 2017, the rate will also be increased in the Czech Republic, the United Kingdom (to 0.5%) and Iceland (to 1%). The CCB has been applied in many third (i.e. non-EEA) countries as well.

The aim is that all EU financial institutions, in calculating their CCB, apply the same country-specific CCB rates. This is necessary in order to ensure equal market conditions and reduce the possibility of avoiding macroprudential regulation, as many EU financial institutions also operate outside their home country. Hence Capital Requirements Directive IV sets forth the mandatory recognition of CCB rates up to 2.5 per cent in the EU, Member States are obliged to recognise the CCB rates in excess of 2.5 per cent applied in other EU countries¹⁴, whereas the CCB rates for exposures in third countries are applied in a coordinated manner¹⁵. The ESRB monitors and assesses the setting of the CCB rates in third countries material for the EU banking sector, while the Member States — in other third countries material for their banking sector.

The list of third countries material for the EU will be updated annually until June 30. According to the initial ESRB assessment¹⁶, countries identified as material for the EU banking system are Brazil, Hong Kong, China, Turkey, Russia and the US. In assessing the materiality of exposures, the ESRB considers the following metrics encompassing credit exposure to the private non-financial sector:

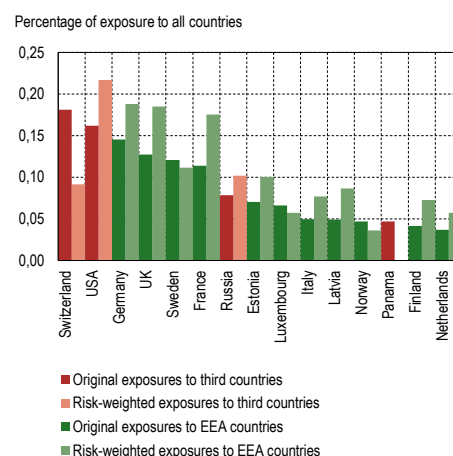
- risk-weighted exposure amounts;
- original (unweighted) exposures;
- defaulted exposures.

A country is identified as material in terms of the CCB if, according to any of these metrics, exposures in the country amount to at least 1 per cent of all exposures in a specific category (including exposure in the home country). In order to reduce the impact of one-off data fluctuations, not only the values of the last two quarters but also average longer-term values are taken into account.

After assessing Lithuanian bank lending, no third countries, material for the Lithuanian banking sector, were identified. Lending of Lithuanian banks outside the country is low: when lending to foreign residents, the share of exposures (both original and risk-weighted) is below 2 per cent, whereas exposures to the third countries — below 0.8 per cent. The shares of exposures in individual countries are small — up to 0.22 per cent (see Chart 12). However, somewhat larger shares of defaulted exposures are seen in Russia and Panama — at the end of the fourth quarter of 2015, these shares accounted for 1.1 per cent of all such exposures (including Lithuania; see Chart 13). On the other hand, the amount of defaulted exposures in these countries remained basically unchanged over the fourth quarter of 2015, while the relative holdings increased due to a significant decrease in defaulted exposures in Lithuania. Since overall there are not many defaulted exposures in the banking sector (4.4% compared to the gross value) and the bank asset quality continued to improve in the fourth quarter of 2015, currently there are no grounds for concluding that the bad-quality assets in Russia and Panama could have a significant impact on the overall quality of the bank portfolio; thus, these third countries are not viewed as material for the Lithuanian banking sector.

Chart 12. Non-domestic exposures of banks registered in Lithuania

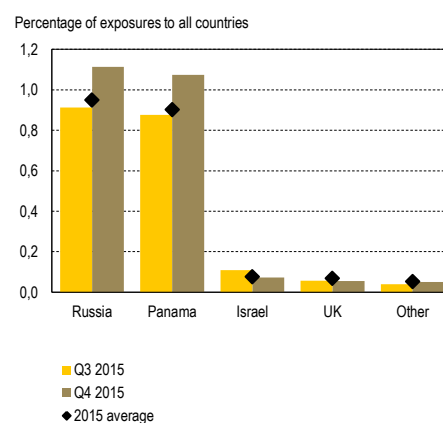
(Q1 2015–Q4 2015 average)



Source: Bank of Lithuania calculations.

Chart 13. Non-domestic defaulted exposures of banks registered in Lithuania

(Q1 2015–Q4 2015)



Source: Bank of Lithuania calculations.

¹⁴ Recommendation of the ESRB (ESRB/2014/1) on guidance for setting countercyclical buffer rates (http://www.esrb.europa.eu/pub/pdf/recommendations/2014/140630_ESRB_Recommendation.en.pdf).

¹⁵ Recommendation of the ESRB (ESRB/2015/1) on recognising and setting countercyclical buffer rates for exposures to third countries (https://www.esrb.europa.eu/pub/pdf/recommendations/2016/Recommendation_ESRB_2015_1.pdf?11b674e263d5799d3680f557a785ff12).

¹⁶ Decision of the ESRB (ESRB/2015/3) on the assessment of materiality of third countries for the Union's banking system in relation to the recognition and setting of countercyclical buffer rates (https://www.esrb.europa.eu/pub/pdf/other/Decision_ESRB_2015_3.pdf?ee1fea534a8a9319f4caa4ab065d4a4).

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

Core indicators:

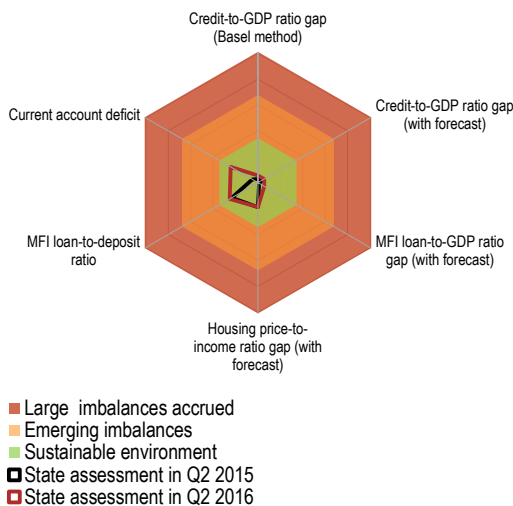
1. Credit to the private non-financial sector-to-GDP gap (calculated in accordance with the standardised Basel method)
2. Credit to the private non-financial sector-to-GDP gap (calculated in accordance with the forecast-augmented method)

Complementary indicators:

1. MFI lending to the private non-financial sector-to-GDP gap (calculated in accordance with the forecast-augmented method)
2. Housing prices-to-household income gap (calculated in accordance with the forecast-augmented method)
3. MFI lending to the 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 in Q2 2016)

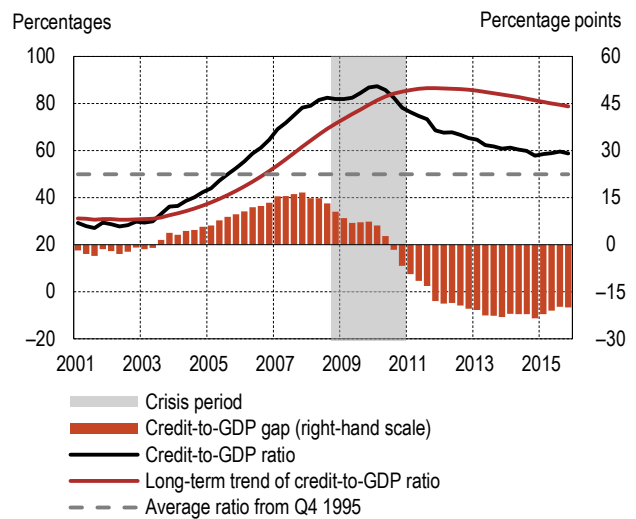


Sources: Statistics Lithuania and Bank of Lithuania calculations.

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 in accordance with the standardised Basel method)

(Q1 2001–Q4 2015)

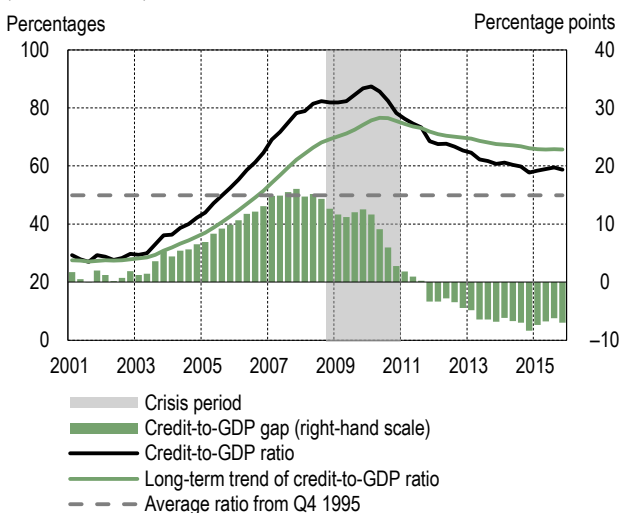


Sources: Statistics Lithuania and Bank of Lithuania calculations.

Note: the long-term trend is computed using a one-sided HP filter with a smoothing parameter of 400,000.

Chart C. Core indicator II: Credit to the private non-financial sector-to-GDP gap (based on the forecast-augmented method)

(Q1 2001–Q4 2015)

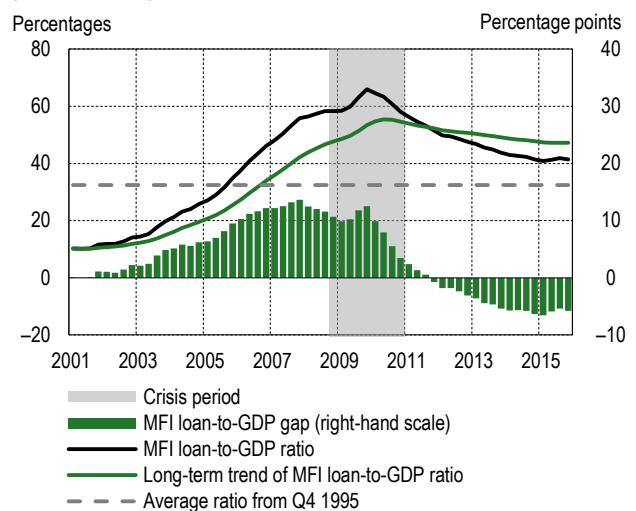


Sources: Statistics Lithuania and Bank of Lithuania calculations.

Note: the long-term trend is computed by applying a one-sided HP filter with the smoothing parameter of 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 the private non-financial sector-to-GDP gap (based on the forecast-augmented method)

(Q1 2001–Q1 2016)

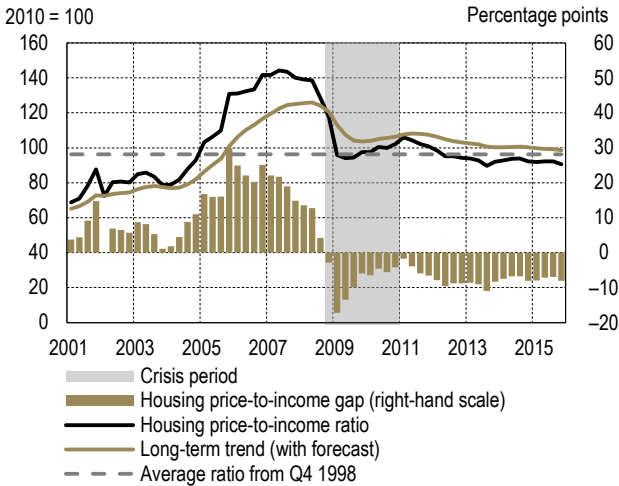


Sources: Statistics Lithuania and Bank of Lithuania calculations.

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: Credit to the private non-financial sector-to-GDP gap (based on forecast-augmented method)

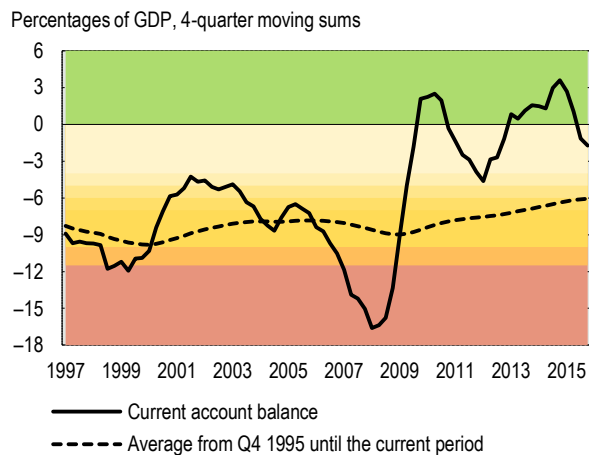
(Q1 2001–Q4 2015)



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 G. Complementary indicator IV: Current account balance-to-GDP ratio (4-quarter moving sums)

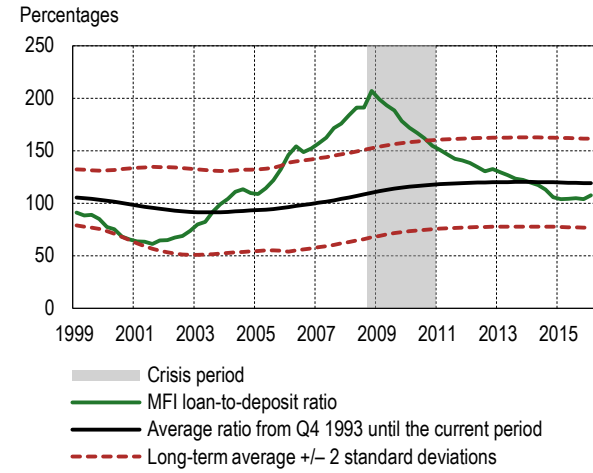
(Q1 1997–Q4 2015)



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

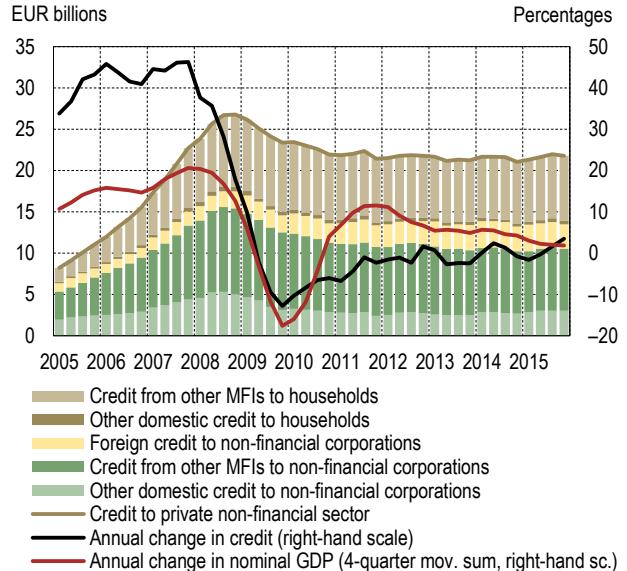
(Q1 1999–Q1 2016)



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 deviation is computed on the basis of Q4 1993–Q1 2006 data covering the period of moderate changes in the ratio.

Chart H. Credit and nominal GDP dynamics

(Q1 2005–Q3 2015; nominal GDP dynamics — until Q1 2016)



Sources: Statistics Lithuania and Bank of Lithuania calculations.