FINANCIAL STABILITY REPORT

December 2017

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Introduction

This report is the fourth Financial Stability Report issued by the National Bank of Ukraine. This report covers the risks that threaten the stability of the financial system.

The report primarily concentrates on banking risks. The risk map on page 6 shows expected change over the next six months for major risks: credit, capital adequacy, liquidity, profitability, currency, and legal. On top of that, the report focuses on consumer lending risks and cyber risks.

Banks have started to lend to households and businesses. The report identifies industries that are currently most fit for lending in terms of their financial standing and outlook. We have also analyzed prospects for retail lending development.

Apart of comprehensive analysis of situation and risks in the key industries, the report outlines the NBU’s plans and objectives for the next year. This report also extensively covers novelties in banking sector regulation that are to be introduced in 2018-2020.

Financial stability is closely related to the NBU’s priority of price stability. Ensuring financial stability and the banking system stability is a core function of the NBU pursuant to the Law *On the National Bank of Ukraine.*

Financial stability depends on engagement of all branches of government and market participants. Safeguarding financial stability requires coordinated efforts from all stakeholders. This report makes recommendations to government bodies and banks on actions to enhance the resilience of the financial system and mitigate current and emerging risks.

This report is addressed primarily to financial market participants, authorities and those interested in issues of stability of Ukrainian financial system. The analysis and opinions presented in the report should help economic agents better understand current risks, their possible impact on financial stability, and the grounds for the regulator’s measures and intentions.

The Financial Stability Committee of the NBU approved this report on 8 December 2017.

Key findings

Overall, 2017 was a successful year for Ukraine's banking system; the system became more resilient and better capitalized. Banks turned profitable and secured more stable sources of funding. After a three-year pause, banks began lending again to households and corporates. The overall level of systemic risks within the banking sector was low. However, the banking system's further development is hampered by slow progress in structural changes in the economy, the lackluster performance of state-owned banks, and a weak legal system. Those factors impair the efficient redistribution of financial resources and hinder a recovery of lending.

The macroeconomic environment has not changed significantly in the last six months. Economic growth has remained slow, while consumer and investment demand have recovered rapidly. That recovery will serve as the basis for the acceleration in GDP growth to more than 3% in 2018. The volatility of the hryvnia exchange rate was moderate, while inflation overshoot the NBU target. Against this background, long-term lending is held back by high inflation, which makes efficient pricing of banks' long-term assets and liabilities impossible.

The NBU expects inflation to slow next year, but acknowledges the emergence of new risks to inflation. Seeking to mitigate the effect of those risks and bring inflation back to its target level, the NBU raised its key policy rate twice by total of 2 pps to 14.5% in late 2017. Despite those rate hikes, the NBU continues to see a long-term downward trend in interest rates, especially loan rates.

Suspending Ukraine's cooperation with the IMF would pose the largest risk to the country's financial stability. Without financial aid from international institutions, Ukraine would find it difficult to rollover the more than USD 20 billion of sovereign and state-guaranteed FX debt maturing in 2018-2020. The NBU deems it necessary to start negotiating on a new lending program with the IMF before the current EFF expires in 2019. A new program would not only help refinance Ukraine's outstanding debt but also generate additional momentum for reforms.

In the real sector, overall solvency is recovering. Companies in most industries increased their operating profits, which helped them normalize their leverage. Companies are generating sufficient revenues to service debt in a timely manner, with more new borrowers becoming attractive to lenders. The financial standing of companies in the real sector has ceased to be a drag on the lending recovery. At the same time, banks have tightened their criteria for assessing borrower solvency by requiring from borrowers full disclosures of ownership structures, reliable financial statements, and liquid collateral.

Recovery in bank lending has started in retail segment. Banks significantly expanded their retail portfolios, with household demand for loans being driven by rising household nominal incomes in the aftermath of the crisis. Ukraine ranks last among European countries in terms of retail lending penetration, with loans-to-GDP of just 3.6%. Even accounting for its less-developed economy, Ukraine's penetration rate is still low. Growth in unsecured loans has surged recently; these loans are low in value and sometimes have an effective rate of over 40%. Secured long-term mortgage lending is minimal, accounting for less than 5% of new loans.

By NBU estimates, lending to households has had an insignificant impact on private consumption. Therefore, bank loans have not created significant risks to an acceleration of inflation or an increase in the deficit of the current account of the balance of payments. However, in the next few years, lending may grow by more than 25% annually, which would pose a risk to banks and would carry negative macroeconomic effects. Therefore, the regulator will remain vigilant about retail lending in the coming years. Should the regulator

deem it necessary, it may tighten credit risk assessment standards for banks for retail loans and introduce macroprudential policy instruments to limit their growth.

Persistently high interest rates are holding back the mortgage lending revival, however, mortgages are projected to become more affordable starting next year. Poor collateral foreclosure processes in the event of a loan default is the main impediment to medium-term growth in mortgage lending. If the process is not reformed, affordable mortgage lending will remain beyond reach.

Currently, the banking sector faces two major challenges: the dominant role of state-owned banks and the large proportion of NPLs in bank loan portfolios. The strategy for the development of the public banking sector must be finalized as soon as possible because any delay may result in an additional burden on the budget to cover the banks' potential future losses. The strategy must outline a clear timeframe for reducing the state's participation in the banking sector. Simultaneously, banks need to enhance their efforts to resolve NPLs by using resolution mechanisms and write-offs. The NBU is developing the legal framework to launch a functional secondary market for problem loans in Ukraine.

In the near-term, the key challenge for banks is the implementation of IFRS 9. The transition to the new standard may have a material, one-time impact on banks' equity. Banks' regulatory capital will be less impacted as it is determined based on prudential provisions (credit risk pursuant to Resolution No. 351). The NBU will analyze banks' financial statements for Q1 2018 to assess whether they need more time to comply with minimum capital adequacy requirements upon transition to IFRS 9.

During the crisis period, the NBU focused its efforts on normalizing the operations of the banking sector. Now, the regulator is prioritizing the establishment of adequate requirements for capital and liquidity to limit the impact of any future crisis on banks. Starting next year, the NBU will step up its efforts to align the requirements for Ukrainian banks with the Basel recommendations and European directives. To accomplish that goal, the NBU will introduce LCR, a new liquidity ratio, next year to strengthen banks' resilience to outflows of funds. Banks will also be given the opportunity to review the draft regulation on the new structure of regulatory capital and the eligibility criteria for its components. All the novelties will be introduced upon a detailed quantitative analysis of their impact on the banking sector.

Annual stress testing will be introduced and will form an important element of the new approach to enhancing the resilience of banks. Independent auditors will be engaged to assess the quality of assets of all financial institutions, and the NBU will independently perform stress tests. Banks jointly accounting for more than 90% of the banking sector by assets size will be stress-tested.

The NBU will also work to enhance the disclosure standards for financial and prudential reports by banks. Starting in 2018, the regulator will begin publishing reports on the structure of banks' regulatory capital and will further tighten disclosure standards. The NBU strives to ensure the full transparency of banks' operations and financials.

Banking Sector Risk Map

The assessment of most risks to the banking sector have remained unchanged in H2 2017.

Credit risk has decreased moderately from the levels assessed in June, mostly on an improvement in the financial standing of corporate and individual borrowers. New loans have a low default rate and low credit risk. Therefore, as lending picks up, the share of non-performing loans should decline further, even though that decrease will be slow.

Capital adequacy risk has not changed. The NBU expects a one-time decrease in equity and regulatory capital in the banking sector in early 2018 after IFRS 9 is introduced. However, this will not have a substantial impact on the capital adequacy of most financial institutions. Some state-owned banks will need additional capital.

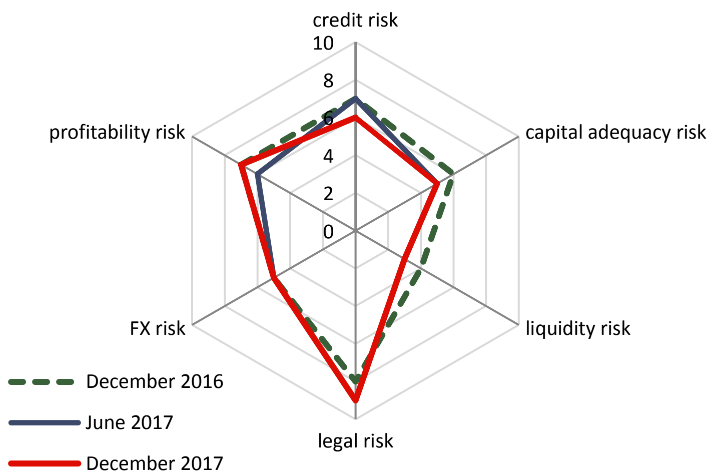
Liquidity risk remains low as banks have enough high-quality liquid assets on their balance sheets. Financial institutions are gradually allocating their liquidity to lending.

Legal risks remain high. The rights of creditors are poorly protected both in terms of legislation and its enforcement. Members of parliament regularly register new draft laws that could significantly deteriorate the business environment for banks and lead to additional budget expenditures.

Foreign exchange risk is moderate. The FX portion of the loan portfolio is gradually shrinking. Banks are more prudent in assessing risks related to FX loans. Shifting to IFRS 9 will lead to a change in the assessment of open currency positions. The NBU believes banks will be able to spread that change out over several months.

Profitability risk has not changed. Although the banking system has turned profitable after three years of losses, the low operating efficiency of state-owned banks remains a risk factor.

Map for the banking sector risks*



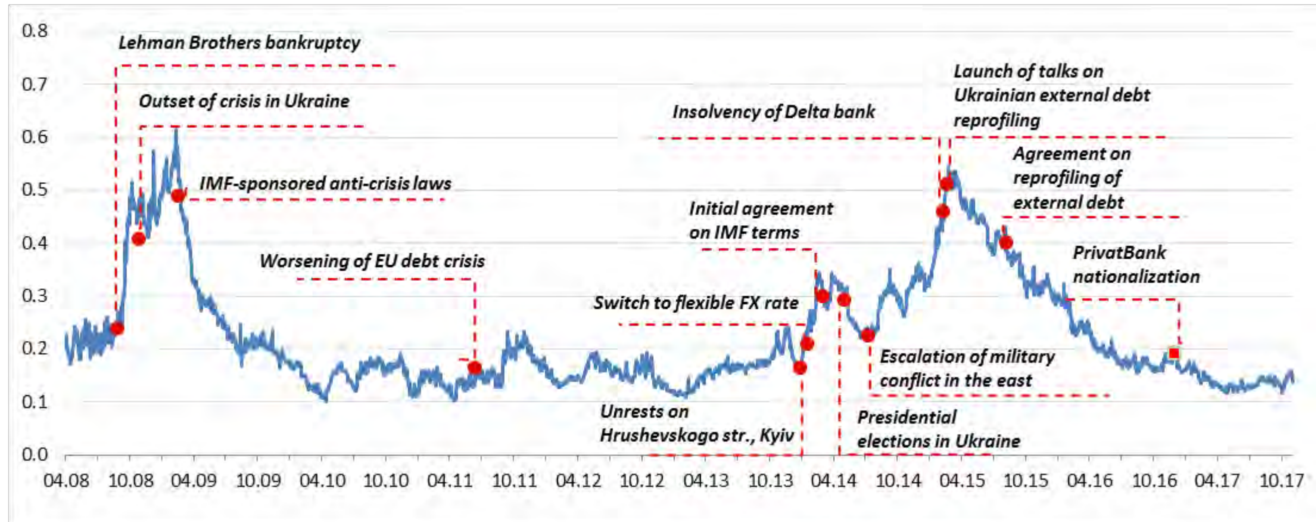
** The NBU assesses risks on a scale from 0 to 10, where 10 represents the highest risk.*
The assessment reflects the situation expected over the next six months.

Source: NBU estimates

Notes:

Credit risk reflects expected changes in the share of non-performing loans in banks' loan portfolios and the need for extra provisions for those loans.
Capital adequacy risk measures the ability of banks to maintain an adequate level of capital.
Liquidity risk is a measure of the capability of banks to meet their liabilities to depositors and creditors on time and in full.
FX risk is the risk that foreign exchange market trends will impact the financial results of banks.
Profitability risk reflects the ability of banks to generate net profit.
Legal risk estimates the ability of banks to use legal instruments to effectively protect their rights.

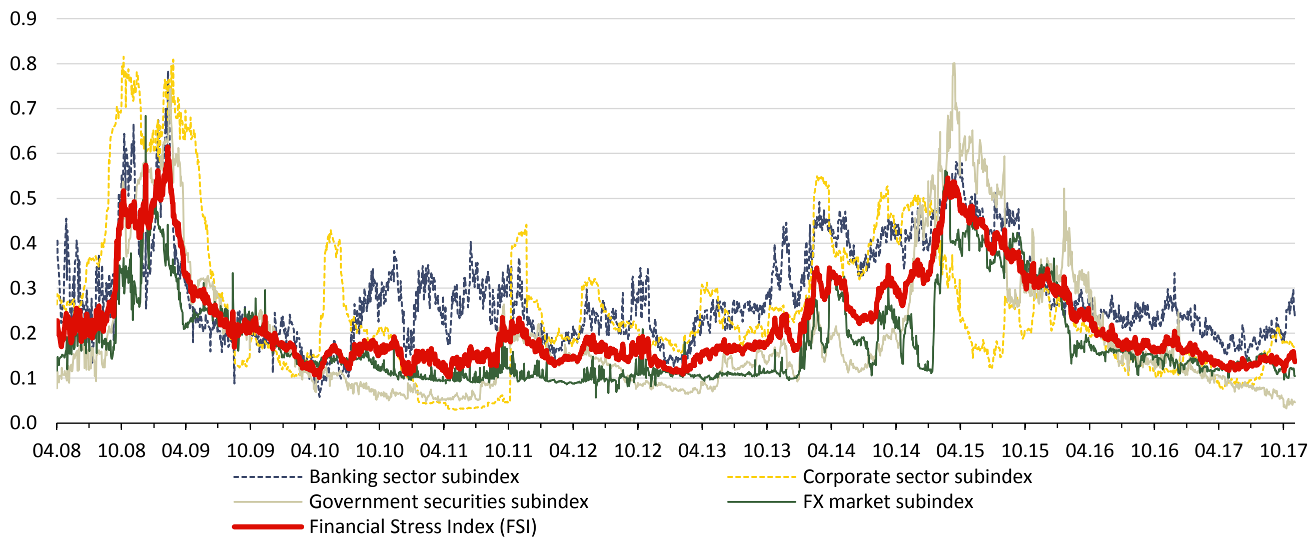
Financial stress index



Source: NBU

The Financial Stress Index (FSI)[1] is at the same level as six months ago and near historical lows for the period for which the index is calculated. The FSI was moderately volatile in H2, mainly from movements in the banking sector sub-index as retail deposits have flowed in at uneven rates, and from the corporate securities sub-index, due to fluctuations in the WIG-Ukraine Index.

The index's current value does not signal the presence of significant stress factors for Ukraine's financial sector. It is worth noting that the index reflects the financial sector's current state; it does not offer an indication of the potential for risks to the financial sector that may materialize in the short- or long-term.



Source: NBU

[1] The calculation method for Ukraine's Financial Stress Index is outlined in the December 2016 Financial Stability Report.

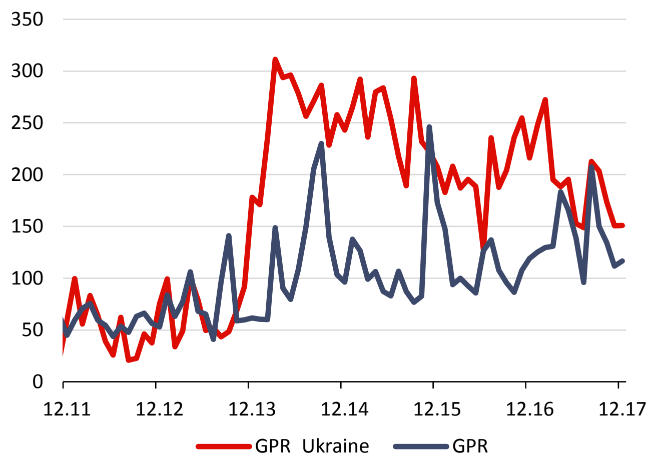
External conditions and risks

External conditions and risks

Overall, external risks have subsided for Ukraine. Global economic growth and an increase in financial and commodity market prices have helped reduce threats. Direct geopolitical risks have little changed. At the same time, mid-term risks to financial stability are gradually rising.

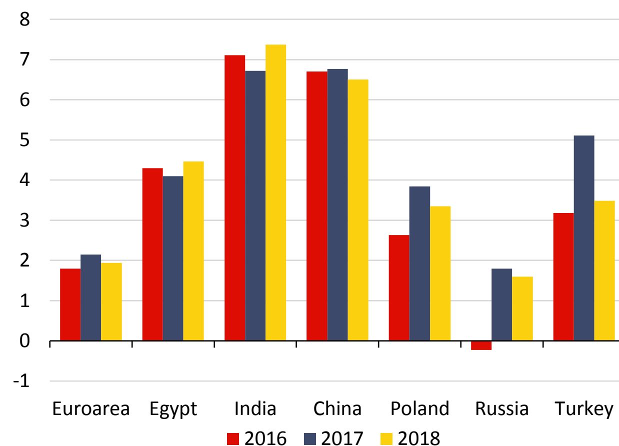
Global economic growth is accelerating as the economic outlook improves.
The pace of real GDP growth in the Euroarea picked up from 2.0% yoy in Q1 2017 to 2.5% in Q3 2017 and from 2.0% to 2.3% in the United States. The economies of most countries, including Ukraine's trading partners, are growing fast. Economic forecasts are improving. In October, the IMF raised its forecast for global economic growth for 2017 and 2018 by 0.1 pp. The IMF expects Euroarea GDP to grow 2.1% in 2017, the fastest pace since the start of Europe's debt crisis. The IMF has also raised its economic growth projections for Ukraine's largest neighbors – Poland, Turkey, and Russia – to 3.8%, 5.1% and 1.8%, respectively. That backdrop will help lessen external economic risks for Ukraine.

Geopolitical risk index (GPR)[2]



Source: Dario Caldara and Matteo Iacoviello

GDP of Ukraine's major trading partners, %



Source: IMF

Although geopolitical risks have increased slightly, they do not pose a direct threat to Ukraine.
Over the last six months, certain geopolitical risks have become less significant. These include populism in Europe and uncertainty around foreign and domestic policies of the Trump administration. However, some threats remain. For example, it is still unclear what form Brexit will take. This increases the probability of the UK's disorderly withdrawal from the EU, which would have adverse economic implications and could cause financial market turbulence as early as in 2018. The process of revising NAFTA is also fraught with difficulties – some analysts believe that some US proposals suggest it does not want to reach agreement whatsoever and is encouraging its partners to quit the talks. That suggests the threat of increased global protectionism remains.

New serious risks have also emerged, including an escalation of the conflict between North Korea and the United States, investigations into Russian interference into the U.S. presidential elections and the Brexit referendum, and the Catalan and Kurdish independence referendums. Although Ukraine is not directly exposed to those risks, they do divert the international media's attention away from Ukraine. The 2018 Russian presidential elections could be a factor in Russia's foreign policy creating additional uncertainty for Ukraine in the near future.

[2] The geopolitical risk index (GPR) measures the aggregate level of global geopolitical risks by calculating the instances of words related to geopolitical tension appearing in leading global and regional media publications. Dario Caldara and Matteo Iacoviello constructed the index. Separate indices are calculated for emerging markets like Ukraine. The index is used widely by international experts and by the IMF in particular.

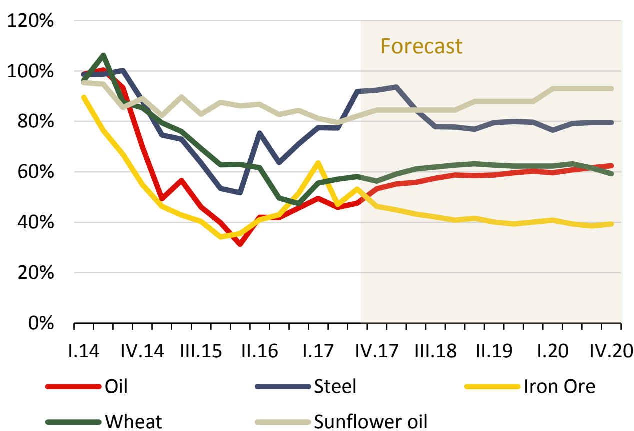
The Donbas conflict continues to smolder
The Minsk peace process does not promote progress towards resolving the Donbas conflict. The work of the Normandy Contact Group will likely resume only after a government is formed in Germany or after the presidential elections in Russia. Although the appointment of Kurt Volker as U.S. special representative for Ukraine intensified the US-Russia talks on the Donbas conflict, it has failed to produce any tangible results in resolving the conflict. New sanctions imposed on Russia by the United States and the European Union have not yielded the desired result so far.

Court rulings on matters important to Ukraine could be made in early 2018
Final court rulings in important litigations could be announced in the first half of 2018. The Arbitration Institute of the Stockholm Chamber of Commerce could close off the dispute between Naftogaz and Gazprom over the price of Russian gas and gas transit, while the High Court of Justice in London may resolve the dispute between Russian and Ukraine over former President Viktor Yanukovych's odious "debt." Considering the large financial sums at stake, the court proceedings will remain in focus.

Movements in global commodity prices are not cause for significant concern yet
Movements in global commodity prices have turned out to be more favorable in 2017 than had been expected at the end of 2016. The growth in energy prices has been more moderate than expected: an increase in oil and gas production in the U.S. and renewed oil supply from Nigeria and Libya affected the market more than production cuts by OPEC, natural disasters, and geopolitical tensions. European steel prices hit the highest level since September 2014. Iron ore prices edged down following the significant increase that took place at the start of the year.

Steel and iron ore prices are expected to fall in 2018. If that happens, a decline in FX proceeds from those raw materials could be offset by growth in food prices due to the poor global harvest in the current marketing year. In 2018, energy prices may grow faster than the NBU initially expected.

Global commodity prices*, 1 January 2014 = 100%



** Brent oil; steel square billets; iron ore concentrate, China; wheat, global quarterly average.*

Source: NBU

Performance of MSCI share indices, 29 Oct. 2007 = 100%*****

*** Indices of US dollar-denominated shares: MSCI WORLD – for 23 developed markets; MSCI EM - for 24 emerging markets.*
**** 100% equals MSCI World pre-crisis maximum.*
Source: Thomson Reuters

Demand for emerging market assets has been strong in 2017
Emerging markets are experiencing steady inflows of capital. In October, the Institute of International Finance (IIF) estimated capital the inflows in 2017 at USD 1.1 trillion, up 53% yoy. Asset prices are rising: over the first ten months of the year, the MSCI EM Index returned 32%, nearly double that of the MSCI World Index. That wave of capital inflows is spurring multiple securities issues. Ukraine has jumped on that opportunity: in September, the Finance Ministry issued USD 3 billion in 15-year Eurobonds.

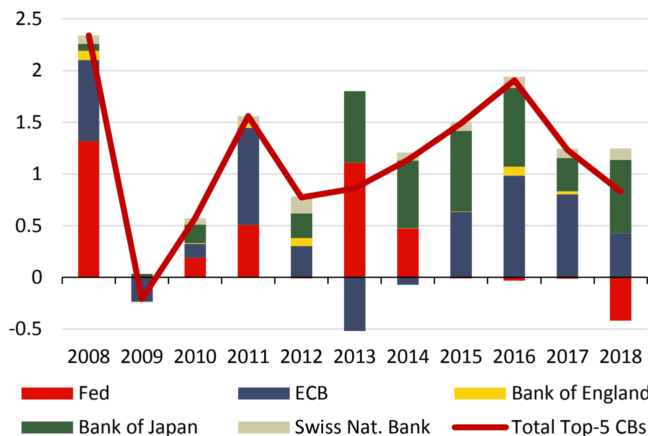
Despite the strong growth of asset prices, it is too early to speculate about a bubble in emerging markets. The MSCI EM Index is 15% below its pre-crisis high (in U.S. dollar equivalent). The IIF sees capital inflows to emerging markets reaching USD 1.2 trillion in 2018. If that projection materializes, inflow growth will continue. That projection would deliver three consecutive years of growth, while asset prices will test global pre-crisis highs. Those highs will make emerging markets more sensitive to negative news flow.

Tighter monetary policy could harm developed markets

The U.S. Federal Reserve raised its key interest rate twice in 2017 and has communicated its expectation of several rate hikes for 2018. It has also announced plans to gradually reduce its balance sheet, accelerating the shrinkage rate to USD 50 billion per month by the end of 2018. Starting in 2018, the European Central Bank (ECB) will halve its monthly asset repurchases to EUR 30 billion. That will significantly decrease the overall scope of quantitative easing in 2018. The largest contribution to quantitative easing will be made by the Bank of Japan, which has not revealed its broad plans, even though it does plan to cut its money issue. It is likely that global quantitative easing has moved past its peak.

The asset prices in developed economies are going up. The MSCI World Index is 23% above its pre-crisis level. The cyclically adjusted price-to-earnings ratio for the S&P 500 Index exceeds its 1929 and 2007 peaks, but is still lower than the high it reached before the dot-com crash. Housing prices in some developed and emerging economies are above the levels seen before the 2007-2008 crisis. The prices are high partly due to the low interest rate environment. Continuous quantitative easing can keep prices at current levels or cause prices to grow significantly. However, if central banks start to hike interest rates and reduce balance sheets, fundamental factors will gradually stop supporting current price levels. That would make developed markets sensitive to any negative news flow, which would increase risks for emerging markets.

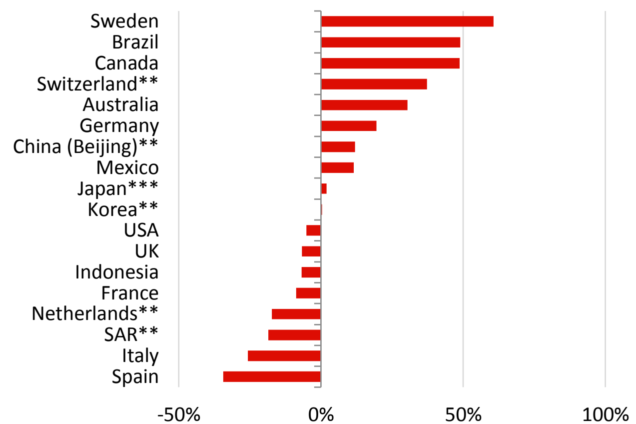
Change in the balance sheets of the largest central banks*, USD trillion



** Annual growth is the difference between the balance sheet currency at the start and end of the year in U.S. dollars equivalent. 2018 data – NBU estimates based on FRS and ECB statements and extrapolations of the current year's developments for other banks.*

Source: Central banks

Growth in real housing prices over the last 10 years, %



** Real price increases from Q4 2007 through Q2 2017.*
*** Through Q3 2017.*
**** Growth in Japan from Q2 2008 through Q1 2017.*

Source: Federal Reserve Bank of St. Louis

In 2017, financial stability recovered throughout the world

Rebounding financial markets, new macroprudential requirements, and systemic financial institutions earning profit again were the key drivers of the recovery. On the other hand, mid-term risks are rising markedly. Lending has picked up sharply amid favorable conditions: the IMF estimates that the debt of the G20's non-financial sector has exceeded pre-crisis levels. However, rising asset prices will need to correct in the mid-term. Against this backdrop, the mid-term external financial risks for Ukraine remain quite high.

Domestic conditions and risks

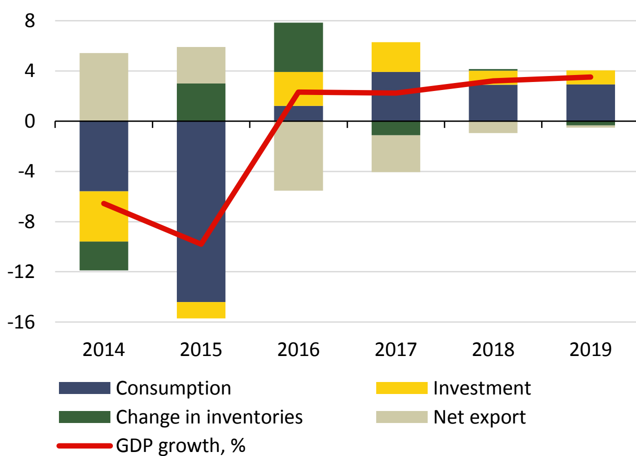
Macroeconomic conditions and risks

Macroeconomic conditions are stable and favorable for a recovery of the financial sector. The NBU expects economic growth to accelerate, driven by consumption and investment. Global raw commodity and capital market conditions are generally benign, but the economy is susceptible to external shocks. A continuation of positive trends and resilience to potential shocks greatly depends on continued cooperation between Ukraine and the IMF. Insufficient external funding would substantially raise risks to financial stability, which may hamper economic growth over the medium term. Ukraine must work to not only continue its financing relationship under the EFF program, but also to secure a new IMF program in 2019.

Economic growth is expected to accelerate next year
The NBU estimates real GDP will grow 2.2% in 2017, near last year's level. However, different sectors are recovering at different speeds. Industry is recovering the slowest: production remains practically at 2016 levels. Construction and trade are growing fastest. On the demand side, economic growth has relied on robust investment activity and higher consumption spending, driven by increased living standards and wages. Those two factors are expected to boost GDP growth to 3.2% in 2018.

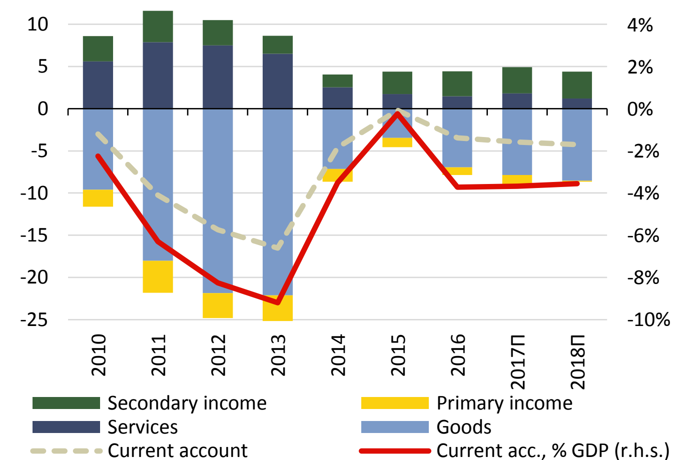
Households and businesses are improving their outlooks. GfK Ukraine's Consumer Confidence Index posted a 62.6 reading in October, +11.0 pp yoy and +3.6 pp mom. According to the Business Outlook Survey by the NBU, the balance of expectations for an increase in the production of goods and services in Ukraine stood at +21.2% in Q4, the highest level in the past seven years. Wages continue to grow rapidly: in October, average nominal and real wages have grown 37.9% and 19.9% yoy, respectively. It is probable that an increase in the minimum wage (+16% as of the start of 2018) will not be the main driver of continued wage growth, but rather the need to compete for employees. Competition may intensify on the back of stronger domestic demand for labor, higher labor mobility, and foreign employment opportunities. Continued growth in household incomes will also bring an improvement in consumer expectations, a recovery of corporate profits, and a revival of consumer and corporate lending.

GDP growth, expenditure approach, pp



Source: NBU

Current account balance, USD billion



Source: NBU

The current account deficit is moderate
Balance of payments indicators remain in-line with the NBU's projections. The current account deficit stands at USD 3.3 billion over the first 10 months of 2017 and is expected to come in at approximately USD 4.0 billion as of the year-end. That would leave the current account deficit below 4% of GDP for the fourth year in a row. Net financial account inflows are offsetting the current account deficit. Since the start of the year, net financial account inflows have been largely driven by foreign currency cash from outside the banking system. Foreign direct investment was another major driver of net financial account inflows, reaching

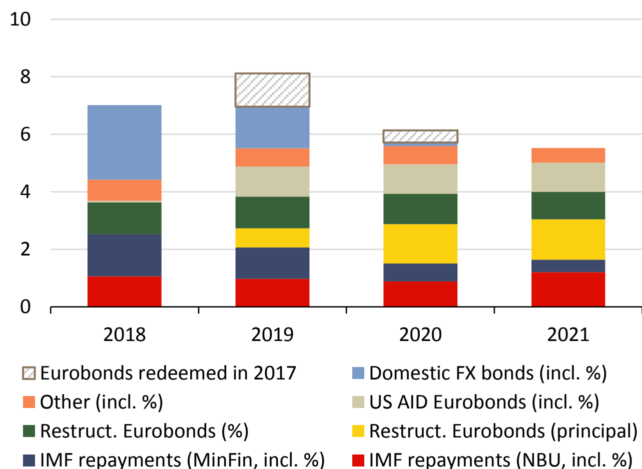
USD 2.1 billion over the first 10 months of the year and exceeding the NBU's forecasts for 2017. Overall, balance of payments indicators will remain acceptable: the current account will register a moderate deficit, which will be fully offset by inflows to the financial account. That is the baseline scenario, based on Ukraine continuing to receive financing from the IMF.

Suspending cooperation with the IMF would constitute a risk to financial stability
In March 2015, the IMF approved a four-year Extended Fund Facility program for Ukraine in the amount of USD 17.5 billion (12.3 billion SDRs). So far, Ukraine has received four tranches for a total USD 8.7 billion (6.2 billion SDRs), with the last tranche issued in April. Since then, Ukraine has not met all of the IMF's requirements for the next review. The government has introduced the reform of the pension system, which has been one of the IMF's main demand. However, progress in other reforms has been insufficient. The NBU expects Ukraine will receive USD 3.5 billion in two additional tranches by the end of the current EFF program. If so, the total amount received would reach USD 12.2 billion.

Over 2018–20, Ukraine is due to repay approximately USD 20 billion under public and publicly guaranteed debt (principal and interest/coupons), along with USD 5 billion in debt held by state-owned companies. Additionally, USD 1.68 billion has already been rolled over via an issue of a new sovereign Eurobonds in September last year. Approximately 30% of USD 20 billion represent repayment of the previous IMF loans. Those are significant amounts given Ukraine's current international reserves (USD 18.9 billion as of the end of November) and inflows via the financial account. Any interruptions to future cooperation with the IMF could carry significant consequences:

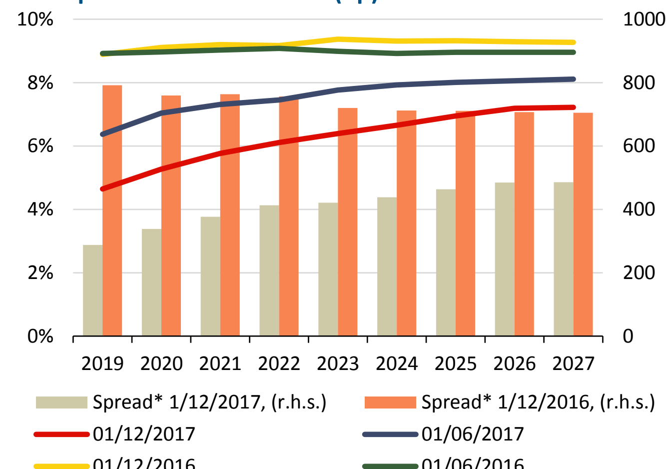
- Cooperation with other international financial institutions and governments could be suspended: programs from different IFIs are often interrelated and require Ukraine to meet similar or identical conditions.
- Investors could cut their assessments of the government's financial position, leading to an increase in the risk premium on Ukraine's public debt. That could boost yields for new sovereign bonds or virtually close Ukraine off from access to capital markets if global market conditions were to deteriorate. Most investors in the September issue of Ukrainian Eurobonds (USD 3 billion) assumed that Ukraine would continue to cooperate with the IMF (read more in the Inflation Report).
- Quasi-sovereign issuers – state-owned banks and companies – could lose access to external capital markets.
- The interest of foreign investors to the private sector could drop, leading to lower inflows of private debt capital and foreign direct investment.

Public and publicly guaranteed FX debt repayments, USD billion



Source: NBU estimates

Yield curve of Ukrainian sovereign Eurobonds in 2016–17 and their spread to US Treasuries (bp)



** The difference between yields on Ukrainian sovereign Eurobonds and US treasury securities of the same maturity. This reflects the premium investors require to invest in Ukrainian debt.*

Source: Bloomberg

A lack of IMF financing could significantly change Ukraine's macroeconomic prospects. A lack of IMF financing would increase the probability of a decline in the NBU's international reserves, a hryvnia depreciation, an acceleration of inflation and it would restrain economic growth over the medium-term. This would directly and negatively affect the banking sector financial performance. For this reason, without cooperation with the IMF, the NBU may be forced to pursue a tight approach to monetary policy to maintain macroeconomic stability, as well as impose new administrative restrictions on the foreign exchange market. The scenario would be even worse if a lack of an IMF program were to be combined with a deterioration of the external environment or an escalation of the conflict in eastern Ukraine.

To reduce the risk of external debt refinancing and related threats to financial stability, Ukraine should start negotiating on a new program with the IMF before the current program expires in early 2019. This is crucial not only for macro-financial stability and sufficient external financing, but also to maintain momentum in reforms. The design of the current EFF program laid the base for the structural reforms that have been on the table for decades. That proves that combining internal reforms with expert and financial support from international financial institutions can yield strong results.

Fiscal sector and related risks

Fiscal risks remained moderate in 2017 amid Ukraine's economic recovery, which drove robust growth in budgetary revenues. Over the coming year, the start of the election campaign is a risk that could manifest itself in budgetary revisions to allocate more funds to social spending. Ukraine's quasi-fiscal deficit persists because of additional capital injected into state-owned banks. The uneven spending of local budget funds, which causes annual volatility in the FX market in December, poses a significant problem. Efforts to resolve the issue have not been successful over the last two years. Only the implementation of long-term budget planning can address the issue.

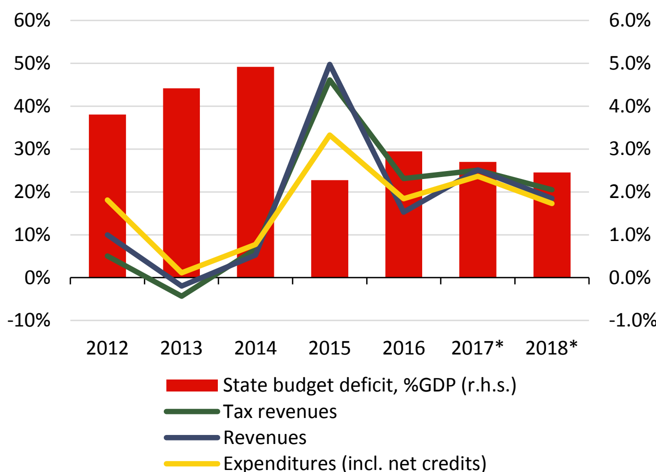
The fiscal deficit remains within acceptable limits

In 2017, state budget revenues and expenditures did not pose significant risks to the financial system. The targeted budget deficit was achieved as the government pursued a tight approach to fiscal policy. The deficit target, per the latest budget revision, will end up at approximately 2.7% of GDP, in-line with the IMF's target. This will be driven by an increase in corporate earnings and household incomes, and moderate spending in the first half of the year. Non-tax revenues, such as dividends paid by state-owned companies (mainly Naftogaz of Ukraine) and the funds confiscated from individuals associated with former President Victor Yanukovych, made a notable contribution to 2017 budget revenues.

Domestic government bonds held by the NBU were reprofiled in October 2017, which marked an important step in managing the liquidity of the government's finances. Bonds worth UAH 219.6 billion were exchanged for new securities with longer maturities. A portion of the new domestic government bonds with a face value of UAH 145.2 billion have a floating interest rate pegged to inflation. This will increase the government's incentive to promote price stability.

Last year, Ukraine's quasi-fiscal deficit persisted. The deficit does not have a direct impact on the state budget deficit, but it increases government debt, just like the budget deficit. Ukraine's quasi-fiscal deficit mainly consists of the domestic government bonds that were issued to inject additional capital into state-owned banks. In the first 11 months of 2017, the government spent UAH 48.9 billion, or 1.7% of GDP, to recapitalize state-owned lenders. The NBU believes the government will continue to provide capital support to those banks. PrivatBank alone may require an additional UAH 16 billion in capital, the second tranche of the total capital needs of UAH 38.5 billion revealed by an audit conducted after the bank was nationalized. Oschadbank also needs capital as the quality of loans to large business groups is deteriorating and the collateral against those loans is depreciating.

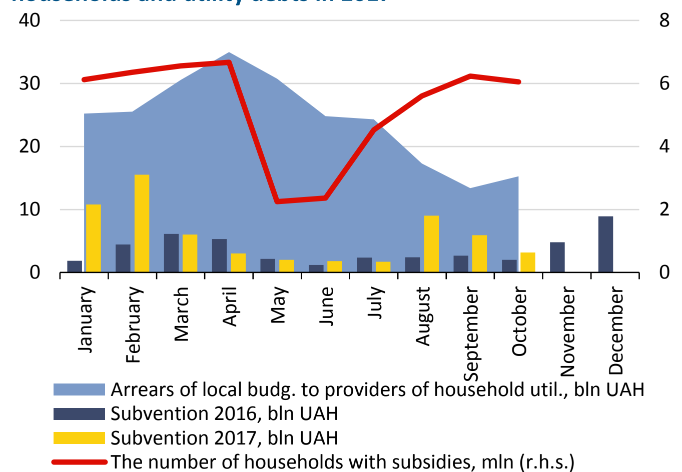
State budget revenues and expenditures, yoy change



** Calculated based on state budget targets for 2017–2018*

Source: STSU

Subventions to local budgets for benefits and utility subsidies to households and utility debts in 2017



Source: STSU, SSSU

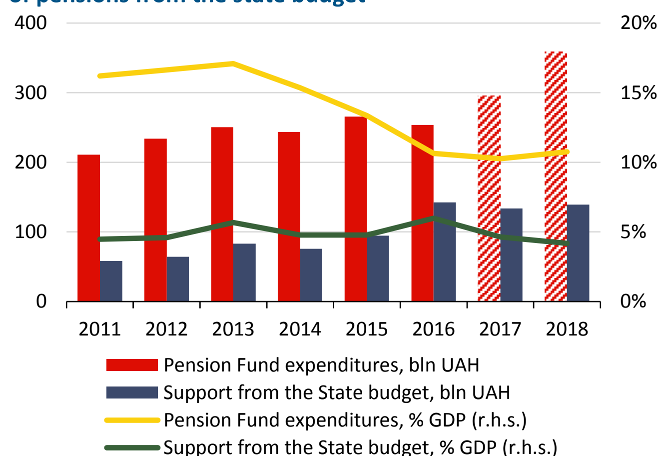
2018 budget: no easing of the fiscal burden expected

The state budget law for 2018 outlines an 18.5% yoy increase in total revenues, a 17.3% increase in expenditures (together with lending), and a deficit of 2.5% of projected GDP. Tax revenues are projected to grow 20.5% yoy. This is an ambitious target, and there is a risk that the target will not be fully achieved. Such plans also suggest the current fiscal burden on businesses will not be eased.

The government has decided to raise the minimum wage by 16.3% from the start of 2018, which is acceptable. The minimum wage may be hiked again over the course of this year. Any decision on an additional hike should only be made after a thorough analysis of benefits (incremental revenues for the budget and the Pension Fund and bringing the labor market further out of the shadows) and drawbacks (increased fiscal burden on businesses, especially SMEs, and higher inflation).

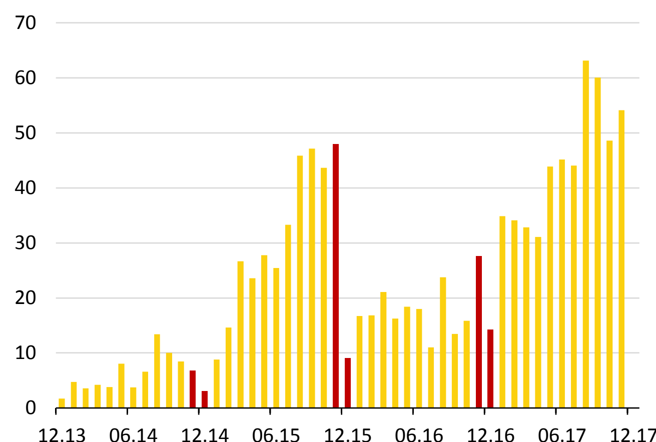
Over the course of 2017, reforms were initiated in the areas of pensions, education, and medicine, as well as the housing subsidy program. This created the need to alter the government's approach to budget expenditures. With several fundamental reforms initiated simultaneously, it will be difficult to assess the overall impact on the budget. Those reforms may prompt the government to overhaul budget spending projections for the year.

Expenditures of Ukraine's Pension Fund and budget financing of pensions from the state budget



Source: PFU, STSU, NBU estimates

Single treasury account balance, UAH billion



Source: STSU

One of goals of the pension reform is to gradually reduce the deficit of the Pension Fund. However, those efforts could widen the deficit in the short-run. That would occur if revenues from the uniform social contribution grow slower in 2018 than in 2017. The increase in the old age pension minimum and the pension modernization that occurred in October 2017 drove up monthly expenses related to pension payments by approximately UAH 7 billion. Growth in the payroll budget and the resulting increase in uniform social contributions may not be sufficient to deliver the expected growth in revenues to the Pension Fund. In that case, the Fund's deficit would grow.

The concentration of fiscal expenditures at the end of the year poses macroeconomic risks

Budget expenditures are typically substantially above average in December. This causes significant fluctuations in the balances of the single treasury account, which makes monetary policy less effective by generating additional inflation and depreciation pressure. The uneven distribute on of budget spending over the course of the year and volatility in single treasury account balances is largely caused by local budget policies. This is driven by the slow implementation of investment projects, which shifts the financing of capital expenditures to the end of the year. Adjusting to a more even distribution of expenditures would require mid-term budget planning and new approaches to liquidity management by the state and local budgets. Unless steps are taken to address the issue, FX market volatility will be a regular occurrence in December.

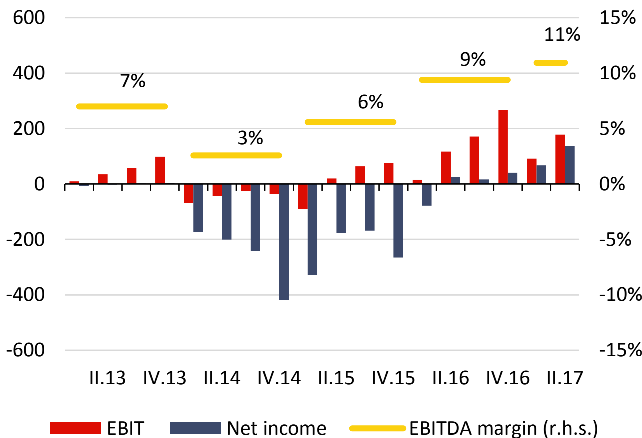
Real sector and related risks

The real sector's profitability has been growing for three years in a row. In 2017, the EBITDA margin averaged over 10% across the corporate sector. Currently, nearly all corporations earn sufficient operating profits to fully pay loan interest. In 2018, profits are expected to rise, risks to the real sector will be moderate, and only individual industries and companies may experience crises, not the entire real sector. Financial institutions are already interested in lending for the medium term to companies in the transportation, livestock raising, pharmaceutical, machine building, and mining sectors. In the trade sector, banks might be interested in pharmaceutical and agricultural companies. Overall, the financial standing of companies is no longer a barrier to lending for banks. However, other factors stand in the way of a lending recovery, especially the lack of legal protection for creditors and high level of loan interest rates.

Real sector profitability continues to grow

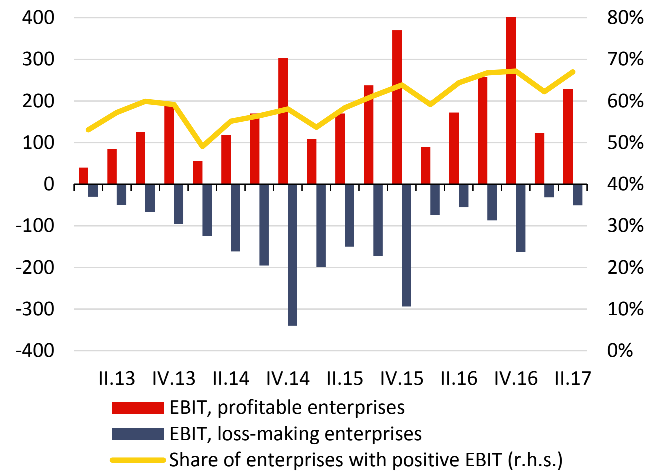
The profitability of the real sector has been recovering since Q2 2015. In H1 2017, the aggregate operating profit of Ukrainian companies[3] grew 52% yoy to UAH 178 billion and net profit increased 5.7 times yoy to UAH 137 billion. The EBITDA margin came in at 11%, 2 pp wider than in 2016. By the end of H1, companies that generated an operating profit accounted for 67% of all firms, up 3 pp yoy.

Financial performance of non-financial corporations, UAH billion



Source: SSSU, NBU

Operating profit/loss of non-financial corporations, UAH billion



Source: SSSU, NBU

Across nearly all industries, companies are able to service loans

The growth in profits has improved the solvency of banks' corporate borrowers. The real sector's interest coverage ratio[4] increased to 4.3 times as of the end of Q2 2017 from 2.3 times in mid-2016. The interest coverage ratio at profitable companies is even higher at 6.8 times. This resolves the problem of paying interest on previously received loans for companies in most industries: operating cash flows should be sufficient to cover those needs. This is a positive signal for banks, who can work more actively with problematic borrowers that defaulted during the crisis.

Metallurgy and construction are an exception. Metallurgy ended H1 with an operating loss because companies with production capacities in the non-government controlled areas (NGCA) generated losses. Developers are facing falling prices for real estate (especially residential), growing prime costs, and in many cases a debt burden accumulated before the crisis, which increases their financial expenses.

[3] Data does not include small enterprises.
[4] Calculated by dividing operating profit for the last 12 months by financial expenses for the last 12 months.

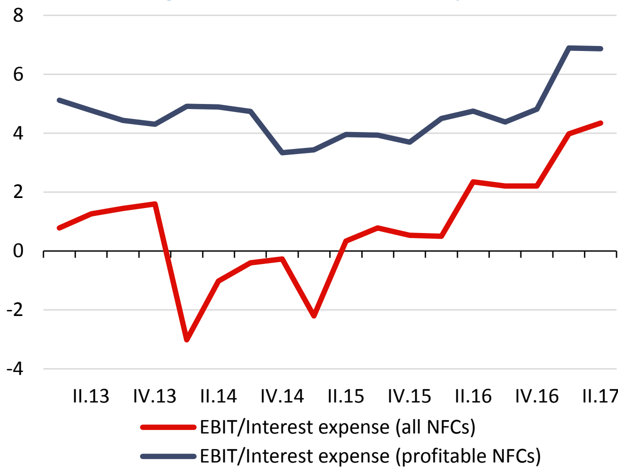
Energy, food, and light industries bear the lowest risk

In 2016, the EBITDA margin grew across all the largest industries except agriculture, which saw its margin fall 9 pp yoy to 31%. At the same time, agricultural production remains the most profitable sector and agricultural companies generally have no problem servicing debt and attracting new financing.

Profits in the energy sector grew thanks to higher rates for thermal power plants: in H1, operating profit grew 4.3 times yoy to UAH 15 billion. The energy sector will be exposed to minor risks in 2018. For electricity providers a new tariff calculation may be introduced - Regulatory Asset Base model. That would support profitability in the sector as the current model passes additional costs to consumers.

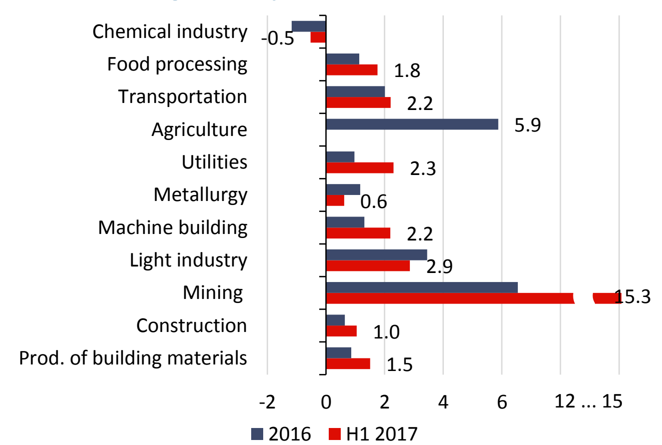
The risks in the food processing and light industries are low. Over the first nine months of 2017, food exports grew 26.3% yoy to USD 5.4 billion, mostly driven by seed oil industry. The forecast for global sunflower oil prices is favorable as global production will drop next year. Light industry exports increased 10.8% yoy over the first nine months of 2017. Profits in the food sector and light industries are expected to continue to grow on the back of rising domestic demand.

Interest coverage ratio of non-financial corporations



Source: SSSU, NBU

Interest coverage ratio by industries



** Production of chemicals, pharmaceuticals, rubber, and plastic.*
*** Production and supply of electricity and the provision of public utility services.*
Data for H1 2017 on agriculture is missing.

Source: SSSU, NBU

Profits also increased in the mining industry as gas production rent has halved since the start of the year. The EBITDA margin of the industry's leader – state-owned company Ukrgazvydobuvannya – increased to 62% over the first nine month of 2017 (+20% yoy), with increase in gas production 3.9%. Over January-September 2017 gas production by private companies has increased 1.5%, output is expected to grow in the near-term. In 2016–17, companies made large investments into geological exploration, drilling, and upgrading exploration and drilling equipment, which should boost gas output.

In the metallurgy, risks materialized at the start of the year. The suspension of trade with the NGCA was the only factor that restrained profitability growth in the sector. As the blockade began, companies gradually shifted to new sources of supply and thus reduced their operating losses in H1. The blockade's negative impact on the mining and metals industries will fade over time. Avdiivka Coke Plant has restarted operations. The shift to new suppliers (non-Russian) will help production in the sector recover. External market conditions are benign for metals producers: the growth in steel prices is expected to outpace price growth for the main raw materials – iron ore and coke.

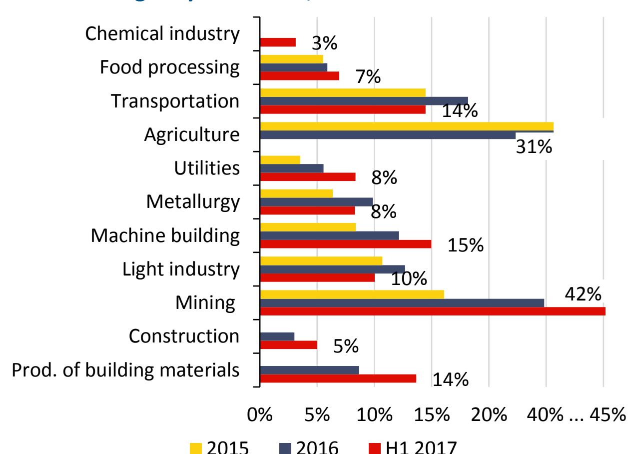
The situation in machinery production is improving, mainly on higher demand for equipment for agriculture and the mining and metals industries. JSC Ukrzaliznytsia may additionally boost the sector as it has a preliminary plan to invest UAH 36 billion in capital assets in 2018. The machinery industry's main risk is related to its lack of capabilities to produce modern and competitive equipment. As a result, machinery imports grew 34.8% yoy in 2016 and 31.3% yoy over January–September 2017.

Chemical industry and housing construction are the riskiest sectors

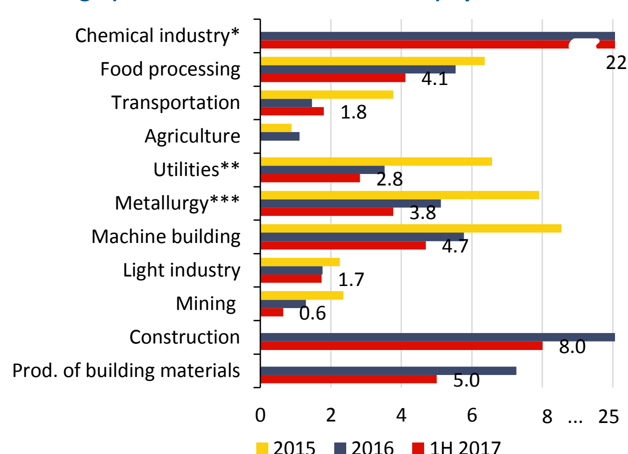
Growth in housing construction has boosted demand for building materials. In H1, the EBITDA margin grew more than one and a half times in both industries. The debt-to-EBITDA ratio declined but remained high, which means related risks remain. Construction of non-residential buildings and engineering structures – especially upgrades to production capacities – is the most promising activity. Over January-September, capital investments increased 27% yoy across all sectors, with agriculture and industry taking the lead. The growth is expected to continue. At the same time, the production potential in residential construction is limited, while risks are high.

The chemical industry is also at risk, excluding the pharmaceuticals, whose profitability is on the rise. Functioning of large fertilizer producers is unstable and they face high risks due to high and volatile gas prices for industrial consumers, outdated equipment, and weak financials that do not allow them to secure sufficient working capital to purchase gas. The agriculture sector covers its fertilizer needs with imports, mainly from Belarus. Chemicals imports grew 10.8% yoy in 2016 and 13.6% yoy over the first nine months of 2017.

EBITDA margin by industries, %



Leverage (debt-to-EBITDA for 12 months) by industries



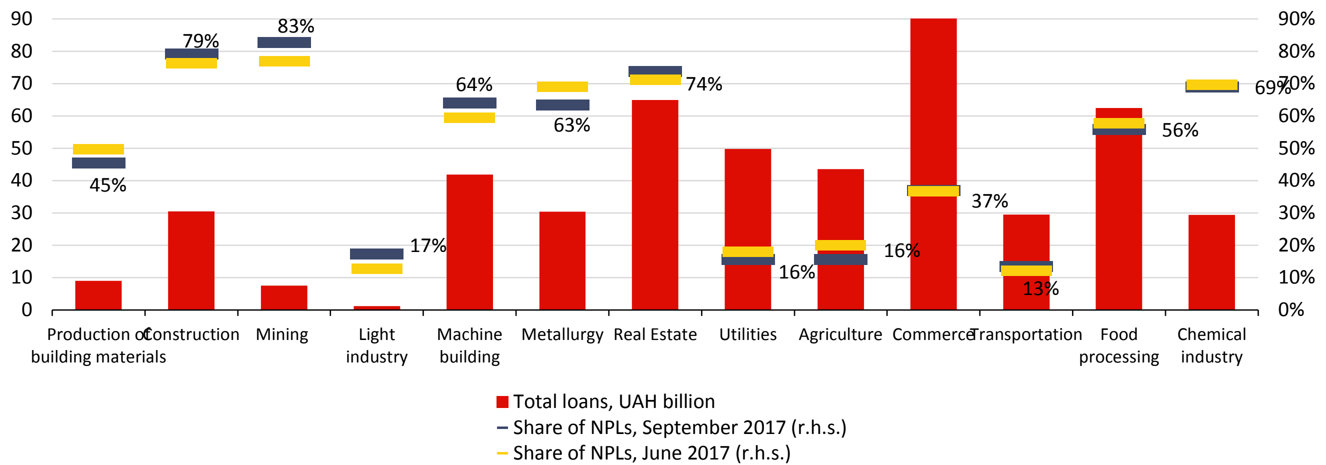
** Production of chemicals, pharmaceuticals, rubber, and plastic.*
*** Production and supply of electricity and provision of public utility services.*
**** Excluding Donetskstal Metallurgic Plant PJSC.*
Data for H1 2017 on agriculture is missing.
Negative values are not shown.

Source: SSSU, NBU

The situation with non-performing loans in the corporate sector has stabilized

Over the last six months, non-performing loans (NPL) in the real sector have not grown significantly. Light industry, the energy sector, transportation, and agriculture have the lowest shares of bad loans, while the construction, mining, and chemicals industries carry the highest shares of NPLs, mostly loans issued before the last crisis. A single large producer of pipes and several companies located in the NGCA account for a large portion of NPLs in the metals industry. At the same time, most metals companies have no problems servicing their bank loans.

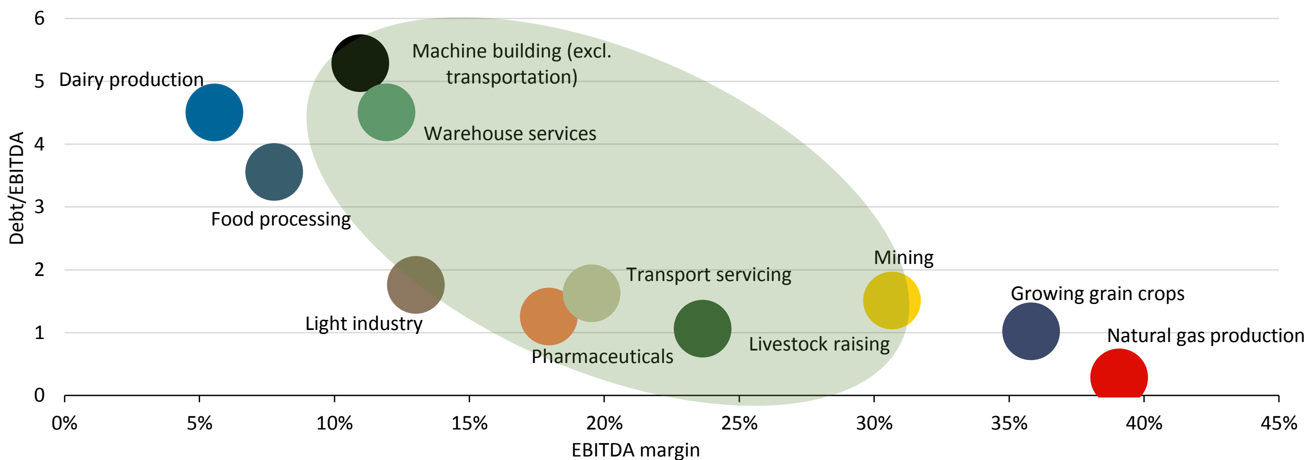
Non-performing loans of non-financial corporations as of September 2017



Source: NBU

Livestock raising, transportation, pharmaceuticals, mining, warehousing, and individual sub-segments of machinery production are ready to attract mid-term loans
Companies with above-average profitability and moderate debt loads are the most desirable medium-term borrowers. Judging from financial and debt indicators, several industries currently have the potential to borrow, with EBITDA margins of 10%-30% and debt-to-EBITDA ratios at a relatively safe level of less than 5 times.

Leverage and EBITDA margin in 2016



Source: SSSU, NBU estimates

The livestock raising sector is a promising one for lending. Ukrainian meat exports have been growing this year and export prices were favorable. That trend will continue as new markets are opened: Ukraine has secured a permit to sell frozen beef to China and is negotiating with Malaysia and other countries on similar deals. A decline in pig livestock caused by African swine fever is supporting profit growth in other industries, especially beef production (poultry companies are already profitable and solvent and have no problem attracting financing). With robust debt and financial indicators, livestock raising sector can service debt through operating activities.

Growth in global dairy prices has boosted Ukraine's exports of dairy products. Post-soviet countries are the main importers of Ukrainian production. The European market is already open for Ukrainian dairy producers, but they currently do not fill the duty-free quotas as allowed for by the EU-Ukraine Association Agreement. Non-tariff measures are the main reason. The need to bring production into compliance with EU requirements may increase demand for loans from dairy companies.

An increase in trade turnover has boosted the profits of companies in the transport servicing sector, especially port operators and sea freight support companies. Businesses in this industry are generally profitable and have low debt loads.

Pharmaceutical companies are expected to increase production. Competition with foreign producers creates demand for investment into R&D and, therefore, for investment loans.

Light industry also offers attractive lending opportunities. Companies in the sector have a low share of NPLs (17%) and low levels of bank debt. The sector has strong potential to replace imports from Belarus, Poland, and Turkey. Many light industry companies are profitable.

Growing profits in the agriculture and food sectors spurred the development of warehouse services (including grain elevators). Grain receiving and processing companies with grain and oilseeds crop storage assets are showing the highest growth in profitability. An increase in crop yields will prompt the construction of additional grain elevators and grain storage facilities.

The machinery industry may become interesting to lenders if its NPLs share decreases. The most promising domain is the production of equipment for certain industries like agriculture, metals, mining, and construction.

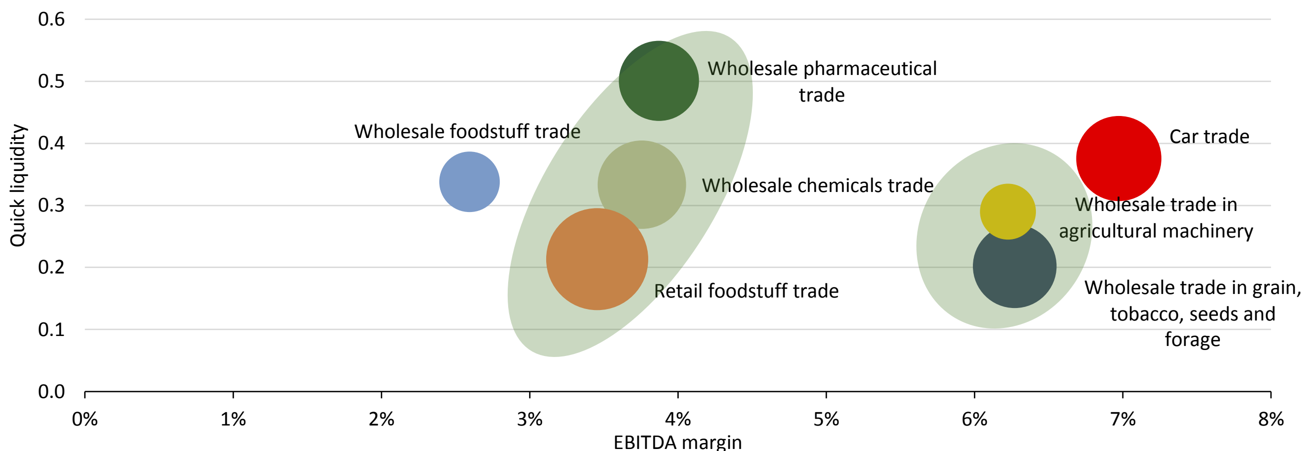
Private gas producers may show an interest in bank loans to finance exploration activities and drilling equipment purchases. Other mining companies may also borrow from banks, except for iron ore producers which have access to cheaper external financing.

Demand for banking loans of grain producers are almost fully satisfied. They will require additional working capital during the sowing campaign and the harvesting season, but will likely not need medium-term loans. Lending to farmers for agricultural equipment upgrades could prove promising.

In the trade sector, pharmaceuticals and agriculture are interesting sectors for lending. Trade in food products also has potential.

Banks may be interested in working capital loans for traders with moderate profitability and quick liquidity ratios [5]ranging from 20%-50%. Based on those indicators, effective demand for short-term loans may come from traders of foods, transport, agricultural equipment, pharmaceuticals, fertilizers, and agricultural products.

Quick liquidity and EBITDA margin in 2016



The radius of a circle represents turnover in a given trade sector.

Source: SSSU, NBU estimates

[5]The quick liquidity ratio determines a company's ability to service short-term liabilities (including loans) using liquid assets and cash. It is calculated by dividing the amount of accounts receivable and cash by current liabilities.

Profits in wholesale pharmaceutical trading is on the rise. The profitability of wholesale trade in industrial chemicals and fertilizers is also growing. Global prices for these products continue to rise on the back of increasing natural gas prices. Development of agriculture will promote demand for mineral fertilizers. Therefore, traders might be interested in short-term loans to purchase imported fertilizers.

Trade in grain, tobacco, seeds, and forage is developing thanks to increased domestic production and favorable global prices. Exporters can increase turnover and profit by taking out short-term bank loans to purchase grain from producers.

The profits of food traders are also growing on a pickup in domestic demand. Large retail networks are increasing the number of outlets, which is being enabled by a growing supply of new commercial real estate. Large international and local retailers do not need additional financing. Banks should consider lending to smaller regional networks trading in goods with inelastic demand.

Real estate market and related risks

Housing supply is growing rapidly, especially in the capital. Demand remains low, which has created a surplus in the market. If the trend continues, individual developers will face risks. However, those risks would not be a threat to financial stability. Mortgage lending is growing rapidly, but its development is restricted and volumes are limited, which makes its impact on demand insignificant. Eliminating legal barriers, especially facilitating collateral foreclosure, would be the first step towards using mortgages to stimulate demand.

New housing supply is growing quickly

Over the first nine months of 2017, 4 million sq. m of apartment housing was completed across Ukraine, 35% higher yoy. The number of construction permits issued for apartment buildings over the first half of 2017 grew 34% yoy, which paves the way for rapid growth in housing construction.

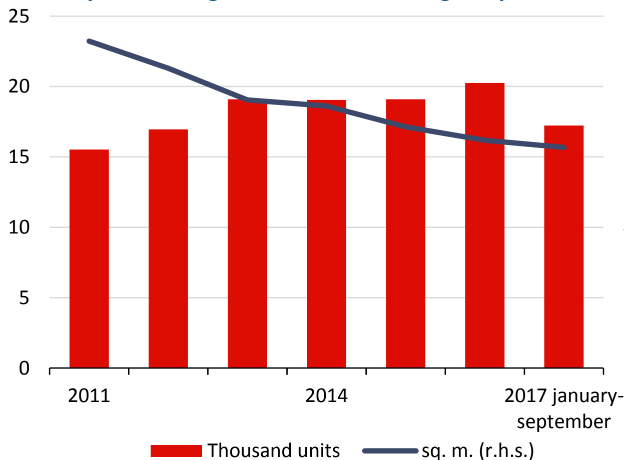
The trends are especially clear in the capital. In H1 2017, the number of newly built apartments in Kyiv almost quadrupled. This was partially driven by stricter legislation on apartment construction that took effect on 10 June 2017, as many developers pushed to finalize construction projects before the deadline to qualify under the existing rules. Over the first nine months of 2017, the quantity of newly built apartments in Kyiv grew 65% yoy.

In that period, the average area of new apartments in Kyiv decreased to 62.7 sq. m from 65.8 sq. m in January–September 2016. One-room apartments continued to lead the way with a 53% share of all new housing in the capital.

New housing in Kyiv is likely to continue growing rapidly for the full year. Insufficient control over construction activity and compliance with municipal planning standards are allowing the growth to continue.

According to City Development Solutions, a consulting company, over the first nine months of 2017, nearly 40,000 new apartments in different stages of construction were put up for sale in 36 new housing projects and 52 additions to existing projects. As of end-September, low-cost housing accounted for 67% of the primary market in the capital.

Quantity and average area of new housing in Kyiv



Source: Main Department of Statistics in Kyiv

New housing supply in Ukraine, million sq. m

Source: SSSU

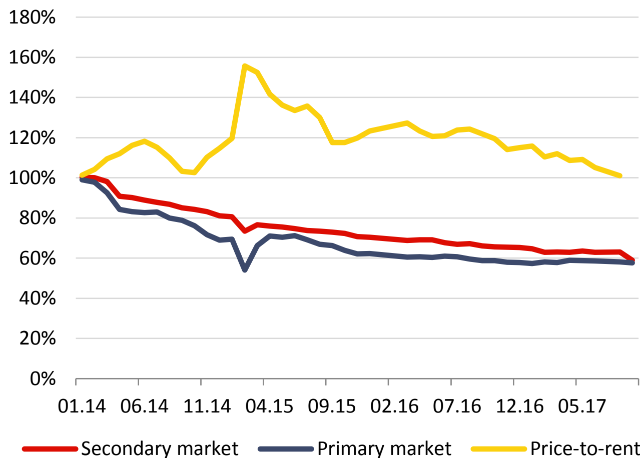
Housing prices continue to decline and approach critical levels

The robust supply of housing has pushed housing prices down. In September, the average price per square meter on Kyiv’s secondary market decreased 11% yoy in US dollars (down 16% yoy in Euro equivalent). A wide choice of new apartments drives down demand and prices for secondary housing. Primary market prices in Kyiv decreased only 1% yoy in September. At the same time, primary market prices declined 4% yoy in Lviv and 5% in Odesa,

showing that the downward trend in prices for residential real estate also exists outside of the capital.

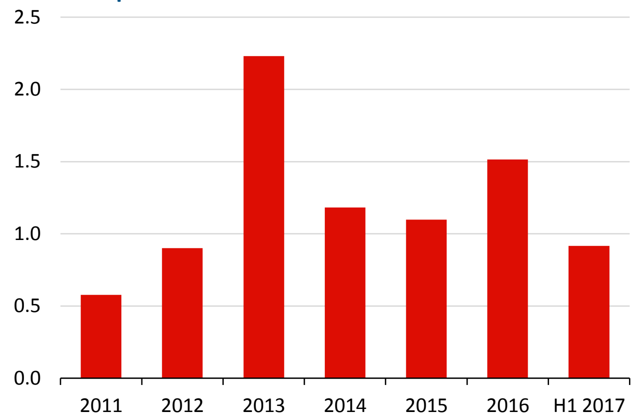
The cost of construction is growing alongside the decrease in housing prices. Ukraine's Ministry of Regional Development, Building, and Housing estimates that the average prime cost per square meter of housing in Kyiv stood at UAH 12,128 as of 1 April 2017. The ministry expects it to rise to UAH 14,340 in 2018. Prices for residential construction grew 15.0% yoy in September, according to the State Statistics Service of Ukraine. With market prices for housing coming down and construction costs on the rise, housing prices are nearly at the prime cost level. According to www.lun.ua, a search service, the minimum price per square meter of primary residential real estate in Kyiv was UAH 14,500 in September. By lowering prices to compete, developers are near the level at which new construction will generate losses, especially in the low-cost segment. To address that situation, construction companies have tried to reduce expenses and prime costs by cutting back on materials, design services, and the grounds around a building project. As a result, the quality of low-cost housing is dropping.

Housing prices in Kyiv in USD equivalent, December 2013 = 100%[6]



Source: real estate agencies, NBU estimates

Permits issued for apartment construction in Ukraine, thousand permits



Source: SSSU

Demand remains low

Despite growing nominal incomes, effective demand for real estate remains low. Lower housing prices in US dollars have made residential real estate more affordable only for some Ukrainians, especially those with large foreign currency savings or with incomes indexed to foreign currency. However, this has not been enough to boost demand.

In August, the average rent per square meter of housing in Kyiv grew 15% yoy in US dollars on the back of steady high demand for rental properties in the capital. Residential real estate has become more attractive as an investment not only for investors seeking long-term price growth but also for prospective rental owners. Given the needs of these buyers, some developers are offering small, turn-key apartment solutions. Declining yields on other investments, especially foreign currency deposits, have boosted the investment attractiveness of real estate.

Mortgage lending is growing quickly, but volumes remain minimal

Over January–September, UAH 963 million in new retail mortgage loans were issued. Although this represents 54% yoy growth, that volume of lending will not have a significant impact on demand.

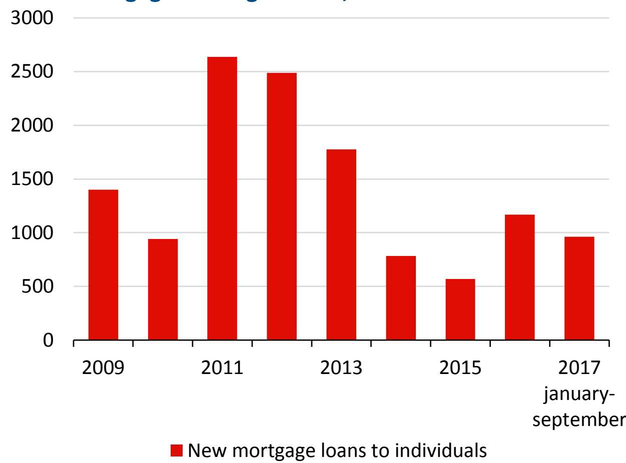
Mortgage rates are gradually declining. Hryvnia mortgage rates currently start at 19% annually, excluding partner programs between banks and developers. Mortgage rates are

[6] The price-to-rent is the ratio of the housing price to its rental price. The ratio is calculated using the formula: $\frac{Price\ per\ sq.m}{Rent\ per\ sq.m * 12}$

likely to decline further, but this will not spur the development of mortgage lending as rates are not the main barrier to greater lending. The problem of foreign currency loans issued prior to the crisis of 2008 has still not been resolved. In addition, creditors still do not have sufficient protection, similar to borrowers that belong to socially vulnerable groups. At solvent banks, more than 90% of foreign currency loans and more than 30% of hryvnia mortgage loans are non-performing, despite recent growth in new lending, mostly in hryvnia. As a result, the number of banks which are interested in mortgage loans is not growing.

Mortgage lending will remain undeveloped unless the legislation changes. Developers must consider that fact when planning projects. In this situation, banks must remain conservative when assessing the solvency of house buyers by sticking to the required level of the LTV (loan-to-value ratio, the ratio of principal to collateral market value) and the DSTI (debt-service-to-income ratio, the ratio of debt servicing expenses to confirmed income). Financial institutions must also consider the oversaturation of the housing market in Kyiv when making credit decisions.

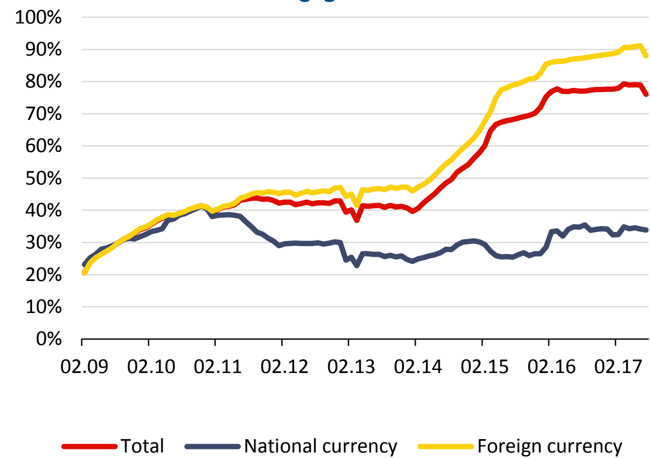
Retail mortgage lending volume, UAH billion*



** Without including individual entrepreneurs, only across solvent banks.*

Source: NBU

Share of NPLs in retail mortgage loans



Source: NBU

Excessive housing supply gives rise to numerous risks

The imbalance of housing supply and demand does not pose a systemic threat to financial stability, as investors and developers continue to mostly finance construction with their own funds, while attracting an insignificant amount of debt. However, risks are increasing for individual developers and therefore for individual banks. Several banks are exposed to real estate market risks by actively lending to developers and/or their buyers. The financials of the largest developers show their financial standing is robust.

A bubble refers to any sharp increase in real estate prices driven by booming demand and mortgage affordability. But the situation on the Ukrainian market is quite the opposite: prices have been falling for several years in a row amid limited demand and sluggish lending.

Demand must pick up and growth in supply must slow for the surplus on the housing market to ebb. Radical measures to restrain supply, such as a moratorium on new construction, are not good options as they would favor weak developers and companies focused on short-term profit that feed on price growth. There is a need for stricter quality requirements for new housing, better protection for primary market buyers, greater consequences for illegal construction, a new long-term strategy for urban development focused on infrastructure, and the commitment of developers to adhere to the requirements.

It is also essential to develop statistical reporting on the housing market, especially on prices and the number of deals on the primary and secondary markets. Publishing a sufficient amount of quality data will enable buyers, developers, and lenders to make fact-based decisions.

Households and related risks

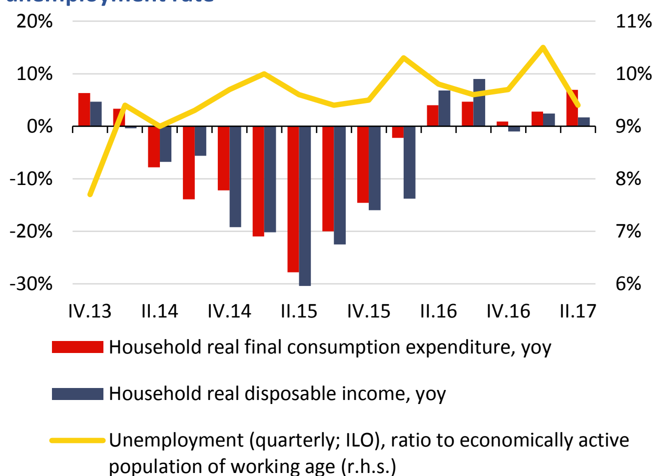
The growth of real household income has remained low, however wage increases and slowing inflation are expected to stimulate its growth in 2018. Households' leverage is low; less than 10% have outstanding loans. Household debt relative to disposable income has been falling over the last three years, but the NBU expects it to grow starting 2018. Banks began actively lending to the retail sector, with unsecured consumer loans accounting for the lion's share of loans. However, that activity did not drive consumption higher.

Real disposable household income grew, but at a slow pace

In H1 2017, real disposable income growth accelerated to 2.1% yoy from 0.3% in 2016. Income growth was driven by the doubling of the minimum wage, which prompted wage indexation in the private sector and budgetary social institutions. Wages remained the main source of income, accounting for 47.1% of all income in Q2 (40.9% in Q1 2015 – just before the crisis). With subsistence levels rising, recalculations of social benefits brought additional momentum to income levels.

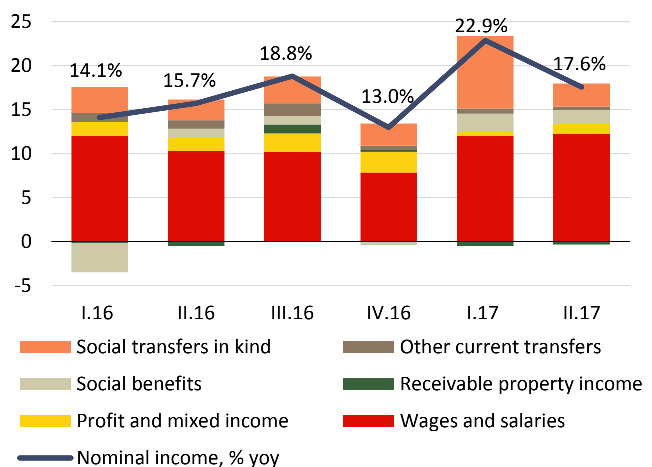
Growth of household income will be sustained thanks to further increases in minimum wages and social allowances. Wages in the private sector will rapidly grow on the back of fierce competition for workers. Provided inflation slows down to the target level, real household income will grow further, which, together with improved consumer expectations, will inspire demand for new loans. In addition, indexed wages create additional inflation risks mainly as a result of growth in consumer demand channels and rising production costs.

Changes of real household income and expenditure, unemployment rate



Source: SSSU

Nominal household income growth factors, pp

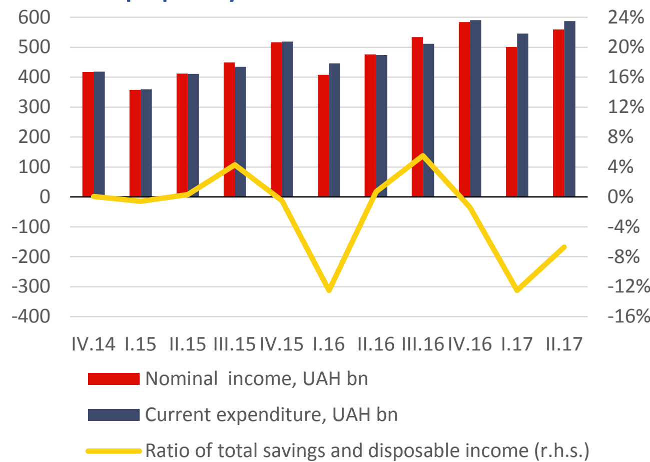


Source: SSSU, NBU estimates

Lending has not become the main driver of consumer expenditure yet

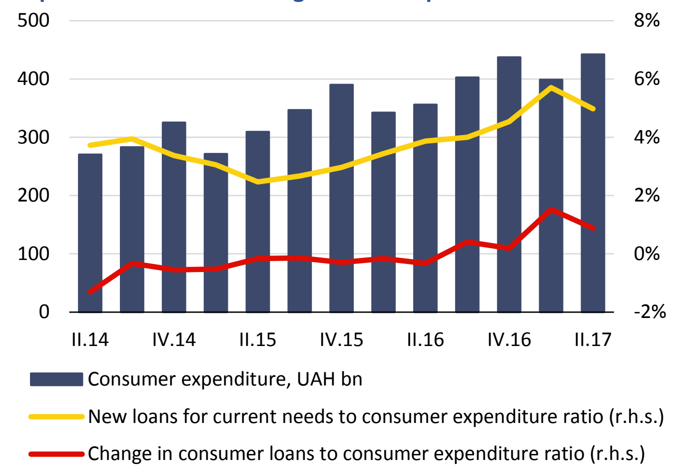
In 2017, consumer lending started to recover. However, that did not make a significant contribution to household consumer expenditure. In Q2, the ratio of new loans (disregarding repayments) to total consumer spending totaled 5.0%. The growth rate of the stock of consumer loans (loans received minus repaid loans), which increases the amount of funds channeled to consumption needs, accounted for 0.9% of consumer expenditure. That does not have a significant impact on the level of consumption and its trend. However, the impact is expected to strengthen, but still not pose risks to the financial system in the short-run.

Household propensity to save



Source: SSSU, NBU estimates

Impact of consumer lending on consumption*



** Data from solvent banks*

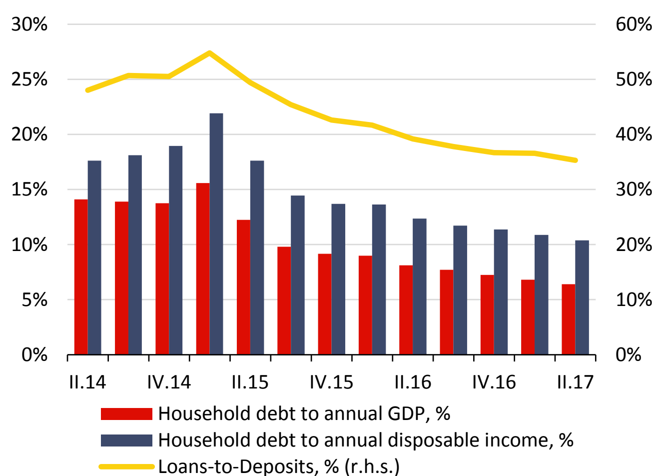
Source: SSSU, NBU estimates

In H1 2017, aggregate household savings decreased by UAH 72 billion. FX sales by the population accounted for over half of that amount: net FX purchases totaled UAH (-40) billion. Increased household debt for utility payments, which grew by UAH 5.3 billion, was another important factor.

The debt burden of households decreased

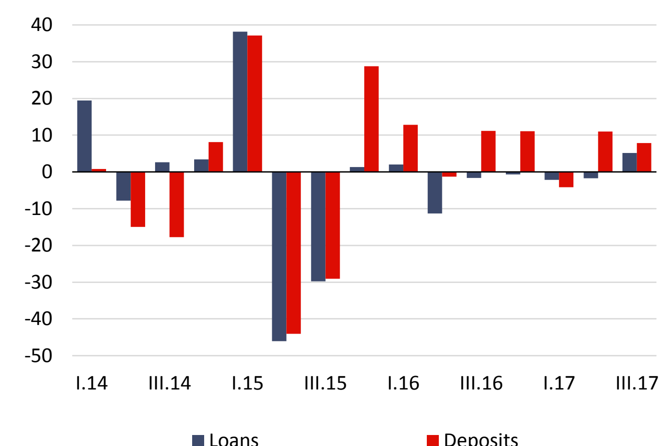
In H1, households' outstanding bank loans decreased 2.4%, mostly on write-offs of problem loans from prior periods. New lending to the population remained insignificant. Total debt burden decreased from 7.3% of GDP (11.4% of annual disposable income) at the beginning of the year to 6.4% of GDP (10.4%) as of the end of 1H. The loan-to-debt ratio (LtD) has dropped over the last two and a half years, meaning the deposit stock is growing faster than banks' household loan portfolios. Banks are distributing funds from the wealthier segments of the population that generate deposit inflows to segments that need loans to support consumption.

Total household debt burden , %



Source: SSSU, NBU estimates

Changes in balances of household loans and deposits, UAH bln



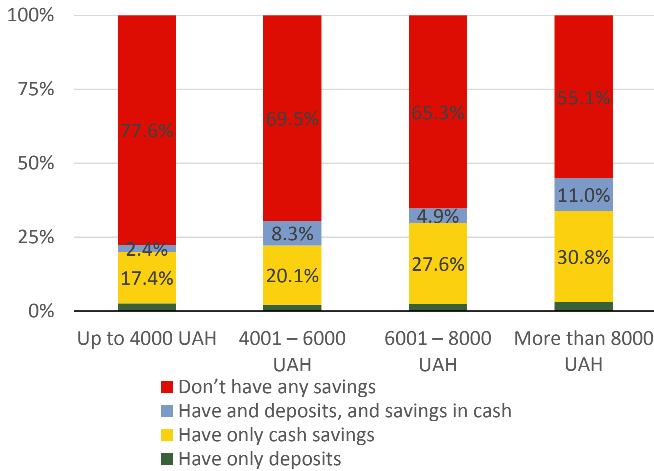
Source: NBU estimates

The household penetration rate of loans and deposits is at its lowest level in the past eight years

Research conducted by GfK Ukraine found the financial standing of households as of the end of 2016 was at its weakest level in recent years. Half of households with a monthly income of UAH 8,000 and more and two-thirds of all other segments of the population reported no

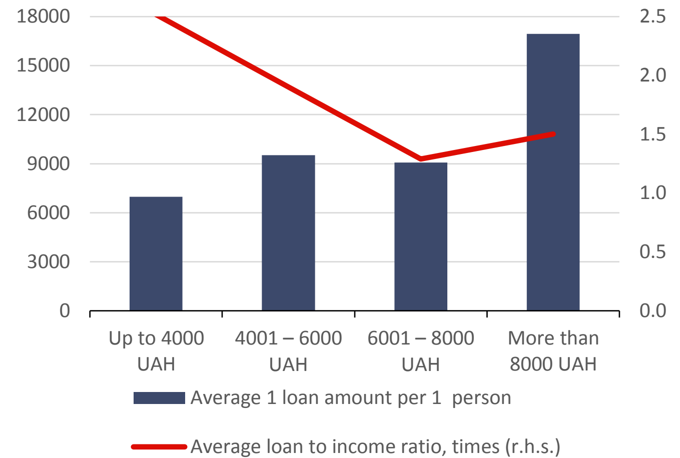
savings. As of the end of 2016, only 3.4% of all individuals had bank deposits, half the amount of the peak year in 2008. At the same time, the results of GfK Ukraine's survey showed that banks' deposit base has room for growth: over 30% of individuals with a monthly income of UAH 8,000 and more held their savings in cash rather than a bank deposit.

Household savings capacity by income groups, 2016



Source: GfK Ukraine

Debt burden per borrower*, 2016, UAH



** Individuals with bank or non-bank loans at the time of the survey or that had loans within the two years prior to the survey*

Source: GfK Ukraine

At the end of 2016, 8.8% of all individuals had bank and non-bank loans, the lowest level in the last eight years. The number peaked at 15.9% in 2008. To satisfy current needs, low-income households often borrow from other individuals, when possible. According to GfK Ukraine, only 1.2% of those surveyed said they could afford to service loans. In 2017, that number was expected to increase as household incomes rose and interest rates declined, but the number has likely remained very low.

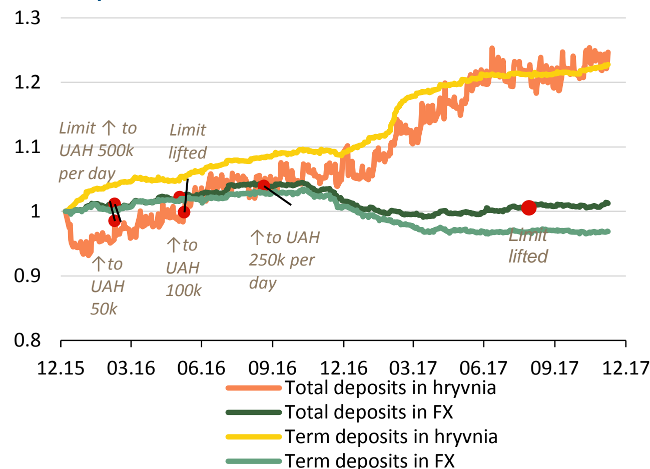
Banking sector conditions and risk

Funding

Inflows of household deposits in H2 slowed substantially. On the other hand, inflows of foreign currency corporate deposits, including those from state-owned enterprises, accelerated. Corporate and retail deposits dominate in the structure of bank liabilities, gradually replacing external borrowings. This funding structure increases liquidity risk since internal resources are predominantly attracted on a short-term basis. In 2018, the NBU is introducing the new liquidity requirement (LCR) that will encourage banks to attract longer-term deposits.

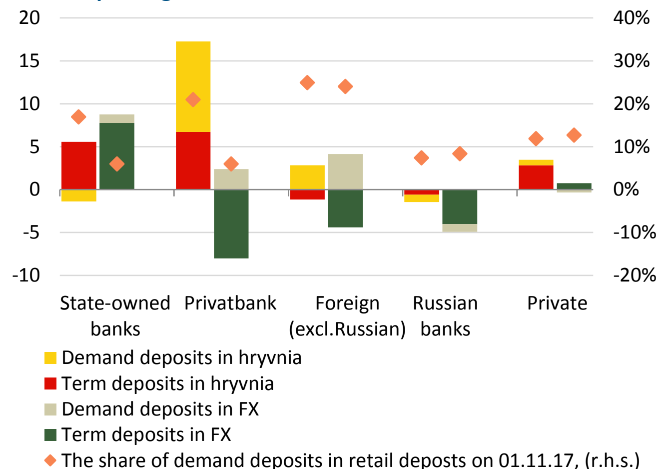
Inflows of retail deposits slowed in H2.
Since the beginning of the year, hryvnia retail deposits have grown 13.0%, while FX retail deposits have decreased 0.7%. Growth was highest in Q2 at 8.0% qoq. Since then, the growth of inflows has slowed, with the value of hryvnia deposits decreasing 0.02% and FX deposits increasing 0.4% in July-October. The NBU expects the growth of deposits to pick up again. The total growth of retail and corporate deposits is projected to come in at 15% in 2018, by NBU estimates. The key growth drivers should rising household incomes and revenues in the real sector, as well as FX market trends.

Retail deposits, 100% = 01.12.2015



Source: NBU

Retail deposits growth in the first 10M 2017, UAH billion



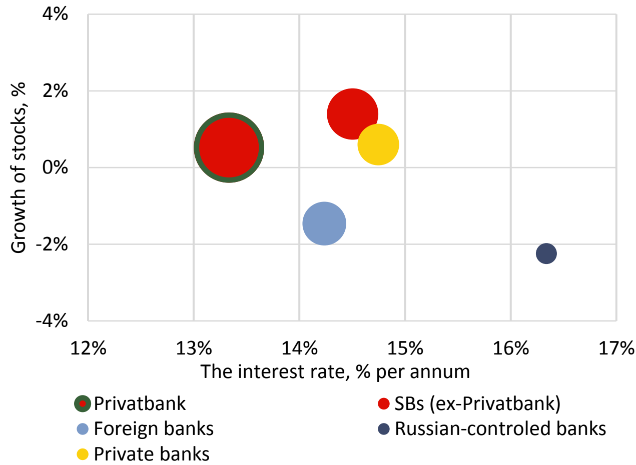
Source: NBU

State-owned banks remain popular with households
In Q3, interest rates played a smaller role in attracting term retail deposits than at the start of the year. Having improved operations and stabilized its client base after nationalization, PrivatBank significantly lowered its rates on retail deposits in August. Other state-owned banks also revised retail interest rates. Nevertheless, PrivatBank was the leader in attracting new household deposits. In July-October, foreign-owned banks saw retail deposits fall 3%, as they offered the market's lowest deposit interest rates. Russian-owned banks continue to see their client base shrink, even though they are offering rates well above the average.

Since August, interest rates on FX deposits have stopped decreasing. Rates are at historic lows (3.7% on 12-month USD deposits), but there is virtually no further downside potential. Interest rates on hryvnia deposits have remained unchanged since October. After the NBU's first key policy rate hike by 1 pp to 13.5% in late October, banks raised interest rates on short-term deposits, but kept longer-term deposit rates largely unchanged. Deposit interest rates will only return to their downward trajectory once inflation risks fade and once the other risks that prompted the rate hike decrease.

In Q3, state-owned banks maintained parity between interest rates on deposits from state-owned companies and local governments and household deposits. The high interest rates enjoyed by the public segment was the result of competition between state-owned banks. However, that interest rate approach creates significant risks to profitability.

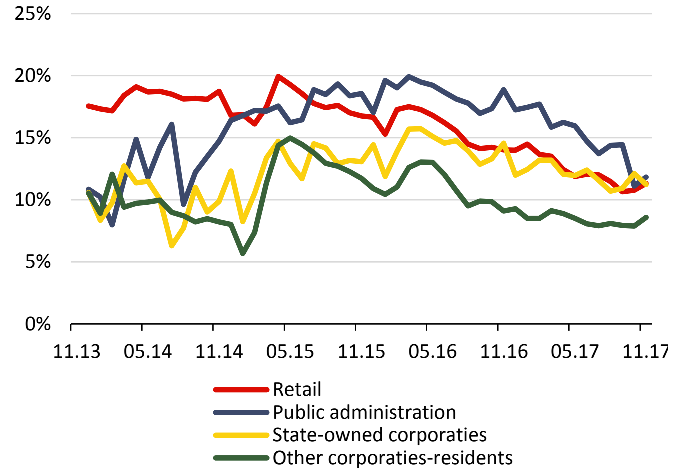
Changes in the volume of fixed-term household deposits in hryvnia* depending on interest rates in Q3 2017



** The size of the circle indicates the volume of new deposit agreements per quarter*

Source: NBU

Interest rates on new hryvnia deposits, % per annum



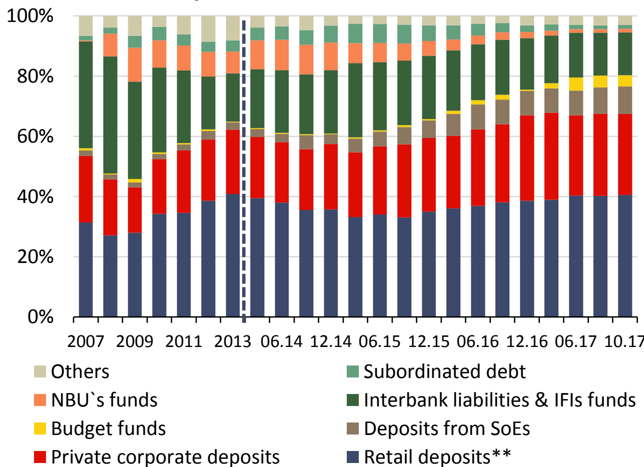
Source: NBU

The share of domestic funding continues to grow

Retail and corporate deposits continue to grow their share in funding; they surpassed 75% of total bank liabilities in early Q4 2017. The share of household deposits returned to pre-crisis levels (40.5% as of the end of October). Over the past four years, corporate deposits have grown their share 1.5 times to 36.0%, while state-owned companies' account balances have soared 3.4 times to 9.2% of banks' total liabilities. Local governments saw their budgets grow significantly to UAH 15 billion as of early Q4 as a result of financial decentralization. Another UAH 29 billion are funds of central government authorities deposited with state-owned banks (funds confiscated from ex-president entourage). The NBU reduced its share in banks' liabilities to 1.1%. Banks continued to repay external borrowings or convert debt into equity. As of the end of October, funds from non-residents accounted for 17.7% of total banking sector liabilities, down 6.1 pp from the start of the year. Banks continued to shift from external to internal funding sources.

By increasing domestic funding sources, liquidity risk has grown, since domestic funding – retail and corporate deposits, budget balances, interbank lending – is typically short-term in nature. Over 70% of banks' liabilities have maturities of up to three months, with demand deposits accounting for over 40%. The only source of long-term funding available to banks are loans attracted from IFIs. However, these account for less than 10% of banks' liabilities.

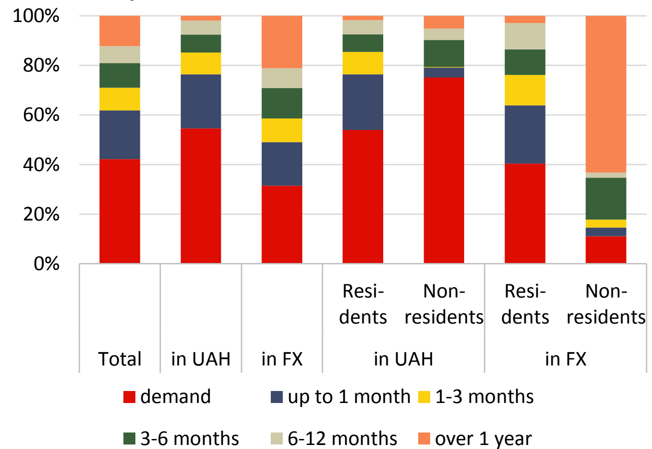
Banks' liabilities by instruments*



** Including accrued interest **Including certificates of deposit*

Source: NBU

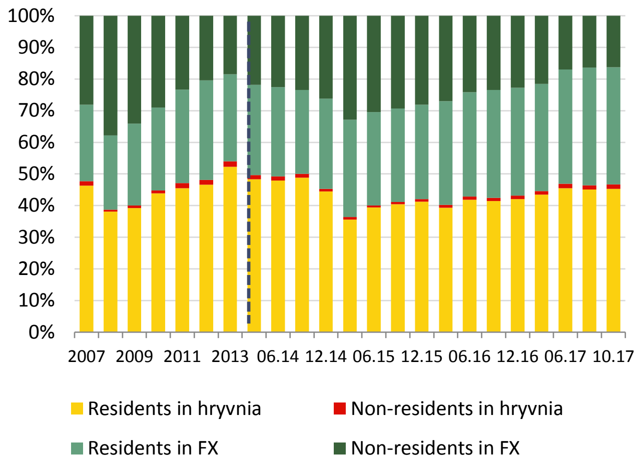
Liabilities by maturities as of 01.10.17



Source: NBU

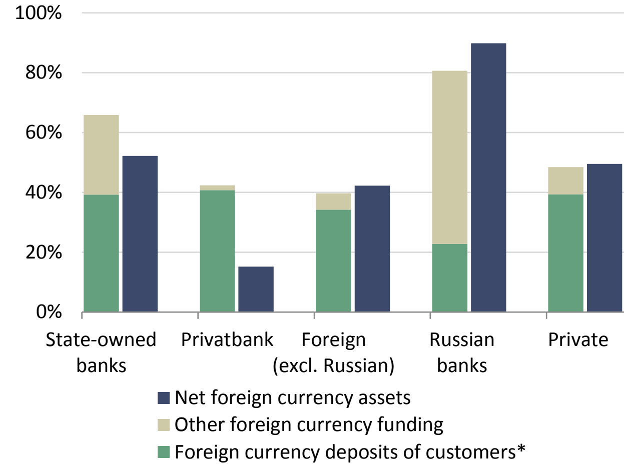
Considering the short-term nature of liabilities, banks must manage liquidity better by holding some assets in the form of highly liquid instruments to protect against potential runs on deposits. To that end, the NBU is introducing new liquidity requirement, the liquidity coverage ratio (LCR). The LCR aims to enhance banks' resilience to liquidity shocks (See box *LCR: New Short-Term Liquidity Requirement*).

Foreign currency liabilities of banks



Source: NBU

Share of foreign currency assets and funding in liabilities by bank groups as of 01.10.2017



** Including certificates of deposit*

Source: NBU

Lending trends

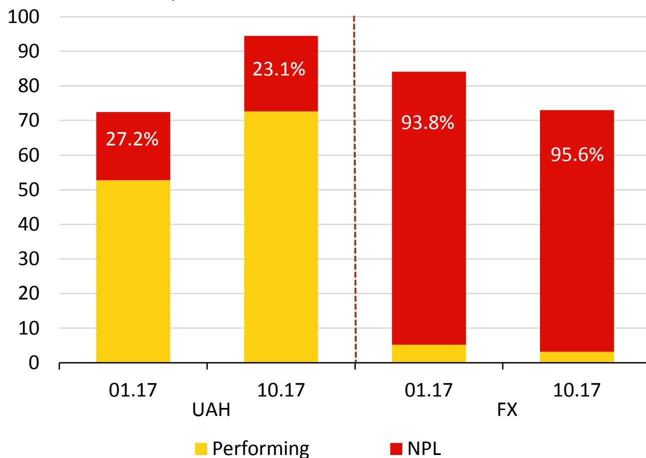
Banks have started to lend to retail customers, and consumer lending is rising sharply. Although retail loans are growing rapidly, the volume of lending is still relatively limited and does not carry risks of a systemic nature. The non-bank financial sector has a marginal effect on retail lending and consumption. If the current growth rates of consumer lending continue, risks could increase significantly in the near-term. If that occurs, the NBU would tighten the criteria for assessing credit risks and would introduce macroprudential measures to limit the pace of lending growth. The NBU recommends that banks be conservative in assessing consumer loans risks. Corporate lending picked up in Q3 2017 following more than three years of decline. The segment is expected to gather steam in 2018 as solvency improves in the corporate sector.

Retail lending is growing rapidly

The retail loan portfolio expanded significantly for the first time in 2017 since the start of the crisis. As of the end of October, gross hryvnia loans had grown 29.4% yoy, with net loans up 37.5% yoy[7]. The growth came across all types of loans, except loans for the house purchase. However, the growth of the overall portfolio was lower at 5.1% as the portfolio of FX loans shrank.

In the first ten months of 2017, gross hryvnia loans grew by UAH 20.0 billion, whereas FX loans shrank by UAH 13.3 billion (UAH equivalent). The overall share of hryvnia NPLs fell markedly, while the quality of FX loans deteriorated. As of today, almost all FX retail loans are NPLs.

Gross retail loans (including private entrepreneurs)* as of 1 November 2017, UAH billion



** At all reporting banks.*

Source: NBU

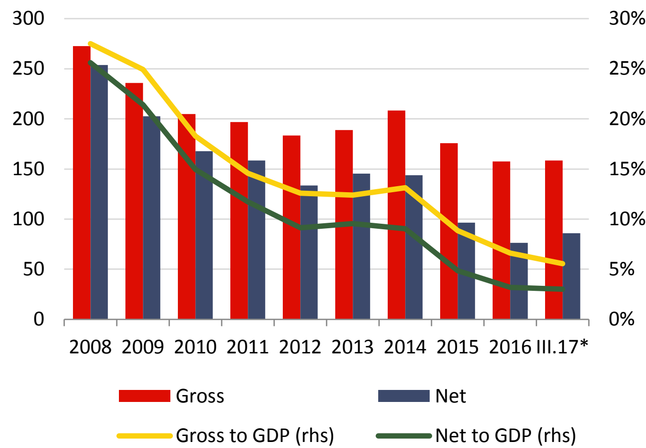
The ratio of gross retail loans to GDP stands at below 6%, while net loans to GDP is approximately 3%. Ukraine's retail lending penetration rate is among the lowest in Europe. There is a close link between the development of retail lending and household income, so one should have expected the low loan penetration rate in Ukraine. Non-performing mortgages that were issued prior to the 2007-2008 crisis now account for over half of the current retail portfolio. Those loans offer clear evidence of what can happen when lending activity is not commensurate with borrower income.

In 2017, hryvnia retail lending started to grow when PrivatBank moved its P2P loans from off-balance sheet onto its balance sheet. Retail lending grew by UAH 5.8 billion in Q1, with the PrivatBank move accounting for two-thirds of the increase. Banks have rapidly expanded

[7]This section is based on data from all banks solvent as of 1 October 2017.

retail lending over the last 12 months. In particular, 12 banks have expanded lending; four of those are among top-10 banks by assets. In nominal terms, net hryvnia retail loans of solvent banks have exceeded pre-crisis levels.

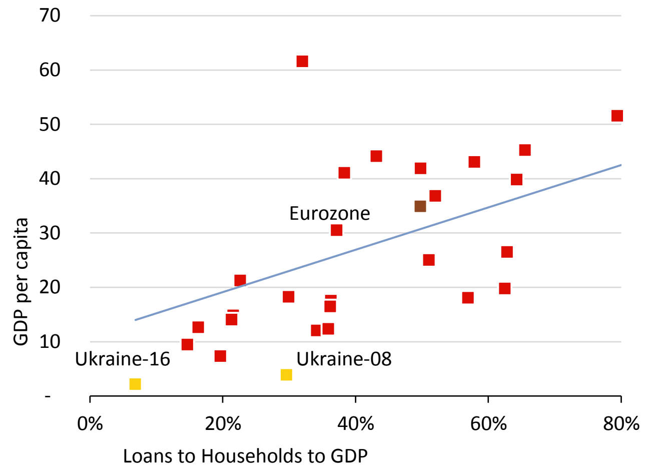
Retail loans, UAH billion



** As a percentage of projected 2017 GDP.*

Source: NBU, SSSU

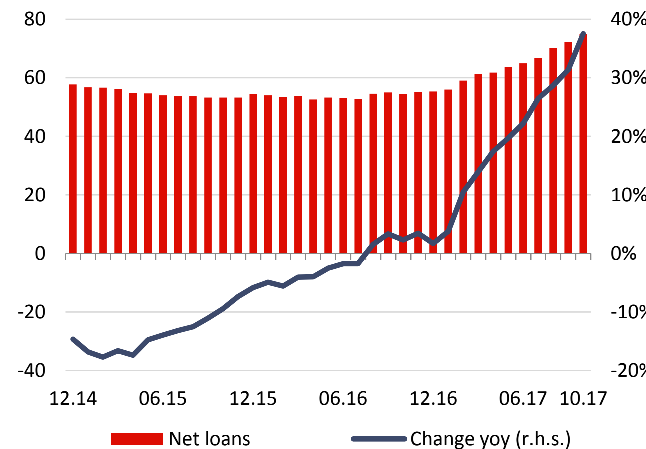
Consumer lending penetration and per-capita GDP in European countries



Source: ECB, World Bank, IMF, Eurostat, NBU

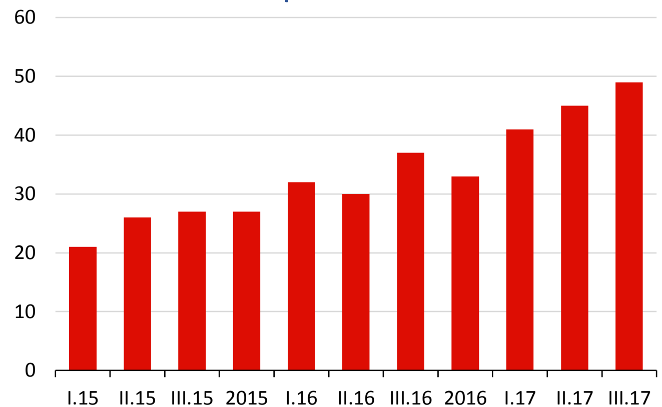
Banks have taken a growing interest in retail lending as demand has recovered and as retail loans have higher interest rates than corporate loans. Hryvnia retail loans carried a weighted average interest rate of 29.1% per annum in October, with the effective rate on short-term consumer loans at times exceeding 40%.

Net hryvnia retail loans, UAH billion



Source: NBU

Number of banks* that grew their portfolio of hryvnia consumer loans over the quarter**



** Of 88 solvent banks as of 1 October 2017.*
*** Excluding accrued interest.*
Source: NBU

Loans for home appliance purchases[8] have the highest rate of growth among all hryvnia retail loans. They grew 108% yoy in October. Other loan types are also growing quickly: car loans grew 36% yoy and other retail loans rose 32% yoy. Real estate loans, both in hryvnia and in FX, continue to decline.

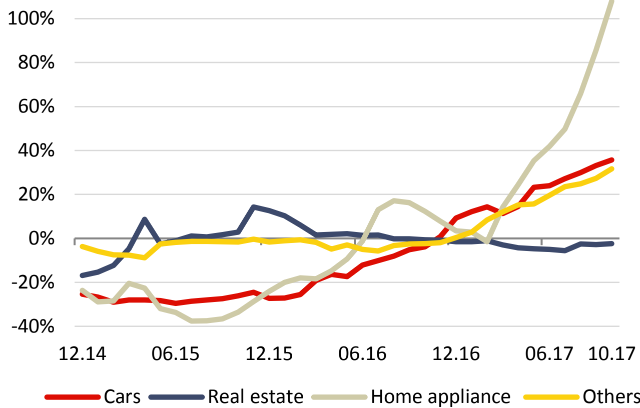
PrivatBank and foreign-owned banks are setting the pace of consumer lending

Domestic private banks were the first to revive retail lending: the combined hryvnia portfolio of those banks grew 59% over the last two years and 46% yoy as of the end of October. However, since those banks hold only a small market share, they are not the largest creditors

[8]Purchase of home appliances, audio, photo, and computer equipment

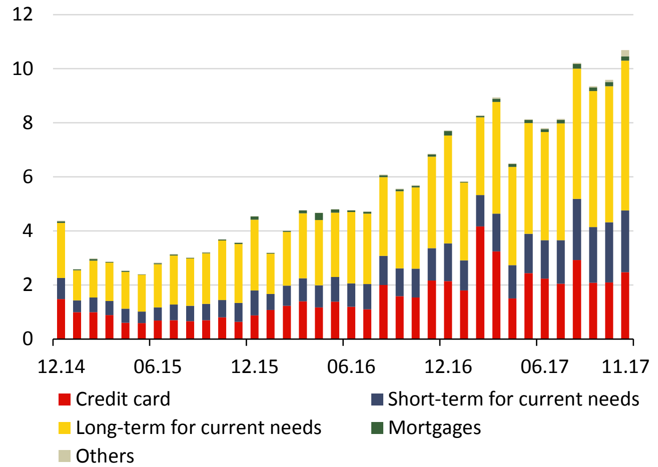
of households and contributed only one-fifth of the annual nominal growth in the retail portfolio.

Change in hryvnia retail loans by components, yoy



Source: NBU

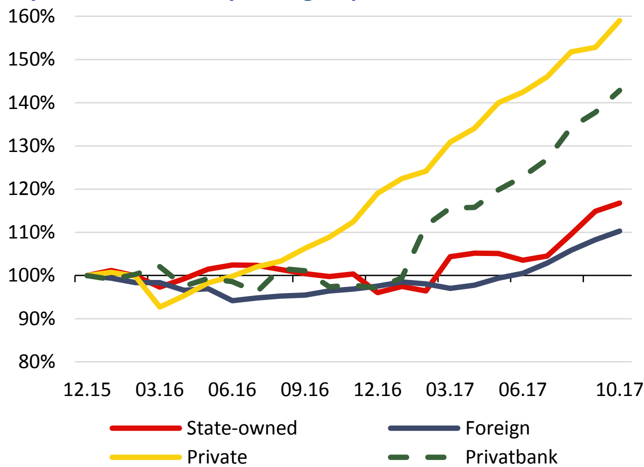
New retail loans by use of loan, UAH billion



Source: NBU

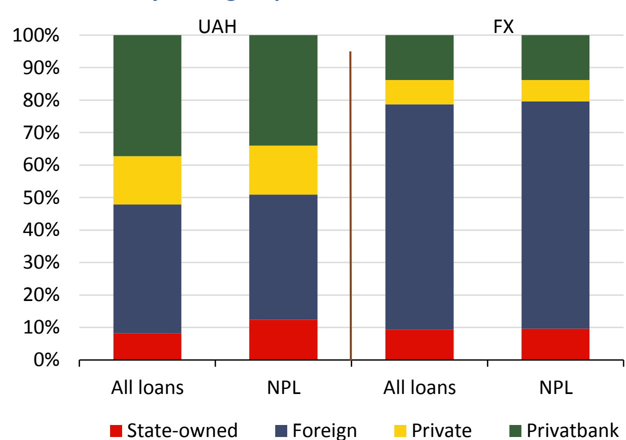
PrivatBank took the lead in retail lending in 2017 with growth of 47% yoy, which was driven by the bank moving its P2P loans onto its balance sheet. PrivatBank accounted for over half of the total growth in all hryvnia loans thanks to its large market share and high rates of growth. Card loans were the main lending channel. Other state-owned banks and foreign-owned banks were the last to jump on the retail lending trend, posting growth rates of 17% and 14% yoy, respectively. Nevertheless, even with their moderate growth rates, foreign-owned banks accounted for 22% of the nominal growth in hryvnia loans.

Hryvnia retail loans by bank groups, 2015=100%



Source: NBU

Retail loans by bank groups as of 1 November 2017



Source: NBU

Banks should be conservative in assessing risks from consumer lending

At the moment, consumer lending by banks and non-banks is not a material driver of private consumption. The growth in the hryvnia loan portfolio contributes for only about 1% of total private consumption. The contribution of non-bank lending is smaller: lending growth is paltry despite a large number of loans issued. As such, consumer lending currently has practically no impact on headline inflation and the current account of the balance of payments.

The NBU sees no reason, for now, to rein in consumer lending. However, given its pace of growth, consumer lending may start to pose systemic risks for the financial sector in the near-term. The NBU will remain vigilant about consumer lending assessing market conditions and related risks twice annually. If required, the central bank will tighten the rules for assessing credit risk from consumer loans or introduce macroprudential measures to limit growth in consumer lending. In such a case, banks would be informed of any changes in advance. The

NBU is aware that any tight restrictions in the banking sector will lead to the faster development of poorly regulated non-bank consumer lending (so-called shadow banking).

The NBU recommends banks:

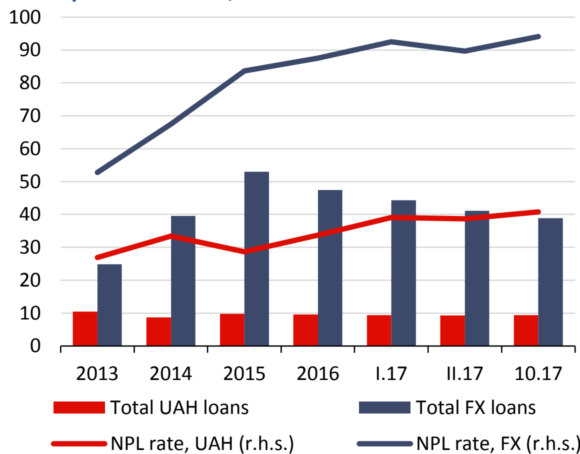
- Be conservative in assessing risks from consumer loan portfolios. A survey of banks (see the "Results of the survey of banks regarding expected losses from the transition to IFRS 9" box) showed material discrepancies between banks' assessments of the probability of default (PD) and loss given default (LGD). In 2018, the NBU will analyze the reasons behind those discrepancies.
- Regularly test the effectiveness of internal credit scoring models.
- Fully comply with the Law of Ukraine *On Consumer Lending* by providing full information about lending terms and effective interest rates.
- Correctly account for consumer lending income and ensure that accrued and received income are matched up as to their time periods as much as possible.
- Diversify consumer loan portfolios by products, types, regions, etc.

New mortgage lending volumes remain non-material

Only the segment of real estate and land transactions saw a decline in lending (-2.4% yoy in hryvnia and -20.5% in FX, USD equivalent). Mortgage lending is picking up and banks are working with property developers and offering preferential rates through partner programs. However, write-offs, repayments, and restructuring of NPLs remain dominant.

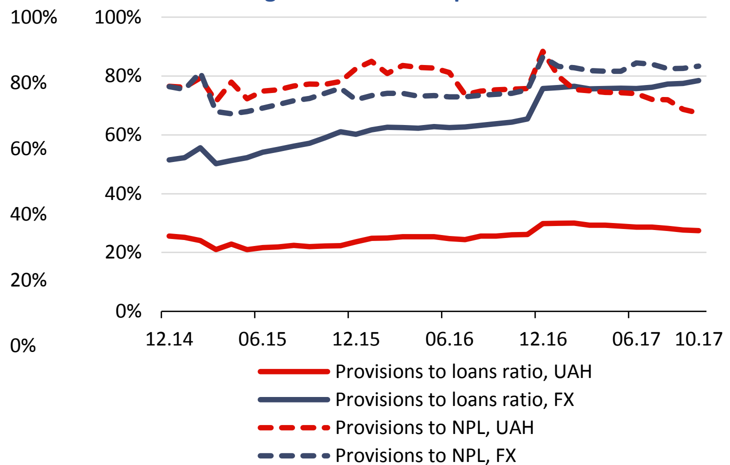
Banks surveyed by the NBU said the lack of solvent borrowers with official incomes was the main factor holding back a lending revival. Other important barriers include high interest rates and legal risks, particularly legislative shortcomings and judicial practices that impede the timely foreclosure in the case of a borrower default (for more details see the "Mortgages: lending has started to recover" box in the previous Financial Stability Report).

Home purchase loans, UAH billion



Source: NBU

Provision coverage ratio for home purchase loans



Source: NBU

Corporate lending has started to recover

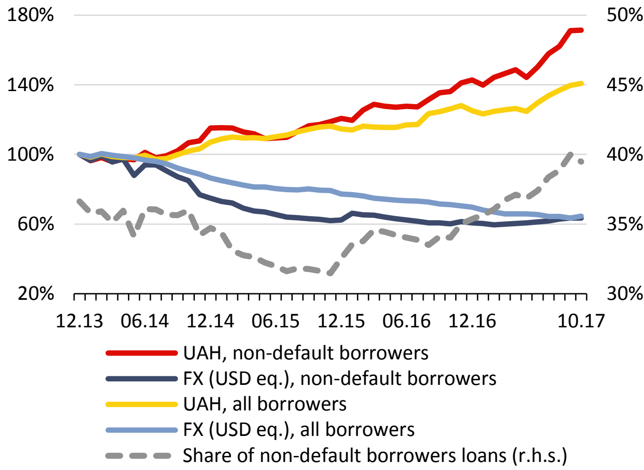
New corporate lending was practically non-existent from the start of the crisis until H2 2017. Banks mostly issued loans under existing loan facilities as they were focused on cleaning NPLs from their balance sheets. Most loans were short-term, some of them even for a few days to cover cash gaps.

This trend reversed in Q3. The amounts of new loans started to exceed the amounts of written-off, sold, and repaid loans. As a result, the outflow of FX loans (USD 700 million) was offset by an increase in hryvnia loans (UAH 32.1 billion) over the last three quarters. This occurred for the first time in the last three years.

A positive development was that banks stepped up lending to domestic private companies that are not part of the top 40 business groups. This lending accounted for over half of the increase in hryvnia corporate loans in Q3. However, these were still largely short-term loans. Since the start of 2017, banks have been largely ramping up lending to customers with strong

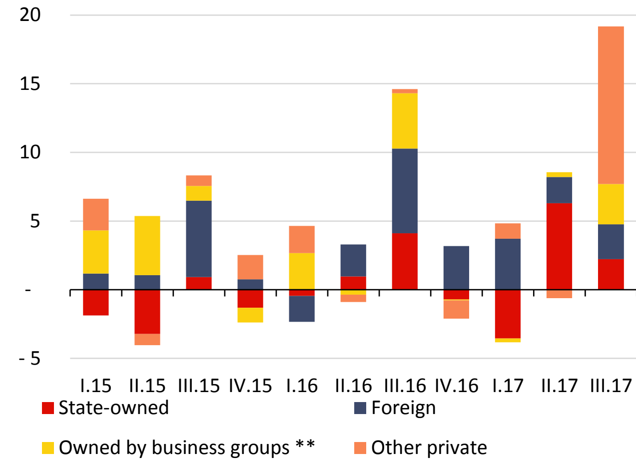
financials that have never defaulted[9]. This trend became stronger in Q3, and therefore, those borrowers now account for 40% of all bank loans (at the height of the crisis that figure stood at 31%).

Loans to large companies*



** Loans to businesses that owe more than UAH 2 million to solvent banks, excluding PrivatBank.*
*** Loans to businesses that did not default in 2014–2017.*
Source: NBU

Change in hryvnia loans by non-financial corporate borrowers, UAH billion*



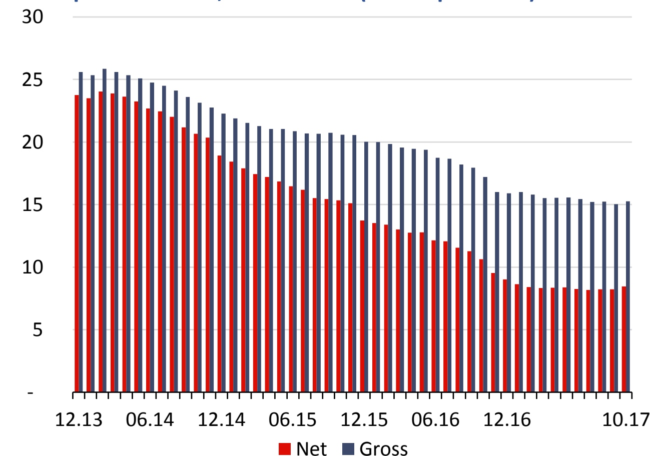
** Issued by banks solvent as of 1 October 2017, excluding PrivatBank*
*** Top 40 business groups.*
Source: NBU

Foreign currency corporate lending is rebounding

Since the start of the crisis, gross and net FX loans have halved to USD 15.3 billion and decreased by three times and USD 8.5 billion (USD equivalent), respectively. In 2017, new FX corporate lending picked up. As a result, despite large amounts of sold and written-off NPLs, gross and net FX loans declined by only 4.1% and 6.3% through the first ten months of the year.

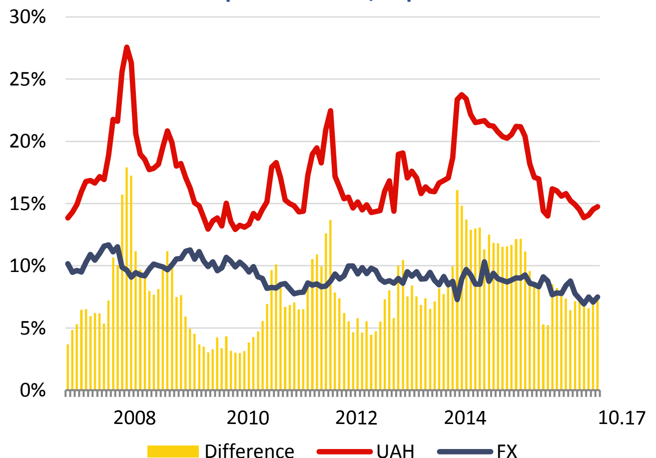
Like before the crisis, the pick-up in lending was driven by the noticeable spread between hryvnia and FX interest rates and the absence of significant hryvnia depreciation expectations. Banks have cheap FX funding and are interested in stepping up FX lending. In addition, in 2017, the NBU eliminated the requirement to banks to consider a shortage of FX earnings of a borrower with an FX loan as a higher risk indicator while assessing credit risk. Today, a borrower's real financial health is the most important criteria for assigning the borrower to a certain financial class and calculating the probability of default.

FX corporate loans*, USD million (USD equivalent)



** Loans issued by banks solvent as of 1 October 2017*
Source: NBU

Interest rates on corporate loans*, % per annum



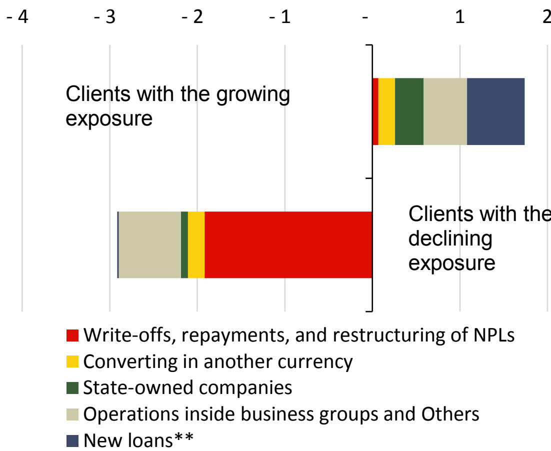
**All reporting banks*
Source: NBU

[9] 1st to 3rd quality class companies based on the old classification (Resolution No. 23) or 1st to 9th class companies based on Resolution No. 351.

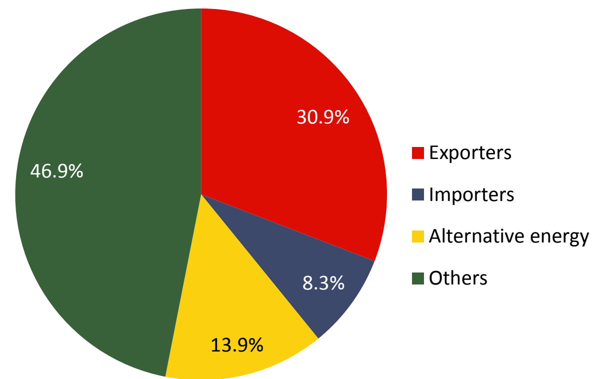
Banks must be more prudent in assessment of FX loan risks

The quality of FX corporate loans is lower than that of hryvnia corporate loans even after considerable write-offs and conversions of FX debts into hryvnia. NPLs accounted for 56% of FX corporate loans and 32% of hryvnia corporate loans as of 1 November 2017 (excluding PrivatBank). An analysis of outstanding FX debt showed that banks have appetite for FX risk. Out of USD 1.2 billion in new FX loans to private businesses and state monopolies in the nine months of 2017, only 30.9% were issued to companies with FX earnings and another 13.9% to alternative energy producers with euro-linked tariffs. If economic conditions were to worsen, the rest of loans may be exposed to default risk due to a lack of funds or an inability to purchase foreign currency.

Changes in FX corporate loans in January-September 2017 by drivers*, USD billion (USD equivalent)



New FX corporate loans by economic sector, 9M 2017



** Loans issued by banks solvent as of 1 October 2017; data from Form 613.*

*** Loans are identified as new if in 2016 the lowest balances were more than four times lower than current balances.*

Source: NBU

Credit risks

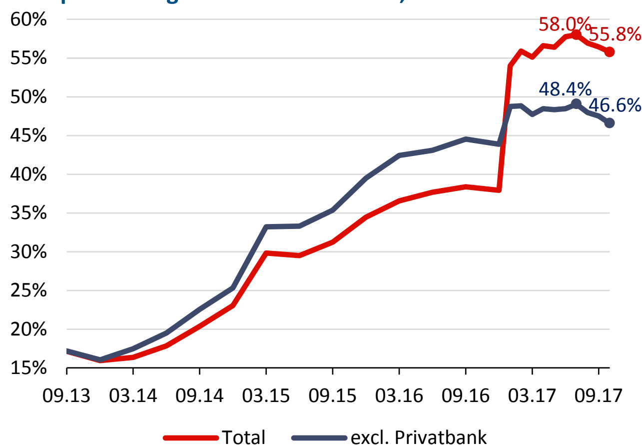
The share of NPLs is gradually decreasing after hitting a historical peak of 58% in July. New hryvnia loans issued to individuals made the largest contribution to the decrease. Economic growth may spur a further improvement in loan portfolio quality; however, most current NPLs will never again be serviced properly. Banks must step up their efforts to clean up balance sheets by selling or writing off NPLs. The adoption of the draft law *On Debt Resolution Activity* could help that process. In H1 2018, the NBU will require banks to submit plans for resolving problem debts. With the aim of constantly monitoring asset quality and fostering the banking sector's resilience to macroeconomic shocks the NBU is introducing an annual assessment of banks, which includes stress testing among others.

The share of NPLs has started to shrink

The adoption of Resolution No. 351 and the banking system's adoption of the international approach to determining non-performing exposures/loans (NPE/NPL) enabled banks to identify the true level of NPLs in Ukraine. Ukraine's banking sector has proven to have the highest share of NPLs ever recorded in the world since the start of record-keeping on problem loans.

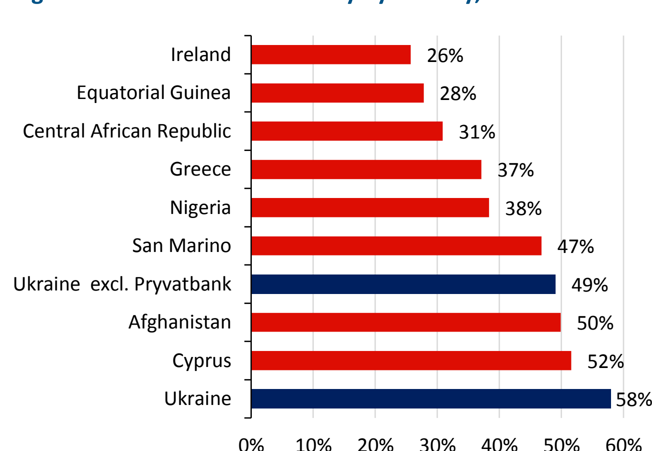
Over the past three months, the share of NPLs has decreased 2.2 pp, mostly thanks to a gradual increase in new lending. The share of NPLs decreased the most in foreign currency corporate loans and retail hryvnia loans: by 3.4 pp and 1.3 pp, respectively. The quality of the retail loan portfolio improved on the back of renewed consumer lending, while efforts by banks to clear corporate NPLs drove the improvement in the quality of the corporate loan portfolio.

Non-performing loan ratio in Ukraine, %



Source: NBU

Highest share of NPLs historically by country, %



Source: IMF (financial soundness indicators, FSIs), NBU

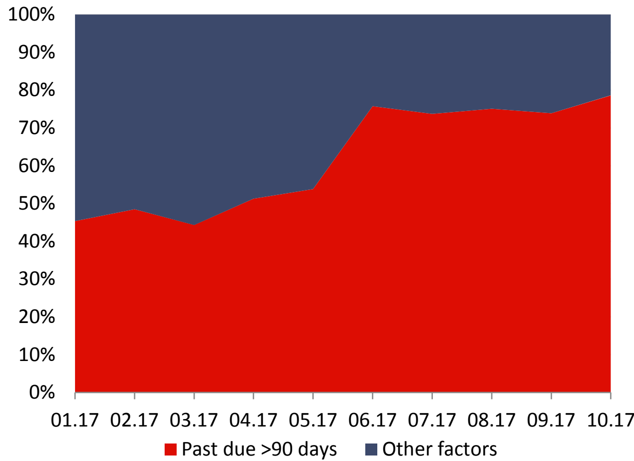
The main criteria in recognizing default was a payment overdue by more than 90 days

In the initial months after Resolution No. 351 came into effect, banks mostly identified borrowers as defaulting based on criteria other than the overdue repayments. Banks often pointed to the overly strict criteria set by the regulator for determining a borrower's inability to service a debt obligation. However, a significant share of borrowers that were initially recognized as being in default later did default on their debt obligations. The share of loans with payments overdue by more than 90 days was on the rise and accounted for almost 80% of all non-performing exposures. That alone is convincing evidence that other signs of default are an effective indicator.

Although a 90-day delinquency was the main criteria for designating non-performing exposures in the banking system, additional default criteria were prevalent in specific sectors. That includes the agricultural sector (78% of NPLs were designated as non-performing by

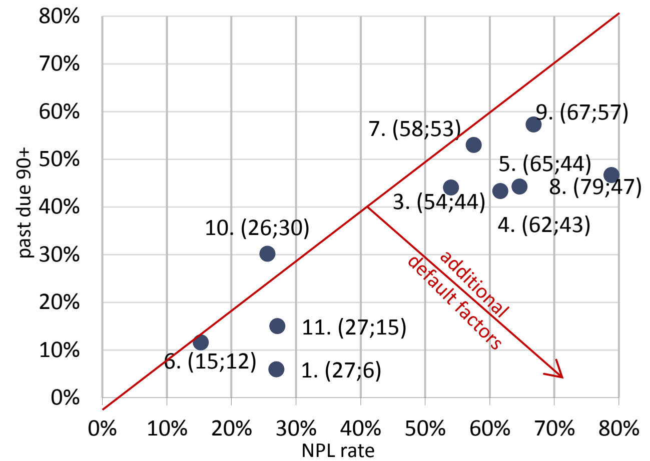
other default criteria) and the extraction industry (52% of NPLs). In the agricultural sector, the main criteria for default was a debt restructuring with the forgiveness of a part of the debt or capitalization of interest 90 days past due. As for the extraction industry, the main criteria was a debt restructuring resulting from financial difficulties incurred by a borrower.

NPLs[10] among loans to businesses by default criteria



Source: NBU

NPLs and loans 90 days past due, as of 1 November 2017



Abbreviations: 1. Agriculture; 2. Extraction industry; 3. Food industry; 4. Metals industry and finished metal products; 5. Machinery production; 6. Energy and water supplies, waste management; 7. Other industries; 8. Construction and real estate; 9. Commerce; 10. Transport and telecommunications Other economic activity. (NPL; 90+)%.
Source: NBU

Economic growth alone will not be able to resolve the issue of non-performing loans

If the NBU's baseline macroeconomic forecast materializes,[11] the quality of banks loan portfolios will improve. However, the regulator does not see a broad recovery of NPL servicing even under strong economic conditions. At the same time, the quality of foreign currency retail loans and hryvnia corporate loans would see virtually no improvement. If an economic recovery is prolonged and the hryvnia exchange rate decreases, current NPLs are still unlikely to be serviced and will continue to be a source of systemic risk.

According to NBU estimates, the share of foreign currency non-performing loans to households will grow and will near 100%. However, the quality of hryvnia loans is expected to improve. The quality of car loans and other types of loans will recover to pre-crisis levels.

The adoption of the draft law *On Debt Resolution Activity* will bring a significant reduction in the share of non-performing loans

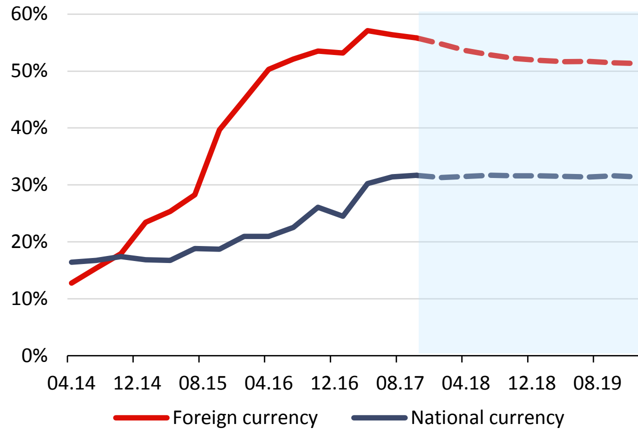
In 2017 banks stepped up their efforts to resolve problem loans, mostly through write-offs and discounted sales. Some major business groups managed to restructure their debts, demonstrating an ability to resume servicing debts, although at rates lower than before the crisis. However, the ineffectiveness of the judicial system hinders foreclosures of collateral pledged under NPLs or makes the procedure extremely time-consuming. Banks continue to use restructuring mechanisms, sales, and write-offs to clean up their balance sheets of non-performing loans.

In November, the NBU and the EBRD jointly drafted the draft legislation *On Debt Resolution Activity*. According to the bill, banks can sell problem assets to asset resolution companies that must meet strict requirements for regulatory capital and funding sources, and will also be restrained in their ability to attract household funds. Those companies will negotiate the terms of debt repayments and settle other problem issues directly with borrowers. The

[10]The charts are based on the largest debts (UAH 2 million or larger) of businesses that accounted for 98% of all non-performing loans in the sector.
[11] October 2017 Inflation Report.

adoption of the draft law will facilitate the cleanup of banks' balance sheets of non-performing loans and help their financial health improve.

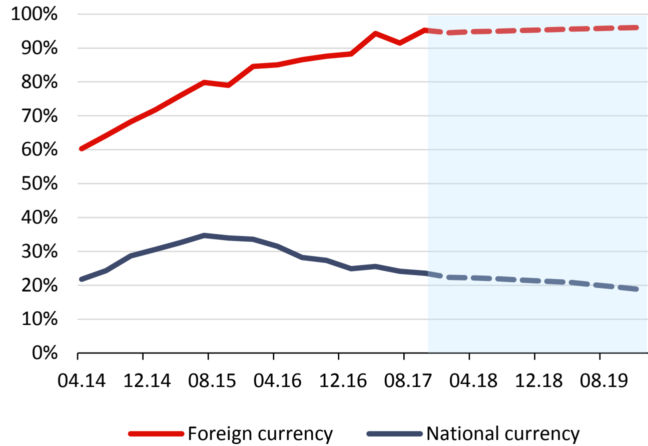
Non-performing loans ratio[12] in the business sector, %



Banks (excluding PrivatBank) [13] solvent as of 1 November 2017

Source: NBU

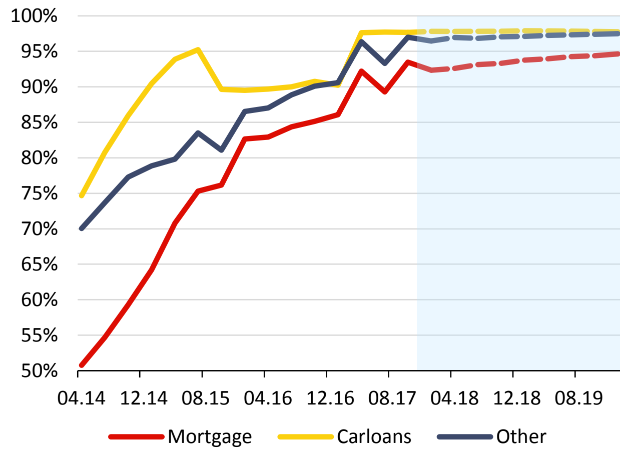
Non-performing loans ratio in the retail sector, %



Banks solvent as of 1 November 2017

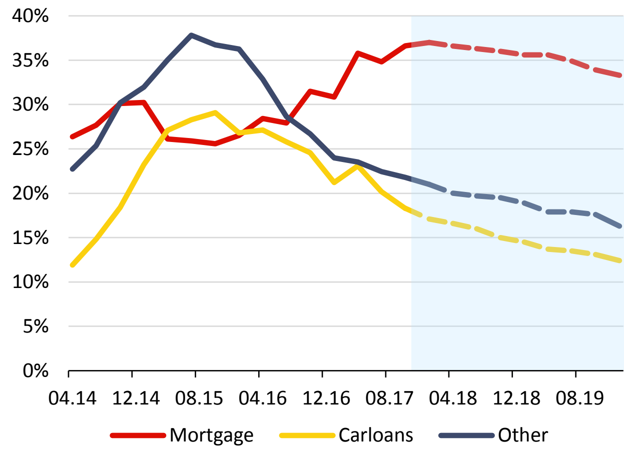
Source: NBU

Share of non-performing retail loans in foreign currency by intended loan use, %



Source: NBU

Share of non-performing retail loans in domestic currency by intended loan use, %



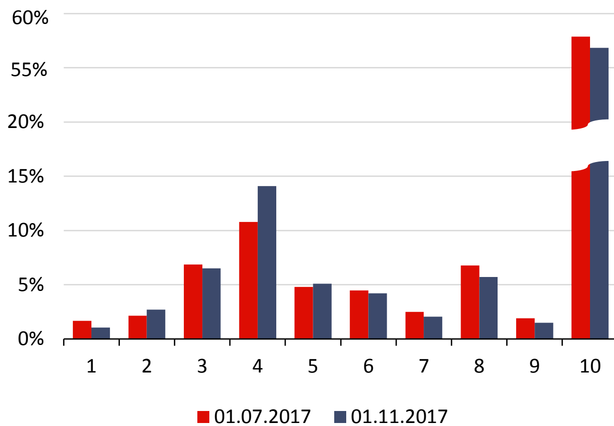
Source: NBU

The quality of performing corporate and retail loans is improving

In Q3 and Q4 2017, the share of loans assigned to the highest (worst) classes of borrowers decreased, both in the corporate and retail loan portfolios. In the retail sector, new loan issuance was the key driver of that shift, since all the loans were classified into the first (best) class at issue. In the corporate sector, an improvement in the financial standing of borrowers drove the improvement in the quality of loan portfolios. The fourth class, for which the probability of default had been set at 4%-6%, grew significantly. Meanwhile, the eighth class of borrowers, which is largely assigned to borrowers with high credit risk (debt-to-net income of greater than 2.5 and debt-to-EBITDA of greater than 7) decreased.

[12] NPL ratio forecasts are indicated using a dotted line.
[13] This chart presents current and forecast NPL ratios, excluding PrivatBank.

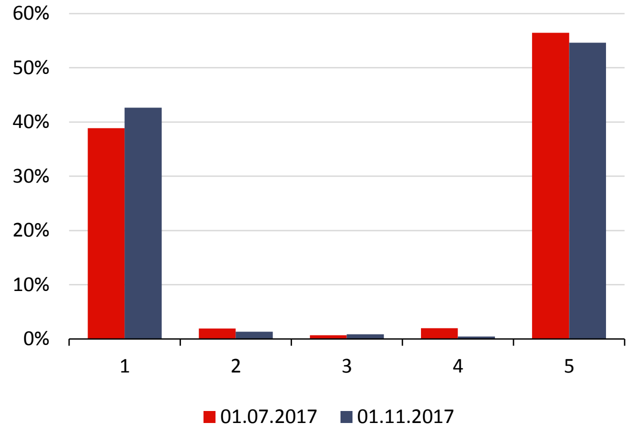
Distribution of loans to businesses by classes



Banks solvent as of 1 November 2017

Source: NBU

Distribution of loans to households by classes



Banks solvent as of 1 November 2017

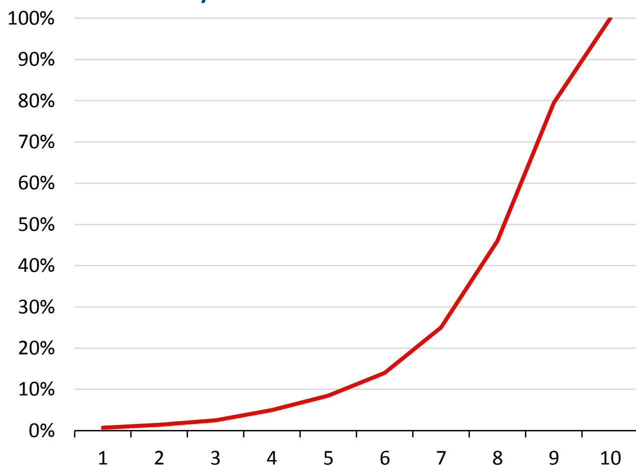
Source: NBU

The NBU is updating its model for assessing borrower default probability

The regulator requires banks to assess credit risks for business primarily using the logistic regression model. The NBU periodically revises its own model and assessments of default probabilities to adjust to changing economic conditions. The first update is slated for H1 2018. The NBU is introducing a new model, which banks will have a chance to review soon, with the following fundamental changes:

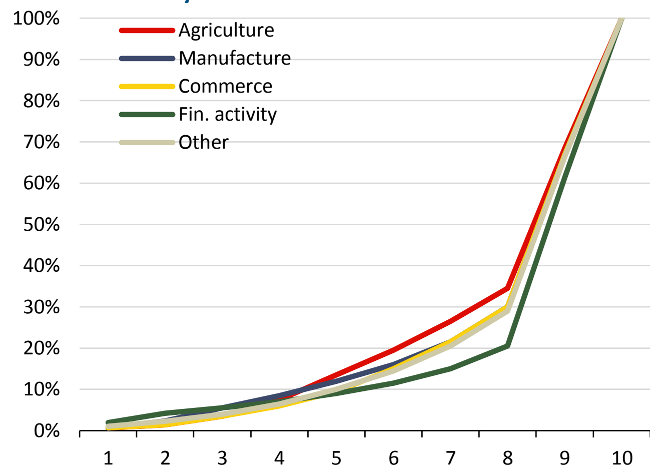
- Companies will be divided into five groups by economic activity (four previously). “Agriculture,” “manufacturing,” and “trade” will remain, and “financial activity” will be separated from the “other” group.
- Using new reporting data about borrowers, the NBU will be able to revise the list of financial coefficients used in the logistic regression model to calculate the integral indicator for corporate borrowers.
- The approach for defining probability of default (PD) will be improved. Each type of economic activity will have its own probability of default scale. This is done to enhance the accuracy of credit risk assessments since certain banks may be focused on a specific branch of the economy.

Current PD scale by classes



Source: NBU

New PD scales by classes



Source: NBU

An analysis conducted by the NBU showed that the new model is more accurate in forecasting PD. The updated approach will help reduce credit risks for certain banks, especially those that were prudently assessing credit risks.

Throughout 2017, the NBU worked to verify the accuracy of assessments of borrowers credit risk by banks. This was done to ensure that banks properly understand the principles and requirements of the new regulation and are consistent in its implementation. Parts of Resolution No. 351 will be clarified based on that analysis. In the future, the regulator will perform annual offsite verification of banks credit risks.

Annually, starting in 2018, the NBU will conduct stress tests to evaluate the resilience of banks to economic shocks (see more in the Box titled Introduction of annual stress testing of banks.

Box: Measuring Credit Risk under IFRS 9 and the NBU's Relevant Regulation[14]

IFRS 9 *Financial Instruments* comes into force in 2018. The standard requires entities to measure expected credit losses. At the same time, Ukrainian banks will continue to measure credit risk (prudential provisioning) as outlined in NBU Regulation No. 351. Regulation No. 351, which came into effect in 2017, required banks to revalue the quality of their credit portfolios using the expected loss principle. For that reason, in most cases, the implementation of IFRS 9 will not have a material impact on the regulatory capital of financial institutions.

International Financial Reporting Standard 9 (IFRS 9) *Financial Instruments* comes into effect on 1 January 2018. The new standard addresses the main shortcomings of its predecessor – IAS 39. Those shortcomings include calculating provisions for impaired assets only, which has resulted in banks not recognizing loan losses in time or in full. The new standard will enable entities to make provisions that more closely match their existing credit risks.

The most important change in IFRS 9 is measuring loan allowances based on expected losses. This will result in a significant, one-off increase in provisions once the standard is implemented. For those loans for which no significant increase in credit risk has been identified since initial recognition, provisions will be made based on expected credit losses (ECL) for the next 12 months. This means that when issuing loans, banks will have to factor in possible (non-zero) losses due to expected loan impairment over the 12 months. For those loans for which credit risk has increased, loan loss provisions will be made for loans' entire lifetime. This will make the assessment of credit risk more conservative. More specifically, IFRS 9 requires assets to be assessed in three stages: 1) At initial recognition until a significant increase in credit risk is identified (expected credit losses are measured for the 12-month horizon); 2) After a material increase in credit risk (ECL for the entire loan's life); and 3) At impairment (ECL for the entire loan's life).

That said, the measurement of expected credit losses takes into account macroeconomic projections and the phase of the economic cycle. Assessments are done by applying the point in time principle (PiT), which means they change in-line with macroeconomic expectations: increase during economic downturns and decrease during economic upturns. To accurately calculate the probability of loan default when measuring ECL on the PiT principle, banks must rely on all information that can be accessed without undue cost or effort, such as information about macroeconomic conditions. Given the natural uncertainty about future macroeconomic conditions, banks must develop scenarios and measure the probability of each scenario materializing. This is a scenario-based approach.

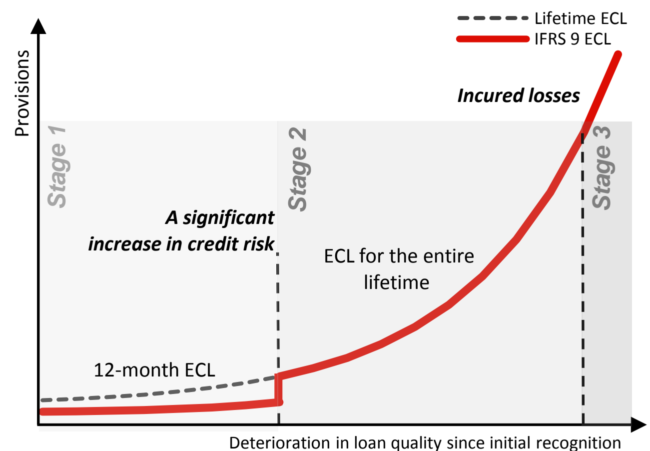
Provisioning stages

Increase in credit risk after initial recognition →

	Stage 1	Stage 2	Stage 3
Loan type	No signs of a significant increase in credit risk	Signs of a significant increase in credit risk	Loan impairment (incurred losses)
ECL horizon	12 months	Loan lifetime	
Calculation of interest income	The effective interest rate is applied to the carrying amount before deducting provisions		The effective interest rate is applied to the carrying amount after deducting provisions

Source: NBU

Change in the ECL horizon under IFRS 9 after a significant increase in credit risk



Source: IASB

IFRS 9 does not provide a clear-cut definition of an event when a significant increase in credit risk occurs. The only explicit condition is when a payment is 30 days past due. However, this condition is rebuttable if a bank proves the loan quality has not changed. Similarly, even though the standard clearly defines a default event as a payment 90 days past due, that can also be rebutted. Each bank draws up a complete list of applicable criteria based on its internal risk management standards.

IFRS 9 also outlines new approaches to interest income calculations. For unimpaired loans, interest income is calculated by applying the effective interest rate to the gross carrying amount of an asset both before and after a significant increase in credit

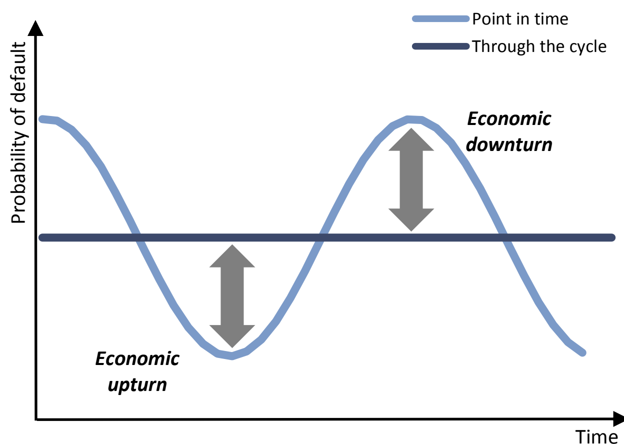
[14] NBU Resolution No. 351 dated 30 June 2016 the Regulation for Measuring by banks of Ukraine of Credit Risk.

risk occurs. In contrast, for impaired assets, it is calculated by applying the effective interest rate to the net value (after deducting provisions).

The regulation governing the calculation of risk exposure arising from asset transactions (the "regulation"), as approved by NBU Board Resolution No. 351, entered into force in 2017. The regulation also requires banks to measure credit risk (estimate prudential provisions) using the expected loss method. Despite some commonalities, measuring expected loan losses under IFRS 9 and the regulation has certain differences:

- The regulation requires banks to calculate through the cycle probabilities of default (CTT PDs) by applying the average measure of PD throughout one economic cycle regardless of current macroeconomic conditions and expectations. In contrast, IFRS 9 requires banks to measure point-in-time probabilities of default (PiT PDs) based on available information about the phase of the economic cycle.

Difference between CTT PDs under the regulation and PiT PDs under IFRS 9



Source: NBU

- The regulation requires entities to forecast a default event over a 12-month horizon, regardless of the quality of an asset. Meanwhile, IFRS 9 identifies two different horizons: if no significant increase in credit risk on an asset has been identified, an entity shall measure the loss allowance for that asset at an amount equal to 12-month expected credit losses; if a significant increase has occurred, an entity shall measure the loss allowance for the entire lifetime of that asset.
- The standard also requires entities to develop and assess various scenarios when measuring credit risk. In contrast, the regulation does not require any scenarios.
- The regulation has a single formula for measuring credit risk: $CR = PD \times LGD \times EAD$. Therefore, credit risk depends on the probability of default (PD) and loss given default (LGD). In contrast, IFRS 9 requires banks to use available information to measure the amount of expected losses by comparing the present value of contractual and expected payments, while not requiring them to measure PD and LGD separately. This means that under IFRS 9 not only the change in the probability of default but also other scenario parameters have a bearing on the amount of expected credit losses.
- The regulation outlines several hard definitions of default, such as when an asset is over 90 days past due. IFRS 9 only provides the condition under which default occurs, but that can still be rebutted based on valid reasons. Therefore, a bank must decide whether a default event has occurred, using its internal risk management standards.

IFRS 9 will make the amount of provisions less sensitive to the current phase of the economic cycle than under IAS 39. However, it remains likely that the calculated probability of default and provisions may increase during crises and decrease in economic upturns. In contrast, calculations made under the regulation are not sensitive to the phases of the economic cycle.

The experience that Ukrainian banks have with measuring credit risk (calculating prudential provisions) under the regulation will help most of them implement IFRS 9 smoothly. Transition to IFRS 9 will lead to a one-off decrease in banks' equity, but will not have a material impact on regulatory capital, which under the regulation is calculating by measuring credit risk (prudential provisions), taking into account expected losses.

Box: Results of the survey of banks regarding expected losses from the transition to IFRS 9

In early 2018, banks will transit to IFRS 9, which prescribes the expected loss provisioning principle. Banks are required to take a provision on all loans, including newly disbursed loans based on historical default levels and expected macroeconomic conditions. Banks should be consistent in implementing the new standard, and their probability of default assessments by similar loan groups must not reveal significant discrepancies.

The NBU conducted a survey to identify how banks assess possible losses for new loans over a 12-month horizon. The survey focused on retail loans. Over the past year, retail lending picked up significantly, naturally raising the question of whether banks adequately assess relevant credit risks. The survey covered only loans in the first stage of assessment (under IFRS 9), referring to loans with no significant increase in credit risk. Banks' assessments are not final and may be adjusted after models are finalized. The results showed a considerable dispersion in banks' assessments of possible defaults in the household sector. In Q1 2018, the NBU intends to investigate the cause for the wide spread.

Survey period: 29 November 2017 to 6 December 2017
Sample: The 30 largest banks by retail loan volumes.
Purpose of the survey: to receive information about the approaches used to group loans and the parameters of measuring expected credit losses on household loans in Stage 1 of assessment.
Key questions: banks were asked to describe the criteria used to identify specific portfolios, probability of default (PD), loss given default (LGD), and expected losses (EL).
Key outcomes: 28 banks responded. Of those, 10 banks said they had not finalized the model and were not ready to respond. Eighteen banks provided descriptions of 125 loan portfolios. For 48 of those portfolios, judgement assessment, rather than statistical assessment, was used for measuring expected losses.

Major criteria used by banks when creating portfolios:
- Lending purpose: card loans, consumer loans, car loans or mortgages, small business loans, and other
- Collateral and LTV ratio
- Past due payments (up to 30 days) or restructuring
- Borrower credit rating
- Loan currency
- Region: Crimea/Anti-Terrorist Operation (ATO), other regions of Ukraine.

Key findings:
- Many banks lack the information to statistically measure expected losses, particularly the LGD ratio
- Banks had, on average, PD and LGD values lower than required by Resolution No. 351 That may be because the NBU measures probability of default based on the average value in an economic cycle, while IFRS 9 requires point-in-time (PiT) measurement
- PD and LGD values for similar loans varied significantly between banks
- A significant number of banks had not developed or were still developing approaches to determining expected loss parameters. Banks should step up their efforts in this respect.

Consolidated Findings of the Survey of Banks

	Number of portfolios	(12-month) probability of default (PD), %			Loss Given Default (LGD), %			Expected Loss (EL), %*		
		min.	max.	Average	min.	max.	Average	min.	max.	Average
Unsecured	46	0.0%	34.6%	5.1%	21.8%	100.0%	81.2%	0.0%	7.4%	2.6%
Unsecured (overdue)	14	2.8%	36.5%	19.9%	59.2%	100.0%	89.4%	15.1%	66.0%	32.0%
Car loans	20	0.0%	80.0%	9.5%	1.0%	88.0%	47.8%	0.3%	4.2%	2.2%
Car loans (overdue)	4	2.8%	30.8%	12.8%	22.6%	84.4%	47.4%	7.0%	7.0%	7.0%
Mortgages	28	0.2%	13.8%	5.1%	17.5%	87.8%	51.9%	0.5%	31.6%	6.1%
Mortgages (overdue)	4	18.1%	29.9%	24.0%	55.0%	79.2%	67.1%	13.9%	23.7%	18.8%
Small enterprises	9	1.9%	10.6%	6.3%	18.7%	100.0%	59.3%	1.3%	6.8%	3.0%

** The level of expected loss in the table does not always equal the multiplication of the PD and LGD since the maximum/minimum estimates of PD and LGD can be provided by different banks.*

Box: Introduction of annual stress testing of banks

Starting in 2018, the NBU will annually stress test the resilience of banks and the banking system overall. The primary goal is to ensure that the system will be able to absorb losses stemming from potential macroeconomic shocks.

The NBU will individually assess each bank as of 1 January. The assessment will be conducted in three stages:

I. Verification of the quality of assets and the eligibility of collateral pledged for loans by audit firms.
II. Extrapolation by the NBU of the first stage results and capital adequacy assessments as of the assessment date.
III. Assessment by the NBU of a bank's capital adequacy based on the results of the stress test under the baseline and unfavorable macroeconomic scenarios on a three-month forecast horizon.

Stages I and II are obligatory for all banks. The NBU will determine those financial institutions for which Stage III is required. The list will be compiled annually depending on each bank's impact on the stability of the banking system and the financial sector overall. In 2018, the NBU will stress test banks that account for more than 90% of banking sector assets. By mid-February 2018, the NBU will present the stress test methodology for familiarization by banks. Adjustments to the methodology can be made as necessary. Banks that undergo a stress test must comply with minimum core and regulatory capital requirements as set by the regulator annually. Banks that show a shortfall in terms of the minimum capital level will face an additional capitalization requirement. The results of the study will be published before the end of every year, which is an important novelty of the procedure.

Comparison of parameters of previous and future diagnostics (resilience measure) of banks

	Stress testing			
	2014	2015-2016	2017	2018
Participants	34 banks accounting for 79% of banking sector assets	2015; 20 banks accounting for 81% of solvent banks assets 2016; 40 banks, 12%	37 banks 2% of assets	I-II stages: all banks III stage: banks accounting for over 90% of assets
Asset quality analysis	audit companies	NBU	NBU	audit companies (NBU interim inspection)
Stress test	audit companies	NBU	NBU	NBU
Macroeconomic Scenarios	Baseline scenario, unfavorable	Baseline scenario	Baseline scenario	Baseline scenario Unfavorable
Individual stress testing of major borrowers	No	Yes	No	Yes
Portfolio stress testing	Yes	Yes	No	Yes
Additional capitalization, if required	Yes	Yes	Yes	Yes

Box: Creating a Credit Register in Ukraine

In November, Ukraine’s parliament in the first reading approved draft law 7114-д to establish a credit register in Ukraine. Credit registers are widely used internationally to manage credit risk and to improve banking supervision and regulation. Establishing a credit register in Ukraine will provide banks with another tool to assess the credit rating of potential and existing borrowers, while enabling the central bank to identify an increase in credit risk at individual banks and across the entire system.

A credit register is a system for collecting data about loan agreements by financial institutions and the execution of those agreements. Banks can use the information to assess risks when making loan decisions and central banks can use it as a regulatory and supervisory tool. According to the World Bank, 96 of 166 countries currently have credit registers. Of those, 44 also have credit bureaus, and that number is on the rise.

International practice shows that in countries with both, credit registers and credit bureaus do not disclose each other because they occupy different niches. Registers have an advantage over bureaus by providing more complete information. Central banks, which typically operate credit registers, not only share this information with financial institutions but also use it for regulatory purposes. Credit bureaus specialize in providing value-added services like credit and collection scores, data processing software, credit portfolio monitoring, and identifying theft.

The features of credit registers vary significantly in different countries. Many registers have threshold values; registers will not collect information about loans that fall below that threshold. Threshold values differ across countries: Slovenia (100% borrower coverage), Belgium (96%), Bulgaria (74%) has no threshold value (i.e. zero), in Portugal (100%) it is EUR 50, in Latvia (89%) - EUR 150, in Lithuania (45%) - EUR 290, and in Spain (79%) - EUR 6,000. Credit registers in different countries also share some features:

- Information to credit registers is usually transferred by banks and non-bank financial institutions, and less often by other institutions.
- Registers collect information about both retail and corporate loans.
- They contain information about borrowers (name, code, financial health) and their debt (amount, loan term, rate, outstanding payments, and collateral).
- Registers are usually accessible to central banks, commercial banks, non-bank financial institutions, and borrowers.
- Many credit registers are updated monthly.

Credit reporting systems in 182 countries and their borrower coverage

Year	Allocation of countries by model				Average level of borrower coverage				
	CB	CR	CB+CR	Absent	CB	CR	CB+CR(bureau)*	CB+CR (register)*	Ukraine (CB)
2009	52	51	31	48	49%	7%	42%	16%	3%
2017	70	50	44	18	57%	21%	57%	32%	47%

** In countries with both, credit registers and credit bureaus, CB+CR(bureaus)* shows, what percentage of credit histories are covered by the bureaus, CB+CR (register)*– by the registers.*
Source: The World Bank

Setting up a credit register in Ukraine has many advantages. It will enable banks to better assess a borrower’s credit score when making loan decisions and whether a borrower has had trouble servicing other debts. This will reduce the probability of lending to risky customers, improve the quality of loan portfolios, and boost creditors’ confidence in reliable borrowers. It will also enable the NBU to use the credit register for banking supervision and financial stability by:

- Monitoring and managing credit risk
- Adjusting macroprudential tools, like the LTC and DSTI ratios
- Enabling more accurate calculations of a borrower’s probability of default (PD) and loss given default (LGD)
- Reconciling credit risk assessments across banks

The NBU will also be able to utilize the credit register to assess risks arising from the loans it will accept from banks as collateral for ELA loans. The credit register will decrease the number of reports financial institutions will need to provide to the NBU. Once the register is launched, banks will have to factor in the credit histories of their borrowers in other banks when calculating credit risk.

Draft law 7114-д lays the foundations for creating a credit register in Ukraine by authorizing the NBU to set up and operate the register, obtain data from banks and the Deposit Guarantee Fund, to provide information to banks. The NBU has been authorized to collect information about all loans, while banks will be able to obtain information about an individual borrower from the register if the borrower’s total debt exceeds 100 times the minimum wage. Banks will have to transfer information to the register, use the register to calculate their credit risk, and notify customers that their loan data will be sent to the register.

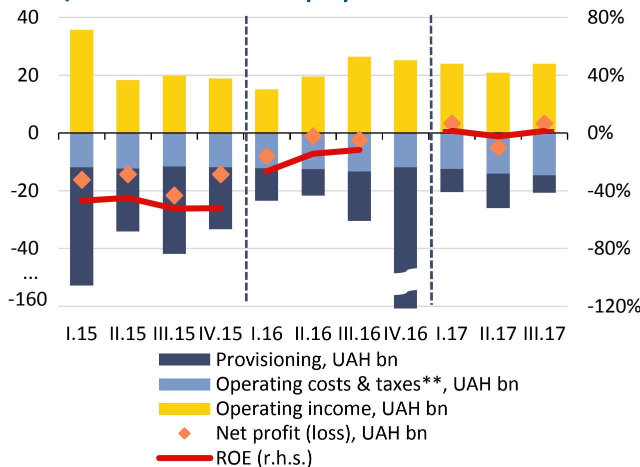
Financial results and capitalization

The banking sector has started earning profits again. Operating profits increased thanks to lower funding costs and higher commission income. Most banks made only insignificant provisions. The number of loss-making financial institutions decreased, however, some banks, especially small banks, were exposed to risks due to losses and weak capitalization. The NBU does not expect any large banks (banks that have a major impact on financial stability) to fail. In early 2018, banks will experience a one-off reduction of equity and regulatory capital due to the transition to new provisioning rules under IFRS 9.

After three loss-making years, the banking sector has returned to profitability
Over the first nine months of 2017, banks improved earnings by UAH 13.1 billion yoy to generate profit of UAH 1.4 billion. Higher net interest income, primarily from the household segment, and commission income helped banks increase their pre-provision operating profit 13% yoy.

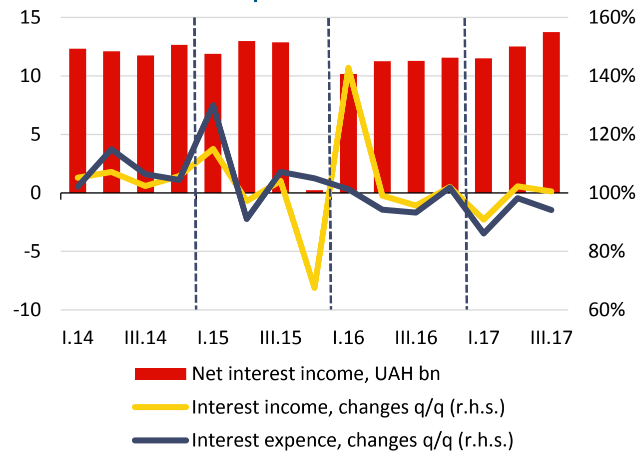
Total operating expenses increased 4.6% yoy, growing more slowly than income. The sector's operating performance improved: the cost-to-income ratio (CIR) declined to 56.1% in 9M 2017 from 60.3% in 9M 2016.

Profit/loss* and return on equity



** In a quarter.*
*** Including income tax.*
Source: NBU

Interest income and expense trends*



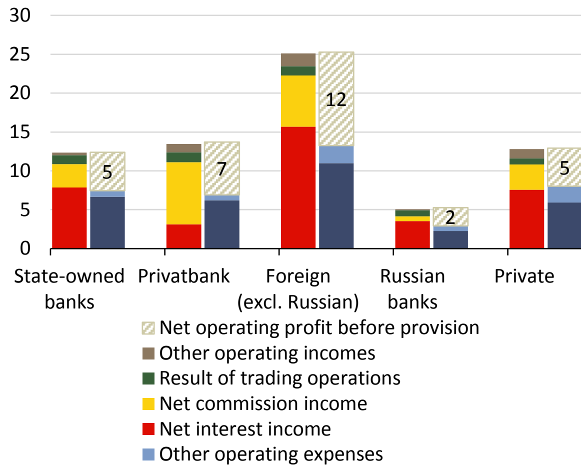
** For banks solvent as of 1 October 2017; the lack of net interest income in Q4 2015 was a one-off effect of banks transitioning to IFRS.*
Source: NBU

Over 9M 2017, banks' net interest income grew 15.6% yoy, with the trend holding for the second consecutive year. That growth was driven largely by decreasing interest rates on deposits, particularly in the retail segment. In 9M 2017, interest expenses declined 22.8% yoy. Rising income from operations in the household segment and with securities (particularly with domestic government bonds) helped offset the decline in interest income from corporate lending.

Net commission income increased 18.1% yoy as demand for banking services grew and retail lending recovered. Consequently, the number and volume of transactions subject to bank commission fees also expanded, especially non-cash payments, transfers, and consumer lending. Those factors contributed to the growth of commission income. Higher fees for settlement and cash operations by some major banks was another growth driver.

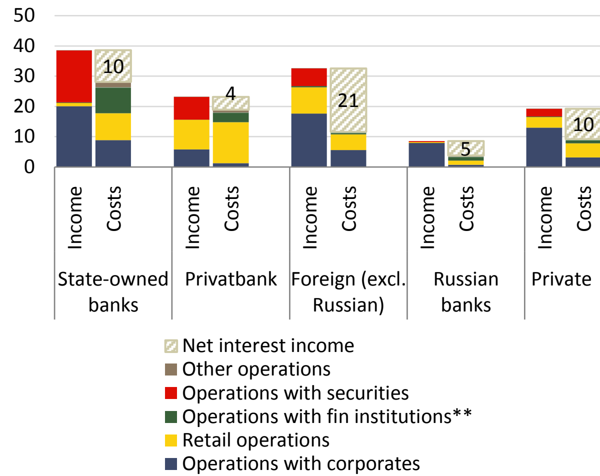
Provisioning decreased 30.1% yoy. Unlike in 2015-2016, when almost all banks had to increase provisions, in 2017 only PrivatBank and Russian state-owned banks set aside substantial amounts for provisions.

Components of operating income and expense by bank groups, 9M 2017, UAH billion



Source: NBU

Components* of net interest income by bank groups, 9M 2017, UAH billion



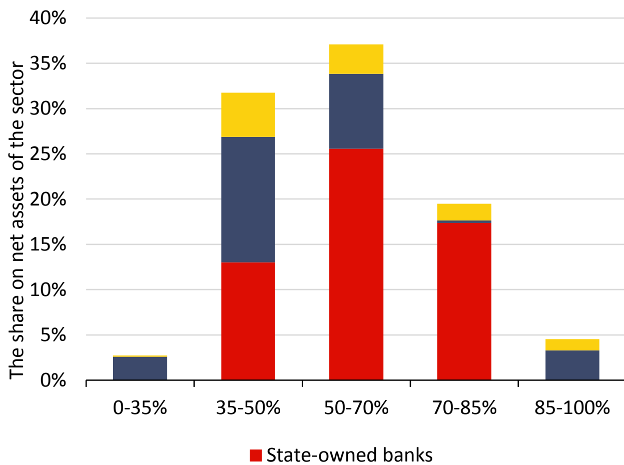
** In annual terms **Interbank transactions, IFIs, NBU.*

Source: NBU

The number of banks exposed to high risks is decreasing

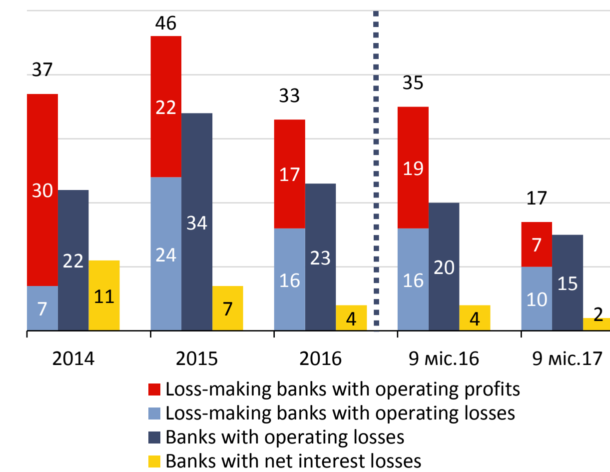
The number of loss-making banks fell from 33 (out of 96) in 2016 to 17 (out of 88) in Q3 2017. Of 73 banks that generated operating profit, 28 banks delivered above-average operating performance indicators. Nine banks, accounting for 1.2% of the sector's net assets, have CIR above 90% and are thus at risk of operating losses. Fifteen banks reported a negative PPOP based on the results of the first three quarters of 2017.

CIR distribution among operationally profitable banks as of 1 October 2017



Source: NBU

Distribution of loss-making banks*



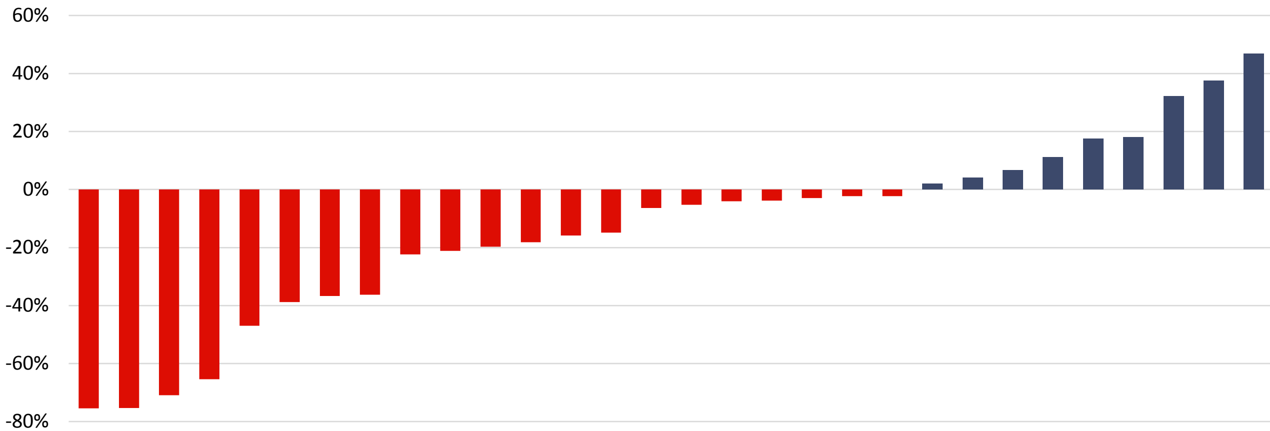
** Solvent banks at period-end.*

Operationally profitable banks are those that reported pre-provision operating profit.

Source: NBU

Some operationally profitable banks, whose actual interest income fell significantly short of accrued interest income, are also at risk. Those banks are either not fully recognizing the true quality of their assets, which may lead to future losses, or need to improve internal accounting policies. According to financial statements, in 9M 2017, four of the largest 30 banks by assets had net interest income (from the cash flow statement) of less than half of their accrued income (from the profit & loss statement).

Differences between net interest income as reported on the cash flow statement and net interest income as reported on the profit & loss statement at major banks in October 2016–September 2017

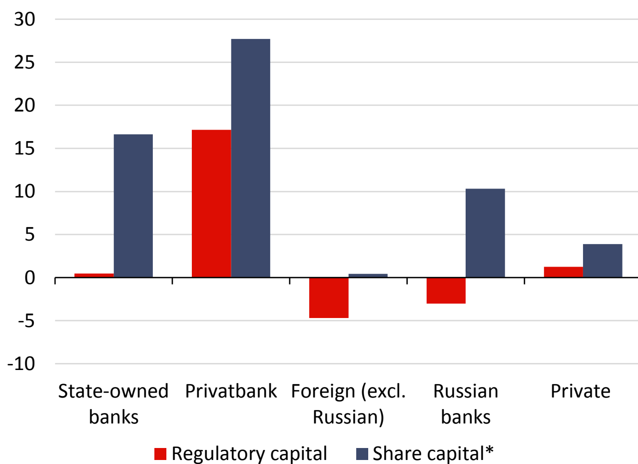


Source: Banks' financial statements, NBU estimates

Banks are better capitalized

In 9M 2017, banks' equity increased by UAH 57 billion, or 13.7%. The key driver was the additional UAH 44 billion capitalization of state-owned banks. Regulatory capital grew by UAH 9.8 billion, or 9.0%. The growth of regulatory capital was lower than for equity because of the additional provisioning and recognition of credit risks by major banks. The banking sector's capital adequacy ratio exceeds minimum requirements.

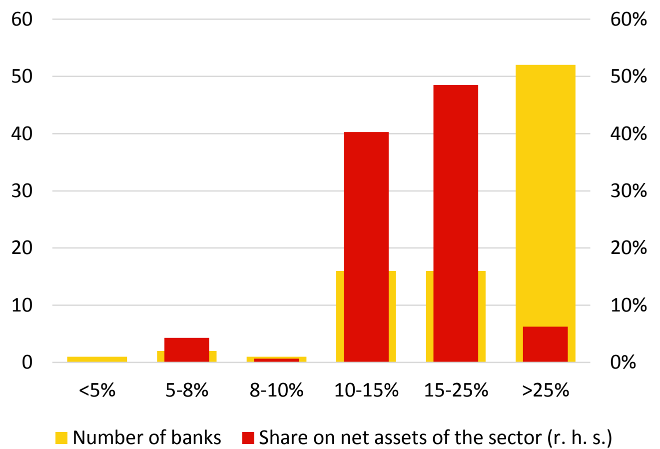
Changes in capital by bank groups for 9M 2017, UAH billion



** Registered and unregistered authorized capital.*

Source: NBU

Distribution of capital adequacy across the banking sector as of 1 October 2017



Source: NBU

The NBU expects banks to increase their activity in 2018 as banks have been re-capitalized and economic activity is on the rise. Demand for banking services continued to grow coupled with the revival in lending. Those factors are expected to support the profit-generating activity of banks in 2018. The sector's major challenge is the low profitability of state-owned banks. The introduction of new provisioning rules according to IFRS 9 is expected to have a negative impact on banks' equity. Exact assessments of the impact will be available only once banks publish financial statements for Q1 2018.

Box: Cyber Risk as a Challenge for Financial Stability

In 2017, several large-scale cyberattacks hit Ukraine and inflicted damage to companies, banks, and government bodies. Direct losses were not significant. However, the interruptions the attacks caused in the operations of large banks and companies proves that the issue of cybersecurity cannot be disregarded. Until recently, Ukraine faced only localized cyberattacks, which led the country to underestimate the potential consequences even though cyber risks have been a global concern in recent years and substantial resources have been allocated to minimizing their impact. The cyberattacks this year show that the problem is national and not isolated. It can be resolved only by uniting the efforts of the public, financial, and real sectors. Otherwise, cyber risks will grow and could pose a threat to financial stability. The NBU recognizes that risk and has introduced measures to reinforce the resilience of banks to cyberattacks and to reduce the adverse effect of any potential attacks.

The attention of the global community was first focused on cybersecurity in 2012 when the World Economic Forum (WEF) included cyberattacks in the top five most probable risks in its Global Risks Report. Today, cybersecurity issues are covered in documents by countries of the G20, the Basel Committee on Banking Supervision (BCBS), the EU including the European Banking Authority (EBA), US financial regulators headed by the US Federal Reserve, the Bank of England (BOE), International Organization of Securities Commissions (IOSCO), International Association of Insurance Supervisors (IAIS), and others.

Cyberattacks aim mainly to breach data and gain control over computer resources or to cause system malfunctions. Adverse consequences can include direct financial losses for banks and companies, the malfunction of IT systems, interrupted operations, intellectual property loss, reputation damage, and a negative impact on the interests of third parties (clients, shareholders, employees, etc.). In addition to direct losses, cyberattacks cause substantial indirect damage such as the loss of potential profits and clients, a decrease in share prices, and more. By IMF estimates, indirect losses usually account for 90% of all losses from a cyberattack. Globally, losses related to cyber risks are estimated at USD 0.25-1.0 trillion annually.

Global expenses cybersecurity

Author and year of estimate	Estimate, USD billion	Comments
OECP (2012)	638	Losses from piracy and data theft
McAfee Company (2014)	375-575	Direct and indirect losses from cyberattacks
Atlantic Council (2015)	250	Global cybersecurity expenses
IT consulting company Gartner (2017)	86.4	Global expenses for cybersecurity

Source: IMF (2017) WP/17/185, “Cyber Risk, Market Failures, and Financial Stability” by Emanuel Kopp, Lincoln Kaffenberger, and Christopher Wilson; Gartner (August 2017)

The world has reacted to the large losses from cyberattacks by sharply increasing counteractivity to those threats. Annual global cybersecurity expenses are growing rapidly and currently stand at approximately USD 100 billion. However, cyberattacks continue to grow in number and scale, which was especially evident in 2016–2017. Individual economic agents lack the resources to resist cyber threats, which makes them vulnerable to those threats. Developed countries decided that the fight against cyber threats must be systemic and that it will require coordination among the regulatory bodies of all interested parties. States and international bodies are adopting legislation that defines cyber risk management rules for businesses, recommendations on assessing risk and protection against cyber risks, insurance requirements, and organizing systems to counteract the risks. A growing number of central banks are paying attention to cyber risks and information security in their financial stability reports.

In 2017, Ukraine was hit by several large cyberattacks. A cyberattack using the Petya virus began on 27 June around 10:30 a.m. Kyiv time. That attack became the largest in Ukraine’s history. The virus infected Ukrainian banks and companies through an update of the “M.E.Doc” accounting program. The software’s popularity and the speed of infection allowed Petya to infect many businesses, financial institutions, and government authorities. The attack affected 35.0% of the banking sector by net assets and 32.4% by household deposits. Most banks faced difficulties in operations for several days, while their profitability returned to normal in less than a week.

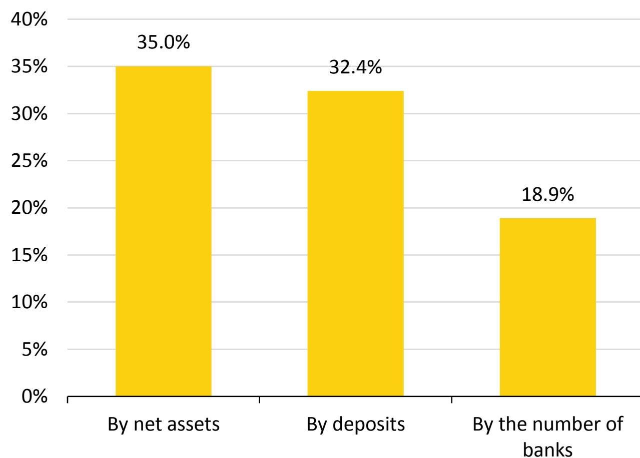
The second large cyberattack took place on 21–22 August, even though the Security Service of Ukraine and the NBU warned about the attack several days in advance[15]. That attack also inflicted substantial damage to banks. On 24 October, a virus attack interrupted card payments at the Kyiv Metro and the operation of information systems at Odesa Airport.

Many banks were also hit by cyberattacks previously. As one example, last year, several financial institutions incurred losses after hackers illegally used their international electronic payment systems. In cases like this, banks usually resolve the issue independently and do not share information with peers. That approach is misguided. Hackers often cyberattack individual institutions to test the vulnerability of IT systems and to refine tools for future large-scale attacks. The timely notification of cyberattacks from banks could reduce the scale of subsequent attacks and the consequences for IT systems. On the other hand, many banks still neglect cybersecurity and are not using the cyber risk counteraction techniques that have proven successful in Ukraine and around the world. For example, the frequency of cryptoware cyberattacks has grown considerably over the last two years: attacks took place in Germany in November 2016 and March 2017 and in Spain and Portugal in May 2017. However, the response by IT security specialists at banks has proven insufficient.

Based on the response to past cyberattacks and efforts to address the consequences of those attacks, IT security specialists have identified the factors that define a successful cyberattack:

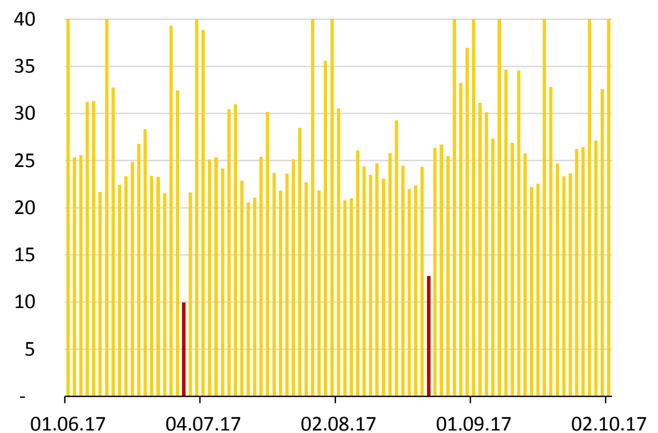
- Insufficient control over incoming email traffic
- Lack of a tested system for installing critical security updates for operating systems
- Lack of a proper process to backup critical information
- Using a single administrator account with wide privileges to work across different IT systems.

Share of banks infected with the Petya virus on 27–29 June 2017



Source: NBU calculations

Change in fee and commission incomes at banks* affected by the attack, UAH million



** Seasonal increases are not shown.*

Source: NBU

The problems with cybersecurity have reached the state level. On 5 October, the Verkhovna Rada adopted Law of Ukraine No. 2163 *On the Basic Principles of Cybersecurity in Ukraine* (takes effect 9 May 2018), which gave the NBU a key role in the national system of cybersecurity. According to the law, the NBU determines the procedure, requirements, and measures of cyber protection and IT security in Ukraine's banking system. Under the law, a cyber protection center will be established at the National Bank of Ukraine.

In response to new challenges, the NBU has offered comprehensive solutions to banks to minimize cyber risks and eliminate existing cyber threats. On 28 September, the NBU Board approved Resolution No. 95 *On the Approval of the Regulation of Measures to Ensure Information Security in the Banking System of Ukraine* (takes effect 1 March 2018). The regulation sets minimum requirements for IT security and cyber protection, the principles of IT security management, and the requirements on banks' IT systems that interact with the NBU's IT systems. The document contains general recommendations for the development of IT security systems and covers specific technical issues for the protection of banking information.

[15] Letter No. 56-0007/55824 dated 11 August 2017.

Changes in the regulatory environment

In H2 2017, the NBU focused on improving the transparency of lending operations and mitigating banks' credit risks. The NBU introduced new requirements in the area of AML/CFT compliance monitoring and launched regular disclosures of performance indicators by individual banks. In addition, the basis for the NBU's Credit Register was created. Progress in reforming legislation was insignificant. Parliament passed the Laws of Ukraine *On the Basic Principles of Cybersecurity in Ukraine* and *On Electronic Trust Services* and approved amendments to Ukraine's Tax Code, *inter alia* eliminating caps on provisions charged to expenses. However, key draft laws that are crucial to the development of the banking system have not yet been adopted.

Outlined guidelines for the state's cyber security policy

The Law of Ukraine *On the Basic Principles of Cybersecurity in Ukraine* is slated to take effect in May 2018. The law outlines key cyber security definitions and specifies the mandates of authorities on IT security. Pursuant to the law, the NBU will establish a cybersecurity center and ensure the cybersecurity system within the banking system functions properly. The Law of Ukraine *On Electronic Trust Services* mandates NBU to regulate e-identification in the banking system. To that end, the NBU has already enhanced the requirements for information security systems used by Ukrainian banks that are consistent with modern cyber threats (See Cyber Risk as a Challenge for Financial Stability).

Addressed taxation issues related to the transition to IFRS 9

Starting 1 January 2018, the amended provisions in the Tax Code of Ukraine will streamline taxation on the operations of banks and other financial institutions related to the implementation of IFRS 9. Caps on provisions for tax deductibility will be eliminated; previously, breaching the caps actually meant that taxes would have been levied on bank losses. Furthermore, provisions pertaining to the forgiveness of a borrower's debts by lenders have been improved, with adjustments for previous years being considered.

Introduced new rules for bank reorganization and simplified bank capitalization procedures

The NBU has streamlined the procedure for reorganizing banks through mergers in accordance with the Law of Ukraine *On Simplifying Capitalization and Reorganization Procedures for Banks*. The procedure will now take three to four months, compared with a year and a half in the past. The NBU will be able to approve bank reorganizations as early as during the merger planning stage. In August 2017, the regulator approved the reorganization of Express-Bank JSC through a merger with Industrialbank JSCB through the new procedure.

The abovementioned law outlines the procedure for the simplified capitalization of banks and the termination of bank operations without dissolving a legal entity. Therefore, a bank that fails to meet capitalization requirements can continue operating as a financial institution after leaving the banking sector and paying off depositors. Four banks have already declared their intention to use this option.

Introduced new requirements for risk management in AML/CTF Compliance Monitoring

Banks have changed their approach to analyzing the financial transactions of customers from a formal compliance to a risk-based approach. The shift from a formal evaluation of financial standing of customers to an analysis of their actual financial capacity will help banks manage risks more effectively. Furthermore, issues of AML/CTF compliance at banks will be reviewed by committees made up of the heads of banks' head and front offices and representatives of the legal and risk management departments.

Banks expanded the publication of financial statements and prudential reports

Banks have started publishing monthly trial balances and loan portfolio structures by financial classes on the NBU website. Additionally, the NBU is set to publish reports on the composition of regulatory capital by individual banks starting in 2018. Expansion of the scope

of publicly available information about banks will allow customers and investors make informed decisions.

Expanded reporting forms as part of preparations for the launch of the NBU Credit Register
The NBU introduced a new statistical reporting form for banks to disclose credit to households and corporates. With this new reporting form, the NBU expects to receive enough data to launch the Credit Register. Creating the relevant database is a prerequisite to develop mass lending in Ukraine. Giving banks access to the database will help them to assess credit risk more effectively. Over the five months up to 1 March 2018, banks will submit the new form in test mode.

The Register of Bank Credit Intermediaries was open
In October, the NBU launched on its website the Register of Bank Credit Intermediaries, which encompasses individuals, legal entities, and entrepreneurs who intermediate bank consumer loans to customers. The register is designed to reduce the risk of fraud for borrowers and to raise their awareness of lending terms and costs. Individuals have the right to intermediate between a bank issuing a consumer loan and a borrower only if they are in the NBU register. The relevant bank must be notified by the regulator of the intermediary's registration number and must publish information about the intermediary on its website.

Improved the consolidated supervision of banking groups[16]
The NBU identified a list of attributes that may indicate at individual control over an entity or the existence of a common controller. Those attributes can help identify the individuals that have a decisive influence on the potential members of a banking group. With a set of instruments at its disposal, the NBU can identify the members of a banking group that have not been reported by a controller. In addition, the regulator has streamlined the procedure for identifying and recognizing banking groups, and it introduced a notion "transparent ownership structure of a banking group." The changes to the identification and supervision of banking groups will facilitate early detection and mitigation of risks that arise from a bank's participation in a banking group.

Improved mechanisms of control over transactions with bank related parties
The NBU has required banks to inform individuals and legal entities of their being identified as a bank related party. The notification must be made no later than the next working day after the decision was made. Financial institutions must now enter the data into the list of related parties. This requirement will enable more transparent relations based on mutual responsibility. In addition, attributes that identify a related party have been revised. Legal entities that have a qualifying level of state ownership, local governments, and international financial institutions that enjoy privileges and immunities under Ukrainian law will not be identified as related parties.

Enhanced requirements for bank auditors and revised annual audit requirements
The NBU revised the procedure for maintaining the Audit Firms Register by introducing additional requirements for audit firms and their employees. Those requirements enhance the responsibility of audit firms for the results of conducted audits and prevent the provision of services by auditors that lack proper qualification. The NBU clarified the grounds for including/excluding an audit firm into/from the register, entering amendments into the register, and changing the expiration date of a certificate on an audit firm's inclusion into the register.

Results for 2017 will be audited according to the International Standards on Auditing. Since 2017, large banks with at least 0.5% of banking system assets must engage audit firms that employ at least five full-time auditors with bank audit certificates and at least five full-time IFRS-certified specialists. That requirement does not apply to smaller banks.

[16] A group of legal entities under common control with a bank or banking services provider as a central element. The group is subject to consolidated supervision.

Standardized the licensing procedures for banks and non-bank financial institutions
The NBU has started to verify the ownership structures, financials, and business reputations of non-bank financial institutions that plan to offer domestic currency transfer services. The NBU has adopted the licensing procedures for money transfer services for non-bank financial institutions to those applied to banks. A transition period has been in place since August 2017 to allow non-banks licensed to transfer money time to comply with the new conditions. The improved regulation of the non-bank financial services market is aimed at eliminating outflows of "dirty" money from the banking sector to the non-bank sector. This will pave the way for a clean-up of the non-bank financial institution sector.

Gradual easing of restrictions in the foreign currency market continues
Over the last six months, the NBU has:

- Allowed banks to perform their own FX transactions without limitations by the group of the Classifier of Foreign Currencies and Investment Metals, or the maturity and type of hedging
- Simplified the terms and procedure for some transactions that involve purchases and transfers of foreign currency, particularly for foreign investors' operations with domestic government bonds
- Allowed banks and non-banks purchases and transfers of foreign currency on the basis of an NBU individual license for making a guarantee deposit outside Ukraine in accounts of international payment systems
- Allowed loan in domestic currency against collateral in the form of FX holdings on customer accounts
- Expanded opportunities for businesses to repatriate profits. Businesses can now pay out dividends accrued not only for 2014-2016, but also for earlier years. However, payments must not exceed USD 2 million per month per legal entity (payments of dividends accrued for 2014-2016 remain capped at USD 5 million)
- Canceled the use of letters of credit for advance payments under external contacts for a value greater than USD 5 million.

The NBU is set to gradually lift the anti-crisis FX restrictions, provided macroeconomic and financial stability is maintained. Passing the draft law *On Foreign Currency* is key to easing FX regulations.

Recommendations

Ensuring financial stability requires coordination between the National Bank of Ukraine (NBU), government authorities, banks, and other financial organizations. The NBU makes recommendations to authorities and banks and outlines its near-term tasks and plans.

Recommendations for Authorities

Adopt legislation to enhance the performance of the banking sector

Several important draft laws were submitted to the Verkhovna Rada of Ukraine aimed at streamlining debtor bankruptcy procedures, restructuring retail foreign currency mortgages, and addressing the resolution of non-performing loans (NPLs). These draft laws have yet to be examined, although their adoption is crucial to restoring the sustainability of the banking sector. Parliament is also still to consider the issue of consolidated supervision for the banking sector (the so-called "split").

Complete and implement the development strategy for state-owned banks and pass a law to introduce independent supervisory boards at state-owned banks

The strategy for reforming the public banking sector has not been revised to adapt to new situation for state-owned banks. This issue must be urgently addressed. The strategy must clearly outline how state-owned banks will co-exist on the market and when the state reduces its share in the banking sector. The independent supervisory boards should implement that strategy. Laws would need to be adopted to amend the rules for establishing supervisory boards at state-owned banks. The NBU supports the draft law that was developed by Ukraine's Finance Ministry in cooperation with experts from international financial organizations.

Streamline the management of local governments' funds deposited in the single treasury account (STA) and banks by making the spending schedule smoother and predictable

Most of the funds accumulated in the STA at the end of the year and hurriedly spent in the final month of the year come from local governments. High outflows in December, an annual occurrence, create risks to the currency market and banking sector liquidity. Despite the NBU's repeated warnings, this issue is long overdue for a response. Radical changes are needed to the management of funds by local governments. That may require amendments to the legislation.

Improve resilience to cyber risks

Over the past year and a half, Ukraine was affected by significant cyberattacks. Those attacks temporarily brought down the IT systems of banks, companies, and government authorities alike. In response, IT security rules and procedures in both the public and private sectors need to be revised. Regulators must ensure that cyber risks are adequately assessed and must introduce cyber emergency alert, control, and response systems. In addition, the regulators must regularly test the resilience of IT and communication systems to identify any vulnerabilities, and promote international cooperation in the area of cybersecurity.

Recommendations for Banks

Complete preparations for the transition to IFRS 9

The implementation of IFRS 9 requires banks to enhance their analytical capacities and train staff. Banks will need to develop statistical models to measure expected losses. Not all banks have finalized developing and testing those models, nor have all banks completed a comprehensive analysis of the possible impact of IFRS 9. To ensure the uniform implementation of the new standard by banks, the NBU will analyze those banks' models in the first six months of 2018.

Monitor risks associated with the revival of consumer lending

Banks must constantly monitor the quality of their loan portfolios, particularly retail loans. Any rapid growth in lending would potentially lead banks to raise their risk appetites, which

would entail higher credit risks. The detailed recommendations for banks regarding consumer lending are outlined in Section Lending trends.

Pursue a prudent approach to distributing profits, particularly at state-owned banks
The introduction of IFRS 9 in 2018 will require banks to make an additional, one-off round of provisioning. Banks must therefore be prudent in their distribution of 2017 profits.

That consideration raises the issue of dividend payments by state-owned banks. According to the Law of Ukraine *On State Property Management*, state-owned enterprises must pay out at least 30% of net earnings in dividends[17]. That requirement should not apply to state-owned banks that are still exposed to capital adequacy risks. Any situation in which state-owned banks pay out dividends and subsequently claim they are poorly capitalized is unacceptable.

Comply with the draft regulation on risk management before it enters into force
In 2017, the NBU drafted regulation related to risk management systems at Ukrainian banks. The draft regulation was the result of joint work by international experts and representatives of the banking sector. The regulation outlines the main objectives and risk management principles across all areas of a bank's activity. It also establishes mandatory minimum requirements for the functioning of a comprehensive, adequate, and effective system of risk management that complies with the Basel regulations. To fully implement the regulation, the Law of Ukraine *On Banks and Banking* must be amended, which is a lengthy process. The NBU recommends that banks start implementing the provisions of the regulation to bring their risk management approaches closer to international best practices.

Continue cleaning up balance sheets of non-performing loans
Over the past six months, the absolute amount of NPLs has remained virtually unchanged. However, their share in banks' loan portfolios has fallen significantly to 56% as lending has grown. Banks are progressing slowly in cleaning up their balance sheets and operating performance is still being affected by the high NPL rates. Financial institutions should make better use of write-off mechanisms (with IFRS 9 allowing for a gradual write-off of financial instruments) and financial restructuring (the "Kyiv approach"). The NBU will urge banks to develop and start implementing plans to deal with NPLs in H1 2018.

Adhere to recommendations on cyber security
Banks must use software and security systems from reliable developers, apply standardized security settings across the organization, respond promptly to any gaps identified in their IT security systems, and limit the number of users with administrator rights. NBU Board Resolution No. 95 dated 28 September 2017 outlines a set of information security rules that are slated to enter into force in Q1 2018.

NBU's Plans and Objectives

Introduce annual stress testing of banks
Stress tests are used widely to assess the resilience of banks to possible shocks. The NBU will introduce annual stress testing in 2018. Banks that jointly account for 90% of the banking sector by assets will be stress tested. Audit companies will be engaged during the asset quality review stage, which precedes the actual stress test. Approaches to stress testing will be revised annually to better assess the impact of risks that are most relevant to the banking sector at a given time.

Continue bringing banking sector supervision practices closer to Basel III
To improve the resilience of the banking system and individual banks, the NBU will work to implement new capital adequacy and liquidity requirements. The new rules will be introduced gradually during an extended adaptation period to allow the NBU to quantitatively assess their impact on the banking sector, as outlined in the road map developed by the regulator. The implementation of the Liquidity Coverage Ratio (LCR) will be followed by changes to the regulatory capital structure and eligibility criteria for its

[17] The Cabinet of Ministers of Ukraine issues resolutions that establish dividend payout reference ratios.

components. In Q1 2018, banks will have the opportunity to familiarize themselves with the NBU's draft regulation for the new regulatory capital structure.

Introduce the Liquidity Coverage Ratio (LCR)
The NBU will introduce the LCR, which is designed to enhance the resilience of banks to short-term liquidity shocks. The LCR will be the first step in adopting a fundamentally new approach to managing bank liquidity risk that meets the Basel requirements. Banks will calculate the LCR in test mode over the next year and compliance will become mandatory by the end of 2018.

Improve standards of financial and prudential disclosures by banks
Since October 2017, the NBU has reported the quality of bank loan portfolios and trial balances which include detailed information about the financial standing of banks. In 2018, the NBU will expand the scope of information for mandatory disclosure, and banks will have to disclose their regulatory capital structures. The NBU will look to have more information disclosed, as provided for by Pillar 3 of the Basel framework.

Require banks to develop and implement plans to reduce NPLs
The regulator will urge banks to develop and begin implementing programs aimed at resolving NPLs in H1 2018. The NBU plans to pass a resolution that will outline requirements for those programs and their implementation schedule.

Supplementary (thematic) materials

Reforming Capital and Liquidity Standards

The NBU is changing requirements for the structure and adequacy of regulatory capital and introducing new liquidity requirements to improve the resilience of banks and the system overall. The new rules will be implemented in stages over a long period of time taking into account quantitative assessment of its impact on the banking sector. The changes are aimed at protecting banks from the negative consequences of possible future crises.

NBU introduces European standards for banking regulation

Under the EU Association Agreement, Ukraine has pledged to bring its legislation closer to Europe's, including to implement the CRR/CRD IV regulation package[18], which is based on Basel III recommendations. These actions are also covered by the *Comprehensive Program of Ukrainian Financial Sector Development Until 2020*.

To prepare for the European standards, the NBU concentrated on normalizing the work of the banking sector over 2014–2016. The regulator required banks to eliminate capital deficits, improve liquidity, eliminate related party loans, and disclose their ultimate beneficial owners. Now the focus has shifted to long-term priorities and to establishing the rules that will protect the banking sector against the consequences of possible crises. That is why the NBU is amending banking regulation and supervision practices to adopt globally accepted standards. The reform foresees the following:

- Changing the structure of regulatory capital and the eligibility criteria for regulatory capital components.
- Updating the rules for calculating risk-weighted assets, particularly to include market and operating risks.
- Introducing requirements on bank leverage.
- Setting requirements on capital buffers.
- Implementing new liquidity requirements.

The specifics of the Ukrainian market will be considered when introducing the international standards, especially the current development of the banking sector and financial markets. CRR/CRD IV allows for these types of considerations.

The NBU will develop new capital and liquidity requirements, discuss the proposed standards with the banking community, and perform a quantitative impact study (QIS) of the proposed rules. There will be a testing period for the new regulations before they become obligatory prudential requirements.

CAPITAL ADEQUACY REQUIREMENTS

The structure of regulatory capital and eligibility criteria for its components

Changing the structure of regulatory capital will be the first step in reforming minimum capital adequacy requirements for banks. New requirements for the proportions of capital components, new eligibility criteria for capital instruments, and changes in the procedure of capital deductions will be introduced.

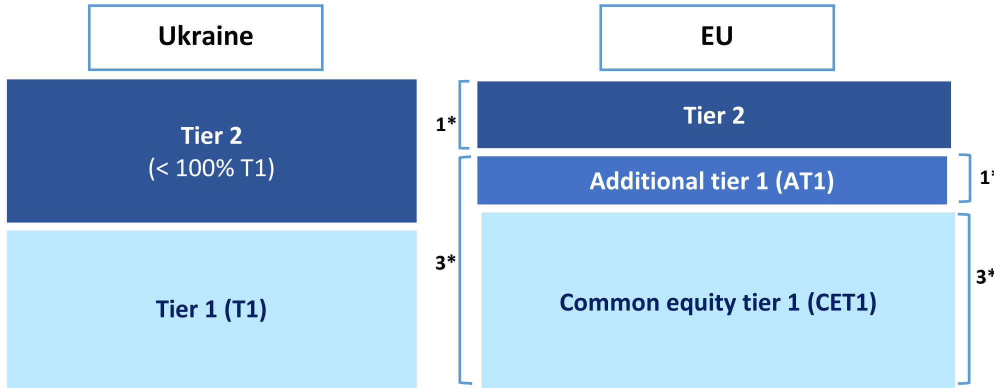
Currently, a bank's regulatory capital consists of core (tier 1) capital and additional (tier 2) capital. Core capital must account for at least 50% of the regulatory capital. The purpose of tier 1 capital (going concern capital) is to absorb unexpected losses from current operations and keep a bank solvent. Tier 2 capital (gone concern capital) absorbs losses if a bank becomes insolvent.

[18] The Capital Requirements Directive (EU Directive 2013/36/EU) sets general requirements for the minimum amount of capital, capital buffers, and liquidity. The Capital Requirements Regulation ((EU) No. 575/2013) sets quantitative and qualitative requirements on the capital structure, capital buffers, and liquidity. It also defines approaches to assessing all types of risks while incorporating them into the calculation of regulatory capital.

International capital standards have evolved substantially since they were introduced globally with Basel I. The minimum requirement for the regulatory capital adequacy ratio remains at 8% for developed countries. However, requirements for the structure and components of regulatory capital, as well as for the assessment of risks it must cover, have changed dramatically. European legislation has adopted all Basel III standards in terms of the structure of regulatory capital. The NBU plans to introduce those standards into Ukrainian legislation by implementing the following structure:

- Core tier 1 capital
- Additional tier 1 capital
- Tier 2 capital.

Current minimum capital requirements: Ukraine and EU



** Numbers reflect proportions of the components.*

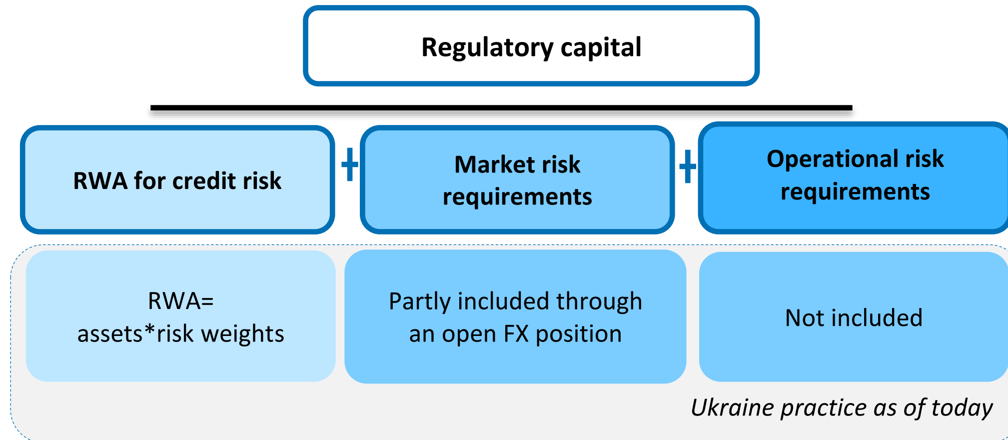
Requirements to core tier 1 capital will be the strictest as it must be immediately available to absorb unexpected losses. Typically, core tier 1 capital instruments include common shares, share premiums related to their issue, and retained earnings verified by the regulator. The NBU also plans to include perpetual subordinated debt in the additional tier 1 capital. That debt would be automatically converted into core tier 1 capital if the latter falls below a certain critical point. The new capital rules will also outline a different rules for making deductions from the capital of each tier.

Banks will receive a copy of the draft legislation on the new capital structure in H1 2018. The new rules are likely to come into force in early 2019. In 2018, minimum capital adequacy requirements will be based on the new capital structure.

New rules for calculating risk-weighted assets

Per Basel III recommendations and EU norms, the capital adequacy ratio is calculated using the formula below. Currently, Ukraine has only partially adopted that approach. Market risk is only accounted for through the amount of a bank's open currency position, while operational risk is not included in capital adequacy calculations. Starting in 2020, the rules for incorporating market risk will be changed and requirements will be set for the capital to cover operational risks.

Regulatory capital adequacy ratio formula



To assess the amount of capital needed to cover credit risk, a standardized approach is used in Ukraine: predefined weights (0-100%) are applied to assets depending on their risk profile (groups). This approach will remain, while the coefficients (weightings) will likely be recalibrated in the light of the recent amendments to Basel 3.

Implementation of leverage ratio

Per the Basel III recommendations and the CRR/CRD IV package, requirements for the bank leverage ratio will apply in addition to the minimum capital requirements. The leverage ratio equals tier 1 capital divided by all exposures, not weighted by the risk. The ratio introduces a means to restrain growth in banks' balance sheets. The NBU plans to implement the leverage requirement in 2020.

Additional requirements to enhance the resilience of the financial system and individual institutions

Along with the minimum capital requirements, Basel III and CRR/CRD IV introduce capital buffers for the system and for individual banks. Capital buffers aim to create a safety cushion to absorb losses incurred from systemic risks to the financial sector.

The implementation of capital buffers would require the core tier 1 capital requirements to be increased. In 2015, the NBU introduced three capital buffers: the conservation buffer, countercyclical buffer, and systemic importance buffer. However, they can be activated no earlier than in 2020.

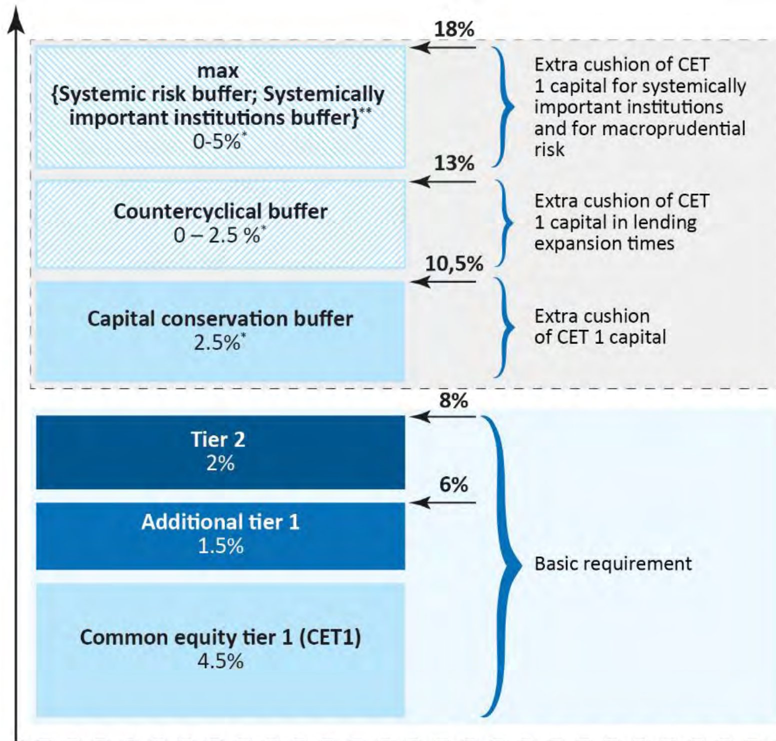
The capital conservation buffer will help build up capital outside crisis periods. Banks can use it to cover losses without violating minimum capital requirements. Ukrainian banks will start accumulating this buffer in 2020, adding 0.625 pp annually (from 0.625% to 2.5%).

The countercyclical capital buffer will be used during periods of credit expansion, when rapid growth in credit portfolios creates systemic risks. This buffer will provide banks with additional protection in case systemic risks materialize. The maximum size of this buffer is 2.5%.

The systemic importance buffer will apply to systemically important banks to reinforce their ability to absorb losses. These banks need to be more resilient to crises than others as their insolvency could have a negative impact on the entire financial sector. The size of the buffer will depend on the bank's category of systemic importance and will range from 1% to 2%.

CRR/CRD IV also allow regulators to apply the systemic risk buffer. Current NBU regulations do not provide for the systemic risk buffer and its implementation will not be considered in the coming years.

Bank capital structure and buffers in the EU under CRD IV



LIQUIDITY REQUIREMENTS

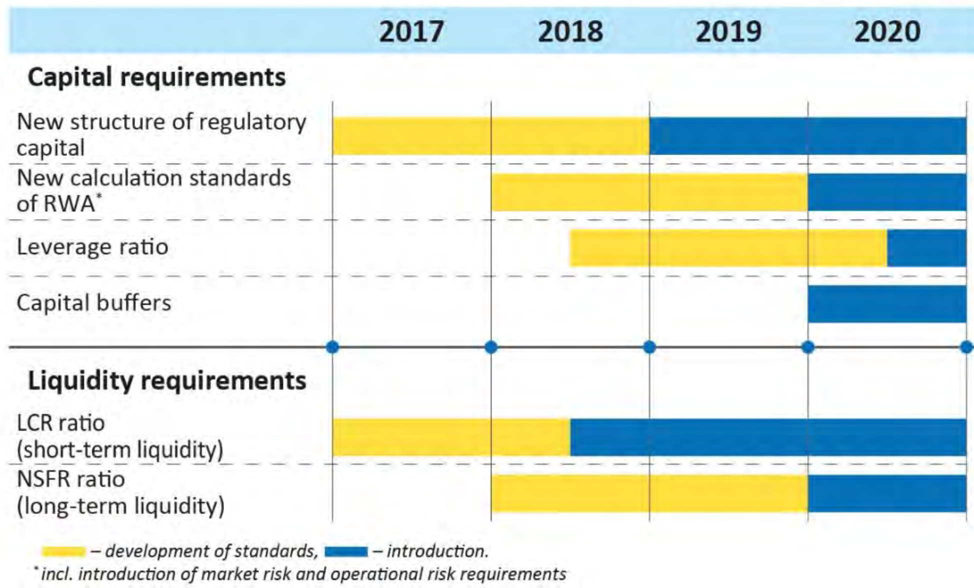
In 2013, Basel III introduced for the first time minimum requirements on bank liquidity. Past Basel standards were only related to capital requirements. Basel III proposed two liquidity requirements: the Liquidity Coverage Ratio (LCR) and Net Stable Funding Ratio (NSFR).

The LCR aims to boost banks' resilience to short-term liquidity shocks. If a bank meets the 100% threshold, it has sufficient resources to cover cash outflows for 30 days during a crisis. EU regulations require a minimum 100% LCR starting on 1 January 2018. More information about the planned implementation of the LCR at Ukrainian banks can be found in the focus piece titled *LCR: The New Short-Term Liquidity Requirement*.

The NSFR is calculated over a one-year horizon. This motivates banks to rely more on stable funding and use less short-term funding. The NSFR requirement does not allow excessive term gaps between bank assets and liabilities.

Compared with the LCR, the NSFR requirement is more difficult for banks as it requires major changes to the term structure of liabilities. For this reason, the NSFR will take longer to be implemented around the world than the LCR. The NSFR will be adopted globally on 1 January 2018 with the minimum value set at 100%. The NBU plans to develop the NSFR for Ukrainian banks in 2018 and launch its stepped introduction in 2020.

Roadmap for reforming capital and liquidity standards



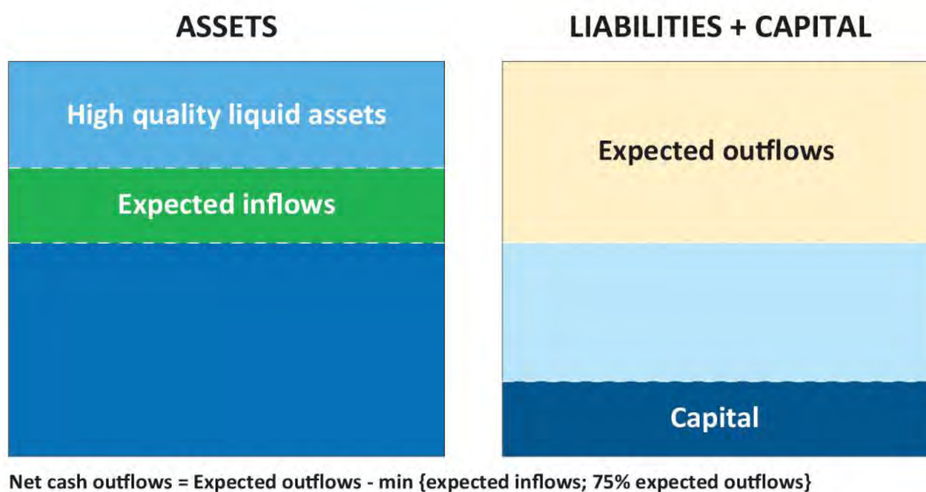
LCR: The New Short-Term Liquidity Requirement

The NBU is introducing a new requirement – the Liquidity Coverage Ratio (LCR). The LCR will enhance banks' resilience to short-term liquidity shocks. The requirement complies with Basel III principles and European law. The LCR is used as a measure of liquidity globally: 45 countries have already adopted the ratio. The LCR will be the first step in Ukraine's new approach towards managing bank liquidity risk. Throughout 2018, banks will calculate the ratio in test mode, and it will become mandatory at the end of 2018.

The LCR is a new prudential requirement that will be introduced in Ukraine by the end of 2018

The Liquidity Coverage Ratio (LCR) is a new prudential liquidity requirement. It measures the share of liquid assets a bank needs to cover an increased outflow of funds for a 30-day period caused by a banking system crisis.

LCR calculation principle



The LCR is calculated as follows:

$$LCR = \frac{\text{The stock of unencumbered high–quality liquid assets}}{\text{Net cash outflow within 30 days}}$$ where

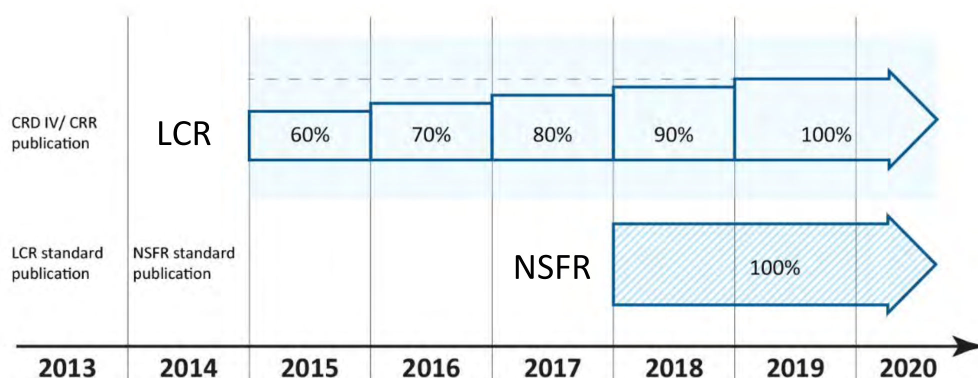
$$\text{Net cash outflow} = \text{Expected outflows} - \text{Min}\{\text{Expected inflows};\ 75\%\ \text{of expected outflows}\}$$

High-quality liquid assets (HQLA) include cash, funds at the central bank, and securities that can be quickly converted into cash in the event of a crisis, because they are transparently valuated at generally stable prices on an active market. Expected inflows refer to the amount of scheduled contractual inflows on performing assets weighted by inflow coefficients as defined by the regulator based on the assumption that a portion of inflows is allocated for the creation of new assets, but not to finance outflows. If an asset qualifies as an HQLA, cash flows related to that asset are not included in the calculation of expected inflows. Expected outflows refer to the amount of scheduled contractual outflows and outstanding balances withdrawable within 30 days multiplied by outflow coefficients. The coefficients account for clients' propensity to decline deposit extensions, rescind agreements with banks, and withdraw funds during a crisis.

The LCR will be introduced in Ukraine by the end of 2018. It aims to ensure that banks have sufficient liquidity to repay liabilities on time and in full during a 30-day period of stress, i.e., under conditions when clients withdraw funds and decline to extend deposit agreements.

Introducing the LCR will bring Ukraine's banking regulation closer to European standards
The LCR and the Net Stable Funding Ratio (NSFR) are two liquidity ratios proposed by Basel III and implemented under European law. The Basel Committee on Banking Supervision developed the two measures in response to the global financial crisis of 2007–08. Saudi Arabia was the first country to implement the LCR in 2013. The ratio has become mandatory since 2015 for EU banks under CRR/CRD IV[19]. As of 2017, 45 countries have adopted the LCR, including countries that are not member of the Basel Committee on Banking Supervision such as Georgia, Belarus, and Kazakhstan.

LCR and NSFR Basel Committee implementation timeline



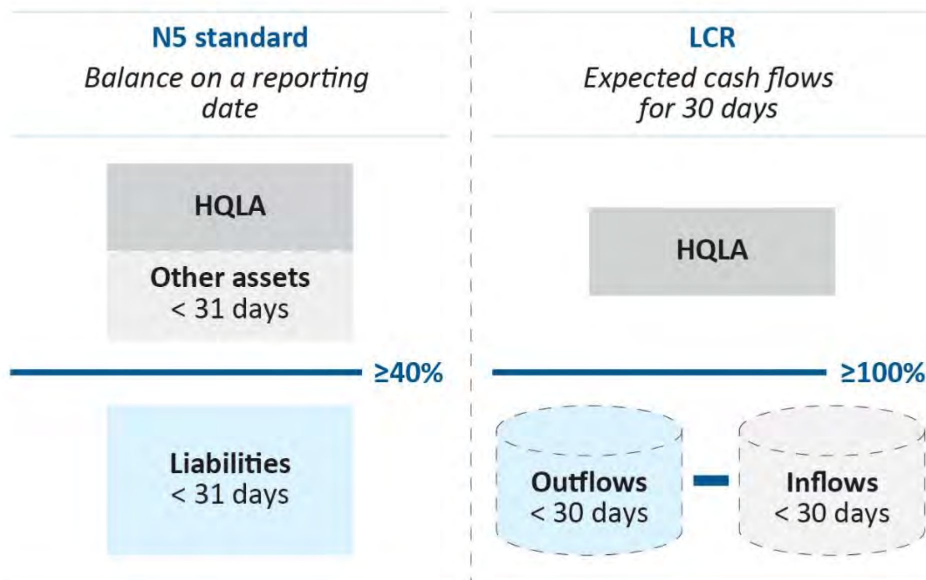
The Basel standard defines the calculation period for the LCR as 30 days, which is viewed as a sufficient period to take measures to recover liquidity or to remove a bank from the market in time. An ideal LCR reading is 100% and greater; that level indicates that a bank carries sufficient HQLA to fully cover a net cash outflow during the 30-day calculation period. Under Basel III, the minimum LCR values have been set at 80% for 1 January 2017, 90% starting in 2018, and 100% starting in 2019. The CRR requires EU banks to have a 100% LCR already as of 1 January 2018.

The implementation of the LCR in Ukraine will be the first step towards tightening bank liquidity requirements and bringing them into compliance with European law and the Basel III recommendations. Next, Ukraine plans to adopt new standards for organizing risk management systems at banks and implement the NSFR, slated for 2019.

The LCR has several advantages over existing liquidity ratios
At present, Ukrainian banks have three liquidity requirements: the quick liquidity ratio (N4), current liquidity ratio (N5), and short-term liquidity ratio (N6). Those ratios determine the share of on-demand liabilities, liabilities due within 31 days and within one year which must be covered with assets of corresponding terms (20%, 40%, and 60%, respectively). All three ratios compare assets and liabilities of a specific maturity. The ratios are static as they only account for balance-sheet figures on a certain date. This approach has drawbacks: it does not factor in expected cash outflows and inflows and usually underestimates the liquidity needed by banks to meet their liabilities during a crisis. For example, the N5 ratio does not reflect the fact that inflows under performing loans maturing within 31 days may not be entirely used to finance outflows, and that not all deposits maturing within 31 days are withdrawn from financial institutions.

19CRR and CRD are packages of regulatory requirements: Capital Requirements Regulation – (EU) No. 575/2013; Capital Requirements Directive – EU Directive 2013/36/EU.

Current liquidity standard vs LCR



The necessary preparations of the implementation of the LCR are underway

The NBU began preparing in 2016 to implement the LCR in Ukraine. The NBU studied the international practice of the implementation of the ratio by consulting with the Basel Committee, the World Bank, USAID, and the central banks of Georgia, Poland, Germany, and Belarus. In September 2016, the NBU and commercial banks established a working group focused on the LCR and its calculation in Ukraine. In 2017, drafts of the calculation approach and regulation were developed.

The following measures have been taken:

- Approved the list of HQLA components and defined the calculation approach.
- Analyzed empirical data and calculated cash outflow coefficients based on 2014 indicators.
- Surveyed banks regarding actual and forecasted cash inflows, and defined inflow coefficients.
- Defined the currency for calculating the ratio and the calculation frequency for the testing period, with an eye on the upcoming implementation of IFRS 9.

High quality liquid assets (HQLA)

Under Basel III and CRR, HQLA are divided into three levels by liquidity: 1 (no less than 60% HQLA), 2A and 2B (no more than 15% of HQLA). In Ukraine, the list of assets that qualify as HQLA is limited because the securities market is undeveloped and there are few eligible instruments in the market. On that understanding, the NBU does not see a need to subdivide HQLA into separate levels.

Hryvnia-denominated HQLA comprise the following unencumbered assets that can be immediately used to cover hryvnia outflows:

- Banknotes and coins
- Banks' funds deposited in correspondent accounts with the NBU, excluding the minimum daily reserve requirements
- Overnight deposits with the NBU
- Hryvnia-denominated domestic government bonds
- Foreign currency domestic government bonds with residual maturity of more than 30 days. These securities are designated as HQLA at their current market/fair value
- NBU certificates of deposit
- Hryvnia bonds issued by international development banks.

Foreign currency domestic government bonds with residual maturity of more than 30 days are included as hryvnia-denominated HQLA because the liquidity of the domestic securities market falls sharply during a crisis, which makes it practically impossible to sell those bonds in exchange for foreign currency.

HQLA denominated in foreign currency comprise the following unencumbered assets that can be immediately used to cover foreign currency outflows:

- Banknotes and coins
- Deposits with the NBU
- Foreign currency domestic government bonds with residual maturity of less than 30 days
- Sovereign Eurobonds (if the residual maturity exceeds 30 days, the HQLA includes 85% of the value of the securities)
- Foreign currency bonds issued by international development banks and the governments of G7 countries with ratings not lower than AA-/Aa3
- Funds on correspondent accounts (the net positive between nostro and loro accounts) with foreign banks rated no lower than investment grade.

Under Basel III and CRD IV, funds on correspondent accounts with other (foreign) banks are included in expected cash inflows, but not into the HQLA. However, because the Ukrainian market does not have sufficient highly-liquid foreign currency assets, the NBU is proposing to include the balances of correspondent accounts with foreign banks into the HQLA during the transition period. The allowable portion of these funds will decrease annually to zero as of 1 January 2025.

Expected cash outflows

To determine inflow and outflow coefficients, the Basel LCR standard factors in the depth of the crisis in 2007–08, especially funding outflows. The developers of the standard believe banks should be able to withstand crises of a similar scale while meeting their liabilities in full for at least 30 days. The Basel Committee recommends that national regulators be more conservative and consider the characteristics of financial systems in different jurisdictions.

The NBU has calibrated outflow coefficients based on data from 2014. On one hand, the war in eastern Ukraine was the major cause of the crisis of 2014–2015. The economy and the banking sector are unlikely to face similar consequences again. On the other hand, at that time, the NBU restricted cash outflows from the banking system by introducing administrative restrictions such as daily limits on cash withdrawals for individuals. These factors balance one another out and make that period suitable for calibrating the parameters of the LCR for Ukraine.

Based on available data, the LCR calculation will be based on the assumption that, within 30 days of the start of a crisis, households withdraw 20% of funds from their current accounts and 10% from term deposits with a residual maturity of up to 30 days, corporations withdraw 40%, and banks withdraw 100%. The NBU's approach differs from the Basel/EU approach:

- In the initial stages in Ukraine, retail deposits will not be broken down by measures of stability. The European stability criteria are not relevant for Ukraine, and defining applicable criteria will require additional research.
- Corporate deposits will not be broken down into operational and non-operational deposits. Clearing and liquidity management services are not sufficiently regulated in Ukraine, and operational deposits are largely related to those services.
- In the EU, the deposits of small and medium enterprises (SME) of less than EUR 1 million are classified as retail deposits. In Ukraine, SME belong to the business segment.

Expected cash inflows

During a crisis, a bank can only rely on scheduled contractual payments under performing loans that are unlikely to default within 30 days. The NBU surveyed banks to determine which assets can be considered fully performing during a crisis in Ukraine. The survey

responses showed that, during a crisis, performing assets are those without a single day past due and without any restructuring in the past 180 days due to financial difficulties on the part of the borrower. Payments under only this type of asset can be immediately included as an expected cash inflow.

The LCR model accounts for the fact that banks do not stop lending in a crisis, in order to retain clients and avoid damaging the bank's reputation. The inflow coefficient is calculated as cash inflows not allocated for new lending to households, businesses, and government bodies divided by total expected cash inflows. The Basel/EU approach sets its value at 50% and Ukraine will adopt the same level. However, a bank can dispose of the full amount of foreign currency inflows from individuals and inflows from other banks as retail foreign currency lending is prohibited and interbank lending market winds down completely during a crisis. In this situation, the inflow coefficient will be 100%.

Calculating, implementing, and reporting the LCR

The Basel/EU approach requires the LCR to be calculated in a single currency. To calculate the ratio, all foreign currency components must be converted into the equivalent of a jurisdiction's domestic currency. However, banks must also monitor the LCR in the major currencies. Some countries, like Turkey, Denmark, Singapore, and Sweden, set separate requirements for the foreign currency LCR to lower the risk of currency discrepancy. Sweden publishes the LCR in euro, US dollar, and in the single currency, and also recommends calculating the ratio in Swedish krona.

This approach is best for Ukraine, given the high level of dollarization in the economy and the high FX risks. The NBU's preliminary calculations for individual banks show[20] that the single currency LCR may not identify a problem if a bank has a weak foreign currency liquidity position. Therefore, Ukrainian banks will separately calculate the LCR for a group of foreign currencies.

Banks will calculate the LCR daily and will report monthly to the NBU. The reporting frequency may change during a crisis. The NBU may raise the LCR requirements and increase the reporting frequency for some banks.

The NBU plans to launch the LCR calculation in test mode in Q1 2018. Based on the test results, the NBU will define the ramp-up schedule for the LCR requirement to reach 100%. Existing liquidity ratios will remain in force until the full implementation of the LCR, the NSFR, and the bank risk management system based on Basel principles.

Expected impact on banks

The LCR ratio requires banks to hold a part of their assets in HQLA to ensure high liquidity. In most countries, HQLA yields are low, so banks are forced to decline a portion of interest income to meet the requirements. In Ukraine, the situation is different. The banking sector currently has a structural surplus of liquidity because of the nature of the post-crisis economic recovery. In addition, yields on HQLA securities are high, meaning most HQLA will generate substantial interest income. Therefore, under the current conditions, the introduction of the LCR should not have a negative impact on profitability of banks.

The shift to the LCR will require banks to adapt the structure of their balance sheets. The NBU expects the following effects from the LCR implementation:

- Asset structures will become more homogeneous in terms of the share of the HQLA in the coming years. Currently, HQLA on average account for more than 30% of net assets across the banking sector. However, the distribution is uneven: the share of HQLA is above 40% at state-owned banks thanks to the domestic government bonds they received through recapitalization, whereas the share is below 10% at some private financial institutions. International practice dictates that HQLA should account for 18-25% of net assets.

[20] The calculations based on data from questionnaires and are not final due to the lack of information. The systemically important banks did not participate in the questioning.

- The share of household deposits with an early repayment option will decline as banks will be motivated to shift to classic term deposits with no early repayment.
- Banks will additionally be motivated to increase the average term of liabilities, especially household deposits, and extend them on time.
- The structure of liabilities will change. Banks will rely more on retail deposits as they are more diversified and have lower withdrawal rates during a crisis than corporate deposits do.
- Banks will be additionally encouraged to conclude Emergency Liquidity Assistance (ELA) agreements with the NBU in time. This will be most important for banks that face high liquidity risks.
- The secondary market for government securities will grow as interbank trading grows.

The LCR sets only the minimum requirements for short-term bank liquidity to limit the dependency of financial institutions on short-term funding. This will not eliminate all liquidity risks, but will lower the probability of a systemic crisis. The liquidity profile for Ukrainian banks is expected to improve gradually after the implementation of the LCR, the NSFR, monitoring tools, and the risk management system.

The implementation of the LCR is the first step towards a completely new mechanism of bank liquidity risk management. This mechanism will become more effective once new standards for the organization of risk management systems at banks are adopted.

Abbreviations and terms

ATO	Anti-terrorist operation
CD	Certificate of deposit
CRR/CRD 4	EU Capital Requirements Regulation / Capital Requirements Directive
DGF	Deposit Guarantee Fund
DSTI	Debt service to income ratio
EBITDA	Earnings before interest, taxes, depreciation and amortization
EBRD	European Bank for Reconstruction and Development
ECB	European Central Bank
ELA	Emergency liquidity assistance
EU	European Union
FDI	Foreign direct investment
FSI	Financial Stress Index
FSR	Financial Stability Report
FX	Foreign currency/exchange
GDP	Gross Domestic Product
H1/H2	First/second half of a year
IFI	International Financial Institution
IFRS	International Financial Reporting Standards
ILO	International Labor Organization
IMF	International Monetary Fund
LCR	Liquidity coverage ratio
LGD	Loss given default
LIBOR	London Interbank Offered Rate
LTD	Loan-to-deposit ratio
LTV	Loan-to-value ratio
MTP	Major trading partner
Naftogaz	National Joint Stock Company Naftogaz of Ukraine
NBU	National Bank of Ukraine
NGCA	Non-government controlled areas (of Donetsk and Luhansk regions)
NFSR	Net stable funding ratio
NFC	Non-financial corporation
NPE/NPL	Non-performing exposure / loan
OPEC	Organization of the Petroleum Exporting Countries
Oschadbank	JSC Oschadbank
Parliament	Verkhovna Rada of Ukraine (Supreme Council)
PFU	Pension Fund of Ukraine
Privatbank	Public Joint-Stock Company Commercial Bank 'PrivatBank'
Q	quarter
ROE	Return on equity
SME	Small and medium-sized enterprises
SB	State-owned bank
SDR	Special Drawing Rights (IMF)
SOE	State-owned enterprise

SREP	Supervisory review and evaluation process
SSC	Single Social Contribution
SSSU	State Statistics Service of Ukraine
STSU	State Treasury Service of Ukraine
UAH	Ukrainian hryvnia
UIRD	Ukrainian Index of Retail Deposit Rates
Ukreximbank	JSC The State Export-Import Bank of Ukraine (JSC Ukreximbank)
Ukrgazbank	Public JSC Joint Stock Bank Ukrgazbank
US	United States of America
USD	US dollar
YTM	Yield to maturity
eop	end of period
bn	billion
k	thousand
m	million
M	month
r.h.s.	right hand scale
pps	percentage points
yoy	year-on-year
qoq	quarter-on-quarter