

# FINANCIAL STABILITY REPORT 2017



*Financial stability: the condition in which the financial system (financial intermediaries, markets and market infrastructures) is capable of withstanding shocks, without significant disruptions in the financial intermediation process and the supply of general financial services.*

*Systemic risk: the risk that the inability of one participant to meet its obligations in a system will cause other participants to be unable to meet their obligations when they become due, potentially with spillover effects threatening the stability of or confidence in the financial system, economic growth and welfare. That inability to meet obligations can be caused by operational or financial problems.*

*The purpose of the "Financial Stability Report" is to raise public awareness of development of the Latvian financial system and draw attention to systemic risks representing potential threats to the stability of the Latvian financial system.*

*The "Financial Stability Report" analyses and evaluates the performance of the Latvian financial system and risks, in particular focussing on the credit institution operation on the basis of financial market data available up to the end of February 2017, economic data available up to the end of March 2017 or at the moment of compiling the current report and credit institution, NBFS and financial infrastructure data available up to the end of March 2017. Forecasts are also based on the most recent available data.*

*The "Financial Stability Report" uses the division of credit institutions into two groups since Latvia's credit institution sector is composed of two different segments. Group 1 comprises credit institutions whose loan portfolios consist of more than 50% of loans to domestic customers and which receive more than 50% of their deposits from domestic customers. The major portion of funding of these credit institutions consists of deposits by domestic customers and financing provided by their Nordic parent banks. Group 2 is made up of other credit institutions which primarily provide services to foreign customers and receive deposits from foreign customers. They do not play a significant role in granting loans to domestic customers and attracting domestic deposits.*

*Data on the branches of foreign banks registered in the Republic of Latvia have been disregarded for the purposes of calculating ROE, the total capital ratio, Tier 1 capital ratio, Common Equity Tier 1 ratio, the open foreign exchange position, the liquidity ratio set by the FCMC; nor have they been used for liquidity and credit risk sensitivity and stress tests or sensitivity analysis of currency and interest rate risks.*

*Curly brackets {} enclose year-on-year data.*

*Charts and tables have been compiled on the basis of the following data sources: Chart 1.1.1 – the EC, Chart 1.1.2 – the ECB, Charts 1.1.3 and 1.1.4 – Bloomberg, Chart 1.1.5 – the Bank of Norway and Valueguard, Chart 1.2.1 – the EC, Chart 1.3.1 – estimates by Latvijas Banka based on data of the State Unified Computerised Land Register; Chart 1.3.2 – estimates by Latvijas Banka based on data of the CSB, Latio Ltd., Ober Haus Real Estate Latvia Ltd. and Arco Real Estate Ltd., Chart 1.3.3 – estimates by Latvijas Banka based on data of Latvijas Banka, the CSB and Latio Ltd., Chart 2.1.1 – the CSB, Chart 2.1.2 – Latvijas Banka and the CSB, Charts 2.2.1 and 2.2.2 – the CSB, Chart 3.1.1 – estimates by Latvijas Banka based on data of Latvijas Banka, Chart 3.1.2 – estimates by Latvijas Banka based on data of Latvijas Banka and the CSB, Chart 3.1.3 – the ECB, Chart 3.1.4 – estimates by Latvijas Banka based on data of Latvijas Banka, Chart 3.1.5 – Latvijas Banka and Bloomberg, Charts 3.1.6 and 3.1.7 – estimates by Latvijas Banka based on data of the FCMC, Charts 3.2.1–3.2.3 – Latvijas Banka, Chart 3.2.4 – the FCMC, Charts 3.2.5 and 3.2.6 – estimates by the FCMC and Latvijas Banka, Chart 3.3.1 – the FCMC, Chart 3.3.2 – estimates by the FCMC and Latvijas Banka, Chart 3.3.3 – estimates by Latvijas Banka, Chart 3.3.4 – estimates by the FCMC and Latvijas Banka, Charts 3.4.1 and 3.4.2 – Latvijas Banka, Table 3.5.1 – the FCMC, Chart 3.5.1 – the FCMC, Chart 3.5.2 – estimates by the FCMC and Latvijas Banka, Charts 3.6.2 and 3.6.3 – estimates by Latvijas Banka based on data of Latvijas Banka, Chart 3.6.4 – the FCMC, Charts 3.6.2 and 3.6.3 – estimates by Latvijas Banka based on data of Latvijas Banka, Chart 3.6.4 – the FCMC, Tables 3.6.1 and 3.6.2 – estimates by Latvijas Banka, Chart 4.1.1 – estimates by Latvijas Banka based on data of Latvijas Banka, the CSB and FCMC, Chart 4.1.2 – estimates by Latvijas Banka based on data of Latvijas Banka, the CSB and Eurostat, Chart 4.2.1 – estimates by Latvijas Banka based on data of Latvijas Banka, the CSB and FCMC, Chart 4.2.2 – the CRPC, Charts 4.2.3 and 4.2.4 – estimates by Latvijas Banka based on data of Latvijas Banka and the CSB, Charts 4.3.1, 4.3.2 and 5.1.–5.3 – Latvijas Banka, Tables A1.1 and A1.2 – the FCMC, Charts A2.1–A2.5 – estimates by Latvijas Banka based on the data of SME and credit institution surveys conducted by Latvijas Banka, Table 2A.1 – estimates by Latvijas Banka, Chart A3.1 – CERT.LV, Tables A4.1 and P4.2 – the FCMC, Charts A5.1–A5.7 – estimates by Latvijas Banka based on data of Latvijas Banka, the FCMC, CSB, ECB, Eurostat and Bloomberg, Table A5.1 and Chart A5.8 – the credit institution survey conducted by Latvijas Banka, Chart A5.9 – estimates by Latvijas Banka based on data of Latvijas Banka, the FCMC, CSB, ECB and Bloomberg.*

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## ABBREVIATIONS

AML/CTF – anti-money laundering and counterterrorist financing	FCMC – Financial and Capital Market Commission
BRRD – Directive 2014/59/EU of the European Parliament and of the Council of 15 May 2014 establishing a framework for the recovery and resolution of credit institutions and investment firms and amending Council Directive 82/891/EEC, and Directives 2001/24/EC, 2002/47/EC, 2004/25/EC, 2005/56/EC, 2007/36/EC, 2011/35/EU, 2012/30/EU and 2013/36/EU, and Regulations (EU) No 1093/2010 and (EU) No 648/2012 of the European Parliament and of the Council	FOP – free of payment
CDS – credit default swap	FRS – US Federal Reserve System
CERT.LV – Computer Emergency Response Team	GAP – difference between RSA and RSL
CET1 – Common Equity Tier 1 capital	GDP – Gross Domestic Product
CIS – Commonwealth of Independent States	IBD-to-EBITDA – interest bearing debt-to-earnings before interest, taxes, depreciation, amortisation
CPI – Consumer Price Index	IT – information technologies
CRD IV – Directive 2013/36/EU of the European Parliament and of the Council of 26 June 2013 on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms, amending Directive 2002/87/EC and repealing Directives 2006/48/EC and 2006/49/EC	JSC – joint stock company
CRPC – Consumer Rights Protection Centre	LCD – Latvian Central Depository
CRR – Regulation (EU) No 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms and amending Regulation (EU) No 648/2012	LCR – liquidity coverage ratio
CSB – Central Statistical Bureau of Latvia	LGD – loss given default
DENOS – the securities settlement system of LCD	LURSOFT – re-user of information from the Enterprise Register of the Republic of Latvia
DVP – delivery versus payment	Ltd. – limited liability company
EBA – European Banking Authority	MFI – monetary financial institution
EBITDA – earnings before interest, taxes, depreciation, amortisation	ML/TF – money laundering and terrorist financing
EC – European Commission	NBFS – non-bank financial sector
ECB – European Central Bank	NIS – Directive (EU) 2016/1148 of the European Parliament and of the Council of 6 July 2016 concerning measures for a high common level of security of network and information systems across the Union
EKS – Electronic Clearing System of Latvijas Banka	O-SII – other systemically important institution
ESI – economic sentiment indicator	PD – probability of default
ESRB – European Systemic Risk Board	ROA – return on assets
EU – European Union	ROE – return on equity
EURIBOR – euro interbank offered rate	RSA – interest rate sensitive assets
FATF – Financial Action Task Force	RSL – interest rate sensitive liabilities
	RWA – risk-weighted assets
	SAFE – ECB and EC Survey on the Access to Finance of Enterprises
	SME – small and medium-size enterprise
	SRMR – Regulation (EU) No 806/2014 of the European Parliament and of the Council of 15 July 2014 establishing uniform rules and a uniform procedure for the resolution of credit institutions and certain investment firms in the framework of a Single Resolution Mechanism and a Single Resolution Fund and amending Regulation (EU) No 1093/2010
	SSM – Single Supervisory Mechanism
	TARGET – Trans-European Automated Real-time Gross settlement Express Transfer system
	TARGET2 – the second generation of TARGET
	US – United States of America



## EXECUTIVE SUMMARY

### Systemic risks and potential systemic vulnerability

**The major risks to Latvia's financial stability are associated with the potential deterioration of the external macrofinancial environment and protracted high uncertainty.** Latvia is a small and open economy, hence external factors can adversely affect the economic growth and profitability of its credit institutions. Although external demand has started to grow more vigorously in the major export markets of Latvian goods, thus improving prospects for Latvia's exporters, and the financial market stress has also in general moderated, the external environment is nevertheless subject to a considerable rise in uncertainty related to the commenced UK exit from the EU, the tense political background in the EU, and the unpredictable policy of the new US administration that might potentially increase the external risks. Financial stability can be undermined by both global shocks (weak global economic growth, changing financial market sentiment and overall risk repricing, geopolitical turbulence) and regional shocks (e.g. materialisation of real estate market risks in the Nordic countries). Consequently, the level of risk for the external macrofinancial environment has been assessed as above average.

**In view of the financial system and trade links of the Nordic-Baltic countries, the financial stability developments in the home countries of the parent banks are essential for Latvia. Risks related to the real estate market imbalances in Sweden and Norway and/or risk repricing do not recede** as the rise in real estate prices and household debt persists despite the already high levels reached. Should the risks materialise, they are likely to adversely affect the borrowing terms of the parent banks relying on market financing. Moreover, the negative effects could spread via the trade and confidence channels and affect the economic growth in the Nordic-Baltic region; that in turn is likely to have an adverse impact on borrowers, lending growth and financial indicators of credit institutions in Latvia. At the end of 2016, Sweden and Norway introduced additional macroprudential measures to strengthen the resilience of credit institutions and dampen the upswing of the financial cycle; however, the current and the new measures do not fully address the underlying causes of the growing vulnerability. Nevertheless, the financial indicators of the parent banks and their subsidiaries in Latvia remain sound, while the significance of parent bank funding for their subsidiaries in Latvia has shrank considerably.

**Table 1. Major systemic risks and potential systemic vulnerability**

<b>Systemic risk, its level and direction</b>	
1. Deteriorating external macrofinancial environment and protracted high uncertainty which might have a negative impact on the economic growth and the profitability of credit institutions.	
2. Significant adjustment of real estate prices in Sweden and Norway and/or risk repricing which could have a negative effect on the borrowing terms of parent banks, financial position and economic growth.	
<b>Potential systemic vulnerability</b>	
IT security risk to financial institutions.	

The risk level is indicated by colour.

Low	Below average	Average	Above average	High
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**With credit institutions increasingly relying on IT in their operations, as well as with the development of innovative financial technology products, IT security risk has the potential to become a systemic vulnerability to financial institutions.** The central banks and supervisory authorities are increasingly paying more attention to this issue from the financial stability point of view as the possibility of simultaneous threats to the operation of IT systems of several financial institutions should not be ignored. The existing framework for containing IT security risk in Latvia has a solid foundation. Moreover, a considerable harmonization of IT security risk management frameworks is expected both under the

SSM framework and by implementing the measures set out in NIS Directive. Appendix 3 to the present report addresses the issue of whether the IT security risk could potentially become a systemic risk to Latvia's financial system, with a focus on the role of IT security with respect to financial stability.

### **Financial sector development trends and risk absorption capacity**

**The financial cycle is showing signs of upswing, while the cyclical risks remain low in Latvia.** Gradual acceleration is observed in domestic lending and the real estate market is on an upward trend both in terms of activity and prices. The credit-to-GDP gap (the deviation of the domestic credit-to-GDP ratio from its long-term trend) is gradually contracting, albeit it is still quite large and remains in the negative territory.

**The projected improvement in the economic growth in Latvia is favourable for the domestic borrower creditworthiness, lending development and credit institution profitability.** At the same time, uncertainty with respect to the amounts and time-scale of the EU fund absorption as well as essential external uncertainty persist. Consequently, the domestic loan portfolio growth is likely to be rather moderate. Credit standards remain conservative. Borrower demand for loans has posted a slight rise, albeit remaining generally low. With the creditworthiness of domestic borrowers and credit quality improving, their credit risk is gradually declining.

**The share of deposits by foreign customers in aggregate deposits of credit institutions has contracted notably.** Deposits of domestic households and non-financial corporations continue on a sustained upward trend, having almost reached the amount of domestic loans. Meanwhile, deposits of foreign customers have shrank considerably since the end of 2015. This can be explained by the introduction and supervision of significantly stricter AML/CTF requirements both in Latvia and abroad, by closing of US dollar correspondent accounts in the US, as well as by the economic situation in foreign customers' home countries. **The introduction and supervision of stricter AML/CTF requirements as well as credit institutions' contribution to more severe customer due diligence should be considered an important step towards promotion of sustainable development of Latvia's financial sector** which also mitigates reputational risks faced by credit institutions and the country.

Despite the significant decrease in deposits received from foreign customers and more active lending to domestic customers, **the liquidity risk of credit institutions has not increased and remains limited as the amount of liquid assets maintained by credit institutions of both groups is relatively large** and more than sufficient to meet both the LCR and the FCMC liquidity requirements. The stress tests of credit institutions' liquidity conducted by Latvijas Banka suggest that their capacity to absorb the shocks caused by potential financing outflows remains high.

**Overall profitability risk at systemic level is below average as the return ratios in both groups of credit institutions remain relatively high; however, profitability trends in both groups differ considerably.** Business volumes and income of Group 2 credit institutions are declining; at the same time, additional compliance costs arise due to AML/CTF requirements. Consequently, these credit institutions face a necessity to readjust their business models. As to Group 1 credit institutions, their overall profit increased, supported by lending growth, the high interest rate margins and stable income from commissions and fees. Nevertheless, the potential to increase profit is limited by the low interest rate environment, shortcomings in the business environment and the relatively small pool of domestic customers, as well as limited opportunities for further cost efficiency improvements and boosting of non-interest income. Moreover, credit institutions have to pay an increasing attention to the growing competition from the non-bank financial sector in several areas of financial services.

**Credit institution solvency risk at systemic level is low as capital adequacy ratios of credit institutions are generally high.** Moreover, the overall capital of Latvia's credit institutions is dominated by higher quality capital. The results of the macroeconomic stress tests and sensitivity analysis conducted by Latvijas Banka suggest that credit institutions' capacity to absorb shocks becomes stronger and is overall good. In case of a significant increase in credit risk, all credit institutions would be able to meet the minimum requirement for total capital ratio and the capital conservation buffer requirement.

In order to increase O-SII loss-absorbing capacity, thereby mitigating the potential systemic risks of the financial system and reducing costs to the economy, **six credit institutions designated as O-SIIs<sup>1</sup> have to comply with the interim capital buffer requirements as of 30 June 2017**, while full compliance with the requirements must be ensured as of 30 June 2018. O-SII capital buffers have been set within the range of 1.5%–2% of RWA.

The FCMC has amended Regulations defining that, as of 9 December 2016, credit institutions have to meet Pillar 2 capital requirements with at least 56% Common Equity Tier 1 capital and at least 75% Tier 1 capital. Capital guidance requirements should be met by Tier 1 capital. The above Regulations will support strengthening capital quality at credit institutions.

**In the future, the capital requirements and capital levels of credit institutions will be affected by the expected amendments to the EU legislation:** the review of CRD IV/CRR, BRRD and SRMR. The package of the so-called risk reduction measures proposed by the EC includes several changes affecting the assessment of the capitalisation and capital requirements of credit institutions (e.g. transitional arrangements for introduction of IFRS 9, reformation of the Supervisory Review and Evaluation Process (Pillar 2), review of market risk and interest rate risk coverage requirements, review of minimum requirement for own funds and eligible liabilities, introduction of leverage ratio requirement).

**Accelerated growth of NBFS persists, but the share of the NBFS assets in Latvia's financial sector still remains quite small and the NBFS does not pose any systemic risks to the financial system.** In 2016, the rise was primarily on account of increased household savings to provide for the future pension in the state-funded pension scheme and private pension plans and the growth of loans (particularly household loans and loans to non-financial corporations by venture capital funds) granted by non-banks.

Results of an assessment of the financial risk of the systemically important financial market infrastructures **TARGET2-Latvija and DENOS**, carried out in 2016 by Latvijas Banka, **point to low liquidity and operational risks in those systems. The above infrastructures provide efficient and secure payment and settlement environment to their participants and the entire financial system, and their smooth operation facilitates financial stability.**

#### **Proposals for promoting financial stability**

The systemic risks to Latvia's financial stability are overall limited and the capacity of Latvia's credit institutions to absorb a potential increase in the systemic risks is good in general; nevertheless, there are several measures that could contribute to the financial system stability.

1) The LCR requirement of 100% will take effect beginning with 2018 and the liquidity ratio requirement set by the FCMC will be revoked. Up to now, higher FCMC liquidity requirements for credit institutions with a sizeable share of foreign customers deposits in their funding were set individually under Pillar 2. As the above ratio has been revoked, additional individual requirements, based on LCR, shall be established for credit institutions, business model requires to maintain higher liquidity buffers under Pillar 2.

<sup>1</sup> Swedbank AS, AS SEB banka, ABLV Bank, AS, AS Rietumu Banka, AS Citadele banka and AS DNB banka.

2) Implementation of high AML/CTF standards is required to strengthen Latvia's financial stability. Tighter requirements in the area of AML/CTF and the ongoing measures to strengthen the supervisory capacity are highly welcome. The latter, in turn, could be enhanced by increasing the annual contributions of the market participants to the FCMC in proportion to the source of the ML/TF risks, i.e., their involvement in the business areas associated with larger ML/TF risks.

3) To mitigate potential IT security risks, it is essential for the FCMC to continue active cooperation with credit institutions in preventing IT security risks by strengthening the coordination framework for limiting/containing IT security risks and minimising the negative consequences.



## 1. MACROFINANCIAL ENVIRONMENT

### 1.1 External macrofinancial environment

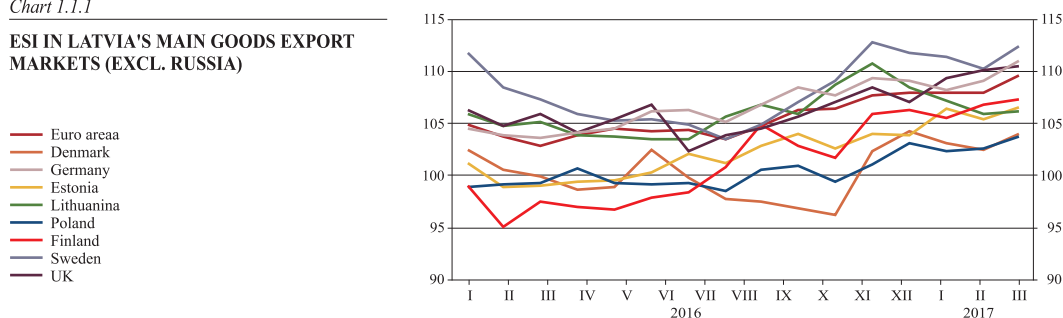
Due to economy's small size and high-level openness, **risks to Latvia's financial stability mainly stem from the external environment.** Potential worsening of external macrofinancial environment and persistence of heightened uncertainty may have an adverse impact on economic growth, borrowers' creditworthiness and credit institutions' profitability. Financial stability can be undermined by global shocks (weak global economic growth, changing financial market sentiment and overall repricing of risk premia, geopolitical turbulence), regional financial vulnerability (like materialisation of real estate market risks in the Nordic countries). Shocks are prone to interact, thereby amplifying the volume and dispersion of instability.

**A heightened political landscape<sup>2</sup> requires maintaining the external environment risk rating above average.** Several unexpected developments on the global political arena in 2016 amplified concerns about an eventual negative impact of the political landscape on economy and financial stability<sup>3</sup>. As the US presidential election and the UK referendum have demonstrated, the outcome of such events is difficult to predict, yet the strength and outreach of speculations may play a significant role, particularly at the time when the EU and euro area countries need to be more deeply integrated and their progress made more sustainable.

**Unfavourable political landscape notwithstanding, the external macroeconomic development has improved somewhat.** Economic survey data (ESI, PMI) point to a more dynamic growth in main export markets of Latvian goods towards the close of 2016 and at the beginning of 2017 (see Chart 1.1.1) and give rise to hopes for a more buoyantly rising external demand for Latvia's products and, accordingly, for a better economic outlook that would reduce risks to financial stability.

Chart 1.1.1

#### ESI IN LATVIA'S MAIN GOODS EXPORT MARKETS (EXCL. RUSSIA)



**Stress level in financial markets have subsided, yet notable adjustment risks are still in place.** The dynamics of the ECB's combined indicator of systemic stress (CISS; see Chart 1.1.2) and the decline in other volatility indices<sup>4</sup> overall imply that stress levels at end-2016 and in early 2017 were on a downward trend. The occurrence of rising stress episodes in financial markets over the last two years, on the other hand, point to fragile optimism and the likelihood of sharp adjustments. The investor sentiment relative to the euro area banking sector has slightly improved, as testified by the share prices of euro area banks (see Chart 1.1.3) and investors' demand for bank debt instruments.

**The European banking sector, nevertheless, remains vulnerable.** This vulnerability that can trigger sharp changes in market sentiments is determined by a high proportion of bad credit on bank balances in some euro area countries, low bank profitability as well as the need for business model adaptation, restructuring and state support. However,

<sup>2</sup> The UK exit from the EU, elections in several euro area countries, and uncertainty related to the US policy.

<sup>3</sup> E.g. the concerns about election results triggered a rise in France's long-term government bond risk premium to a high over several years. In accordance with the assessment presented in the ECB's "Financial Stability Report", steep risk premium repricing and return of sovereign debt crisis are the main systemic risks in the euro area.

<sup>4</sup> E.g. Euro Stoxx 50 stress index.

the overall slight improvement in investors' sentiment relative to the European banking sector is a positive phenomenon in the context of Latvia's financial sector as well, because parent bank financing risks are abating along with rising investment in banking sector's financial instruments.

Chart 1.1.2

## ECB's CISS

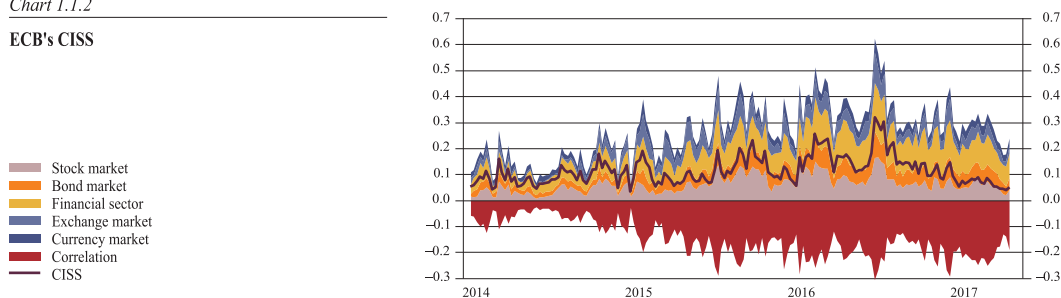
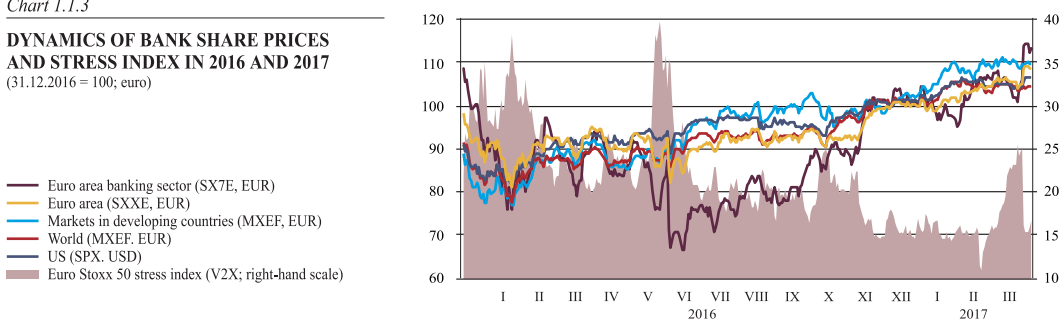


Chart 1.1.3

DYNAMICS OF BANK SHARE PRICES AND STRESS INDEX IN 2016 AND 2017  
(31.12.2016 = 100; euro)

**After the US presidential election, the dynamics of global financial market and business sentiment indicators has been positive.** The stock market is growing<sup>5</sup>, underpinned by promises to reduce expansionary fiscal policies and regulation, resulting in an appropriate and potentially higher FRS's target interest rate as a response to steeper US economic growth in combination with higher inflation expectations, thereby boosting yields on benchmark bonds. So far, the information about the time, design and size of fiscal stimulus to be implemented has been scarce; in addition, the impact of fiscal stimulus could be eroded by pursuit of restrictive monetary policy<sup>6</sup>. The implementation of accommodative fiscal policy in the US is most likely to promote an upward financial market development and improved business confidence in the short run. Protectionist policies, on the other hand, may undermine global economic growth in the long run.

**Rising inflation expectations in Europe**, driven by oil price dynamics and expectations for monetary and fiscal policy measures in the US, **have translated into higher interest rates on benchmark bonds, the ongoing supportive monetary policy measures in the euro area notwithstanding. Moderately elevated interest rates would improve profitability prospects of European banks** (albeit under the condition that interest rate adjustment is gradual and does not trigger massive short-term financial sector losses from marked-to-market asset portfolio). So far, financial market adjustment has been relatively smooth but it is vital for the upward dynamics of interest rates not to accelerate markedly facilitating overall repricing of risk premia, for the latter has been identified as a systemic risk to financial stability by several EU countries.

**Risks related to deteriorating macrofinancial situation in Russia have softened** along with more favourable oil price level and developments (see Chart 1.1.4). The Russian ruble has stabilised, and inflation has fallen notably. In contrast to declines in previous years, Russia's GDP is projected to grow in 2017<sup>7</sup>, thereby improving export opportunities

<sup>5</sup> On 1 March 2017, the US DJIA stock market index elevated to a record high.

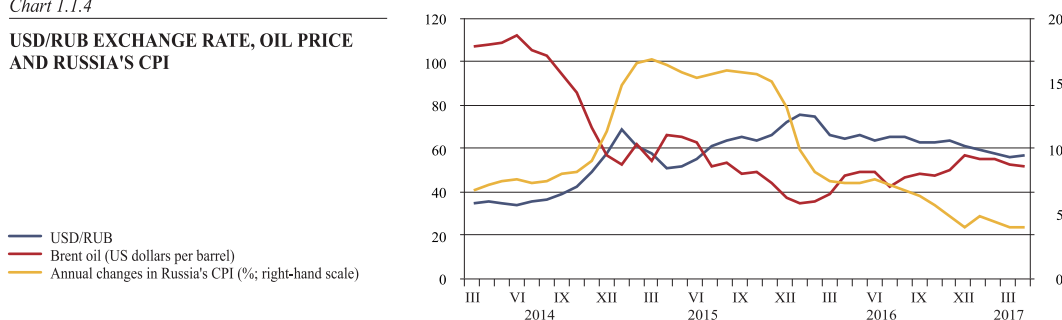
<sup>6</sup> In a longer perspective, the pursuit of an accommodative fiscal policy could be held back by the US government debt and striving to maintain the highest credit rating (AAA).

<sup>7</sup> According to the EC Spring 2017 Economic Forecast, GDP growth in Russia in 2017 is projected to reach 1.2%.

for Latvian businesses in this market<sup>8</sup>. Stabilisation of non-performing loan ratio in the credit portfolio of Russia's banking sector corroborates **that the downward trend in borrowers' creditworthiness has abated.**

Chart 1.1.4

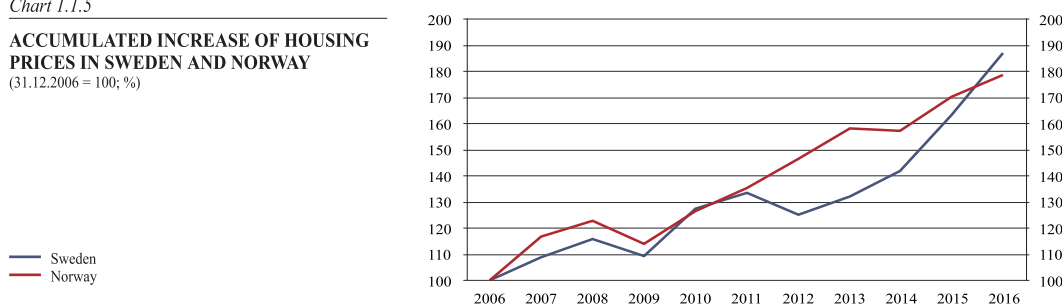
#### USD/RUB EXCHANGE RATE, OIL PRICE AND RUSSIA'S CPI



**Risks related to steeply rising real estate market prices and household debt burden in countries where parent banks are located continue to accumulate.** Housing prices keep elevating rapidly in Sweden and Norway, in February of 2017 posting an annual pickup of 8.6% and 13.0% respectively (see Chart 1.1.5). Household lending in the two countries is expanding buoyantly, thereby pushing up household indebtedness and amplifying their vulnerability. A rapid downward adjustment of real estate prices in Nordic countries and confidence effects resulting from it may trigger a systemic regional crisis. Close trade and financial linkages in the region may add momentum to a larger shock transmission.

Chart 1.1.5

#### ACCUMULATED INCREASE OF HOUSING PRICES IN SWEDEN AND NORWAY (31.12.2006 = 100; %)



**To address vulnerability of the banking sector and households, Sweden and Norway have expanded their macroprudential measure sets.** For instance, both countries have raised their counter-cyclical capital buffer to 2%. Likewise, Sweden has set a new tougher mortgage amortisation requirement. Norway followed the suit, in addition introducing extra measures to strengthen shock absorption ability of banks and to make household borrowing standards tighter (e.g. limiting the borrower's overall loan to five times gross annual income and reducing the loan-to-value ratio on secondary homes in Oslo to 60%).

**However, current measures have proved insufficient to affect the underlying causes, including the structural ones (e.g. tax policy stimuli, housing market supply, etc.), of growing vulnerability.** Appropriate and sufficient measures of macroprudential and economic policies<sup>9</sup> to address these vulnerabilities are essential for financial stability in the entire Nordic–Baltic region.

**The Nordic parent bank groups<sup>10</sup> continue to enjoy favourable financial conditions** (see Table 1.1.1). In 2016, these banks earned better-than-expected profits. Income growth was achieved on account of core business (bank commissions in particular). Capitalisation of all banks improved.

<sup>8</sup> In February 2017, Russia's share in Latvia's exports of goods amounted to 8.1%.

<sup>9</sup> See Warning of the ESRB of 22 September 2016 on medium-term vulnerabilities in the residential real estate sector in Sweden.

<sup>10</sup> Swedbank group, SEB group, Nordea group and DNB group.

Table 1.1.1

**CONSOLIDATED RATIOS OF NORDIC BANK GROUPS FOR THE FOURTH QUARTER 2016**

(data of Q3 2016 in brackets)

Ratios	Swedbank group	SEB group	Nordea group	DNB group
Tier 1 capital ratio (%)	25.0 (23.8)	18.8 (18.6)	18.4 (17.9)	16.0 (15.7)
ROE (%)	13.1 (15.8)	11.8 (11.8)	13.9 (11.6)	10.9 (8.5)
Standard & Poor's long-term credit rating	AA- (AA-)	A+ (A+)	AA- (AA-)	A+ (A+)
Moody's Investors Service long-term credit rating	Aa3 (Aa3)	Aa3 (Aa3)	Aa3 (Aa3)	Aa2 (Aa2)

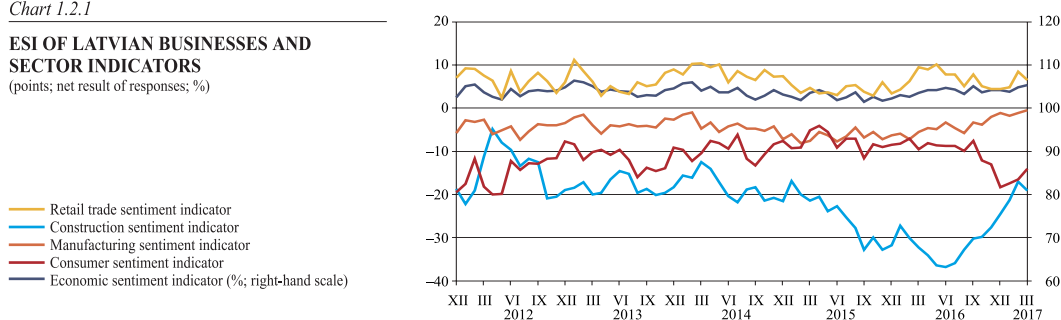
**1.2 Domestic macrofinancial environment**

**In 2016, the domestic macrofinancial environment was characterised by decelerating economic growth<sup>11</sup> and contracting investment. It was primarily related to delayed absorption of the EU funding and significant contraction in construction associated with it (mainly of civil engineering structures).** The transport sector likewise recorded shrinking freight volumes at ports and by rail. This was on account of falling demand for oil product and coal transport services, which, in turn, was affected by two factors – the low prices of energy resources with a minimising effect on Russia's exports of respective goods and the Russian long-term policy of a more intensive reliance on domestic port facilities. At the end of 2016 and in early 2017, the port and rail transport performance improved slightly, albeit without substantial changes in global demand for energy resources and the respective prices, the improvements would be difficult to sustain. Even though the share of loans to construction and transport sectors in credit institutions' aggregated portfolio is not significant (1.6% and 4.0% in February 2017 respectively), a further decline in the activities of both sectors may have an indirect adverse effect on growth and credit portfolio quality.

**For 2017 and 2018, a pickup in the domestic economic growth is projected. It is likely to be driven by both stronger external demand and growing investment,** thereby boosting creditworthiness of borrowers and reducing risks to the financial system. As the legislation for managing the EU funds has been adopted, the absorption of financing is expected to gain momentum and the construction activity to recover in 2017. GDP is projected to pick up 3.4% in 2017.

**Improvements in the economic growth outlook have been reflected in the ESI dynamics.** Following a notable fall in developers' sentiment in the first half of 2016, ESI improved markedly (see Chart 1.2.1). ESI of Latvia's manufacturers is likewise rising, underpinned by improved expectations for output volumes in the upcoming months. Having substantially declined in the second half of the previous year, the index of consumer sentiment took an upward trend in 2017.

Chart 1.2.1

**ESI OF LATVIAN BUSINESSES AND SECTOR INDICATORS**  
(points; net result of responses; %)<sup>11</sup> In 2016, GDP picked up 2.0% (according to seasonally and calendar unadjusted data).

**Strengthening of external demand is supportive for the development of exporting businesses.** Overall, exports in 2017 are projected to expand more buoyantly than in the previous year because of faster growth in real exports and rising export prices, both driving up sector revenues. However, the negative implications of previous adverse external factors are still felt. For instance, though some sectors hit by the Russian sanctions and affected by the deteriorating macrofinancial environment in Russia are gradually capturing new export markets, other manufacturers, e.g. of food products, electrical equipment, pharmaceutical products and textile articles, have failed to substitute in full for previous export niches in the Russian market. Also, the depreciation of the British pound sterling had a negative effect on businesses exporting their output to the UK (primarily in wood industry). This notwithstanding, exports of goods to the UK, including wood and products of wood, are growing persistently, thereby confirming competitiveness of Latvian businesses in this market. Consequences for the economy of Latvia of the UK decision to leave the EU are dependent on the exit terms and conditions.

**Higher labour remuneration is likely to drive the domestic consumption.** The increased budget expenditure for 2017, envisaging wage rises for several groups of public sector employees, will be acting as another driver. Due to elevating inflation, however, improvements in real purchasing power are likely to be quite modest.

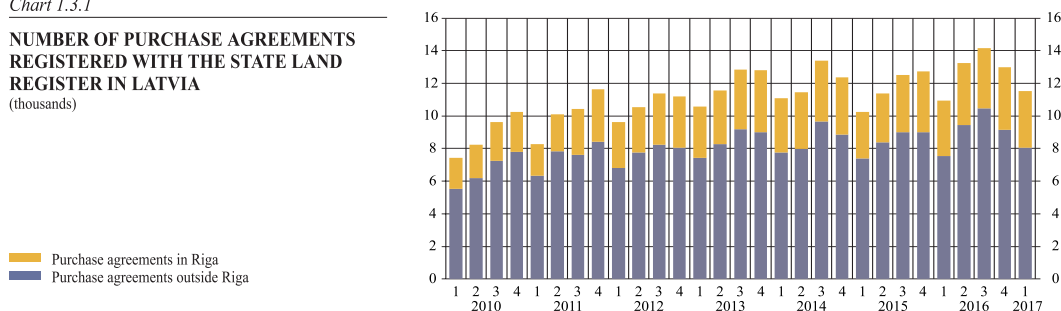
**Gradual improvements in legislation relating to insolvency proceedings reduce risks to legal environment and thereby also to financial stability.** Amendments to the Insolvency Law were adopted in December 2016 (primarily relating to insolvency administrators' responsibilities and qualification<sup>12</sup> as well as enhancing powers of creditors in legal protection proceedings), the Guidelines for Insolvency Policy Development were defined, and other improvements, e.g. to the Beneficiary Register and interconnection to the Accounts Register, were introduced.

### 1.3 Real estate market development

**The real estate market activity is strengthening.** The number of purchases registered with the State Unified Computerised Land Register in 2016 increased by 16.3% year-on-year (see Chart 1.3.1). Increases in the respective number were registered not only in Riga and Riga district (by 16.1%) but also across Latvia. However, the low base effect should be taken into account in the assessment: in 2015, the number of registered real estate purchases in Latvia contracted by 1.0% (including by 6.9% in Riga). In the first quarter of 2017, the annual growth rate of respective transactions was modest, at 5.1% for Latvia and 2.2% for Riga. In comparison with Vilnius and Tallinn, capital cities of Latvia's neighbouring countries, Riga posted a comparatively small number of housing purchase transactions per 10 000 inhabitants (146 purchases in Riga, 220 in Vilnius, and 303 in Tallinn in 2016)<sup>13</sup>.

Chart 1.3.1

NUMBER OF PURCHASE AGREEMENTS REGISTERED WITH THE STATE LAND REGISTER IN LATVIA (thousands)



<sup>12</sup> Enhanced was insolvency administrators' disciplinary responsibility, and their qualification, reputation and professional requirements were tightened; regular examination of insolvency administrators was introduced, while creditors were granted the right to claim audits of insolvency administrators' activities.

<sup>13</sup> The State Land Register, CSB, Statistikaamet and Lietuvos statistikos departamentas.

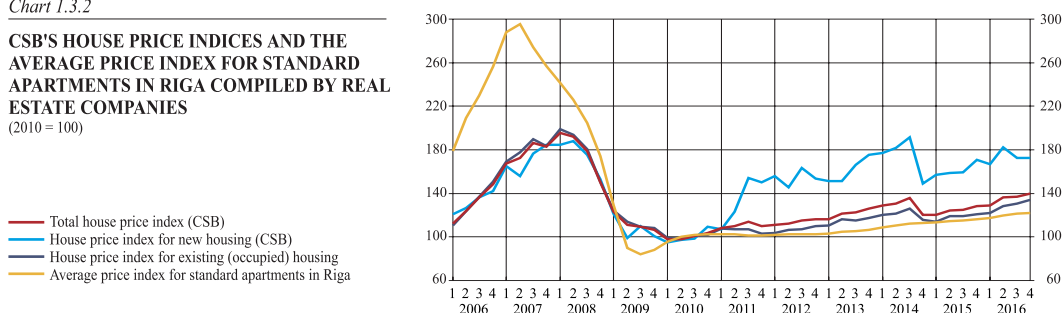
**More buoyant real estate market activity and the price level therein are driven by the growing resident demand**, while the activity of foreigners in Latvia's real estate market remains low: in 2016, the share of transactions by foreign buyers amounted to 5% of the total.

**Household interest in real estate is fuelled by their gradually rising purchasing power, low interest rates, and the State Housing Loan Guarantee Programme for construction or purchase of first housing, the latter at the same time boosting the demand for new mortgage loans.** In 2016, the number of housing purchases financed under this programme in total real estate purchases of residential property accounted for 13.2% {6.7%}<sup>14</sup>. Currently, the former share has stabilised, with the growth rate slowing down.

**The annual pace of real estate price rises has generally accelerated.** In the fourth quarter of 2016 year-on-year, the CSB's total house price index increased by 9.0% overall, with the house price index for existing (prior occupied) dwellings going up by 10.8% and that for new dwellings picking up 1.0% (see Chart 1.3.2). Meanwhile, real estate companies report more moderate price rises. In compliance with the data compiled by real estate companies, average prices of standard apartments in Riga were by 6.5% higher at the end of 2016 than a year before<sup>15</sup>; meanwhile, prices of new housing projects in Riga suburbs were by 2.9% higher and in Riga district by 0.7% lower (data of the Latvian Association of Real Estate Transactions).

Chart 1.3.2

**CSB'S HOUSE PRICE INDICES AND THE AVERAGE PRICE INDEX FOR STANDARD APARTMENTS IN RIGA COMPILED BY REAL ESTATE COMPANIES**  
(2010 = 100)



**Price rises in the segment of existing and more affordable (in terms of price) housing are supported by limited supply and growing demand. The supply of new housing, on the other hand, is expanding and, hence, stabilising the price hikes.** Developers seek to adjust to the local household purchasing power and demand, and offer smaller-space economy-class apartments in ever growing numbers<sup>16</sup>.

**Considering price rise fluctuations and their overall moderate average growth in recent years as well as generally stable housing availability indicators, the pace of real estate price rises should not be treated as excessive so far.** Over the last three years, the CSB's total house price index has posted a 3.6% annual growth on average. With real estate prices rising faster than wages, housing availability in Latvia deteriorated somewhat; in Riga, however, availability of standard apartments has remained almost unchanged, with slightly longer time needed to save for the first down payment, and the ratio of monthly payment on a housing loan to average wages of two working household members contracting (see Chart 1.3.3). So far, deterioration in housing availability has not been notable and extended.

<sup>14</sup> Calculated by Latvijas Banka, based on information provided by the State Land Service and JSC "Attīstības finanšu institūcija Altum".

<sup>15</sup> The used apartment price data provided by the CSB and real estate companies differ, as different are the two indices, their definition and geographical coverage. The CSB calculation includes all housing in Latvia put into operation more than three years before or placed in the secondary market.

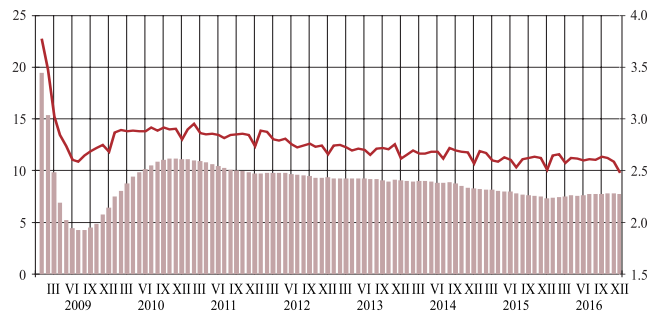
<sup>16</sup> The number of new apartments built in 2016 contracted somewhat (by 1.9%) year-on-year, while in terms of space the recorded contraction was 16.1%.

Chart 1.3.3

**HOUSEHOLD PURCHASING POWER OF STANDARD APARTMENT BY THE NUMBER OF YEARS NEEDED FOR SAVING FOR THE FIRST DOWN PAYMENT AND BY THE RATIO OF MONTHLY PAYMENT ON LOAN TO TWO WORKING MEMBERS' AVERAGE WAGE**

■ Number of years needed to save for the first down payment on loan for standard apartment, provided that two working household members save 25% of their 12-month average wage (right-hand scale)

— Ratio of monthly payment on loan to average wage of two working household members (%)



The rent market is posting good dynamics; however, according to the data by Latio Ltd.<sup>17</sup>, rent for standard apartments remains unchanged, at 5.0 EUR/m<sup>2</sup>.

As to commercial real estate market, only data supplied by sector companies are available. They confirm that, in terms of rent and unoccupied space, **essential changes in Latvia's commercial real estate market segment have not been registered.**

<sup>17</sup> "Residential Market Report, Riga and Regions, Q4 2016" by Latio Ltd.

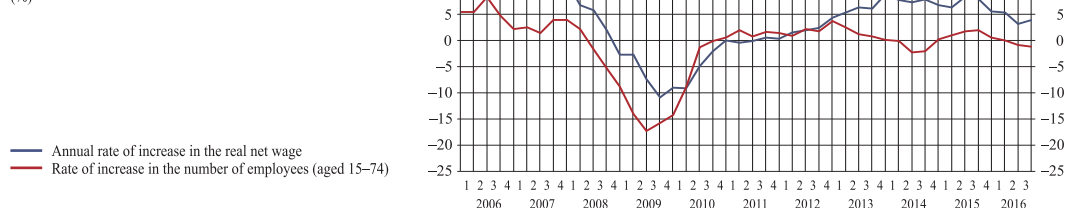
## 2. FINANCIAL VULNERABILITY OF BORROWERS

### 2.1 Financial vulnerability of households

**Overall, financial vulnerability of borrowers continues on a downward path. A rise in income, the low debt burden and good payment discipline imply improvements in household creditworthiness.** The rate of household creditworthiness gains has moderated. It can primarily be explained by a slower increase in the real net wage. The annual rise in the real net wage stood at 4.0% {8.0%} in the fourth quarter of 2016 (see Chart 2.1.1). It will likely decelerate in 2017 as higher inflation will diminish the effect from an increase in the gross nominal wage. Meanwhile, labour market developments have remained broadly unchanged, i.e. the annual rate of change in the number of employees is hovering around zero, but the unemployment rate continues to decline slowly.

Chart 2.1.1

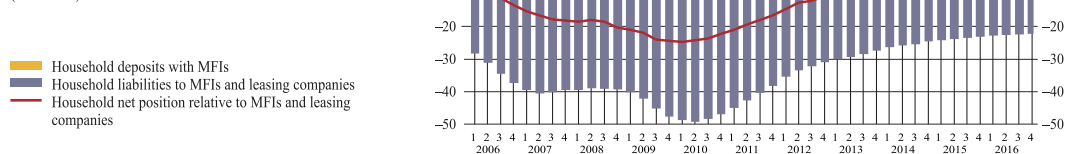
**THE ANNUAL RATE OF INCREASE IN THE NUMBER OF EMPLOYEES (AGED 15–74) AND REAL NET WAGE (%)**



**The level of household debt in Latvia is still relatively modest, and household involvement in the credit market is in general lower than in the euro area (see Box 1).** At the end of 2016, the ratio of household liabilities to MFIs and leasing companies to GDP and household disposable income was 22.1% and 36.5% {23.0% un 37.7%} respectively. With new loans increasing, household debt could start to increase at a subdued rate in 2017. At the same time, household deposits with MFIs continue solid growth, and the positive net position of household deposits with MFIs and liabilities to MFIs and leasing companies reached 2.9% {0.6%} of GDP at the end of 2016 (see Chart 2.1.2).

Chart 2.1.2

**HOUSEHOLD DEPOSITS WITH MFIS, LIABILITIES TO MFIS AND LEASING COMPANIES AND THE NET POSITION VIS-À-VIS MFIS AND LEASING COMPANIES (% of GDP)**



**With interest rates and household debt remaining low, the interest payment burden of households also remains low, thus mitigating household credit risk.** In the fourth quarter of 2016, the ratio of household interest payments to GDP stood at 0.8% for the third consecutive quarter, while it was 1.3% relative to household disposable income. The difference between the recognised and calculated interest payments to GDP has narrowed somewhat (to 0.5 percentage point), suggesting further recovery of household creditworthiness and payment discipline.

In 2016, the number of insolvency cases filed by natural persons decreased by 5.0%, which was partly due to the base effect (with the amendments to the Insolvency Law taking effect in 2015, the number of insolvency cases filed by natural persons rose substantially).



**Box 1****The ECB household finance and consumption survey: results for Latvia**

In December 2016, the results of the Household Finance and Consumption Survey<sup>18</sup> organised by the ECB were published for the year 2014. The survey was conducted for the first time in Latvia, the next one will take place in autumn 2017. The Household Finance and Consumption Survey is a representative household survey compiling data on various aspects of households' balance sheets (assets, liabilities, income, consumption) as well as household socio-demographic characteristics. 1 202 households were surveyed in Latvia. The survey is a valuable source of data on the participation of households in the debt market, their debt level and debt servicing capacity<sup>19</sup>.

Overall, the participation of Latvian households in the debt market is lower than in the euro area as a whole. According to the survey data, only 34% of Latvian households had credit liabilities in 2014 (42% of households across the euro area had credit liabilities). Mortgages constitute the major part (82%) of credit liabilities (86% in the entire euro area; see Charts 2.1.3 and 2.1.4).

Chart 2.1.3

**HOUSEHOLD PARTICIPATION IN THE DEBT MARKET**

(% of the total number of households)

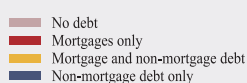
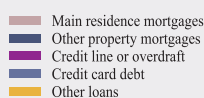


Chart 2.1.4

**THE STRUCTURE OF HOUSEHOLD DEBT**

(%)



Participation in the credit market largely depends on household's income level. The survey results indicate that it is mainly the households representing the highest income quintile that participate in the credit market; 63% of households in this quintile have credit liabilities (see Charts 2.1.5 and 2.1.6) and they hold 61% of outstanding amount of loans granted to households. Meanwhile, debt participation of households belonging to the two lowest income quintiles is quite small, i.e. only 13% of households in the first and 17% of households in the second quintile have credit liabilities. This can be explained by rather low income level (in 2014, average gross monthly income of households in the first quintile was 208 euro, but in the second quintile – 392 euro).

<sup>18</sup> Household Finance and Consumption Survey (HFCS). The survey was conducted in all euro area countries according to a harmonised methodology. The first wave of the survey took place in 2010–2011 (<https://www.ecb.europa.eu/pub/pdf/scpsps/ecbsp2.en.pdf>) but the second one – in 2013–2014. Latvia (also Estonia and Ireland) participated in the second wave of the survey for the first time (The Household Finance and Consumption Survey: results from the second wave. Frankfurt am Main: European Central Bank, 2016; see <https://www.ecb.europa.eu/pub/pdf/scpsps/ecbsp18.en.pdf>). Within the second wave, the survey was also conducted in two non-euro area countries, i.e. Hungary and Poland.

<sup>19</sup> Latvijas Banka conducts a survey of household borrowers on a regular basis. The survey compiles information on household credit liabilities, income and consumption. However, only the households holding mortgages are surveyed within this survey which does not allow drawing conclusions on the participation of the population in the credit market.

Chart 2.1.5

**HOUSEHOLD DEBT<sup>20</sup> BREAKDOWN INTO INCOME QUINTILES**

(% of the total loan portfolio granted to households)

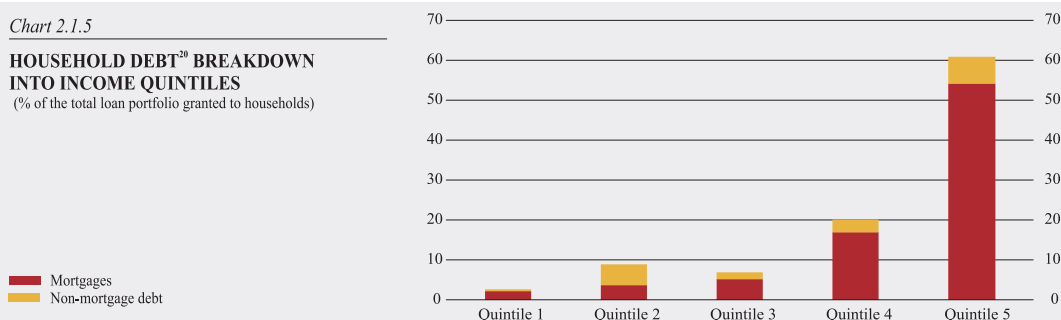
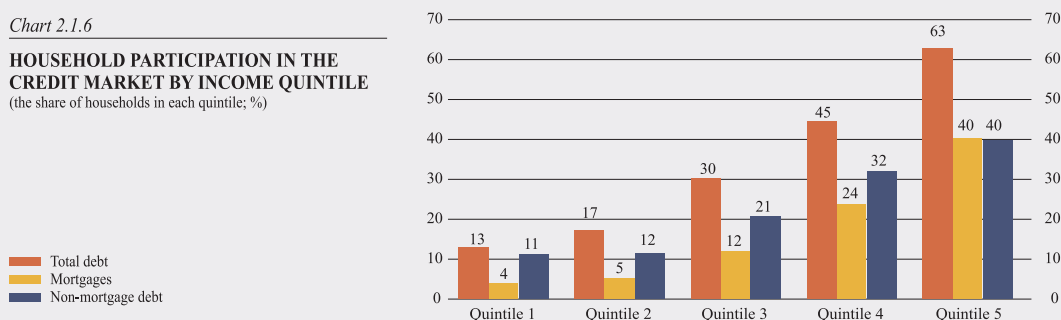


Chart 2.1.6

**HOUSEHOLD PARTICIPATION IN THE CREDIT MARKET BY INCOME QUINTILE**

(the share of households in each quintile; %)



The income level of Latvian households is overall low which results in relatively high financial vulnerability indicators in the lowest income quintiles. At the same time, household creditworthiness indicators are fairly good in the highest income quintile.

The DTA ratio of an indebted household is calculated according to the following formula:

$$DTA_i = \frac{D_i}{W_i},$$

where  $D_i$  is the total household debt but  $W_i$  – household gross wealth (excluding public and occupational pension plans). This ratio shows the extent to which a household will be able to repay the debt by using its total assets.

The DSTI ratio of an indebted household (excluding households having only a credit card debt) is defined as

$$DSTI_i = \frac{DS_i}{I_i},$$

where  $DS_i$  represents household monthly debt servicing payments and  $I_i$  – the total household monthly gross income. The DSTI ratio is a widely accepted household debt burden indicator, which also reflects the interest rate level and loan maturity. It is considered that in the case of an unexpected income shock the households with DSTI ratio exceeding 40% may encounter loan repayment problems; therefore, they are classified as financially vulnerable. Although the DSTI median is relatively low in Latvia, i.e. 11.4% (13.5% across the euro area), this indicator is high in the lowest income quintile (73.5%<sup>21</sup>), and the DSTI ratio exceeds 40% in 55% of the households belonging to this quintile.

According to the household financial vulnerability self-assessment<sup>22</sup>, 15.2% of indebted Latvian households are financially vulnerable. The highest share of vulnerable households is in the lowest income quintile (48%), whereas in the highest income quintile the share of vulnerable households constitutes 6% (see Chart 2.1.7).

<sup>20</sup> In relation to credit institutions and NBFS.

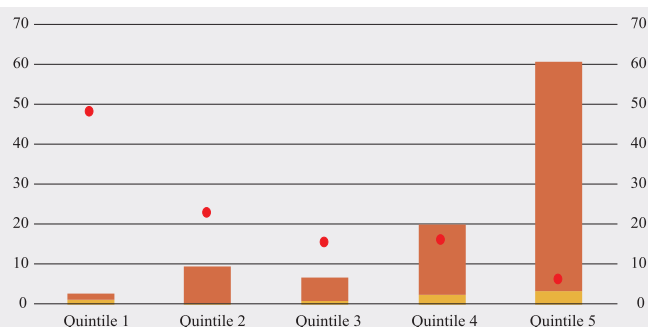
<sup>21</sup> This high indicator develops partly on account of short-term loans, but partly it stems from loans for house purchase granted prior to the crisis, i.e. income of a certain section of borrowers shrank markedly during the crisis, and it has not reached the pre-crisis level.

<sup>22</sup> A household is considered vulnerable if it reported that expenses exceeded household's income in 2013.

Chart 2.1.7

**THE SHARE OF LOANS TO VULNERABLE AND SOLVENT HOUSEHOLDS IN THE TOTAL HOUSEHOLD LOAN PORTFOLIO AND THE SHARE OF VULNERABLE HOUSEHOLDS IN EACH QUINTILE**  
(%)

■ Share of loans to solvent households  
■ Share of loans to vulnerable households  
● Share of vulnerable households

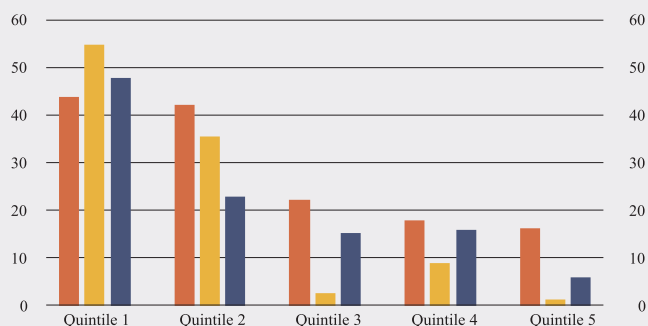


Despite the high vulnerability indicators in the lowest income quintile (see Chart 2.1.8), the risk faced by credit institutions in the case of macroeconomic shocks is limited as the amount of loans granted to households in the lowest income quintile is small (only 2.8% of the total loans to households). The share of loans to all vulnerable households in the total household loan portfolio accounts for 8.7%.

Chart 2.1.8

**VULNERABILITY INDICATORS OF BORROWERS**  
(the share of households in each quintile; %)

■ Debt-to-assets >75%  
■ Debt servicing costs to income >40%  
■ Self-assessment of vulnerability (expenses exceed income)



Data on the balance between expenditure and income of all households (not only borrowers) suggest that **possibilities of Latvian households to make savings are limited**. In 2014, income of only 7.5% of households in the lowest income quintile exceeded expenses, while the respective figure in the highest income quintile stood at 34% (see Chart 2.1.9). The survey results confirm that it is only 17% of Latvian vulnerable households that spend their savings in the case of financial difficulties. The vulnerable households largely rely on help from relatives or friends (43%) or they leave some bills unpaid (36%; see Chart 2.1.10). Meanwhile, the households in the highest income quintile rather often use new loans to repay previous debts.

Chart 2.1.9

**ABILITY TO SAVE OVER THE PAST YEAR**  
(the share of households in each quintile; %)

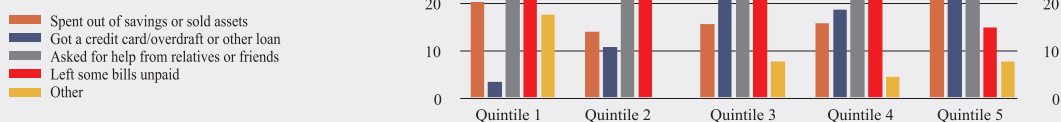
■ Expenses exceeded income  
■ Expenses same as income  
■ Expenses less than income



Chart 2.1.10

### ACTIONS TAKEN BY VULNERABLE HOUSEHOLDS IN THE CASE OF FINANCIAL DIFFICULTIES

(the share of households in each quintile; %)



## 2.2 Financial vulnerability of non-financial corporations

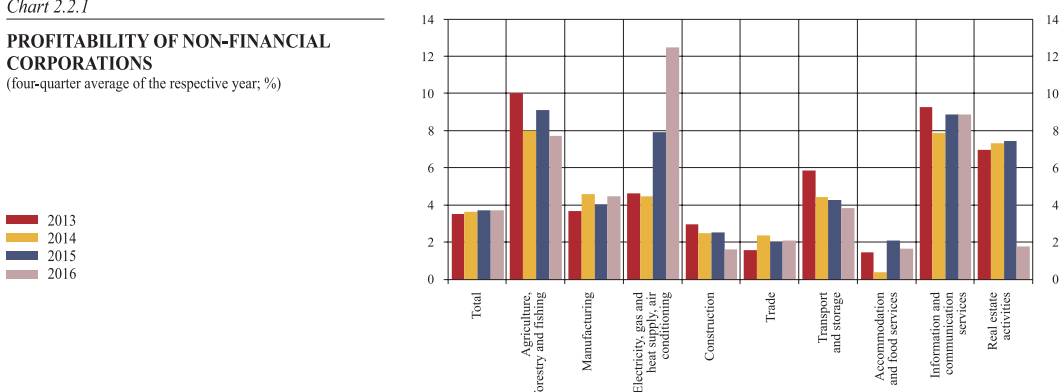
**Overall, creditworthiness of non-financial corporations has not changed considerably. In 2016, their turnover edged down slightly (by 0.4%) due to slowdown of economic growth** in the middle of the year (including a significant decrease in construction volume caused by delays in absorption of EU funds and a decline in large public procurements). Moreover, it was also deflation that partly affected the fall in turnover in nominal terms in 2016. **At the same time, profitability of non-financial corporations remained broadly unchanged, i.e. it was stable (3.7%) for the third consecutive year.**

**Development of financial indicators is not homogenous across sectors.** Turnover and profitability of the agricultural, transport and storage, real estate activities and construction sectors dropped, while turnover and profitability of other sectors picked up (see Chart 2.2.1). The economic development indicators for the first quarter of 2017 as well as higher GDP and inflation projections suggest that the financial results of non-financial corporations could improve in 2017.

Chart 2.2.1

### PROFITABILITY OF NON-FINANCIAL CORPORATIONS

(four-quarter average of the respective year; %)

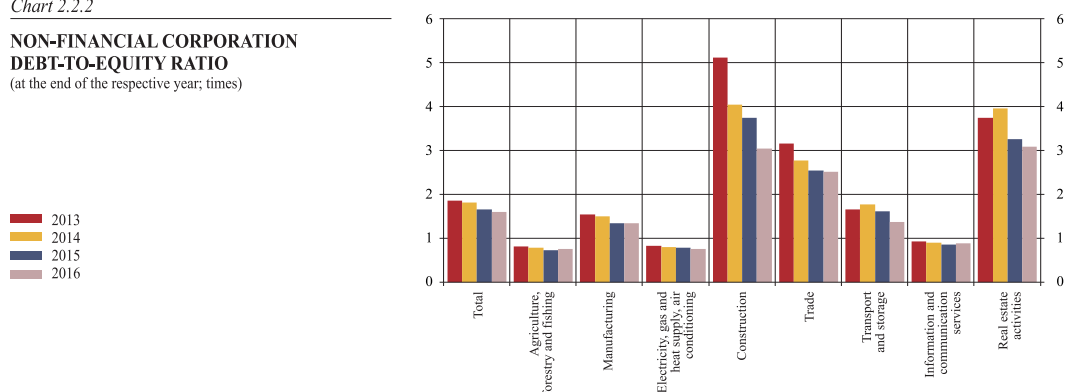


**With the total value of investment decreasing and lending edging up slightly, the total debt of non-financial corporations continues to shrink slowly. Thus, their debt servicing indicators also continue on an upward path and are relatively good overall.** The ratio of their total debt-to-GDP accounted for 73.0% {77.6%} at the end of 2016. The debt-to-equity ratio slightly improved in 2016 (it decreased from 1.7 times to 1.6 times; see Chart 2.2.2), and the interest payment ratio of non-financial corporations picked up from 6.2 times to 6.7 times. Although the ratio of average debt to equity is gradually improving, it remains high for a large number of non-financial corporations. According to the SME survey and credit institutions' survey on obstacles to SME lending conducted by Latvijas Banka (see Appendix 2), credit institutions believe that financial indicators of less than a half (42%) of the surveyed SMEs meet the lending requirements set by credit institutions (including the ratio of maximum debt burden capital, depending on the type of sector and other conditions).

Chart 2.2.2

**NON-FINANCIAL CORPORATION  
DEBT-TO-EQUITY RATIO**

(at the end of the respective year; times)



**A decrease in the amount and share of loans past due over 90 days in the loan portfolio also suggests that debt servicing of non-financial corporations is improving.** In 2016, these indicators improved across all sectors, apart from the transport and storage sector. This is consistent with a decline in turnover and profitability as well as with the manufacturing sector. At the same time, the share of long past due loans continued on a downward trend in the construction and real estate activities sectors despite the significant decline in annual turnover (by 23.1% and 4.7% respectively) and weakening of other financial indicators.

**The number of insolvency cases of legal persons continues to fall** (it declined by 9.1% in 2016). The amendments to the Insolvency Law adopted in December 2016 will further reduce the number of bad faith insolvency cases and improve the business environment (see Subsection 1.2). At the same time, the number of liquidated enterprises is still growing (it increased by 21% in 2016) due to the ongoing better organisation of the business environment, i.e. the enterprises not engaging in economic activity for a prolonged period are removed from registers. Taking account of the sustained high number of the so-called shell non-financial corporations, the number of liquidated enterprises will remain elevated in the coming years<sup>23</sup>.

<sup>23</sup> According to LURSOFT data, the share of non-financial corporations having a zero turnover contracted from 26.4% in 2013 to 22.9% in 2015 in the total number of non-financial corporations.

### 3. DEVELOPMENT AND RISKS OF THE CREDIT INSTITUTION SECTOR

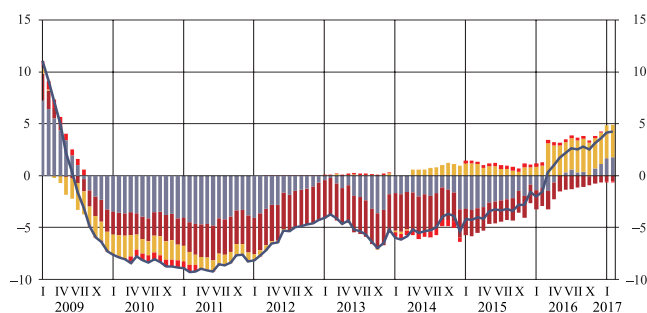
#### 3.1 Lending development and credit risk

**Lending development is gradually accelerating. With new loans increasing, the domestic loan portfolio has started to expand, and its annual change returned to positive territory in 2016 after a seven-year break.** This growth reached 3.1% in December 2016 and 3.7% in February 2017 (excluding the effect of the cancellation of credit institution licences constituting 4.3%; see Chart 3.1.1). Loans to non-bank financial institutions granted by credit institutions substantially contributed to the expansion of the total domestic loan portfolio. It can primarily be explained by the change in the funding model of one credit institution's subsidiary that is a leasing company<sup>24</sup>. However, the annual change in loans to domestic non-financial corporations and households has also been positive since the end of 2016, and the pickup reached 0.9% in February 2017 (excluding the effect of the cancellation of credit institution licences amounting to 1.3%).

Chart 3.1.1

**ANNUAL RATE OF CHANGE IN DOMESTIC LOANS (%) AND ITS COMPONENTS BY SECTOR (PERCENTAGE POINTS)**  
(%; percentage points)

■ Government  
■ Financial institutions  
■ Households  
■ Non-financial corporations  
— Annual rate of change in loans (%)

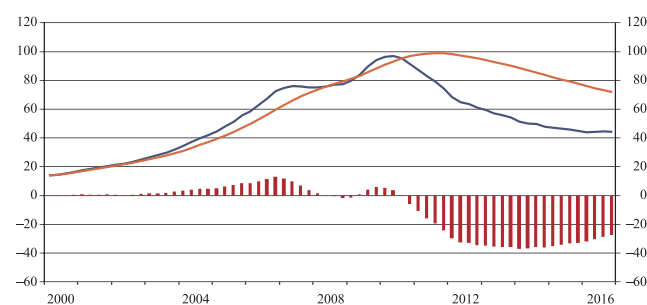


**Development of domestic lending is still significantly lagging behind its long-term trend. However, the deviation of the credit-to-GDP ratio from its long-term trend is gradually contracting.** Given that the current moderate lending growth is taking place after a significant decrease in the loan portfolio<sup>25</sup>, the deviation of the credit-to-GDP ratio from its long-term trend remains negative, i.e. it was -27 percentage points in December 2016 {-33 percentage points} (see Chart 3.1.2). The ratio of loans to the domestic private non-financial sector to GDP stood at 45% at the end of 2016.

Chart 3.1.2

**DEVIATION OF THE RATIO OF TOTAL LIABILITIES OF THE PRIVATE NON-FINANCIAL SECTOR TO GDP FROM THE LONG-TERM TREND**  
(percentage points; %)

■ Deviation from the trend  
— Loans-to-GDP trend  
— Loans-to-GDP



**Despite the decrease in investment and delayed absorption of EU funding, lending to non-financial corporations is gradually following an upward trajectory.** The annual growth rate of the loan portfolio of domestic non-financial corporations was 2.8% in February 2017 (excluding the effect of the cancellation of credit institution licences constituting 3.4%). In March 2016–February 2017, new loans to non-financial corporations exceeded the figure of the respective period of the previous year by one third. It was not only the growing financing of investment and current assets that facilitated the expansion of the loan portfolio but also financing of merger/acquisition transactions as well as refinancing of the outstanding loans, including refinancing of the loans previously

<sup>24</sup> The financing of the leasing company Nordea Finance Latvia Ltd. provided by the Finnish Nordea Finance Finland was replaced with a loan granted by the Latvian branch of Nordea Bank AB.

<sup>25</sup> In February 2017, loans to domestic customers shrank by 39% in comparison with those granted in December 2008.

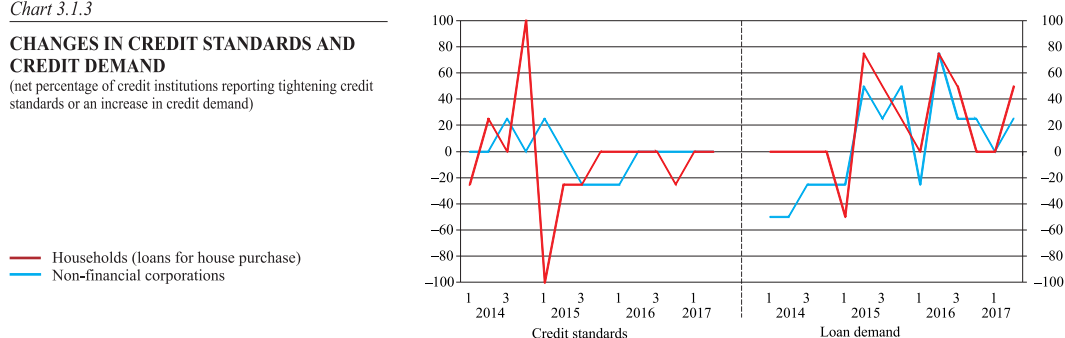
granted by foreign credit institutions. It is projected that the loan portfolio of non-financial corporations could expand at a slightly faster pace in the second half of 2017. It will be supported by more active absorption of EU funds, including financing from the European Fund for Strategic Investments, and improvement of Latvia's economic growth.

**New loans to households are increasing rapidly. However, the annual rate of change of the loan portfolio is still negative.** It was  $-1.4\%$  in February 2017 (excluding the effect of the cancellation of credit institution licences constituting  $-1.2\%$ ). The repayment of the long-term loans granted for house purchase in the pre-crisis period is still heavily weighing on the shrinking of the household loan portfolio. Meanwhile, in March 2016–February 2017, new loans to households exceeded the figure of the respective period of the previous year by 30%. The rise in new loans to households is mostly supported by household creditworthiness gains, augmenting activity in the real estate market and the state-guaranteed mortgage programme for construction or purchase of first housing<sup>26</sup>. Approximately 37% of the new loans for house purchase were granted within the framework of the above programme in 2016.

Chart 3.1.3

### CHANGES IN CREDIT STANDARDS AND CREDIT DEMAND

(net percentage of credit institutions reporting tightening credit standards or an increase in credit demand)

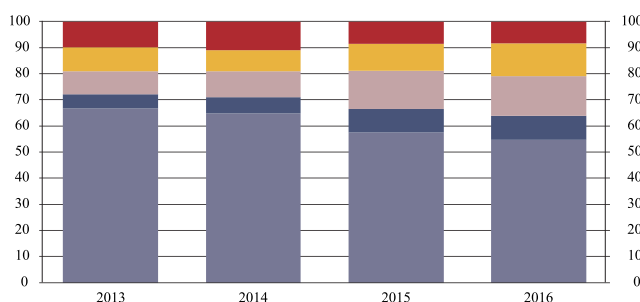


**The results of the bank lending survey organised by the ECB suggest that borrowers' demand for loans show a general increase.** However, dynamics of change in demand is uneven, and demand remains subdued. For example, the credit institution lending survey conducted by Latvijas Banka and the SME survey (see Appendix 2) reveal that the most commonly cited factor restricting lending to non-financial corporations is the reluctance to borrow.

**Credit institutions' responses contained in the bank lending survey organised by the ECB suggest that credit standards have remained broadly unchanged.** At the same time, the data contained in the Credit Register of Latvijas Banka show that the loan-to-value ratio of new loans to households for house purchase has slightly increased in 2016 (see Chart 3.1.4). To a large extent, this might be on account of the state-guaranteed mortgage programme for construction or purchase of first housing which has facilitated households' access to credit for house purchase. However, credit standards of credit institutions remain generally cautious, i.e. only for 8% of new loans for house purchase the loan-to-value ratio exceeded 85% in 2016. Likewise, credit institutions do not grant loans for house purchase with a very long maturity, i.e. only 1% of the new loans for house purchase exceeded the maturity of 30 years in 2016.

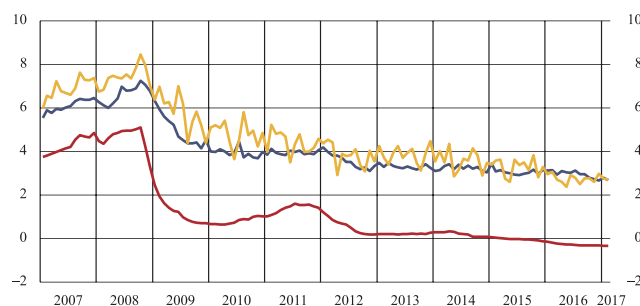
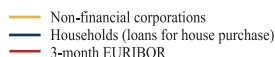
<sup>26</sup> The state guarantees loans granted by credit institutions to families with children for house purchase or construction within the programme launched in 2015. The guarantee covers 10%–20% of the loan depending on the number of minor children in the family. A less stringent requirement of the maximum threshold (95%) of the loan-to-value ratio is applied to participants of the state-guaranteed programme, thus allowing to reduce the first down payment accordingly. In other cases, the maximum threshold of the loan-to-value ratio is 90% when mortgages exceed 100 minimum monthly wages. Moreover, the participants of the state-guaranteed programme get a rebate on the stamp duty for registration of the property rights with the Land Register. The stamp duty to be paid by the programme participants is 0.5% of the property value, but in other cases – 2.0%.

Chart 3.1.4

**LOAN-TO-VALUE RATIO OF NEW LOANS TO DOMESTIC CUSTOMERS FOR HOUSE PURCHASE (%)**


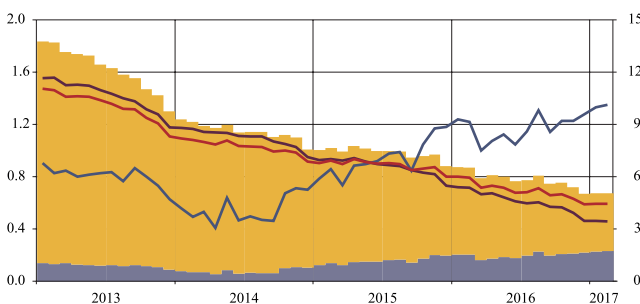
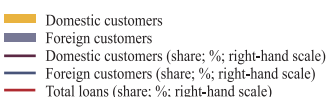
**The accommodative monetary policy is an additional factor contributing to lending.** With money market indices decreasing to a historic low, interest rates of credit institutions also tend to go down gradually (see Chart 3.1.5). However, margins still remain relatively high, and interest rates on new loans granted in Latvia are higher than those in other euro area countries.

Chart 3.1.5

**INTEREST RATES APPLIED ON NEW TRANSACTIONS OF DOMESTIC CUSTOMERS AND THE MONEY MARKET INDEX (%)**


**The credit risk is gradually declining. The quality of the total credit institutions' loan portfolio continues to improve. According to the stress test results, credit institutions' ability to absorb the potential shocks is relatively good and continues on an upward path** (see Section 3.6). In February 2017, the share of loans past due over 90 days in the total loan portfolio of credit institutions shrank to 4.5% {6.0%} (including the domestic portfolio – to 3.1% {5.4%}); see Chart 3.1.6). With the loan portfolio quality improving, credit institutions' provisions for total loans continue to contract, and in February 2017 they constituted 3.9% {4.8%} of the total loan portfolio. Along with the projected acceleration of economic growth, low interest rates and improvement in borrowers' creditworthiness, domestic customers' ability to fulfil their debt obligations will further improve, and the share of long past due loans in the domestic portfolio will continue to decrease.

Chart 3.1.6

**LOANS PAST DUE OVER 90 DAYS GRANTED TO DOMESTIC AND FOREIGN CUSTOMERS AND THEIR SHARE IN THE TOTAL LOAN PORTFOLIO OF THE RESPECTIVE GROUP OF LOANS (billions of euro)**


At the same time, risks related to the foreign loan portfolio remain high. With the quality of the restructured loans deteriorating further, an increase in the long past due loans in the foreign loan portfolio could still increase. At the same time, the most recent projections suggest that the macrofinancial situation in Russia, where a significant share of the foreign loan portfolio is concentrated, is improving gradually. This gives rise to hopes that the quality of the foreign loan portfolio will not continue to deteriorate as sharply as in the

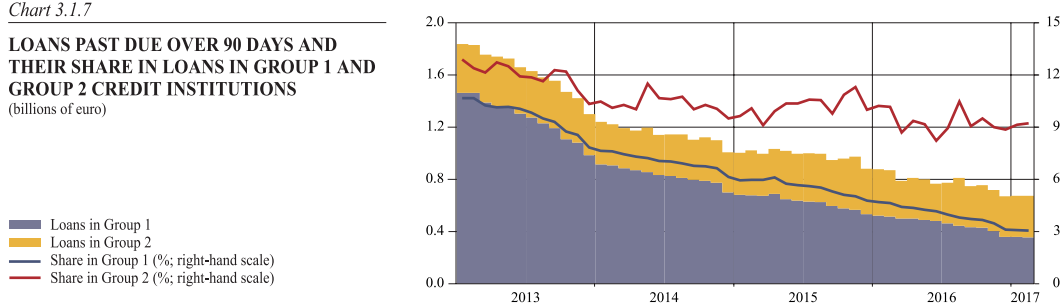


previous two years. Loans to foreign customers have stabilised (the annual growth rate of the foreign loan portfolio picked up by 2.5% in February 2017, and it was largely driven by exchange rate effects). Loans to foreign customers constitute 15% of the credit institutions' total loan portfolio.

**Quality trends of the loan portfolio differ by credit institution group.** The share of loans past due over 90 days is decreasing steadily in Group 1; it reached 3.1% {4.6%} in February 2017. Meanwhile, the share of loans past due over 90 days is fluctuating in Group 2; it constituted 9.2% {10.2%} in February 2017 (see Chart 3.1.7). The stress test results suggest that credit institutions are overall soundly resilient to a potential rise in credit risk if shocks related to Russia and other CIS countries increase significantly (see Section 3.6). This risk is also mitigated by the individual additional capital adequacy requirements set by the FCMC within the framework of the supervisory review and assessment process (Pillar 2) for the credit institutions providing services to foreign customers.

Chart 3.1.7

**LOANS PAST DUE OVER 90 DAYS AND THEIR SHARE IN LOANS IN GROUP 1 AND GROUP 2 CREDIT INSTITUTIONS**  
(billions of euro)



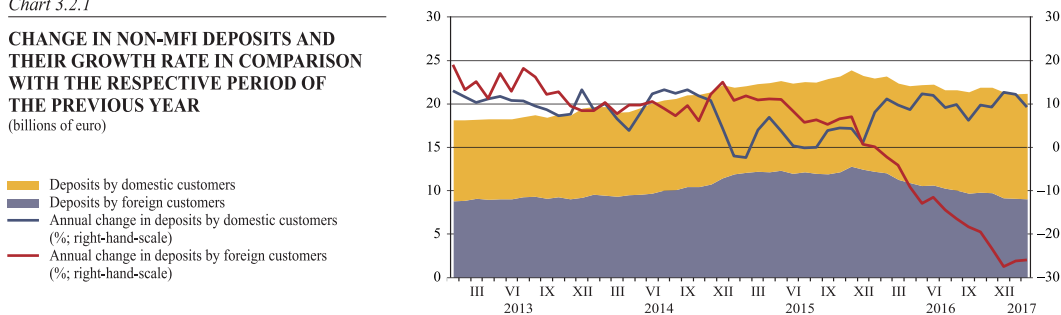
### 3.2 Funding and liquidity risks

**Funding of credit institutions continues to be largely made up of non-bank deposits** whose share in financing attracted by credit institutions stood at 85% in February 2017. Deposits by domestic households and non-financial corporations are increasing steadily. In February 2017, their annual growth was 8.5% and 7.5% respectively. At the same time, deposits by foreign customers have been contracting significantly since the end of 2015. They had shrunk by 3.4 billion euro or 27.2% in February 2017 compared to the end of 2015 (see Chart 3.2.1). Thus, **the structure of credit institutions' deposits has changed substantially, i.e. the share of deposits by foreign customers has declined** from 53.4% at the end of 2015 to 42.7% in February 2017.

**With the growth rate of domestic deposits exceeding that of domestic loans for a protracted period, the ratio of domestic loans to deposits is decreasing and is close to equilibrium** (105.6% {111.3%}) at the end of February 2017). Given that credit institutions are able to finance the largest share of the funds necessary for lending by using domestic deposits and since credit growth is moderate, the net funding provided by parent banks to their Latvian subsidiaries has remained broadly unchanged over the past years (in February 2017, 3.3% of the total funding attracted by credit institutions).

Chart 3.2.1

**CHANGE IN NON-MFI DEPOSITS AND THEIR GROWTH RATE IN COMPARISON WITH THE RESPECTIVE PERIOD OF THE PREVIOUS YEAR**  
(billions of euro)

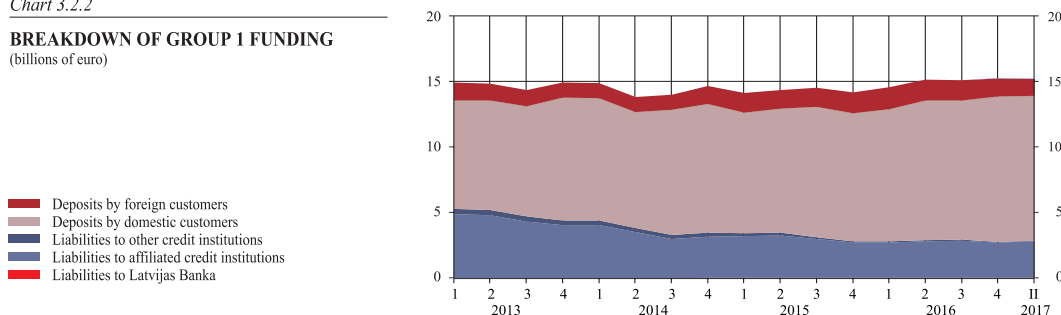


**Overall, funding of Latvian credit institutions is characterised by a short maturity and by the consequent relatively high maturity mismatch** as most of deposits (97.1%) are demand deposits or deposits with the residual maturity of up to 1 year, and the share of long-term funding in financing provided by parent banks continues on a downward trend (only 19.9% {24.5%} in February 2017). However, this risk is mitigated by the large share of liquid assets<sup>27</sup> in the total credit institution assets (34.1%) and the available support by Nordic parent banks to their subsidiaries.

**The share of domestic deposits in Group 1 funding continues to increase.** At the end of February 2017, they accounted for 72% {70%} of the total funding attracted (see Chart 3.2.2). The ratio of domestic loans to deposits has shrunk to 102.1% {106.6%} in this group. Funding provided by parent banks has not changed significantly and with dynamics of domestic lending remaining moderate, investment by parent banks in their Latvian subsidiaries will not change substantially.

Chart 3.2.2

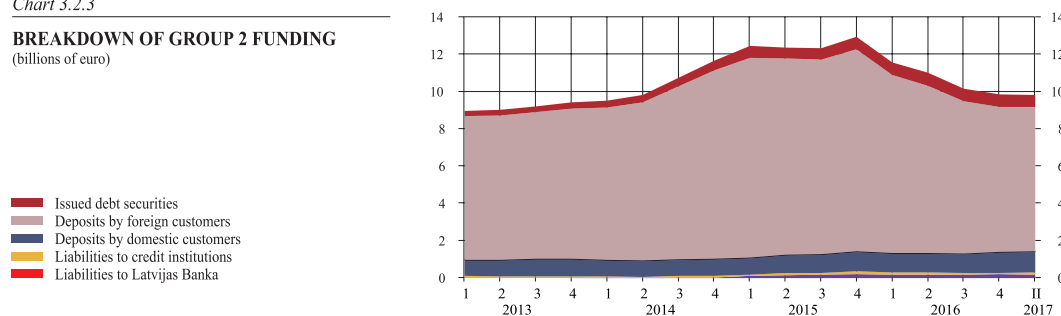
#### BREAKDOWN OF GROUP 1 FUNDING (billions of euro)



**The financing of Group 2 is still almost entirely made up of deposits by foreign customers. However, their deposits have been contracting significantly since the end of 2015** (see Chart 3.2.3). It can primarily be explained by the introduction and supervision of significantly stricter AML/CTF requirements, by closing of the correspondent accounts in US dollars for several Group 2 credit institutions<sup>28</sup> as well as by the economic situation in foreign customers' home countries.

Chart 3.2.3

#### BREAKDOWN OF GROUP 2 FUNDING (billions of euro)



**Stricter AML/CTF requirements and the closure of US dollar correspondent accounts in the US for several Group 2 credit institutions resulted in a significant fall in transfers made by foreign customers, especially in US dollars** (see Chart 3.2.4). In March 2016–February 2017, the average monthly value of transfers by foreign customers via the correspondent banking network in Group 2 credit institutions posted a 33% drop in comparison with 2015 (including a decrease of 39% in US dollars). The fall in the volume of foreign customers' transfers and deposits led to diminishing profits of Group 2 credit institutions.

**The introduction and supervision of stricter AML/CTF requirements as well as**

<sup>27</sup> Liquid assets = vault cash + claims on central banks and other credit institutions + central government fixed income debt securities.

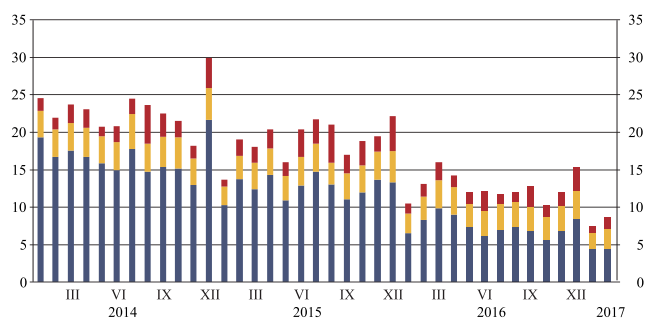
<sup>28</sup> In August 2016, Deutsche Bank Trust Company Americas, a subsidiary of Deutsche Bank located in the US, took a decision to terminate correspondent banking in US dollars with several Group 2 credit institutions.

**credit institutions' contribution to more severe customer due diligence should be considered an important step towards promotion of sustainable development of Latvia's financial sector** which also mitigates reputation risks faced by credit institutions and the country (see Box 2). With the importance attached to deposits by foreign customers decreasing in Latvia's financial sector (the ratio of deposits by foreign customers to GDP dropped from 51% at the end of 2015 to 37% at the end of 2016), the potential financial and liquidity risks are also subsiding.

Chart 3.2.4

**THE MONTHLY VALUE OF INCOMING AND OUTGOING TRANSFERS MADE BY FOREIGN CUSTOMERS OF GROUP 2 CREDIT INSTITUTIONS VIA THE CORRESPONDENT BANKING NETWORK**  
(billions of euro)

■ Other currencies  
■ EUR  
■ USD



## Box 2

### The introduction of stricter AML/CTF requirements in Latvia

The imposition of significant measures to improve the financial sector's ability to fight against money laundering and terrorist financing (ML/TF) continued in 2016. The independent checks carried out by US consulting companies in 12 credit institutions in relation to their compliance with the US AML/CTF requirements were completed in November 2016. The credit institutions have already started to implement the recommendations made during the checks, and it has been intended to finish their implementation by the end of 2017. The FCMC regulations stipulate that the checks by independent consultants shall be carried out at least once in 18 months. Moreover, the Law on the Financial and Capital Market Commission specifies the circumstances in which the FCMC is entitled to require a credit institution to submit an opinion by an independent consultant on the compliance of the operation of the respective credit institution with the requirements of legal acts.

In 2016, laws were amended on several occasions to strengthen the AML/CTF framework. The compliance with the 40 recommendations by the Financial Action Task Force has been improved (most of the recommendations have been implemented in Latvia), and work on the transposition of the Fourth AML/CTF Directive<sup>29</sup> continued. For example, the range of politically exposed persons and their associates was extended to include local government officials, their family members and other close associates of politically exposed persons, obliging credit institutions to carry out an in-depth examination of such persons and their transactions. The Credit Institution Law introduces a significantly higher maximum fine resulting from violations of AML/CTF requirements, providing for a fine amounting up to 10% of the overall annual turnover as presented in the latest reports approved by the credit institution's management body or up to 5 million euro if 10% of the total annual turnover constitutes less than 5 million euro.

The FCMC has approved new regulations for credit institutions and electronic money institutions on an in-depth examination of customers. They also include a requirement to establish automated customer risk systems on the basis of ML/TF risk factors. The FCMC has also approved ML/TF risk management regulations, setting the minimum requirements credit institutions have to comply with when developing an AML/CTF strategy and establishing a set of basic indicators describing the ML/TF exposition.

<sup>29</sup> Directive (EU) 2015/849 of the European Parliament and of the Council (EU) 2015/849 of 20 May 2015 on the prevention of the use of the financial system for the purposes of money laundering or terrorist financing, amending Regulation (EU) No 648/2012 of the European Parliament and of the Council, and repealing Directive 2005/60/EC of the European Parliament and of the Council and Commission Directive 2006/70/EC.

The FCMC has also approved new regulations on ML/TF risk management personnel resources and staff training, laying down uniform requirements for credit institutions in relation to the provision of personnel resources to ensure more efficient ML/TF risk management. The new regulations specify the criteria related to the number of staff, workload and assessment of qualification as well as lay down requirements to be applied when drawing up a staff training plan, taking into account the risks related to operation of each credit institution and the knowledge and qualification required for carrying out official duties of an employee. Also, credit institutions have to ensure appropriate IT systems.

Stricter AML/CTF requirements increase credit institutions' costs (additional investment in personnel resources and IT systems is needed) and put pressure on credit institutions, making them refuse to serve high ML/TF risk customers whose due diligence requires substantial additional resources, and part of financial market participants needs to change its operational strategy. At the same time, the implementation and enforcement of AML/CTF standards contribute to sustainable development of Latvia's financial system and mitigate its reputational risks which in turn may have an adverse effect on the country's investment environment and generate additional costs both indirectly to other sectors and the country as a whole.

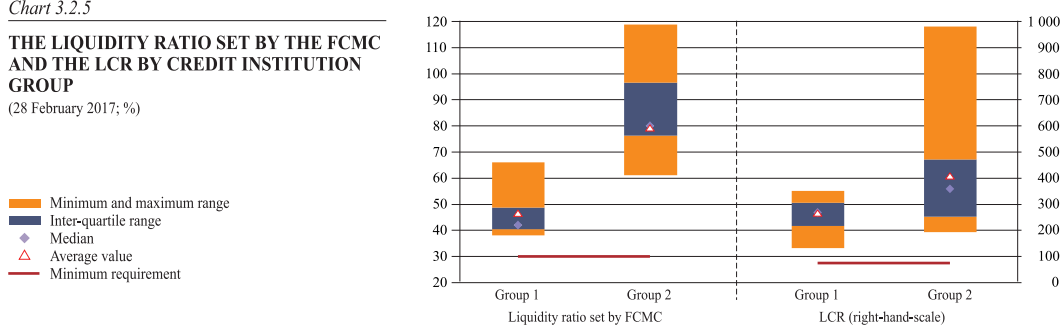
The FCMC significantly increased the capacity of the structural unit responsible for AML/CTF both by increasing the number of its employees and promoting their training in the field of AML/CTF. Latvijas Banka supports capacity building of supervisory institutions and calls for account to be taken of the ML/TF risk level of each market participant when revising annual contributions of market participants to be made to finance FCMC activities. This principle would mean that the market participants having a higher ML/TF risk level and thus also higher supervisory costs would make larger contributions.

**Despite the significant decrease in deposits received from foreign customers and more active lending to domestic customers, the liquidity risk of credit institutions has not increased and remains limited as the amount of liquid assets maintained by credit institutions of both groups is sufficient to fulfil their liabilities to the extent prescribed by both the FCMC liquidity requirement<sup>30</sup> and LCR<sup>31</sup> (see Chart 3.2.5). The stress tests of credit institutions' liquidity conducted by Latvijas Banka in February 2017 also suggest that their ability to absorb the shocks caused by potential financing outflows remain high (see Box 3).**

Chart 3.2.5

**THE LIQUIDITY RATIO SET BY THE FCMC AND THE LCR BY CREDIT INSTITUTION GROUP**

(28 February 2017; %)



**The LCR of Group 1 credit institutions and the liquidity ratio set by the FCMC exceed the minimum requirement.** In February 2017, these ratios stood at 270% and 46.7% respectively. Liquidity ratios of these credit institutions slightly declined in 2016. It can be explained by gradual recovery of lending to domestic customers, unwillingness of credit institutions to keep an excessive amount of lower yield liquid assets, as well as by liquidity management at the level of the respective credit institution group.

<sup>30</sup> The FCMC liquidity ratio will be valid until the end of 2017 when it will be completely replaced by the liquidity ratios defined by the CRD IV/CRR.

<sup>31</sup> As of 1 January 2017, the minimum LCR requirement is 80%, but a 100% LCR requirement will be applicable from 1 January 2018.

**To date, Group 2 credit institutions have managed to successfully overcome the contraction of deposits by foreign customers** due to the high level of their liquid assets. With deposits by foreign customers decreasing, these credit institutions mainly reduced the amount of liquid securities and claims on foreign MFIs. Thus, their liquidity ratio set by the FCMC has remained broadly unchanged; it stood at 79.4% at the end of February 2017, while the LCR was 411.0%.

**As of 2018, changes are expected to emerge in the field of liquidity requirements of credit institutions.** The minimum reserve of credit institutions' liquid assets is currently subject to two short-term liquidity ratio requirements: the LCR requirement of 80% and the liquidity ratio requirement of 30% set by the FCMC. The FCMC, within the framework of the Supervisory Review and Evaluation Process (Pillar 2), has established a higher individual liquidity requirement (which can reach even 60%) for credit institutions having a sizeable share of deposits by foreign customers. In 2018, when the LCR requirement of 100% becomes effective, the current liquidity requirement set by the FCMC will be abolished. This will reduce the reporting burden on credit institutions as the definitions of liquid assets of both ratios differ, and will prevent duplication of surveillance tools since both liquidity ratios focus on the mitigation of short-term liquidity risks. However, the abandonment of the liquidity ratio set by the FCMC implies that a new solution is needed, i.e. how to establish additional liquidity requirements for credit institutions whose operational model makes it necessary to maintain higher liquidity buffers. Although currently the minimum liquidity requirements are more than fulfilled by Group 2 credit institutions, there is a need to establish a liquidity buffer duly consistent with their operational model. The uncertainty surrounding the expected amendments to the CRD IV/CRR legislative package in relation to the microprudential and macroprudential frameworks hampers the development and establishment of the new additional requirement.

### Box 3

#### *Stress tests of credit institutions' liquidity*

Liquidity stress tests evaluate the significance of the potential consequences of financial outflows. The results of the liquidity stress tests indicate the tolerance of credit institutions to the outflows of foreign non-MFI deposits, domestic non-MFI deposits and the total funding (MFI and non-MFI) with the residual maturity of up to three months before their liquidity ratio<sup>32</sup> reaches 0, assuming that credit institutions do not have access to additional resources to offset the funding outflows.

According to the stress test results, all credit institutions would be able to withstand the outflows of more than 40% of domestic deposits (in case of outflows of 10% of domestic customers' deposits, all credit institutions would fulfil the liquidity requirements set by the FCMC) and the outflows of more than 60% of deposits by foreign customers. The large share of credit institutions' liquid assets<sup>33</sup> in their total assets ensures the credit institutions' ability to absorb shocks from financing outflows.

The stress tests of Group 2 were supplemented with two particularly adverse scenarios. The assumptions of Scenario 1 foresee that it is impossible to pledge or sell the securities portfolio, except securities issued by the Latvian government and those issued by other governments where at least one of the three long-term ratings by international credit rating agencies<sup>34</sup> is AAA. In relation to Latvian government securities it was assumed that they lose 30% of their value in Scenario 1, and they can be used by applying a 3.0% discount in the Eurosystem's monetary policy operations. In Scenario 2, in addition to the above assumptions of Scenario 1, it is provided that no credit institution has access to claims on MFIs from a country on whose MFIs the specific credit institution has the highest volume of claims.

<sup>32</sup> Liquidity requirements set by the FCMC.

<sup>33</sup> The liquid assets included in the calculation of the FCMC liquidity ratio.

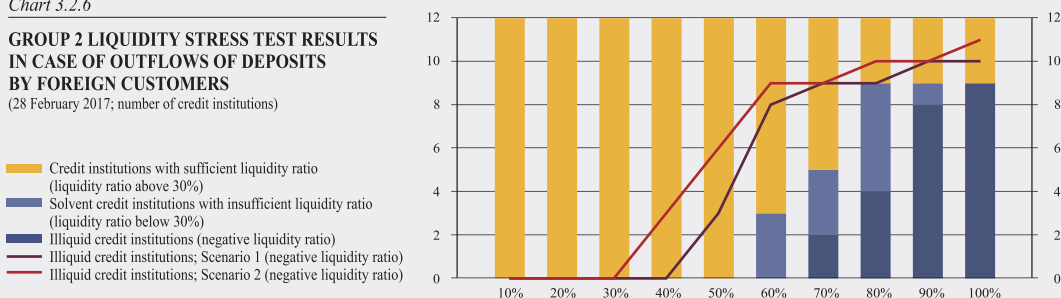
<sup>34</sup> Standard & Poor's, Moody's Investors Service and Fitch Ratings.

The application of Scenario 1 did not notably deteriorate the results of the basic stress tests. Group 2 would be able to withstand the outflows of no less than 40% {50%} of foreign customers' deposits (see Chart 3.2.6). The application of Scenario 2 would reduce the ability to withstand the outflows of up to 30% {30%} of deposits by foreign customers.

Chart 3.2.6

#### GROUP 2 LIQUIDITY STRESS TEST RESULTS IN CASE OF OUTFLOWS OF DEPOSITS BY FOREIGN CUSTOMERS

(28 February 2017; number of credit institutions)



### 3.3 Market risk

**Given the financial market volatility, the low interest rates as well as well as the political uncertainty, the risk of abrupt risk repricing remains high.** Interest rates remain low in the European financial markets. At the same time, they have increased in the USA, causing a fall in the US bond prices. Since the beginning of 2016, the yield rates of AAA-rated short-term European government bonds continued to decrease, while the rates of 10-year government bonds slightly increased. This change in the term-structure of interest rates can be associated with the market expectations regarding the future inflation and EU growth, the additional supply of long-term bonds as the governments were willing to borrow at low long-term interest rates as well as with a higher demand for short-term bonds as, for example, market participants gave preference to earning lower short-term income instead of a fixed and low long-term income.

**The aggregate securities portfolio of Latvia's credit institutions contracted significantly in 2016** (by 14%; including a 25% decrease in Group 2). This can be mainly associated with a decline in deposits by foreign customers in Group 2, as several credit institutions sold off part of their available for sale assets to offset the outflow of those foreign deposits. At the end of 2016, the securities portfolio constituted about 22% {23%} of the credit institutions' assets. This included securities held to maturity (that are not subject to mark-to-market accounting treatment) amounting to 6%, available for sale securities totalling 11%, securities at fair value through profit or loss totalling 2% and securities held for trading representing 3% of the assets.

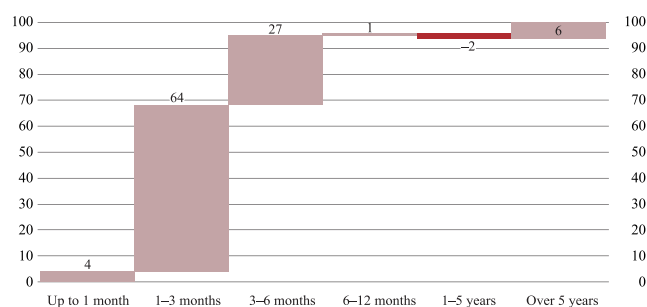
**Overall, the interest rate risk on the securities portfolio of credit institutions is low as the portfolio is composed of rather short-term bonds which would enable the credit institutions to adjust quickly should the general interest rates increase.** More than 90% of the credit institutions' securities portfolio consist of bonds with a low weighted average modified duration. In February 2017, the modified duration was 1.5 which suggests that the portfolio's value is exposed to relatively short-term interest rate changes and that the overall interest rate risk on the portfolio is low. The short maturities of the bonds suggest that the credit institutions have not given preference to low long-term yields and could adjust their portfolios quite easily should the general interest rates increase. As the yields on short-term securities are very low, particularly in comparison with their historical levels, pursuing such a strategy for a long time would create a pressure on yields.

**Latvia's credit institutions have balanced their RSAs and RSLs to manage the interest rate risk on the aggregate balance sheet, i.e. to limit the sensitivity of the net interest income and economic value to interest rate movements.** At the end of 2016, the RSA/RSL ratio was 1.26. Consequently, the GAP was positive and that means that a rise in the short-term interest rates would have a positive effect on the aggregate

net interest income of credit institutions. Latvia's credit institutions have the highest sensitivity towards the changes in 1–6 month interest rates as the GAP of the RSAs and RSLs of this maturity bucket amounts to almost 95% of the overall margin (see Chart 3.3.1). This can be explained by the fact that most loans have a floating interest rate which is reset every three months.

Chart 3.3.1

#### GAP BY RESET PERIOD (% of total GAP)



The results of the short-term sensitivity analysis<sup>35</sup> suggest that a general increase in interest rates would boost the net interest income in 75% of Latvia's credit institutions and the capital-weighted rise in net interest income would amount to 3.1% of the credit institutions' Tier 1 capital (see Chart 3.3.2). A further decline in the short-term interest rates would, in turn, result in net interest income losses, especially in cases where the loan agreement does not specify a floor level for the floating interest rate.

Chart 3.3.2

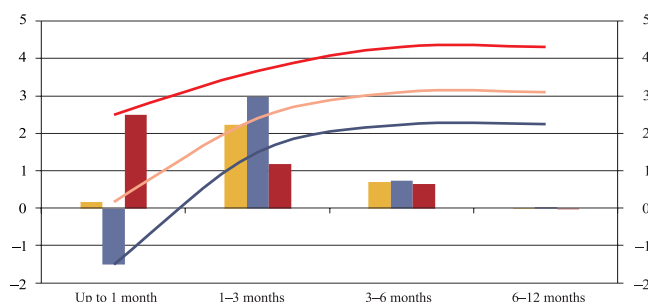
#### THE EFFECT OF AN INCREASE IN INTEREST RATES BY 200 BASIS POINTS AND CUMULATIVE EFFECT ON CREDIT INSTITUTIONS' NET ANNUAL INTEREST INCOME BY MATURITY AND CREDIT INSTITUTION GROUP (% of Tier 1 capital)

Effect

- All credit institutions
- Group 1 credit institutions
- Group 2 credit institutions

Cumulative effect

- All credit institutions
- Group 1 credit institutions
- Group 2 credit institutions



Long-term sensitivity analysis<sup>36</sup> estimates the sensitivity of the economic value of credit institutions under various interest rate term structure development scenarios: a parallel positive shift of the yield curve of 200 basis points; return to the level of December 2010 (the level observed prior to the European sovereign debt crisis); a parallel negative shift of the yield curve of 200 basis points (with a 2% floor); a steeper rise at the longer end of the yield curve; flattening of the yield curve or an increase in short-term interest rates and a decrease in long-term interest rates (see Chart 3.3.3).

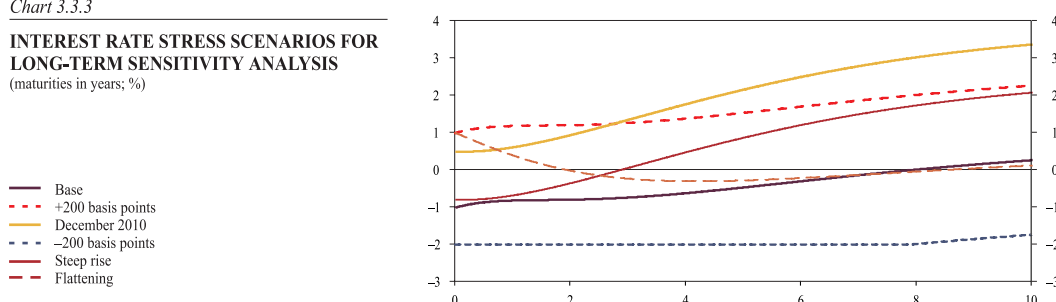
<sup>35</sup> The impact on the annual net interest income within each time-band is calculated by multiplying the time-band's GAP with the interest rate change and the ratio of this time-band characterising the part of the year when the GAP of this time-band will be active. For the purposes of calculating the ratio, it is assumed that resetting will take place in the middle of the time-band. For example, 3- to 6-month time-band ratio is calculated as follows:  $(12 - 0.5 \times (3 + 6))/12 = 0.625$ . The overall impact on the annual profit is the aggregate effect for the first four time-bands. As the calculations are based on the GAP method, they do not take into account the impact of interest rates on the credit institutions' economic value and the estimates of the interest income are based on the structure of credit institutions' balance sheet as at the end of each year.

<sup>36</sup> A credit institutions' economic value is the discounted value of the credit institutions' expected future net cash flows generated by claims and liabilities that are both on and off the credit institutions' balance sheet.

Chart 3.3.3

### INTEREST RATE STRESS SCENARIOS FOR LONG-TERM SENSITIVITY ANALYSIS

(maturities in years; %)

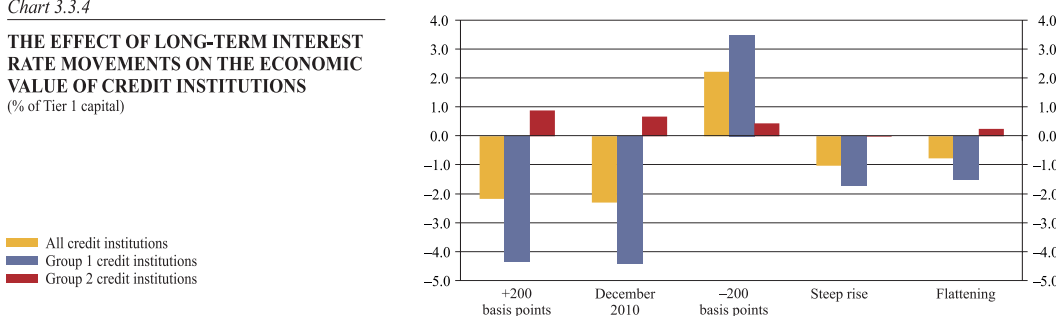


Long-term sensitivity analysis shows that **the cash flows of credit institutions are balanced at various maturities, and the changes in the economic value in most cases are much lower than the elevated interest rate risk threshold**, i.e. 15% of Tier 1 capital (see Chart 3.3.4). The most sizeable changes in the economic value could be expected in association with major short-term interest rate shocks (the first three scenarios). Consequently, an increase in longer-term interest rates would create no material impact on the economic value of credit institutions relative to their own funds.

Chart 3.3.4

### THE EFFECT OF LONG-TERM INTEREST RATE MOVEMENTS ON THE ECONOMIC VALUE OF CREDIT INSTITUTIONS

(% of Tier 1 capital)



**The currency composition of the assets and liabilities of Latvia's credit institutions is well-balanced and the foreign exchange risk remains low.** The most sizeable open foreign exchange position is that in US dollars: in December 2016, the weighted average open position was 1.3% of the credit institutions' own funds. As credit institutions most often have long positions in US dollars, with the US dollar appreciating relative to euro, the value of the credit institutions' assets would slightly increase.

## 3.4 Profitability

Overall profitability of Latvia's credit institutions can be viewed as good. Weighted average ROE of the credit institution sector was 14.3% {12.5%} in 2016 (10.4% when excluding the effect of the one-off sale of Visa Europe Ltd. shares<sup>37</sup>), significantly higher than the EU average<sup>38</sup>. Both credit institution groups retained solid return ratios: 11.7% in Group 1 (9.4% when excluding the effect of the one-off sale of Visa Europe Ltd. shares) and 18.0% in Group 2 (11.7% when excluding the effect of the one-off sale of Visa Europe Ltd. shares; see Chart 3.4.1). The return ratios of both credit institutions remained relatively high also in the first two months of 2017 at 9.9% and 11.8% respectively.

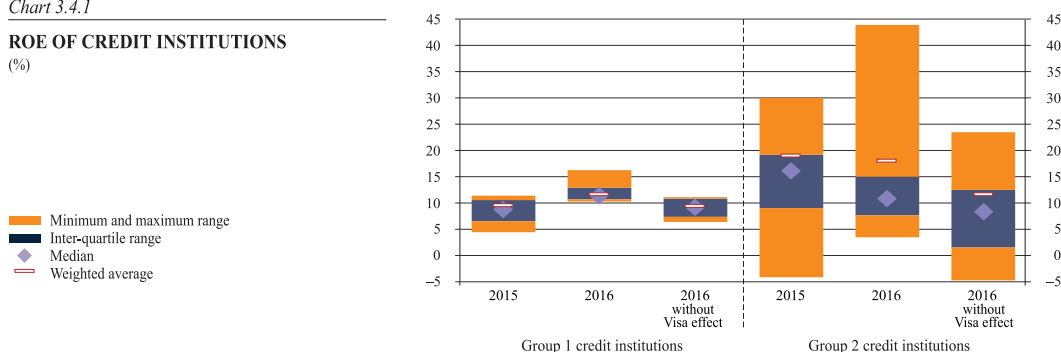
<sup>37</sup> Credit institutions servicing Visa credit cards had a historical obligation to purchase and hold a specific proportion of Visa Europe Ltd. shares. At the beginning of 2016, following the restructuring of the Visa group, with Visa Inc. acquiring Visa Europe Ltd. and Visa Europe Ltd. shareholders becoming Visa Inc. shareholders, the credit institutions' obligation to hold Visa shares was lifted. Credit institutions recognise the proceeds from the sale of shares under the *Gains from trading in financial instruments* item of their profit and loss accounts.

<sup>38</sup> According to EBA data, the weighted average ROE of EU credit institutions was 3.3% in the fourth quarter of 2016.



Chart 3.4.1

### ROE OF CREDIT INSTITUTIONS (%)



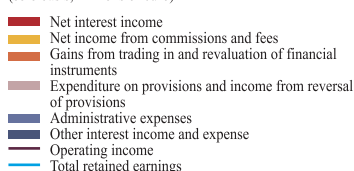
The one-off sale transaction of Visa Europe Ltd. shares had a significant effect on the overall profit of credit institutions in 2016. The aggregate (net) profit of credit institutions grew by 7% in 2016. However, net of the effect of the above sales transaction, profit contracted significantly (by 20%<sup>39</sup>), primarily on account of the falling profit in Group 2. As selling Visa Europe Ltd. shares was a one-off transaction and will have no further effect, the one-off profit earned from that sale is excluded from further analysis. In the first two months of 2017, the aggregate profit of credit institutions continued on a slightly downward trend, with the annual rate of decline reaching 4%. In contrast to that, the aggregate operating income of credit institutions remained broadly unchanged year-on-year both in 2016 and in the first two months of 2017.

Both groups are characterised by significantly different profitability trends and main sources of profit; therefore, a separate profitability analysis was conducted for each of the credit institution groups.

Chart 3.4.2

### DISTRIBUTION OF CREDIT INSTITUTION INCOME AND EXPENSES AND PERFORMANCE RESULTS\*

(solo basis; millions of euro)



\* Excluding the one-off profit from Visa Europe Ltd. share sale.

## Group 1

The main source of profit for Group 1 credit institutions is providing loans and services to domestic customers. Thus a gradual expansion of the domestic loan portfolio, an improvement in the credit worthiness of domestic customers as well as higher economic growth prospects all support the profitability of those credit institutions.

Most credit institutions of this group experienced an increase in the overall profit in 2016; nevertheless, the aggregate profit of the whole group decreased by 13%. This can be explained by lower income from reversion of provisions at some credit institutions which does not have an effect on the real cash flow of the credit institutions. In the first two months of 2017, the aggregate profit of Group 1 grew by 11% in annual terms. Meanwhile, the rise in operating income was moderate: 3% and 4% year-on-year for the whole group in 2016 and in the first two months of 2017 respectively.

Despite the low interest rate environment, margins remained relatively high on both the amounts outstanding (3.0 percentage points) and new business (2.9 percentage points), helping to support the stability of the net interest income. Net interest income

<sup>39</sup> To ensure the comparability of data, the data of JSC TRASTA KOMERC BANKA have been excluded from 2015 data.

remained unchanged in 2016 as compared to the previous year. The expanding volumes of new loans will support moderate interest income growth in the future.

**In a low interest rate environment, Group 1 credit institutions try to boost their non-interest income**, primarily by raising the commissions and fees and earning income from trading in financial instruments. The non-interest income of Group 1 credit institutions grew by 8% in 2016, with its proportion in the operating income reaching 35%.

**The options to further improve cost efficiency are limited.** Significant spending cuts and cost efficiency improvements were on the credit institutions' agenda in the previous years, whereas the year 2016 saw a minor increase of 4% in the operating costs of credit institutions. Thus the cost efficiency of credit institutions slightly deteriorated and cost-to-income ratio of Group 1 credit institutions somewhat increased in 2016 (to 49.8% {48.2%}). Nevertheless, it remains better than the average cost-to-income ratio of the EU credit institutions which is 65.7%<sup>40</sup>.

Considering the economic growth forecasts, the recovery of lending, the ability of credit institutions to preserve quite high margins and boost their non-interest income, **the overall profitability risk of Group 1 credit institutions remains low; nevertheless, there are several factors that could limit their potential to increase profit.** These factors are as follows: less opportunities to continue with cutting the operating costs and to boost the income by raising the commissions and fees, shortcomings in the business environment and a relatively small pool of domestic customers as well as the exposure of the Latvian economy to external uncertainties. Moreover, the credit institutions have to pay an increasing attention to the growing competition from the non-bank financial sector in several areas of financial services.

## Group 2

**The involvement of Group 2 credit institutions in providing loans to the Latvian economy is insignificant<sup>41</sup>** and the income of those credit institutions is primarily dependent on providing services to foreign customers.

**The business models and profits of those credit institutions were significantly affected by the tightening of the AML/CTF requirements both in Latvia and abroad, closing of the US dollar correspondent accounts in the US for a part of the credit institutions, as well as the weak growth reported in the home countries of their foreign customers. The aggregate profit of Group 2 credit institutions shrank by almost one third (29%) in 2016, while the operating income contracted by 4%. The aggregate profit and operating income continued on a downward path in the first two months of 2017 as well, declining by 20% and 12% year-on-year respectively. The value of foreign customer payments handled by those credit institutions via the correspondent banking network and foreign customer deposits contracted significantly in 2016 (by 29%<sup>42</sup>). With the deposits shrinking, the credit institutions scaled their previously fast-growing securities portfolios as well. Moreover, according to the new AML/CTF requirements, credit institutions have to make significant additional investment in human resources and IT systems.**

**Lower business volumes and rising costs were reflected in almost all profit generating segments**, i.e. in interest and non-interest income and their sub-items as well as provisioning expenses and operating costs. With interest income shrinking and interest expense growing, net interest income decreased by 9% in 2016. Given the downsizing of the securities portfolios, these credit institutions can no longer benefit from fast-growing interest income on investment in debt securities. Moreover, the quality of loans granted to

<sup>40</sup> According to EBA data on the weighted average cost-to-income ratio of the EU credit institutions for the fourth quarter of 2016.

<sup>41</sup> In February 2017, loans granted by Group 2 credit institutions to domestic customers amounted to 12.2% of the aggregate loans to domestic customers granted by all credit institutions. Deposits from domestic customers with Group 2 credit institutions constituted only 9.2% of the aggregate domestic deposits.

<sup>42</sup> FCMC statistics on the value of credit institution customers' payments via the correspondent banking network. The estimate includes all (debit and credit) payments in all currencies.

foreign customers has also deteriorated and Group 2 credit institutions are forced to build up their provisions. At the same time, net commissions and fees are decreasing. Almost all Group 2 credit institutions reported a rise in fees and commissions expense in 2016. This was affected by higher correspondent banking costs: with a lower number of banks available for direct US dollar correspondent banking relationships, credit institutions are engaging in indirect, and therefore more expensive correspondent banking relationships. Income from commissions and fees, in turn, will continue to decrease on account of lower transaction values and shrinking pool of customers.

The abrupt fall in income resulted in an increase in the cost-to-income ratio from 46.8% in 2015 to 50.5% in 2016. **At the same time, the return ratios of Group 2 credit institutions (including those of the largest credit institutions of this group) remain high.** They are, however, significantly lower year-on-year and there is a wide dispersion across the credit institutions, suggesting that different credit institutions have different ability to adjust to the new circumstances (see Chart 3.4.1).

It is expected that the business volumes of Group 2 credit institutions will continue to contract and, at the same time, these credit institutions will have to dedicate more resources to ensure the implementation of the high AML/CTF standards and safeguard their reputation. The sizeable fall in their profits means that **Group 2 credit institutions will have to reconsider their business models.** It is important that they do not turn to riskier sources of profit in search of the opportunities to sustain their profitability. Although Group 2 credit institutions overall bear little relation to Latvia's economic development, adverse developments can impair the trust in Latvia's credit institution sector in general.

### 3.5 Capitalisation

**The overall capitalisation of credit institutions is high and significantly exceeds the minimum capital requirements as well as the average credit institution capitalisation in the euro area** (see Table 3.5.1 and Chart 3.5.1). The average leverage ratio of credit institutions is also high (9.5% at the end of 2016) and significantly above the minimum threshold of 3% set by Basel III standards. The results of the stress test and credit risk sensitivity analysis conducted by Latvijas Banka suggest that the capacity of credit institutions to absorb a potential rise in credit risk caused by external and internal shocks is rather high.

Table 3.5.1

**CAPITAL REQUIREMENTS FOR CREDIT INSTITUTIONS IN LATVIA<sup>43</sup> AND CAPITAL RATIOS ON A CONSOLIDATED LEVEL AT THE END OF THE FOURTH QUARTER OF 2016 (% OF RWA)**

Type of capital	CET1	Tier 1 capital (includes CET1 and additional Tier 1 capital)	Own funds (include Tier 1 capital and Tier 2 capital)
Minimum capital requirements	4.5	6.0	8.0
Capital conservation buffer <sup>44</sup>		2.5	
Countercyclical capital buffer		0.0	
Average in Latvia <sup>45</sup>	17.1	17.1	20.1
Euro area average <sup>46</sup>	14.1	14.8	17.3

<sup>43</sup> Since 2014, the capital ratios of credit institutions is estimated on the basis of the CRD IV/CRR package laying down both the minimum capital requirements and additional capital buffer requirements.

<sup>44</sup> The capital conservation buffer of 2.5% above the minimum capital requirements is set to reduce the likelihood of a credit institution's capital falling to a level below the respective minimum capital requirement. If the relevant capital ratio declines below the total capital requirement (which includes Pillar 1 and Pillar 2 capital charges as well as the capital conservation buffer) but remains above the minimum capital requirement, this will not be considered as non-compliant with regulatory requirements; however, payments of dividends and bonuses will be limited.

<sup>45</sup> The average figure for all Latvia's credit institutions as at the end of the fourth quarter of 2016.

<sup>46</sup> The average figure for all euro area credit institutions as at the end of the third quarter of 2016 (ECB *Consolidated banking data*).

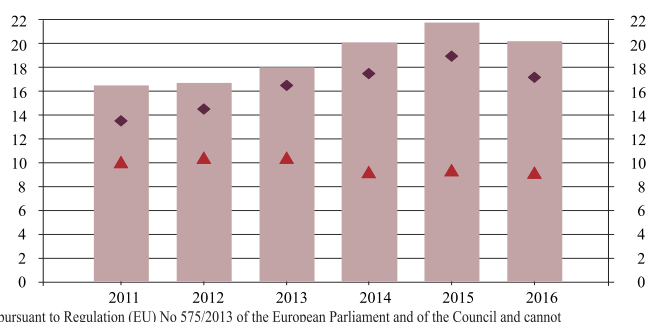
At the beginning of 2016, the capital ratios of Group 1 credit institutions and the absolute amount of their CET1 contracted as a result of a pre-planned capital reduction by two Latvian subsidiaries of Nordic bank groups in order to optimise the capital structure within the groups. Following the capital reduction, these credit institutions remained more than capable of meeting the capital requirements. At the same time, several other credit institutions injected capital. At the end of 2016, the average total capital ratio of Group 1 credit institutions was 19.8% on a consolidated level, including CET1 ratio which stood at 19.1%.

Chart 3.5.1

#### DEVELOPMENT OF CAPITAL RATIOS ON A CONSOLIDATED LEVEL\*

(%)

■ Total capital ratio  
◆ Tier 1 capital ratio\*\*  
▲ Leverage ratio



\* As of 2014, capital adequacy, including the leverage ratio, is estimated pursuant to Regulation (EU) No 575/2013 of the European Parliament and of the Council and cannot be directly compared with the ratios of the previous periods.

\*\* CET1 ratio of all credit institutions equals Tier 1 capital ratio.

**Capitalisation of Group 2 credit institutions has overall improved**, with their average total capital ratio on a consolidated level being 21.0%, including CET1 ratio being 15.2%. A higher level of capitalisation for those credit institutions resulted primarily from investing the profits earned in the previous periods into the capital. However, with the profitability prospects of Group 2 credit institutions deteriorating, several (mainly smaller) credit institutions face further risk of decreasing capitalisation.

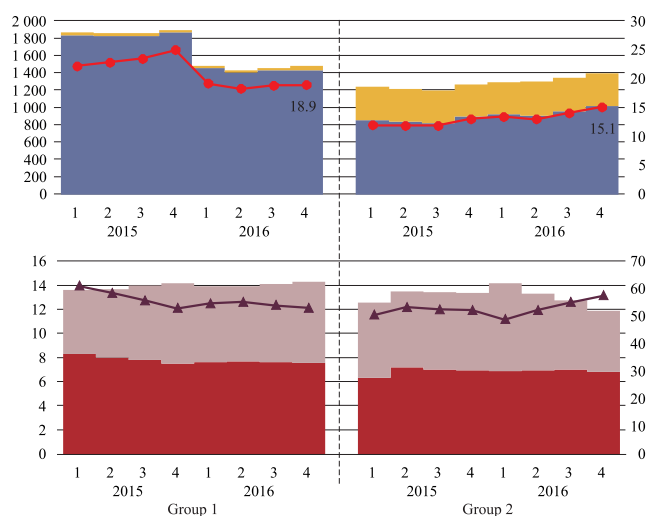
**RWA of both groups of credit institutions have remained broadly unchanged and have made no substantial contribution to the development of the capital ratios** (see Chart 3.5.2). The shrinking of Group 2 assets in combination with virtually unchanged RWA was mainly attributable to a decrease in lower-risk assets (particularly including MFIs that fall into the category of a risk weight of 20%). The shrinking business volumes and profits of Group 2 credit institutions could potentially increase their willingness to invest in riskier assets.

Chart 3.5.2

#### CONSOLIDATED CET1, TIER 2 CAPITAL, RWA AND ASSETS OF CREDIT INSTITUTIONS, CET1 RATIO AND RWA-TO-ASSETS RATIO

(at the end of 2016; %)

■ Tier 2 capital  
■ CET1  
● CET1 ratio (right-hand-scale)  
■ Difference between the total assets and RWA  
■ RWA  
▲ RWA-to-assets ratio (right-hand-scale)



**Retention of earnings has supported an improvement of the capital quality at credit institutions.** The overall capital of Latvia's credit institutions is dominated by higher quality capital. At the end of 2016, CET1 constituted 84.9% of all capital.

The FCMC has introduced amendments to the FCMC Regulation No. 199 "Regulation on the Development of Capital Adequacy Assessment Process" of 29 November 2016<sup>47</sup> in order to implement the EBA Guidelines<sup>48</sup>. The FCMC has defined that, as of 9 December 2016, credit institutions have to meet Pillar 2 capital requirements with at least 56% CET1 and at least 75% Tier 1 capital. Capital guidance requirements should be met with CET1. This Regulation will support strengthening of the capital quality at credit institutions. Nevertheless, considering that Tier 2 capital instruments are less appropriate for the loss-absorption function in financial distress, in individual cases, higher requirements for the proportion of Tier 1 capital in overall capital should be considered for the purpose of covering Pillar 2 risks.

**In October 2016, the FCMC again identified six O-SIIs in Latvia** (JSC Swedbank, JSC SEB banka, JSC ABLV Bank, JSC Rietumu Banka, JSC Citadele banka and JSC DNB banka) **as well as decided on the size of the applicable O-SII buffers**. O-SII capital buffers have been set within the range of 1.5%–2%. Partial compliance with the requirements has to be ensured as of 30 June 2017, whereas full compliance has to be in place as of 30 June 2018 (see Appendix 1).

**The capital requirements and capital levels of credit institutions could be affected by the expected amendments to EU legislation**, i.e. CRD IV/CRR, BRRD and SRMR will be reviewed. The package of the so-called risk reduction measures proposed by the EC includes several changes affecting the assessment of the capitalisation and capital requirements of credit institutions (for example, transitional arrangements for the introduction of IFRS 9, reformation of the Supervisory Review and Evaluation Process (Pillar 2), a review of market risk and interest rate risk coverage requirements, a review of the minimum requirement for own funds and eligible liabilities, the introduction of leverage ratio requirement).

### 3.6 Credit risk shock-absorption capacity

Latvijas Banka conducts a regular sensitivity analysis<sup>49</sup> and macroeconomic stress tests<sup>50</sup> of credit institutions. Estimates are based on the consolidated data of credit institutions as at the end of December 2016. The thresholds for stress tests are as follows: the total capital ratio of 8.0%, the Tier 1 capital ratio of 6.0% and the CET1 capital ratio of 4.5%<sup>51</sup>. Failure to meet the requirement for a single type of capital is automatically considered a failure to meet overall capital requirements. The assessment period is the year 2017. The stress test stipulates 60% provisions for loans past due over 90 days and 20% provisions for unlikely-to-pay loans.

**The results of the sensitivity analysis suggest that credit institutions' capacity to absorb the potential increase in credit risk continues to improve in general. On a consolidated basis, credit institutions would have been able to absorb a potential rise in credit risk resulting in the share of loans past due over 90 days expanding by 14.4 percentage points at the end of 2016 (by 11.8 percentage points in 2015).**

<sup>47</sup> EBA/GL/2014/13.

<sup>48</sup> The Regulation came into effect on 9 December 2016; see <https://likumi.lv/ta/id/287170-kapitala-un-likviditates-pietiekamibas-novertesanas-procesa-izveides-normativie-noteikumi>.

<sup>49</sup> A credit risk sensitivity analysis provides an indication of the magnitude of an increase in loans past due over 90 days a credit institution would be able to absorb before its capital adequacy ratios fall below the minimum capital requirements. It is assumed that a credit institution has to build provisions in the amount of at least 60% for the over 90 days past due loan portfolio and build additional provisions totalling 60% of the increase in the loans past due over 90 days; restructured loans which are not past due more than 90 days have to be provisioned by at least 20%. Credit institution capital and RWA are reduced by the amount of the additional provisions.

<sup>50</sup> Macroeconomic stress tests measure the resilience of Latvia's credit institutions to various plausible but low-probability adverse macroeconomic shocks. The results of the credit risk stress tests allow assessing whether credit institutions have sufficient capital for absorbing losses stemming from a rise in credit risk in particularly severe and even extreme macroeconomic circumstances without additional capital injections.

<sup>51</sup> A characteristic feature of Latvian credit institution capital structure is the fact that the Tier 1 capital requirement is met with CET1 capital; therefore, compliance with the Tier 1 capital requirement automatically means compliance with the CET1 capital requirement as well. As a result, a relatively high stress test threshold is applied to high quality capital (CET1).

**The results of the macroeconomic stress test show that the capacity of credit institutions to absorb a potential increase in credit risk caused by external and internal shocks continues to improve.** This is mainly determined by the improvement in the quality of credit institutions' loan portfolio and their high capitalisation level which has been supported by the capital increases implemented by individual credit institutions. The capacity of credit institutions providing services to foreign customers to absorb potential losses stemming from materialisation of Russia- and other CIS countries-related risks has increased; nevertheless, some credit institutions need to continue to strengthen Tier 1 capital.

#### Box 4

##### Changes in the macroeconomic stress testing methodology

Latvijas Banka continues to improve its framework for macroeconomic stress testing:

- migration to and from the category of unlikely-to-pay loans has been modelled;
- Basic Model Elasticities (coefficients determining the shock effects in macroeconomic scenarios) have been updated.

##### Assumptions for modelling migration to and from the category of unlikely-to-pay loans

Data on unlikely-to-pay loans disclosed in the supervisory reports enable a more accurate evaluation of the loan quality. The previous macroeconomic stress test by Latvijas Banka used a credit risk model for estimating the expected share of loans past due over 90 days<sup>52</sup>. In order to consider all available information about loan quality and have a more accurate estimate of the losses incurred by credit institutions under various stress scenarios, the magnitude of loan migration from performing loans (i.e. those which are not in the unlikely-to-pay or past due over 90 days category) to unlikely-to-pay and from unlikely-to-pay to loans past due over 90 days should also be evaluated (see Chart 3.6.1). To estimate loan migration from performing loans to loans past due over 90 days<sup>53</sup> we use PD implied by the credit risk model. Information about unlikely-to-pay loans is only available starting from the third quarter of 2014. The short time series limits the use of these data in econometric modelling; therefore, the historical data on restructured loans which are not past due over 90 days (the largest part of the unlikely-to-pay loans category) were used to model loan migration to unlikely-to-pay loans and from unlikely-to-pay loans to loans past due over 90 days.

Chart 3.6.1

#### LOAN MIGRATION



According to the Credit Register data, the exposure-weighted PD of restructured loans which are not past due over 90 days is, on average, four times larger than that of the total domestic loan portfolio<sup>54</sup> (see Charts 3.6.2 and 3.6.3). Therefore, the stress test assumes that the PD of unlikely-to-pay loans is four times larger than the implied PD derived from the credit risk model.

<sup>52</sup> Default is technically defined as being in arrears more than 90 days

<sup>53</sup> The credit risk model of Latvijas Banka models the share of loans past due over 90 days. This modelled share can be used to derive the PD of the domestic loan portfolio (hereinafter, implied PD).

<sup>54</sup> PD, which is based on the number of loans, is less volatile and in the case of restructured loans which are not past due over 90 days exceeds that of the total domestic loan portfolio five times (see Chart 3.6.3). Nevertheless, the exposure-weighted PD is more adequate for the purposes of stress test calculations using the total stock of loans in each category.

Chart 3.6.2

**EXPOSURE-WEIGHTED ANNUAL PD (%)**

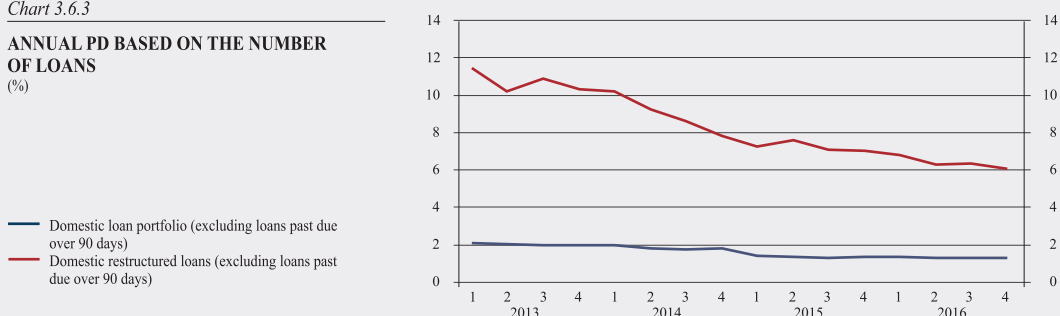
(%)



Chart 3.6.3

**ANNUAL PD BASED ON THE NUMBER OF LOANS (%)**

(%)

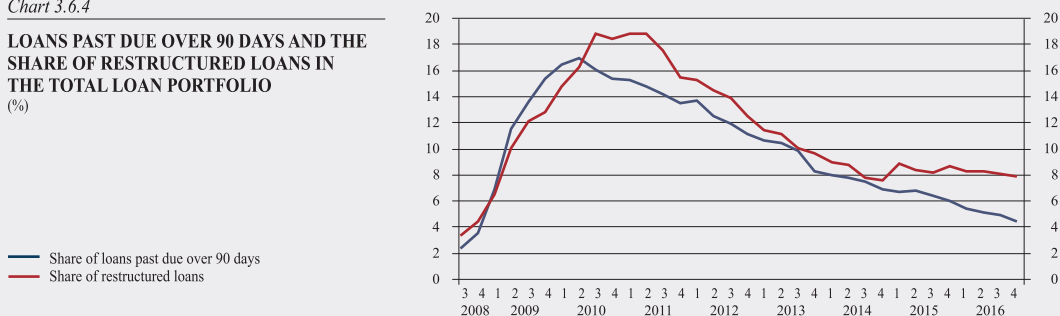


To model loan migration from performing loans to unlikely-to-pay loans, the data of Latvijas Banka's Credit Register were used, estimating the probability that a loan which is not past due could become restructured within one year<sup>55</sup>. The probability estimates for this migration in 2012–2016 are close to the PD estimates of the total domestic loan portfolio (PD reflects the share of performing loans which could become loans past due over 90 days). The Credit Register data, however, do not provide an insight into how this probability developed at the beginning of the crisis. From 2008 to 2010, the dynamics of loans past due and restructured loans was similar (see Chart 3.6.4)<sup>56</sup>. Hence one can assume that the probability of performing loans becoming restructured loans could also be close to the probability that they could become loans past due over 90 days (PD). Therefore, the macroeconomic stress test assumes that the probability of a loan migrating to the unlikely-to-pay category coincides with the implied PD of the credit risk model.

Chart 3.6.4

**LOANS PAST DUE OVER 90 DAYS AND THE SHARE OF RESTRUCTURED LOANS IN THE TOTAL LOAN PORTFOLIO (%)**

(%)

**Updating Basic Model Elasticities**

The stress test scenarios developed by Latvijas Banka use the so-called Basic Model Elasticities which are based on impulse response functions of endogenous variables to exogenous shocks. The impulse response functions have been derived from the macro-model of Latvijas Banka. The Basic Model Elasticities were updated in 2016; as a consequence, the effect of external and internal shocks on GDP has slightly decreased under the stress scenarios. To include the effect of a sufficiently significant decrease in GDP on Latvia's credit institutions in the stress tests and to make them more comparable

<sup>55</sup> In both cases loans which are not past due over 90 days were examined.

<sup>56</sup> Excluding JSC Parex banka.

with the previous stress tests, the magnitudes of the applied shocks were increased. Comparability of scenarios can be best judged from GDP growth rate deviation from the baseline scenario and the resulting increase in the share of loans past due.

The macroeconomic stress test was carried out to evaluate the capability of credit institutions to absorb a potentially higher credit risk caused by deterioration of the external and domestic macrofinancial environment. The main risks under the stress scenario are a significant weakening of the external demand and heightened uncertainty (including in relation to materialisation of potential real estate market shocks in the home countries of Nordic parent banks) as well as delays in absorption of EU funds that could have a negative effect on domestic economic growth.

The risks associated with macrofinancial deterioration in Russia have subsided and a small increase in GDP is expected in Russia in 2017, reflected in a lower expected loss rate defined for the baseline scenario. Nevertheless, because of the historically high volatility of Russia's market, stress test assumptions regarding investment in Russia and other CIS countries have remained the same as in the stress test described in the Financial Stability Report 2016. Table 3.6.1 provides a summary of the stress test parameters.

#### **Baseline scenario**

The baseline scenario is based on the macroeconomic forecasts of Latvijas Banka released in April 2017, foreseeing that, with the external environment gradually improving and availability of EU funding restored, Latvia's GDP growth will accelerate slightly in 2017 and reach 3.4%. The following assumptions have been used in the baseline scenario with regard to foreign investment: in 2017, the PD for loans granted to customers from Russia and other CIS countries is 5%, whereas LGD amounts to 75%. PD is 5% as regards securities issued by the CIS countries and claims on MFIs of the CIS countries<sup>57</sup>, and LGD is 75%.

#### **Stress scenario**

The stress scenario includes the risk of a potential failure to use EU funding which, in combination with persistently high external uncertainties and weak confidence, would strengthen the decline in investment (by 35%). The external demand shock was kept at the level of 15%, whereas the private consumption shock was raised to 10%. The scenario assumes that the above-mentioned shocks affect the Latvian economy in the second quarter of 2017. The stress scenario for investment in Russia and other CIS countries was left unchanged in comparison with the 2016 stress test. PD for credit institutions' investment in the CIS countries remained at 25% and LGD – at 75%.

Changes in Latvia's real GDP in the stress scenario were evaluated employing the macroeconomic model of Latvijas Banka.

Under the stress scenario, the impact on the quality of loans granted to domestic customers was estimated by using the credit risk model of Latvijas Banka and employing the above-mentioned assumptions about migration to and from the unlikely-to-pay loans category.

The stress test assumed that in the case of loans to Lithuanian and Estonian borrowers the credit risk developed in the same way as the credit risk of the domestic loan portfolio<sup>58</sup>. The losses stemming from loans to foreign customers, securities of the CIS countries and claims on MFIs were estimated based on the parameters assumed in the scenarios. To reflect the potential losses arising from investment in the CIS countries more accurately, the amount of investment made in these countries was specified according to the data provided in country risk reports.

<sup>57</sup> In the baseline scenario, the PD of securities issued by the CIS countries has been estimated based on rating migration tables as the weighted (by the particular security's exposure in the total portfolio) average PD of Russian government and corporate securities as at the end of December 2016.

<sup>58</sup> Without modelling their changes in the unlikely-to-pay loans category.



Table 3.6.1

**PARAMETERS OF THE MACROECONOMIC STRESS TEST**

(%; percentage points)

Credit risk parameters and macroeconomic shocks	Baseline scenario	Stress scenario
<b>Latvia</b>		
Shock from lower external demand	0	15
Shock from deteriorating investor confidence (lower investment)	0	35
Shock from deteriorating consumer confidence (lower private consumption)	0	10
Annual changes of Latvia's GDP in 2017	3.4	-6.4
3-month EURIBOR <sup>59</sup>	-0.328	-0.328
The implied <sup>60</sup> probability for a performing loan or a loan past due less than 90 days to become a loan past due over 90 days within a period of one year	–	7
Probability for an unlikely-to-pay loan to become a loan past due over 90 days within a period of one year	–	28
Increase in the share of loans past due over 90 days in the domestic customers' loan portfolio in the fourth quarter of 2017 <sup>61</sup>	-0.4	8.1
<b>Russia and other CIS countries</b>		
<b>Claims on MFIs, securities</b>		
PD	5	25
LGD	75	75
Expected loss rate	3.75	18.75
<b>Loans</b>		
PD	5	25
LGD	75	75
Expected loss rate	3.75	18.75

Using the baseline scenario assumptions, it is expected that the quality of the domestic loan portfolio of credit institutions will continue to improve slowly in 2017. The quality of loans granted to foreign customers, however, could somewhat deteriorate. Under the baseline scenario, the estimated losses from investment in the CIS countries could reach 57 million euro or 0.2% of the total credit institution assets. None of the credit institutions would find it difficult to comply with the minimum capital requirement. Under the stress scenario, the share of loans past due over 90 days in the domestic loan portfolio would increase by 8.1 percentage points, reaching 11.6% by the end of 2017. Table 3.6.2 features the aggregated results of the stress tests.

Table 3.6.2

**MACROECONOMIC STRESS TEST RESULTS FOR THE STRESS SCENARIO**

Indicator	Stress test result
Estimated losses (millions of euro)	710.6
Additionally required provisions (% of total credit institution assets)	2.7
<b>Total capital ratio</b>	
Number of credit institutions with the total capital ratio below 8%	–
Additionally required capital (millions of euro)	–
<b>Tier 1 capital ratio</b>	
Number of credit institutions with Tier 1 capital ratio below 6%	2
Additionally required capital (millions of euro)	6.5
Assets of credit institution with Tier 1 capital ratio below 6% (% of total credit institution assets)	19.1
<b>CET1 capital ratio</b>	
Number of credit institutions with CET1 capital ratio below 4.5%	–
Additionally required capital (millions of euro)	–

<sup>59</sup> Annual average of 3-month EURIBOR futures rates; source: Bloomberg, 23.03.2017.

<sup>60</sup> This probability was estimated based on the increase in loans past due over 90 days (6.8%) yielded by Latvijas Banka's credit risk model using the assumptions defined in Table 3.6.1.

<sup>61</sup> Adding up loans that have migrated from the category of "performing loans or loans past due less than 90 days" and from the category of "unlikely-to-pay loans".

In the event of the stress scenario materialising, the estimated losses could reach 710.6 million euro or 2.7% of the total credit institution assets. Two credit institutions would face problems to comply with the minimum capital requirement owing to shocks. Three credit institutions would find it difficult to comply with the capital conservation buffer requirement as a result of shocks. None of the credit institutions would have negative capital.

The overall conclusion is that **the capacity of credit institutions to absorb significant shocks stemming from deterioration of the macrofinancial environment can be considered as good and has improved in comparison with the last year. This was achieved on account of increasing CET1 capital of credit institutions, reducing investment in government securities of Russia and other CIS countries as well as improving the loan portfolio quality.** Regardless of the methodology changes which strengthened the effect of the scenario, the amount of additionally required capital is smaller than in the stress test described in Latvijas Banka's Financial Stability Report 2016. Nevertheless, some credit institutions providing services to foreign customers would still need to strengthen their Tier 1 capital.

## 4. DEVELOPMENT AND RISKS OF NBFS

### 4.1 Development of NBFS

**In 2016, the growth of NBFS was buoyant** – the NBFS assets grew by 12.7%, reaching 6.8 billion euro {6.0 billion euro} at the end of the year. The rise was primarily on account of increased household savings to provide for the future pension in the state-funded pension scheme and private pension plans and the growth of loans (particularly household loans and loans to non-financial corporations by venture capital funds) granted by non-banks.

**The share of NBFS assets in Latvia's financial sector is still moderate.** At the end of 2016, the share of NBFS assets in the total assets of Latvia's financial sector amounted to 12.4% {11.6%}<sup>62</sup>. The ratio of NBFS assets to credit institution assets increased to 23.1% {18.5%} at the end of 2016 (see Chart 4.1.1). The role of the NBFS in Latvia's financial sector and economy is considerably smaller compared with the euro area financial sector primarily due to the low level of long-term savings of the Latvian population which has evolved over a longer period of time elsewhere in the euro area. At the end of the third quarter of 2016, the ratio of the assets of the NBFS and other financial intermediaries to GDP was 41.8% (including the ratio of Latvia's NBFS assets to GDP – 27.3%), while the ratio for the euro area was, on average, 36.7%<sup>63</sup> (see Chart 4.1.2).

Chart 4.1.1

#### NBFS ASSETS IN BREAKDOWN BY SUBSECTOR (billions of euro)

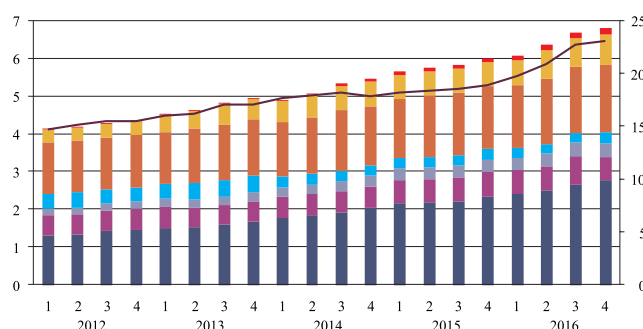
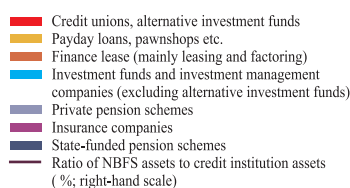
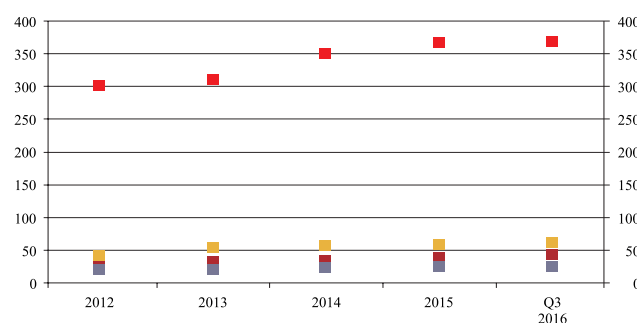


Chart 4.1.2

#### RATIO OF ASSETS OF NBFS AND OTHER FINANCIAL INTERMEDIARIES TO GDP (%)



**The interconnectedness of the NBFS participants with credit institutions (investment of credit institutions in the share capital of the NBFS participants and mutual placing of assets) is still insignificant in comparison with the volume of the credit institution assets.** At the end of 2016, both the credit institution assets in NBFS (loans, investments and other assets) and the NBFS deposits with credit institutions did not exceed 5% of the credit institutions' total assets. Despite the increase in loans granted

<sup>62</sup> Non-bank financial intermediaries, such as holding companies, are included in a separate group "other financial intermediaries" instead of the NBFS analysed under this section as they are not directly involved in the process of ensuring the functioning of Latvia's financial system. The shares of Latvian financial and non-financial corporations are mainly held by holding companies, which do not represent additional risk to the stability of Latvia's financial system. At the end of 2016, the assets of other financial intermediaries (including the assets of holding companies) amounted to 3.8 billion euro {2.8 billion euro}, representing a 37.4% increase in comparison with 2015. The share of other financial intermediaries in Latvia's overall financial sector constituted 6.9%.

<sup>63</sup> According to the Eurostat data.

to NBFS by credit institutions in 2016 (mainly due to the change in the funding model of one leasing company<sup>64</sup>), no credit institution loans granted to NBFS, however, so far exceeded 10% of its assets. Although leasing companies and insurance corporations are generally subsidiaries of credit institutions and their direct linkages are therefore close, investment of credit institutions in the share capital of NBFS accounted only for 1.3% of the credit institution assets at the end of 2016. Investment in the NBFS enables credit institutions to slightly diversify the sources of profit, thus improving their consolidated profit indicators.

**Continuity of accessibility of the NBFS services is high** as in the event of the withdrawal of a participant, the services provided by it to ensure the functioning of Latvia's financial system may be replaced by other market participants due to the relatively low market concentration<sup>65</sup>.

Although the NBFS segments are experiencing a rapid growth, the persistently relatively moderate amount and share of the NBFS assets in Latvia's financial sector, the insignificant interconnectedness with credit institutions and the high level of continuity of accessibility of the NBFS services suggest that the **NBFS does not represent systemic risks to the financial system**.

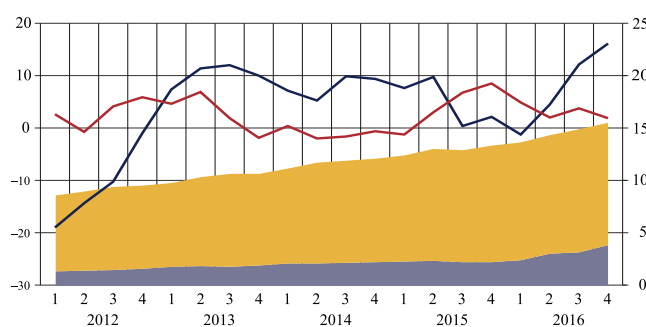
## 4.2 Financing of households and non-financial corporations

**In 2016, the growth of NBFS lending was driven by the rise in household lending and the expansion of operation of alternative investment funds. At the same time, the growth of financial leasing was limited by delay in absorption of EU funds and a slowdown in economic growth in the middle of the year** (see Chart 4.2.1). The increase in loans granted by NBFS was also on account of a significant NBFS lending service provider's transaction within its group, expanding total lending to domestic non-financial corporations. Loans granted to domestic customers by NBFS lending service providers<sup>66</sup> grew by 13.1%, reaching 1.9 billion euro at the end of the year. The ratio of loans granted to domestic households and non-financial corporations by NBFS to loans granted to domestic households and non-financial corporations by credit institutions is on the rise, although it is still relatively low (15.6% {13.4%} at the end of the year).

Chart 4.2.1

**ANNUAL GROWTH RATE OF DOMESTIC LOANS GRANTED TO HOUSEHOLDS AND NON-FINANCIAL CORPORATIONS BY NBFS AND THEIR RATIO TO RESPECTIVE LOANS GRANTED BY CREDIT INSTITUTIONS (%)**

■ Leasing – ratio to the credit institution portfolio of loans to households and non-financial corporations (right-hand scale)  
 ■ Other – ratio to credit institution portfolio of loans to households and non-financial corporations (right-hand scale)  
 ■ To non-financial corporations (only financial leasing and alternative investment funds)  
 ■ To households



**The outstanding amount of loans granted to non-bank households continues to outpace that of loans granted by credit institutions; amendments to laws and regulations have contributed to more balanced NBFS lending growth** (see Box 3). In 2016, the outstanding amount of loans granted to domestic households by NBFS increased by 16.2% {2.1%}, reaching 497.0 million euro (including 46.5% – financial

<sup>64</sup> In 2016, financing of Nordea Finance Latvia Ltd. from Finnish Nordea Finance Finland was replaced with the loan from Nordea Bank AB Latvia Branch.

<sup>65</sup> The Herfindahl–Hirschman index method based evidence suggests that the highest level of market concentration exists in the segments of investment funds, investment management companies and private pension funds, but the lowest level – in the segments of insurance corporations. The highest level of market concentration in the segment of lending service providers has been found for leasing companies, while the lowest one – in the segment of consumer short-term lending.

<sup>66</sup> 199 merchants {178}: 20 financial leasing service providers, 117 payday lenders, consumer credit lenders and other lending service providers (including 52 firms licensed by the Consumer Rights Protection Centre), 16 alternative investment funds managed by 12 alternative investment fund managers and 34 cooperative credit unions.

leasing, 48.2% – payday loans, consumer loans and loans granted by other lenders and 5.3% – other loans (loans of credit unions, pawnshops, other financial lease etc.) at the end of the year. A pick-up in loans granted to households by NBFS was mainly on account of leasing for car purchase and loans for the purchase of consumer goods. Short-term (up to one year) loans granted to domestic households by NBFS rose by 11.9%.

**In 2016, financial leasing loans granted to non-financial corporations grew** only somewhat (by 0.8% {7.9%}), reaching 939.2 million euro. The expansion of the financial leasing portfolio was limited by the sluggish development of the transport sector and the significant output decrease posted by the construction sector which, on their turn, were determined by the delay in absorption of EU funds. With the accessibility to financing from the EU funds and the development of the construction sector improving, financial leasing is expected to grow more actively in the future. The main profitability risk of leasing companies is the potential deterioration of the creditworthiness of non-financial corporations in the event of severe external shocks that would also limit new investments.

**Latvian non-financial corporations, particularly start-ups, more often use the risk capital as an alternative source of funding for credit institutions or leasing companies.** The amount of assets of alternative investment funds increased by 61.9% during the year, reaching 143.3 million euro. The assets of venture capital funds which finance start-ups account for the largest share (55.4%) of it, while venture capital funds which invest in real estate – for the remaining share.

#### **Box 5**

#### ***Non-bank loans to households – what changed after the introduction of interest rate ceilings and other limits?***

**To promote responsible lending, more stringent requirements laid out in the regulatory framework governing consumer lending took effect on 1 January 2016.** The new requirements stipulate that the total costs associated with loan repayment may not exceed 100% of the amount of a loan initially paid out and restrict the interest rate applied to the loan<sup>67</sup>.

Changes to the framework are binding on all financial sector participants; however, they have the most pronounced effect on NBFS lending service providers as the financial products offered by them are characterised by relatively short maturities and relatively high interest rates as well as lower requirements for the assessment of their clients' solvency.

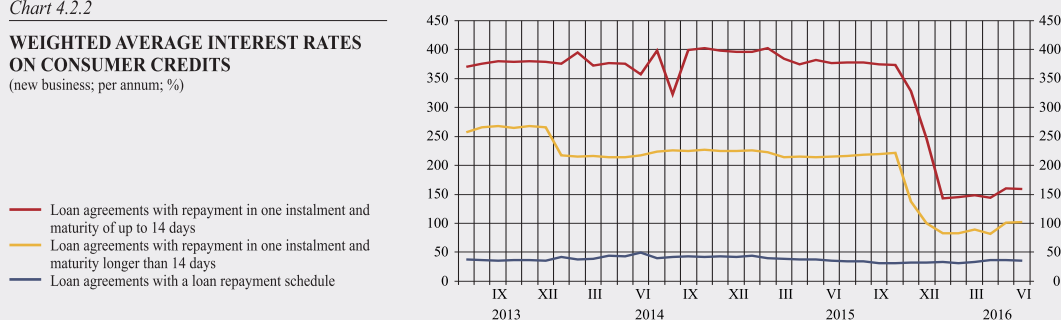
**The new requirements have contributed to a decline in interest rates applied to short-term loans granted to households by NBFS.** According to the CRPC data, at the end of the first half of 2016, the interest rates on NBFS short-term consumer credits to be repaid in one installment were 57.8% lower than at the end of the first half of 2015 (see Chart 4.2.2). At the same time, the interest rates on longer-term consumer credits with a repayment schedule have remained broadly unchanged in the respective period (–1.5%).

<sup>67</sup> The total costs to a consumer may not exceed 0.55%, 0.25% or 0.2% of the amount of a loan per day from the first to the seventh day of the use of the credit facility, from the eighth to the 14th day and from the 15th day respectively. In the contracts according to which a loan is repayable on demand or in which the deadline for the use of a loan exceeds 30 days, the total costs to a consumer may not exceed 0.25% of the amount of a loan per day.

Chart 4.2.2

**WEIGHTED AVERAGE INTEREST RATES ON CONSUMER CREDITS**

(new business; per annum; %)



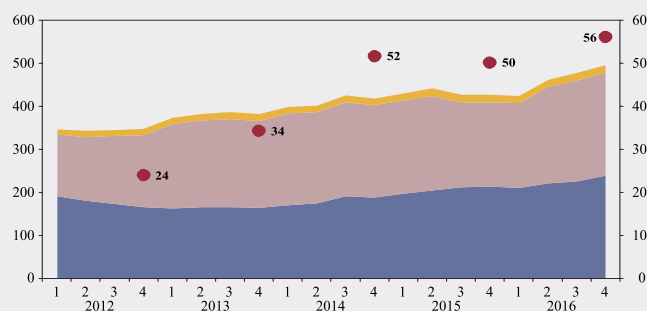
The NBFS lending service providers have adapted their model of operation for the new framework governing consumer lending, and the outstanding amount of loans increases again. In 2015, the growth rate of loans granted to households by NBFS decelerated to 2.1% in expectation of the new legal requirements. In 2016, however, NBFS household lending accelerated again when adopting the model of operation. Although loans with maturity of up to 7 days are no longer offered, longer-term loans with a repayment schedule are available. At the same time, loans with maturity of up to 30 days with repayment in one installment are still popular in the segment of short-term loans. Thus, the share of NBFS in the total outstanding amount of short-term consumer loans granted to households (incl. by credit institutions) continued to increase, reaching 56.2% {50.3%} at the end of 2016 (see Chart 4.2.3).

Chart 4.2.3

**OUTSTANDING AMOUNT OF NON-BANK SHORT-TERM (UP TO ONE YEAR) LOANS AND SHARE OF SHORT-TERM CONSUMER LOANS IN THE TOTAL OUTSTANDING AMOUNT OF SHORT-TERM LOANS GRANTED BY THE FINANCIAL SECTOR**

(millions of euro)

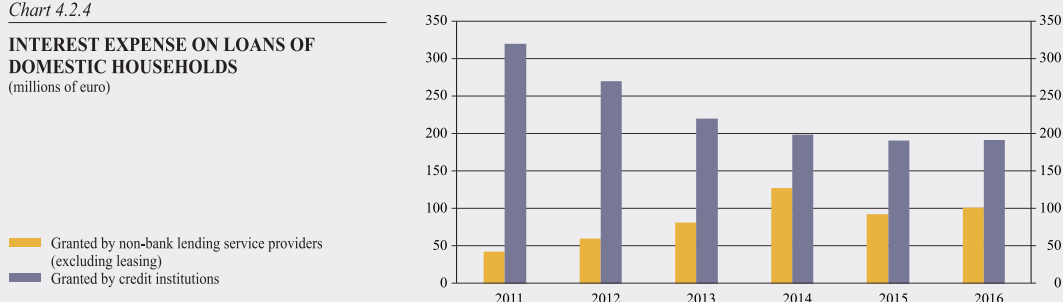
■ Credit unions  
 ■ Payday loans, consumer credits etc.  
 ■ Financial leasing  
 ● Share in the total short-term consumer loans granted by the financial sector, including credit institutions (%; right-hand scale)



**Regulatory changes have contributed to the moderation and stabilisation of household spending on non-bank lending services.** Although the outstanding amount of loans granted to households by NBFS is smaller than that of loans granted to households by credit institutions, household spending on non-bank loans is relatively high (see Chart 4.2.4). Disproportionately large payments may increase the household debt burden, thus contributing to the size of the informal economy, and damage their credit history in the event of the deterioration of the household creditworthiness, limiting the access to the mortgage market for a part of households. In 2015, household spending on non-bank loans followed a downward trend in expectation of the new legislative requirements. Meanwhile, despite the strong expansion of the loan portfolio, it posted a moderate rise in 2016. At the same time, it should be noted that also other factors like the self-regulation of the industry, the high saturation of the non-bank lending market as well as the environment of low interest rates contributed to the stabilisation of interest expense.

Chart 4.2.4

### INTEREST EXPENSE ON LOANS OF DOMESTIC HOUSEHOLDS (millions of euro)



It can be concluded that the new legislative requirements have promoted more responsible lending, particularly in the segment of short-term loans, thus reducing and stabilising household spending on non-bank lending services, without negatively affecting the development of the non-bank lending market in the long-run.

## 4.3 Other financial services

Other NBFS financial services are primarily related to the allocation of household savings (pension funds and investment funds, life insurance with savings), risk insurance as well as execution of payments. In 2016, the assets of other NBFS service providers<sup>68</sup> increased by 12.3%, amounting to 4.1 billion euro {3.6 billion euro} at the end of the year. Their share in the NBFS assets is 59.2% {59.7%} (including the funds accumulated under state-funded pension schemes, accounting for 40.7%).

### Household long-term savings to provide for the future pension grew at a faster pace.

The assets of state-funded pension schemes rose by 18.7% {15.3%}, reaching 2.8 billion euro {2.3 billion euro}. The savings ratio is expected to grow more moderately in 2017 as the increase has been so far primarily determined by amendments to the law establishing the redistribution of the pension capital between the first and second pillars of the pension scheme<sup>69</sup>. At the same time, the assets of pension schemes managed by private pension funds increased by 14.8%, amounting to 381.6 million euro {331.5 million euro} (of which household private long-term savings account for 82.9%, but contributions made by employers on behalf of employees for their future pension capital – account for the rest). Meanwhile, the share of households depositing savings with private pension funds remained low (only 21% {20%} of the participants of the second pillar pension scheme deposit savings also with private pension funds).

**In 2016, the return on investment of pension schemes managed by pension funds that strongly depends on developments in the international financial markets remained broadly unchanged year-on-year.** At the beginning of 2016, yields dropped due to uncertainty related to the UK referendum on EU membership, while in the second half of the year, – due to higher bond yields in the euro area and the US, negatively affecting the balance sheet value of the bonds. Overall, the persistently low interest rates reducing interest income were still reported as a yield restricting factor. In 2016, the average return on investment of state-funded pension schemes amounted to 2.0% {1.9%} and ranged from 0.4% to 5.0% depending on the investment strategy for the investment plan. The return on investment of pension schemes managed by private pension funds was higher than that of state-funded pension schemes (an average of 3.2% {2.3%}). The euro area bond yield volatility and the overall uncertainty in the global financial markets can be mentioned as the main operational risk of pension funds in 2017.

**The development of insurance corporations moderated in 2016.** In 2016, the total level of gross premiums written by all insurance corporations (including the branches

<sup>68</sup> 41 merchants {38}: 19 insurance corporations (including the assets of 12 branches of foreign insurance corporations), six pension funds, 12 investment management companies and four investment brokerage companies.

<sup>69</sup> In 2012, the Saeima of the Republic of Latvia decided on the reallocation of the pension capital that was launched in 2013 and continued until 2016. Under the process of reallocation, the rate of social security contributions to the state-funded pension scheme increased from 5% to 6% of the compulsory social security contributions per person in 2016.

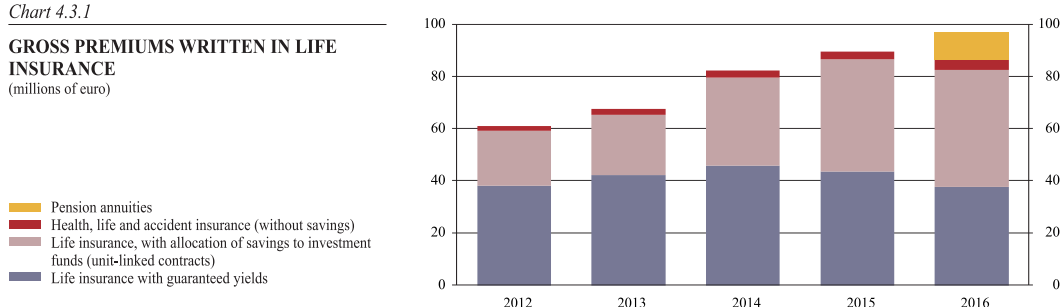
of foreign insurance corporations in Latvia) grew by 0.2% {2.6%}, amounting to 532.4 million euro {531.1 million euro} at the end of the year. At the same time, the total assets of Latvian insurance corporations (including the assets of foreign branches of Latvian insurance corporations abroad, but excluding the assets of branches of foreign insurance corporations<sup>70</sup>) decreased by 6.5%, reaching 602 million euro {644 million euro} at the end of the year.

**In 2016, Latvian insurance corporations continued adapting the models of operation, trying to improve the long-term profitability potential.** The non-life insurance sector continued the gradually started reorganisation and consolidation through mergers of corporations or attraction of a major foreign insurance corporation as an investor, thus improving the long-term profitability. At the same time, life insurance corporations gradually adapt their model of operation as traditional life insurance products become less attractive in the environment of persistently low interest rates. In 2016, Latvian life insurance corporations started to develop a relatively new type of insurance – a pension annuity. At the end of 2016, pension annuities increased already to 11.0% of the total gross premiums written in life insurance (see Chart 4.3.1), and the main advantage of them is the gradual payout of the state-funded pension capital with a possibility to transfer the accumulated capital by inheritance. Taking into account the fact that Latvian life insurance corporations do not undertake to guarantee minimum returns on investment when offering pension annuity agreements, they do not pose any risk to the stability of life insurance corporations that is associated with pension annuity schemes and identified elsewhere in the EU in the event of persistently low interest rates.

Chart 4.3.1

#### GROSS PREMIUMS WRITTEN IN LIFE INSURANCE

(millions of euro)



**The profitability of insurance corporations is improving, but it is still fragile.** In 2016, the profit earned by all insurance corporations was approximately 7.0 million euro {loss of 0.8 million euro} including the profit of life insurance corporations in the amount of 1.8 million euro {loss of 0.9 million euro} (excluding the one-off profit earned by a non-life insurance corporation as a result of the reorganisation transaction). The profit indicators of life insurance corporations improved due to the adaptation of the model of operation when developing the segment of pension annuity products and the successful investment strategy, allowing for relatively good prospects of profit in the financial markets (the return on investment of life insurance corporations registered in Latvia was 9.5% {1.1%} in 2016). The high interest rate volatility, along with the environment of persistently low interest rates, providing for increasingly low guaranteed yield rates on new agreements and thus restricting the attraction of new customers, is the main risk for life insurance corporations. Moreover, the growth of life insurance corporations is underpinned by the persistence of tax allowances at the present level.

**The solvency ratios of insurance corporations continue to be high** also after the Solvency II regime (the single EU solvency and supervision regime) has come into effect

<sup>70</sup> Starting from 2016, the Solvency II regime envisages that data on the amount of the assets of branches of foreign insurance corporations in Latvia is collected in the country where the respective corporation is registered (mainly Estonia and Lithuania). In 2015, the assets of branches of foreign insurance corporations in Latvia represented 43.4% of the total assets of insurance corporations.



on 1 January 2016. In 2016, the solvency ratio of non-life insurance corporations<sup>71</sup> was 143.2% {145.1%}, but that of life insurance corporations – 173.2% {201.9%}.

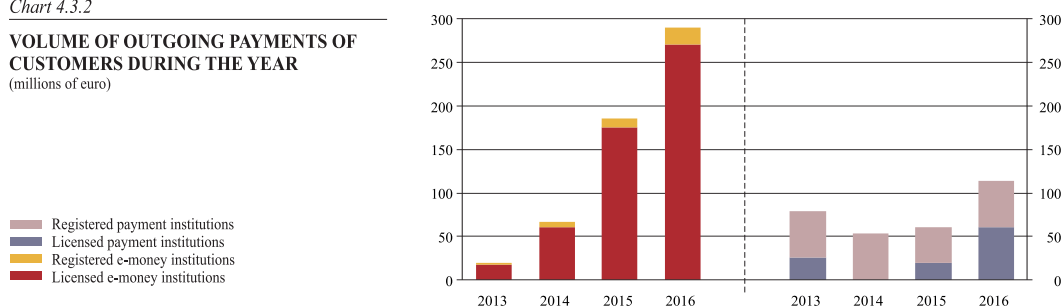
Similar to 2015, **the investment funds of investment management companies** (excluding alternative investment funds engaged in lending) **could ensure a notable net increase in the assets despite the high uncertainty in the international financial market.** The dispersion of returns of investment funds is high, with returns of investment funds ranging from –0.5% to +51.5%, depending on the investment policy pursued by the respective fund. Bond funds accounting for 82.6% of all investment funds performed better. The total assets of investment funds decreased by 2.1% (to 216.6 million euro) {223.0 million euro} in 2016. This was a result of the liquidation of a closed-end investment fund.

Amidst low interest rates, the quality of investment portfolios of other NBFS financial service providers has not thus far worsened, while remaining broadly unchanged in comparison with 2015. Investment funds still record the highest share of heightened risk investment determined by the risk appetite of the members of investment funds.

**The size of NBFS payment service providers is low in terms of payment volume in comparison with the volume of credit institution payments.** At the end of 2016, the volume of outgoing payments of NBFS customers relative to that of outgoing payments of credit institution customers amounted to 0.15%. The growth of payment service providers is determined by the increased risk appetite of domestic non-financial corporations to develop e-commerce services and customer internet payments as well as by new technological solutions to servicing household payments (e.g. contactless credit cards). Although the volume of liquid assets of payment institutions and e-money institutions is small (2.6 million euro and 27.4 million euro at the end of 2016 respectively), in 2016, the volume of payments provided by them was 402.2 million euro or by 58.8% more than in 2015 (see Chart 4.3.2). In 2016, licensed payment institutions operated at a loss (0.4 million euro), but licensed e-money institutions – with a profit of 5.1 million euro.

Chart 4.3.2

**VOLUME OF OUTGOING PAYMENTS OF CUSTOMERS DURING THE YEAR**  
(millions of euro)



The segment of NBFS payment services is highly concentrated; despite the presence of 29 payment institutions and 15 e-money institutions on the market, 80.9% of the total amount of customer outgoing payments have been provided by two corporations in 2016. The data of Latvijas Banka suggest that the size of payment institutions and e-money institutions in terms of the volume of outgoing payments was insignificant in comparison with that of outgoing payments of credit institution customers in 2016 (267.3 billion euro). However, like elsewhere in the world, their rapid growth rate indicates that the development of this segment increases competition vis-a-vis credit institutions, and the potential risks related to their development should be monitored closely.

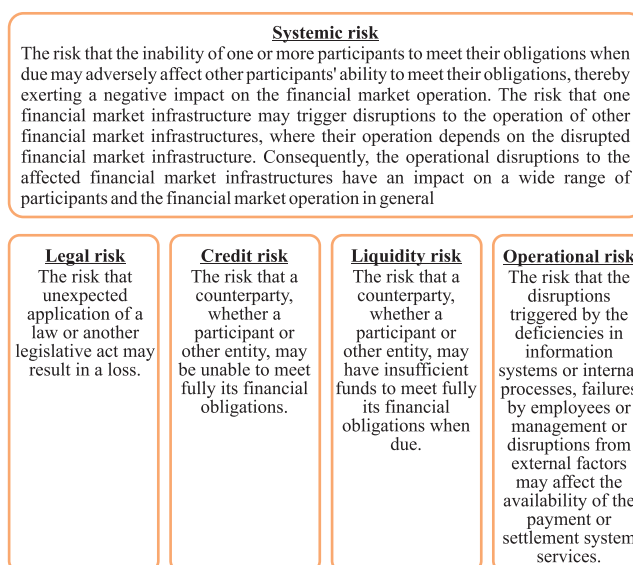
<sup>71</sup> The solvency ratio is based on the relationship between own funds and the solvency requirement. The lowest admissible level of this ratio is 100%.

## 5. SYSTEMICALLY IMPORTANT PAYMENT AND SETTLEMENT SYSTEMS

**The oversight of financial market infrastructures focuses mainly on the systemically important financial market infrastructures**, since the operational disruptions to such infrastructures might affect the financial stability in the country. In order to make sure that the risks related to the operation of the infrastructure are identified and appropriately managed and, where necessary, provide recommendations for enhanced risk containment measures, an assessment of infrastructures is carried out within the oversight framework in compliance with the international "Principles for Financial Market Infrastructures"<sup>72</sup>. The operation of the financial market infrastructures is subject to various risks which may affect the ability of the infrastructures to deliver services as expected or may inflict significant losses to the infrastructure itself or its participants. The key risks (see Chart 5.1) faced by the financial market infrastructure operator and the infrastructure participants are the following: legal risk, credit risk, liquidity risk and operational risk. Each risk, either alone or in combination with other risks, may trigger a systemic risk, i.e. the risk that the inability of a participant in a payment or settlement system (hereinafter referred to as the "participant") to meet its obligations or the disruptions to one financial market infrastructure can affect the financial market operation.

Chart 5.1

### THE KEY RISKS FACED BY FINANCIAL MARKET INFRASTRUCTURES



**Latvijas Banka has assessed both systemically important market infrastructures – TARGET2-Latvija and DENOS – and has established that all risks in those systems are adequately limited.** The credit risk in TARGET2-Latvija has been practically eliminated taking into account the real-time gross settlement model used by the system. Since DENOS cash leg settlement takes place in the accounts of TARGET2-Latvija, the credit risk shall also be deemed eliminated in DENOS. Overall, the risk assessment may only change in case of significant operational changes to the respective system; however, the liquidity and operational risk assessment may also change depending on the operational indicators of the system, i.e. the value of payments processed in the system, the liquidity available for settlement and the system's business continuity. Therefore, the liquidity risk faced by the system participants and the operational risk faced by the system operators are the only risks to be revised additionally, taking into account the operational indicators of the respective system. Within the oversight framework, Latvijas Banka performed the liquidity and operational risk assessment for TARGET2-Latvija and DENOS in 2016. According to the assessment, the above risks remain low in these systems, and additional risk containment measures are not necessary. The above

<sup>72</sup> Bank for International Settlements and International Organization of Securities Commissions. *Principles for financial market infrastructures*. April 2012.

infrastructures provided efficient and secure payment and settlement environment to their participants and the entire financial system, and their smooth operation facilitated the financial stability.

## 5.1 Payment systems

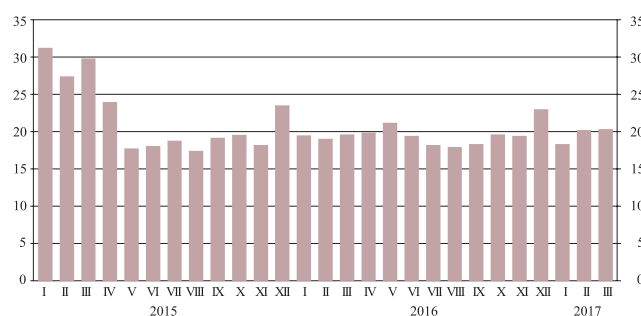
Latvijas Banka ensured the operation of TARGET2 in conjunction with other participants of the European System of Central Banks. **The TARGET2 oversight assessment carried out by the Eurosystem in 2016 suggested that the risks associated with the operation of TARGET2 are appropriately managed and contained ensuring that their impact on the system's operation and its participants is minimal and does not trigger systemic disruptions.**

TARGET2 consists of 25 real-time gross settlement systems operated by the central banks which are participating in TARGET2 or which have joined it (five non-euro area national central banks). Latvijas Banka maintained TARGET2-Latvija, a component system of TARGET2, enabling the settlement of the Eurosystem's monetary policy operations, interbank settlement of large-value payments, settlement of urgent customer payments in euro and final settlement in euro for the EKS, DENOS and the payment card processing system of First Data Latvia Ltd.

**The total value of payments processed in TARGET2-Latvija in 2016 amounted to 235.1 billion euro** representing a decline of 11.2% in comparison with 2015 (see Chart 5.2 for the monthly value dynamics of the payments made). The decline in the total value of payments had been going on since mid-2015 when several credit institutions of the Nordic-Baltic group changed their liquidity management methods by reducing the frequency of liquidity transfers through keeping funds in the TARGET2-Latvija component system without transferring them to TARGET2 component systems of other countries. In 2016, the daily average value of payments processed in TARGET2-Latvija amounted to 914.6 million euro (in the first quarter of 2017, the daily average was 905.8 million euro).

Chart 5.2

VALUE OF PAYMENTS EXECUTED IN TARGET2-LATVIA (billions of euro)



### Liquidity risk assessment

In order to assess the liquidity risk in TARGET2-Latvija, Latvijas Banka performed analysis of data by means of the payment and settlement system simulator (model BoF-PSS2), developed by Suomen Pankki – Finlands Bank.

**To assess the liquidity risk in TARGET2-Latvija, Latvijas Banka evaluated the value of the settlement funds necessary for the execution of all payments submitted during the day as compared to the liquidity available in the system.** The following indicators were assessed: a lower bound of the settlement funds, i.e. the value of the settlement funds ensuring the execution of all payments by the end of TARGET2-Latvija business day at the latest; an upper bound of the settlement funds, i.e. the value of the settlement funds ensuring an immediate execution of all submitted payments; the liquidity available in the system, i.e. the total value of funds in the accounts of the system participants' credit institutions and the Treasury, also including intraday credit granted to credit institutions; the value of Latvijas Banka's settlement funds necessary for the execution

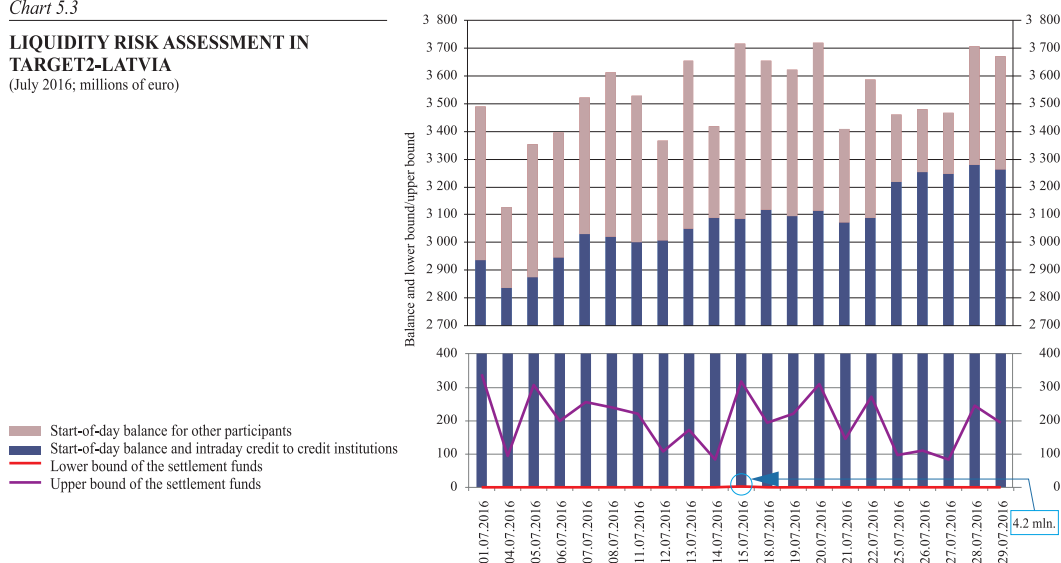
of the payments submitted by Latvijas Banka. Where the liquidity available in the system exceeds the upper bound of the settlement funds, the system's liquidity risk is deemed to be low. Where the liquidity available in the system is lower than the upper bound of the settlement funds, while exceeding the lower bound of the settlement funds, the system's liquidity risk is deemed to be medium. Meanwhile, where the liquidity available in the system equals to or is lower than the lower bound of the settlement funds, the system is exposed to a high liquidity risk.

For its data analysis, Latvijas Banka used July 2016 data, since, compared to other months of 2016, July saw the smallest value of excess settlement funds defined as the spread between the liquidity available in TARGET2-Latvija and the total value of payments executed in TARGET2-Latvija. Therefore, the results of the July data analysis allow drawing conclusions about the liquidity risk throughout 2016.

The simulation results showed that the daily upper bound of the settlement funds amounted to 199 million euro on average or 5.65% of the liquidity available in TARGET2-Latvija. On none of the days did the upper bound of the settlement funds in July exceed 10% of the liquidity available in the system. The average daily lower bound of the settlement funds stood at 0.191 million euro or 0.01% of the liquidity available in TARGET2-Latvija. On none of the days did the lower bound of the settlement funds exceed 4.2 million euro or 0.11% of the liquidity available in the system. The results suggest that **the liquidity available in TARGET2-Latvija in 2016 significantly exceeded the upper bound of the settlement funds (see Chart 5.3). Thus, the liquidity risk of TARGET2-Latvija remains low.**

Chart 5.3

#### LIQUIDITY RISK ASSESSMENT IN TARGET2-LATVIA (July 2016; millions of euro)



#### Business continuity

Since TARGET2-Latvija is a component system of TARGET2, its business continuity is reflected by the performance indicators of TARGET2. In 2016, the availability ratio of TARGET2 stood at 100% (99.98% in 2015). Operational disruptions were not identified in TARGET2 in the first quarter of 2017 as well. According to the services contract, an operator of TARGET2 shall ensure the system's availability ratio of at least 99.7%. The availability ratio of TARGET2 suggests that the system is highly resilient to operational disruptions. This leads to the conclusion that **the operational risk of TARGET2 remains low.**

### 5.2 Securities settlement systems

In 2016, DENOS was the only systemically important securities settlement system in Latvia since it was used for the monetary policy operations of the Eurosystem and

mobilisation of collateral securities of the participants in the monetary policy operations for the purpose of receiving an intraday credit in TARGET2-Latvija. The cash leg of DENOS financial instrument related settlement in euro was executed in TARGET2-Latvija.

The conformity of DENOS with the oversight standards<sup>73</sup>, including the system's risks, i.e. the credit risk, the liquidity risk and the operational risk, were assessed in 2012. **The oversight assessment suggested that the risks associated with the operation of DENOS are appropriately managed and contained ensuring that their impact on the system's operation and its participants is minimal and does not trigger systemic disruptions.**

Taking account of the transition of the Baltic markets to a new settlement platform planned for 2017 and their joining the TARGET2-Securities platform, in early 2017 the overseers completed the assessment of the planned securities settlement system of Latvia in compliance with the international "Principles for Financial Market Infrastructures". The outcome of the assessment suggested that the planned securities settlement system of Latvia is designed in way to appropriately manage and contain the risks ensuring that their impact on the system's operation and its participants is minimal and does not trigger systemic disruptions. The assessment provided oversight recommendations to be implemented by the time of launching the system. Prior to launching the system, the overseers intend to perform additional assessment to make sure that the oversight recommendations provided in the assessment have been implemented.

**The total value of DVP transfers amounted to 1.6 billion euro in 2016** (a 51.1% increase year-on-year). In 2016, the daily value of settlement executed by DENOS via TARGET2-Latvija stood at 4.9 million euro on average, while in the first quarter of 2017 the daily average value of such payments comprised 3.9 million euro.

Given that DENOS cash leg settlement is executed in TARGET2-Latvija between the participants of TARGET2-Latvija, and the liquidity risk assessment for TARGET2-Latvija suggested that the liquidity available in TARGET2-Latvija significantly exceeded the necessary liquidity (see Chart 5.3), **the liquidity risk in DENOS cash leg settlement remains low.**

### **Business continuity**

In addition to the operational risk assessments performed within the oversight framework, the overseers, when performing the day-to-day oversight, also evaluate the impact of the system disruptions on the system's operation as well as the system's availability throughout the year, since the operational disruptions to the system may affect the smooth functioning of systems and cause systemic risk.

In 2016, the availability ratio of DENOS stood at 100% (99.3% in 2015). In the first quarter of 2017, one disruption was identified in DENOS due to a loss of electricity causing technical failures. For this reason, the system's operation was not ensured for a few hours; however, it did not have a significant impact on the settlement, since it was completed on the same business day in accordance with the procedure stipulated in the LCD regulations.

**The availability ratio of DENOS suggests that the system is highly resilient to operational disruptions.** Hence, it may be concluded that the operational risk has a minimal impact on the system's operation.

<sup>73</sup> European Central Bank and Committee of European Securities Regulators. *Recommendations for securities settlement systems and recommendations for central counterparties in the European Union*. May 2009.

## APPENDICES

## Appendix 1

## SETTING THE O-SII CAPITAL BUFFER REQUIREMENTS

**On 25 October 2016, the Council of the FCMC decided on a repeated identification of six O-SIIs and for the first time introduced O-SII buffer requirements**, in order to increase O-SII loss-absorbing capacity, thereby mitigating the potential systemic risks of the financial system and reducing costs to the economy. The O-SII buffers set by the FCMC vary from 1.5% to 2.0% of RWA (see Table A1.1), and they are introduced over a transition period. The requirements for the transition period take effect on 30 June 2017, while full compliance with the requirements must be ensured as of 30 June 2018.

Table A1.1

LATVIA'S O-SIIS AND THEIR BUFFER REQUIREMENTS

Credit institution	O-SII buffer as of 30 June 2017 (%)	O-SII buffer as of 30 June 2018 (%)
JSC ABLV Bank	1	2
JSC Swedbank	1	2
JSC SEB banka	1	2
JSC Rietumu Banka	0.75	1.75
JSC Citadele banka	0.75	1.50
JSC DNB banka	0.75	1.50

O-SIIs must be identified in all EU countries, including Latvia, in accordance with the EBA Guidelines<sup>74</sup>. Meanwhile, the methodology for setting O-SII buffers is at the discretion of the individual Member States. Most euro area countries establish the O-SII buffers based on the O-SII scores which are calculated according to the EBA Guidelines. Where the score does not reflect the actual systemic importance of an O-SII in the respective country, the calculation of the O-SII's score is adjusted and supplemented by changing the indicator weight and introducing additional indicators. In order to establish the amount of an O-SII buffer, the O-SII's score, which is expressed in points, must be converted to an interval ranging from 0% to 2% of RWA.

**In order to calibrate the O-SII buffers, euro area countries have applied different methodologies and their combinations.** Most countries have used the methodology of bucketing by dividing the calculated O-SII scores into intervals and allocating a specific O-SII buffer amount to each interval or the methodology of clustering by grouping the credit institutions as per similar features. Some countries have taken account of the requirements set by other countries in respect of similar banks and/or banks belonging to the same group (peer comparison) or have aligned the O-SII capital requirements with the additional capital requirements set for the global systemically important institutions in the same country. These methodologies are often combined with an analysis of the banks' historical losses by calculating the amount of capital requirements sufficient to cover the historical losses of banks, as well as with the equal expected impact methodology, whereby the calculation is based on the assumption that the O-SII buffer is set in the amount as to ensure that the expected costs to the economy arising from an O-SII's financial stress do not exceed those incurred by an institution which is not systemically important. In addition to quantitative calculations, most EU countries have also taken account of the so-called quality assessment of supervision when establishing the O-SII buffers. In respect of setting the O-SII buffers, the euro area countries display significant heterogeneity. Several countries have applied quite different O-SII buffers to institutions with similar O-SII scores which can be explained by both the differences in the O-SII buffer calibration methodologies and the various transition periods.

<sup>74</sup> EBA Guidelines EBA/PN/2014/10 (for more information, see the "Financial Stability Report" 2016) available at: <https://www.eba.europa.eu/documents/10180/930752/EBA-GL-2014-10+%28Guidelines+on+O-SIIs+Assessment%29.pdf>.

**The methodology developed by the FCMC for setting the O-SII buffer requirements for Latvia's credit institutions is based on the equal expected impact methodology** applied by several EU Member States (including Estonia and Lithuania) for the purpose of establishing the O-SII buffers. According to this methodology, an O-SII buffer for a systemically important credit institution must be set to ensure that in the event of financial stress the potential systemic impact of the O-SII would be the same as that of the so-called reference institution (i.e. a non-SII with the systemic score of 425 points). In the event of financial stress, the additional capital buffer of the O-SII, established according to its systemic score and the probability of financial stress, would allow absorbing losses and contain its potential systemic impact.

This methodology is based on the following assumptions.

1. The capital requirements for credit institutions consist of three components: the minimum capital requirement, the capital conservation buffer and the O-SII buffer. The amount of the O-SII buffer depends on the score of the O-SII's systemic importance. A higher O-SII score corresponds to a proportionally higher O-SII buffer.

2. A credit institution is deemed to be subject to the so-called financial stress where, within one quarter, it has incurred losses amounting to at least 2.5% of its RWA which corresponds to the capital conservation buffer. Such losses do not yet imply the insolvency of a credit institution; however, they limit the credit institution's ability to pay out dividends and may adversely affect the financial stability.

3. The probability of such an event occurring with respect to a credit institution having the respective O-SII score is denoted as  $P(\text{O-SII})$ . The higher the O-SII buffer, the smaller the probability of such an event. The costs to the economy arising from a credit institution's financial stress are denoted as  $C(\text{O-SII})$ . It is assumed that these costs are higher for a systemically more important credit institution than those incurred by a systemically less important credit institution. According to the equal expected impact principle, the O-SII buffer is set by the following expression:

$$P(\text{O-SII}) \times C(\text{O-SII}) = P(\text{O-SII}^{\text{REF}}) \times C(\text{O-SII}^{\text{REF}}), \forall \text{O-SII} \geq \text{O-SII}^{\text{REF}}$$

where  $\text{O-SII}^{\text{REF}}$  is a hypothetical score of a reference credit institution which equals the 425-point threshold set by the FCMC for the identification of an O-SII. The score separates the systemically important institutions from other credit institutions.

4. According to the equal expected impact principle, after applying the O-SII buffer, the expected costs to the economy arising from O-SII's financial stress should be the same as those arising from the financial stress of a reference credit institution.

5. The probability of a credit institution facing financial stress is assessed based on the historical distribution of the credit institution sector's RORWA (return on risk-weighted assets) indicator<sup>75</sup>. Looking at the indicator's distribution, it can be concluded that during one quarter the credit institutions have incurred losses of at least 2.5% of RWA in 4.9% of cases. When applying the additional capital requirement to an O-SII, the above probability can be decreased so that, even with greater crisis-related costs to the economy, the expected O-SII costs would be the same as those of the so-called reference credit institution with an O-SII score of 425 points.

6. In order to establish the individual probability of a systemically important institution's financial stress, it is necessary to estimate the ratio of the crisis-related O-SII costs to those of the reference credit institution. This ratio can be estimated from the ratio of the O-SII scores denoting the number of times the respective O-SII is systemically more important compared to other credit institutions. The probability of the entire credit institution sector incurring losses of at least 2.5% of RWA is then divided by the above

<sup>75</sup> The representative sample comprises credit institution data for the period from 2004 to 2015, excluding the profit indicators recorded in the first 4–7 quarters for institutions having started their activity during the reporting period. The initial profit indicators are adversely affected by different start-up costs.

coefficient, thereby obtaining the individual probability of a credit institution's financial stress. The cumulative probability distribution of the RORWA in the credit institution sector allows estimating the RORWA values corresponding to the individual probabilities. Consequently, the obtained values are used to set the O-SII buffers.

**The O-SII buffer is proportionally dependent on the O-SII score; therefore, it is important that the obtained O-SII scores reflect the degree of the institutions' systemic importance adequately.** When identifying O-SIIs, EU countries must take into account the EBA Guidelines. However, some indicator weights included in the EBA methodology are not fully appropriate for the specificities of Latvia's financial system making it impossible to obtain adequate numerical O-SII scores. Thus, for instance, to estimate a credit institution's actual systemic importance in Latvia's domestic market, decreased weights should be applied to indicators such as cross-border activity and debt securities outstanding.

**In order to obtain the numerical score of the systemic importance of Latvia's O-SIIs as accurately as possible, the FCMC in cooperation with experts of Latvijas Banka developed methodology for establishing the degree of the systemic importance of Latvia's O-SIIs, which can be used to set the O-SII buffer amounts.** The methodology offered by the FCMC differs from that of the EBA Guidelines in the range of indicators included and the weights assigned thereto (see Table A1.2). The following new indicators have been added to the FCMC approach: the RWA, private sector loans to and deposits from domestic customers and the required additional provisions according to the results of credit risk stress tests, as well as substantially modified indicator weights. Such an approach allows for a more accurate estimation of the credit institutions' relative systemic importance in the local financial system, and, consequently, the setting of the O-SII buffer amounts.

Table A1.2

**O-SII SCORING METHODOLOGIES FOR IDENTIFYING O-SIIS AND SETTING THEIR BUFFERS**

Criterion	Indicator	Weight (%)	
		EBA methodology for identifying O-SIIs (%)	FCMC methodology for setting O-SII buffers (%)
Size	Total assets	25	25
	Risk-weighted assets	–	15
Importance (including substitutability/ financial system infrastructure)	Value of domestic payment transactions	8.33	5
	Private sector deposits from depositors in the EU	8.33	5
	Private sector loans to recipients in the EU	8.33	5
	Private sector loans to domestic customers	–	5
	Private sector deposits from domestic customers	–	5
Complexity/cross-border activity	Value of OTC derivatives	8.33	5
	Cross-jurisdictional liabilities	8.33	5
	Cross-jurisdictional claims	8.33	5
Interconnectedness with the financial system	Intra-financial system liabilities	8.33	5
	Intra-financial system assets	8.33	5
	Debt securities outstanding	8.33	5
Additional indicators	Required additional provisions (credit risk stress test)	–	5



## Appendix 2

### THE CREDIT INSTITUTIONS' SURVEY CONDUCTED BY LATVIJAS BANKA AND THE SME SURVEY ON OBSTACLES TO SME LENDING

In 2016, an extensive SME survey<sup>76</sup> was conducted at the request of Latvijas Banka in order to identify factors affecting growth of SMEs as well as their access to finance and demand for loans. Loans to SMEs account for the largest share in the total loan portfolio of non-financial corporations (79%); however, they are expanding at a slower pace than those granted to large enterprises. Growth of SMEs is vital for the economy: SMEs represent more than 99% of all enterprises in Latvia, and their turnover accounts for more than 77%<sup>77</sup> of the total turnover of non-financial corporations.

The data obtained in the survey were linked to the financial data of the surveyed SMEs' annual reports for 2015 included in the LURSOFT database. In addition to the SME survey, Latvijas Banka also surveyed credit institutions regarding the SMEs' demand for loans and obstacles to receiving a loan from credit institutions<sup>78</sup>.

**For the purposes of promoting financial stability, it is essential to understand whether there are significant impediments to smooth financial intermediation**, at the same time being aware that responsible lending to financially sound SMEs should be supported.

#### Factors restricting lending to SMEs

**According to SMEs, lack of demand is one of the main factors underlying the sluggish growth in SME lending** (see Chart A2.1). **The inability to ensure sufficient own contribution or weak financial ratios are also considered important reasons.** Over the last three years (2013–2015), 57% of the surveyed SMEs had never applied for the financing of credit institutions or leasing companies primarily due to the lack of need for this type of financing. When commenting on their reluctance to use the credit institutions' financing also in the future, 36% of the surveyed SMEs indicated that they did not wish to undertake additional risk. Moreover, this factor was equally important for both SMEs with a sound financial position and those whose financial standing was weaker. Meanwhile, almost 50% of the SMEs recognising their financing needs did not intend to apply for a credit institution's loan on account of their reluctance to undertake additional risk.

**According to the credit institutions, the main reason for SMEs not obtaining long-term loans is insufficient collateral, while the second major reason is the lack of need for loans.** Meanwhile, insufficient collateral and insufficient own contribution to the project (80% of respondents indicated both reasons), insufficient profitability and/or cash flow (70%), as well as concerns about the viability of the project to be financed (60%) were cited by the credit institutions as the most frequent reasons for loan rejections.

An opinion is often voiced that the credit institutions' strict requirements for the SMEs' financial position significantly dampen the lending activity in Latvia and that the funding requests of SMEs are often rejected by credit institutions. However, the survey results indicate that **credit institutions and leasing companies have approved 79% of SME loan applications submitted over the last three years.** The results of the survey on the access to finance of enterprises (SAFE) conducted by both the ECB and the European Commission in 2016 also confirmed that credit institutions had granted loans to 75% of SMEs having submitted their applications over the previous six months.

<sup>76</sup> Pursuant to the Regulation for the Credit Register, SMEs are enterprises which on average employ no more than 249 persons annually and whose annual net turnover does not exceed 50 million euro or whose balance sheet total assets do not exceed 43 million euro.

<sup>77</sup> Based on the CSB 2014 data on the number and turnover of SMEs in manufacturing, construction, trade and other services sectors.

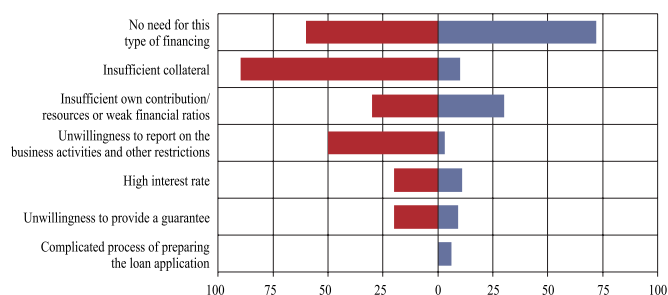
<sup>78</sup> The calculations performed in the Appendix are based on the responses of 10 credit institutions. Loans granted by these credit institutions to their domestic customers represent 78% of the credit institutions' total domestic loan portfolio, while the loans granted by the above credit institutions to SMEs account for more than 80% of the total SMEs credit portfolio of all credit institutions.

Chart A2.1

### REASONS FOR NOT OBTAINING LONG-TERM LOANS

(% of respondents)

■ Credit institutions' opinion  
■ SMEs' opinion



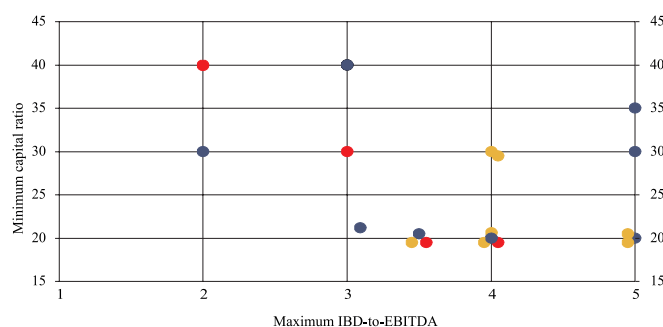
An analysis of the credit institution survey results shows that **credit institutions' requirements in respect of the SMEs' financial position are not inadequately strict** (see Chart A2.2). Although larger credit institutions are more conservative than smaller market participants, their requirements should not be viewed as excessive. For instance, larger credit institutions pointed out that the capital ratio of stable sector SMEs had to be at least 30%<sup>79</sup>, while individual market participants believed that a 20% minimum capital ratio would be sufficient, even in case of a new enterprise. The maximum IBD-to-EBITDA<sup>80</sup> threshold indicated by larger credit institutions is 3.5. Smaller market participants, in turn, mostly agree that the stable sector SMEs can exceed that ratio, but not above 5.0. At the same time, it should be noted that each application for funding is reviewed individually, taking account of not only the financial ratios but also the respective project, the sector, the ability of SMEs to provide their own contribution, the collateral and other substantial factors, e.g. the EU funds co-financing.

Chart A2.2

### FINANCIAL RATIO THRESHOLDS SET BY CREDIT INSTITUTIONS FOR SMEs TO QUALIFY FOR THE REVIEW OF THEIR LOAN APPLICATIONS

(%; times)

● Unstable sector  
● Stable sector  
● New sector or enterprise



An assessment of the financial position of the SMEs which have already received financing leads to the conclusion that **their average financial standing should be viewed as good**, with their average capital ratio, average EBITDA margin and IBD-to-EBITDA standing at 40%, 7% and 2.8 respectively. The following is worth noting: by reporting new loans on the SME balance sheets, the capital and debt burden ratios deteriorate somewhat, i.e. after the receipt of a loan, the capital ratio declines and the IBD-to-EBITDA increases. Meanwhile, the financial ratios of the rejected SMEs are substantially weaker, with the capital ratio, the EBITDA margin and the IBD-to-EBITDA standing at 24%, 4% and 7.2 respectively.

By linking the responses provided in the SME survey with the SMEs' financial ratios, it can be concluded that **the funding opportunities are more appreciated by the SMEs with good financial ratios**. They mentioned that their opportunities to receive funding are not restricted by the requirements for collateral and/or guarantee and that the access to finance is not a constraining factor. In turn, the SMEs with weaker financial ratios pointed out that the above factors do restrict their opportunities to receive funding.

Both the SME survey conducted by Latvijas Banka and the SAFE carried out by the ECB and the European Commission suggest that **the lack of funding is not a material**

<sup>79</sup> The capital ratio is capital to all liabilities and capital.

<sup>80</sup> IBD-to-EBITDA is interest bearing debt-to-earnings before interest, taxes, depreciation, amortisation. EBITDA margin is the ratio of earnings before interest, taxes, depreciation, amortisation to turnover.

**factor constraining growth of SMEs in Latvia.** When assessing the level of constraint regarding their access to finance in the range from 1 (not constraining) to 5 (constraining), the SMEs rating stood at 2.2 in the SAFE and 2.5 in the SME survey conducted by Latvijas Banka. This leads to the conclusion that **the access to finance of SMEs is constrained by weak financial ratios** rather than the access to finance per se.

### The financial position of SMEs

LURSOFT data on the surveyed SMEs suggest that **the overall financial position of SMEs complies with the credit institutions' standards for the review of loan applications.** The average capital ratio and the IBD-to-EBITDA of the surveyed SMEs stood at 41% and 2.6 respectively and their average EBITDA profit margin reached a high of 7.2%. However, the financial standing of SMEs is not homogenous. Based on the financial ratio thresholds set by the credit institutions for the review of loan applications, the SMEs were grouped according to their financial position by applying the thresholds referred to in Table A2.1.

Table A2.1

FINANCIAL RATIO THRESHOLDS FOR THE FINANCIAL QUALITY ASSESSMENT

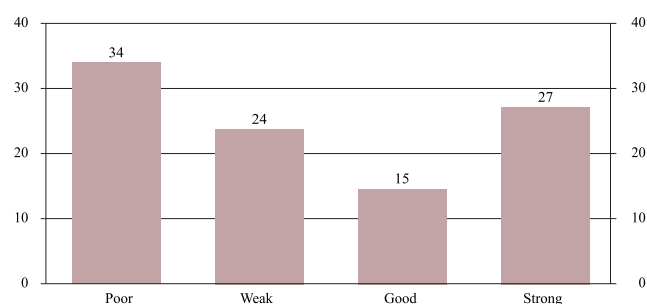
Ratio thresholds	Capital ratio (%)	IBD-to-EBITDA	EBITDA profit margin (%)
Weak financial ratios	<20	<0 or >5	<3
Average financial ratios	20–40	3–5	3–5
Good financial ratios	>40	0–3	>5

The SMEs have a strong financial position if all three financial ratios are good. Where at least one ratio is good and the other two are average, the SME is classified as an enterprise with a good financial position. Enterprises belonging to either of those groups stand a good chance of receiving funding from credit institutions. Meanwhile, in case of at least one weak ratio, the SME's financial standing is considered to be weak, while two weak ratios point to poor financial position. Enterprises belonging to either of the latter groups are unlikely to receive funding from credit institutions.

Although the average ratios of the SMEs' financial position are overall good, the SMEs' breakdown by their financial position suggests that **less than half (42%) of all surveyed SMEs comply with the credit institutions' standards for the review of loan applications** (see Chart A2.3). Moreover, when looking at the subgroup of the surveyed SMEs indicating their intention to apply for finance, only 42% of respondents have a sufficiently good financial position to qualify for the review of their applications.

Chart A2.3

SME BREAKDOWN BY THE ASSESSMENT OF THEIR FINANCIAL POSITION  
(% of respondents)



### Factors affecting growth of SMEs

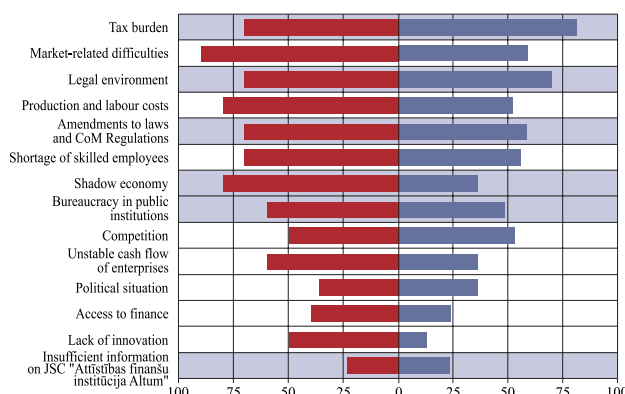
In response to the question about the factors constraining SMEs' growth, the SMEs mostly mentioned issues which could be addressed by public policy measures such as tax burden, changing and inefficient legal environment, inefficient public administration, shadow economy, as well as shortage of skilled employees, costs and market-related difficulties (see Chart A2.4). Credit institutions cited similar factors, also indicating unstable cash flow, lack of innovation and competitiveness.

Chart A2.4

### FACTORS SIGNIFICANTLY CONSTRAINING SME GROWTH

(% of respondents)

■ Credit institutions' opinion  
■ SMEs' opinion  
■ Factors directly addressed by public policy measures



In response to the question about factors facilitating SME lending, 79% of SMEs indicated the easing of the tax burden, while 66% of SMEs pointed to the measures promoting capital investment, e.g. lowering corporate income tax rate on retained earnings (see Chart A2.5). Although some enterprises always want to reduce their tax burden in any tax system, the results of the survey of large and medium-sized Baltic enterprises' executives conducted by SIA PricewaterhouseCoopers suggest that Latvian businesses (85%) are more concerned about the growing tax burden in comparison with their Lithuanian and Estonian counterparts (69% and 63% respectively)<sup>81</sup>. According to SMEs, the stabilisation of the tax system would facilitate growth, since the frequent changes place administrative burden on businesses and hamper planning. Meanwhile, the non-taxation of corporate income from reinvested earnings would allow for faster accumulation of funds necessary for investment and would improve SMEs financial ratios.

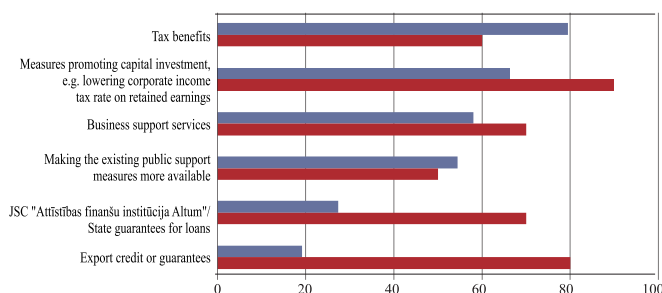
90% of the credit institutions highly valued the measures promoting capital investment, e.g. the lowering of corporate income tax rate on retained earnings. Export credit and guarantees were indicated as the second most important measure (80%), followed by the support programmes of JSC "Attīstības finanšu institūcija Altum" and other measures promoting entrepreneurship (70%).

Chart A2.5

### FACTORS ASSESSED BY SMES AND CREDIT INSTITUTIONS AS IMPORTANT OR VERY IMPORTANT FOR PROMOTING SME LENDING

(% of respondents)

■ Credit institutions' opinion  
■ SMEs' opinion



Overall, it may be concluded that **the SME lending development is hampered by weak credit demand on account of the SMEs' reluctance to take on additional risks, as well as the insufficient own contribution of SMEs. The financial position of SMEs is also a relatively significant constraining factor.** With the overall macrofinancial environment improving gradually, the impact of lending- and growth-constraining factors is likely to ease, which is already suggested by the latest data on lending. The survey results show that **public policy measures, e.g. improving the tax system (including the lowering of the corporate income tax rate on retained earnings) and combating the shadow economy, would stimulate improvements in the investment environment and sound lending development.**

<sup>81</sup> See <https://www.pwc.com/lv/lv/assets/baltijas-uznemumu-vaditaju-aptaujas-rezultati-30-novembris-2016.pdf>.

### Appendix 3

#### COULD IT SECURITY RISK POSE A POTENTIAL SYSTEMIC RISK TO THE FINANCIAL SECTOR OF LATVIA?

With the use of IT in the financial sector becoming increasingly widespread and the introduction of new IT-based financial products and services, i.e. non-cash settlement (including contactless card payments), online services provided by credit institutions (including the credit institutions' mobile apps), financial innovations (FinTech), etc., the credit institutions are becoming more dependent on IT and thus increasingly susceptible to IT security risk. Increasingly more national central banks of EU Member States and other countries are turning their attention to this issue, discussing it in their financial stability reports. Although Latvia's credit institutions have not yet registered any major IT security incidents that could have created significant losses<sup>82</sup> to the institutions themselves or their customers, **it is important to thoroughly assess whether the IT security risk could become a potential systemic risk to Latvia's credit institutions.**

**While not being perfect, the oversight of IT security-related risks in Latvia's credit institutions by the competent authorities is on a high level and is continuously improving.** At national level, IT security is governed by the Law on the Security of Information Technologies, based on which the Information Technology Security Incident Response Institution CERT.LV<sup>83</sup> has been established. In cooperation with the public, local government and private institutions, CERT.LV promotes IT security and provides support in the elimination of the consequences of IT incidents. However, the reporting obligation is currently only binding for public and local government institutions, as well as institutions defined as critical IT infrastructure according to the National Security Law. For all other institutions, including credit institutions, reporting is voluntary. However, they, too, can ask for CERT.LV support in IT security-related matters and voluntarily report their IT security incidents. Both the FCMC and several Latvian credit institutions are members of the Information Technology and Information Systems Security Experts Group lead by CERT.LV<sup>84</sup> and are actively involved in the information exchange. However, not all credit institutions are represented in this group of experts. Meanwhile, according to Paragraph 3 of Section 8 of the Credit Institution Law credit institutions have a duty to inform the FCMC regarding all conditions, including regarding suspicious and fraudulent transactions, which may have a significant effect on stable future management and activities of the credit institution corresponding to the laws and regulations or which may seriously endanger the reputation of the credit institution. Upon receiving information on significant incidents from a credit institution, it is also asked to submit a plan for further action to reduce the possibility of recurrence of such incidents. However, the definition used in the law is quite broad, i.e. it does not specify what types of events are considered to have a significant impact, and, therefore, does not provide the credit institutions with a sufficiently efficient, standardised and comprehensive procedure for reporting their current IT security incidents to the supervisor. The FCMC invites all credit institutions to report the IT security incidents to their respective coordinators at the FCMC and, where a threat has a potential to affect other credit institutions, the FCMC informs them accordingly. The FCMC performs on-site inspections in all credit institutions on a regular basis (at least once every three years), assessing the overall security management of the credit institution's information systems and laying down requirements and providing recommendations for its improvement. The FCMC receives credit institutions' reports

<sup>82</sup> E.g. the UK incident, where, over a weekend, approximately 3 million euro were stolen from about nine thousand Tesco Bank customers, received great publicity abroad. Tesco Bank compensated its customers for the losses, but the criminal investigation into the attack and how it was carried out is still ongoing. The case where considerable amounts of money were stolen from the Central Bank of Bangladesh via fraudulent SWIFT payment orders should also be mentioned as a significant incident.

<sup>83</sup> Institute of Mathematics and Computer Science of University of Latvia.

<sup>84</sup> The Information Technology and Information Systems Security Experts Group, also known as DEG, is a voluntary group of IT security experts dedicated to promoting IT security and providing support to CERT.LV.

on all operational events, including IT events<sup>85</sup>, on a quarterly basis, while structural reports on all IT incidents<sup>86</sup> are submitted on an annual basis. On its educational website klientuskola.lv, the FCMC also promotes financial literacy by educating the users of the credit institutions' services and the general public on IT security risks, their types and ways to ensure protection from threats related thereto.

**The mitigation of the potential IT risks to the credit institutions directly supervised by the ECB's SSM will soon be supported by the ECB's SSM supervisory framework for IT security risks** that is set to be introduced in the first half of 2017<sup>87</sup>. It will comprise the creation of an incident database and a notification procedure whereby the credit institutions under the ECB' supervision will be obliged to notify the ECB and the respective national supervisory authority on significant IT security incidents. Both the requirements of the ECB's SSM supervisory framework for IT security risks and the requirements of the national IT supervisory frameworks are to be harmonised with the new requirements laid down in the EU legislation. Firstly, Payment Services Directive II<sup>88</sup> requires payment service providers to report significant IT security incidents. Secondly, NIS Directive<sup>89</sup> stipulates a requirement for credit institutions to report their IT security incidents to the designated IT security authorities as from 2018<sup>90</sup>. Meanwhile, as regards the supervisory framework, the EBA is preparing guidelines for IT risk assessment as part of the supervisory review and assessment process<sup>91</sup> and a recommendation for the outsourcing of IT services, thereby facilitating the harmonisation of IT security risks-related supervisory practices in the EU. All the above indicates that the measures to mitigate IT security risk in the EU banking sector will be reinforced in the near future.

**The public information provided by CERT.LV does not indicate a significant increase in credit institutions' IT security risks.** CERT.LV collects data on all reports of IT security incidents, including those of credit institutions. Although the number of high priority incidents<sup>92</sup> increased in 2016, CERT.LV explains this by higher public confidence in CERT.LV as a supervisor of IT security, i.e. private sector enterprises and households have started submitting their voluntary incident reports more actively (see Chart A3.1). Meanwhile, references to incidents related to credit institutions are rare and mainly associated with examining the operation of computer viruses directed at credit institutions. Phishing<sup>93</sup> attacks are becoming a growing concern in the public domain; however, they are dependent on the preparedness of the customers and, thus, relatively unlikely to become systemic, i.e. result in significant losses to several major credit institutions simultaneously. This risk will also be mitigated by the FCMC requirement<sup>94</sup> to introduce higher security requirements for all payments executed via e-banking, whereby at least one of the authentication elements should be unique and non-reusable, as well as by the public awareness activities conducted by the FCMC and CERT.LV.

<sup>85</sup> Regulations No. 129 "Regulations on Preparing and Submitting Information on the Cases of the Occurrence of Operational Risk Events" adopted by the FCMC on 7 June 2013.

<sup>86</sup> Paragraph 78 of Regulations No. 112 "Regulations on the Information Systems Security of the Financial and Capital Market Participants" adopted by the FCMC on 7 July 2015.

<sup>87</sup> *EBA/CP/2016/14 Guidelines on ICT Risk Assessment under the SREP*, *Handelsblatt Global*, 12 May 2016, <https://global.handelsblatt.com/exclusive-ecb-to-create-european-database-for-cyber-threats-677164>.

<sup>88</sup> Directive (EU) 2015/2366 of the European Parliament and of the Council of 25 November 2015 on payment services in the internal market shall be transposed into national legislation until 13 January 2018.

<sup>89</sup> NIS Directive shall be transposed into national legislation by 9 May 2018.

<sup>90</sup> NIS Directive does not lay down this obligation for all credit institutions – the reporting obligation shall apply to the critical service providers designated by a competent authority of each EU country. All other credit institutions not designated as critical service providers shall submit their reports on a voluntary basis.

<sup>91</sup> *EBA/CP/2016/14 Guidelines on ICT Risk Assessment under the SREP*. See <https://www.eba.europa.eu/regulation-and-policy/supervisory-review-and-evaluation-srep-and-pillar-2/guidelines-on-ict-risk-assessment-under-the-srep>.

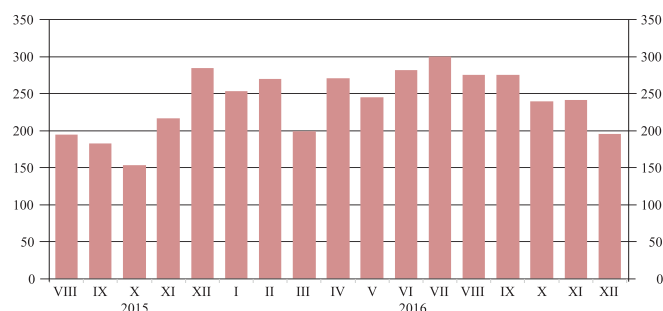
<sup>92</sup> High priority incidents include all cases of compromised devices, phishing, attacks involving denied access, hacking attempts and any other incidents directly affecting high priority institutions or reported by an individual rather than an automatic messenger.

<sup>93</sup> Obtaining the user's access data or the credit card details from the credit institutions' customers by using fictional e-mail addresses and websites similar to those of credit institutions (phishing).

<sup>94</sup> Appendix 1 to Regulations No. 112 "Regulations on the Information Systems Security of the Financial and Capital Market Participants" adopted by the FCMC on 10 July 2015.

Chart A3.1

**THE TOTAL NUMBER OF HIGH PRIORITY INCIDENTS REGISTERED IN LATVIA BY CERT.LV**



Thus, **there is currently no apparent reason to consider the IT security risk as systemic for Latvia's credit institutions. However, its prevention is undeniably important for all credit institutions.** Nevertheless, this does not mean that several credit institutions could not be subject to a simultaneous attack by the groupings of cyber criminals. It is also difficult to estimate the credit institutions' possible risks associated with infrastructure/equipment. The potential vulnerability may also grow on account of increasingly more credit institutions opting for outsourcing services in order to optimise their costs. Consequently, with IT systems of a number of credit institutions being serviced by one or several interrelated outsourcing service providers, the IT security risk would become more concentrated and systemic.

Overall, it may be concluded that **Latvia's credit institutions have a solid foundation with respect to containing their IT security risk. Moreover, significantly greater degree of harmonisation in addressing IT security risk-related issues is about to be introduced both within the SSM framework and as a result of the implementation of the measures set out in NIS Directive.** At the same time, Latvijas Banka may invite the FCMC to continue to actively act as a coordinator and adviser for all Latvia's credit institutions in IT security-related matters, facilitating timely exchange of information and, where necessary, providing support in identifying IT security risk and eliminating any consequences related to it. It is also important to explore ways of encouraging credit institutions to report to the FCMC on the identified IT security issues and incidents. It is necessary to raise the awareness of credit institutions that only by cooperating in a coordinated manner and sharing information with the FCMC on IT security threats (including the possible solutions for the elimination of their consequences) an effective protection of the banking sector can be achieved and its IT security management strengthened. It is also important to continue to educate credit institutions' employees, users of the credit institutions' services, as well as the general public on IT security risk, its types and ways of avoiding the related threats, since it is the human factor which causes the most serious vulnerability for IT security<sup>95</sup>.

<sup>95</sup> IBM 2014 Cyber Security Intelligence Index.

## Appendix 4

## PERFORMANCE INDICATORS OF CREDIT INSTITUTIONS

Table A4.1

## OVERALL PERFORMANCE INDICATORS OF CREDIT INSTITUTIONS

Indicator	2010	2011 <sup>96</sup>	2012 <sup>96</sup>	2013	2014	2015	2016	February 2017
<b>Balance sheet items</b>								
Number of credit institutions and subsidiaries of foreign credit institutions	29	30	29	28	26	27	23	23
Total assets (millions of euro)	31 256.5	29 775.7	28 784.4	29 192.3	30 816.1	31 937.7	29 496.1	29 418.1
Share of loans in total assets (%)	65.3	62.9	58.0	53.5	47.6	46.0	51.3	52.4
Share of deposits in total liabilities (%)	50.6	52.9	61.7	66.8	72.0	72.8	72.4	72.0
Share of liabilities to MFIs in total liabilities (%)	31.2	24.5	20.5	15.4	11.4	9.2	9.5	9.9
Loans to deposits ratio (%)	129.0	119.0	94.1	80.1	66.1	63.1	70.8	71.4
<b>Profitability<sup>97</sup></b>								
ROE (%) <sup>98</sup>	-19.7	-11.2	5.6	8.6	11.1	12.5	14.3	10.7
ROA (%) <sup>99</sup>	-1.6	-0.9	0.6	0.9	1.1	1.3	1.5	1.2
Cost-to-income ratio (%) <sup>100</sup>	72.0	60.3	52.6	50.7	49.7	47.5	44.7	52.5
Profit margin (%) <sup>101</sup>	-77.2	-25.1	24.3	31.4	39.3	47.0	45.0	47.3
<b>Capital adequacy<sup>102</sup></b>								
Own funds (millions of euro)	2 739.1	2 713.3	2 723.0	2 769.2	3 025.8	3 175.8	2 908.4	-
CET1/Tier 1 capital (millions of euro) <sup>103</sup>	2 145.8	2 215.0	2 358.0	2 532.0	2 632.4	2 759.3	2 469.2	-
Risk-weighted assets (millions of euro)	18 709.9	15 595.9	15 465.8	14 618.6	14 361.3	13 938.0	13 591.3	-
Total capital ratio (%)	14.6	17.4	17.6	18.9	21.1	22.8	21.4	-
CET1 ratio/Tier 1 capital ratio (%)	11.5	14.2	15.2	17.3	18.3	19.8	18.2	-
<b>Liquidity</b>								
Liquidity ratio (%) <sup>104</sup>	67.9	63.9	59.8	64.4	63.1	66.7	61.9	61.9
Liquid assets to total assets ratio (%) <sup>105</sup>	27.3	27.4	32.3	36.5	39.9	40.2	33.8	34.1
LCR (%)	-	-	-	-	-	-	341.4	336.7
<b>Asset quality</b>								
Loan loss provisions to the total loan portfolio (%)	11.3	11.5	8.0	6.1	5.3	4.7	4.0	3.9
Share of loans past due over 90 days in the loan portfolio (%)	19.0	17.5	11.1	8.3	6.9	6.0	4.4	4.5

<sup>96</sup> The Latvia Branch of the Allied Irish Banks Plc, JSC Latvijas Krājbanka and JSC Parex banka have been excluded from the profitability, capital adequacy and liquidity ratios for 2011 and 2012.

<sup>97</sup> Profitability ratios for 2016 have been presented without excluding the impact of the one-off sale transaction of Visa Europe Ltd. shares.

<sup>98</sup> Annualised profit/loss ratio to average capital and reserves of the reporting period (excluding data of foreign credit institution subsidiaries).

<sup>99</sup> Annualised profit/loss ratio to average assets of the reporting period.

<sup>100</sup> Cost-to-income ratio = (administrative expenses + intangible and fixed asset depreciation and disposal)/(net interest income + income from dividends + net commissions and fees + profit/loss from trades of financial instruments + financial instrument revaluation result + net ordinary income + adjustment for impairment of available-for-sale financial assets) × 100.

<sup>101</sup> Ratio of pre-tax profit to operating income.

<sup>102</sup> As of 2014, the capital adequacy of credit institutions and the related indicators have been calculated in line with the methodology of the CRR and cannot be directly compared with the indicators of the previous periods.

<sup>103</sup> CET1 is equivalent to Tier 1 capital for all credit institutions in 2014. As regards 2012 and 2013, data for Tier 1 capital are indicated.

<sup>104</sup> Liquid assets as stipulated by the FCMC (vault cash; claims on Latvijas Banka and solvent credit institutions whose residual maturity does not exceed 30 days, and deposits with other maturity, if a withdrawal of deposits prior to the maturity has been stipulated in the agreement; investment in financial instruments, if their market is permanent, unrestricted) must not be less than 30% of credit institutions' total current liabilities with residual maturity under 30 days.

<sup>105</sup> Liquid assets = vault cash + claims on central banks and other credit institutions + central government fixed income debt securities.



Table A4.2

## PERFORMANCE INDICATORS OF GROUP 1 AND GROUP 2 CREDIT INSTITUTIONS

Indicator	Group 1						Group 2					
	2012 <sup>106</sup>	2013	2014	2015	2016	February 2017	2012 <sup>106</sup>	2013	2014	2015	2016	February 2017
Balance sheet items												
Number of credit institutions and subsidiaries of foreign credit institutions	14	13	10	11	10	10	15	15	16	16	13	13
Total assets (millions of euro)	19 207.5	18 345.0	17 623.3	17 289.9	17 845.0	17 743.4	9 576.9	10 847.3	13 192.9	14 647.8	11 651.1	11 674.7
Share of loans in total assets (%)	71.8	68.6	64.9	64.7	65.2	65.8	30.5	28.0	24.5	23.8	29.9	29.6
Share of deposits in total liabilities (%)	50.6	57.3	63.4	65.6	69.8	69.5	83.9	83.0	83.6	81.3	76.5	75.9
Share of liabilities to MFIs in total liabilities (%)	30.2	24.0	19.4	16.0	15.2	15.8	1.1	0.8	0.7	1.0	0.7	1.0
Loans to deposits ratio (%)	141.8	119.7	102.4	98.7	93.5	94.7	36.3	33.8	29.3	29.3	39.1	39.0
Profitability <sup>107</sup>												
ROE (%) <sup>108</sup>	4.8	6.8	9.8	9.1	11.7	9.9	7.6	13.1	13.7	19.0	18.0	11.8
ROA (%) <sup>109</sup>	0.6	0.8	1.1	1.2	1.3	1.2	0.6	1.0	1.1	1.5	1.8	1.3
Cost-to-income ratio (%) <sup>110</sup>	51.6	50.5	49.7	48.2	46.1	50.8	54.6	51.0	49.7	46.8	43.1	54.8
Profit margin (%) <sup>111</sup>	26.2	29.3	41.8	50.1	46.4	46.0	20.9	34.5	36.5	43.9	43.7	46.7
Capital adequacy <sup>112</sup>												
Own funds (millions of euro)	1 898.7	1 817.3	1 786.7	1 896.6	1 494.7	–	824.3	951.9	1 039.1	1 279.2	1 413.6	–
CET1/Tier 1 capital (millions of euro) <sup>113</sup>	1 710.5	1 786.3	1 755.1	1 865.9	1 441.5	–	647.4	745.7	887.3	893.4	1 027.7	–
Risk-weighted assets (millions of euro)	10 632.7	9 228.5	8 022.5	7 185.1	7 220.3	–	4 833.1	5 390.1	6 338.9	6 752.9	6 371.0	–
Total capital ratio (%)	17.9	19.7	22.3	26.4	20.7	–	17.1	17.7	19.6	18.9	22.2	–
CET1 ratio/Tier 1 capital ratio (%)	16.1	19.4	21.9	26.0	20.0	–	13.4	13.8	13.8	13.2	16.1	–
Liquidity												
Liquidity ratio (%) <sup>114</sup>	50.6	51.9	46.1	49.1	47.3	46.7	69.8	77.7	78.6	81.8	79.2	79.4
Liquid assets to total assets ratio (%) <sup>115</sup>	22.9	25.6	27.7	28.5	27.8	28.1	51.2	54.8	56.4	54.0	43.0	43.3
LCR (%)	–	–	–	–	314.1	269.7	–	–	–	–	366.3	411.2
Asset quality												
Loan loss provisions to the total loan portfolio (%)	8.0	5.8	4.9	4.2	3.1	3.1	8.1	7.4	6.9	6.3	6.7	6.9
Share of loans past due over 90 days in the loan portfolio (%)	10.8	7.8	6.1	4.8	3.1	3.1	12.7	10.4	9.6	10.0	8.9	9.2

<sup>106</sup> The Latvia Branch of the Allied Irish Banks Plc, JSC Latvijas Krājbanka and JSC Parex banka have been excluded from the profitability, capital adequacy and liquidity ratios for 2011 and 2012.

<sup>107</sup> Profitability ratios for 2016 have been presented without excluding the impact of the one-off sale transaction of Visa Europe Ltd. shares.

<sup>108</sup> Annualised profit/loss ratio to average capital and reserves of the reporting period (excluding data of foreign credit institution subsidiaries).

<sup>109</sup> Annualised profit/loss ratio to average assets of the reporting period.

<sup>110</sup> Cost-to-income ratio = (administrative expenses + intangible and fixed asset depreciation and disposal)/(net interest income + income from dividends + net commissions and fees + profit/loss from trades of financial instruments + financial instrument revaluation result + net ordinary income + adjustment for impairment of available-for-sale financial assets) × 100.

<sup>111</sup> Ratio of pre-tax profit to operating income.

<sup>112</sup> As of 2014, the capital adequacy of credit institutions and the related indicators have been calculated in line with the methodology of the CRR and cannot be directly compared with the indicators of the previous periods.

<sup>113</sup> CET1 is equivalent to Tier 1 capital for all credit institutions in 2014. As regards 2012 and 2013, data for Tier 1 capital are indicated.

<sup>114</sup> Liquid assets as stipulated by the FCMC (vault cash; claims on Latvijas Banka and solvent credit institutions whose residual maturity does not exceed 30 days, and deposits with other maturity, if a withdrawal of deposits prior to the maturity has been stipulated in the agreement; investment in financial instruments, if their market is permanent, unrestricted) must not be less than 30% of credit institutions' total current liabilities with residual maturity under 30 days.

<sup>115</sup> Liquid assets = vault cash + claims on central banks and other credit institutions + central government fixed income debt securities.

## Appendix 5

### FINANCIAL STABILITY RISK ASSESSMENT TOOLS

The risk assessment tools described in the Appendix are additional instruments used in the financial stability assessment process. It is important to take into account the technical limitations of these tools when interpreting results; expert assessment plays an important role in the final risk assessment.

#### 5.1 RISK DIAGRAM AND INDICES OF RISK CATEGORIES

Chart A5.1

#### ASSESSMENT OF RISK CATEGORIES (AGAINST THE HISTORICAL RISK VALUE)

— Q4 2015  
— Q4 2016

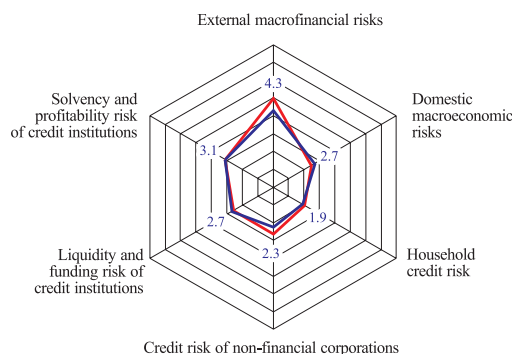
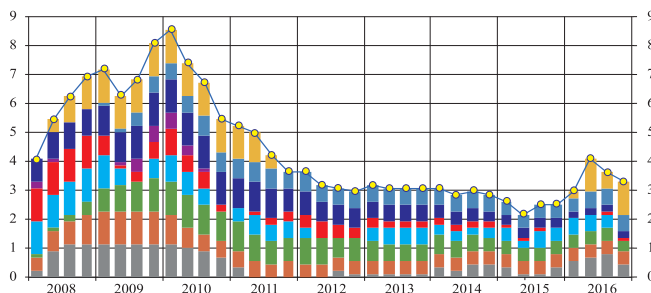


Chart A5.2

#### ASSESSMENT OF CHANGES IN DOMESTIC MACROECONOMIC RISKS (DYNAMICS OF THE INDEX AND ITS COMPONENTS)

■ Government debt changes (percentage points)  
■ Government debt (% of GDP)  
■ Domestic loans (% of GDP)  
■ Credit-to-GDP gap (percentage points)  
■ Current account balance (% of GDP; percentage points)  
■ CPI (percentage points)  
■ Unemployment rate (%)  
■ Latvia ESI (points) (-1)\*  
■ Real GDP (annual changes; percentage points)  
—●— Domestic macroeconomic risk index

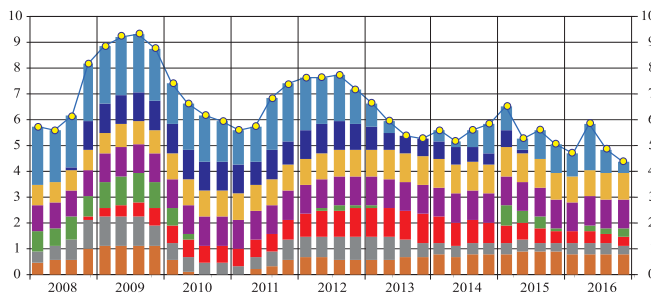


\* (-1) represents indicators that have an inverse relationship with the risk.

Chart A5.3

#### ASSESSMENT OF CHANGES IN EXTERNAL MACROFINANCIAL RISKS (DYNAMICS OF THE INDEX AND ITS COMPONENTS)

■ ECB CISS (points)  
■ Government debt to the EU (annual changes; % of GDP)  
■ Government debt to the EU (% of GDP)  
■ Private debt (% of GDP)  
■ Private debt (annual changes; % of GDP)  
■ Unemployment rate in the EU (%)  
■ EU ESI (points) (-1)\*  
■ Imports in the main trade partners (annual changes; % (-1)\*  
—●— External macrofinancial risk index

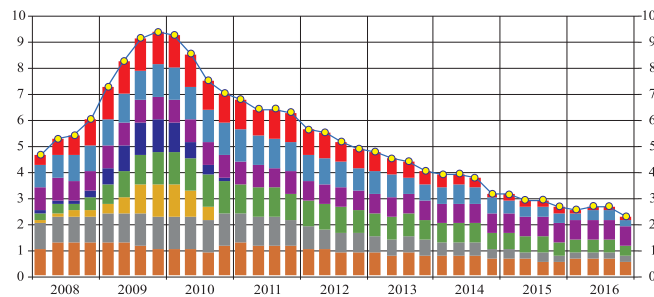


\* (-1) represents indicators that have an inverse relationship with the risk.

Chart A5.4

### ASSESSMENT OF CHANGES IN CREDIT RISK OF NON-FINANCIAL CORPORATIONS (DYNAMICS OF THE INDEX AND ITS COMPONENTS)

- Interest coverage (%) (-1)\*
- Debt-to-equity ratio of non-financial corporations (%)
- The Herfindahl–Hirschman index
- Share of loans past due over 90 days (annual changes; percentage points)
- Share of loans past due over 90 days (%)
- Credit-to-GDP gap (loans to non-financial corporations; percentage points)
- Loans to non-financial corporations (% of GDP)
- Profitability of non-financial corporations (%) (-1)\*
- Non-financial corporation credit risk index

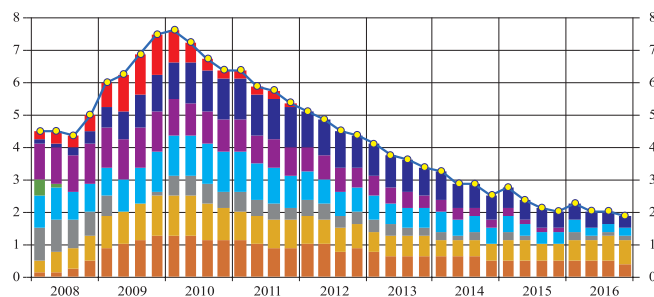


\* (-1) represents indicators that have an inverse relationship with the risk.

Chart A5.5

### ASSESSMENT OF CHANGES IN HOUSEHOLD CREDIT RISK (DYNAMICS OF THE INDEX AND ITS COMPONENTS)

- Share of loans past due over 90 days (annual changes; percentage points)
- Share of loans past due over 90 days (%)
- Ratio of interest payments to disposable income (%)
- Household debt-to-disposable income gap (percentage points)
- Ratio of household debt to disposable income (%)
- Housing affordability ratio (%)
- Real net wage (annual changes; %) (-1)\*
- Unemployment rate (%)
- Household credit risk index

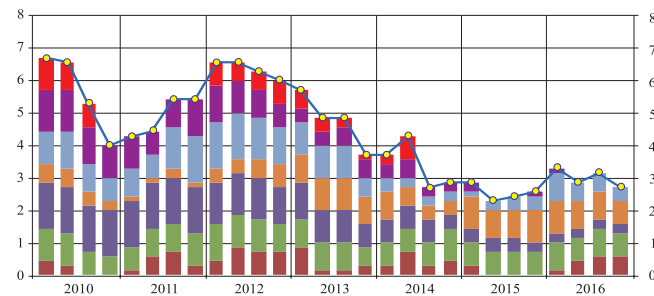


\* (-1) represents indicators that have an inverse relationship with the risk.

Chart A5.6

### ASSESSMENT OF CHANGES IN LIQUIDITY AND FUNDING RISK OF CREDIT INSTITUTIONS (DYNAMICS OF THE INDEX AND ITS COMPONENTS)

- Spread between the 3-month interbank interest rates of Latvia and the euro area (until 2014; percentage points)/historical volatility of the interest rates on overnight loans in euro (as of 2014; %)
- 5-year CDS premium of Latvia (basis points)
- 5-year CDS premium of Swedish and Norwegian parent banks (basis points)
- Stable domestic funding indicator (%)
- Domestic client loan-to-deposit ratio (%)
- Domestic client deposits (annual changes; %) (-1)\*
- FMC liquidity ratio of credit institutions (%) (-1)\*
- Liquidity and funding risk index of credit institutions

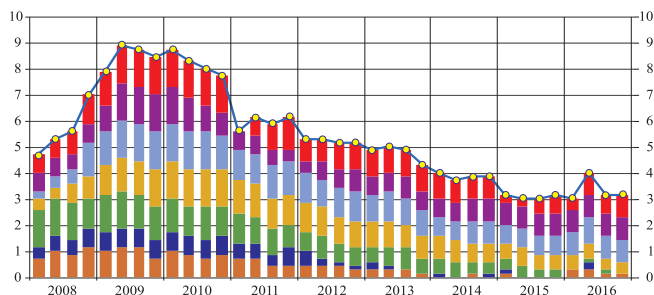


\* (-1) represents indicators that have an inverse relationship with the risk.

Chart A5.7

### ASSESSMENT OF CHANGES IN SOLVENCY AND PROFITABILITY RISK OF CREDIT INSTITUTIONS (DYNAMICS OF THE INDEX AND ITS COMPONENTS)

- Spread of the overall interest rates on outstanding amounts (percentage points) (-1)\*
- Ratio of net provision expenditure to operating income (%)
- ROE (%) (-1)\*
- Ratio of net loans past due over 90 days to capital (%)
- Provisioning ratio (%) (-1)\*
- Ratio of capital and reserves to assets (%) (-1)\*
- Common Equity Tier 1 ratio (%) (-1)\*
- Solvency and profitability risk index of credit institutions



\* (-1) represents indicators that have an inverse relationship with the risk.

<sup>116</sup> In February 2017, Latvijas Banka conducted its regular survey of credit institutions in relation to their assessment of risks to Latvia's financial system. 15 credit institutions were surveyed.

## 5.2 RESULTS OF THE CREDIT INSTITUTION SURVEY ON RISKS

Table A5.1

### ASSESSMENT OF POTENTIAL RISKS BY CREDIT INSTITUTIONS IN FEBRUARY 2017

(the results of the previous survey conducted in July 2017 are provided in brackets)<sup>116</sup>

Item No.	Risks by their importance	Expected likelihood	Potential impact
1.	Reputation and other risks associated with a high share of foreign customer deposits in funding of credit institutions	3.3 (3.5)	3.6 (3.5)
1.1	reputation risk (including the maintenance or establishment of credit institution correspondent banking relationships)	3.5 (3.4)	3.7 (3.6)
1.2	AML/CTF risks	3.1 (3.2)	3.3 (3.3)
1.3	effect of compliance costs of tightened AML/CTF requirements/regulation on profitability and the business model of financial institutions	3.5 (3.4)	3.4 (3.3)
1.4	liquidity risk	2.5 (2.4)	3.2 (3.3)
2.	Impact of an unstable legal environment on Latvia's economy and financial system	3.5 (2.9)	3.3 (2.9)
3.	Risks associated with the environment of persistently low interest rates	3.1 (3.1)	3.0 (2.9)
3.1	sharp risk premium adjustment in financial market	2.3 (2.6)	3.0 (3.4)
3.2	deterioration of credit institution profitability (including the fall in net interest income)	3.0 (3.1)	3.1 (3.2)
3.3	deceleration in sustainability of credit institution business models	3.3 (2.9)	3.3 (3.1)
3.4	deterioration of the quality of credit institution loan portfolio arising from a search for higher yields	2.5 (2.6)	2.7 (2.8)
4.	Potential negative effect of weakening of external demand and continuation of the high uncertainty on Latvia's economy	3.0 (3.6)	3.5 (3.5)
5.	Prolonged weak lending	3.3 (3.2)	3.1 (3)
6.	Impact of shortcomings of the legal framework on Latvia's economy and financial system	2.9 (2.8)	2.9 (2.8)
7.	Significant adjustment of real estate prices in Sweden and Norway and/or risk repricing which could have a negative effect on the borrowing terms of parent banks, financial situation and economy	2.5 (2.4)	3.1 (2.8)
8.	Deterioration of non-financial corporation creditworthiness	2.3 (2.6)	3.2 (3.6)
9.	Deterioration of Latvia's economic situation due to domestic factors	2.1 (2.2)	3.3 (3.4)
10.	Deterioration of availability of financing for Latvian credit institutions	2.1 (2.3)	3.0 (3.1)
11.	Deterioration of household creditworthiness	1.9 (2.2)	3.2 (3.7)
12.	Adverse impact of the deterioration of the economic and political situation in Russia on Latvia's economy and operation of credit institutions	2.8 (3.1)	3.1 (3.2)
13.	Rapid changes in real estate prices	1.8 (1.8)	2.9 (3.4)

Risk level scale and colour designation

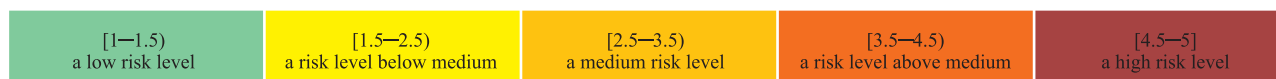
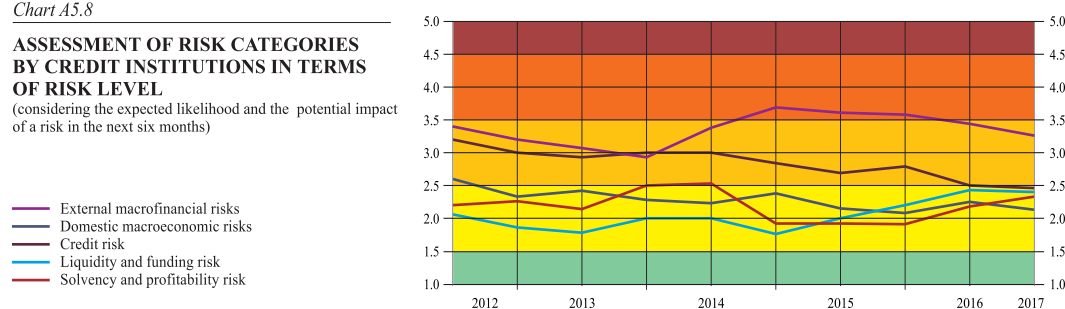


Chart A5.8

### ASSESSMENT OF RISK CATEGORIES BY CREDIT INSTITUTIONS IN TERMS OF RISK LEVEL

(considering the expected likelihood and the potential impact of a risk in the next six months)



### 5.3 LATVIAN FINANCIAL STRESS INDEX

Chart A5.9

#### LATVIAN FINANCIAL STRESS INDEX

