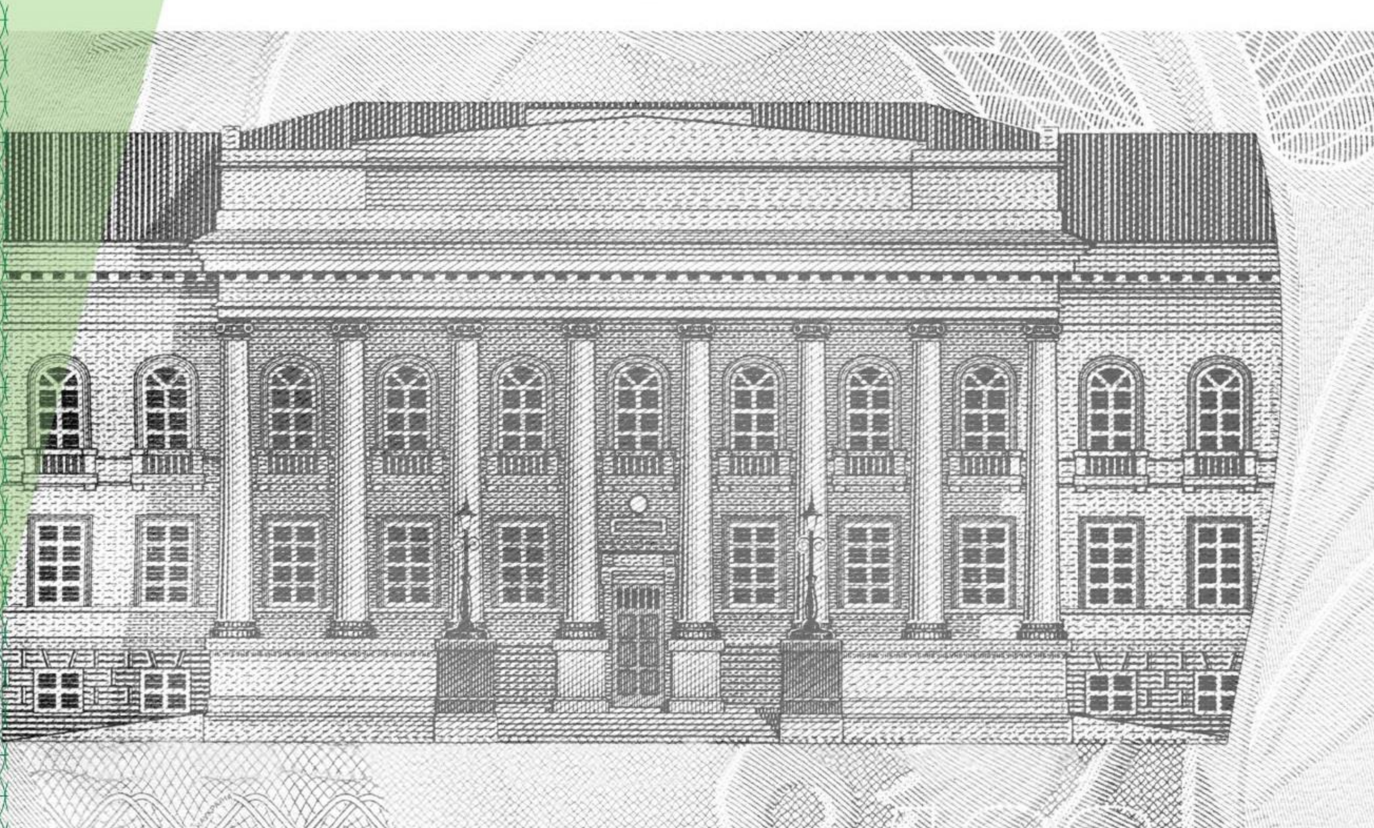
National Bank of Ukraine

Financial Stability Report

December 2018



The Financial Stability Report (hereinafter the report) is a key publication of the National Bank of Ukraine. It aims to inform about existing and potential risks that can undermine stability of Ukraine's financial system. The report primarily focuses on banking risks. The report makes recommendations to the authorities and banks on measures to mitigate risks and to enhance the resilience of the financial system to those risks.

The report is primarily aimed at financial market participants, and all those interested in financial stability issues. The report helps to understand better challenges that Ukrainian economy and financial system are facing as well as the impact that these challenges might have on financial stability in Ukraine. Publication of the report promotes higher transparency and certainty of macroprudential policy, helps to boost public confidence in the policy, and thus facilitates National Bank's management of systemic risks.

The report was approved for publication by the Financial Stability Committee of the NBU on 14 December 2018.

Contents

Summary

There were no substantial domestic or external shocks affecting the banking sector in H2 2018. Banks were actively raising funds and lending. Bankers are willing to lend and expecting their loan portfolios to increase in quality throughout 2019. The sector generated a profit in 2018 for the first time since the crisis.

The introduction of martial law in 10 Ukrainian oblasts has had little effect on banking activities: retail and corporate deposits have not decreased and banks remained liquid and continue to made timely payments. This is a clear sign of the recovery of customer confidence in the banking system. The safety margin that was formed after the last crisis is a guarantee that banks will remain stable, even under adverse conditions.

The banking sector has not seen a bankruptcy in more than a year. In late November, however, the NBU had to declare VTB Bank insolvent after it failed to make payments on time because of a lack of support from its parent. The NBU believes banks with Russian state capital will continue to wind down operations in Ukraine while meeting their commitments to depositors in full.

Unless the conflict with Russia escalates, the NBU expects no deterioration of macroeconomic conditions for banks in 2019. Nevertheless, economic growth is likely to slow and the country will soon enter an election period. The new program arrangement with the IMF has eliminated significant systemic risks to the economy and the financial sector. Consistent compliance with the program's requirements will ensure that Ukraine has enough resources to fulfill its external commitments and regain the trust of international investors. Under that scenario, the foreign exchange market will be stable and inflation will continue to decelerate.

NBU expects household and corporate incomes to keep growing, retail hryvnia deposits to rise at least at 15% yoy, and corporate deposits to increase 10% yoy. Corporate lending will be concentrated in the quality borrower segment: loans to high-quality companies will increase by more than 15% in 2019. The growth of retail lending will slow marginally, but will remain high for some time against a low comparison base. The sector's earnings will grow next year, with return on capital expected to exceed 10% overall.

The LCR, a new liquidity ratio, came into effect in early December. Early estimates of the LCR indicate that banks have sufficient high-quality liquid assets. On the other hand, banks are facing a substantial problem with a sizable maturity gap. The NBU views this as a system risk to the banking sector. Banks should make efforts to increase the ratio of term deposits and maturity of retail and corporate deposits.

The results of an evaluation of the banking sector's resilience under a baseline macroeconomic scenario confirm that banks are sufficiently capitalized. At the same time, financial institutions should increase capital to ensure a sufficient safety margin to weather any potential crisis. Stress tests of Ukraine's largest banks in 2018 showed that nearly half of the financial institutions tested may need additional capital to properly prepare for a severe crisis. Financial institutions with insufficient resilience margins must fundamentally restructure their balance sheets and revise their business models.

The NBU recommends that banks increase capital buffers beyond the minimum requirements for tier I capital adequacy (7% as of the start of 2019) and regulatory capital adequacy (10%). This recommendation is especially poignant for loss-making financial institutions or those with a low return on equity. From early 2020, a capital conservation buffer of 0.625% will be applied to all banks in addition to the tier I capital adequacy ratio. The NBU is also about to impose a new capital instrument – perpetual subordinated debt – which will become part of tier I capital but will not be critical to its formation.

The NBU continues to monitor the trends of household lending for current needs. Hryvnia-denominated net household loans have been growing at more than 35% yoy. Banking sector risks associated with retail lending are moderate because the total loan portfolio is not large.

At the same time, certain banks are facing increasing risks as their estimates of the probability of borrower default (PD) and loss given default (LGD) are not conservative enough. Estimates vary significantly across banks and are often based on historical data of poor quality. The NBU will continue to focus on these problems and to analyze the statistics of individual banks and the performance of their scoring models. Credit risk assessments should be realistic and banks should sufficiently provision for their household loan portfolios.

This report contains a detailed analysis of the dollarization of bank balance sheets, which is a significant risk to the banking sector. The NBU believes that certain banks are not taking sufficient measures to reduce the share of foreign currency loans and deposits. This problem is particularly urgent for financial institutions with private Ukrainian capital; at these banks, 50% of deposits and 40% of net loans are denominated in foreign currency. The stress-testing has exposed the vulnerability to economic shocks of banks with high foreign currency exposures on their balance sheets. The NBU has prepared balance sheet de-dollarization guidelines, which will lay the groundwork for specific banks to restructure their balance sheets by the end of 2019. The NBU expects that banks will work harder to bring the proportion of foreign currency on their balance sheets down to 20%–30%.

Earlier in December, the NBU published its Macroprudential Strategy, which outlines the NBU's approach to macroprudential policy to ensure financial stability and support sustainable economic growth. The strategy formalizes the NBU's macroprudential policy even though the NBU has already implemented some of the strategy's elements in the past. With regard to recommendations from the ESRB, the NBU has identified the following intermediate objectives for its macroprudential policy:

1) to avoid excessive credit growth;
2) to prevent illiquidity;
3) to limit the concentration of exposures;
4) to limit the impact of misaligned incentives (especially for state-owned banks);
5) to enhancing the resilience of financial infrastructure;
6) to lower dollarization rates in the banking sector.

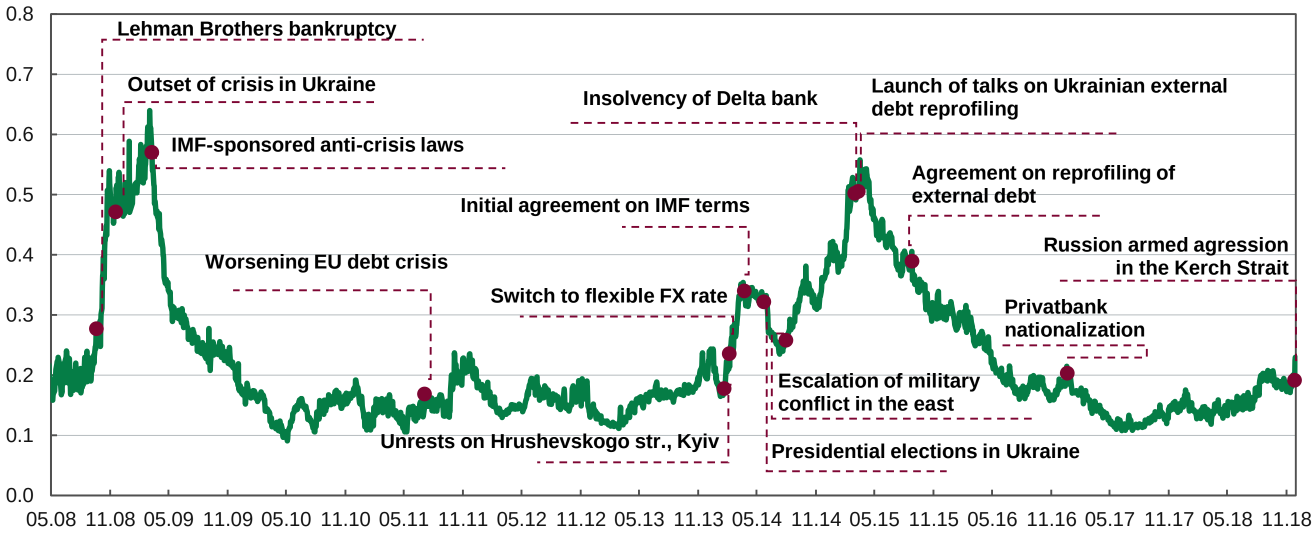
The NBU continuously monitors and analyzes banking sector risks and communicates them to market participants. When necessary, the NBU will use macroprudential instruments to prevent risks from building-up or to strengthen the resilience of banks to potential crises.

Financial Stress Index

The Financial Stress Index (FSI)[1] has grown slightly over the past six months, driven largely by the banking sector sub-index. The sub-index grew mainly because of a decline in liquid bank assets and the volatility of household deposits. From the middle of the year, the sub-indices representing the corporate sector, the FX market, and the government securities sector rose considerably, driven by uncertainty over the future of Ukraine's continued cooperation with the IMF. Towards the end of the year, the negative influence of this factor started to subside, improving the performance of the FSI and most of its components. However, the FSI spiked in late November in the wake of Russia's armed aggression in the Kerch Strait.

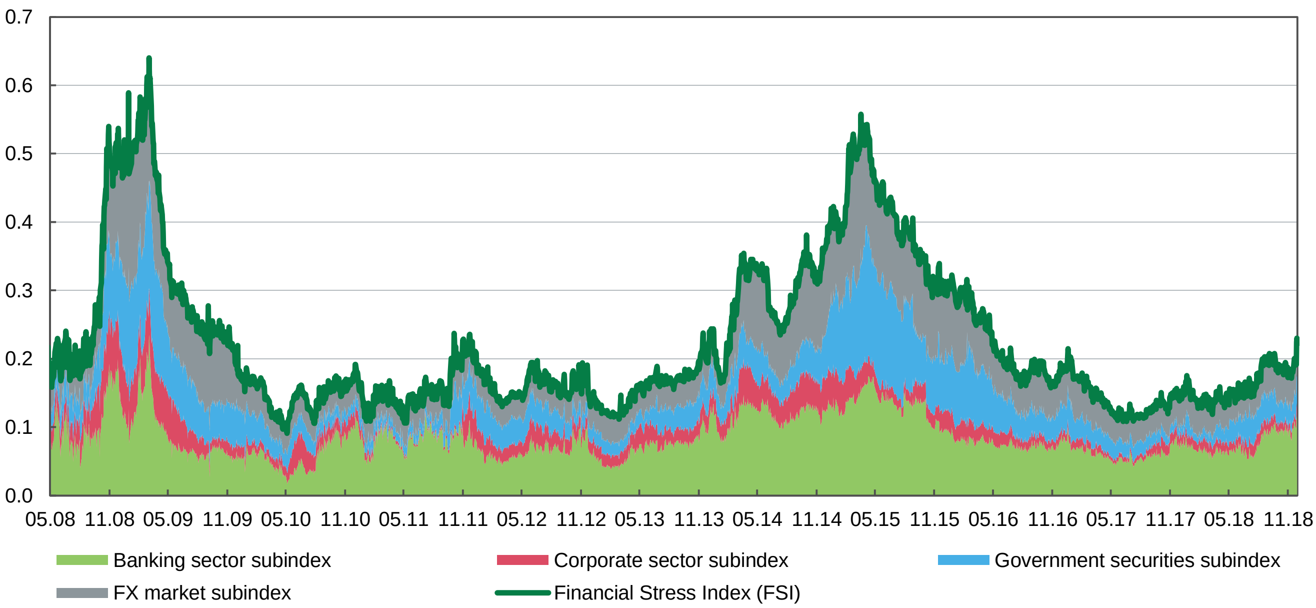
However, the index only reflects current conditions in the financial sector; it does not reflect short- or long-term prospects.

Figure FSI1. **Financial Stress Index**



Source: NBU.

Figure FSI2. **Contributions of sub-indices to the Financial Stress Index**



Source: NBU.

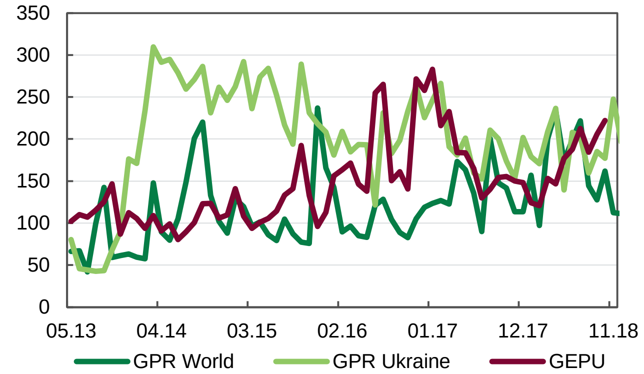
[1]The calculation method for Ukraine's Financial Stress Index is outlined in the December 2016 Financial Stability Report.

Part 1. External Conditions and Risks

1.1. External Developments

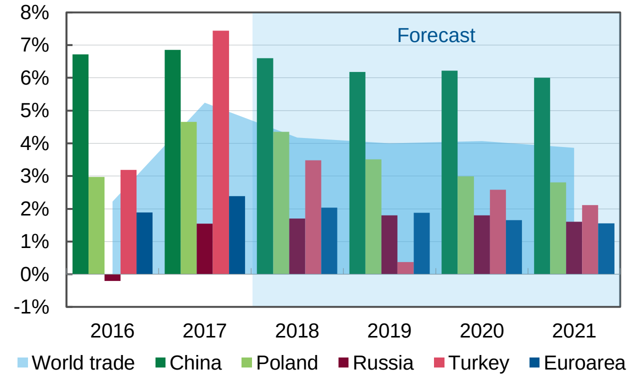
Russian aggression against Ukraine took new dimensions, now threatening to seize ports in the Sea of Azov. External risks to Ukraine's economy have intensified as economic growth in Ukraine's trading partners has decelerated and most emerging markets face tighter financial conditions and because of various trade conflicts. Commodity prices have dropped in recent months, and that downward pressure is likely to continue into 2019.

Figure 1.1.1. Geopolitical risk (GPR) Index[2] and Global Economic Policy Uncertainty (GEPU) Index[3]



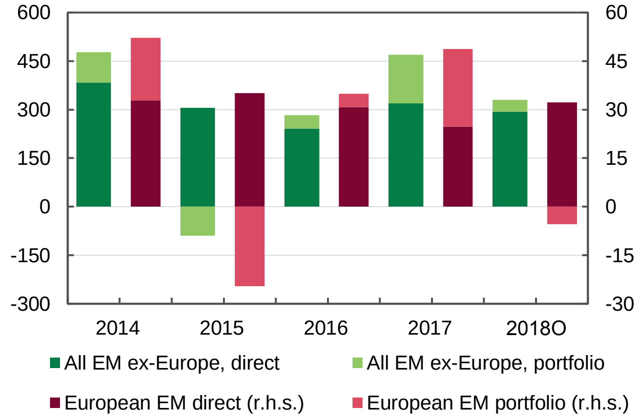
Source: Dario Caldara and Matteo Iacoviello; Davis, Steven J.

Figure 1.1.2. GDP of Ukraine's major trading partners and global trade volume, year-on-year growth



Source: IMF, October 2018 World Economic Outlook.

Figure 1.1.3. Net foreign investment in emerging markets, USD billion



Source: IMF, October 2018 World Economic Outlook.

Russian aggression takes on a new form

Russia has expanded its military aggression against Ukraine to the sea. On 25 November, Russian naval and coast guard forces seized three Ukrainian naval ships. The attack led Ukraine to impose martial law in 10 oblasts. Russia has regularly blocked or complicated the passage of Ukrainian vessels through the Kerch Strait. Between mid-May and late November, Ukrainian ships were delayed by Russia more than 630 times. As a result, the ports of Mariupol and Berdiansk, as well as the producers and carriers using those ports, have suffered large losses. The tensions in the Black Sea and the Sea of Azov will continue. Russia can completely shut down the Kerch Strait to Ukrainian merchant ships. A blockade would cause significant losses to ports on the Azov Sea. However, this would not be a critical risk to Ukraine overall as logistics are already gradually being rerouted to Black Sea ports. According to the Administration of Sea Ports of Ukraine, the share of Mariupol and Berdiansk in cargo volumes handled by Ukrainian ports dropped to 5.8% in the first 11 months of 2018 from 11.9% in 2013.

Unrecognized "elections" in the non-government-controlled areas are another destabilizing factor. The global community's response to Russia's actions has so far been limited.

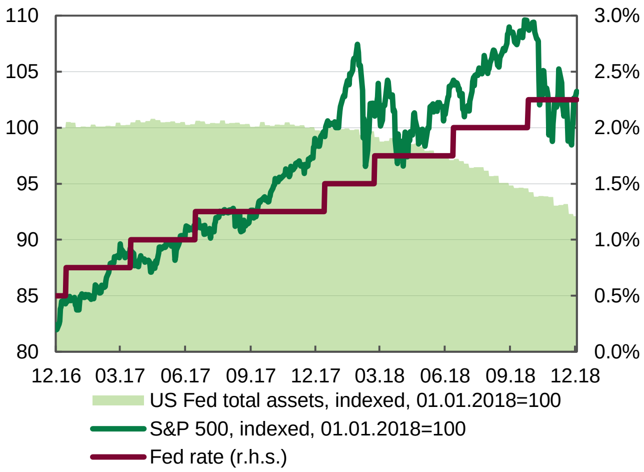
Geopolitical and geoeconomic risks are high

The threat of disorderly Brexit persists, as does the risk of an escalation in the trade conflicts between the US and China and other countries. US and Chinese leaders have agreed to postpone, but not cancel, increases to customs tariffs. Tensions have been on the rise in international economic policy (as measured by the GEPU Index) since Italy approved a populist budget and Paris was hit by protests against higher fuel taxes.

On a positive note, there has been progress made in the lawsuit filed by Ukrainian companies against Russia after the seizure of Crimean assets. Russia's appeal against the arbitration court's authority has been rejected in Lausanne. In addition, Oschadbank won a case against Russia in the Paris Arbitration Tribunal related to USD 1.3 billion in losses stemming from the occupation of Crimea.

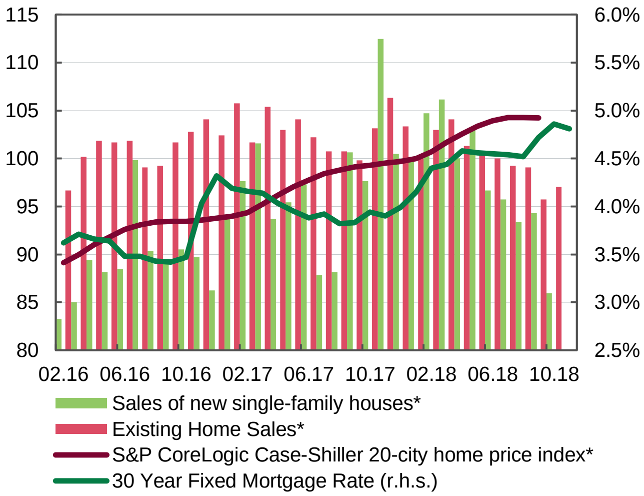
[2]Refer to the December 2017 Financial Stability Report.
[3]The Global Economic Policy Uncertainty (GEPU) Index is based on the frequency of references in national media to uncertainty about future economic policy. The GEPU Index is a GDP-weighted average of the national EPU indices of G20 countries. Davis, Steven J., 2016. "An Index of Global Economic Policy Uncertainty."

Figure 1.1.4. Fed rate and balance sheet index, performance of the S&P 500 Index, 1 January 2018 = 100



Source: Thomson Reuters.

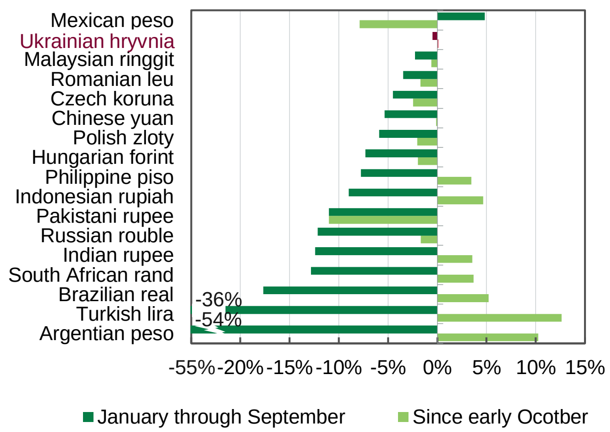
Figure 1.1.5. US real estate market indicators and mortgage rates



* 1 January 2018 = 100. New housing sales in the 20 largest cities.

Source: S&P CoreLogic Case-Shillerhomson Reuters, US Census Bureau, Macrotrends.

Figure 1.1.6. Change in exchange rates against the US dollar in 2018*



* (-) denotes depreciation, (+) denotes appreciation.

Source: Thomson Reuters.

Global economic growth is slowing

Next year, the world economy will decelerate by 0.1–0.2 pp from 2018, according to forecasts by the IMF and World Bank. Economic growth will also decelerate in Ukraine's major trading partners including the Euroarea, China, Poland, and Turkey (by 0.2, 0.4, 0.8, and 3.1 pp, respectively), according to the IMF's October Outlook. The slowdown in the Polish economy will threaten inflows from labor migrant remittances on top of bilateral trade.

The growth in global trade will also slow but will still be comparatively high, according to the IMF's baseline scenario.

Financial conditions for emerging markets are gradually deteriorating

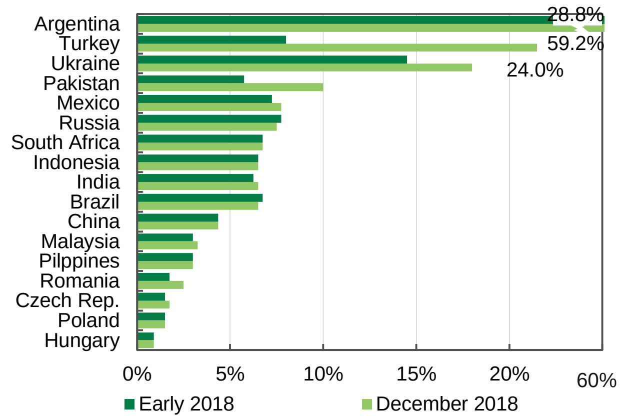
Capital inflows to emerging markets except China have fallen by an estimated 30% in 2018 (estimates by the Institute of International Finance, IIF) after the US tightened monetary policy and eased fiscal policy. That reduction in capital inflows has pushed stocks in emerging markets lower (the MSCI EM Index was down 12.2% in the first 11 months of the year), weakened their currencies (the MSCI EM Currency Index was down 3.6%), and pushed their Eurobond yields higher. Economies with largest financial and economic imbalances like Argentina, Turkey, and Pakistan were hit hardest. In response to external challenges, the governments of numerous developing countries reacted with relevant policy measures, including key policy rate hikes. This helped ease tensions somewhat in the affected markets in the last weeks of the year. The improved sentiment may last a few months, but the global trend towards interest rate increases will persist, with various consequences for emerging markets. Ukraine is not immune to the market shifts: the government placed USD 2 billion in sovereign Eurobonds in October, with yields noticeably higher than last year. Ukraine has large external debt repayments due in 2019, meaning government will need to again tap international debt markets for private debt next year.

Higher interest rates in the US are starting to weigh on the real economy

The US Federal Reserve has hiked the federal funds rate by 2 pp in the past three years. In 2018, the increasingly tighter monetary policy only affected financial markets as US stocks experienced several large sell-offs and yields of US treasuries increased substantially. However, the higher rates are starting to also affect the real sector through several channels. Primarily, the Fed's federal funds rate hike triggered an increase in mortgage rates. As a result, mortgage applications declined, which is already having a negative impact on sales of existing and new homes in the US. If this continues, investment in the US economy will decrease, eventually bringing down aggregate demand.

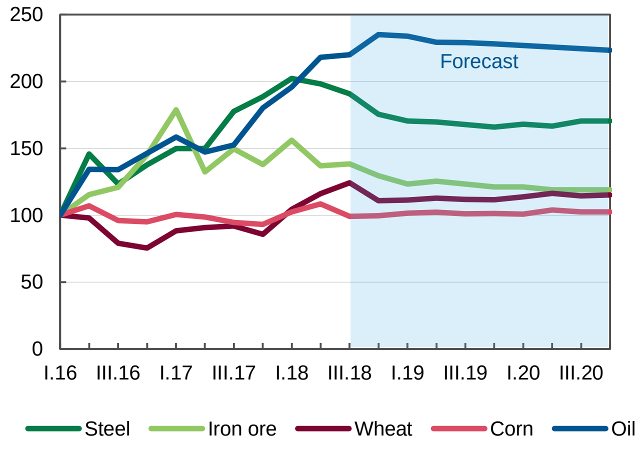
Moreover, the high debt burdens of the US government, corporations, and households is resulting in significant increases in interest payments as interest rates rise. This has not posed a threat thus far, as the US economy is growing alongside household incomes and corporate profits are at

Figure 1.1.7. Key policy rates of emerging market central banks



Source: Thomson Reuters.

Figure 1.1.8. Global commodity prices*, 1 Quarter 2016 = 100



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

Source: NBU, October 2018 Inflation Report.

record highs. However, risks will grow if the Fed further tightens monetary policy.

In addition, another channel raises real-sector risks outside the US. Increases in the federal funds rate provoke capital outflows from emerging markets, with many countries increasing key policy rates in response. This increases the cost of funding in those countries, which may lead to lower investment. Emerging markets have been growing quickly so far, and so while this is not a critical factor for now, risks will increase over time. It is currently difficult to predict which of these channels poses the greatest risk to the global economy and to Ukraine. However, the federal funds rate is to rise further according to the Fed projections, meaning the trends noted above will continue.

Global commodity prices will not increase

Oil prices plunged about 30% in October–November driven by greater supply, expectations of a global economic downturn, and fears of a potential supply glut. The decision by OPEC+ to reduce oil production by 1.2 million barrels per day and the renewal of US sanctions against Iran have stopped the fall in the oil price, but the price remains low. For Ukraine, the developments may lower the cost of gas, whose price is lagging oil prices, and a decrease in the overall cost of energy imports.

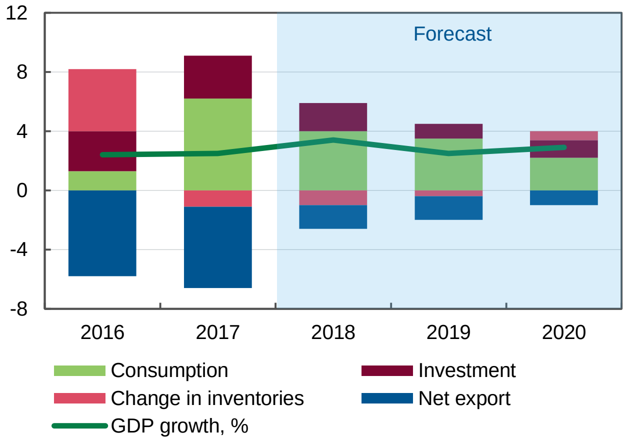
Next year, the IMF expects prices for several groups of commodities to decline. Steel and iron ore prices will decrease as supply grows and demand falls in China. At the same time, trade restrictions will lead to a further regionalization and partial isolation of markets: access will be limited to the US market, where prices for steel products are high. Grain prices will remain close to the current relatively low levels. All of this may pose risks to Ukraine's balance of payments.

Part 2. Domestic Conditions and Risks

2.1. Macroeconomic and Fiscal Risks

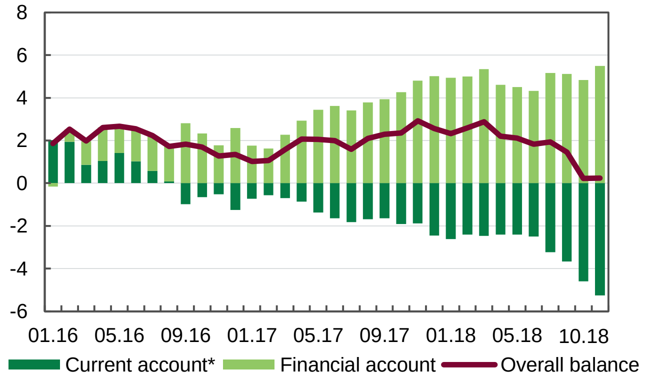
In 2019, foreign currency repayments on public and publicly guaranteed debt will continue to be Ukraine's main challenge. Economic growth will slightly decelerate. Terms of trade will likely deteriorate next year, the election campaigns is an additional risk factor. At the same time, the implementation of the new IMF program will significantly reduce the risks associated with external debt refinancing. Overall, the NBU does not expect macroeconomic factors to generate significant problems for the banking system and the real sector.

Figure 2.1.1. GDP growth, expenditure approach, pp



Source: SSSU, NBU.

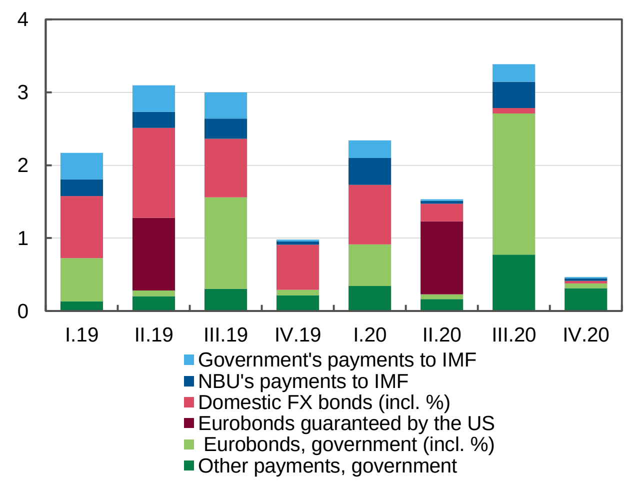
Figure 2.1.2. Balance of payments in 2016–2020, USD billion, trailing 12-months



* Current account and capital account.

Source: NBU.

Figure 2.1.3. Foreign currency repayments on public and publicly guaranteed debt, USD billion*



* Including interest.

Source: NBU.

In 2019, GDP growth will decelerate

In Q3 2018, real GDP growth decelerated to 2.8% yoy, but the NBU expects it to accelerate in Q4. Overall, the NBU sees full-year economic growth at 3.4% yoy in 2018. According to NBU forecasts, GDP growth will drop to 2.5% in 2019 owing to tight monetary and fiscal policies and slower growth in Ukraine's major trading partners. Other risk factors include a likely deterioration of terms of trade and the start of the election period. The mounting Russia's aggression against Ukraine has created problems for the Ukrainian economy by cutting off transportation routes that go through Azov Sea ports. However, this factor will not materially affect GDP growth in the baseline scenario.

Household consumption, supported by growth in real wages and remittances from abroad, continues to be the main driver of economic growth. Rising household incomes will continue to propel GDP growth and facilitate growth in savings and demand for bank loans. However, the growth in household incomes will decelerate, restrained by tight monetary policy and lower competition in the domestic labor market.

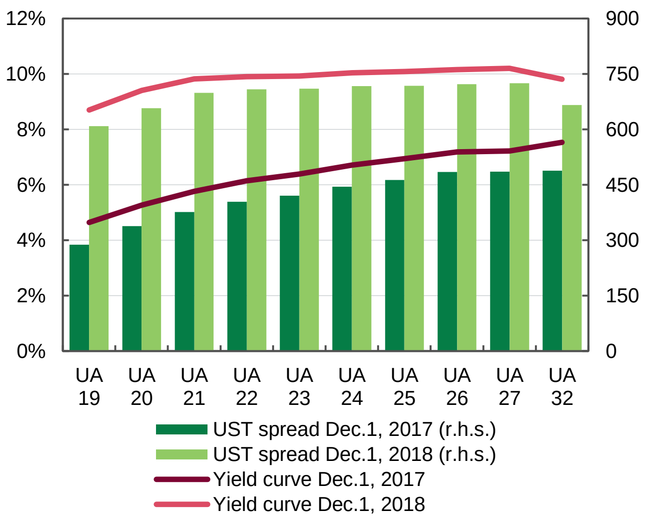
The external sector saw the current account deficit widening to USD 4.2 billion in July–October 2018 from USD 1.4 billion in the same period of 2017. The key drivers were the acceleration in imports of consumer and capital goods, as well as growth in the cost of energy amid high global prices. That and external debt repayments affected the hryvnia FX rate, which depreciated noticeably in July–September. For the full year, however, the current account is expected to improve on the back of favorable global food prices, the strong corn harvest, lower energy prices, and a seasonal decline in consumer goods purchases.

The 2018 current account deficit will likely exceed the NBU's forecast that was published in the October Inflation Report (2.7% of GDP). In the medium term, the current account deficit is expected to remain close to 2.5%–3.0% of GDP, meaning that related risks will be moderate.

Ukraine is facing substantial foreign currency repayments on public and publicly guaranteed debt

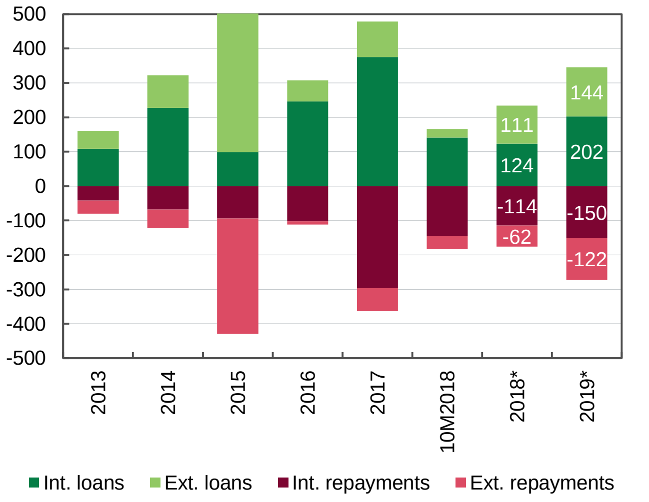
In 2019–2020, Ukraine is due to repay USD 17 billion in foreign currency-denominated debt, including interest payments. Thus, a major challenge next year will be securing the necessary funds to refinance the external and domestic obligations. The repayment schedule is tight but manageable as long as Ukraine continues to work smoothly with the IMF. The new Stand-By program is due to launch soon, with

Figure 2.1.4. Ukrainian sovereign Eurobond yields by year of redemption and spread to US Treasuries (bp)



Source: Bloomberg.

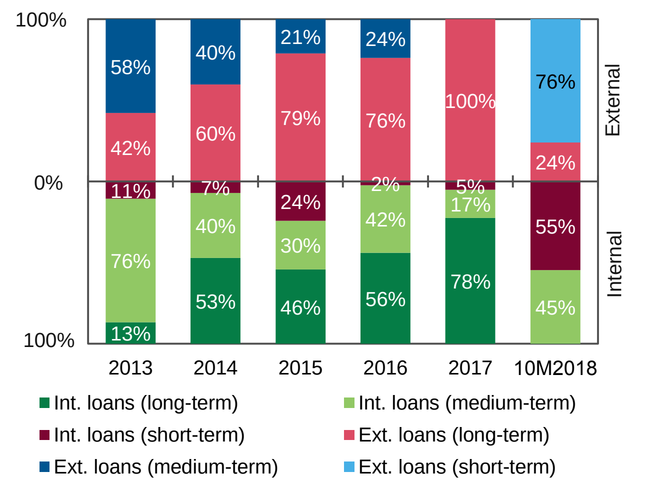
Figure 2.1.5. Financing of Ukraine's state budget in 2013–2019, by debt operations, UAH billion



* Approved by the Verkhovna Rada of Ukraine for 2018 (amended) and 2019.

Source: STSU, MoF.

Figure 2.1.6. Financing of Ukraine's state budget in 2013–2019, by type of debt



Source: STSU, MoF.

planned disbursements of SDR 2.8 billion (USD 3.9 billion) in three installments over 14 months. Ukraine can substantially reduce its debt refinancing risk if it meets the planned schedule.

The agreement with the IMF also unlocks access to funding from other creditors, like the EU and the World Bank. Those loans will be used to finance budget needs. To fully cover the gap in financing, however, the government will have to place Eurobonds and actively raise funds on the domestic market.

New borrowings from the market are expensive. Adverse conditions in global debt markets and the upcoming presidential and parliamentary elections are making Ukraine's situation worse. The placement of Ukrainian Eurobonds in October and the postponed placement of corporate Eurobonds by NJSC Naftogaz of Ukraine in November showed that investors are demanding large risk premiums. Borrowing costs will remain high but could decline significantly if Ukraine resumes its cooperation with the IMF.

The 2019 budget provides for refinancing domestic debt by 134% and external debt by 118%. The government expects that 21% of new domestic borrowings will have a 12-month maturity and external borrowings will not include short-term debt. However, market conditions suggest it will be difficult to borrow for the long term. In January–October, short-term instruments dominated both domestic and external borrowings. This makes the government more vulnerable to interest rate risks and creates uncertainty around the management of public finances.

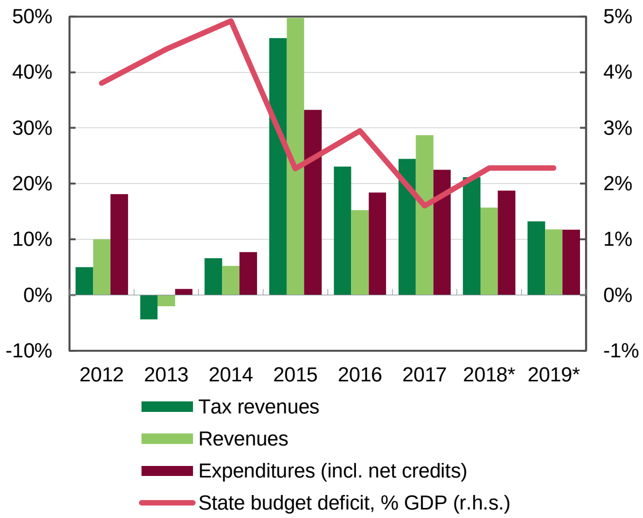
Another hurdle will emerge in 2019 as state-owned banks have to pay around USD 1.1 billion on Eurobonds (redemption and interests). The state-owned banks are the largest buyers of domestic government debt, meaning that demand for government bonds may change substantially.

The 2019 budget is conservative

Balanced 2019 budget was one of the key prerequisites for the launch of the new program with the IMF. The budget, which was approved in November, is realistic. The budget is based on macroeconomic parameters that are more moderate than in previous years and, for the most part, consistent with the NBU's forecasts. This considerably mitigates the risk of budget amendments or liquidity gaps during the year, as happened several times in 2018. To prevent that type of situation in the future, the government must draw on the experience of developed countries by creating liquidity buffers both in hryvnia and in foreign currencies. This will shore up government finances and lower sovereign risks.

Risks to budget revenues may come from export and import trends (the NBU and government differ somewhat in their estimates) and from the transfer of a portion of the NBU's 2018 profit (the Verkhovna Rada has approved UAH 47.6 billion, but the final amount may change and will only be known once the annual results are confirmed). Risks to

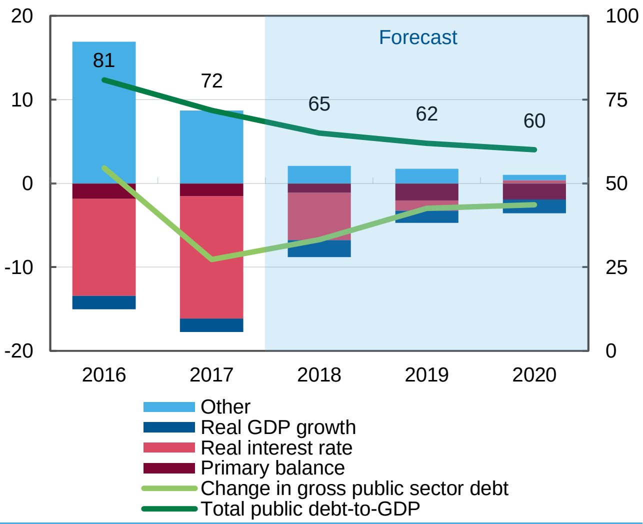
Figure 2.1.7. Annual change in revenues and expenditures of Ukraine's state budget and the deficit-to-GDP ratio



* Approved by the Verkhovna Rada of Ukraine for 2018 (amended) and 2019.

Source: STSU, MoF.

Figure 2.1.8. Factors contributing to changes in public and publicly guaranteed debt, pp, and debt-to-GDP ratio, %



* Other factors – the aggregate contribution of changes in the amount of guarantees, assets, and exchange rate fluctuations; positive values represent growth in the debt-to-GDP ratio and negative values represent a decrease.

Source: NBU.

budget expenditures are related to the size of subventions to local budgets to finance benefits and housing subsidies (household gas prices increased, while the approved expenditure has decreased to UAH 55 billion in 2019 from UAH 71 billion in 2018) and potential additional needs for the Pension Fund. The budget deficit of 2.3% is feasible and moderate. However, the budget deficit could prove even smaller at the conclusion of 2019 if the government faces difficulties raising funds.

The government's debt burden is decreasing

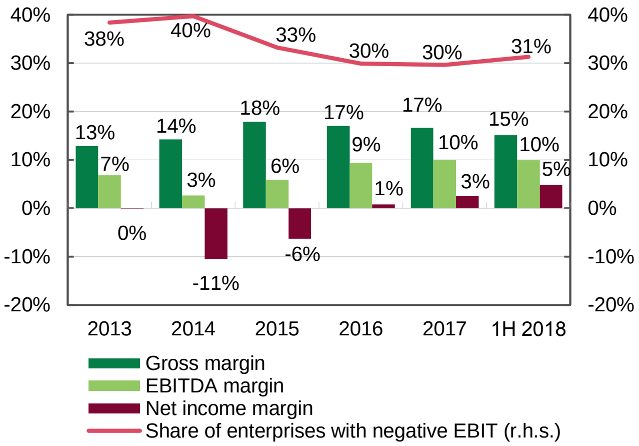
Debt will continue to decrease as a percentage of GDP, reaching 65% at the end of 2018 and projected at 62% as of end-2019 under the NBU's baseline scenario. GDP growth, the favorable impact of the real interest rate, and the positive primary balance are the main contributors to the decrease in the debt burden in 2018–2019.

The gradual decline in the debt-to-GDP ratio is evidence of the country's recovering solvency. However, the size and makeup of the loan portfolio will continue to pose risks that may materialize under adverse conditions. These may include deterioration of terms of trade, tight monetary policy in the world's leading economies, and weakened investor appetite for emerging market debt.

2.2. Real Sector and Related Risks

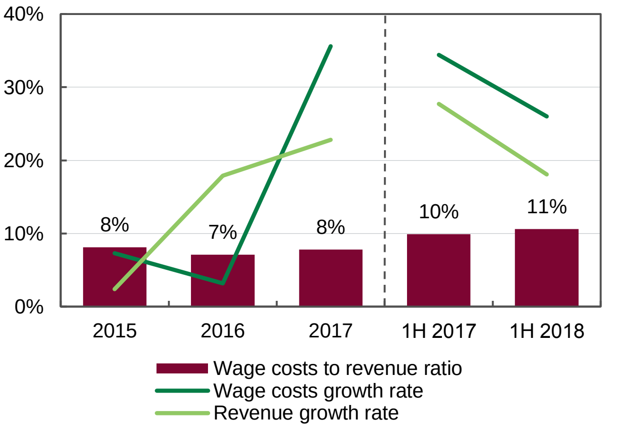
The decline in profitability that started in the real sector in Q3 2017 has been continuing. A further increase in wages and growth in interest rates on new loans are the main risks to the solvency of bank borrowers. The decline in global commodity prices poses a risk to the metallurgy sector and oil and animal fats production. At the same time, the NPL ratio in most sectors is gradually shrinking.

Figure 2.2.1. Proportion of companies with operating losses and real sector profitability



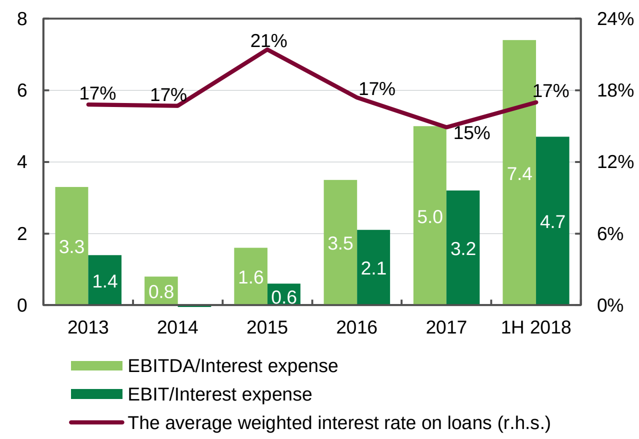
Source: SSSU, NBU estimates.

Figure 2.2.2. Growth rates in revenue and wage costs at non-financial corporations



Source: SSSU, NBU estimates.

Figure 2.2.3. Interest coverage ratio of non-financial corporations' by operating profit and EBITDA, interest rates on new loans



Source: SSSU, NBU.

Real sector profitability is declining

The post-crisis growth in real sector profitability has stopped. Since Q3 2017, the aggregate EBITDA margin has been[4] slowly decreasing after more than two years of growth. The reduction in profitability is driven by two major factors: growing competition across most sectors and rising wage costs. If no macroeconomic shocks occur, the trend will persist: the EBITDA margin will decline to pre-crisis levels (about 7% in 2013).

In H1, 31% of all companies made operating losses (-1 pp yoy). The growth in operating profit has significantly decreased from 50% yoy in the first six months of 2017 to only 1% yoy in January–June 2018.

Growing wages and interest payments pose the greatest risks to real sector profitability

For two consecutive years, corporate revenues have been growing much more slowly than wage costs. This is caused by the increased minimum wage and high labor migration. Companies had to raise pay substantially as they competed for employees. Wage costs grew fastest in transportation, light industry, and machinery production and slower in agriculture and construction materials. In 2019, the NBU expects labor migration to decrease in intensity, thus slowing the growth in wages.

Another risk is an increase in interest expenses. The high key policy rate raises the cost of new loans. Overall, the interest coverage ratio for the first six months of 2018 is high for the real sector at 4.7x. Companies in most sectors have sufficient operating profits to cover the increasing financial expenses. However, the food industry, construction, and some metallurgical companies may struggle with the increased costs.

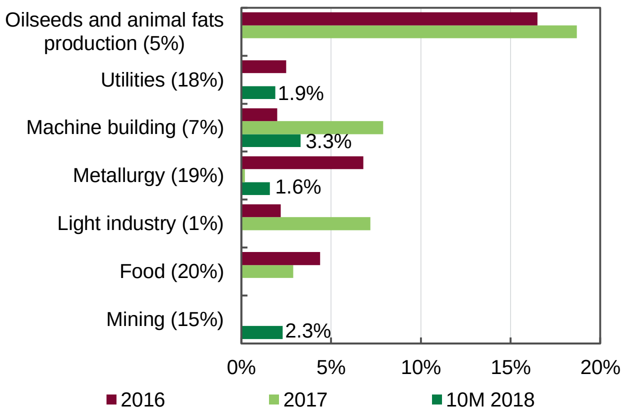
Production has been growing moderately overall, while the debt burden has not changed substantially

Output in most sectors increased 2%–3% over the first 10 months of the year. Light industry and the food industry saw output fall (-2.9%) and (-1.7% yoy), respectively. The production of oil and animal fats fell (-9.9% yoy) owing to a lower sunflower harvest in the last marketing year.

The real sector has seen a modern decrease in its debt load over the past 12 months with the debt-to-EBITDA ratio falling to 2.1x from 2.6x last year. However, oil and fat production, energy, and transportation saw a slight increase in debt loads. Debt in the production of machinery and construction materials declined.

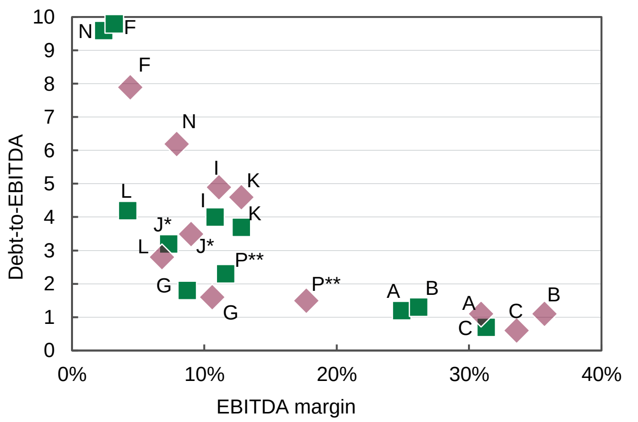
[4] The data excludes small businesses.

Figure 2.2.4. Industrial output indices, % yoy



Negative values are not shown.
The food industry includes oil and animal fats production.
*Shares of sold industrial goods for the first 10 months of 2018.
Source: SSSU.

Figure 2.2.5. Gross debt-to-EBITDA ratio and EBITDA margin by sectors[8]***



* Excluding Donetskstal Metallurgic Plant PJSC.
** Excluding Ukrtransgaz PJSC.
*** Green represents the 12-month period ending 30 June 2018; pink represents the 12-month period ending 30 June 2017. For agriculture, oil and animal fats production, and growing grain crop, data for 2016–2017 were used.
Source: SSSU, NBU estimates.

The real sector's greatest risk is drop in commodity prices

Among Ukraine's key sectors, metallurgy, oil, and animal fats production face the greatest risks. The primary risk factor is the projected decrease in commodity prices.

Metallurgical output grew only 1.6% yoy in the first 10 months of 2018 as repairs and transportation challenges in the Azov Sea held back growth. Exports of metallurgical products increased 25% yoy to USD 9 billion, thanks to a low comparison base and favorable global prices at the start of the year. However, prices began to decline in H2. That trend will extend into 2019 as world metals prices could decrease on average 10%[5] yoy. Russia's Azov Sea blockade could push Mariupol-based plants to cut output. Those plants accounted for one-third of Ukraine's total metallurgical output in 2018. Efforts to reroute exports to Black Sea ports have encountered two obstacles: higher production costs and limited rail capacity.

Global vegetable oil prices have been falling since the start of the year due to an excess supply of sunflower and other oil crops. As a result, sunflower oil value exports declined 10% yoy in the first nine months of the year, which served to increase the sector's debt burden. Oil crop prices are expected to fall thanks to the strong harvest. In 2019, export volumes are expected to grow on the back of the robust sunflower harvest in 2018 (13.8 million tons, up 16.6% yoy).

Risks to agriculture are generally moderate

Profits in the animal breeding segment continue to grow. The decline in animal herds has decelerated, except in pig livestock, which decreased after an outbreak of African swine fever. Poultry breeding is facing the lowest risks as production rates are growing on the back of exports to the EU.

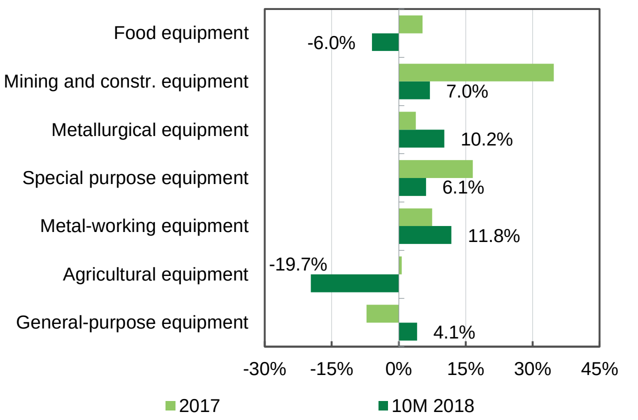
Grain crop production reached a record 69.3[6] million tons in early December. In H2, wheat prices increased after some exporting countries were hit by drought, while corn prices fell thanks to a bumper harvest. Exports of grain crops declined 1.7% yoy in the first nine months of the year to USD 4.7 billion as stocks were depleted. Next year, global grain prices will be favorable to Ukrainian producers after some grain-exporting countries were hit by bad weather during the sowing campaign and a decrease in crop yields.[7] Risks are moderate in this sector.

Strong outlooks for the mining and metallurgical machinery, and gas production sectors

Machinery production increased 3.7% yoy in the first 10 months of the year. This occurred even as investment demand from the agriculture sector slowed. Agriculture machinery production began to decrease halfway through 2017, and the drop in production accelerated to 19.7% yoy over the first nine months of this year. In 2018, imports of

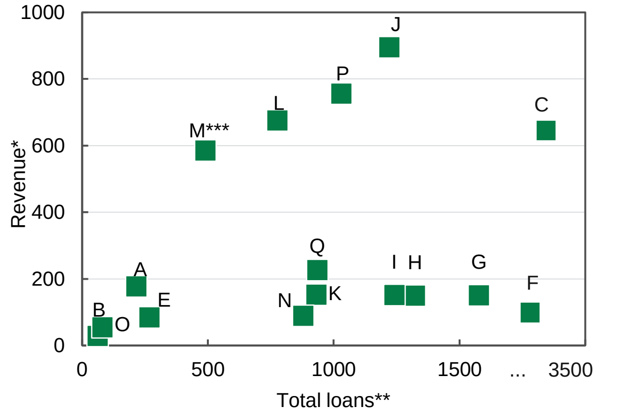
[5]NBU, October 2018 Inflation Report
[6] Data from Ukraine's Ministry of Agrarian Policy and Food.
[7]US Department of Agriculture, UN Food and Agriculture Organization.
[8] Sectors: A – agriculture, B – growing grain crop, C – mining, D – natural gas production, E – food production, F – oil and animal fats production, G – light industry, H – chemical industry and pharmaceuticals, I – production of construction materials, J – metallurgy, K – machinery production, L – electricity supplies, M – renewable energy, N – construction, P – transportation, Q – real estate.

Figure 2.2.6. Output growth in machinery production sub-sectors, % yoy



Source: SSSU.

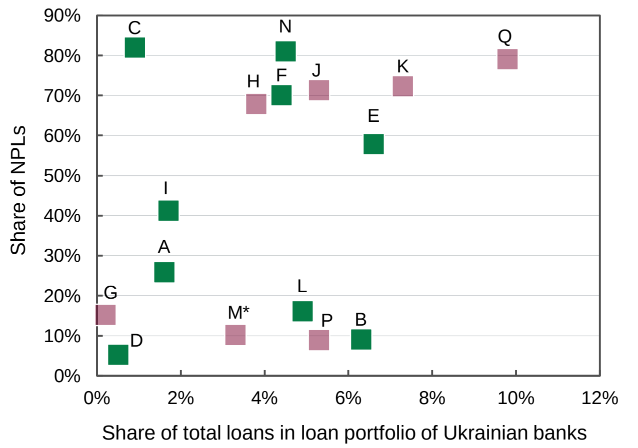
Figure 2.2.7. Concentration of companies revenues and debts by sector as measured by HHI[9]



Sector names are listed under footnote 2 on page 14.
*2017 data exclude small businesses.
**Early October 2018 data.
***Data do not include the NGCA.

Source: SSSU, NBU estimates.

Figure 2.2.8. NPL ratios by sector**



Sector names are listed under footnote 2 on page 14.
* Data do not include the NGCA.
** Change as of October 2018 yoy: green represents a decrease in the NPL ratio, while pink represents an increase in the NPL ratio.

Source: NBU.

agricultural machinery also declined substantially. Production of equipment for the food industry is falling, while imports are on the rise. The key drivers behind the increase in machinery production are government orders in the defense sector and higher demand for mining and metallurgical machinery. Other drivers represent one-off factors, while the search for new markets continues. Meanwhile, imports of machinery are growing, up 16.3% yoy to USD 12.2 billion over the first nine months of the year.

Earnings in the mining sector remain strong. Mining output reversed a decrease in 2017 (-5.7% yoy) to 2.3% yoy growth in the first 10 months of 2018. Expectations that state-owned companies would significantly increase natural gas production did not materialize (+1% yoy in 9 months), but private production grew 18% yoy to 3.1 billion cu. m. A substantial increase in total production is expected no earlier than 2020, as a renewal of mining licenses was delayed multiple times in H1.

Banking debt burden vary across different sectors. The NPL ratio in the real sector is shrinking

Growing grain crops, commerce, and the food industry (except oil and animal fats production) have the lowest concentration of revenues and loans. The leverage is unevenly distributed across oil and animal fats production, the chemical industry, and the mining. These sectors have the highest concentration of loans. Renewable energy appears to be the riskiest sector. Its growth has mostly been driven by a favorable tariff for producers. Should that tariff be revised, profitability will fall, putting the solvency of borrowers at risk.

The NPL ratio is shrinking in most key sectors. The fall in NPLs is primarily driven by writing off a bad debt and by debt restructuring or an expansion of corporate loan portfolios thanks to new lending in some sectors (oil and animal fats production, mining, and others). Light industry, agriculture, transportation, and energy have the lowest NPL ratios.

[9] The Herfindahl-Hirschman Index (HHI) is a measure of market concentration and is calculated as the sum of companies' squared market shares.[9]

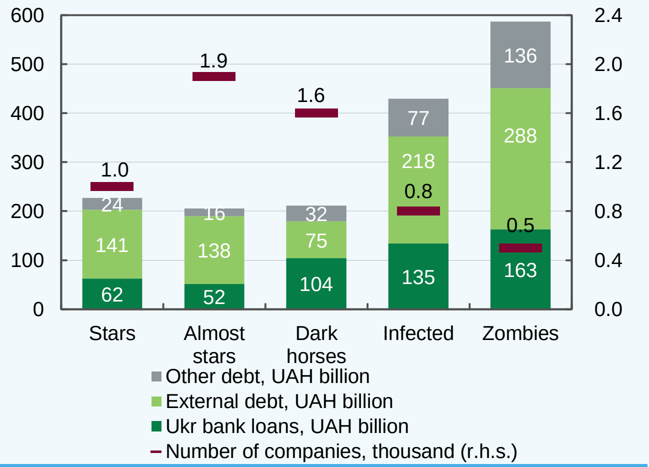
Box 1. "Stars" and "Zombies": An Assessment of the Quality of Companies in the Real Sector[10]

Ukrainian companies survived two deep crises in 2008–2009 and 2014–2016 that left them struggling to improve their substantially depleted financials. Many companies discontinued payments on their large debt loads. However, the impact of those crises was not evenly distributed across the real sector. As a result, there are considerable differences in solvency between companies today. To understand the scale of and prospects for the corporate NPL portfolios held by Ukrainian banks, the NBU conducted a bottom-up assessment of the financials of a wide sample of companies in the real sector. The assessment shows that after the crisis businesses have divided into "Stars", which have no financial issues, "Zombies", which are insolvent and incapable of regaining solvency; and also three in-between groups with varying abilities to repay debt. "Zombies" account for nearly a third of all corporate loans. They are highly unlikely to be repaid, but banks have built provisions for most of those loans. In other words, "Zombie" loans will not affect the profitability of banks but will be holding back growth in corporate lending, creating a problem that will cost banks time and money to resolve.

The NBU analyzed a sample of large and medium businesses with more than UAH 100 million in net income or net debt in 2017. This approach filtered out most non-operational companies. Another 78 entities were removed from the sample after they were marked as likely shell corporations. The final adjusted sample comprised 5,731 companies that accounted for 70% of total revenues by legal entities in 2017. The analysis used consolidated statements for those companies that are part of the 17 largest groups of companies in Ukraine. These business groups account for 19% of the sample's total revenue.

The sample was broken down into groups based on three criteria: debt burden, profitability, and revenue growth (Table 1). The top performers that had low debt burden were "Stars"; "Almost Stars" had one indicator below the threshold; Dark Horses had satisfactory metrics; "Infected" companies had some unsatisfactory parameters; "Zombies" had poor financial indicators.

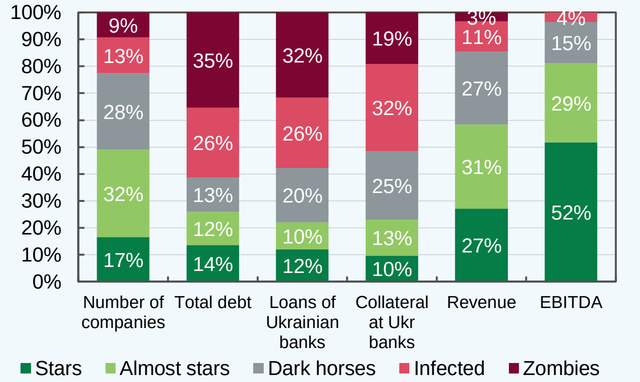
Figure 2.2.9. Debt by of borrower quality group[11]



Source: SSSU, NBU, companies' data, NBU estimates.

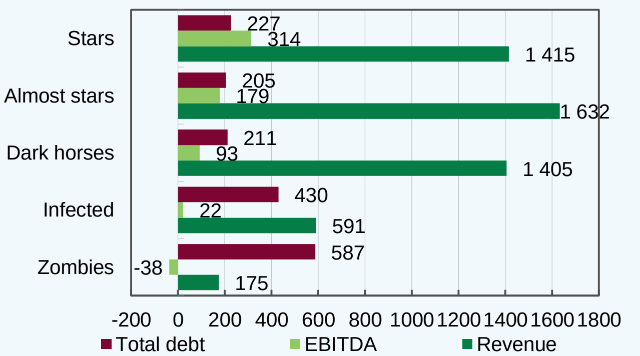
"Zombies" and "Infected", 1,296 companies in total, were the riskiest in the sample. They represented 61% of debt and 58% of bank loans, but only 14% of the sample's revenue. By contrast, "Stars" and "Almost Stars" earn the lion's share of revenues and profits, accounting for 84% of the sample's EBITDA.

Figure 2.2.10. Breakdown of individual indicators by quality group



Source: SSSU, NBU, companies' data, NBU estimates.

Figure 2.2.11. Aggregate company indicators by quality group, UAH billion

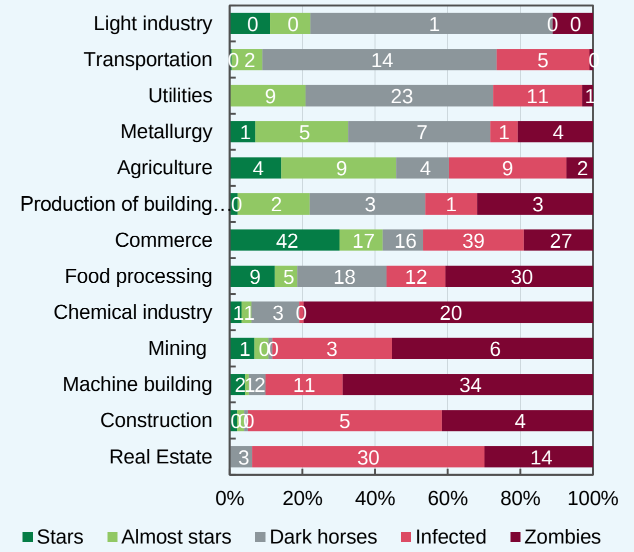


Source: SSSU, NBU, companies' data, NBU estimates.

The majority of "Zombies" and "Infected" companies operate in the machinery production, chemicals, food, mining, construction, and real estate sectors of the economy. The machinery production sector has suffered from the loss of the Russian market. The chemical industry incurred losses stemming from problems with raw material supplies and the partial loss of production capacities located in the non-government-controlled areas (NGCA). Problems in the food industry began after Russia restricted export of Ukrainian dairy products. That was made worse by default of several heavily indebted large food producers. The major part of "Zombie" loans in the mining industry were to a company with unacceptably high debt. Real estate and construction companies operating with significant leverage booked major losses after prices and rents declined.

[10] This study was inspired by PWC's report titled "Stars and Zombies: Greek Corporates Coming out of the Crisis."
[11] Other debt includes debt to the Deposit Guarantee Fund (DGF), loans to related parties, loans by non-bank financial institutions, issued bonds, etc.

Figure 2.2.12. Bank loans in major sectors by quality group, UAH billion

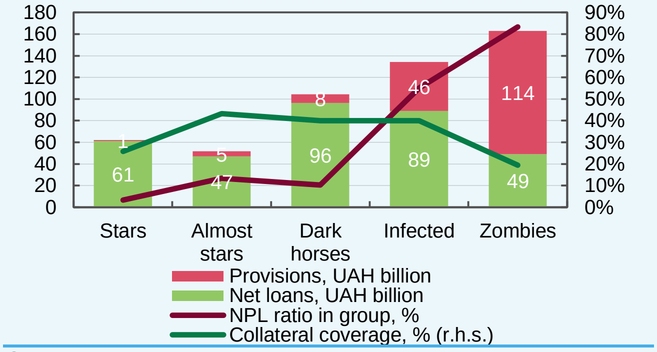


Source: NBU.

“Zombie” debtors have almost none of their own resources with which to service loans and they would have to use third-party resources to repay debt. In addition, “Infected” companies would not have enough incomes to repay one-third of their debt even if loan terms were eased. However, the quality of these companies does not put the banking system at risk. Banks have already recognized 83% of “Zombie” loans and 55% of “Infected” loans as non-performing. As of late 2017, 70% of “Zombie” debt and 34% of “Infected” debt was sufficiently provisioned. By 1 October 2018, those percentages had increased to 75% and 42%, respectively.

The “Zombie” and “Infected” credit exposures were mostly legacy debt. Banks have restructured these loans to allow problem debtors to resume servicing the loans. However, the NBU estimates that most “Zombie” companies with NPLs have only a limited capacity to recover solvency. As a result, only one-fifth of the “Zombie” debt stands a chance of being successfully restructured. The “Infected” debtors that are in default can repay no more than an estimated 40% of the debt.

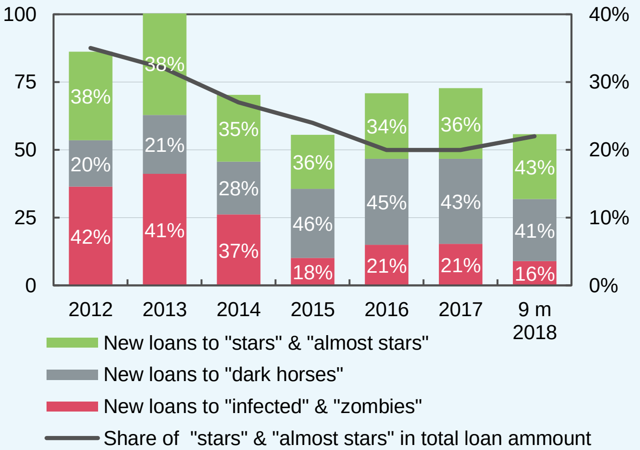
Figure 2.2.13. Provisioning by quality group



Source: NBU.

Banks lend now primarily to high-quality companies. The lessons banks have learned from the crisis and the NBU’s strict oversight of the quality of credit risk assessment have pushed banks to revise borrower loan requirements. As a result, banks are now lending to companies with transparent financial statements and adequate cash flows. Out of the UAH 55 billion in new loans banks made to companies in the sample over the first nine months of 2018, 84% went to companies ranked no lower than “Dark Horses”.

Figure 2.2.14. Breakdown of new loans by quality group, share of quality loans in banks’ portfolios



Source: NBU.

Now, the first order of business is to clean bank balance sheets of low-quality loans. Banks can then work more intensively with higher quality debtors. The real sector has lending potential. For example, out of 2,811 “Stars” and “Almost Stars”, 1,725 companies had practically no debt.

Table 1. Quality assessment methodology for companies

	Good (G)	*Satisfactory (S)*	*Poor (P)*
Debt burden	Debt/EBITDA <2 or negative net debt and Debt/Assets <0.5	Debt/EBITDA <7 and Debt/Assets <1	Debt/EBITDA >7 or Debt/Assets >1 or EBITDA < 0
Profitability	EBITDA margin is above the industry average and return on invested capital exceeds 15%	EBITDA margin and return on invested capital are greater than 0%	EBITDA margin or return on invested capital are less than 0%
Revenue growth	Average annual change in inflation-adjusted revenue in 2012–2017 is higher than 0%	Average annual change in inflation-adjusted revenue in 2012–2017 is greater than -5%	Average annual change in inflation-adjusted revenue in 2012–2017 is less than -5%

Table 2. Quality group distribution criteria[12]

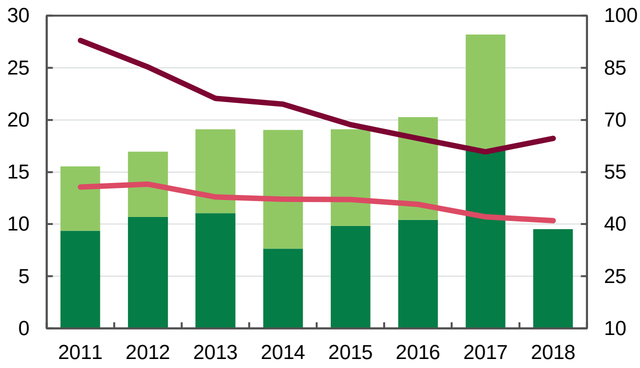
'Stars'	'Almost Stars'	'Dark Horses'	'Infected'	'Zombies'
GGG	SGG, GSG, GGS, GPG, GGP	GSS, SGS, SSG, SSS, GSP, SPG, SGP, GPS	PGG, PGS, PSG, SSP, SPS, PSS, PPG, PGP, GPP	PPS, PSP, SPP, PPP

[12] Each letter in the three-symbol code represents the outcome of the assessment for each criterion: the first letter represents the debt burden, the second profitability, and the third income growth.

2.3. Real Estate Market and Related Risks

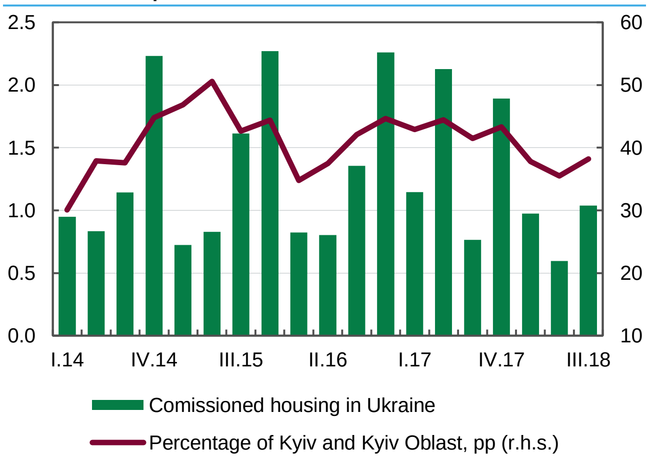
Housing supply and demand are nearing a natural balance and risks to financial stability are subsiding. Prices for quality residential real estate are expected to stabilize over the medium-term. Although mortgage lending continues to pick up, lending volumes are not having a material influence on demand. The commercial real estate market is seeing an increase in investment activity related to the purchase of real estate foreclosed by banks, as well as gradual growth in construction.

Figure 2.3.1. Number and average size of new housing in Kyiv



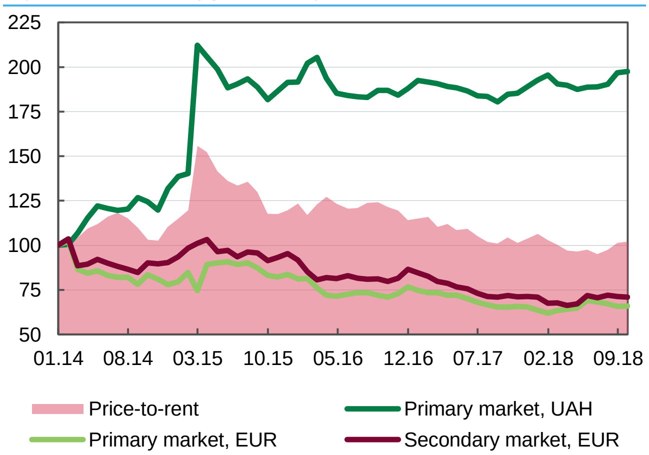
Source: Kyiv Main Statistics Office.

Figure 2.3.2. New housing supply in apartment blocks in Ukraine, thousands of square meters



Source: SSSU.

Figure 2.3.3. Housing prices in Kyiv, December 2013 = 100



Source: Real estate agencies, NBU estimates.

Growth of supply of new housing has declined

Over the first nine months of 2018, commissioned housing in Ukraine decreased 36% yoy. Of note is the 45% yoy decrease in Kyiv and the 33% yoy decrease in Kyiv Oblast. However, these trends came against an unusually high comparison base. Over the first three quarters of 2017, the number of newly built dwellings in Kyiv nearly doubled, driven by a lower surcharge on infrastructure development. Moreover, on 10 June 2017, a new classification for buildings and new rules for securing building permits came into effect. This stimulated developers to commission new buildings more quickly.

In January–September, the number of construction permits issued for residential buildings with two or more dwellings dropped 85% yoy because of regulatory uncertainty. It means that the growth in residential housing will continue to decelerate in the coming years.

The supply of new housing became more diversified in terms of regions, as Kyiv and Kyiv Oblast's percentage of commissioned residential housing fell from 41% in Q3 2017 to 38% in January–September 2018. Kyiv also saw a slight decrease in the share of one-room apartments and an increase in the share of three-room apartments.

On 1 September, new construction regulations came into effect that limited housing density and the number of stories permitted in a building. The regulations will reduce the profitability of construction projects. However, in practice the regulation is not yet fully implemented: according to the Better Regulation Delivery Office, local authorities are not yet adhering to the regulations when issuing construction permits.

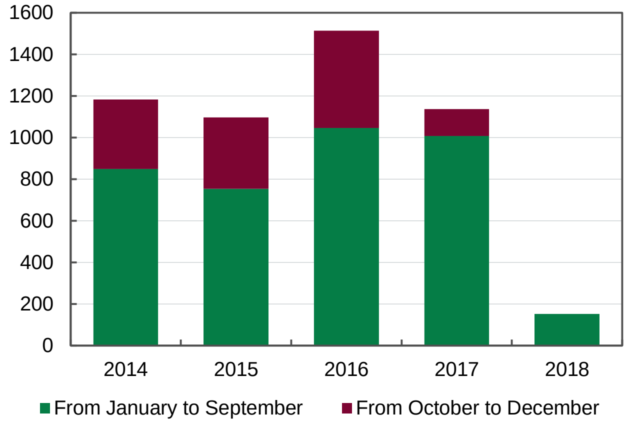
Housing prices remain stable

In September, housing prices on Kyiv's primary market went up 6.9% yoy in hryvnia and 0.8% yoy in euro equivalent. Kyiv's secondary housing market saw hryvnia prices grow 4.5% yoy and euro prices fall 1.3% yoy. The substantial supply of more affordable housing on primary market continues to put pressure on euro prices on the secondary market.

The average rent in Kyiv has been little-changed over the past year. According to developers, buy-to-let property investment remains a popular practice.

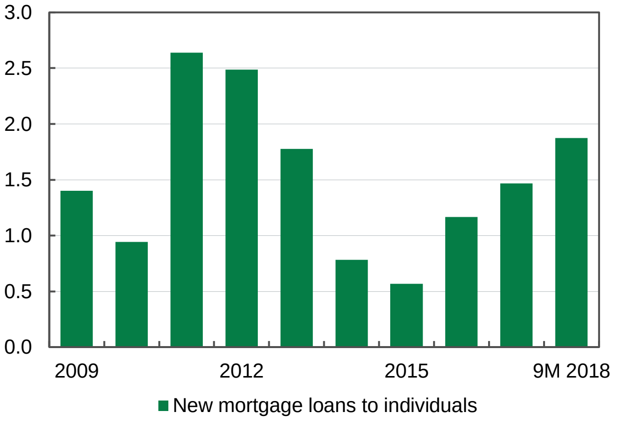
Prices for residential construction and installation services grew 23.3% yoy in September, according to the State Statistics Service of Ukraine. As of 1 October, Ukraine's Ministry for Regional Development, Building, and Housing

Figure 2.3.4. Number of apartment blocks for which construction permits were issued, units



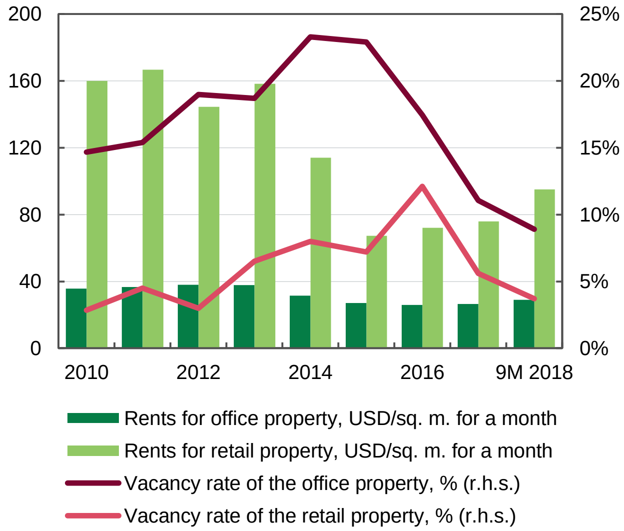
Source: SSSU.

Figure 2.3.5. New retail mortgage lending, UAH billion



Source: NBU.

Figure 2.3.6. Average vacancy rate and rent for Kyiv commercial real estate



* Rents for the highest quality commercial real estate.

Source: consultancies, NBU estimates.

assessed the average construction cost per square meter of housing at UAH 11,849, up 10.2% yoy. Higher construction costs and stricter requirements on housing quality will weigh on profitability for developers.

Demand for housing is rising only slightly

The Ministry of Justice reported an 11.0% yoy increase in the number of housing purchase and sale agreements in Q3, largely driven by growth in household income. Thus, high-income households continue to create strong investment demand (accounting for up to 40% of sales in the premium segment) on the back of decreased foreign currency deposit yields. Meanwhile, an increasing number of lower-income individuals intend to take out mortgages or are interested in payment installment plans. Although mortgage lending is growing, volumes are still too small to significantly influence demand. However, developers and dealers say installment plans and mortgages are gaining prominence in sales of low-cost housing, while the prevalence of full payments is on the decline. The purchasing power of first-time buyers is still weak.

The primary market is likely to reach equilibrium over the medium-term. The quality of housing supply will improve. Even today, housing demand is stronger in residential areas with more developed infrastructure, while sales of dwellings in poorly placed standalone buildings are difficult to stimulate even with aggressive advertising or discounts. Developers that focus on one price segment or one residential area could be at risk.

The supply of commercial real estate has grown

The construction of commercial real estate in Kyiv is still insignificant compared to available land area. That said, the retail segment is being developed more actively than other segments. Over the first nine months of 2018, new property commissioned in the retail segment had grown six times compared to the entire year of 2017. JLL, a consultancy, reported that the market is quickly absorbing newly constructed buildings, decreasing the vacancy rate (to 3.7% in Q3) and pushing up rents (31.9% yoy in the US dollar equivalent).

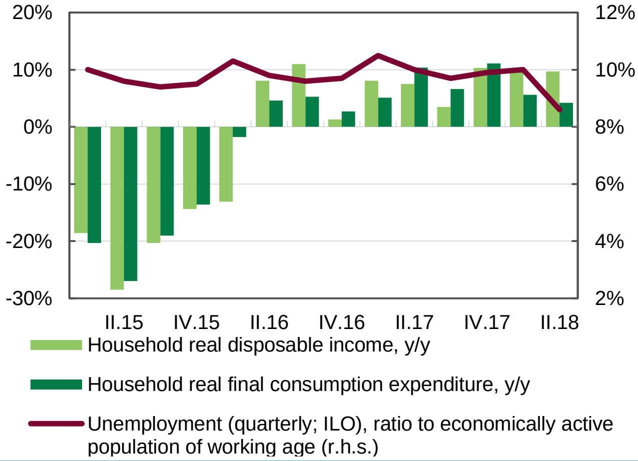
Meanwhile, commissioned office real estate declined almost eight times yoy. Nevertheless, the vacancy rate in this segment is also dropping, with rents edging up.

The construction of new commercial real estate is primarily financed by investors. Banks are mainly focused on restructuring legacy non-performing loans and selling foreclosed collateral. This is pushing up the number of secondary market agreements. Cushman & Wakefield, a consultancy, reported that in H1, secondary market transactions had come in at about USD 170 million, a significant increase from the entire year in 2017. By the end of 2018, investment in commercial real estate on the secondary market is expected to hit about USD 360 million.

2.4. Households and Related Risks

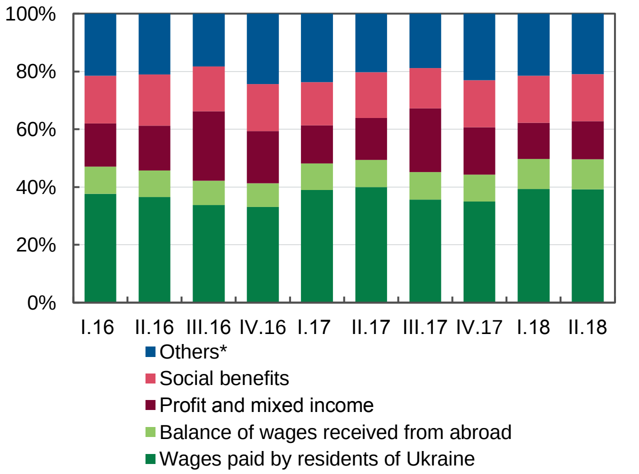
The financial standing of households continued to improve in 2018. The pace of growth in real disposable income accelerated thanks to increases in salaries and social benefits, higher wages among labor migrants, and slower inflation. As a result, the solvency of households improved as debt burden decreased. The bank deposit base expanded, although at a slower pace than lending. Lending will continue to grow, but its impact on total household consumption will remain relatively minor.

Figure 2.4.1. Change in household real disposable income, consumer expenditures and the unemployment rate



Source: SSSU, NBU estimates.

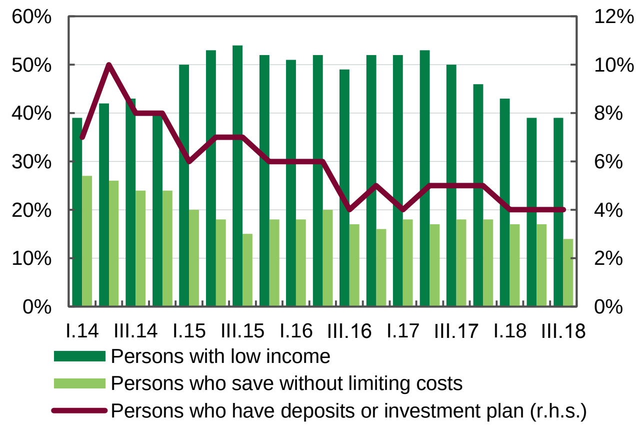
Figure 2.4.2. Structure of nominal household income



* Including property income and other current transfers received in cash and in-kind.

Source: SSSU, NBU estimates.

Figure 2.4.3. Distribution of Ukraine's population by propensity to save



Source: GfK Ukraine, monthly surveys of households (age 16+).

Real disposable household income continues to grow

Real disposable income have grown for two consecutive years. In H1 2018, real disposable household income increased by 9.8% yoy, however, it made only 82% of 2013 level. Wages have been the main driver of income growth. Wages grew by 26%, with the largest increase coming in industrial production, transportation, the financial sector, and public administration. The minimum wage grew 16%, meaning its impact on the trend of the average wage was insignificant this year. In addition, with inflation remaining high, the growth in real disposable income of low-income households was moderate.

The impact from wages paid in Ukraine on total household income declined as the earnings of temporary labor migrants grew markedly, as did social benefits on the back of the pension system reform. Wages received by Ukrainians abroad rose by 43% yoy. However, the growth in the number of labor migrants from Ukraine has been slowing in 2018, particularly due to market saturation in Poland[13]. This may limit the increase in Ukrainians' wages abroad and reduce the deficit in the domestic labor market, which is likely to restrain wage growth in Ukraine. In the future, streamlined procedures in European countries for hiring foreign workers can boost labor migration from Ukraine to Europe, driven by the substantial difference in wages.

Real disposable income will continue to grow in Ukraine. Over the first nine months of 2018, real wages increased by 13% (including almost 15% yoy in Q3), so the full-year annual growth rate is likely to be around 13%. In 2019, the growth of real household income may slow owing to lower GDP growth and tighter monetary policy that will limit wage growth in the public sector. At the same time, this will have little impact on the banking sector and the pace of growth in deposits will likely be unaffected.

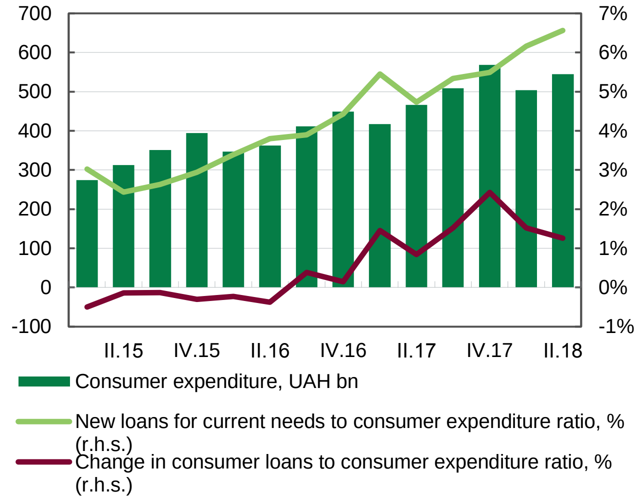
The solvency of households is on the rebound

In H1, the growth in nominal income outpaced the growth in spending by 3.8 pp, which marks a departure from the trend of past years. For this reason, financial resources of households increased by UAH 10.5 billion – almost the amount of the decrease in 2017. In Q2, savings grew to 4.2% of disposable income. However, this is still well below pre-crisis levels when households saved more than 10% of disposable income.

Thus, the solvency of households is improving. The monthly surveys by GfK Ukraine from January through September 2018 also showed this trend. In Q3, 39% of citizens considered their income as low, which was 15 pp less than

[13] Inflation Report, October 2018.

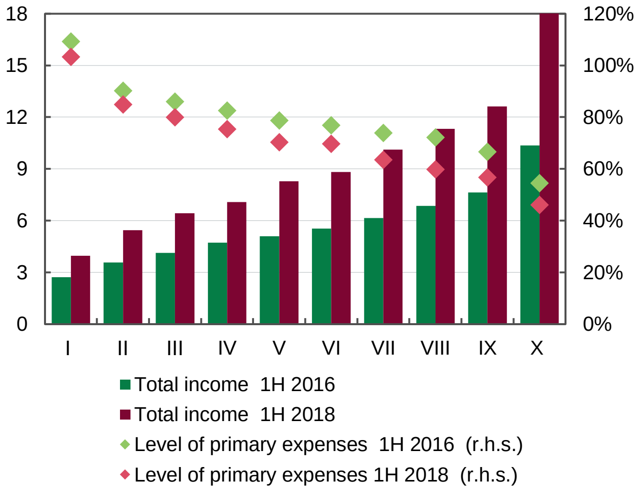
Figure 2.4.4. Effect of consumer lending* on consumption



* Gross consumer loans of solvent banks.

Source: SSSU, NBU estimates.

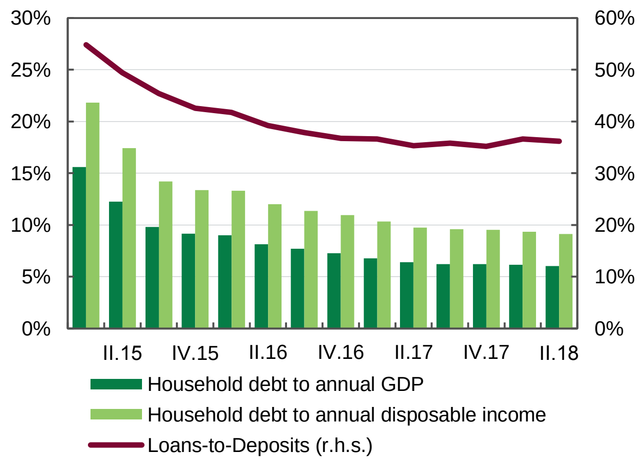
Figure 2.4.5. Average monthly income and primary expenses level* of a household by decile groups, UAH thousand



* Spending on food, clothing, footwear and utilities.

Source: SSSU, NBU estimates.

Figure 2.4.6. Household debt burden



Source: SSSU, NBU estimates.

three years ago, when this indicator peaked due to the crisis. At the same time, only 30% of all households (VIII-X decile groups) spend less than 60% of income on primary expenses, according to data from the State Statistics Service of Ukraine (SSSU). Lending to borrowers with this spending profile is internationally considered the lowest risk.

According to the GfK survey, the proportion of households that can save without cutting consumption remains low at 14%. That said, only 4% of all respondents have term deposits or intend to open deposit accounts and this share somewhat decreased compared to 2017. Similar trend is also observed for the share of time deposits in total volume: compared with January 2017, it decreased by 10 pp. to 63%. Therefore, changes in retail deposits in banks are determined mainly by balances on current accounts, that is, unspent wages and social benefits.

Hryvnia consumer loans are growing at more than 35%, propelled by higher household incomes. In H1, the amount of new loans (excluding repayments) increased 1.5 times yoy. The ratio of new loans to total consumption continues to grow, reaching 6.6% in Q2. However, the growth in outstanding balances of consumer loans (issued less repaid) has been decelerating for two consecutive quarters, making up 1.3% of consumption spending in Q2. Consumer lending volumes and their impact on spending remain minor. Nevertheless, the NBU expects lending to grow as household finances strengthen and consumer demand rises.

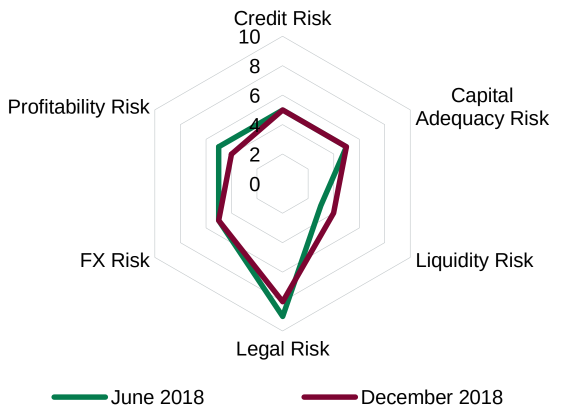
Overall household debt continues to shrink

The rapid growth in nominal household income pushed total household debt down to 6.0% of GDP (9.1% of annual disposable income) as of the end of H1 2018 from 6.2% of GDP (9.5% of annual disposable income) in 2017. The decline in debt burden was driven by loan repayments and FX loan restructuring. At the same time, the deposit base is growing slower than outstanding loans, with the loan-to-deposit ratio (LTD) up 3 pp to 36% since the start of the year. Households remain the net creditor of the banking sector, and that situation will keep over the medium term.

Part 3. Banking Sector Conditions and Risks

3.1. Banking Sector Risk Map

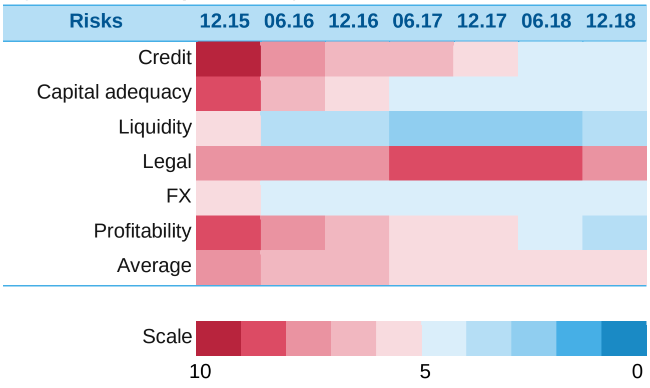
Figure 3.1. Banking Sector Risk Map*



* The NBU assesses risks on a scale from 0 to 10, where 0 is the lowest and 10 the highest level of risk. The assessment reflects the outlook for the next six months.

Source: NBU estimates.

Figure 3.2. Heatmap of banking sector risks



Source: NBU estimates.

Description:
Credit risk reflects expected changes in the share of non-performing loans in bank 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 ability of banks to meet their liabilities to depositors and creditors in full and on time.

Legal risk estimates the ability of banks to use legal instruments to effectively protect their rights.

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.

Credit risk remains unchanged

Following the 2014–2016 crisis, businesses across different sectors of the economy have seized the opportunity to improve operating efficiency. However, banks are still in need of high-quality corporate borrowers. On the retail side, only consumer loans are enjoying strong demand.

Capital adequacy risk is also unchanged

Based on the results of stress tests, the banking sector overall is well-capitalized, as long as no macroeconomic shocks materialize. However, approximately 10 large banks must increase capital or restructure their balance sheets to improve their ability to weather potential crises.

Liquidity risk inches higher

Liquidity risk has grown, mainly because of lower amounts of high-quality liquid assets on banks' balance sheets. At the same time, the first LCR calculations show most banks have a significant liquidity buffer.

Legal risk declines

Legal risk has decreased for the first time since the NBU began publishing the risk map. The improvement has come after several laws were adopted that are important to the banking sector. The successful implementation of those laws is to be the next step. Judicial practices have improved as well, with better protection of the interests of creditors. However, those changes have not been become systemic yet.

No change to foreign exchange risk

FX risk remains moderate as some banks still have highly dollarized credit portfolios. The exchange rate has been quite volatile in H2. In 2019, large external debt repayments will bring higher exchange rate risks.

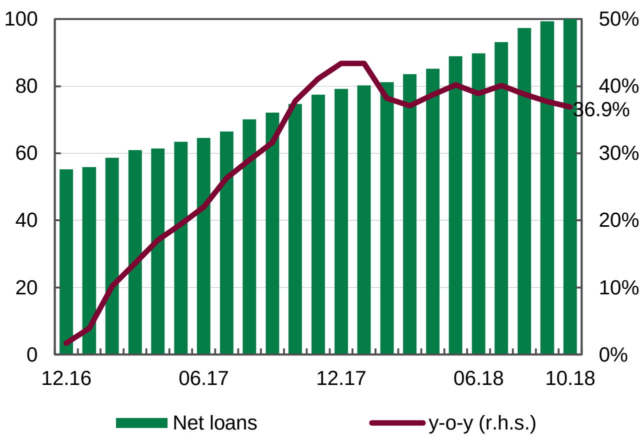
Profitability risk decreases

Large operating profits at banks and the lowest provisioning levels in the last decade have driven overall profitability risks down. Many foreign-owned banks now have a return on equity (ROE) exceeding 30%. The main challenge on the profitability side is the low operating efficiency of two state-owned banks.

3.2. Consumer Lending Risk

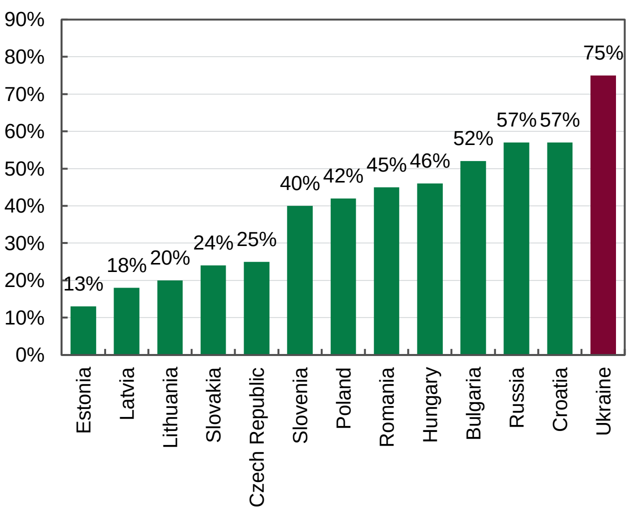
Consumer lending has been growing rapidly for more than a year. It is too early to cap this growth with macroprudential tools: the net value of retail bank loans is only 3.5% of GDP, meaning any related risks are minor. However, if banks underestimate credit risks and relax lending standards, this could cause a buildup of risks, which would make the banking sector more vulnerable to shocks. The NBU monitors the development of consumer lending and promotes proper risk assessment, setting regulatory requirements and adjusting the estimated parameters of prudential provisioning calculations.

Figure 3.2.1 Net hryvnia retail loans*, UAH billion



* At banks solvent as of 1 November 2018.
Source: NBU.

Figure 3.2.2. Share of consumer loans in the retail portfolio, September 2018



Source: ECB, Bank of Russia, NBU.

Hryvnia retail lending in Ukraine has grown by more than 35% yoy since Q4 2017. Ukraine last saw greater growth rates of hryvnia lending in 2007 when the growth exceeded 80%. Since the start of 2017, the average loan amount has increased by over 60%, while the number of loans on bank balance sheets has risen 18%. The number of borrowers is also expanding.

The majority of the loans are used to cover current needs. Those loans account for three-quarters of the total loan portfolio, the highest level in the region. However, Ukraine is not the only country with this kind of loan portfolio structure. Short-term unsecured consumer loans with high effective rates are common in countries that are at a similar stage of financial sector development as Ukraine. Banks gravitate to this type of lending because their yields are significantly higher than for corporate loans. In addition, credit risk assessment requirements are less strict. Banks must only continuously monitor past due loans to assess loan quality. Another advantage of these loans is their short-term maturity: more than half of the loans are issued for less than one year. Therefore, banks that focus on this lending segment do not have substantial maturity mismatches. They are also not exposed to FX risk, as foreign currency retail loans have been banned since 2009. Given the above factors, banks are facing greater competition in consumer lending segment, which inevitably leads to lower requirements for borrowers.

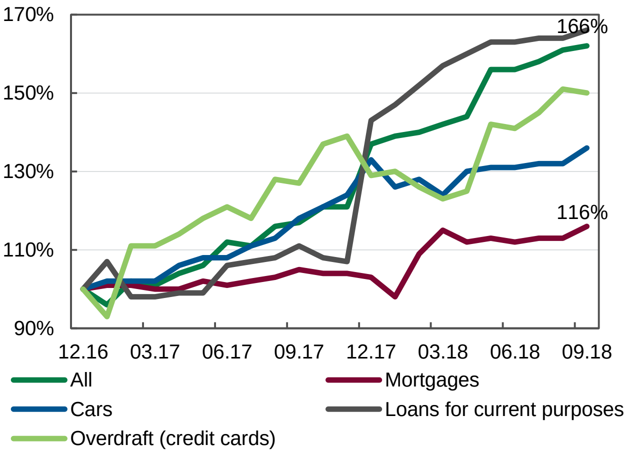
On the other hand, secured lending is recovering slowly. For example, stable growth in mortgage lending requires cheap long-term funding, which is usually in short supply in developing countries.

The non-bank lending market is also expanding: new loans grew 50% yoy in 2017 and slightly slower in 2018. Non-bank financial institutions (NBFI) lend for shorter terms than banks, which explains their faster turnover of loans and high loan issuance levels. However, after recovery in bank retail lending, the non-banks' market share has stabilized. As of end-June, the ratio of outstanding loans issued by NBFIs to the loans issued by banks was just 5%. This does not pose a systemic risk, as the level of outstanding retail loans owed to NBFIs is low.

At the same time, net retail loans account for just 3.5% of GDP, almost three times less than prior to the crisis of 2014 – 2015. The household debt burden is also low at 9.1% of annual disposable income[14]. However, low-income households probably face a much higher debt burden.

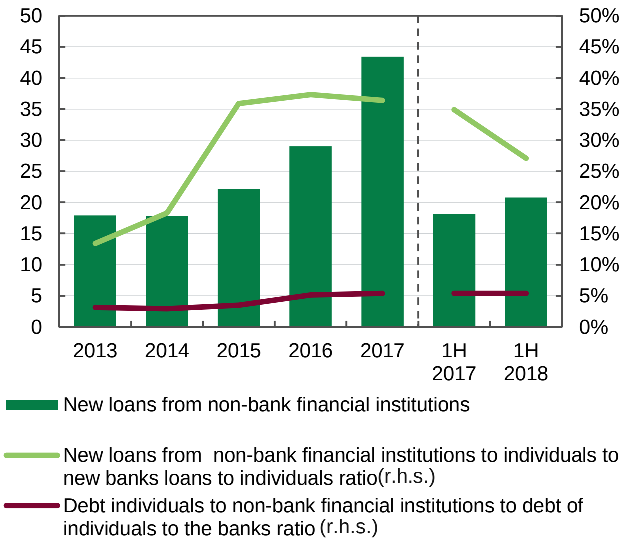
[14]Data for 2017.

Figure 3.2.3. Change in the average amount of hryvnia retail loans, December 2016=100%



Source: NBU.

Figure 3.2.4. New retail loans issued by non-bank financial institutions, UAH billion*



* Including (a) change in loans issued to members of credit unions; (b) loans issued by credit institutions (until 2016); (c) financial loans issued by pawnshops against collateral; and (e) lending by financial institutions, including financial loans.

Source: NBU, National Commission for the State Regulation of Financial Services Markets.

However, consumer loans already account for a large proportion of the loan portfolios at some banks. Retail loans account for a small proportion of banks' total net assets (8%). As of the end of October, they accounted for more than half of the loan portfolio at only eight financial institutions. Income from retail clients accounts for more than 30% of total loan interest income. At the same time, retail loans generate more than half of interest income at 11 banks. This means that retail lending does not yet carry a systemic risk, but credit risk and profitability risk are already building up at some banks. The NBU therefore focuses on the quality of the risk assessments of consumer loans by financial institutions. Currently, those assessments are not conservative enough.

According to a survey by the NBU, banks expect less than 2% in annual losses on average when calculating provisions under IFRS 9 (see Box 2. Banks' Expected Losses under IFRS 9). The assessments vary substantially from bank to bank. On the other hand, data from the financial institutions that are most actively engaged in consumer lending (data collected per Regulation No. 351) show that the rate of migration into non-performing loans was, on average, twice higher than the levels of the past five years, although this does include the crisis period. Despite the sharp growth in the loan portfolio, the share of non-performing hryvnia loans has been declining slowly for the past year to 24%.

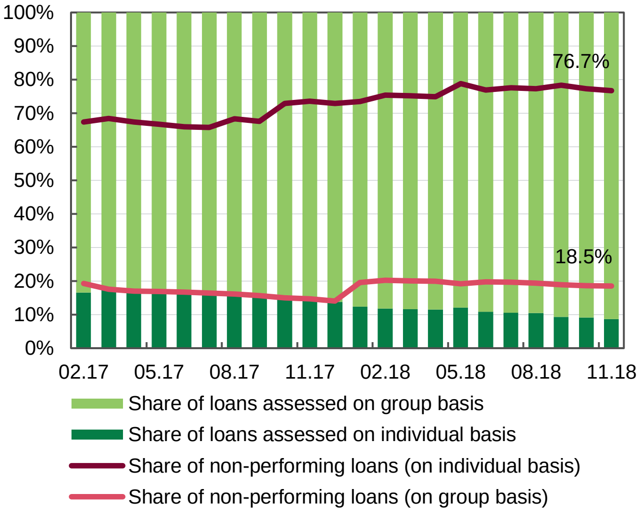
The survey and discussions with banks show that banks rarely assess debt burdens properly, even for large retail borrowers that owe more than UAH 2 million. Credit risk should be measured on an individual basis for this type of borrower. However, banks either do not have information about debt burdens or the debt burden is too high, so NPLs account for 77% of these loans. Financial institutions often approach credit risk assessment formally for borrowers with small loans as well.

Insufficient attention to borrower solvency and lower lending standards driven by competition between banks carry the risk of a dramatic deterioration of portfolio quality during a crisis. Current data suggest the level of non-performing consumer loans could grow by 10 – 20 pp during a crisis. If banks are too optimistic about their credit risks, they cannot accumulate a safety buffer that is sufficient to cover possible losses.

The NBU has tightened its credit risk requirements to require financial institutions to better assess consumer lending risks. Pursuant to Resolution No. 351, starting in April, only banks that properly keep their own data and use it to calculate credit risk are allowed to set the PD parameter below the mid-point of the range. The NBU will continue to regularly revise the minimum values of the PD and LGD parameters, especially on the basis information from the credit register. Banks will be required to use data from the credit register to downgrade borrowers who have defaulted on debts with other banks.

The next stress tests will focus on consumer loan portfolios (read more in Stress-Testing Ukrainian Banks). Currently, consumer loans are low in proportion to GDP, so the NBU

Figure 3.2.5. Indicators of hryvnia retail loans



Source: NBU.

does not plan to cap the debt-service-to-income ratio (DSTI) or the debt-to-income ratio (DTI). However, the NBU will constantly monitor the market to promote realistic credit risk assessment by banks and prevent a decline in lending standards and excessive debt burdens in certain groups of households.

Box 2. Expected Bank Losses under IFRS 9

In 2018, Ukrainian banks started to calculate loan loss provisions based on the expected loss approach as per IFRS 9. In December 2017, the NBU first surveyed banks on the parameters of the calculation of provisions (PD, LGD, EL). The results of the third survey of 64 banks that was conducted from 16 October to 19 November are now available.

Compared to the previous survey, the results are less varied. On average, banks expect around 2% in annual losses for most stage I loans (those without large increases in credit risk after origination). At the same time, the parameter assessments still vary significantly.

Table 3. Expected losses on stage I hryvnia retail loans based on the results of three surveys, %

	Expected losses (EL)					
	average			highest		
	2017	2018 Q2	2018 Q4	2017	2018 Q2	2018 Q2
Consumer loans	2.6	5.7	1.5	7.4	41.9	13.1
Car loans	2.2	1.8	1.9	4.2	7.8	25.0
Mortgage loans	6.1	4.7	5.7	31.6	61.0	25.8
Small businesses	3.0	2.7	2.7	6.8	18.2	27.6
Card loans	-	4.2	7.2	-	24.9	24.6
Other	-	3.4	1.3	-	13.7	6.9

Source: NBU.

The latest survey contained a question about the value of the PD parameter under the worst-case scenario modelled by banks in order to measure provisions. These assessments also vary substantially, but average at approximately 10%–15%. The next NBU stress test will assume that NPLs as a share of total unsecured consumer loans will grow by at least 20 pp. This assumption will be the same for all banks.

Table 4. Probability of default for stage I hryvnia retail loans under various scenarios, %

	Probability of default (PD)					
	baseline scenario		best case*		worst case*	
	avg.	max.	avg.	max.	avg.	max.
Consumer loans	5.7	23.3	3.8	20.5	14.9	100.0
Car loans	8.4	50.0	8.3	50.0	12.7	50.0
Mortgage loans	8.5	50.0	6.5	50.0	13.7	50.0
Small businesses	5.0	17.1	3.6	13.6	9.6	40.0
Card loans	6.8	33.4	3.4	12.7	5.2	16.4
Other	7.1	25.0	8.6	22.0	11.6	28.0

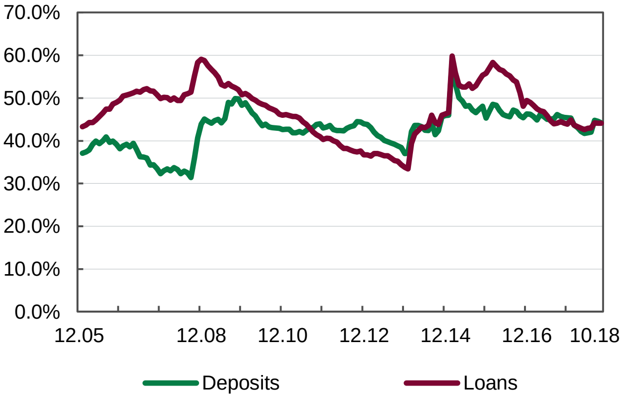
* Not all banks provided their assessments for the best case (or worst case) scenario, so they may be higher (or lower) than the average for the baseline scenario.

Source: NBU.

3.3. Dollarization Risk

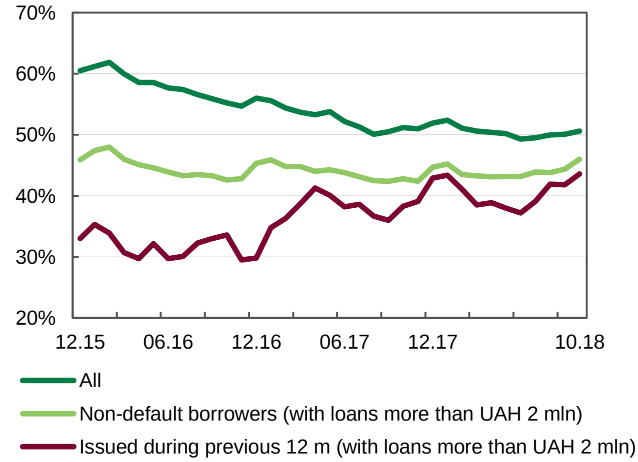
Despite deposit outflows, a reduction in external funding, and the restructuring of debt since the crisis, Ukraine's banking sector remains highly dollarized. Some banks have reduced the foreign currency components of their portfolios, but some continue to expand foreign currency lending. This puts the loan portfolio at risk of a sharp deterioration in quality and could lead to substantial losses for banks under adverse conditions. The NBU has emphasized the need to scale back foreign currency exposures. Failure to do so may prompt the NBU to increase risk weights on foreign currency assets and tighten requirements for credit risk assessment of foreign currency loans.

Figure 3.3.1 Dollarization of resident loans and deposits



Source: NBU.

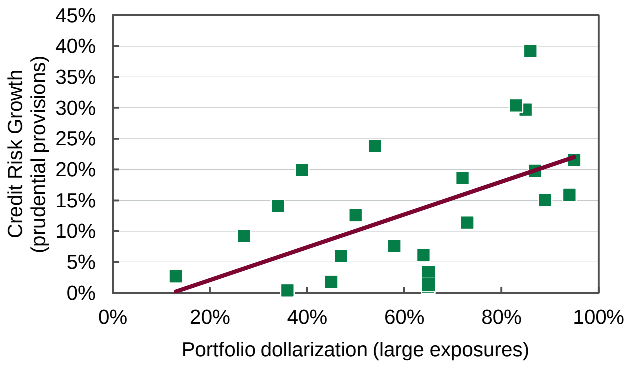
Figure 3.3.2. Dollarization of corporate loans at solvent banks except PrivatBank



* Loans to businesses that have not defaulted since 2014
**Performing loans issued/reissued in the year leading up to the reporting date.

Source: NBU.

Figure 3.3.3. Impact of portfolio dollarization on credit risk under an adverse stress-test scenario (by bank)



Source: NBU.

Ukraine's banking sector remains highly dollarized. Over the past decade, the share of foreign currency deposits and loans has not fallen below 31%. Spikes in inflation and depreciation have constantly eroded the hryvnia's purchasing power, incentivizing households to store a hefty portion of savings in foreign currencies. At the same time, foreign currency loans have also seemed more attractive than hryvnia loans because of lower rates. For some time, external financing fueled foreign currency lending.

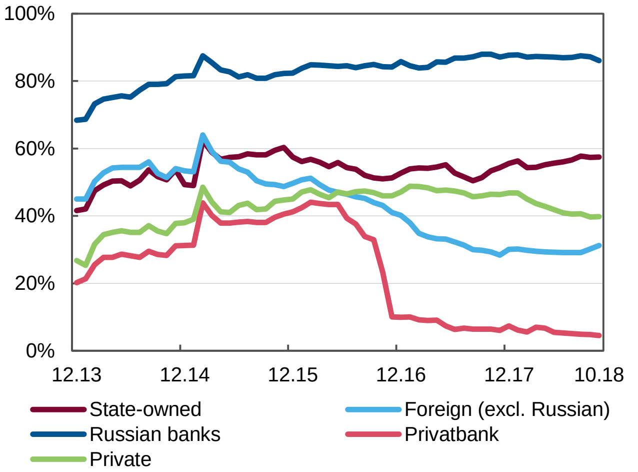
Foreign currency risks materialized fully during the past crises, which were marked by episodes of substantial hryvnia depreciation. Banks were hit by deposit outflows. Depreciation made it harder for households and businesses to service loans, pushing the NPL ratio up. For this reason, parliament adopted legislative restrictions on foreign currency lending to households. However, there are no limits on foreign currency lending to the corporate sector.

Following the crises, the dollarization of bank balance sheets decreased. Banks were repaying external funding or converting it into capital and restructuring foreign currency debts into hryvnia. However, every subsequent wave of depreciation wiped out whatever progress had been made in reducing dollarization. As a result, dollarization remained at close to 45% as of the end of 2018, both for deposits and loans. For countries like Ukraine, however, a 20%–30% range is considered acceptable. Foreign currency loans account for 30% even of all new loans.

In a stable macroeconomic environment, the risks related to high loan portfolio dollarization do not manifest themselves readily. This is especially true if a bank has a source of cheap long-term foreign currency funding. On the other hand, during a crisis, credit risk may increase as the hryvnia depreciates. Loan service problems tend to have an especially adverse effect on debtors that have no foreign currency income to repay loans. Thus, banks with dollarized balance sheets take on the greatest losses when the hryvnia depreciates. Stress-testing results confirm that conclusion.

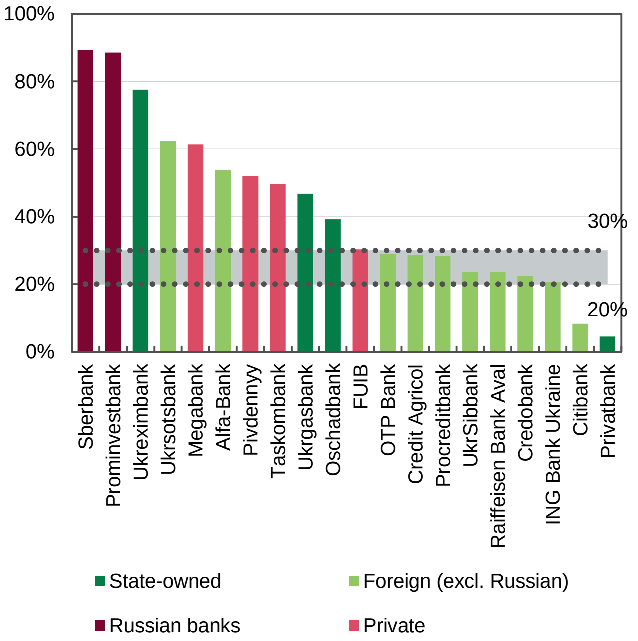
The dollarization rate differs dramatically across groups of banks. Banks with Russian state capital at which foreign currency loans hold up to a 90% of loan portfolios lead the way in terms of dollarization. Most of these are legacy loans. The loan portfolio of these banks is not currently growing; foreign currency lending has been limited in recent years. At the same time, a number of banks with foreign capital have a share of foreign currency loans that is appropriate (below 30%), even though they can tap relatively cheap foreign

Figure 3.3.4. Dollarization of the net loan portfolio, by bank group



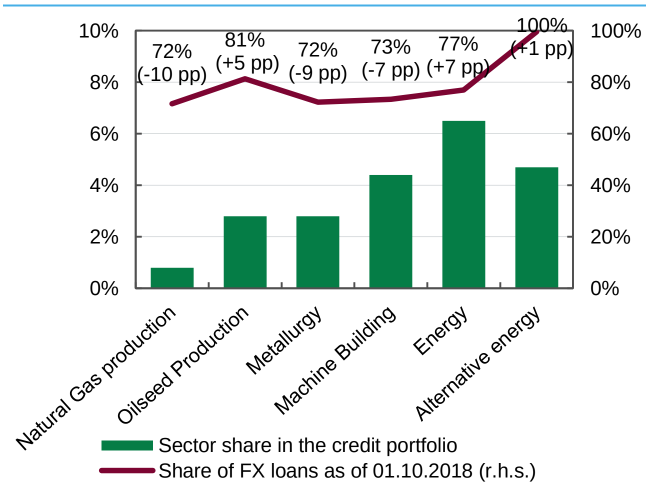
Source: NBU.

Figure 3.3.5. Dollarization of the net loan portfolio as of 1 November 2018, by bank



Source: NBU.

Figure 3.3.6. Sectors with the highest rates of loan portfolio dollarization



* The numbers in parentheses represent yoy change in the dollarization rate (pp).

Source: NBU.

currency funding from their parent banks. The significant losses those banks incurred during past crises because of portfolio dollarization taught them a lesson, motivating them to cut their foreign currency loan exposures by 15–20 pp. However, some banks at which foreign currency loans hold more than a 50% of all loans, lend on intensively in foreign currency.

Low interest rates on foreign currency loans continue to attract borrowers. In turn, banks issue these loans because they have ample foreign currency liquidity. It is worth noting that foreign currency lending does not guarantee higher profitability. The banks that generate the greatest earnings have far lower shares of foreign currency loans than the sector average.

Some sectors of the economy borrow primarily in foreign currency. In those sectors, the rate of loan dollarization exceeds 70%. Lending to these borrowers is not always viable, as they often do not generate sufficient foreign currency income.

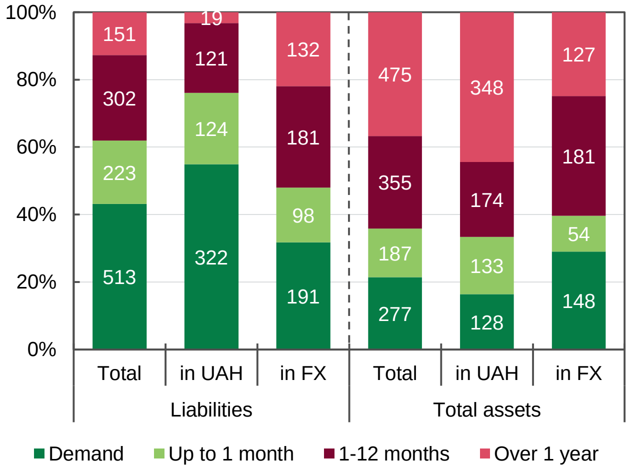
The NBU is convinced that the high level of portfolio dollarization at banks exposes them to systemic risk. The NBU therefore monitors foreign currency exposures itself and also encourages banks to monitor these exposures. Future stress tests will continue to be based on an assumption of a material depreciation of the hryvnia. The degree of depreciation may even be increased in future stress tests. Based on the results of the resilience assessment of the banking sector, the NBU has already recommended that banks lower the share of foreign currency loans in their portfolios. Going forward, banks can independently identify interim goals in aligning balance sheets with recommended standards. However, the ban on foreign currency lending to households should remain.

If banks fail to take sufficient action to reduce balance sheet dollarization, the NBU may apply additional risk weights to foreign currency assets and tighten requirements for assessing credit risk of foreign currency loans. These measures are designed to reduce foreign currency risks for banks and their clients.

3.4. Liquidity Risk

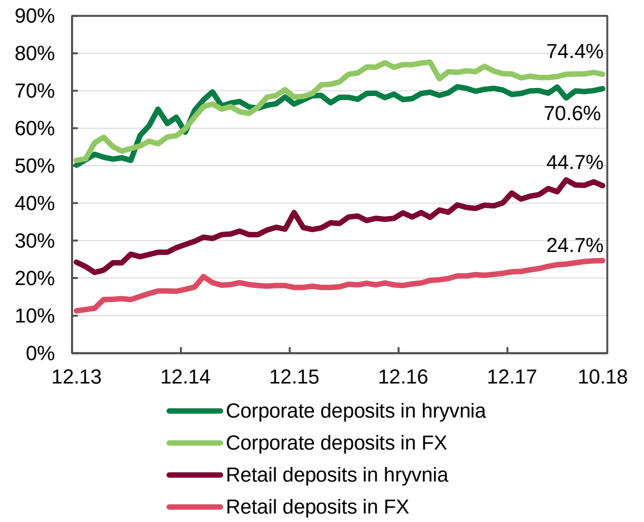
Ukrainian bank funding is dominated by extremely short-term deposits from households and businesses. In stable conditions when funding is growing, financial institutions can use short-term funding to issue long-term loans. However, this type of funding is prone to shocks, which creates considerable risks. Ukraine is experiencing a shortage of long-term funding, meaning banks will have to rely for a while on short-term deposits from households and businesses. To mitigate liquidity risks, the NBU introduced the new LCR requirement in December. The requirement is designed to motivate banks to accumulate high-quality liquid assets (HQLA) to cover net outflows of funds in stress periods. The NBU plans to introduce an NSFR requirement in 2020 to motivate banks to attract longer-term funding. However, banks should already make it an objective of liquidity management to offer greater incentive for customers to deposit their money in term deposits and deposit them for longer.

Figure 3.4.1 Breakdown of total bank assets and liabilities by time to maturity, as of 1 November 2018



Source: NBU.

Figure 3.4.2. Share of current accounts in the funds of businesses and individuals



Source: NBU.

Short-term debt continues to dominate the structure of bank liabilities: 62% of all liabilities have a residual maturity of less than one month. That proportion is even greater for hryvnia-denominated liabilities, at three-quarters. In contrast, 64% of assets and 67% of hryvnia assets have a residual maturity of more than one month. The banking sector is reliant on short-term funding but lends for longer terms.

Since the start of the 2014–2016 crisis, the maturity structure of banking sector liabilities has been deteriorating, with current accounts holding a growing share of banks' household funds. Current account balances currently account for the bulk of the increase in banks' retail funds. This is being driven especially by current accounts used for payout of salary and social benefits. In stable periods, banks can comfortably draw on this type of funding. During crises, however, funds from current accounts can be withdrawn instantly.

Corporate deposits are even more prone to short-term funding: over 70% of corporate funding sits in current accounts. The share of these funds in total funds from businesses has grown substantially since 2014.

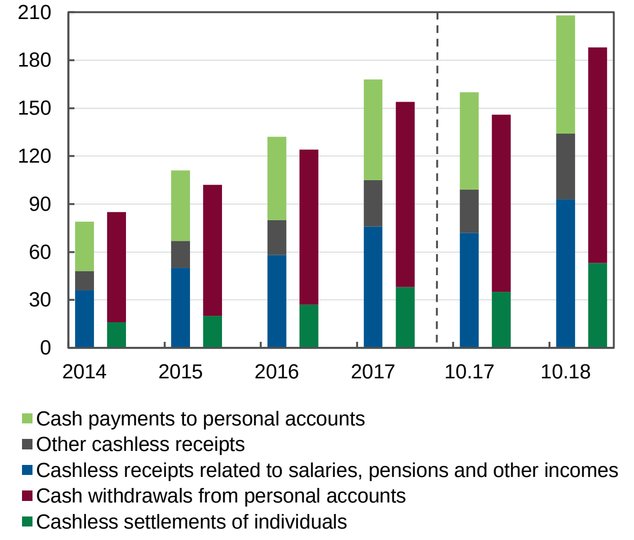
The maturity gap between assets and liabilities is putting banks at both liquidity risk and interest rate risk. As interest rates grow, the cost of most funding sources also grows within a month. But it takes banks significantly longer to raise the value of their assets. This narrows the interest spread and reduces net interest income and, thus, the sector's net profit.

A large portion of the funds on individuals' bank accounts comes from placing cash on accounts. These inflows are less stable than inflows of cashless funds, which primarily come in the form of paychecks and social benefits. The regularity of cash receipts depends heavily on the stability of the FX market and on consumer confidence and expectations. During crises, cash inflows are not a reliable source of funding.

Banks cannot quickly switch to long-term funding as it is currently in short supply in Ukraine. To prevent short-term funding from causing a liquidity crunch, the NBU introduced the new LCR requirement in December[15]. The requirement is designed to motivate banks to keep sufficient amounts of HQLA on their balance sheets to cover net outflows of funds

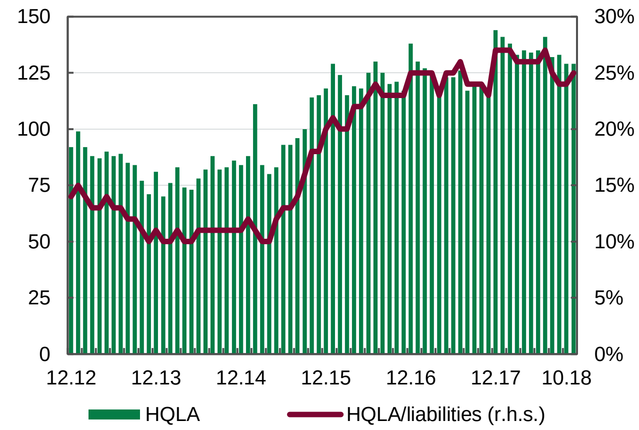
[15] See the December 2017 Financial Stability Report for more information.

Figure 3.4.3. Average receipts to and write-offs from household accounts, UAH billion



Source: NBU.

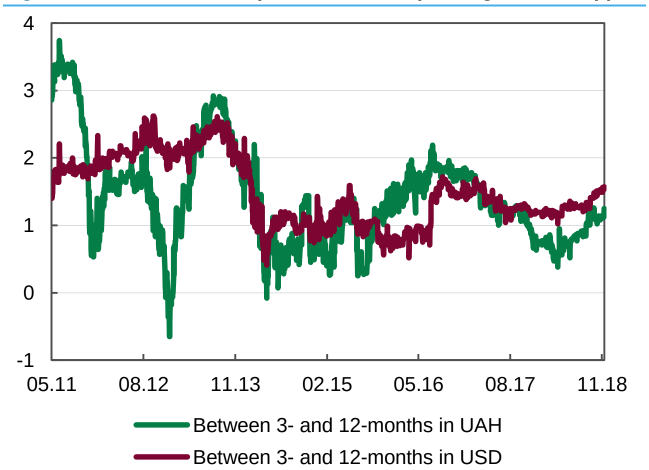
Figure 3.4.4. High-quality liquid assets (HQLA)* at private banks, UAH billion



* Include domestic government bonds, certificates of deposit, cash, corresponding accounts at the NBU excluding required reserves, and corresponding accounts at investment-grade foreign banks.

Source: NBU.

Figure 3.4.5. Interest rate spread for new deposit agreements, pp



Source: NBU.

in periods of stress. The NBU has introduced an all-currency LCR and a foreign-currency LCR for a set of foreign currencies. The LCR minimum requirement currently stands at 80%, but it will gradually increase to 100% over the course of the year.

The banking sector currently enjoys a high level of liquidity. Private banks have 25% of their liabilities secured by HQLA, which they can use to cover outflows of customer funds. This is higher than the 10%–15% ratio these banks had when the crisis struck in 2014. The makeup of the HQLA (excluding the state-owned banks) is dominated by funds in correspondent accounts with investment-grade foreign banks. These funds represent 34% of the HQLA. Domestic government bonds account for 25%, certificates of deposit for 20%, and cash for 17%.

Preliminary estimates suggest 94% of the banks that account for over 98% of banking sector assets are in compliance with the LCR requirement. Most of them have more HQLA than needed to meet the requirement. This means the banking sector currently has a sufficient safety margin to fulfill its commitments to customers in full and on time, even under stressful conditions. That safety margin will be retained going forward thanks to the LCR requirement.

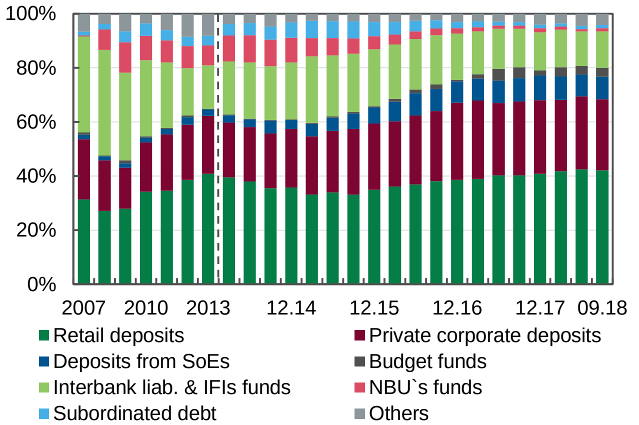
The next step to increase bank liquidity is the introduction in 2020 of the net stable funding ratio (NSFR), a long-term-liquidity requirement for banks. This ratio is designed to motivate banks to extend funding maturity and discourage them from relying solely on short-term resources when issuing long-term loans. This ratio will be harder to meet, as it will require substantial changes to the maturity structure of balance sheets. For this reason, the NBU will introduce it in stages over a transition period to allow banks to adapt to the new rules.

Banks should make it a liquidity management priority in the short run to maintain the liquidity buffer (meet the LCR) and work on extending the maturity of term deposits. Banks should offer more incentives for clients to make longer-term deposits. Currently, the margin between long- and short-term deposit rates is minimal.

3.5. Funding

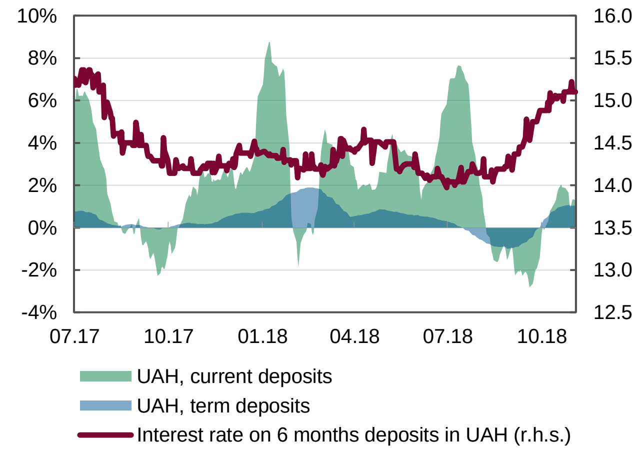
Over 85% of total bank liabilities were sourced from the domestic market, with customer deposits accounting for about 80% of the liabilities. Other funding sources are currently insignificant, while external funding no longer plays a notable role in shaping of the banking sector's funding base. Household deposits are expected to grow quickly and significantly outpace nominal GDP. The share of these deposits is likely to increase in 2019. The largest weakness of the banking sector's current funding composition is its extremely short maturity (see Liquidity Risk).

Figure 3.5.1. Bank liabilities by instruments



Source: NBU.

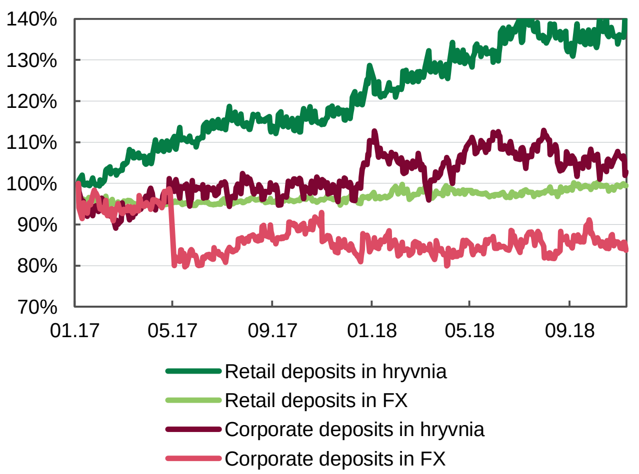
Figure 3.5.2. Average monthly* change in household deposits and the deposit rate



* Change in the moving average for the last 20 business days

Source: NBU.

Figure 3.5.3. Household and corporate deposits, 2016 = 100%



Over the last two years, customer deposits made around 80% of funding. Half of that is in household deposits, with deposits by state-owned companies and budget funds accounting for 12% of total liabilities. External funding accounts for nearly 14% of banking sector liabilities. Other components are negligible. That composition will not change materially over the next few years.

As of the end of Q2, the banking sector's gross external debt fell to USD 5.9 billion, the lowest since 2005. About half of that debt is in Eurobonds issued by the state-owned banks, a substantial portion of which matures in H1 2019. For that reason, banks are mostly raising foreign currency funds on the domestic market: new euro and US dollar deposits from residents are 2.6 times higher than those from non-residents. Ukraine is unlikely to borrow significant amounts from external markets in the near-term as Ukrainian banks have little interest in foreign currency lending. Furthermore, the cost of foreign debt funding is currently two to three times higher than domestic foreign currency funding.

Hryvnia household deposits are rising steadily: in October, demand deposits grew 34% yoy, while term deposits rose 8% yoy. Demand deposits account for 45% of hryvnia household deposits. Foreign currency deposits have increased during periods of FX volatility. In Q3, hryvnia deposits were temporarily converted into foreign currency deposits. However, in October–November, the hryvnia deposit base rebounded as the FX rate stabilized and some banks hiked deposit rates. The interest rate spread between hryvnia and foreign currency household deposits is significant, and it has increased 1 pp over the past year to about 12 pp. This encourages households to make hryvnia deposits.

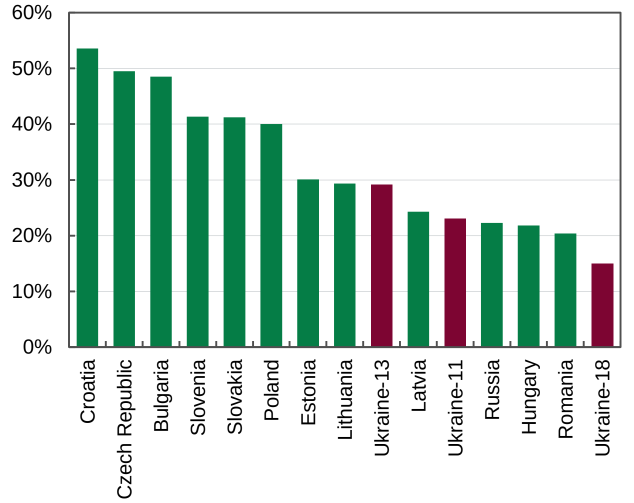
The deposit guarantee system currently fully covers 98% of all deposits[16], which meets IADI standards[17]. The introduction of the UAH 200,000 guarantee cap left the percentage of completely covered deposits practically unchanged. The deposit insurance system covers 59% of total household deposits amount.

In 2018, households increased their investment in domestic government bonds by 6.2 times to UAH 5.5 billion. Government bonds yield higher interest income than deposits, and coupon payments are not taxed. However, deposits are unlikely to be replaced by domestic government bonds on a large scale for several reasons. First, the minimum investment amount is too large for most bank

[16] Excluding depositors with deposits below UAH 10.
[17]Principle 8 of the Core Principles for Effective Deposit Insurance Systems of the International Association of Deposit Insurers (IADI).

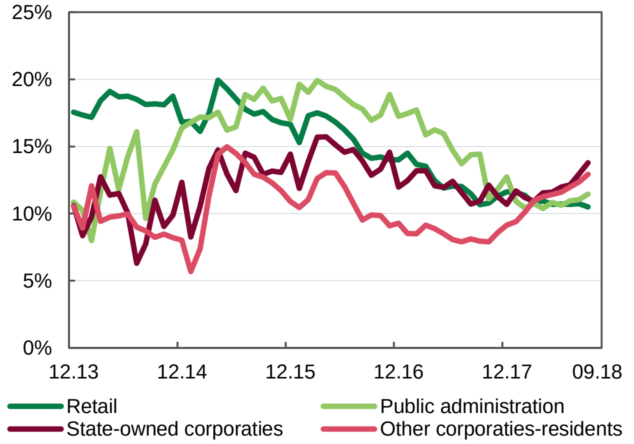
Source: NBU.

Figure 3.5.4. Ratio of household deposits to GDP as of the end of 2017



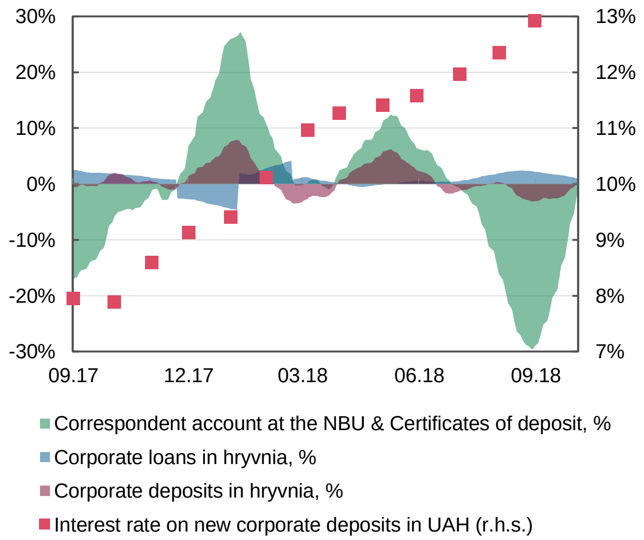
Source: NBU.

Figure 3.5.5. Interest rates on new hryvnia deposits, % per annum



Source: NBU.

Figure 3.5.6. Impact on bank liquidity of changes in average monthly* corporate deposits and outstanding corporate loans



* Change in the moving average for the last 20 business days.
Source: NBU.

customers. Second, depositors are currently not prepared to make long-term investments.

Household deposits have considerable growth potential as Ukraine only has a 15% deposits-to-GDP ratio, down by half from the beginning of the latest crisis and the lowest ratio among CEE countries. Over the medium-term, growth in household deposits is expected to significantly outpace nominal GDP growth. Sustainable long-term rates of growth in household deposits are 12–17%.

Corporate deposits as a percentage of liabilities are currently close to 10-year highs. Corporate deposits are rising, although three-quarters of them remain demand deposits. In 2018, hryvnia corporate deposits were more volatile than last year. During a period of instability in Q3, outflows of hryvnia corporate deposits, coupled with a pick-up in corporate lending, led to a temporary reduction in the liquidity at some banks. Competition for deposits from large companies, together with hikes in the key policy rate, pushed up corporate deposit rates by 3 pp to 12.9% per annum. State-owned companies were offered even higher rates (13.8% per annum), while accounts of over UAH 50 million earned 15.6% per annum.

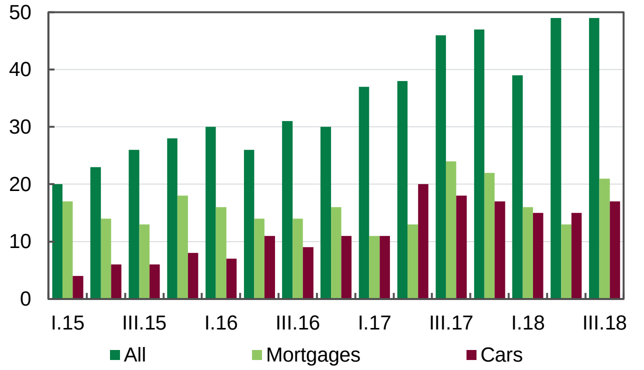
Growth in corporate deposits is expected to be moderate and mainly driven by balances in the accounts held by state-owned companies. Bringing the economy out of the shadows and boosting cashless payments could prove a powerful driver of growth in corporate deposits. However, these deposits will remain short-term as demand deposits account for over two-thirds of total deposits.

Higher demand from banks for liquid funds drove up the volume of and rates on overnight interbank loans. That said, most banks were net lenders in the interbank market as of the end of October. Liabilities to the NBU accounted for only 1.2% of banking sector liabilities even though they have grown in recent months due to borrowings by several large banks.

3.6. Lending Prospects

Household lending remains strong. The volume of mortgages remains small, even though mortgage lending grew for the first time since the crisis. Consumer loans are rising at the fastest pace. Retail lending is one of the most profitable segments for banks and it also enjoys strong demand. Therefore, growth is expected to remain robust in this segment. The corporate loan portfolio has been practically unchanged over the past three years. That said, lending to high-quality borrowers is growing rapidly – hryvnia lending to these borrowers has almost doubled since the crisis hit, with foreign currency loans expected to return to their pre-crisis levels within the next several years.

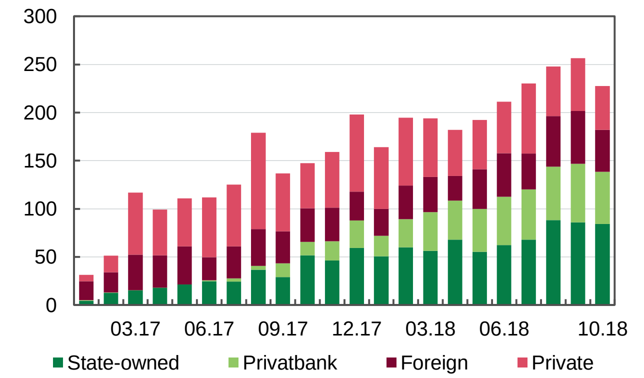
Figure 3.6.1. Number of banks that generated growth in hryvnia household loans, excluding accrued interest*



* Issued by banks solvent as of 1 November 2018.

Source: NBU.

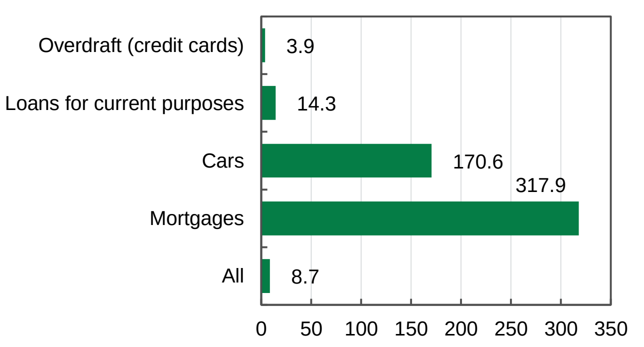
Figure 3.6.2. New mortgage loans by groups of banks, UAH million*



* Issued by banks solvent as of 1 November 2018.

Source: NBU.

Figure 3.6.3. Average size of a hryvnia household loan as of 1 October 2018, UAH thousand[19]



Source: NBU.

Consumer lending keeps growing

As of the end of October, net household loans in hryvnia had increased 36.9% yoy. In Q3, 49 of 79 operating banks[18] grew the principal amount of their loan portfolios (excluding accrued interest). Banks are taking a greater interest in retail lending, as the segment is enjoying a resurgence of high-quality borrowers and offers higher yields than the corporate loan segment. In January–October, 11 banks that account for 28.9% of total assets (including PrivatBank) generated more than half of their customer-related interest income from retail lending. Together with fee and commission income from the household segment, the income generated from retail lending is even higher.

Consumer loans accounted for over 90% of the growth in household loans, with the remaining in car loans (7%) and real estate loans (2%). Car and mortgage lending is becoming less concentrated as new banks enter those segments. In Q3, 17 banks actively issued car loans and 21 banks issued mortgages. In contrast, consumer loans are becoming more concentrated at the banks that have wide branch networks. In late October, the five largest players in this segment accounted for 73% of all loans.

Although mortgage lending grew 8.1% yoy as of the end of October, mortgage lending overall remains insignificant. Over the first 10 months of the year, banks granted UAH 2 billion in new mortgages. This is the equivalent of only several hundred apartments purchased each month. In 2018, state-owned banks, especially PrivatBank, issued slightly more than half of all mortgages. Mortgage lending will remain sluggish and be mainly focused on joint lending programs between banks and developers. The banks that actively issue mortgages intend to maintain or increase their market share to secure a competitive advantage in the future.

Banks overall have been upbeat about household lending since the start of 2016. In October 2018, nearly 70% of all financial institutions said household lending would grow over the next 12 months.

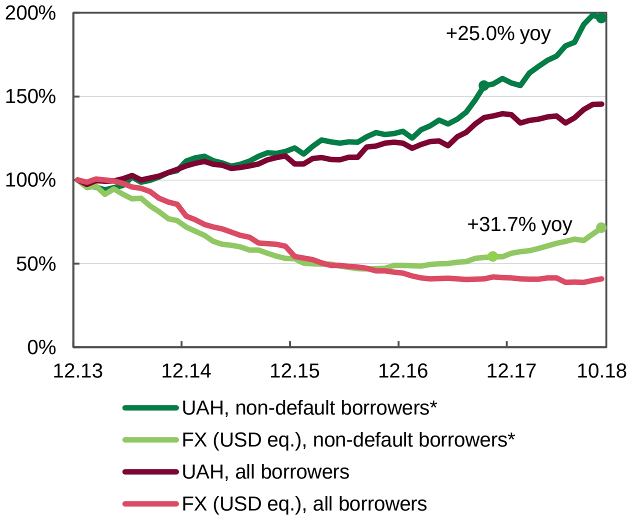
Lending to reliable corporate borrowers is picking up

As of the end of October, net hryvnia corporate loans grew 1.0% yoy (4.8% yoy excluding PrivatBank), while foreign currency corporate loans decreased 0.9% yoy (USD equivalent).

[18] As of 1 November 2018.

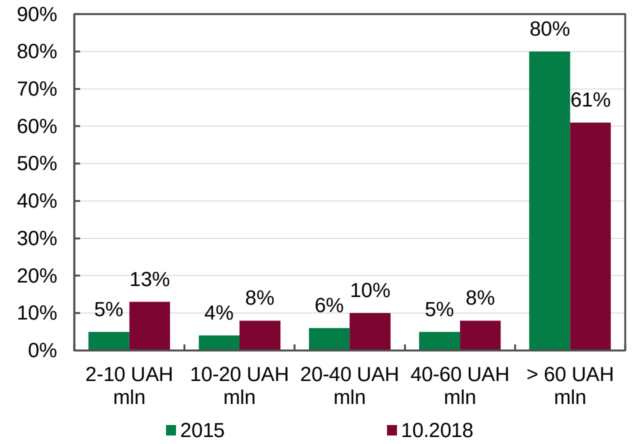
[19] Since September 2018, banks have started to shift outstanding overdraft loan balances to other accounts, making it difficult to calculate the average size of an overdraft.

Figure 3.6.4. Net corporate loans (excluding loans issued by PrivatBank), 2013=100%*



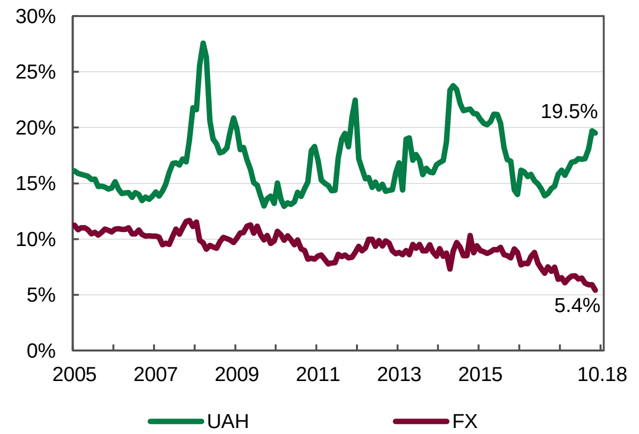
* Issued by banks solvent as of 1 November 2018.
** Loans of over UAH 2 million to businesses with no record of debt default in 2014-2018.
Source: NBU.

Figure 3.6.5. Breakdown of net corporate loans* by principal amount*



* Issued by banks solvent as of 1 November 2018 ** Loans of over UAH 2 million to businesses with no record of debt default in 2014 – 2018.
Source: NBU.

Figure 3.6.6. Interest rates on new loans to non-financial corporations, % per annum



Source: NBU.

The growth trend diverged across different borrower groups. Loans to high-quality borrowers with no record of loan default in 2014–2018 continued to grow rapidly: hryvnia and foreign currency loans grew 25% and 32% yoy, respectively. Hryvnia loans to this group of borrowers have doubled since the crisis, while foreign currency loans are expected to return to their pre-crisis levels over the next several years. High quality companies from sectors that generate mainly foreign currency earnings took on foreign currency loans.

The concentration of the loan portfolio to high quality borrowers by loan size is on the decline. Loans with a principal of between UAH 2 million and UAH 10 million accounted for 13% of all loans, up from 5% in 2015. Foreign-owned banks are largely focused on lending to small and medium companies; these loans accounted for 17% of all corporate loans as of late October. Over the last three years, the share of the largest loans (with a principal amount of over UAH 60 million) has dropped from 80% to 61%.

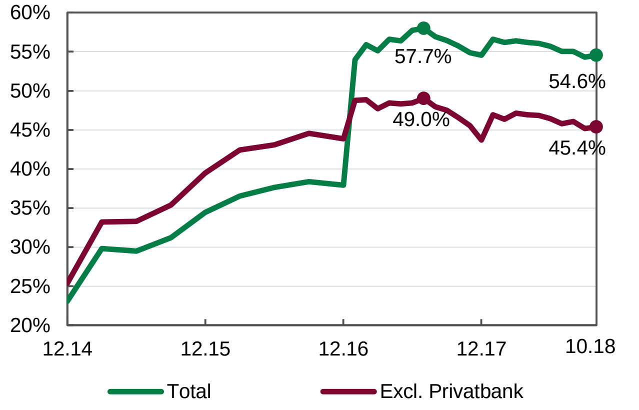
In H2, hryvnia deposit rates spiked, driven by a tightening of monetary policy, and hryvnia loan rates responded accordingly. In contrast, interest rates on foreign currency deposits continued to fall, dropping to historic lows. In Q3, corporate demand for loans increased dramatically. The increase was driven by seasonal factors and the higher volatility of the exchange rate that boosted the attractiveness of hryvnia loans.

Banks are ready to lend to businesses. Lending surveys show that banks have been expecting an upswing in corporate lending since Q4 2016. In late September 2018, three-fourths of all banks planned to ramp up corporate lending. Since 2016, banks have also been easing lending standards, especially for small- and medium-sized companies.

3.7. Loan Portfolio Quality

NPL ratio continues to decline, although slowly. This major driver is the new retail lending that is gradually "diluting" the existing loan portfolio. NPLs owed by delinquent borrowers are unlikely to improve in quality. In 2019, a key amendment in regulation on credit risk assessment (prudential provisioning) comes into effect. Banks will be required to amortize collateral that they have been unable to recover for years. This requirement will encourage banks to increase the coverage of NPLs with prudential provisions and later by provisions under IFRS.

Figure 3.7.1. **NPL ratio in Ukraine**

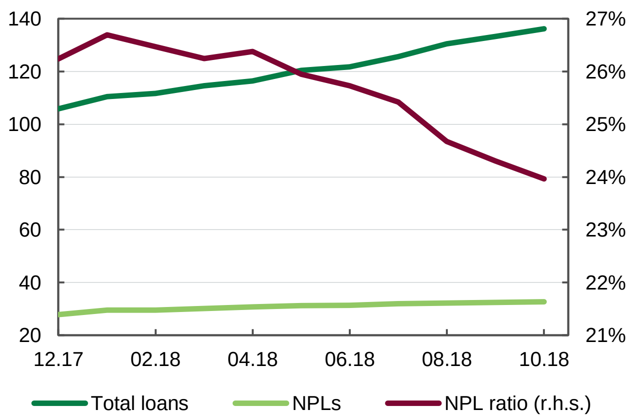


Source: NBU.

Figure 3.7.2. **Loans past due for more than 90 days as a percentage of total NPLs, % as of the start of each month**

Source: NBU.

Figure 3.7.3. **Retail loans (incl. to sole proprietors) in hryvnia, UAH billion**



Source: NBU.

Over 2018, the NPL ratio has been slowly decreasing, approximately by 0.2 pp per month. That decrease was mostly due to the growth in consumer lending and the slow "dilution" of the existing portfolio with new loans. However, the rate of the decrease in the NPLs ratio against a more than 35% yoy increase in new retail lending indicates that the quality of the new loans is sub-optimal. At the same time, NPL ratio in the corporate segment remained almost unchanged. This means banks have not been active in restructuring and writing off low-quality corporate loans.

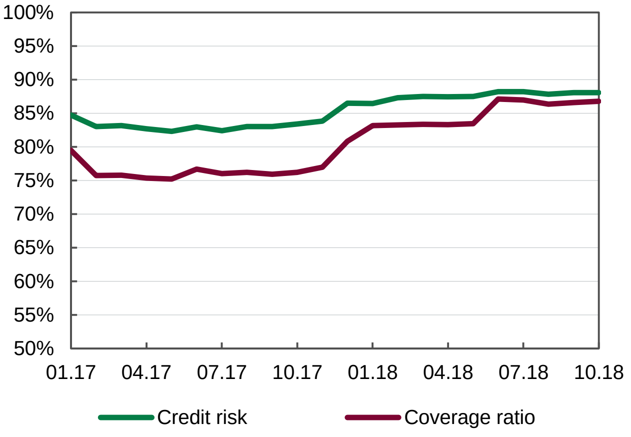
After Resolution No. 351 came into effect, the share of loans recognized as NPLs for reasons other than being past-due for more than 90 days has stabilized at 16%–17%. However, the NBU expects the share to increase slightly along with the growth in NPL volumes once banks are required to use data from the NBU Credit Register. This provision requires financial institutions to downgrade a borrower's class if a borrower's loans issued by other banks are non-performing or carry a high credit risk.

After banks transitioned to IFRS 9 and began applying the expected loss approach to provisioning, the NPL coverage ratio has reached 87%. The coverage ratio has approached the levels of credit risk (prudential provisions) as measured according to the NBU's requirements.

The NBU expects credit risk to increase slightly in 2019due to the new requirement to discount collateral for NPLs. Banks need a collateral to reduce losses caused by borrower default. However, in practice, financial institutions have been unable to recover collateral for several years and therefore cannot rely on that collateral to offset losses from loan defaults. The weight of the collateral as a mean to compensate losses decreases over time. In response to that, many regulators require banks to gradually discount collateral value if a bank has been unable to recover the collateral within a reasonable timespan. According to the rules set by the NBU, when calculating prudential provisions, banks can take into the full collateral value only during the first two years after the borrower's default. A 30% discount must be applied in the third year and a 50% discount in the fourth year. From the fifth year onwards, collateral cannot be included when calculating provisions. Nevertheless, banks must make further efforts to recover the collateral. This provision will come into effect on 1 February 2019.

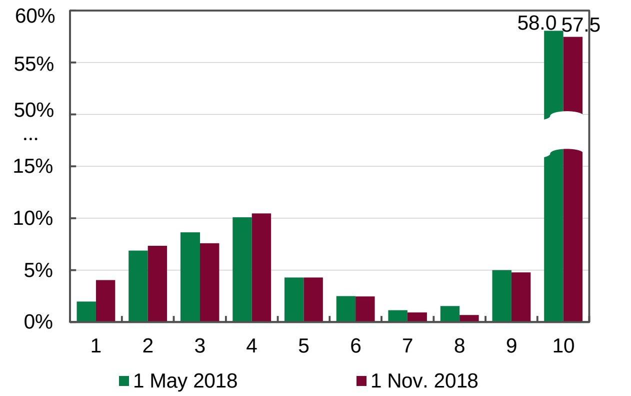
Credit risk is expected to increase after the implementation of this provision. The incremental credit risk may exceed UAH 15 billion. However, the impact on the banking system's capital will be minor. It poses no threat to the capital

Figure 3.7.4. Provisioning and credit risk levels of corporate NPLs



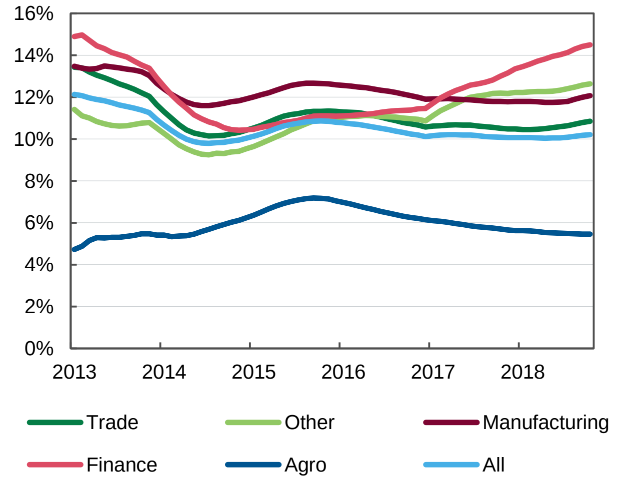
Source: NBU.

Figure 3.7.5. Corporate loans by class



Source: NBU.

Figure 3.7.6. The trend of default rates over a 12-month horizon by economic sectors (adjusted data)



Source: NBU

adequacy requirement (N2) for most banks as they have sufficient capital cushions. High operating profits will allow financial institutions to cover any losses from discounting the collateral in 2019. At the same time, for some banks the adverse effect of this change may be significant.

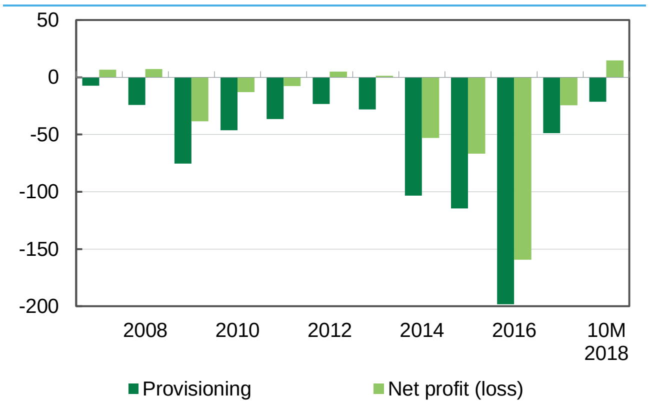
In April 2018, the NBU revised the model for assessing credit risk for corporate borrowers and for probability-of-default curves (for more details, refer to *The NBU is updating its model for assessing borrower default probability* on page 43 of the December 2017 Financial Stability Report). Since then, the level of non-performing corporate loans (class 10) has remained almost unchanged. However, the distribution of borrowers across non-default classes has continued to improve. Over the last six months, the share of loans in classes 1–4 (i.e., with a probability of default of less than 10%) has increased by 1.9 pp. An improvement in the financial standing of borrowers drove that growth.

The NBU will update its models for assessing the probability of default and recalculate the probability-of-default curves based on new information in order to assess credit risk properly. The preliminary estimations of default rates indicate that the probability has been increasing gradually across all economic sectors except agriculture over the past four months. This trend is observed in the financial sector for two years in a row. If this continues, the NBU will have to revise the probability-of-default curves and raise their average levels. For agricultural companies, the average level is likely to decline slightly.

3.8. Profit or Loss and Capital

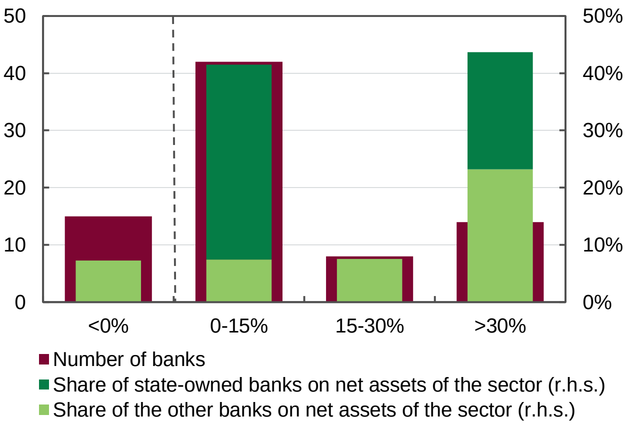
In 2018, the banking sector's is close to posting its highest profit in more than a decade. Thanks to strong operating efficiency and a substantial decrease in provisioning levels, the return on equity (ROE) of solvent banks may reach 10%. The ROE of many foreign-owned banks exceeds 30%. However, current profits are still low when compared to the sector's total losses over the last decade. In 2019, profitability will remain strong despite likely pressure on interest margins from the expected high cost of funding. The poor operating performance of some state-owned banks is the main risk to the sector's profitability.

Figure 3.8.1. Profit or loss of the banking sector, UAH billion



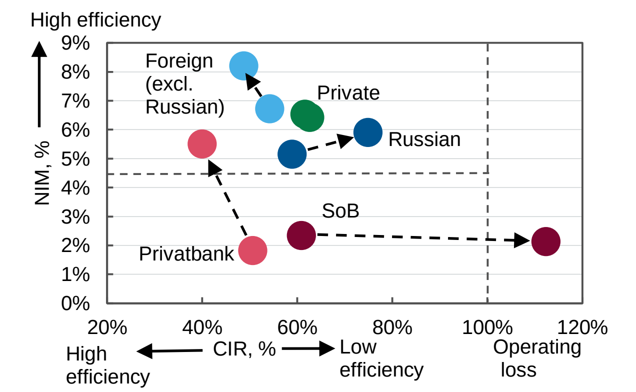
Source: NBU.

Figure 3.8.2. Breakdown of banks' ROE as of 1 November 2018



Source: NBU.

Figure 3.8.3. Cost-to-Income Ratio (CIR) and net interest margin (NIM) by bank groups*



* The arrow's starting point denotes the reading as of 1 November 2017 and the end point denotes the reading as of 1 November 2018.

Source: NBU.

Banking sector records a profit for the first time in five years

The banking sector has generated a profit of UAH 14.8 billion over the first ten months of the year. Banks that account for 92% of the sector's net assets were profitable in that period. The combined profit of those banks was UAH 26.2 billion. Out of 79 financial institutions, 15 reported a loss. VTB Bank and Sberbank accounted for almost 80% of total losses as they increased loan loss provisions.

The sector's full-year results should also be in the black and the NBU expects the sector's net profit to reach a more than 10-year high. This will be mainly driven by lower provisioning levels. Overall, in the first 10 months of the year, the sector reported provisions of UAH 21 billion, 25% less than last year and the lowest level since 2012.

In 2018, the banking sector's ROE has exceeded 10% on average. Over the first 10 months of the year, 14 banks that account for 43.7% of the sector's assets had a ROE of over 30%. These are mostly subsidiaries of foreign banking groups. Among the state-owned banks, ROE was high only at PrivatBank (31%), while the other state-owned banks reported ROE in the range of 0.5%–12.5%.

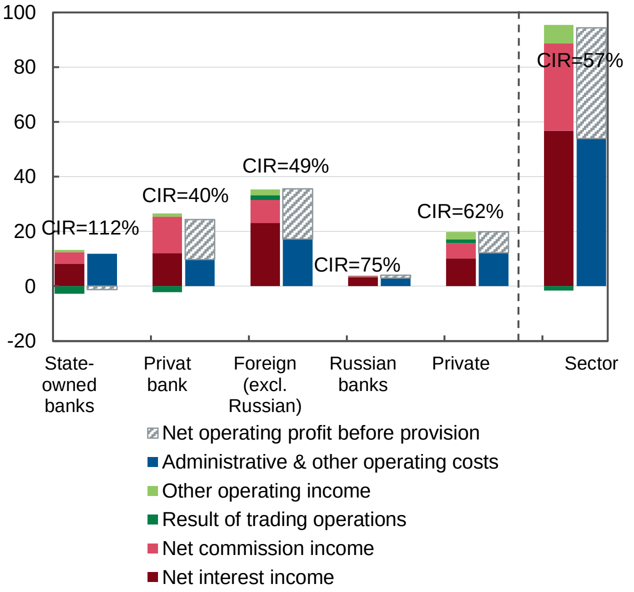
The considerable increase in profitability has injected optimism among key financial market participants about the current situation: in their opinion, bankruptcies or major financial issues would not pose a systemic risk. According to the Systemic Risk Survey, this factor dropped from 12th position in May to 18th as of November in the rating of systemic risk factors.

Some banks will report an operating loss

Despite the overall positive trends, 14 banks still made an operating loss (pre-provisioning loss) in the first 10 months of the year. Four of those banks, most notably two state-owned banks, registered a net profit after they released loan loss provisions. Another two banks with Russian capital were withdrawn from the market in November. The remaining eight operating loss-making financial institutions account for only 2% of the sector's net assets and do not pose a significant threat to the banking sector.

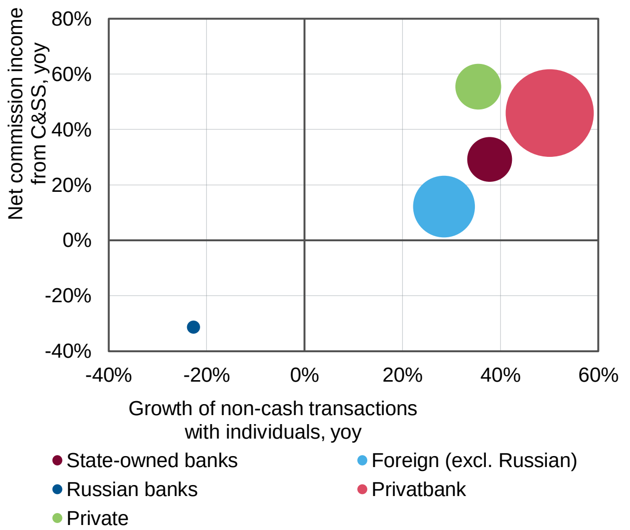
The sector's overall operating efficiency has remained almost the same as in 2017: the ratio of operating costs to income (CIR) stood at close to 57% in January–October. PrivatBank and foreign-owned banks (except banks with Russian capital) have saw an improvement in this ratio. At the same time, the operating performance of two state-owned financial

Figure 3.8.4. Operating income and cost by bank groups as of 1 November 2018, UAH billion



Source: NBU.

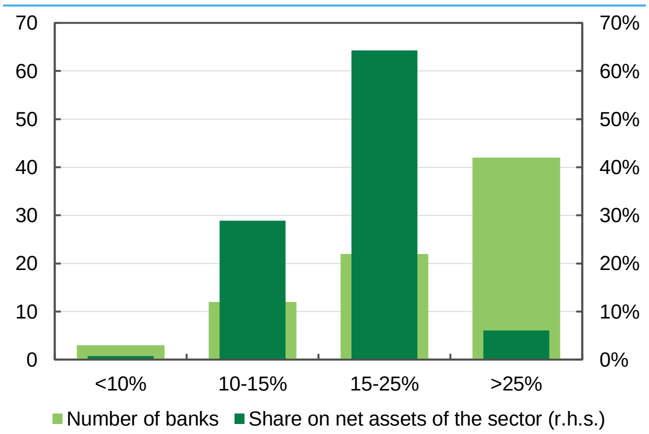
Figure 3.8.5. Annual change in net fee and commission income from cash and settlement services and volumes of cashless operations* by bank groups



* The size of each circle reflects the volume of net fee and commission income from cash and settlement operations as of 1 November 2018.

Source: NBU.

Figure 3.8.6. Breakdown of banks' capital adequacy ratio as of 1 November 2018



Source: NBU.

institutions has deteriorated: their CIR exceeded 100%, meaning they made an operating loss.

Over the first 10 months of the year, the net interest margin increased across almost all groups of banks. Banks belonging to western parent banks were the most efficient in terms of interest income. Their loan interest income rose markedly while they kept their interest expenses on borrowed funds unchanged. The higher cost of corporate funds at private banks was offset by higher income from retail lending and investments in domestic government bonds. PrivatBank has sharply improved the efficiency of its interest operations, primarily on the retail side. Interest margins will come under pressure in 2019: the cost of funding will increase because of higher interest rates and competition for deposits.

Net fee and commission income grew 31% yoy, primarily in commissions for cash and settlement services. Banks with fast-growing cashless retail operations were the leaders in terms of growth rates. As of end-October, PrivatBank generated 42% of the banking sector's total net fee and commission income as it dominated the market for retail cashless operations. Banks with private Ukrainian capital generated the fastest growth in net fee and commission incomes (49% yoy).

Over the first 10 months of the year, net fee and commission income and net interest income accounted for 94.4% of the banking sector's operating income, up 8.1 pp yoy.

Regulatory capital is growing despite a decrease in equity caused by transition to IFRS 9

Banks transitioned to the new IFRS 9 standard in 2018, which required them to downgrade assets in their portfolios as of the start of the year. As a result, the sector's total equity declined by UAH 27 billion. State-owned banks accounted for 90% of the decline. However, the net income earned throughout this year has substantially offset the decrease in equity driven by IFRS 9.

Regulatory capital has grown 9.3% since the start of the year, while equity decreased 9.3%. The share capital of banks increased by UAH 11.9 billion (2.4% yoy) thanks to new contributions by shareholders or retained earnings. The sector's total capital adequacy currently exceeds minimum requirements. As of the end of October, banks holding 70% of net assets had a capital adequacy ratio of above 15%.

3.9. Changes in the Regulatory Environment

The regulatory environment saw major changes in H2. Parliament passed laws aimed at streamlining the liberalization of the FX market, improving corporate governance at state-owned banks, reducing the cost of credit, improving the effectiveness of bankruptcy procedures, and enhancing controls over the quality of audit services. A new liquidity requirement was also introduced.

The FX regulatory framework was changed dramatically

The Law of Ukraine *On Currency and Currency Operations* was adopted to implement the free movement of capital. Existing FX restrictions will be canceled gradually as economic and financial stability risks decline to acceptable levels. Subsequently, FX operations will be conducted according to the principle "anything that is not explicitly prohibited by law is permitted".

Introduction of independent supervisory boards at state-owned banks

Members of supervisory boards will be selected on a competitive basis. Independent members and state representatives sitting on supervisory boards must meet a set of criteria. The term of tenure is three years.

Enhanced protection of creditor rights

Parliament adopted a law that will encourage a recovery of lending. The law simplified prosecution of a delinquent borrower under civil proceedings, especially by elaborating out-of-court settlement procedures and preventing borrowers from withdrawing collateral in violation of loan agreements.

Streamlined bankruptcy procedures

Parliament has adopted the Bankruptcy Code of Ukraine, which improved the procedure of corporate bankruptcy and introduced procedures related to debt restructuring and bankruptcy of private individuals[20].

Improved auditing mechanisms

The Law of Ukraine *On the Audit of Financial Statements and Auditing* took effect on 1 October. The law introduced a new audit supervision system that complies with EU norms. In September, the Public Oversight Board was established. This body will control the quality of services by audit companies providing the statutory audits of companies of public interest. The body will have the power to sanction offenders. Within the first three years after the law comes into force, the NBU can reject any audit company chosen by a bank to conduct an external audit or to suspend its right to conduct audits outright. Stronger control over the quality of audit opinions will enhance trust in the sector.

Access to the NBU's Credit Register

As of 1 September, banks have free real-time access to the NBU's Credit Register. The register contains data on borrowers, loan terms, and the performance under loan agreements. It will store information on outstanding credit amounting to at least 100 times the minimum wage to a single bank. Banks must assess their borrowers using data from the Credit Register.

New liquidity requirement

The NBU has introduced a new requirement, the liquidity coverage ratio (LCR) effective 1 December. Banks must maintain a ratio of no less than 80%. The new ratio should improve the resilience of banks to short-term liquidity shocks that are common in crisis periods when clients massively withdraw funds. The LCR is calculated cumulatively for all currencies, and also separately for foreign currencies. Banks will calculate the ratio daily as a 30-day moving average. The LCR minimum will be brought to 100% in three stages:

- 80% on 31 December 2018, the first reporting date for banks;
- 90% on 1 June 2019;

[20]The Code is being prepared to be submitted to the Chairman of the Verkhovna Rada, after which it will be sent to the President of Ukraine for final approval.

- 100% on 1 December 2019.

Starting in January 2019, the NBU will start publishing bank-specific information on compliance with the LCR along with other ratios under the *Statistics – Banking System Indicators* section of its official Internet site.

Changes to emergency liquidity assistance (ELA) procedures

Banks will no longer be required to submit financial development plans and will only need to provide a real estate evaluation when they request loans. The validity of real estate evaluation has been extended from three months to six months from the day of its submission. In addition, the NBU has established a new list of assets not eligible as collateral for loans to banks. The NBU will not accept real estate located outside oblast and district central cities (except for integral property complexes, production facilities, and warehouses), undeveloped sites outside the cities of Kyiv, Dnipro, Odesa, Kharkiv, and Lviv, loss-making properties, and properties that do not generate income. In addition, all mortgaged property must now be insured. The NBU has defined the eligibility criteria for insurance companies, including no legal breach over the past two years, profit generation, and reinsurance with leading international companies to cover risks. The changes to ELA lending procedures reduces red tape, which brings down the costs incurred by banks to obtain ELA loans, and protects against non-repayment of the loans in the event of the bank failure.

Publication of the Macroprudential Policy Strategy

The strategy defines the objectives and tools of macroprudential policy as well as the principles and stages of its implementation. The strategy marks the transition to systemic macroprudential regulation aimed at enhancing the resilience of the financial system and preventing the build-up of systemic risks, with the ultimate goal of ensuring financial stability and steady economic growth.

Remote identification of bank clients

Individuals can now get online access to banking services on top of administrative services. Starting in November 2018, the BankID system allows on-line opening of bank accounts. To open an account on-line, a client needs to pass once an identification procedure at any one of the banks participating in the system. The client then gains access to on-line banking provided by any other financial institution connected to BankID.

Recommendations

Financial stability requires cooperation between all financial market participants – the NBU and other regulators, banks, non-bank financial institutions, – as well as active support from government authorities. Below, the NBU makes recommendations to authorities and banks, and communicates its near-term goals and plans. Most of the recommendations from the previous Financial Stability Report remain relevant.

Recommendations for authorities

Expedite the adoption of laws required for the development of the financial sector
In H2, parliament adopted several laws designed to enhance the soundness of the financial sector in the long-run. However, some draft laws that are critical for the financial sector have not yet been considered, including the following:

- *Bill On Consolidating the Regulation of the Financial Services Market* (No. 2413a). This bill seeks to split the mandate of the National Commission for the State Regulation of Financial Services Markets between the NBU and the National Securities and Stock Market Commission. This will ensure effective supervision over both the banking sector and non-bank financial services market, which will in turn improve the quality of financial market regulation;
- *Bill On the Protection of the Rights of Financial Consumers* (No. 2456-д). This bill seeks to regulate the interaction of individuals with banks and financial companies according to European best practice, particularly in terms of fair promotion and the disclosure of information about financial services. It will also set out the rules for using electronic documents and remote service channels and promote the innovative technologies in financial services. Its adoption will strengthen the trust of financial services consumers in the banking system and improve retail lending conditions.

Ensure the full implementation of the IMF Stand-By Arrangement
The new Stand-By Arrangement provides for disbursements of SDR 2.8 billion (USD 3.9 billion) over a 14-month period. Resuming full cooperation with the IMF will significantly decrease risks to refinancing external public debt. Ukraine's financial stability depends on the continued cooperation with international financial institutions (IFIs) and uninterrupted access to financing from those IFIs. This in turn requires rigorous and timely compliance with the terms and conditions – the structural benchmarks – of the IMF program.

Appoint supervisory boards at state-owned banks
The Law of Ukraine No. 2491-VIII came into effect in November. This law stipulates that new independent supervisory boards be established at the state-owned banks, especially Oschadbank and Ukreximbank. With the overarching goal of implementing a strategy for the development of the state-owned banks, the new boards will address multiple long-term tasks like the issue of NPLs and improving risk management practices. The independent supervisory boards must be appointed within the timeframe set out by the law.

Publish the recommendations on the NPLs management at state-owned banks
A decision by the Financial Stability Council (FSC) established a task force on NPLs resolution at state-owned banks. The task force has formulated the principles for restructuring NPLs at state-owned banks. The FSC has to approve and publish them by the end of the year.

Recommendations to banks

The previous Financial Stability Report gave banks a number of recommendations (p. 58). The most important ones remain relevant:

- Speed up the NPLs resolution
- Adequately assess borrower credit risk
- Banks that consistently make losses should revise their business models
- Improve the management of the non-core assets banks obtained during the latest crisis or speed up the sale of those assets.

Decrease the dollarization of loan and deposit portfolios

The banking sector has a high level of loan and deposit dollarization. If the hryvnia were to depreciate, this will significantly increase credit risk. Many financial institutions, mainly those that are part of international banking groups, have noticeably cut foreign currency exposures on their balance sheets. However, high dollarization remains a critical issue for state-owned banks and banks with private domestic capital (see the Dollarization Risk Section). These banks should set mid-term goals to reduce the dollarization of their balance sheets.

Implement capitalization and restructuring plans in full and in good time

In 2018, the NBU assessed the resilience of the baking sector and found that some banks did not have sufficient capital cushions for a crisis. These banks must sustainably increase capital cushions or restructure balance sheets and operations to improve their resilience. The banks must consistently implement respective plans and programs through 2019.

Use the NBU's credit register while measuring credit risk

Banks should use information from the NBU's credit register and promptly downgrade the loan quality class if a borrower is in default or if a borrower is deemed high risk by another financial institution.

Proactively prepare to meet the 100% LCR minimum by the end of 2019

The LCR, a new liquidity ratio, came into effect in early December, requiring banks to ensure at least 80% ratio. Throughout 2019, banks will have to bring that ratio up to at least 100%.

Attract and retain more stable, longer-term funding

To mitigate liquidity risk, banks should grow time deposits as a share of total household deposits and attract longer-term deposits.

The NBU's plans and goals

Streamline registration and licensing procedures for banks and introduce a new contingent convertible capital instrument

The NBU announced this intention in the previous Financial Stability Report and plans to introduce it by the end of 2018 or in January 2019.

Complete SREP assessments of banks

In Q1 2019, the NBU will complete its assessments of banks in line with SREP (supervisory review and evaluation process) methodology. These assessments are based on EBA guidelines and are designed to evaluate banks on four criteria: corporate governance, liquidity, capital, and the business model. These assessments will be reviewed annually and will influence the NBU's decisions about the frequency and intensity of supervisory actions regarding each bank.

Expand the list of data banks must disclose

In addition to existing requirements, banks will now be required to disclose the following on their websites: the results of the annual assessment of bank resilience, particularly capital adequacy assessments under baseline and adverse scenarios; the LCR reading; credit risk broken down by borrower class; the corporate loan portfolio, including NPLs, broken down by economic activities; and the retail deposit portfolio broken down by amount and potential compensation from the Deposit Guarantee Fund. The NBU will publish the consolidated results of the annual assessment of resilience for each financial institution on its official website.

Hold the second annual resilience assessment of banks

In 2019, the NBU will conduct the second annual assessment of the resilience of banks and the banking sector overall. It will consist of asset quality review for all banks and stress tests of large banks.

Provide greater opportunities to assess corporate loans at the group level

The NBU plans to raise the total limit on corporate loans for which credit risk (prudential provisions) can be measured at the group level from UAH 2 million to UAH 5 million. About 15% of all corporate loans – mainly those to small and medium companies – will be subject to the more lenient group assessment. This will noticeably cut banks' costs related to administering small loans. Credit risk (prudential provisions) may also decrease for these loans.

Finalize measurement methodology for NSFR liquidity requirement

In H1 2019, the NBU will finalize the regulation that outlines the methodology for measuring the net stable funding ratio (NSFR), a new liquidity ratio. The introduction of this ratio is the second step towards harmonizing prudential requirements for Ukrainian banks with the Capital Requirements Regulation (CRR). The NBU will review the document with banks and amend it if required. The new ratio is expected to be introduced in early 2020. The initial value of the ratio and the transitory period will be determined based on test calculations.

Finalize a new regulation on capital composition

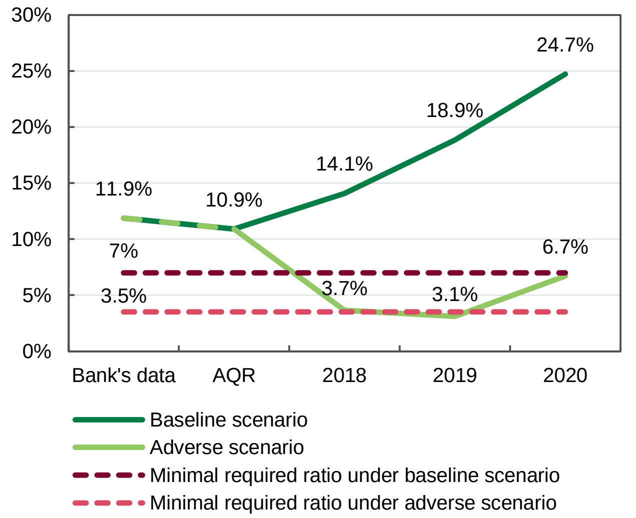
In H1, the NBU will publish a draft regulation that lays down CRR-based approaches to determining the composition and adequacy of regulatory capital. Regulatory capital is expected to comprise tier 1 capital (common equity and additional tier 1 capital) and tier 2 capital. The minimum capital adequacy ratio will remain at 10%. After discussing the document with banks, the NBU plans to approve the regulation in H2 2019. A policy on improving capital requirements was published in January 2018.

Special Focus

Stress-Testing Ukrainian Banks

In 2018, the NBU stress-tested the largest banks in Ukraine. The test revealed that under a baseline scenario, most financial institutions would continue to generate profits and would not experience problems with capital. However, according to the NBU's estimates, half of the banks would not emerge from a crisis without significant losses. These banks must restructure their balance sheets or boost their capital to decrease their vulnerability to risk and build a safety cushion by creating a capital buffer. This will enhance the financial resilience of individual banks and the banking system overall. The banks that need additional capital have already started to fulfill the NBU's requirements. During the next resilience assessment of banks, the NBU intends to keep the key assumptions from past stress test and also focus on identified systemic risks.

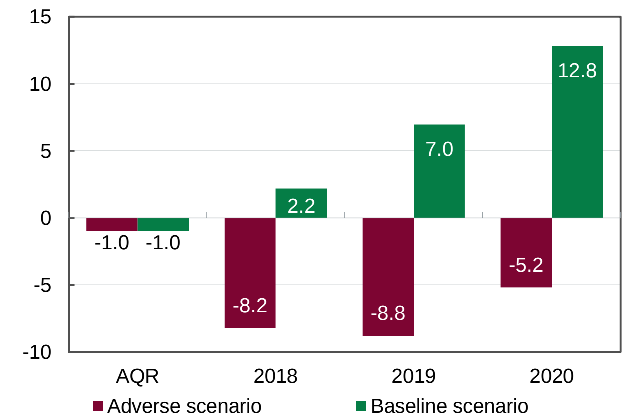
Figure 4.1.1. Weighted average estimates of the core capital adequacy ratio under stress test*



* Weighted by risk-weighted assets for each year.

Source: NBU.

Figure 4.1.2. Cumulative change in the core capital adequacy ratio under stress test compared to bank data as of 1 January 2018, pp



Source: NBU.

Table 5. Stress test scenario parameters, increase in %

Indicator	Baseline scenario			Adverse scenario		
	2018	2019	2020	2018	2019	2020
Real GDP	3.4	2.9	2.9	-3.3	-3.8	1.0
CPI	8.9	5.8	5.0	18.7	15.5	9.3
Exchange rate*	5.4	2.7	1.5	23.1	11.1	5.6

* UAH/USD exchange rate; under a baseline scenario, as estimated by Focus Economics.

Source: NBU, Focus Economics.

In 2018, the NBU conducted the first annual resilience assessment of banks. The review consists of an asset quality review (AQR) and a stress test. Stress test covered the largest banks by risk-weighted assets and retail deposits (i.e. the banks that could have a significant adverse impact on the banking sector and financial stability if their financial health were to deteriorate). In 2018, the NBU stress-tested the banks that account for over 94% of banking sector assets.

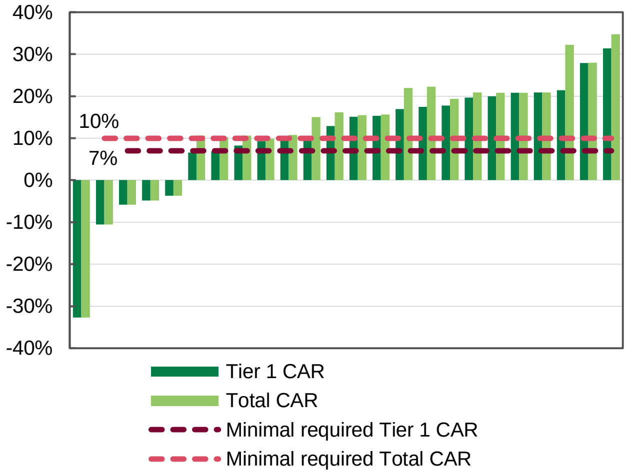
Stress test is a common tool for identifying and managing systemic risks. Central banks use this tool both for micro- and macroprudential regulation purposes. Stress test is designed to identify probable consequences for banks during a crisis rather than to forecast possible developments in the sector. To that end, the NBU models potential bank losses in a hypothetical crisis and calculates the capital the banks would need to cover those losses.

The NBU develops two stress test scenarios: a baseline and an adverse scenario. The adverse scenario contains the factors the regulator believes could trigger the largest risks, with assumptions based on data from past crises and consistent in terms of macroeconomic linkages. The adverse scenario is built to primarily trigger credit risk, as well as interest rate and FX risks. The scenario is based on a real GDP contraction, a hryvnia depreciation, higher inflation, and a consequent rise in interest rates. The model is run on a three-year horizon to capture all the stages of a crisis, from the initial development to the start of economic recovery. The baseline scenario is then used as a comparison base for the results of the stress test; it is not a forecast.

The stress tests of 2018 revealed that eight banks needed an additional UAH 6 billion in capital under the baseline scenario. Credit risk and weaker operating performance were the key factors behind the capital need. Those eight banks include two Russian-owned banks that continued to wind down operations and decrease their presence on the market in 2018. All of these banks must raise additional capital and complete capitalization plans by April 2019. However, this type of decrease in capital at some banks poses no systemic risk. In fact, a baseline scenario forecasts an increase in overall bank profit and a 13 pp increase in the core capital adequacy ratio over the next three years.

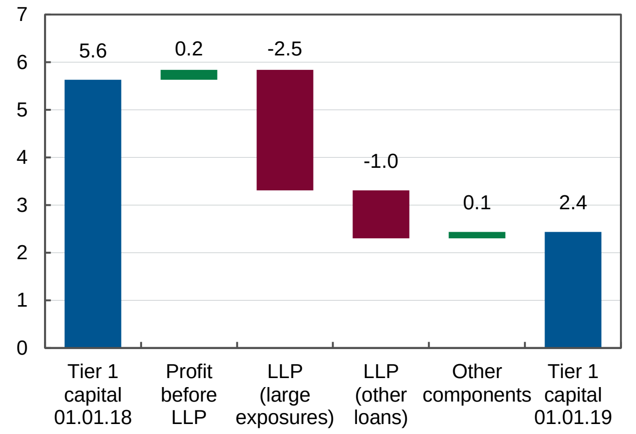
Under the adverse scenario, capital needs will be considerably higher. The weighted average core capital

Figure 4.1.3. Banks' capital adequacy ratios in the first year of the stress test baseline scenario



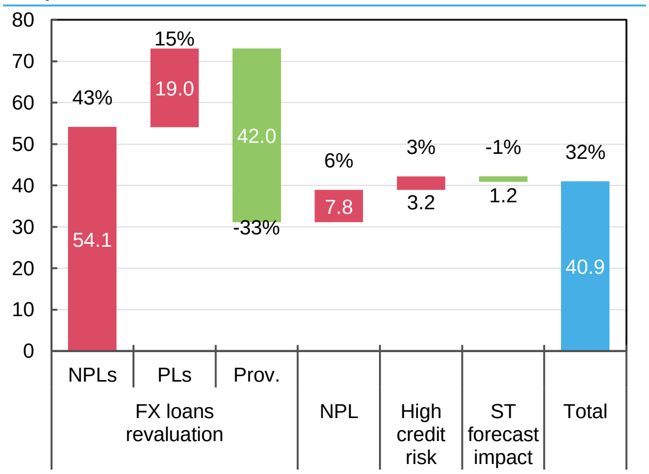
Source: NBU.

Figure 4.1.4. Factors driving change in the capital of banks that need capital under the baseline scenario, UAH billion



Source: NBU.

Figure 4.1.5. Increase in credit risk from large borrowers by components under the adverse scenario, UAH billion



* Percentages represent increases in credit risk relative to 1 January 2018.
Source: NBU.

adequacy ratio will drop to about 3%. The core capital adequacy ratio is expected to fall by about 9 pp in the event of a crisis. Twelve financial institutions would require UAH 42 billion in capital. Two state-owned banks account for a significant share of this amount. In general, the stress tests showed that existing systemic risks could cause potential losses.

Under the adverse scenario, banks' total core capital would drop by more than 70% compared to the baseline scenario. Given the high level of bank portfolio concentration, this would be mainly due to an increase in credit risk arising from large borrowers[21]. To estimate this change in credit risk, the NBU modeled the performance of large borrowers and evaluated their ability to service debt on time. This showed that debt revaluation due to currency depreciation is the most important driver of credit risk, as most large borrowers have no foreign currency earnings. That said, not taking currency revaluation into account, total credit risk decreased for companies with reasonable debt burdens even under the adverse scenario. The NBU will continue to stress test large borrowers individually using sector-specific assumptions.

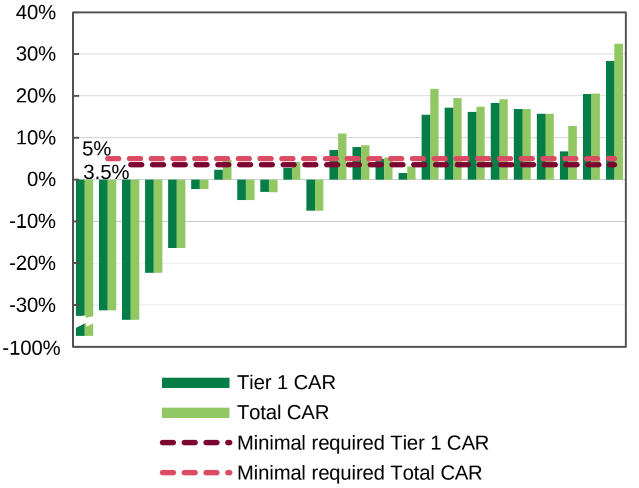
An increase in credit risk arising from other borrowers would also have a significant impact on the banks' capital. That would be driven by loans migrating to NPLs. The migration rates were calculated based on an econometric model using macroeconomic data for both crisis and non-crisis periods. According to the results, this approach was not conservative enough, especially for portfolios with shorter maturities and significant growth, for example consumer loans. For the next round of stress test, the NBU will assume a larger increase in the NPL ratio, based on historical data for crisis periods.

Another credit risk driver under an adverse scenario is the assumption that losses given default (LGD) will increase to at least 85% of total non-performing loans. Although it does not have a material impact across the system, this driver appears to be significant for some banks. With considerable legal risks and under a hypothetical crisis, banks would likely not be able to recover their loans by foreclosing on and selling the collateral for these loans. This is especially true of legacy non-performing loans. That is why Resolution No. 351 requires banks to completely amortize the value of collateral within four years after classifying loans as non-performing. The assumption of an increase in LGD will remain in future stress tests. To decrease its negative impact on the results of the stress test, banks need to either foreclose on collateral more actively or recognize credit risk in time, as the probability of recovering defaulted loans is low.

A potential change in interest rates is another risk that can have material adverse impact on bank capital. The adverse scenario pushed short-term deposit rates higher at a faster pace, rates on deposits with maturities of over six months at a slightly slower pace, and assumed an even slower rise in loan rates. In contrast to loans migration to NPLs, the impact from a change in interest rates varies depending on each

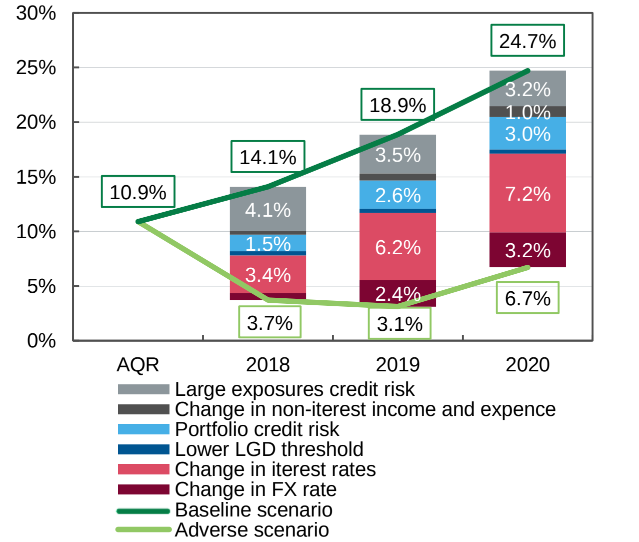
[21] For individual stress tests, the model includes the 40 largest corporate borrowers whose total debt accounts for no less than 5% of a bank's regulatory capital.

Figure 4.1.6. Capital adequacy ratio in the first year of the stress test adverse scenario



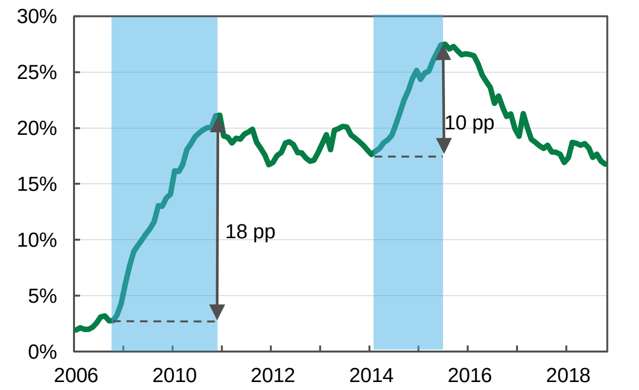
Source: NBU.

Figure 4.1.7. Factors driving change in a bank's core capital under the adverse scenario compared to the baseline scenario



Source: NBU.

Figure 4.1.8. Share of household NPLs, excluding mortgage and car loans (issued by solvent banks excluding PrivatBank)



Source: NBU.

bank's funding composition and current interest rate policy. In general, during the first year of the adverse scenario, this factor would increase the core capital adequacy ratio by 1 pp at some banks while suppressing it by 10 pp at other banks. As expected, banks with mainly short-term retail funding are more exposed to this risk. Under the stress test approach used this year, there was a possibility of an increase in the interest margin. However, given current high loan rates, it is unlikely that loan rates would rise further during a crisis. Therefore, the NBU plans to base future stress tests on the assumption that loans rates will be unchanged, while funding cost will grow.

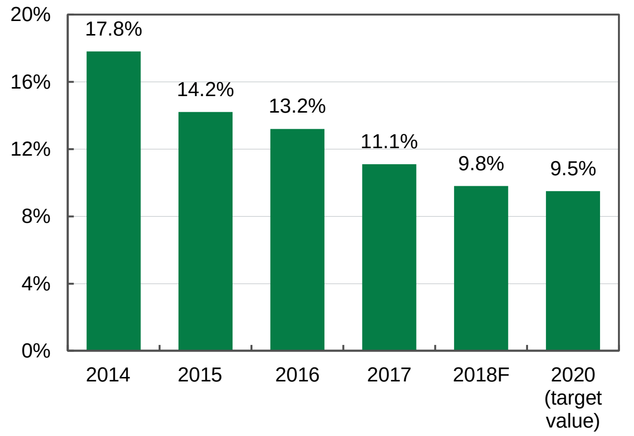
The indirect negative effect of a weaker hryvnia is evident in the erosion of the solvency of borrowers with foreign currency loans. Conversely, a weaker hryvnia has a direct positive influence on the capital of some banks – when revalued, assets grow more than liabilities owing to long open foreign currency positions. In future stress tests, the NBU will retain its assumption of a significant hryvnia depreciation. This will encourage banks with substantial foreign currency exposures in their loan portfolios to balance them. That said, the positive effect of a weaker hryvnia on capital will diminish during future stress tests as banks gradually bring their open foreign currency positions in-line with the limits imposed by the NBU.

The stress test have shown that although capital levels are sufficient under current conditions, banks are still vulnerable to crises. After the test, some banks have boosted their capital and pledged to address existing imbalances. The NBU will continue to assess the sustainability of the banking system every year to identify systemic risks. Next year, the adverse scenarios will have harsher assumptions to determine how vulnerable banks are to risks. These assumptions will include rapid growth in the ratio of non-performing consumer loans, unchanged loan rates, and higher losses given default.

Security of Cashless Settlements

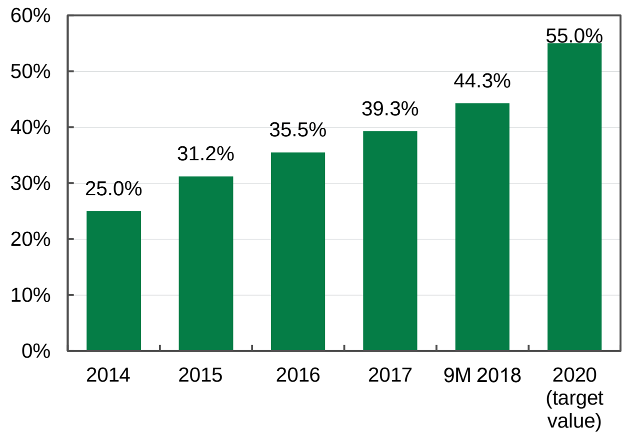
Cashless payments are gaining in popularity due to their convenience and safety. Payment infrastructure has been expanding since the crisis, and the number of active cards in use and the saturation of retail network with payment and POS terminals have increased. The NBU oversees the payment system to ensure the safety of cashless payments. The NBU is constantly updating approaches to monitoring the operating risks inherent in payment systems to keep those risks from materializing. Increasing the reliability of financial infrastructure, especially of payment infrastructure, is one of the NBU's key priorities in ensuring financial stability.

Figure 4.2.1. **Ratio of cash in circulation to GDP**



Source: NBU, SSSU.

Figure 4.2.2. **Ratio of cashless transactions with payment cards**



Source: NBU.

Cashless transactions are on the rise

The development of nearly every modern economy and financial system brings growth in cashless transactions. That trend is gaining steam in Ukraine, as cashless payments are fast, convenient, and secure. An increasing number of people are choosing cashless payments over cash. The growing share of cashless settlements is also helping reduce the shadow economy.

The NBU has launched and been an active participant in the Cashless Economy project. The project's performance is evaluated based on several key measures: the ratio of cash outside banks to GDP, the ratio of cashless transactions with payment cards, and the saturation of payment terminals. The project has made progress in terms of those measures and the positive trends are set to continue.

The NBU's oversight aims to ensure the security of payment systems

As cashless payments grow in importance, questions loom about the safety of electronic payments and the risk of payment failure or loss of funds.

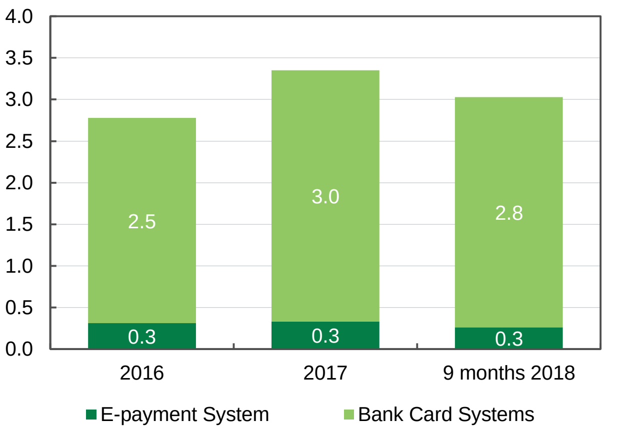
Operating payment systems comes with certain risks. This is due to the complexity of the processes and instruments, the high mobility and speed of settlement, the rapid development of new technologies, the development of remote banking services, etc.

The NBU oversees payment systems to ensure their uninterrupted, safe, and effective operation. That oversight includes monitoring and evaluating payment systems in terms of compliance with international standards and inducing changes to their operation as necessary. Effective operating risk management and the continuous operation of payment systems are critical to financial stability. The NBU has set enhanced resilience of financial (including payment) infrastructure as an intermediate policy objective in its Macroprudential Policy Strategy.

To mitigate risks to the operation of payment systems, the NBU has amended[22] Regulation No. 755 *On the Oversight of Payment Systems and Settlement Systems in Ukraine* of 28 November 2014. The amendments tighten the requirements for the organizational and technical measures that ensure operational continuity. In particular, the NBU now set reporting requirements concerning failures in the operations of payment systems, payment system participants, and service operators of payment infrastructure. Those reports

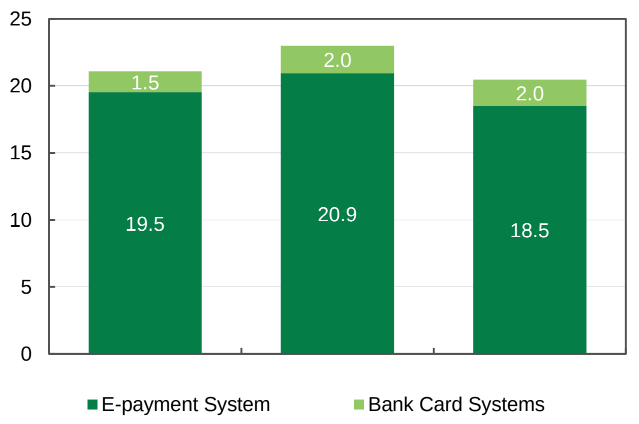
[22] NBU Board Resolution No. 61 dated 7 June 2018.

Figure 4.2.3. Number of payments in the SEP and card payment systems in Ukraine, billions



Source: NBU.

Figure 4.2.4. Volume of payments in the SEP and card-based payment systems in Ukraine, UAH trillion



Source: NBU.

must describe the reasons, consequences, duration of failure, measures to recover the payment system's operation, etc.

The NBU will use the data collected in the course oversight to compile an indicator of operational accessibility of payment systems[23] to boost risk management and help avoid similar failures going forward. This is consistent with the best practices of central banks around the world. In addition, the NBU has prepared Guidelines for Risk Management in Payment Systems, which take into account the experiences of various central banks and recommendations from the World Bank and the IMF.

The NBU's System of Electronic Payments (SEP)

The NBU's SEP handles over 97% all hryvnia-denominated interbank transfers within Ukraine[24]. All Ukrainian banks, the State Treasury, and the NBU itself participate in the NBU's SEP. The system lays the infrastructural and technological groundwork for the implementation of the NBU's monetary policy and the handling of budget payments and operations with domestic government bonds. In terms of international approaches and the criteria approved by the NBU, the SEP is the only systemically important payment system in Ukraine.

The SEP is especially important in promoting financial stability; failures in the system's operation could have negative impact on all banks. For this reason, the NBU periodically evaluates the system's compliance with the Principles for Financial Market Infrastructures, which are the global standards for oversight set by the Financial Stability Board. These are among the key international standards for ensuring efficient and stable financial systems. They are also the only standards in the area of payments, clearing, and settlements.

Card-based payment systems

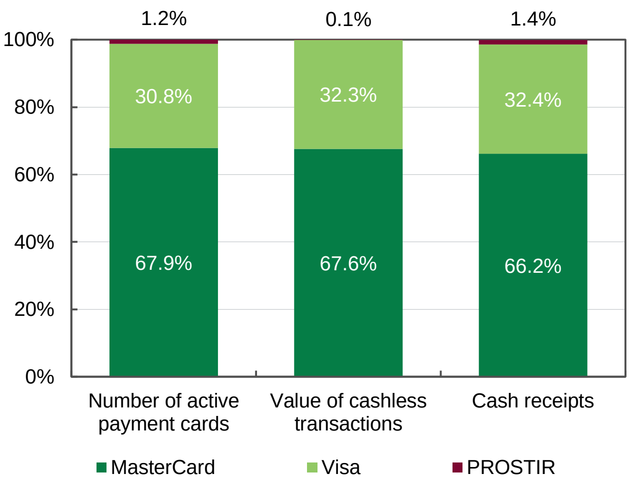
Key card-based payment operators in Ukraine include international payment systems MasterCard and Visa, as well as the PROSTIR, national payment system. The three account for almost 100% of all card-based payments in Ukraine.

In the first nine months 2018, 2.8 billion (+27% yoy) card payment transactions were made in Ukraine, valued at around UAH 2 trillion (+39% yoy). In the first nine months of 2018, cashless transactions accounted for 44.3% of all card-based transactions. The Cashless Economy project has set a target of 55% for cashless transactions by the end of 2020.

The continuous operation of card-based payment systems ensures the increasing consumer confidence in the banking system and the domestic currency. Any disruption in the operation of these systems could cause negative social consequences and restrict households' access to payment services. MasterCard and Visa hold an important role in Ukraine's payment infrastructure and thus the NBU views them as socially important and sets out requirements for risk

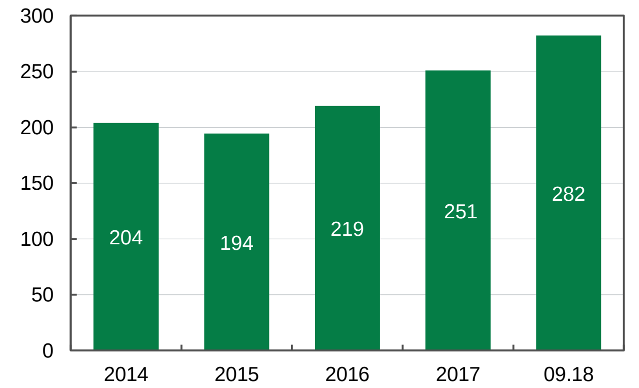
[23] Operational availability refers to the ratio between the actual and planned life span of a payment system's operation (in a given year).
[24] The remaining 3% of interbank domestic currency transfers are processed through correspondent accounts opened with other banks.

Figure 4.2.5. Number of active payment cards (1 October 2018) and amount of transactions (Q2 and Q3 2018)



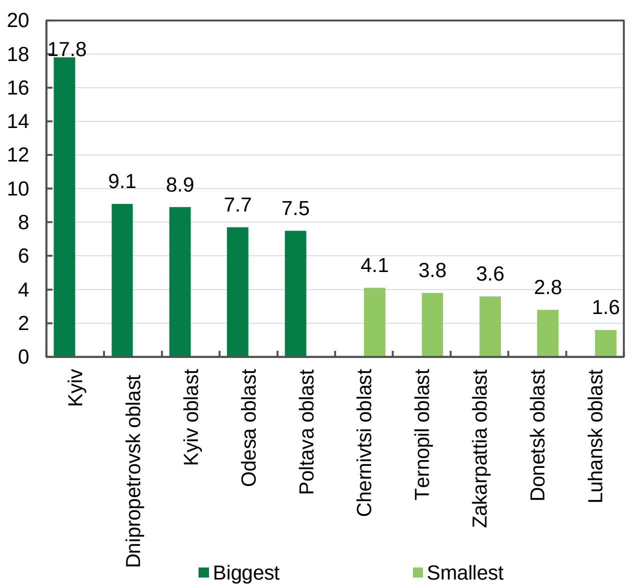
Source: NBU.

Figure 4.2.6. Number of retail and bank payment terminals, thousand units



Source: NBU.

Figure 4.2.7. Number of payment terminals per 1,000 individuals (top and bottom five oblasts)



Source: NBU.

management and operational continuity as per international standards. MasterCard accounts for 70% of Ukraine's cashless card-based payments. To ensure joint oversight of MasterCard's payment system, the NBU and the National Bank of Belgium have signed a Memorandum of Understanding for the Exchange of Confidential Information, as the National Bank of Belgium is the key responsible authority for the MasterCard system's oversight.

Retail payment infrastructure

Growth in the volume of cashless transactions depends on a wide-reaching card-based payment network. Ukraine's network of retail payment (POS) terminals grew 13.6% in 2018 to 264,000 units. About 79% of all POS terminals can handle contactless payments. However, despite the growth in the number of POS terminals, some oblasts have low levels of POS terminal saturation. Kyiv has 17.8 terminals per 1,000 individuals, while some oblasts have fewer than 4 terminals per 1,000. Ukraine averages 6.7 terminals per 1,000, less than Poland's 12.5 and well behind the over 50 per 1,000 in the UK.

As of early October 2018, Ukraine had nearly 18,500 ATMs, down 0.7% from the start of the year. Thanks to the commission policy for card-based payment systems, bank customers can now withdraw cash from almost any ATM at a low cost or free of charge. This frees banks from the need to expand their own ATM networks, which are expensive to maintain (especially because of the cost of handling cash).

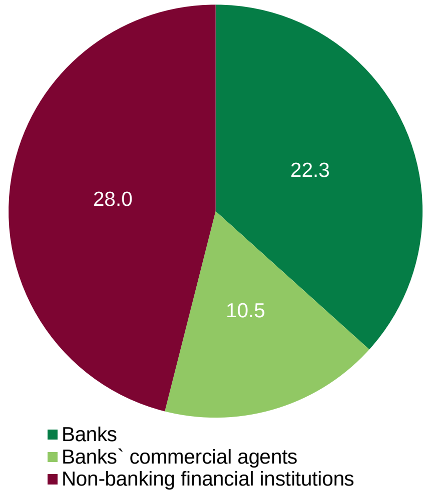
Self-service kiosks (SSK) constitute an important element of the payment infrastructure. They meet cash payment needs for customers (depositing cash into bank accounts, refilling cell phone accounts, paying utility bills, etc.) 24 hours a day, 7 days a week. SSKs are installed by banks, their commercial agents, and non-bank financial institutions that hold an NBU license to transfer funds. As of early October, Ukraine had 61,000 operational SSKs.

Payment card fraud

As the market develops, card payments are becoming the target of fraud efforts involving unauthorized fund transfers from customer accounts. In H1 2018, 30 banks that are part of card payment systems reported 32,600 cases of unlawful/suspect transactions with payment cards and/or payment card details worth a total of UAH 83 million (up from 32,400 cases worth UAH 69 million in H1 2017). This means that out of every UAH 1 million in card-based purchases, UAH 64 came from illegal transactions (compared to UAH 77 in H1 2017).

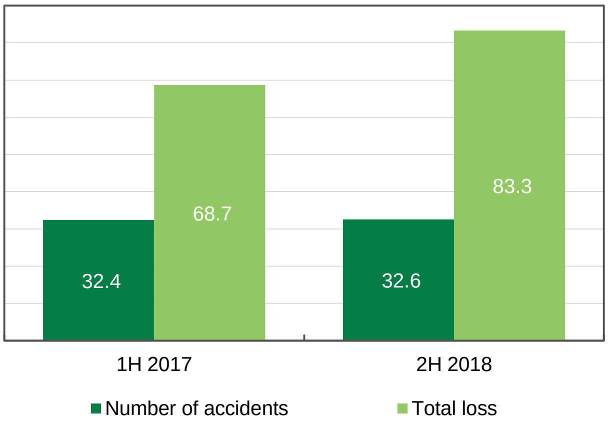
In recent months, unlawful actions/suspect transactions involving "social engineering" fraud have become increasingly common. This trend is driven by fraudsters shifting away from technology and towards the human factor. To counter that treat, all payment market participants should join the effort to increase the financial literacy of cardholders. At the same time, payments at retail stores are becoming

Figure 4.2.8. Breakdown of self-service kiosks by owner type, thousands



Source: NBU.

Figure 4.2.9. Number of illegal actions/suspect transactions with payment cards (in thousands) and amount of losses from those transactions (UAH million)



Source: NBU.

among the most secure (in contrast to losses incurred by cardholders and banks due to ATM and on-line transactions).

Conclusions and outlook

The NBU is constantly working to harmonize Ukrainian laws with international payment oversight practices, to implement best international practices in payment security and the protection of customer rights. Simultaneously, national payment systems and payment infrastructure are evolving.

Innovative payment technologies and the relevant infrastructure play a key role in the development of the cashless economy. Ukraine has tremendous potential in implementing payment innovations. For instance, customers in Ukraine are currently not able to make instant payments between accounts in different banks 24 hours a day, 7 days a week. As a result, payment cards are the most popular method for retail payments. The volume of card-to-card (P2P) transfers continues to grow. On one hand, this is the result of market participants introducing convenient and accessible services. On the other, it is a consequence of the lack of alternate technologies.

In-line with international standards and IMF guidelines, the NBU is planning to tighten the oversight of payment infrastructure and evaluate the central securities depository and central counterparty for compliance with international standards for oversight, as these entities are seen as systemically important for Ukraine's economy and may affect financial stability.

Abbreviations and terms

AQR	Asset quality review
ATM	Automated teller machine
ATO	Anti-terrorist operation / United Forces Operation
DGF	Deposit Guarantee Fund
EBA	European Banking Authority
EBITDA	Earnings before interest, taxes, depreciation and amortization
EL	Expected losses
ELA	Emergency liquidity assistance
EM	emerging markets
EU	European Union
CAR	Capital adequacy ratio
CEE	Central and Eastern Europe
CIR	Cost-to-income ratio
C&SS	Cash and settlement operations
CPI	Consumer price index
DSTI	Debt service to income ratio
EM	Emerging markets
Fed	US Federal Reserve System
FIG	Financial and industrial groups
FSI	Financial Stress Index
FX	Foreign currency/exchange
GDP	Gross Domestic Product
HQLA	High-quality liquid assets
IFI	International Financial Institutions
IFRS	International Financial Reporting Standards
ILO	International Labor Organization
IMF	International Monetary Fund
LCR	Liquidity coverage ratio
LGD	Loss given default
LLP	Loan loss provision
LTD	Loan-to-deposit ratio
LTV	Loan-to-value ratio
MoF	Ministry of Finance of Ukraine
Naftogaz	National Joint Stock Company Naftogaz of Ukraine
NGCA	Non-government controlled areas (of Donetsk and Luhansk regions)
NBU	National Bank of Ukraine
NFC	Non-financial corporation
NPE/NPL	Non-performing exposure / loan
NFSR	Net stable funding ratio
OPEC	Organization of the Petroleum Exporting Countries
PD	Probability of default
POS	Point-of-sale terminals
PrivatBank	Public Joint-Stock Company Commercial Bank “PrivatBank”
Parliament	Verkhovna Rada of Ukraine (Supreme Council)
PFU	Pension Fund of Ukraine
Regulation No 351	Regulation of the NBU of 30 June 2016 No 351 approving Regulation on credit risk calculation by Ukrainian banks
RP	Bank’s related parties
ROE	Return on equity
SDR	Special drawing rights
SEP	System of electronic payments (of the NBU)
SME	Small and medium-sized enterprises
SREP	Supervisory review and evaluation process
SSSU	State Statistics Service of Ukraine
SSK	Self-service kiosks
ST	Stress test
STSU	State Treasury Service of Ukraine
UIRD	Ukrainian Index of Retail Deposit Rates
US	United States of America

k	thousand
m	million
bn	billion
UAH	Ukrainian hryvnia
USD	US dollar
pp	percentage points
M	month
Q	quarter
H1/H2	First/second half of a year
avg.	average
cu. m.	Cubic meters
eq.	equivalent
eop	end of period
yoy	year-on-year
qoq	quarter-on-quarter
mom	month-on-month
sq. m.	square meters
r.h.s.	right hand scale
YTM	Yield to maturity