



Bond Market Insight

Sensitivity analysis of future public debt

FRIDAY, 10 JULY 2015

This report provides a projection of what Ukraine's public debt level might evolve from 2015 through 2025. Assuming ICU's base-case macroeconomic scenario (with a 50% probability) and no external debt restructuring, Ukraine's public debt level is not expected to stabilize in the near-term and should remain above 100% of GDP through 2018. A 25% nominal haircut is sufficient to restore creditworthiness within the IMF's guidelines.

In our recent [macro report](#), we assessed possible outcomes of ongoing negotiations with private creditors. It argues that given the base-case macroeconomic forecast, a maturity extension, coupon reduction and nominal reduction (by 25%) are feasible (see pp.37-39 of *Quarterly Report* "Since the storm last February", 17 June 2015). This outcome meets the IMF's three targets it determined to restore Ukraine's sovereign creditworthiness:

- 1) Generate US\$15.3bn savings in public sector financing during the IMF's program period, assumed to be 2015-18.
- 2) Reduce public debt in terms of debt-to-GDP to under 71% of GDP by 2020.
- 3) Contain the budget's gross financing needs to an average of 10% of GDP in 2019-25 (maximum of 12% of GDP in any given year).

The aim of this note is to explain the sensitivity of our macro model and debt operation outcome in regard to such key macro indicators as real GDP growth and the exchange rate.

It should be noted here that the above-mentioned analysis assumes the US\$3bn Eurobond due this December as a private debt instrument. Hence, the Russian government is assumed to be a private lender as it refuses to constructively cooperate with Ukraine's official lenders as led by the IMF.

Although recent articles in the [FT](#) (June 19th) and [Bloomberg](#) (June 23rd) have inferred that the IMF is leaning to classify that Russian bond as a lending instrument from an official creditor, the IMF has not confirmed this allegation. In our base-case scenario, the IMF will treat the Russian Eurobond due this December as private debt. If this decision is realized, it changes the above-mentioned assessment on a rationale outcome. This note also tries to address this issue and provide a view on future debt metrics and macroeconomic indicators given the assumption that the IMF will continue to advise the Ukrainian government to repay US\$3bn to the Russian government this December.

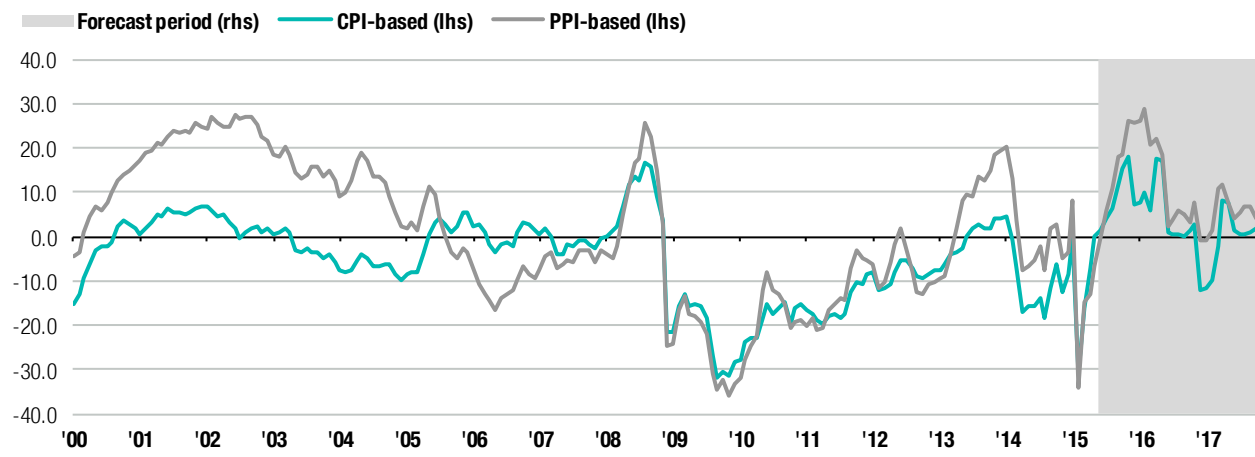
Assumptions on exchange rate

Our baseline assumption about the future exchange rate of the Ukrainian hryvnia (UAH) to the dollar is depicted in Chart 2 below. As explained in the *Quarterly Report* (see section "View on UAH: High inflation destroys competitiveness" on p.42), the ongoing endemic high inflation should erode currency competitiveness quite fast (as depicted in Chart 1 below).

We forecast that the hryvnia's real trade-weighted value will appreciate to an unsustainable level, with the market rate rising to 25/USD at the end of 2015 from the current 21/USD. The same logic applies to 2016-17, when the economy is projected to experience double-digit inflation yet again.

Chart 1. Misalignment of the UAH's FX rate as implied by the UAH real trade-weighted indices

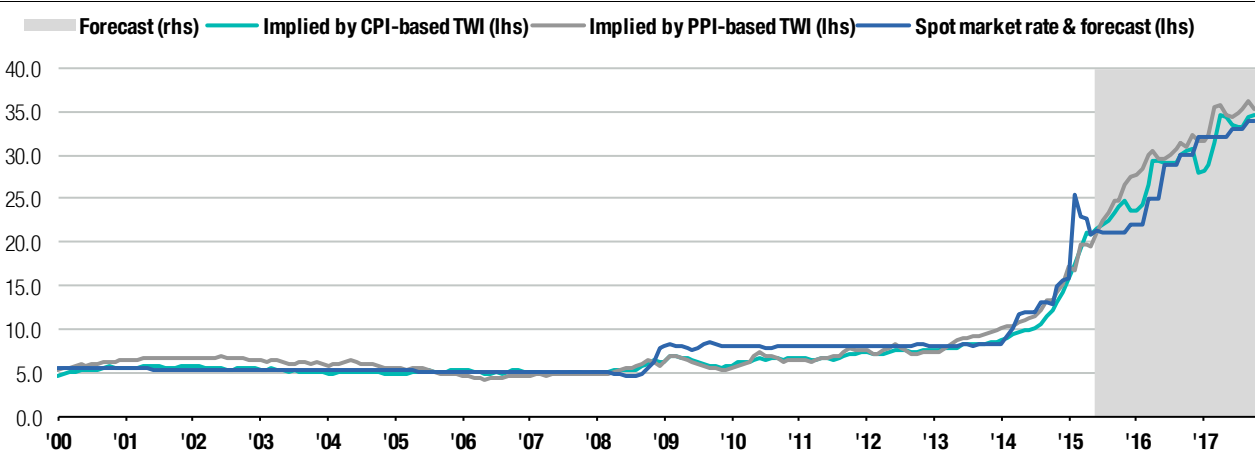
History 2000-5M15 and forecast for 2H15-2017



Source: ICU.

Chart 2. UAH's FX rate versus the rates implied by the UAH real trade-weighted indices

History 2000-5M15 and forecast for 2H15-2017



Source: ICU.

For sensitivity purposes, we constructed the following range of FX rate forecasts for 2015-25, the period that is determined by IMF as indicative for restoring public debt sustainability:

- 1) As ICU's base-case scenario assumes that Ukraine's authorities will adhere to a flexible FX regime, the market FX rate runs according to the projections as depicted in Chart 2 above and Table 1 below. The average FX rate for 2015 is 22.5, 30.8 for 2016, 34.3 for 2017, 36.5 for 2018 and 38 from 2020. This scenario has a 50% probability. It is driven by high inflation, a very thin current account surplus in 2015, and current account deficits starting from 2016, in addition to modest FDI inflows.

- 2) Four scenarios of a flexible FX regime that result in a slightly more rapid weakening of the FX rate than in the scenario above, while the mid-term rate settles down to 25, 27, 30, 35/USD from 2017 through 2025. This development has a 30% probability.
- 3) Two scenarios of a pegged FX regime with the UAH's FX rate fixed at 21.5 and 22.5/USD in 2015 through 2025. There is a 20% probability that authorities will be able to sustain a pegged FX regime even over short-term period of 1-2 years.

Table 1. Range of FX rate scenarios (UAH per USD) with their probability (%)

Scenario	Probability (%)	2014	2015F	2016F	2017F	2018F	2019F	2020F	2021F	2022F	2023F	2024F	2025F
Flexible FX regime	50	12.01	22.56	30.75	34.25	36.50	38.00	38.00	38.00	38.00	38.00	38.00	38.00
Flexible FX regime, long-term @35/USD		12.01	22.56	30.75	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Flexible FX regime, long-term @30/USD	30*	12.01	22.56	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00
Flexible FX regime, long-term @27/USD		12.01	22.56	27.00	27.00	27.00	27.00	27.00	27.00	27.00	27.00	27.00	27.00
Flexible FX regime, long-term @25/USD		12.01	22.56	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00
Pegged FX regime @22.5/USD	20**	12.01	22.50	22.50	22.50	22.50	22.50	22.50	22.50	22.50	22.50	22.50	22.50
Pegged FX regime @21.5/USD		12.01	21.50	21.50	21.50	21.50	21.50	21.50	21.50	21.50	21.50	21.50	21.50

Note: * each scenario of this group has 30% probability; ** each scenario of this group has 20% probability. Sources: ICU.

Assumptions on inflation

Our base-case inflation forecast for year-end 2015-17 is 52.7%, 23.6% and 16.7%, respectively. From 2018, consumer inflation is forecast to be under control and contained in the single-digit area of around 5%. Our key viewpoints in regard to future inflation are:

- 1) Authorities' commitment to raise tariffs on utilities;
- 2) As wage earners have experienced a sizable collapse of purchasing power, they will demand higher compensation;
- 3) Seasonal factors (historically, monthly inflation in summer time flattens while in the fall and spring it picks up.

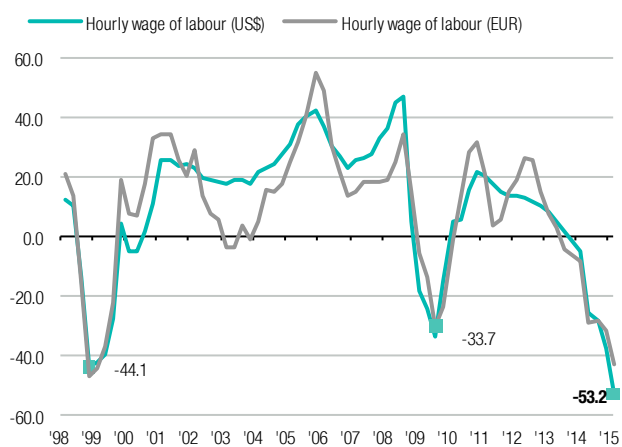
This forecast incorporates an assumption that after a more than 50% slump in wages (in terms of the average hourly wage in 1Q15 versus 1Q14 in the US dollar equivalent, see Chart 3), there will be political pressure on the government to index wages in the public sector and pensions, wages in the private sector too are likely to start growing albeit in nominal terms. This assumption is based upon ICU's observation of consumer price behavior.

Chart 4 below depicts the historical changes in the value of the standardized basket of consumer goods (see pp.52 of [Quarterly Report](#)), which, as of the end of June this year, was worth of UAH683.44, or US\$32.53 at the market exchange rate. The USD equivalent of the basket value is 0.4% more than it was at the end of 2014 but 13.4% less than the basket's value a year ago.

This underlines a gapping divergence between cost of living and wage-earners income level – the former declined by 13% YoY while the latter dropped by 53% YoY. In our view, nominal wages are likely to start increasing as the economy tries to catch up with the cost of living. This is likely to start putting pressure on PM Yatsenyuk and President Poroshenko to make concessions this fall before the October regional elections.

Chart 3. On-year change in average hourly wage* in hard currencies equivalents USD and EUR (% YoY)

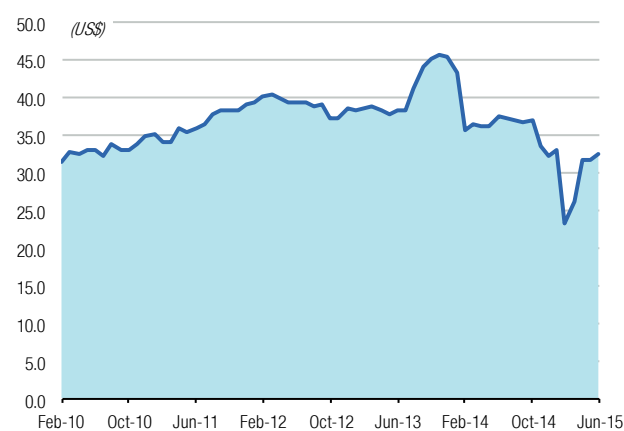
History from 1Q of 1998 through 1Q of 2015



Note: * Average hourly wage is calculated by dividing wages by the number of employed and then by hours worked during the quarter. Source: State Statistics Service, ICU.

Chart 4. US dollar value of ICU consumer basket (US\$)

Monthly history from February 2010 through June 2015



Source: ICU.

Assumptions on real GDP growth

ICU's baseline growth assumptions for Ukraine's economy are as follows. This year's recession is seen to be deeper than previously thought; hence, we downgraded growth rate from minus 7.3% to minus 13.1% year-on-year. In 2016, we expect growth to rebound at a quite mild rate of +2.7%, followed by +2.0% growth after 2017. In our view, the economy's long-term growth rate is +2.0%. This reflects the persistently low level of fixed investments, which is measured by the share of gross fixed capital formation in the GDP which amounted just recently to 11.6% in the four-quarter period through 1Q15 and well below the 20.9% average for in 1997-2013. Also, weak external demand from the recession in Russia and its trade restrictions, as well as weak global demand for steel, should weigh on the potential growth rate.

Alongside the base-case scenario for growth, we defined the range of growth projections for sensitivity analysis:

- 1) ICU's base-case scenario: -13.1% in 2015, +2.7% in 2016, +2.0% since 2017. This scenario has a 50% probability.
- 2) A range of growth scenarios (six), each has the same depth of recession in 2015, while each scenario's long-term growth rate fixate in the range from +3.0% to +8.0%, differing from each other by 1ppt. In our view, a range of growth rates of 3.0-4.0% has a 30% probability and the 5.0-6.0% range has a 15% probability. The future long-term growth rate of 7.0-8.0% is unlikely and hence has a very low 5% probability.

Table 2. Range of real GDP scenarios (% YoY) with their probability (%)

Scenario	Probability (%)	2014	2015F	2016F	2017F	2018F	2019F	2020F	2021F	2022F	2023F	2024F	2025F
Base-case long-term +2.0%	50	-6.6	-13.0	2.7	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Long-term +3.0%	30	-6.6	-13.0	2.7	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Long-term +4.0%	30	-6.6	-13.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Long-term +5.0%	15	-6.6	-13.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Long-term +6.0%	15	-6.6	-13.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Long-term +7.0%	5	-6.6	-13.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Long-term +8.0%	5	-6.6	-13.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0

Sources: Company data.

Assumptions on fiscal policy

Our key assumption in this area is that the government will adhere to the balanced budget in primary terms (expenditures net of debt servicing).

Assumptions on external balance, FX reserves

In this regard, ICU's base-case scenario assumes the following:

- 1) A nearly balanced current account in 2015, amounting to a 0.1% of GDP surplus, the first positive balance since 2005 when it was 2.9% of GDP. Then, over the next two years when real GDP turns positive, current account deficits are projected to return albeit projected to be at manageable level of 1.6% in 2016 and 2.5% in 2017. From 2018, the assumption is that the current account deficit will be 1.0-2.1% of GDP.
- 2) FDI inflows are projected to recover from a slump of 0.2% of GDP in 2014 to +3.3% of GDP this year, and then to nearly +5% a year on average from 2016 through 2025.
- 3) External borrowings by the non-government sector — namely, banks and corporations — are projected via the level of rollover ratios, which were well below 100% in 2014, implying the deleveraging of these sectors and downward pressure on FX reserves. These ratios are forecast to be still below 100% (implying deleveraging) in 2015, but should recover toward 100% from 2016.

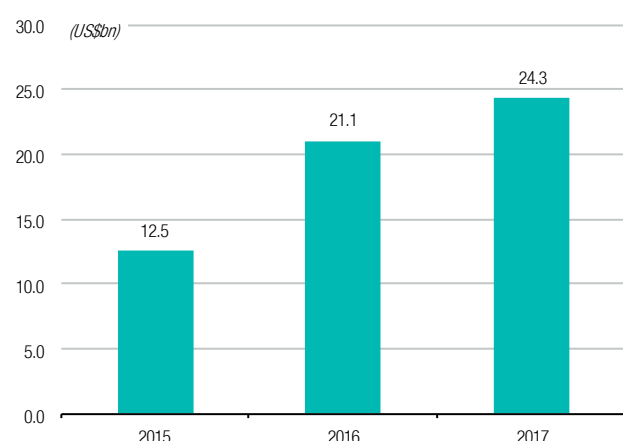
As a result of the above-mentioned assumptions, and thanks to financings by the IMF and other official lenders, FX reserves are forecast to recover to US\$12.5bn in 2015 and then to US\$21.1bn in 2016 and US\$24.3bn in 2017.

Such a timid recovery of FX reserves is to prevent a future currency run as well as quell doubts by FX market players of authorities' ability to support the UAH in 2H15 through 2016. It is unlikely to cause an oversupply of FX that would have forced authorities to step back and allow the UAH to appreciate.

These assumptions are incorporated into our FX forecast that is discussed above.

Chart 5. Forecast of FX reserves (US\$bn)

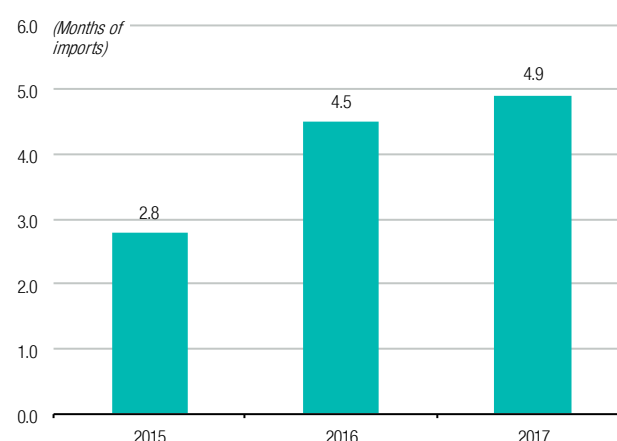
As of the year-end of 2015-17



Source: ICU.

Chart 6. Imports coverage by FX reserves (months)

As of the year-end of 2015-17



Source: ICU.

Taking the side of creditors: No haircuts

If the debt "operation" talks conclude that requires no haircut but allows the maturities to be restructured, i.e. extended, to meet the IMF's target #1, and then targets #2 and #3, Ukraine's economy has to function under these macro indicators (see Table 6 and Table 7 on pp.11-12):

- 1) If real GDP growth meets ICU's base-case scenario (see p.4), then the future FX rate should rise to at least 25/USD, starting from 2016 through 2025. This achieves the public debt level at 71% by 2020 (target #2) and keeps the government's gross financial needs at 10% during 2019-25 (target #3).
- 2) If the UAH's FX rate meets ICU's base-case scenario (see p.3), the economy must grow at least +8.0% YoY per year from 2016. This achieves the public debt level to be below 71% by 2020, precisely at 69% (target #2), and keeps the government's gross financial needs at 10% during 2019-25 (target #3).

In our view, both outcomes have a low probability as the economy most likely will be unable to sustain a 25/USD exchange rate beyond 2016 as the real appreciation of the currency would require a correction of the nominal (market) rate. A more obvious explanation concerns the economy's ability to grow 8.0% per year from 2016 through 2025. This would require an economic miracle.

Taking the side of Ukraine's government: A 40% nominal haircut

On the other hand, if the debt "operation" talks conclude that the debt restructuring takes place in accordance with the Ukrainian government's offer, which implies nearly halving the coupon rate to 4.5% and reducing the nominal amount by 40%, then the IMF's targets #2 and #3 will be fulfilled.

Moreover, these targets are met by a sizable margin under ICU's base-case scenarios for real GDP growth and FX rate projections in 2015-25. This means the restructuring offer by Ukraine's government is forecast to meet IMF targets sooner than indicated by the Fund. For instance, target #2 (public debt level below 71%) is forecast to be met by 2019, one year ahead of 2020.

See Table 8 and Table 9 on pp.13-14.

The middle of the two sides: What if?

In our view, to meet the IMF's targets #2 and #3, it would be enough to agree to two requests: first, reduce the coupon to 4.5% a year, and second, a 25% nominal reduction. This quite neatly produces a desired result for Ukraine and the IMF. It is also quite beneficial to private creditors as their concession helps the economy perform under the base-case scenario.

In our view, this is a realistic outcome of the debt talks between Ukraine and private creditors.

Russian debt status: official or private

Currently, Ukraine's government assumes it is private and should be treated as a general creditor. Our model does the same.

If the IMF treats the debt as official, then Ukraine must repay it. Our base-case scenario is at risk as this required repayments will decrease FX reserves at year-end 2015 and result in negative market sentiment, weakening the UAH's FX rate at year-end 2015 and beyond. This erosion of business and consumer confidence will lower the growth rate in 2016.

Because of this, Ukraine is hesitant to make concessions to creditors during the ongoing talks, leading officials to insist on concessions by creditors larger than the 25% nominal reduction (discussed above) and likely to be in a 30-40% range.

Paris Club considerations

During an interview of Finance Minister Natalie Yaresko to Ukrainian media, the possibility of applying to the Paris Club to resolve the Russian debt issue was mentioned.

In brief, the Paris Club (www.clubdeparis.org) is an informal institution that functions by the principles that have been shaped historically by G7/8 Summits¹. Club members include wealthy-country creditors, namely the US, UK Canada, France, Japan, Italy, Russia and a few other nations.

One of the key principles of the club in dealing with a debtor country is that **"all decisions are reached by full consensus among creditor nations"**. This could potentially be a stumbling block for Ukraine's possible appeal.

Another principle of the club is **"debt renegotiations are applied only for countries that clearly need debt relief, as evidenced by implementing an International Monetary Fund (IMF) program and its requisite economic policy conditionally"**. This supports Ukraine's possible appeal to the club as it meets this principle.

Our considerations on the costs of a default

Ukraine's government has several times stated its readiness to enact a moratorium on external debt repayments.

Our forecast states that without a nominal reduction, the ratio of public debt will be in the 94-104% range in the next five years and the government's gross financial needs will be 13.8% of GDP on average over the same period. This is a sizable burden and is likely to be quite difficult to sustain over this period. Hence, with imminent political and economic crises arising, new restructuring talks will be required when a new government is formed following the political crisis.

In this regard, ICU's in-house view reverts to sovereign debt literature² that warns of a sovereign default and provides several points that describe the costs it bears:

- 1) **Adverse effects on international trade.** Empirical research of sovereign defaults over the last several centuries yields this conclusion: defaults trigger a decline in bilateral trade between the debtor and its creditor countries of approximately eight percent a year which persists for around fifteen years and are driven by a reduction in trade credit. In Ukraine's current situation, this perspective of a foreign trade contraction lasting 15 years seems unlikely as it has already contracted during the last 1.5 years at a sizable pace (). At the same time, in our view, the point is still relevant. Ukraine's recent foreign trade contraction was related to the Russian recession and its willingness to enter a trade restricting regime with Ukraine as well as with other countries deemed hostile. Other factors include the general global weakness, as exemplified by the deceleration of China's economy, dramatically lower domestic demand resulting from the nearly 50% currency devaluation in Ukraine. Nevertheless, if Ukraine defaults, domestic private corporations could be cut off from trade credit because foreign counterparties will deem Ukraine to be an extreme sovereign credit risk. Default will outright signal foreign counterparties to not extend trade credit to Ukraine's businesses. Hence, there is risk of further foreign trade deterioration if Ukraine defaults.

¹ See short brief here <https://www.fas.org/sgp/crs/misc/RS21482.pdf>

² Sturzenegger, Federico, Zettelmeyer, Jeromin. 2006. [*Debt Defaults and Lessons from a Decade of Crises*](#). MIT Press.

- 2) **Loss in market access.** The authors say this is "a temporary effect that generally lasts only until the conclusion of a debt restructuring agreement" which could take a long time. Exclusion from the markets, the authors argue, tended to shorten over time. For example, in the 1980s it was four years on average, while in the 1990s defaults were "very short". In the current environment, it should not be extrapolated for Ukraine and concluded that market exclusion, if Ukraine defaults, would be short (say, a couple of years). Instead, in our view, market access is driven by the current conditions of global liquidity, particularly in USD. With the current trend for US monetary policy driven by the Federal Reserve for gradual tightening, global US dollar liquidity conditions could deteriorate, especially for rogue borrowers that defaulted recently. This cost factor is also negative for Ukraine.
- 3) **Borrowing costs.** The authors argue that past sovereign defaults (over the last several hundred years) did not have "a longer-lasting impact on borrowing costs", but instead "the size of the effect does not appear to be very large". However, despite this largely neutral effect, Ukraine's borrowing costs after a debt restructuring, particularly following a default, still would be characterized by a sizable risk premium (in our view, of 800-1,000bp, see "On the exit yield for Ukraine sovereign debt" below). Hence, this factor does have a cost for Ukraine. In 2012-13³, Ukraine's government borrowed from the USD Eurobond market with a risk premium in the range of 560-860bp above US Treasuries. At that time, Ukraine's public debt level was well below 40% of GDP, while at year-end 2015 it is forecast to be above 90%.
- 4) **Reputational spillover.** This factor, as authors of the book argue rightfully, undermines the confidence of the private sector in the authorities as property rights are being questioned. Moreover, private sector players start to guess which assets will be confiscated and so on. Eventually, sovereign default means that the government is desperate which could cause a flight of capital to other countries. Ukraine suffered a capital flight that cost a great deal of FX reserve losses during 2014. This implies a prospect of additional capital flight that could be compensated by FX reserve loss, a sizable UAH devaluation, or both.
- 5) **Collapse or severe impairment of the domestic financial system.** While Ukraine's government persistently claims that a moratorium on external privately-held debt would have no impact on the domestic economy and financial markets, there is a sober sense of doubt about this claim. The authors claim that empirical evidence suggests "several of the recent defaults have led to" such a negative outcome. In Ukraine, currently it is still unknown how the domestic economy and financial markets would react to a moratorium (default). As the authors claim this factor plays out via the "insolvency of economically important entities whose net worth and/or cash flow depend on the debt being defaulted on", one could claim that there are no such economically important entities inside Ukraine's economy who would suffer from a moratorium. Hence, this risk is lowest versus the above-mentioned ones.

On the exit yield for Ukraine sovereign debt

Ukraine's risk premium reflects its de-facto pre-default status (see Table 3 below). Even if the external debt "operation" is done according to our base-case scenario (with a 25% nominal reduction), it still does stipulate that this year's public debt level stays slightly above

³ Last time, when Ukraine's government borrowed from the USD Eurobond market was in April 2013 (US\$1.25bn 7.5% coupon 10-year bond). Then, that placement was made at yield that was 576bp over US Treasury. A wider spread (risk premium) of 863bp was observed in July 2012, when a US\$2bn 9.5% coupon 5-year Eurobond was placed.

90%. This is far above its peers that have the same ratio well below. Hence, in our view, the post-restructuring risk premium to Ukrainian debt will be at premium to its peers, around 800-1,000bp. This would translate into an exit yield that equals the US Treasury 10yr note yield plus the above-mentioned risk premium, or 10.5-12.5% (2.5% plus 8-10%).

Table 3. Ukraine versus peers: public debt level projection for 2015 and risk premium

Country	Credit ratings (Moody's/S&P/Fitch)	Public debt (% of GDP) 2015F	Bond	Spread to benchmark (bp)
Nigeria	--/B+/BB-	18.6	Nigeria 6.375% '23	379
Serbia	B1/BB-/B+	72.7	Serbia 6.75% '24	452
Kenia	--/B+/B+	57.9	Kenia 6.875% '24	419
Georgia	Ba3/BB-/BB-	39.7	Georgia 6.875% '21	342
Venezuela	Caa3/CCC/CCC	21.6	Venezuela 9% '23	2,796
Egypt	B3/B-/B	89.8	Egypt 5.875% '25	402
Ukraine	Ca/CC/CC	91.4	UKRAIN 7.95% '21	2,184
			UKRAIN 7.5% '23	1,693

Sources: Bloomberg.

Our analysis of sovereign debt restructurings that took place via pre-emptive measures or via defaults (table below) shows that after the restructuring process, the market value debt of these sovereigns with risk premium is in the range of 600-1,300. This wide range of risk premiums could be explained by the difference of macro and fiscal indicators of each sovereign. This just underscores our call (mentioned above) that Ukraine in the post-restructuring period might deserve a 800-1,000 risk premium. This is because Ukraine's public debt level is forecast to deteriorate beyond the 90% threshold at the end of this year.

Table 4. List of countries that underwent sovereign debt restructuring over past 10 years

Sovereign	Preemptive or post-default	Before restructuring			Post restructuring			Current standing				
		Default date	Announcement	Rating	Spreads to benchmark (bp)	Date of exchange	Rating	Spreads to benchmark (bp)	Debt level (% of GDP)	Rating	Spreads to benchmark (bp)	Debt level (% of GDP)
Belize	Preemptive		Aug.06	Caa3/SD/NR	1,100	Feb.07	Caa1/B/NR	1,300	83.40	Caa2/B-/NR	1,400	72.50
Ecuador	Post-default	Dec.08	Jan.09	Ca/SD/RD	1,100	Jun.09	Ca/CCC+/CCC	800	16.10	B3/B+/B	800	27.50
Seychelles	Post-default	Jul.08	Mar.09	NR/SD/NR	10,000	Feb.10	NR/NR/B-	600	N/A	NR/NR/B+	650	N/A
Jamaica	Preemptive		Jan.10	Caa1/CCC/CCC	800	Feb.10	Caa1/B-/RD	700	128.00	Caa2/B/B-	200	128.90
Greece	Preemptive		Jul.11	Caa1/CCC/CCC	2,000	Mar.12	C/CCC/RD	1,000	156.90	Caa3/CCC-/CC	1,500	177.10
Jamaica	Preemptive		Feb.13	B3/B-/B-	700	Feb.13	B3/SD/RD	700	132.20	Caa2/B/B-	200	128.90

Sources: IMF, Bloomberg.

The table below illustrates the sensitivity analysis of the net present value (NPV) of the new sovereign Eurobond⁴ with a range of nominal haircuts and exit yields resulting from a restructuring. Given the above-mentioned considerations on the likely exit yield (10.5-12.5%), the NPV ranges from 43-52% of par value should a 25% nominal haircut be accepted.

⁴ It is assumed that new sovereign Eurobond has 4.5% coupon rate, 5-year grace period, 10 equal amortizations a year from 2020 through 2029.

Table 5. Sensitivity of NPV of new Ukraine sovereign Eurobond (% of par) after restructuring to exit yield and size of nominal haircut

		Nominal haircut															
		15%	16%	17%	18%	19%	20%	21%	22%	23%	24%	25%	26%	27%	28%	29%	30%
exit yield	8%	67.0	66.2	65.4	64.6	63.8	63.0	62.2	61.4	60.7	59.9	59.1	58.3	57.5	56.7	55.9	55.1
	9%	62.7	62.0	61.3	60.5	59.8	59.0	58.3	57.6	56.8	56.1	55.3	54.6	53.9	53.1	52.4	51.7
	10%	58.9	58.2	57.5	56.8	56.1	55.4	54.7	54.0	53.3	52.6	51.9	51.2	50.5	49.9	49.2	48.5
	11%	55.3	54.7	54.0	53.4	52.7	52.1	51.4	50.8	50.1	49.5	48.8	48.2	47.5	46.9	46.2	45.6
	12%	52.1	51.5	50.8	50.2	49.6	49.0	48.4	47.8	47.2	46.6	45.9	45.3	44.7	44.1	43.5	42.9
	13%	49.1	48.5	47.9	47.4	46.8	46.2	45.6	45.0	44.5	43.9	43.3	42.7	42.2	41.6	41.0	40.4
	14%	46.3	45.8	45.3	44.7	44.2	43.6	43.1	42.5	42.0	41.4	40.9	40.3	39.8	39.3	38.7	38.2

Sources: ICU.

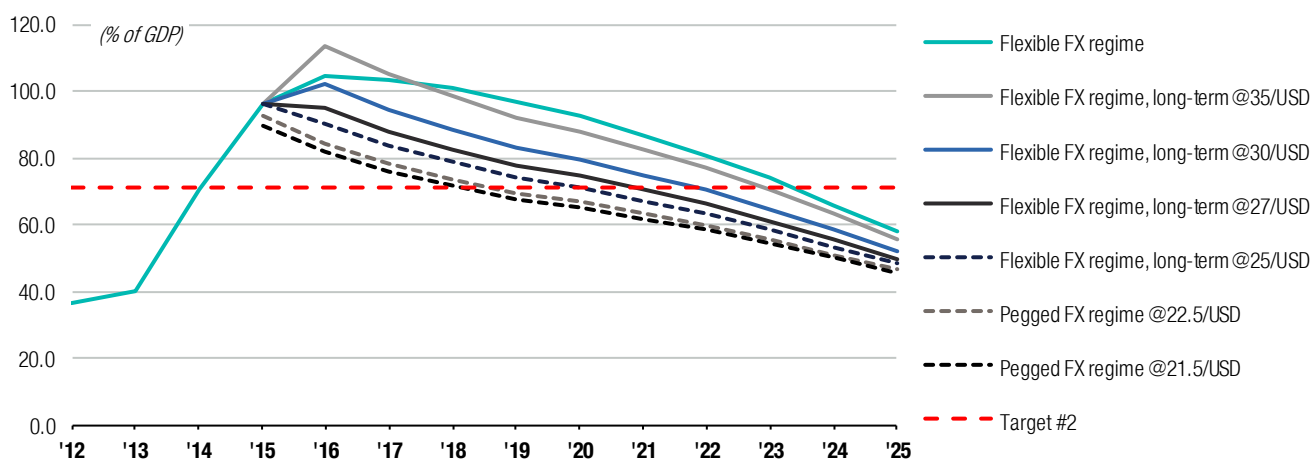
Table 6. Sensitivity of Ukraine's debt "operation" (without coupon and principal haircuts) to a range of USD/UAH rate projections
Real GDP projections are fixed at ICU's base-case forecast (see "Assumptions on real GDP growth", p.4)

	History			Forecast												Avg '19-25
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025		
Range of USD/UAH rate projections (USD/UAH, period average)																
Flexible FX regime	8.1	8.2	12.0	22.5	30.8	34.3	36.5	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	
Flexible FX regime, long-term @35/USD				23.0	31.3	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	
Flexible FX regime, long-term @30/USD				23.0	28.8	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	
Flexible FX regime, long-term @27/USD				23.0	26.5	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	
Flexible FX regime, long-term @25/USD				23.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	
Pegged FX regime @22.5/USD				22.2	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	
Pegged FX regime @21.5/USD				21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	
Public debt (% of GDP)																
TARGET #2: To reduce public debt in terms of debt-to-GDP to under 71% of GDP by 2020																
Flexible FX regime	36.6	39.9	70.3	96.2	104.4	103.4	101.2	96.5	92.4	86.8	80.9	73.9	65.9	58.0		
Flexible FX regime, long-term @35/USD				96.2	113.7	105.1	98.5	92.1	88.0	82.7	77.1	70.5	63.1	55.7		
Flexible FX regime, long-term @30/USD				96.2	102.0	94.3	88.5	83.0	79.5	74.9	70.2	64.6	58.2	52.0		
Flexible FX regime, long-term @27/USD				96.2	94.9	87.8	82.6	77.6	74.4	70.3	66.0	61.0	55.3	49.7		
Flexible FX regime, long-term @25/USD				96.2	90.2	83.4	78.6	73.9	71.0	67.2	63.3	58.6	53.4	48.2		
Pegged FX regime @22.5/USD				92.5	84.4	78.0	73.6	69.4	66.7	63.3	59.8	55.7	51.0	46.3		
Pegged FX regime @21.5/USD				89.8	82.0	75.8	71.7	67.6	65.0	61.7	58.4	54.5	50.0	45.6		
Gross financing needs (% of GDP)																
TARGET #3: To contain the budget's gross financing needs to an average of 10% of GDP in 2019-25 (maximum of 12% of GDP in any given year)																
Flexible FX regime	9.7	12.0	14.7	14.7	13.2	15.0	14.7	13.2	12.9	14.0	13.4	12.4	11.4	10.3	12.5	
Flexible FX regime, long-term @35/USD				14.6	13.8	14.9	14.0	12.5	12.2	13.2	12.7	11.7	10.8	9.8	11.8	
Flexible FX regime, long-term @30/USD				14.6	12.6	13.5	12.8	11.4	11.2	12.0	11.6	10.8	10.0	9.2	10.9	
Flexible FX regime, long-term @27/USD				14.6	11.8	12.7	12.0	10.7	10.6	11.4	11.0	10.3	9.6	8.8	10.3	
Flexible FX regime, long-term @25/USD				14.6	11.3	12.2	11.6	10.3	10.1	10.9	10.6	10.0	9.3	8.6	10.0	
Pegged FX regime @22.5/USD				14.5	10.7	11.5	10.9	9.7	9.6	10.3	10.1	9.5	8.9	8.3	9.5	
Pegged FX regime @21.5/USD				14.5	10.4	11.2	10.7	9.5	9.4	10.1	9.9	9.3	8.7	8.2	9.3	

Source: ICU.

Chart 7. Public debt level (% of GDP) projections under a range of USD/UAH rate projections

Real GDP projections are fixed at ICU's base-case forecast (see "Assumptions on real GDP growth", p.4)



Source: ICU.

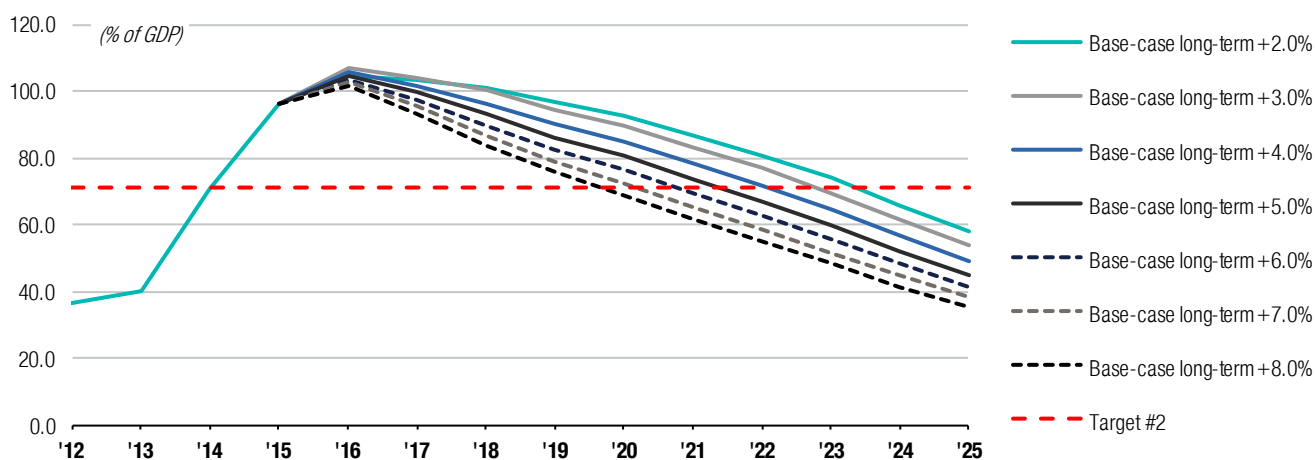
Table 7. Sensitivity of Ukraine's debt "operation" (without coupon and principal haircuts) to a range of real GDP projections
UAH's FX rate projections are fixed at ICU's base-case forecast (see "Assumptions on exchange rate", p.2)

	History			Forecast												Avg '19-25
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025		
Real GDP growth (%YoY)																
Base-case long-term +2.0%	0.2	-0.1	-6.7	-13.1	2.7	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Long-term +3.0%				-13.1	2.7	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Long-term +4.0%				-13.1	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Long-term +5.0%				-13.1	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Long-term +6.0%				-13.1	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Long-term +7.0%				-13.1	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Long-term +8.0%				-13.1	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	
Public debt (% of GDP)																
TARGET #2: To reduce public debt in terms of debt-to-GDP to under 71% of GDP by 2020																
Base-case long-term +2.0%	36.6	39.9	70.3	96.2	104.4	103.4	101.2	96.5	92.4	86.8	80.9	73.9	65.9	58.0		
Long-term +3.0%				96.2	106.7	104.0	100.1	94.5	89.4	83.2	76.8	69.5	61.5	53.7		
Long-term +4.0%				96.2	105.4	101.5	96.2	90.1	84.6	78.1	71.5	64.3	56.5	49.1		
Long-term +5.0%				96.2	104.4	99.4	92.9	86.2	80.3	73.5	66.9	59.7	52.2	45.1		
Long-term +6.0%				96.2	103.5	97.4	89.6	82.5	76.3	69.3	62.6	55.5	48.2	41.5		
Long-term +7.0%				96.2	102.5	95.4	86.5	79.0	72.4	65.3	58.6	51.6	44.6	38.2		
Long-term +8.0%				96.2	101.6	93.4	83.4	75.6	68.8	61.6	54.9	48.1	41.3	35.3		
Gross financing needs (% of GDP)																
TARGET #3: To contain the budget's gross financing needs to an average of 10% of GDP in 2019-25 (maximum of 12% of GDP in any given year)																
Base-case long-term +2.0%	9.7	12.0	14.7	14.6	13.1	14.9	14.5	13.2	12.9	13.9	13.3	12.3	11.2	10.2	12.4	
Long-term +3.0%				14.6	13.1	14.5	13.8	12.8	12.4	13.3	12.7	11.7	10.6	9.6	11.9	
Long-term +4.0%				14.6	12.7	13.8	12.7	12.3	11.9	12.6	12.0	10.9	9.9	8.9	11.2	
Long-term +5.0%				14.6	12.5	13.2	11.7	11.8	11.3	12.0	11.3	10.3	9.3	8.4	10.6	
Long-term +6.0%				14.6	12.2	12.6	10.8	11.4	10.9	11.5	10.7	9.8	8.8	7.9	10.1	
Long-term +7.0%				14.6	11.9	12.0	9.9	10.9	10.4	10.9	10.2	9.2	8.3	7.4	9.6	
Long-term +8.0%				14.6	11.6	11.4	9.0	10.5	10.0	10.4	9.7	8.7	7.8	7.0	9.2	

Source: ICU.

Chart 8. Public debt level (% of GDP) projections under a range of real GDP projections

UAH's FX rate projections are fixed at ICU's base-case forecast (see "Assumptions on exchange rate", p.2)



Source: ICU.

Table 8. Sensitivity of Ukraine's debt "operation" (coupon haircut to 4.5% and 40% principal haircut) to a range of USD/UAH rate projections

Real GDP projections are fixed at ICU's base-case forecast (see "Assumptions on real GDP growth", p.4)

	History			Forecast											Avg '19-25
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	
Range of USD/UAH rate projections (USD/UAH, period average)															
Flexible FX regime	8.1	8.2	12.0	22.5	30.8	34.3	36.5	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0
Flexible FX regime, long-term @35/USD				23.0	31.3	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0
Flexible FX regime, long-term @30/USD				23.0	28.8	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
Flexible FX regime, long-term @27/USD				23.0	26.5	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0
Flexible FX regime, long-term @25/USD				23.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
Pegged FX regime @22.5/USD				22.2	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Pegged FX regime @21.5/USD				21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5

Public debt (% of GDP)

TARGET #2: To reduce public debt in terms of debt-to-GDP to under 71% of GDP by 2020

Flexible FX regime	36.6	39.9	70.3	88.4	88.9	81.7	73.7	62.9	54.6	46.2	38.6	30.7	22.7	15.3
Flexible FX regime, long-term @35/USD				88.4	94.3	81.7	70.8	60.2	52.6	44.9	37.9	30.7	23.3	16.6
Flexible FX regime, long-term @30/USD				88.4	85.4	74.4	65.0	55.9	49.4	42.8	36.8	30.6	24.4	18.6
Flexible FX regime, long-term @27/USD				88.4	80.1	69.9	61.5	53.3	47.4	41.5	36.1	30.6	25.0	19.9
Flexible FX regime, long-term @25/USD				88.4	76.5	67.0	59.2	51.5	46.1	40.6	35.7	30.6	25.4	20.7
Pegged FX regime @22.5/USD				83.0	72.1	63.3	56.3	49.4	44.4	39.5	35.1	30.6	26.0	21.8
Pegged FX regime @21.5/USD				80.8	70.3	61.8	55.1	48.5	43.8	39.1	34.9	30.6	26.2	22.2

Gross financing needs (% of GDP)

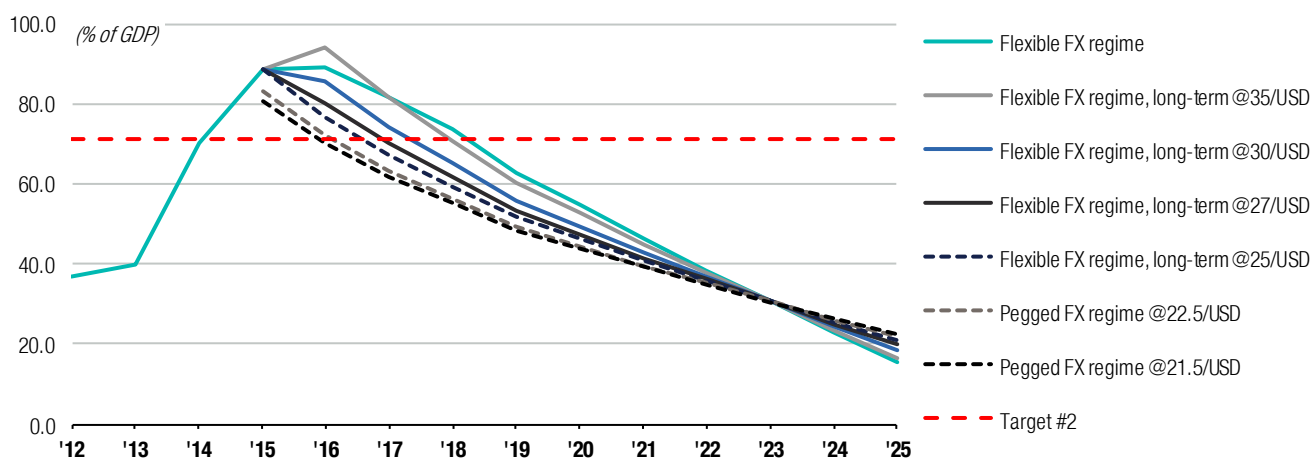
TARGET #3: To contain the budget's gross financing needs to an average of 10% of GDP in 2019-25 (maximum of 12% of GDP in any given year)

Flexible FX regime	9.7	12.0	14.7	14.7	11.7	12.7	11.6	9.3	8.6	8.7	8.0	6.9	5.9	5.0	7.5
Flexible FX regime, long-term @35/USD				14.7	12.2	12.7	11.2	9.0	8.3	8.5	7.8	6.8	5.9	5.1	7.3
Flexible FX regime, long-term @30/USD				14.7	11.3	11.7	10.5	8.4	7.9	8.0	7.5	6.7	5.9	5.2	7.1
Flexible FX regime, long-term @27/USD				14.7	10.7	11.1	10.0	8.0	7.6	7.8	7.3	6.6	5.9	5.2	6.9
Flexible FX regime, long-term @25/USD				14.7	10.3	10.7	9.7	7.8	7.4	7.6	7.2	6.5	5.9	5.3	6.8
Pegged FX regime @22.5/USD				14.6	9.8	10.3	9.3	7.5	7.2	7.4	7.1	6.5	5.9	5.3	6.7
Pegged FX regime @21.5/USD				14.6	9.6	10.1	9.2	7.4	7.1	7.3	7.0	6.4	5.9	5.4	6.6

Source: ICU.

Chart 9. Public debt level (% of GDP) projections under a range of USD/UAH rate projections

Real GDP projections are fixed at ICU's base-case forecast (see "Assumptions on real GDP growth", p.4)



Source: ICU.

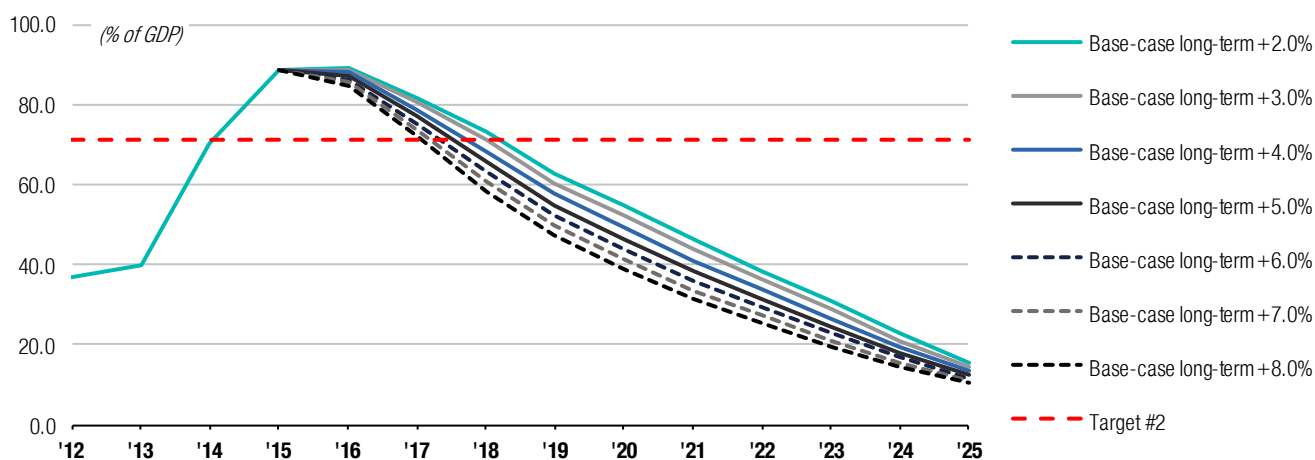
Table 9. Sensitivity of Ukraine's debt "operation" (coupon haircut to 4.5% and 40% principal haircut) to a range of real GDP projections UAH's FX rate projections are fixed at ICU's base-case forecast (see "Assumptions on exchange rate", p.2)

	History			Forecast												Avg '19-25
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025		
Real GDP growth (%YoY)																
Base-case long-term +2.0%	0.2	-0.1	-6.7	-13.1	2.7	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Long-term +3.0%				-13.1	2.7	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Long-term +4.0%				-13.1	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Long-term +5.0%				-13.1	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Long-term +6.0%				-13.1	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Long-term +7.0%				-13.1	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Long-term +8.0%				-13.1	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	
Public debt (% of GDP)																
TARGET #2: To reduce public debt in terms of debt-to-GDP to under 71% of GDP by 2020																
Base-case long-term +2.0%	36.6	39.9	70.3	88.4	88.9	81.7	73.1	62.9	54.6	46.2	38.6	30.7	22.7	15.3		
Long-term +3.0%				88.4	88.7	80.6	71.0	60.4	52.1	43.7	36.2	28.7	21.1	14.4		
Long-term +4.0%				88.4	87.8	78.8	68.2	57.5	49.1	40.9	33.7	26.5	19.5	13.3		
Long-term +5.0%				88.4	87.0	77.0	65.5	54.8	46.4	38.3	31.3	24.6	18.0	12.4		
Long-term +6.0%				88.4	86.2	75.3	63.0	52.1	43.7	35.9	29.1	22.8	16.7	11.6		
Long-term +7.0%				88.4	85.4	73.7	60.5	49.6	41.3	33.6	27.1	21.1	15.5	10.9		
Long-term +8.0%				88.4	84.6	72.1	58.1	47.2	38.9	31.5	25.3	19.6	14.5	10.3		
Gross financing needs (% of GDP)																
TARGET #3: To contain the budget's gross financing needs to an average of 10% of GDP in 2019-25 (maximum of 12% of GDP in any given year)																
Base-case long-term +2.0%	9.7	12.0	14.7	14.7	11.7	12.7	11.5	9.3	8.6	8.7	8.0	6.9	5.9	5.0	7.5	
Long-term +3.0%				14.7	11.6	12.3	10.8	9.0	8.3	8.4	7.6	6.6	5.7	4.8	7.2	
Long-term +4.0%				14.7	11.3	11.7	9.8	8.7	7.9	8.0	7.3	6.3	5.4	4.6	6.9	
Long-term +5.0%				14.7	11.0	11.1	8.9	8.3	7.6	7.6	6.9	6.0	5.2	4.4	6.6	
Long-term +6.0%				14.7	10.8	10.5	8.1	8.0	7.2	7.3	6.6	5.7	4.9	4.3	6.3	
Long-term +7.0%				14.7	10.5	9.9	7.2	7.7	6.9	7.0	6.3	5.5	4.8	4.1	6.0	
Long-term +8.0%				14.7	10.2	9.4	6.4	7.4	6.7	6.7	6.1	5.3	4.6	4.0	5.8	

Source: ICU.

Chart 10. Public debt level (% of GDP) projections under a range of real GDP projections

UAH's FX rate projections are fixed at ICU's base-case forecast (see "Assumptions on exchange rate", p.2)



Source: ICU.

Table 10. Sensitivity of Ukraine's debt "operation" (coupon haircut to 4.5% and 25% principal haircut) to a range of USD/UAH rate projections

Real GDP projections are fixed at ICU's base-case forecast (see "Assumptions on real GDP growth", p.4)

	History			Forecast											Avg '19-25
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	
Range of USD/UAH rate projections (USD/UAH, period average)															
Flexible FX regime	8.1	8.2	12.0	22.5	30.8	34.3	36.5	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0
Flexible FX regime, long-term @35/USD				23.0	31.3	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0
Flexible FX regime, long-term @30/USD				23.0	28.8	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
Flexible FX regime, long-term @27/USD				23.0	26.5	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0
Flexible FX regime, long-term @25/USD				23.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
Pegged FX regime @22.5/USD				22.2	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Pegged FX regime @21.5/USD				21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5

Public debt (% of GDP)

TARGET #2: To reduce public debt in terms of debt-to-GDP to under 71% of GDP by 2020

Flexible FX regime	36.6	39.9	70.3	91.4	94.7	89.9	84.4	75.5	68.8	61.4	54.4	46.9	38.9	31.3
Flexible FX regime, long-term @35/USD				91.4	94.7	89.9	80.8	71.9	65.7	58.9	52.5	45.6	38.2	31.3
Flexible FX regime, long-term @30/USD				91.4	90.8	81.3	73.5	65.9	60.5	54.8	49.3	43.4	37.2	31.3
Flexible FX regime, long-term @27/USD				91.4	84.9	76.2	69.2	62.2	57.5	52.3	47.4	42.1	36.5	31.2
Flexible FX regime, long-term @25/USD				91.4	81.0	72.8	66.3	59.8	55.4	50.6	46.1	41.3	36.1	31.2
Pegged FX regime @22.5/USD				85.6	76.1	68.5	62.7	56.8	52.8	48.5	44.5	40.2	35.6	31.2
Pegged FX regime @21.5/USD				83.3	74.2	66.8	61.3	55.6	51.8	47.7	43.9	39.8	35.4	31.2

Gross financing needs (% of GDP)

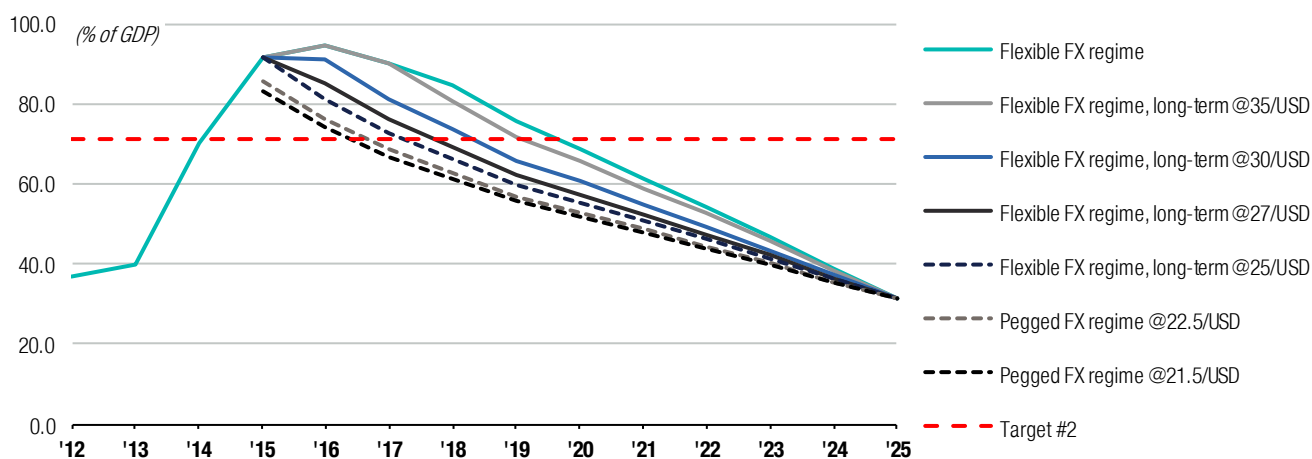
TARGET #3: To contain the budget's gross financing needs to an average of 10% of GDP in 2019-25 (maximum of 12% of GDP in any given year)

Flexible FX regime	9.7	12.0	14.7	14.7	12.2	13.6	12.8	10.8	10.2	10.7	10.0	9.0	7.9	7.0	9.4
Flexible FX regime, long-term @35/USD				14.7	12.2	13.6	12.4	10.3	9.8	10.3	9.7	8.7	7.8	6.9	9.1
Flexible FX regime, long-term @30/USD				14.7	11.8	12.5	11.4	9.5	9.2	9.6	9.1	8.3	7.5	6.7	8.6
Flexible FX regime, long-term @27/USD				14.7	11.2	11.8	10.9	9.1	8.8	9.2	8.8	8.1	7.3	6.7	8.3
Flexible FX regime, long-term @25/USD				14.7	10.7	11.4	10.5	8.8	8.5	8.9	8.5	7.9	7.2	6.6	8.1
Pegged FX regime @22.5/USD				14.6	10.2	10.8	10.1	8.4	8.2	8.6	8.3	7.7	7.1	6.5	7.8
Pegged FX regime @21.5/USD				14.6	10.0	10.6	9.9	8.2	8.0	8.4	8.1	7.6	7.0	6.5	7.7

Source: ICU.

Chart 11. Public debt level (% of GDP) projections under a range of USD/UAH rate projections

Real GDP projections are fixed at ICU's base-case forecast (see "Assumptions on real GDP growth", p.4)



Source: ICU.

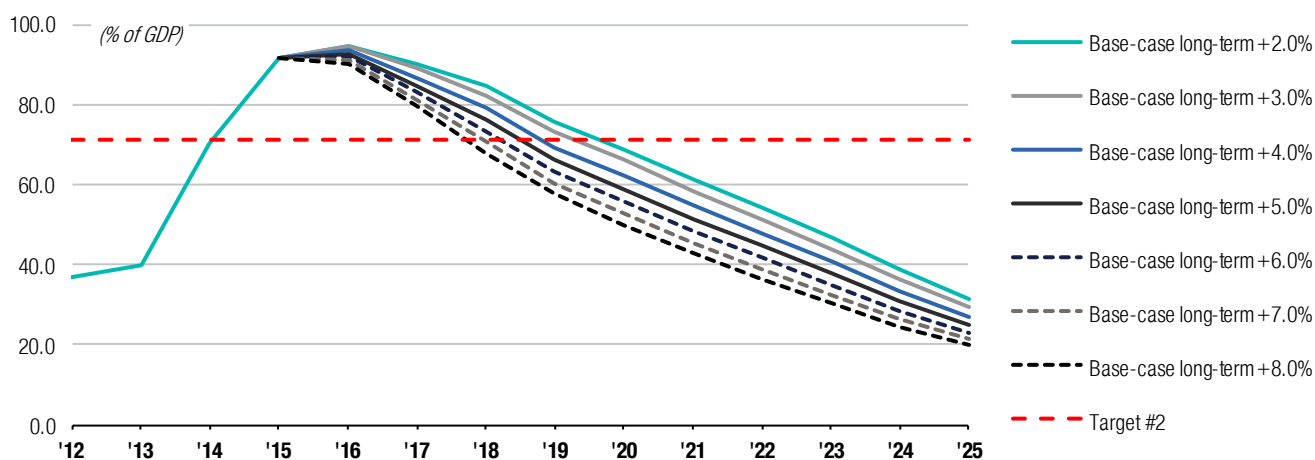
Table 11. Sensitivity of Ukraine's debt "operation" (coupon haircut to 4.5% and 25% principal haircut) to a range of real GDP projections
UAH's FX rate projections are fixed at ICU's base-case forecast (see "Assumptions on exchange rate", p.2)

	History			Forecast												Avg '19-25
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025		
Real GDP growth (%YoY)																
Base-case long-term +2.0%	0.2	-0.1	-6.7	-13.1	2.7	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Long-term +3.0%				-13.1	2.7	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Long-term +4.0%				-13.1	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Long-term +5.0%				-13.1	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Long-term +6.0%				-13.1	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Long-term +7.0%				-13.1	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Long-term +8.0%				-13.1	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	
Public debt (% of GDP)																
TARGET #2: To reduce public debt in terms of debt-to-GDP to under 71% of GDP by 2020																
Base-case long-term +2.0%	36.6	39.9	70.3	91.4	94.7	89.9	84.4	75.5	68.8	61.4	54.4	46.9	38.9	31.3		
Long-term +3.0%				91.4	94.7	88.9	82.3	73.0	66.0	58.4	51.4	44.0	36.3	29.2		
Long-term +4.0%				91.4	93.6	86.7	79.0	69.4	62.2	54.7	47.8	40.6	33.4	26.8		
Long-term +5.0%				91.4	92.7	84.8	76.0	66.2	58.8	51.3	44.6	37.7	30.8	24.7		
Long-term +6.0%				91.4	91.8	83.0	73.2	63.2	55.7	48.2	41.6	35.0	28.5	22.9		
Long-term +7.0%				91.4	91.0	81.2	70.5	60.3	52.7	45.4	38.9	32.6	26.5	21.2		
Long-term +8.0%				91.4	90.1	79.5	67.8	57.5	49.9	42.6	36.3	30.3	24.6	19.7		
Gross financing needs (% of GDP)																
TARGET #3: To contain the budget's gross financing needs to an average of 10% of GDP in 2019-25 (maximum of 12% of GDP in any given year)																
Base-case long-term +2.0%	9.7	12.0	14.7	14.7	12.2	13.6	12.8	10.8	10.2	10.7	10.0	9.0	7.9	7.0	9.4	
Long-term +3.0%				14.7	12.2	13.2	12.1	10.5	9.9	10.3	9.6	8.6	7.6	6.7	9.0	
Long-term +4.0%				14.7	11.9	12.5	11.1	10.0	9.4	9.8	9.1	8.1	7.1	6.3	8.5	
Long-term +5.0%				14.7	11.6	11.9	10.1	9.6	9.0	9.3	8.6	7.7	6.8	6.0	8.1	
Long-term +6.0%				14.7	11.3	11.3	9.2	9.3	8.6	8.9	8.2	7.3	6.4	5.7	7.8	
Long-term +7.0%				14.7	11.1	10.8	8.4	8.9	8.3	8.5	7.8	7.0	6.1	5.4	7.4	
Long-term +8.0%				14.7	10.8	10.2	7.5	8.6	7.9	8.1	7.5	6.6	5.9	5.2	7.1	

Source: ICU.

Chart 12. Public debt level (% of GDP) projections under a range of real GDP projections

UAH's FX rate projections are fixed at ICU's base-case forecast (see "Assumptions on exchange rate", p.2)



Source: ICU.

Table 12. Financial instruments that defined by Ukraine's government as a perimeter for debt operation

	Volume (USDm)	Currency	Maturity date	Description
Eurobonds				
EXIMUK 8.375% '15	750	USD	24-Apr-15	State-owned bank
UKRAIN 6.875% '15	500	USD	23-Sep-15	Sovereign
UKRAIN 4.95% '15	600	EUR	13-Oct-15	Sovereign
CITKIE 8% '15	250	USD	6-Nov-15	Municipal, City of Kyiv
UKRAIN 5.00% '15	3,000	USD	20-Dec-15	Sovereign, "Russian" bond
EXIMUK 8.4% '16	125	USD	9-Feb-16	State-owned bank
OSCHAD 8.25% '16	700	USD	10-Mar-16	State-owned bank
UKRAIN 6.25% '16	1,250	USD	17-Jun-16	Sovereign
CITKIE 9.375% '16	300	USD	11-Jul-16	Municipal, City of Kyiv
UKRAIN 6.58% '16	1,000	USD	21-Nov-16	Sovereign
UKRAIN 9.25% '17	2,600	USD	24-Jul-17	Sovereign
UKRINF 8.375% '17	568	USD	3-Nov-17	State-owned enterprise, debt guaranteed by the government
UKRAIN 6.75% '17	700	USD	14-Nov-17	Sovereign
UKRINF 9% '17	550	USD	7-Dec-17	State-owned enterprise, debt guaranteed by the government
EXIMUK 8.75% '18	600	USD	22-Jan-18	State-owned bank
OSCHAD 8.875% '18	500	USD	20-Mar-18	State-owned bank
UKRINF 7.4% '18	690	USD	20-Apr-18	State-owned enterprise, debt guaranteed by the government
RAILUA 9.5% '18	500	USD	21-May-18	State-owned enterprise
UKRAIN 7.75% '20	1,500	USD	23-Sep-20	Sovereign
UKRAIN 7.95% '21	1,500	USD	23-Feb-21	Sovereign
UKRAIN 7.8% '22	2,250	USD	28-Nov-22	Sovereign
UKRAIN 7.5% '23	1,250	USD	17-Apr-23	Sovereign
Loans				
Ukravtodor	2,186	USD & EUR	2015-2017	State-owned enterprise
Pivdenne	410	USD	2018	State-owned enterprise
Ukrmedpostach	102	USD	2020	State-owned enterprise
Oschadbank	200	USD & EUR	2015-2017	State-owned bank

Sources: Ministry of Finance of Ukraine, ICU..

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Disclosures

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EQUITY RATING DEFINITIONS

Buy: Forecasted 12-month total return greater than 20%

Hold: Forecasted 12-month total return 0% to 20%

Sell: Forecasted 12-month total return less than 0%

Note: total return is share price appreciation to a target price in relative terms plus forecasted dividend yield.

DEBT RATING DEFINITIONS

Buy: Forecasted 12-month total return significantly greater than that of relevant benchmark

Hold: Forecasted 12-month total return is in line with or modestly deviates from relevant benchmark

Sell: Forecasted 12-month total return significantly less than that of relevant benchmark



11th floor, LEONARDO Business Centre
19-21 Bogdan Khmelnytsky Street
Kiev, 01030 Ukraine
Phone/Fax +38 044 2200120

WEB www.icu.ua



@ICU_UA

CORPORATE FINANCE

Makar Paseniuk, CFA, Managing Director
makar.paseniuk@icu.ua

Roman Nikitov, ACCA Director
roman.nikitov@icu.ua

Ruslan Kilmukhametov, Director
ruslan.kilmukhametov@icu.ua

Ivan Shvydanenko, Vice President
ivan.shvydanenko@icu.ua

Yuriy Kamarytskyi, Vice President
yuriy.kamarytskyi@icu.ua

Ruslan Patlavsky, Vice President
ruslan.patlavsky@icu.ua

STRATEGY AND CORPORATE DEVELOPMENT

Vlad Sinani, Director
vlad.sinani@icu.ua

SALES AND TRADING

Konstantin Stetsenko 
Managing Director
konstantin.stetsenko@icu.ua

Sergiy Byelyayev
Fixed-Income Trading
sergiy.byelyayev@icu.ua


Vitaliy Sivach 
Fixed-Income & FX Trading
vitaliy.sivach@icu.ua


Liliya Kubytovych 
Asset Management Product Sales
liliya.kubytovych@icu.ua

Julia Pecheritsa
Ukraine and CIS International Sales
julia.pecheritsa@icu.ua

Yevgeniya Gryshchenko
Fixed-Income Sales
yevgeniya.gryshchenko@icu.ua


RESEARCH DEPARTMENT

Alexander Valchyshen 
Head of Research
alexander.valchyshen@icu.ua

Alexander Martynenko 
Head of corporate research
alexander.martynenko@icu.ua

Bogdan Vorotilin 
Financial analyst (Food & Agribusiness)
bogdan.vorotilin@icu.ua

Taras Kotovych 
Senior financial analyst (Sovereign debt)
taras.kotovych@icu.ua

Mykhaylo Demkiv 
Financial analyst (Banks)
mykhaylo.demkiv@icu.ua

Lee Daniels, Rolfe Haas
Editors

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