



UKRAINE

SELECTED ISSUES

April 2017

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Approved by
**The European
Department**

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CORRUPTION AND GROWTH¹

The level of corruption in Ukraine is exceptionally high. This can severely undermine economic growth prospects, in particular by hindering private investment. Reducing corruption is therefore essential to speed up the process of economic convergence to the rest of Europe. Regional comparisons help identifying best practices in reducing corruption. The Ukrainian authorities have recently adopted important measures that follow some of these best practices. They are, however, facing a number of specific challenges, including the concentration of political and economic powers in a small group of people which may hamper effective anti-corruption efforts.

A. Corruption Indicators: Ukraine in International Perspective

1. Figure 1 documents the extent of corruption in Ukraine relative to other countries using various data sources. In particular, we compare Ukraine with the average corruption levels in “lower and middle income” countries, in “Central, Eastern and Southeastern Europe” (CESEE), and in the European Union.² Since corruption is notoriously difficult to measure, and each measure has its own shortcomings, we rely on several different data sources:

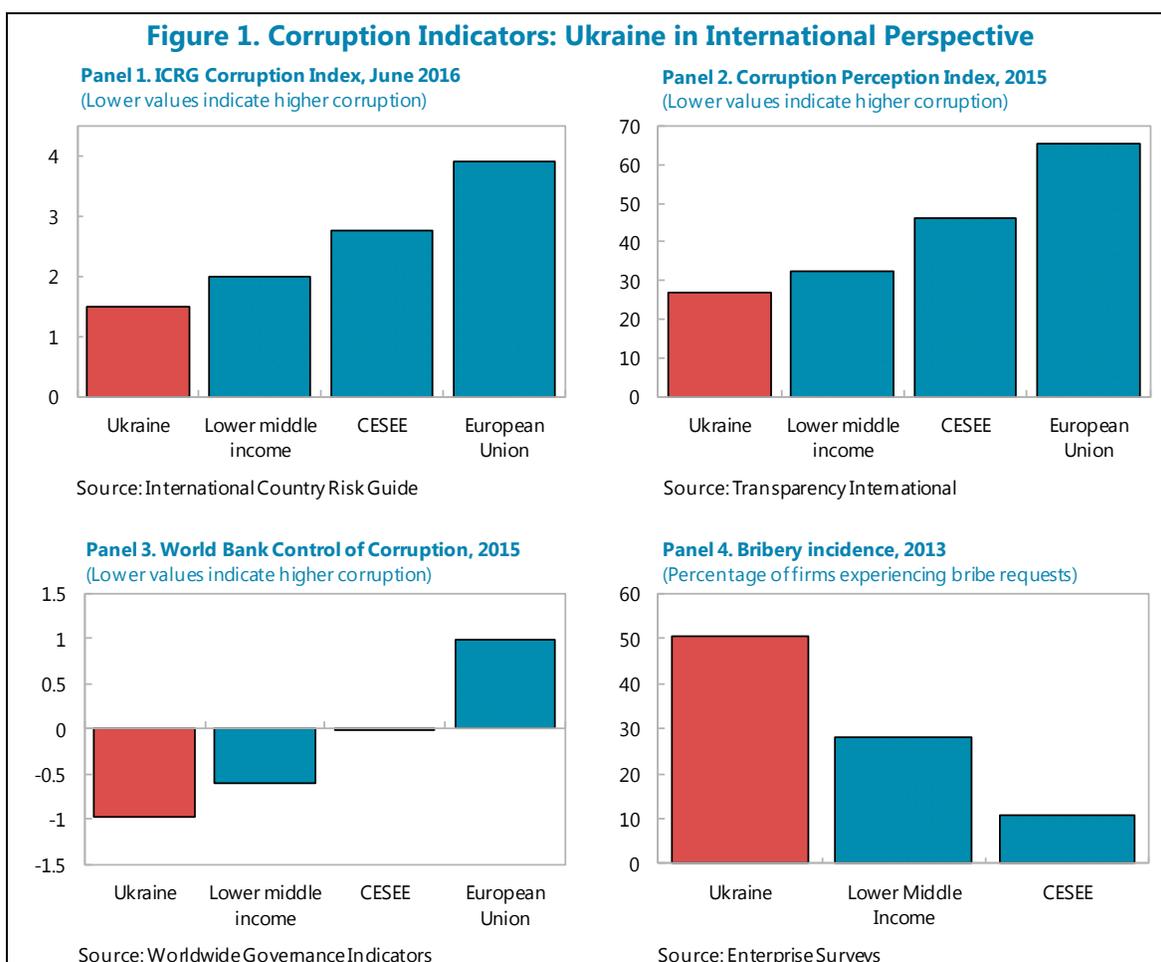
- Panel 1 uses the June 2016 Corruption Index from the International Country Risk Guide (ICRG). This index varies between 1 and 6 (with lower values indicating higher corruption) and captures the extent of corruption within the political system, in particular in reference to “excessive patronage, nepotism, job reservations, ‘favor-for-favors’, secret party funding, and suspiciously close ties between politics and business.”
- Panel 2 shows the 2015 Corruption Perception Index from Transparency International. This index varies from 0 to 100, with lower values indicating higher corruption. It is constructed by averaging 12 different data sources that capture the perceptions of business people and country experts about the level of corruption in the public sector.
- Panel 3 uses the 2015 Control of Corruption indicator from the World Bank Governance Indicators. This index varies from -2.5 to +2.5 (with lower values denoting higher corruption) and is constructed by aggregating multiple underlying data sources. It captures “perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as capture of the state by elites and private interests.”
- Panel 4 is based on data from the Enterprise Surveys of the World Bank. These surveys are collected about every 3–4 years by interviewing the business owners and top managers of

¹ Prepared by Damiano Sandri (RES). The author thanks Huy Quoc Nguyen for excellent research assistance.

² The definition of “lower and middle income” countries follows the 2016 World Bank classification which comprises 51 countries, including Ukraine. The countries that belong to CESEE are: Albania, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Kosovo, Latvia, Lithuania, Macedonia FYR, Moldova, Montenegro, Poland, Romania, Russia, Serbia, Slovak Republic, Slovenia, Turkey, and Ukraine. The European Union category includes the 28 members as of 2016.

private firms. We use data from 2013, when the latest survey in Ukraine was conducted. Panel 4 shows the bribery incidence, i.e. the percentage of firms experiencing at least one bribe payment request. A similar picture emerges in the case of bribery depth, i.e., the percentage of public transactions where a gift or informal payment was requested.

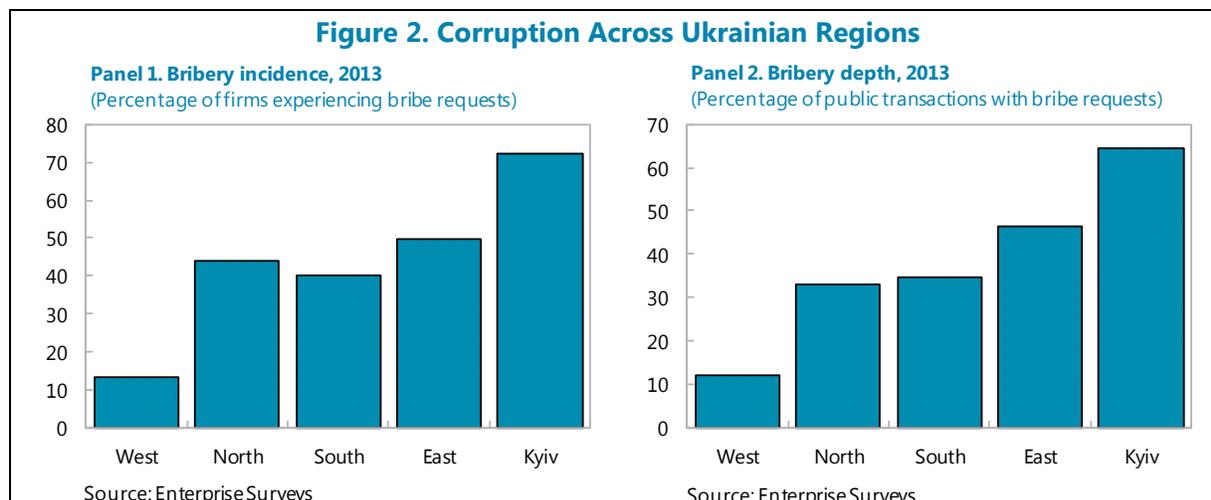
2. According to all data sources, Ukraine is confronting high levels of corruption.³ Both the ICRG measure, the Corruption Perception Index, the Control of Corruption index, and the Enterprise Survey data indicate that corruption appears to be much more prevalent in Ukraine than in other lower and middle income countries. The gap is even starker when Ukraine is compared with CESEE countries and in particular with EU countries. All data sources provide a remarkably consistent picture about the severity of the corruption problem in Ukraine.



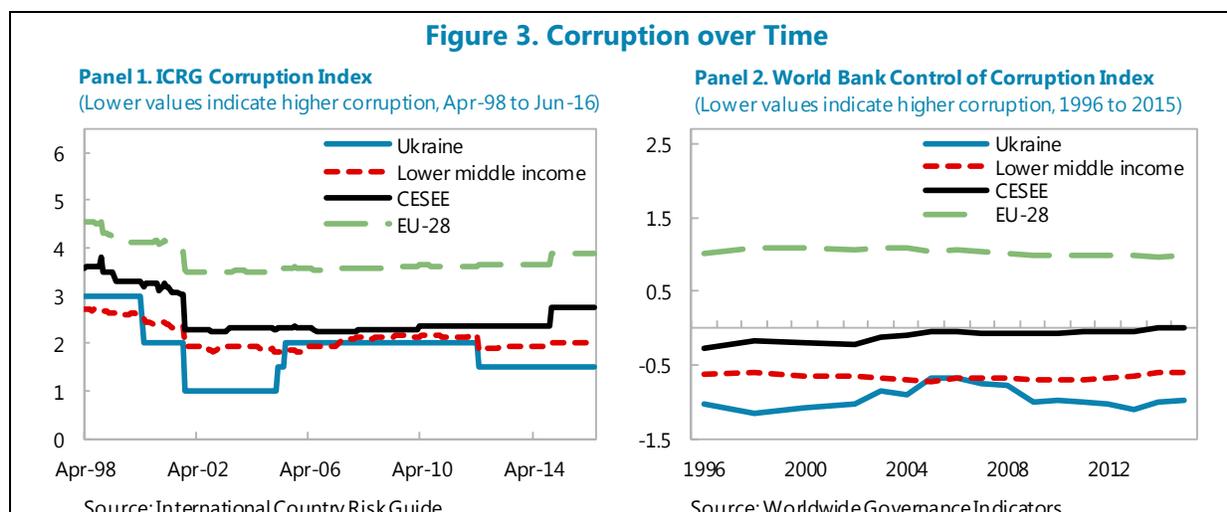
3. Corruption is prevalent across all regions of Ukraine, except in the West. Figure 2 uses data from the 2013 Enterprise Survey to document the extent of corruption across geographical

³ Note that the cross-country correlation between the various corruption indicators is extremely high. Considering for example the year 2014, the correlation between the ICRG indicator and the World Bank Control of Corruption index is 0.95.

regions within Ukraine. Corruption appears to be widespread throughout most of the country, being particularly severe in Kyiv. Firms located in the West seem instead to face lower corruption levels, even though 65.8 percent of them still consider corruption as a major constraint for business.

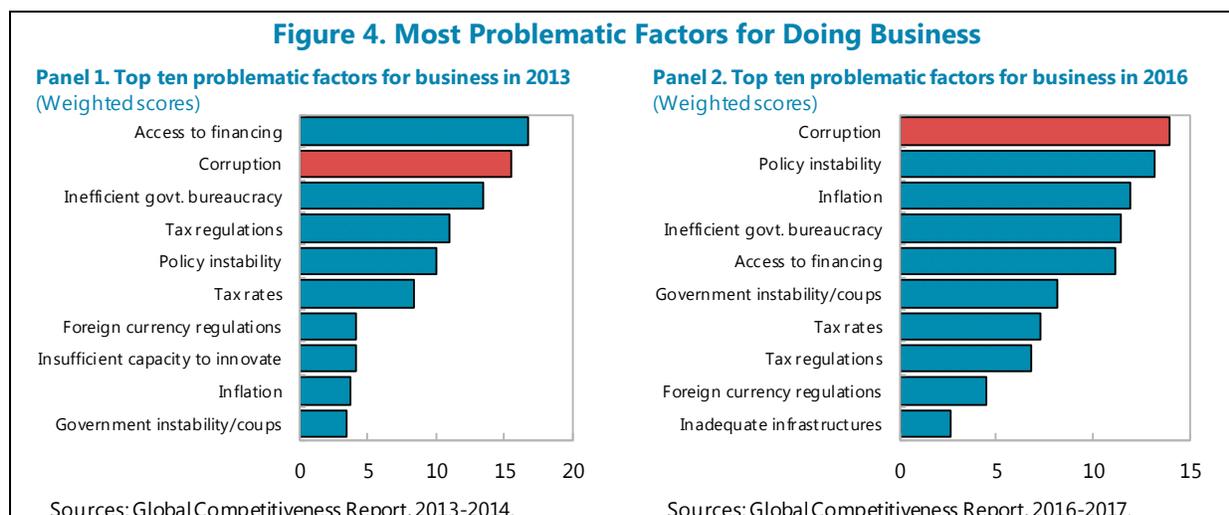


4. Regarding the evolution of corruption over time, Ukraine has witnessed no improvement over the last 10 years. The ICRG provides monthly values of the corruption index that in the case of Ukraine go back to April 1998. Using these data, Panel 1 of Figure 3 shows the time series evolution of corruption in Ukraine and in other country groups. Over the last 10 years, corruption has declined in the countries that currently belong to the European Union (EU-28) as well as in CESEE countries. On the contrary, there has been no improvement in Ukraine, with the ICRG index actually suggesting a worsening of the corruption problem in 2012. Panel 2 shows a very similar picture based on the World Bank Control of Corruption index that stops in 2015.



5. The high level of corruption in Ukraine acts as a significant impediment to business development. Figure 4 shows a ranking of the main constraints to business development in Ukraine

according to the Global Competitiveness Report. Panel 1 uses data from 2013 according to which corruption was the second most important obstacle to growth. The corruption problem has become even more severe in the last few years, with the 2016 data reporting corruption as the most problematic factor for doing business (Panel 2). It is also interesting to note the growing concerns related to policy and government instability.

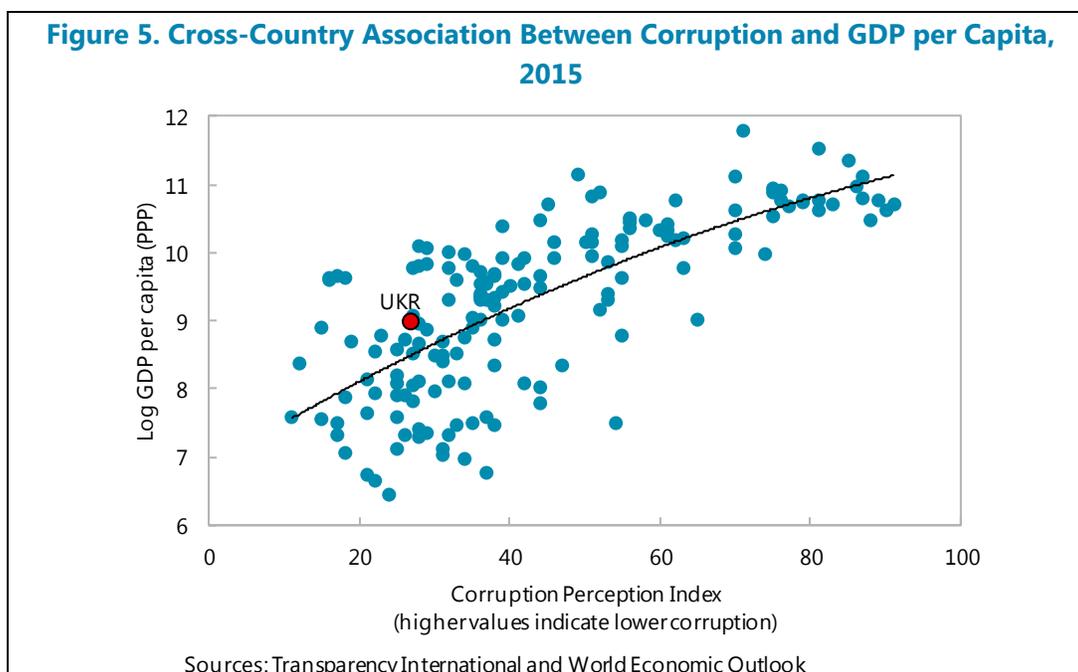


B. Corruption and Economic Growth

6. This section analyzes the association between corruption and economic growth. There exists an extensive literature on this topic that has used various datasets and econometric techniques to investigate the extent to which corruption impairs a country's economic potential. Despite that corruption data are notoriously imprecise given the obscure nature of corruption (Heywood and Rose, 2014), the empirical evidence suggests significant negative effects.⁴ We revisit these findings using the most recent available data and relying on both time-series and cross-country identification.

7. Countries with lower corruption tend to have higher GDP per capita. Figure 5 illustrates this fact using a cross-country scatter plot of the log of GDP per capita measured in purchasing power parity (PPP) over the Corruption Perception Index (CPI). As shown by the quadratic regression line, higher CPI values (that denote lower corruption) are associated with higher GDP per capita. The position of Ukraine above the regression line confirms that Ukraine has a high level of corruption given its level of GDP per capita.

⁴ Early evidence about the negative impact of corruption on economic growth based on a cross-country empirical analysis is presented in Mauro (1995). Similar results are obtained by Wei (1999), Méon and Sekkat (2005), Gamberoni et al. (2016). For excellent reviews of the literature, see Svensson (2005), Campos et al. (2010), Ugur and Dasgupta (2011), and IMF (2016). Evidence about the negative economic impact of corruption is also found in micro-level studies, such as Svensson (2003), Fisman (2001), and Fisman and Svensson (2007).



8. The negative association between corruption and GDP per capita suggests that reducing corruption may boost economic growth. Nonetheless, the negative correlation between corruption and GDP per capita may also reflect endogeneity concerns, among which reverse causality. For example, the correlation may arise because higher income countries have more resources to fight corruption. To try to isolate the causal effects of corruption on economic growth, we rely on econometric regressions that allow us to control for other growth determinants and look at the impact that corruption has on future GDP growth.

9. We first estimate the impact of corruption on economic growth using panel regressions that exploit time-series variation in the data (Table 1). We analyze the impact of corruption on both the real growth rate of GDP per capita as well as on real investment growth. The regressions are estimated using yearly data for about 130 countries depending on data availability.⁵ Note that to mitigate concerns about reverse causality, we use the one-year lagged value of corruption. The regressions include country-fixed effects and conventional growth determinants, such as: the lagged growth rate of GDP per capita (or investment growth) to capture possible autocorrelation; the lagged level of GDP per capita to control for mean reversion in growth; and the lagged value of secondary school enrollment that is expected to be positively correlated with growth.

10. The panel regressions in Table 1 suggest that by reducing corruption to the levels seen elsewhere in the region, Ukraine could raise per capita GDP growth by about 0.85 percent. In columns 1 and 2, we estimate the impact of corruption on per capita GDP growth over the 2005–15

⁵ In the regression analysis, we measure corruption using the ICRG index since it has the longest time-series coverage, ranging for many countries from 1980s to 2016. The World Bank Control of Corruption indicator has instead data only for 1996, 1998, 2000 and from 2002 to 2015.

period. In column 1, we first consider a simple bivariate regression of per capita GDP growth on the one-year lagged ICRG corruption index. The coefficient is positive and statistically significant, suggesting that an increase in the ICRG corruption index by one unit (equivalent to lowering corruption in Ukraine to the levels in Bulgaria and Romania) would raise GDP growth by about 0.87 percent. In column 2, we add to the regression the control variables described above. These controls are all highly statistically significant, but do not materially change the impact of corruption: a one-unit increase in the ICRG index raises GDP growth by 0.69 percent within one year, and by about 0.85 percent after 3 years once we take into account the autocorrelation coefficient.

Table 1. The Impact of Corruption on GDP and Investment Growth, Time-Series Analysis

	(1)	(2)	(3)	(4)	(5)
	Real growth of per capita GDP		Real investment growth		
	2005 - 2015		1995 - 2015	2005 - 2015	1995 - 2015
One-year lagged values of:					
ICRG corruption index	0.868** (0.424)	0.692** (0.346)	-0.0821 (0.145)	4.001** (1.719)	4.268 (3.140)
Per capita GDP growth		0.194*** (0.026)	0.156*** (0.021)		
Log of GDP per capita		-15.58*** (1.217)	-5.145*** (0.547)	-54.00*** (6.186)	-15.72 (11.920)
Secondary school enrollment		0.0540*** (0.020)	0.0500*** (0.011)	0.119 (0.097)	0.36 (0.235)
Investment growth				0.001 (0.032)	-0.010 (0.023)
Constant	0.0504 (1.118)	167.6*** (12.740)	54.86*** (5.861)	581.9*** (64.90)	137 (128.80)
Observations	1,468	1,060	1,969	985	1773
R-squared	0.003	0.205	0.071	0.089	0.003
Countries	136	129	133	120	124

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1

11. Corruption seems to have now a stronger negative impact on economic growth than in the past. Column 3 shows that the coefficient on the ICRG corruption index loses statistical significance if we extend the period of analysis back to 1995. This could be due to a deterioration in the accuracy of corruption data as we go back in time. Or it may reflect that corruption has become over the last decade a more important impediment to economic growth than in the past. For example, the impact of corruption on growth in the past could have been overshadowed by the damaging effects of poor macroeconomic policies. Now that most countries have finally reaped the benefits of traditional macroeconomic reforms, tackling corruption may have a stronger effect on

growth.⁶ We also note that the overall fit of the regression for 1995–2015 is considerably worse than over the 2005–15 period, with the R-squared declining from 0.20 to 0.07.

12. The panel estimates suggest that lowering corruption may also raise investment. In column 4, we estimate the impact of corruption on real investment growth over the 2005–15 period including the control variables. Increasing the ICRG corruption index by one unit is associated with a statistically significant increase in the growth rate of investment by 4 percent. As in the case of per capita GDP growth, the coefficient on corruption loses statistical significance if we extend the period of analysis back to 1995.

13. We also analyze the impact of corruption on economic growth using cross-country regressions (Table 2). In particular, we regress the country-specific real per capita GDP growth between 2005–15 on the average ICRG corruption index. The regressions also include as control variables the average log of GDP per capita in PPP and the secondary school enrollment in the two years prior to the period of analysis, i.e., 2003 and 2004. Given the considerable cross-country heterogeneity in schooling and corruption, we include also their squared values to capture possible non-linearities.

14. Cross-country estimates confirm that corruption tends to have a negative effect on economic growth. In column 1 of Table 2, we first consider a simple bivariate regression of average GDP growth between 2005–15 on the average ICRG corruption index (for which higher values denote lower corruption). The estimated coefficient is negative and statistically significant, thus detecting a positive correlation between corruption and growth. However, this should not be interpreted as evidence that corruption is beneficial for growth since it simply reflects that more advanced economies (that have lower corruption) have experienced slower growth over the last decade. Indeed, the coefficient on the ICRG corruption index becomes positive in column 2 once we control for the initial income level and schooling (that have the expected negative and positive signs, respectively). A reduction in corruption equivalent to an increase in the ICRG index by one unit is estimated to increase per capita GDP growth by 1.35 percent. This is a stronger effect than estimated using panel regressions, but the coefficient is less statistically significant.

15. The cross-country estimates are robust to controlling for government spending and using alternative time samples. In column 3 we add to the regressors the average level of government spending that in some of the literature is found to have a negative impact on growth. The estimated coefficient is not statistically significant and the inclusion of government spending slightly increases the coefficient on corruption. In columns 4 and 5, we re-estimate the cross-country regressions over the period 1995–2005, with the initial average levels of GDP per capita and schooling computed over 1993 and 1994. In the bivariate regression of column 4, the ICRG corruption index is not statistically significant. However, once we include the control variables in

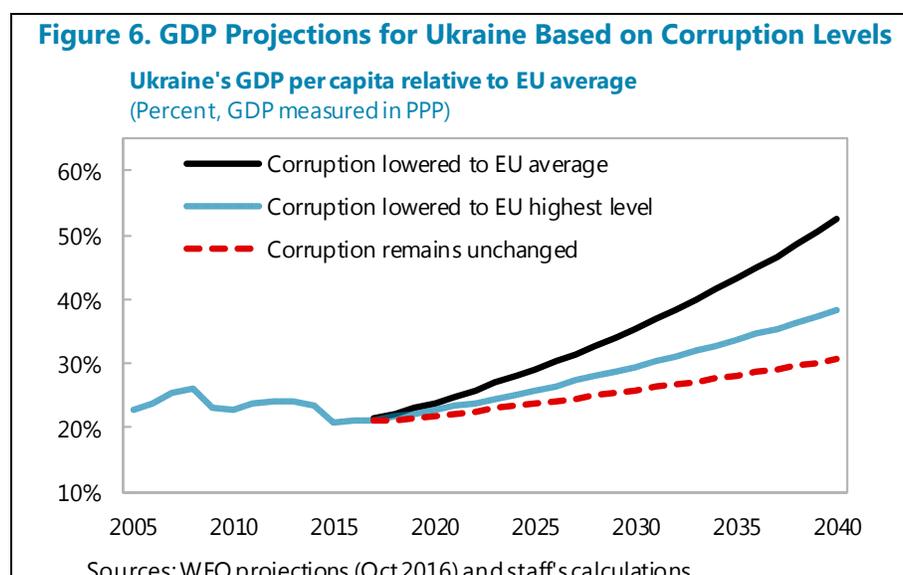
⁶ A similar argument can be made in reference to excessive regulation. In the past, some authors argued that corruption could actually raise economic growth as a tool to circumvent burdensome regulation (Leff, 1964; Huntington, 1968). This possible channel has likely become less relevant over time since various countries have adopted more market-friendly policies and reduced red tape.

column 5, the coefficient on corruption becomes similar to the one estimated over the 2005–15 period in column 3.

	(1)	(2)	(3)	(4)	(5)
	GDP growth over 2005 - 2015			GDP growth over 1995 - 2005	
ICRG corruption index	-0.605*** (0.154)	1.352* (0.729)	1.392* (0.729)	0.0856 (0.178)	1.324* (0.784)
ICRG corruption index squared		-0.175 (0.109)	-0.178 (0.109)		-0.166 (0.115)
Initial log GDP per capita		-1.663*** (0.282)	-1.657*** (0.282)		-1.495*** (0.278)
Initial secondary school enrollment		0.0970*** (0.028)	0.0935*** (0.028)		0.104*** (0.027)
Initial sec. sch. enrollment squared		-0.000483*** (0.000)	-0.000439** (0.000)		-0.000391** (0.000)
Government spending (% GDP)			-0.0435 (0.040)		-0.000306 (0.041)
Constant	3.899*** (0.443)	11.27*** (1.898)	11.79*** (1.955)	2.357*** (0.561)	8.901*** (2.171)
Observations/Countries	133	109	109	132	101
R-squared	0.105	0.366	0.373	0.002	0.296

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1

16. The results suggest that reducing corruption could substantially contribute to speeding up economic convergence towards the European Union. The econometric analysis suggests that an increase of the ICRG index by one unit may raise per capita GDP growth by about 1 percent. Based on this metric, Figure 6 shows the projected path of Ukraine’s GDP per capita in proportion to the EU average under alternative corruption levels. If Ukraine is unable to lower corruption, per capita GDP will still be only about 30 percent of the EU average in 2040. If corruption is lowered to the highest level prevailing among EU countries (equivalent to an increase of the ICRG index by one unit), per capita GDP will reach about 40 percent of the EU average in 2040. Finally, if Ukraine is able to reduce corruption to the EU average (equivalent to a 2.5 increase of the ICRG index), per capita GDP will exceed 50 percent of the EU average in 2040, sharply converging afterwards.

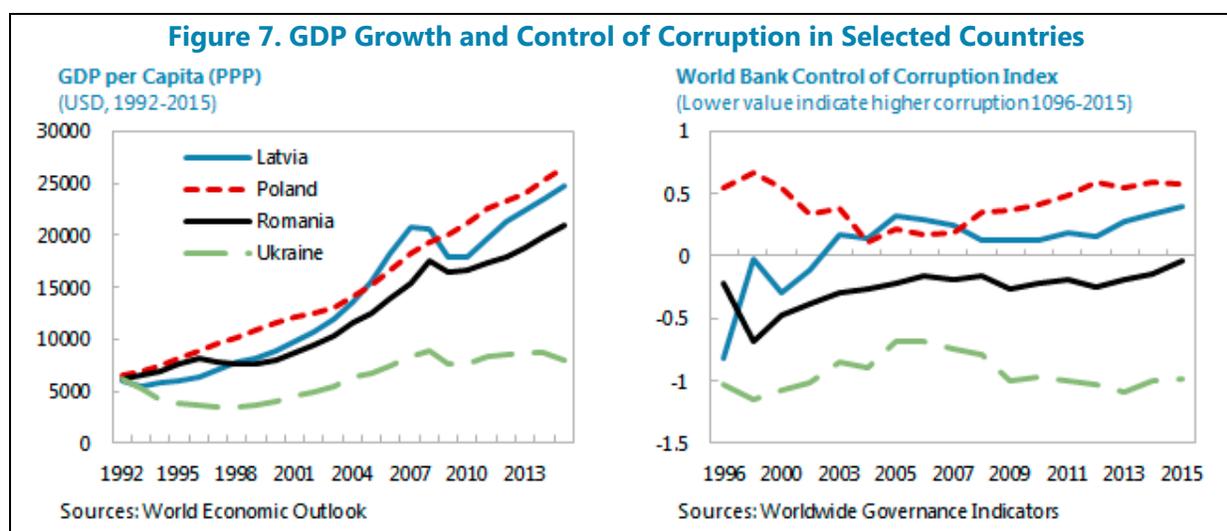


C. Regional Comparison and Best Practices

17. While there are a number of international examples of successful anticorruption initiatives, regional examples might fit better with the Ukrainian context. Anticorruption policies implemented in countries such as Hong Kong, Guatemala or Indonesia are of interest. However, these countries do not share similar background in terms of economic development, historical legacies, or political culture. Accordingly, relying on regional examples appears more meaningful.

18. Having started their transition with a similar GDP per capita in 1992, Poland, Romania and Latvia have since outperformed Ukraine. The three countries do not rank particularly high on anticorruption indicators in the EU but provide good references as they shared a similar GDP per capita at the beginning of the transition to a market economy. Romania and Poland are the two other large eastern European countries with 20 and 38 million inhabitants respectively, as compared with 44 million in Ukraine. Latvia is much smaller (2 million), but it has been part of the Soviet Union, as Ukraine has been. In 1992, GDP per capita was similar for these four countries. In 2015, the other three countries on average have a GDP per capita that is three times higher than in Ukraine. Poland's GDP per capita represents 70 percent of the EU average, while Ukraine is close to 20 percent.

19. There appears to be a strong association between the ability to control corruption and growth in these four countries. In the case of Poland, the indicator of control of corruption has been relatively high throughout the period and economic growth has been the higher. On the other extreme, Ukraine has combined a low level of control of corruption and of economic growth over the period. Romania and Latvia have seen their ability to control corruption strengthen over the period and growth followed a path similar to Poland.



20. Best practices can be identified from the experiences of Poland, Romania, and Latvia, particularly with regard to anticorruption institutions, transparency of officials' assets, enforcement actions, and the role of civil society. Anticorruption policies and environment in the three countries present interesting features that may explain the progress made. They relate to strong anticorruption institutions having benefitted from determined leadership and strong public support. They also relate to law enforcement, which also includes a functioning and trusted judiciary. Finally, civil society and the media have also played an important role in these countries.

21. Specialized anticorruption law enforcement authorities, with some degree of independence, have been a common feature in the three countries. All three countries have established specialized anti-corruption law enforcement agencies: Romania's National Anti-corruption directorate (DNA) in 2002, Latvia's Corruption Prevention and Combating Bureau (KNAB) in 2002, and Poland's Central Anti-Corruption Bureau (CBA) in 2006. All three institutions were granted broad autonomous powers, with the Romanian DNA being generally perceived as quite independent. All three have had broad investigative powers (e.g., special investigative techniques, including wiretapping) and did focus investigations on high-level officials' cases.

22. The leadership of these law enforcement authorities and public support has been key to ensure that institutions are secured and strengthened. Importantly, beyond institutional framework, personal leadership by the heads of these institutions and public support have been critical. It has been important that the leadership of these institutions is perceived as rule of law oriented, prosecuting crimes without taking into consideration the person and the political affiliation.

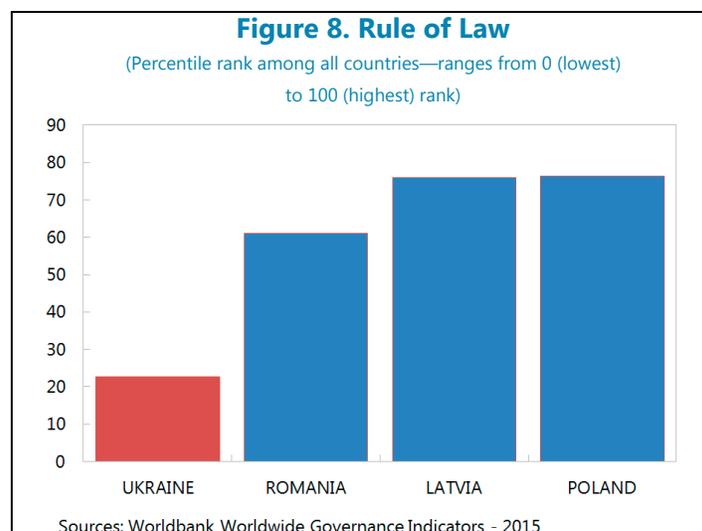
23. Ensuring the publication of comprehensive public officials' asset declarations has been an important vehicle to increase public ownership of anticorruption reforms. The three countries required public officials to declare their assets and incomes. Such requirements were introduced in 1994 in Latvia and in 1996 in Romania, and have been strengthened over time. In Poland, the comprehensive requirement introduced in 2003 met severe opposition from some

officials which lead one of them to apply to the European Court of Human Rights. While the court found that the requirement to submit comprehensive declaration and its online publication were indeed an interference with the right to privacy, it considered that it “is precisely this comprehensive character which makes it realistic to assume that the impugned provisions will meet their objective of giving the public a reasonably exhaustive picture of councilors’ financial positions that the additional obligation to submit information on property, including marital property, can be said to be reasonable in that it is designed to discourage attempts to conceal assets simply by acquiring them using the name of a councilor’s spouse.” The Court also endorsed the publication and internet access to declarations arguing that “the general public has a legitimate interest in ascertaining that local politics are transparent and Internet access to the declarations makes access to such information effective and easy. Without such access, the obligation would have no practical importance or genuine incidence on the degree to which the public is informed about the political process.”⁷

24. Public support benefitted from actual results in investigations, prosecutions and, most importantly, convictions and asset recovery. Judicial response has been a key feature of the relative success of the anticorruption agencies, particularly in Romania and Latvia. The ability to provide a judicial response has, however, been fluctuating and uneven. Romania stands out in recent past. In 2015 alone, the DNA indicted one sitting prime minister, five ministers, 21 members of parliament and ordered the seizure of almost half a billion dollars. The confirmation rate of DNA indictments through final court decisions has reached 90 percent, and around US\$200 million have been recovered by the Romanian State in 2015. Good results have also been achieved in Latvia, where cases have been started, for example, against prosecutors, judges, high-level officials of the Customs and State Revenues Service, heads of SOEs and mayors of large cities. In Latvia, the confirmation rate on KNAB’s indictment through final court decisions reached more than 80 percent.

25. Achieving successful convictions requires robust prosecutors and courts adjudicating corruption cases. In this regard, it is noticeable that the three countries rank much higher than Ukraine with respect to the World Bank’s indicator of rule of law (figure 8). While Romania’s ranking is lower than Latvia and Poland, cases of high-level corruption receive a special treatment in Romania. The High Court of Cassation and Justice (ICCJ) is exclusively competent for legal proceedings against high-level officials, including senators, deputies and Romanian members of the European Parliament, government members, and senior judges and prosecutors, for acts committed in the exercise of their office, including acts of corruption. First-instance judgements are handed down by a chamber of three ICCJ judges. In the case of an appeal against this verdict by the defendant or the prosecutor, the final-instance judgement is then passed by a five-member chamber.

⁷ WYPYCH v. POLAND, no. 2428/05, ECtHR (Fourth Section), October 25, 2005.



26. Civil society support and involvement is key to ensure the sustainability of reforms. In the three countries, civil society has been involved in the institutions' design. In the context of Latvia and Romania, they leveraged on EU conditions, while in the case of Poland the process has been more home grown. Public support for anticorruption institutions has been an important element, particularly when high-level officials have been investigated and indicted. Information released by investigative journalists has also been supporting the work of anticorruption agencies, to different extent, in the three countries.

D. Policy Implications for Ukraine

27. Considerable progress has been made over the last two years, particularly with the establishment of the anticorruption bureau and the implementation of a comprehensive asset declaration mechanism. The independent National Anti-Corruption Bureau of Ukraine (NABU) started its work in late 2015. One year later, more than 40 cases had been sent to court, with two court decisions requiring the restitution of US\$45 million of embezzled funds, and NABU had seized more than US\$200 million in financial assets. After many obstacles, the authorities have also implemented a comprehensive asset declaration system for high-level officials by end-October 2016, requiring the declaration of assets legally and beneficially owned, including by relatives of the officials and outside of Ukraine. The high amounts disclosed by some senior officials was a source of surprise for the population. As an example, civil society estimates that members of parliament collectively declared a total of almost half a billion U.S. dollars in banknotes. The establishment of the business ombudsman is another important institution to support anticorruption efforts, as it can act as a first point of contact for companies seeking redress against unfair treatment.

28. However, reforms have not delivered concrete results yet and public discontent is growing. More than three years after the Euromaidan protests, which were in large part triggered by perceptions of widespread corruption, no senior officials have been convicted. The assets recovered by the state budget as a result of convictions for acts of corruption are very low. They

amounted to less than US\$5,000 in 2015 and less than US\$3,000 for the first six months of 2016. According to polls conducted in December 2016, 89 percent of the country's population considers the authorities' efforts to address corruption to be a failure.

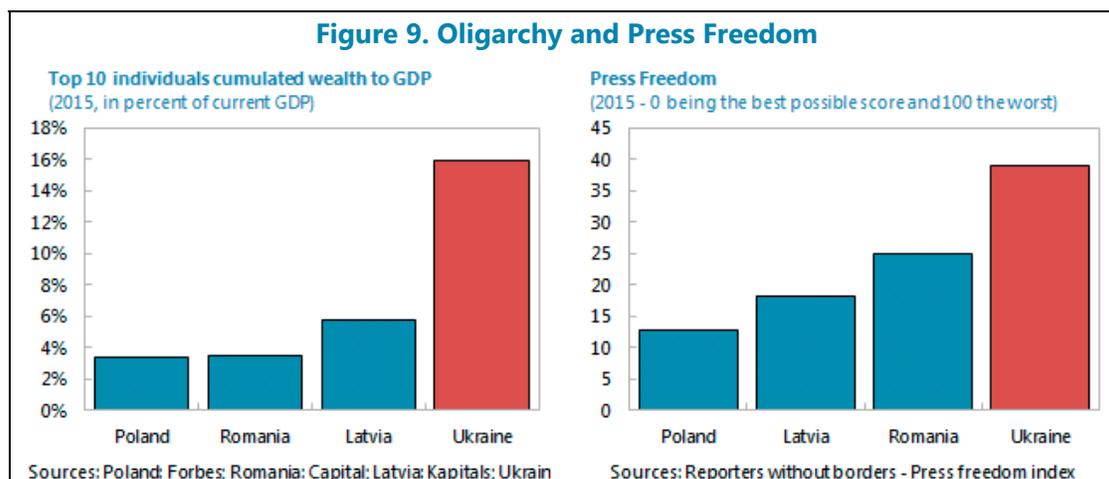
29. Regional experience indicates that convictions of high-level officials take time to materialize and that the independence of NABU should be strengthened. In the case of Romania, while the DNA has been established in 2002, it is only from 2011 that high-level officials started to be successfully put on trial. While the number and high level of investigations conducted by NABU over its first year of exercise is relatively impressive, which could potentially lead to the first convictions in the coming months, the current absence of concrete results may provide justification to non-reformist forces' efforts to weaken the NABU. Over the last months, the NABU has already been subject to pressures from other law enforcement agencies, including to prevent some investigations and to revisit its exclusive jurisdiction in high-level corruption cases. This should certainly be resisted, and on the contrary, investigative powers of NABU should be strengthened, including by giving it the right to wiretap independently.

30. Following up on the implementation of asset declaration is critical to catalyze public support. The publication of asset disclosures of high-level officials was the first significant concrete consequence of the recent anticorruption efforts conducted by the Ukrainian authorities. It indicated a break with the past, while it also offered a confirmation of what was previously rumored or suspected as the extensive wealth accumulated by some senior officials, including among the ones having always worked in the public sector for very low salaries. This information creates the opportunity for quick wins in anticorruption enforcement, including by convicting the high-level officials who did not file asset declarations, and the ones for which false declaration may be simple to evidence.

31. The operationalization of an anticorruption court may create a virtuous circle. While the first NABU cases have been sent to court in May 2016, no cases have been decided yet, in a context of very low public trust in the independence of courts. The Romanian experience indicates the interest of having a special and trusted judicial process for cases of corruption of high-level officials. Accordingly, to ensure that prosecution of acts of corruption by senior officials receives adequate judicial response, it appears important that the anticorruption court envisaged in the judicial reform legislation adopted in July 2016 is operationalized in a way that ensures public trust and independence.

32. Oligarchy and its effect on law making and on the plurality of the media is a specific impediment in Ukraine. The level of concentration of resources in a small group of people is a major difference with Latvia, Poland and Romania, as indicated in Figure 9 (using the cumulated wealth of the top richest individuals as a proxy of oligarchy). The "state capture" by blocks of powerful political and economic elites that are pyramidal in structure and entrenched throughout public institutions and the economy has been seen as a specific feature of Ukraine's corruption. These pyramids have typically taken the form of powerful elites at the top of a pyramid, heads of agencies in the middle and agency staff at the base. They are perceived to influence law making and control appointments in the public sector, to ensure the application of regulations in a manner that

entrenches their oligopolistic control of the economy. They also try to limit public access to information, including by their control of media. These elite power structures are viewed as predatory, with an overarching objective of self-enrichment. Such structures have obviously no interest in the emergence of independent and effective anticorruption institutions and in the sanctioning of acts of corruption. They tend to use the media they own to promote their interests and discredit anticorruption institutions.



33. In this context, while independent law enforcement and courts are strengthening, foreign enforcement authorities could contribute to support Ukrainian anticorruption efforts.

Based on regional experience, even in the best circumstances, it will take time to achieve a critical number of convictions of high-level officials and asset recovery that would content the public and send a signal that acts of corruption are not tolerated and bear consequences for their authors. Absent enforcement actions in the short term, elite structures benefiting from corruption may find renewed strength to derail past anticorruption efforts, and the general public may lose interest and trust in the overall reform process. The latter could lead to public discontent and the rise of political forces opposed to reforms. Enforcement actions against Ukrainian officials by foreign law enforcement authorities could assist in avoiding such outcome while domestic institutions are strengthening. The conviction in the United States, 10 years ago, of a former Ukrainian prime minister for crimes including money laundering and extortion is an interesting precedent. In particular, in most countries, when proving that property is the proceeds of crime, it would not be necessary that a person be convicted of a predicate offence. This could facilitate foreign prosecutions of the laundering of proceeds of acts of corruption by Ukrainian officials irrespective of the level of cooperation of Ukrainian judicial authorities. With regard to asset declaration framework, while the absence or false declaration is a crime in Ukraine, the laundering of the proceeds of this crime may constitute a money laundering offence in some foreign jurisdictions. More broadly, the effective implementation of anti-money laundering frameworks in financial centers hosting assets of corrupt Ukrainian officials could accordingly contribute to support Ukrainian anticorruption efforts.

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REFORMING UKRAINE'S PENSION SYSTEM¹

Ukraine's pension system is in urgent need of fundamental reform. The sustainability of the pension system's finances has reached critically low levels requiring major changes in its design. A large number of retirees results in a high level of pension expenditure, even as pensions are low. Demographic trends will put further pressures on the pension system and government finances. Further reducing pension levels is not a viable alternative, as this would increase old-age poverty. Reforms would therefore need to focus on reducing the inflow of new retirees and increasing the number of contributors. Raising the effective retirement age and years-of-service requirements, which are very low by international comparison, together with a further tightening of early retirement options would help reduce the pension system's financial imbalances over time. In addition, the efficiency and equity of the system could be improved by reducing or eliminating categorical supplements and special occupational pensions. There is significant scope to expand the base for social security contributions and strengthen payment compliance. Pension reform could also have important indirect effects on the sustainability of the pension system's finances through an increase in labor participation rates of older age cohorts, and hence in the number of contributors, and support economic growth more broadly.

A. Introduction

1. On current trends, the pension system in Ukraine is financially unsustainable. Without a major overhaul, the current contributory, earnings-related pension system will continue to remain in deficit and will fail to provide adequate and equitable pensions to all retirees. Even before the cuts in social security contributions, which became effective from January 2016, the Pension Fund of Ukraine (PFU) was facing large deficits. Following the major tax reform adopted at the end of 2015, which mainly involved reducing social security contributions from an average rate of 40 percent to a flat 22 percent, the PFU deficit jumped to 6¼ percent of GDP in 2016, one of the highest levels in the world.

2. The pension system currently provides very modest old-age incomes to retirees. The level of average pension in Ukraine currently stands at about US\$65–70 per month, slightly above of the international poverty line of US\$1.90 per day. While the average gross replacement rate of about 39 percent (2015 estimate) is not very low by international comparison, a high level of informality and under-reporting of taxable earnings is likely to result in a significant overestimation of the average pension value relative to average nationwide wages. Under current indexation rules, the replacement rate will decline further, reducing its level to even more socially unsustainable levels.²

¹ Prepared by David Amaglobeli (FAD).

² Following the expected increase in the average wage due to the government's decision to double the minimum wage from 2017, the replacement rate could drop closer to 30 percent.

3. Unfavorable demographic trends will put additional pressure on the pension system's finances. Declining fertility rates and increasing longevity will result in a smaller and older population.³ These demographic changes will have substantial implications for public finances, especially for the pension system. With the shrinking working age population, the number of contributors will decline, while spending on age-related programs, including pensions, will increase as the share of the elderly in the population grows. In emerging economies, spending on public pensions is expected to increase by 5 percent of GDP between 2015–2100 (Clements and others, 2015). Given the large uncertainties surrounding demographic projections, an even faster population aging cannot be ruled out. Thus, policymakers need to be cognizant of the urgency to reform entitlement programs, including pensions, to mitigate the effect of aging on public finances.

4. Pension reform would also support the government's growth objectives. It would help mitigate the adverse effect from the prospective demographic trends on labor markets. The share of the working age population (population between 15–64 years of age) in the total population in Ukraine is expected to decline from 70 percent in 2015 to less than 60 percent by 2060.⁴ Moreover, the increasing share of older-age cohorts in the working-age population will lead to a significant drop in aggregate labor force participation rates. By international comparison, Ukraine has particularly low labor force participation rates for older-age cohorts. For example, the average labor force participation rate of the cohort between 50–59 in Ukraine was 63 percent in 2014, compared with about 75 percent on average in OECD countries.⁵ The gap is even larger for older cohorts. The average labor force participation rate for the cohorts between 60–69 is 15½ percent in Ukraine compared with 37 percent on average in OECD countries. A major factor behind this large gap is a relatively low statutory retirement age that results in the early exit of workers from the labor market. For example, the average effective exit age is 58½ years for men and 55.9 years for women in Ukraine, compared with 63½ years and 62½ years, respectively, on average in the EU. Pension reform that includes raising the retirement age would provide additional incentives to workers to postpone retirement and therefore limit the prospective decline in the labor force.

5. Significant policy adjustment is needed to put the pension system on a sustainable footing. Notwithstanding past reforms, including gradually increasing the retirement age for women (2011) and tightening some early retirement options (2015–16), in the absence of further reforms, the pension system will face large and growing deficits. Therefore, pension reform needs to focus especially on limiting the inflow of new pensioners. This could also create space for bringing the average pension to more socially acceptable levels. Other reforms that help improve equity and efficiency of the pension system are also needed.

6. Creating a so-called second pillar in the pension system will do little to address the fundamental problems of the old-age security system. The discussion to introduce mandatory-

³ Under the UN's medium-fertility scenario, Ukraine is expected to experience a continuous net outflow of migrants.

⁴ Based on UN's population projections under the medium-fertility scenario.

⁵ For OECD, labor force participation rate for the 50–59 age group is calculated as the simple average of rates for 50–54 and 55–59 age cohorts.

funded schemes risks only to divert attention from the problems facing the pay-as-you-go system. Moreover, many shortcomings still stand in the way of successfully introducing mandatory, defined contribution schemes in Ukraine. In the absence of political will to increase pension contributions, diverting existing contributions to a funded pillar would further increase the deficit of the pay-as-you-go system, or would require a further reduction in pension benefits in the first pillar. Therefore, the introduction of the funded pillar could only be considered once the structural deficit of the first pillar has been addressed in a sustainable manner, macroeconomic and fiscal sustainability have been secured, and all necessary elements of the legal and regulatory infrastructure are in place (a comprehensive companies law, a securities law in line with internationally accepted principles, collateralization and bankruptcy procedures, creditor and property rights, and accounting regulations payments system, custodian and depository functions).⁶ Since these preconditions are not yet met in Ukraine, the introduction of a second pillar should be delayed (Andrews, 2015).

7. Countries in the region facing similar pension system problems have already started taking policy action. In April 2016, the president of Belarus issued a decree mandating an increase in the retirement age by three years to 63 years for men and 58 years for women starting from January 1, 2017 (by six months every year). Also in April 2016, the Russian parliament adopted legislation to increase the retirement age for civil servants to 65 years for men and 63 years for women (from current 60 years and 55 years, respectively), effective from 2017 (by six months a year). Proposals for increases of other parts of the work force are under discussion. In December 2016, the Moldovan parliament adopted legislation increasing the statutory retirement age gradually to 63 years for men from 62 years and for women from 57 years (Table 1).⁷

B. Ukraine's Current Pension System

High pension spending

8. Public pension spending in Ukraine is one of the highest in Europe. Despite the decline from its high of 18 percent of GDP in 2010, public pension spending in Ukraine still remains among the highest levels in Europe (Figure 1). In 2016, pension spending accounted for about one quarter of total general government expenditures, which is also among the highest. The increase in pension spending from 2003 was mainly driven by discretionary pension increases (Figure 2). After 2013, pension spending in percent of GDP started to decline sharply, reflecting mainly the erosion in real value of pension benefits, resulting from the limited indexation of pensions against the background of high inflation. In addition to non-indexation, measures adopted in 2015 such as denial of pension benefits to working pensioners in the civil service and withholding 15 percent of the pension benefit for other working pensioners also contributed to lower pension spending.

⁶ For more details on preconditions for the introduction of funded pillars of pension systems, see Rudolph and Rocha (2009).

⁷ On the other end of the spectrum is Poland, whose parliament in November 2016 approved the ruling party's plan to roll back the previous retirement age increases introduced in 2012, from 67 years to 65 years for men and 60 years for women.

Table 1. Regional Comparison of Pension Systems

	Ukraine	Belarus	Russia	Moldova
Statutory retirement age (years) 1/				
Current (Men/Women)	60/58	60/55	60/55	62/57
Prospective (Men/Women)	60/60	63/58	60/55	63/63
Pension spending (percent of GDP), 2015	13.4	9.6	9.5	11.0
Government transfers to social security fund, 2015 (percent of GDP)	4.8	0.6	3.8	3.4
Number of pensioners				
In thousands 2/	12,147.2	2,559.7	42,729.0	679.9
In percent of population 60+	120.1	132.8	148.7	100.9
In percent of total population	27.1	27.0	29.8	16.7
In percent of working age population 3/	41.7	41.2	45.5	24.4
Average monthly pension, 2015				
In national currency units 2/	1,699.5	2,805,727.0	12,080.9	1,165.2
In US dollars 4/	70.8	151.1	165.7	59.3
Average gross replacement rate (percent) 5/	39.0	40.4	33.7	24.8
Life expectancy at birth, 2010-2015				
Men	65.7	65.3	64.2	67.2
Women	75.7	77.0	75.6	75.4
Life expectancy at 60, 2010-2015				
Men	15.2	14.5	15.2	14.8
Women	20.2	20.9	20.7	19.5
Old-age dependency ratio 6/				
In 2015	21.9	20.0	19.1	13.4
In 2060	42.1	40.6	37.4	52.9
Social Security Contribution Rate (percent) 7/	22.0	35.0	30.0	33.5
Memo items:				
Population, total (thousand)	44,823.8	9,495.8	143,456.9	4,068.9
GDP per capita, 2015 (US dollars)	2,125.4	5,749.1	9,243.3	1,821.9

Sources: National authorities; UN population projections; World Economic Outlook; IBFD; and IMF staff estimates.

1/ Current retirement age is the one prevailing on January 1, 2017. Prospective retirement age is the one that has been legislated and will be achieved at some future date.

2/ As of January 1, 2016.

3/ Working age population is defined as population between 20 and 64 years of age.

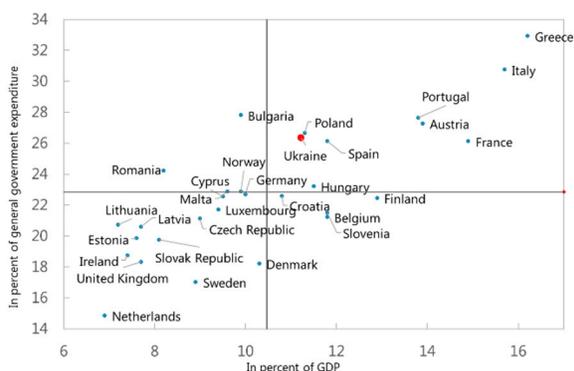
4/ Calculated as the average pension in national currency divided by the average exchange rate on January 1, 2016.

5/ Calculated as the average pension in 2015 divided by the average wage in the economy.

6/ Calculated as the ratio of population 65 years and above over the population between 15 and 64.

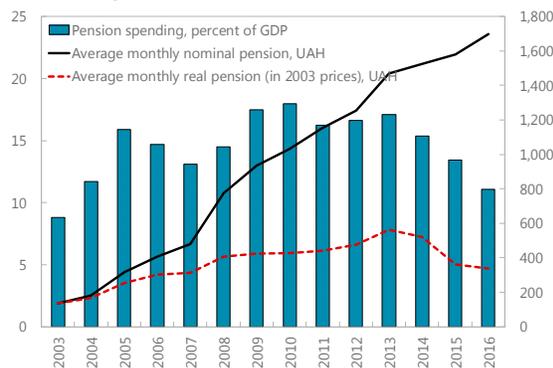
7/ Total social security contribution rate, including pension contributions.

Figure 1. Pension Spending, International Comparison (Pension expenditure, 2013)



Note: Data for Ukraine is from 2016.
Sources: Ukrainian authorities, European Commission and IMF staff estimates.

Figure 2. Pension Spending and Average Pension, 2003–16

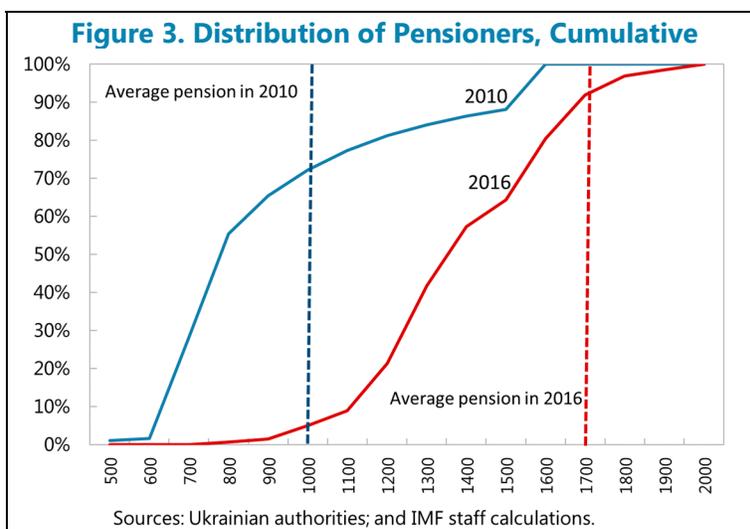


Sources: Ukrainian authorities; and IMF staff estimates.

Low average pensions, but high pensions for some privileged groups

9. However, the pension system provides relatively low old-age incomes. Currently, at about US\$65–70 per month, the average pension is among the lowest in Europe. While the 39 percent gross average replacement rate (2015) is not the lowest, large underreporting of wages probably results in overestimation. The average benefit size of special pension recipients is significantly higher than the average regular pension, but special pensions account for less than 10 percent of the total pension population. Moreover, as under the current indexation rules only the portion of the benefit corresponding to the minimum subsistence level is adjusted every year, the benefit distribution is gradually becoming more compressed. For example, in 2010 about three-quarters of pensioners had benefits lower than the average pension, but by 2016 this share has increased to over 90 percent (Figure 3). Individuals with higher earned benefits experience a larger erosion of the real value of their benefits.

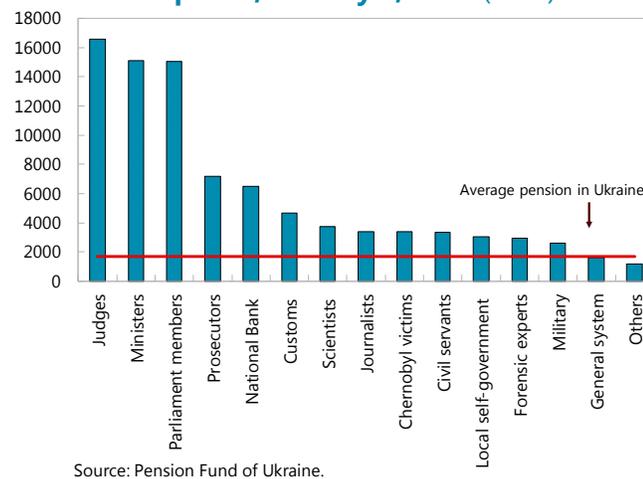
Figure 3. Distribution of Pensioners, Cumulative



Sources: Ukrainian authorities; and IMF staff calculations.

10. Retirees in about a dozen occupations enjoy a privileged treatment. These retirees receive special pensions, the size of which could exceed the average regular pension by a factor of 1½–10. These larger benefits do not necessarily reflect the relative contributions, but rather their privileged status (Figure 4).⁸ Special pension recipients, about 850,000 in total, include former civil servants, ministers, judges, members of parliament, prosecutors, scientists and others and are regulated by pension-related norms in about a dozen special laws. Since 2015, no new special pensions have been granted following legislation that stated that unless a new pension law is adopted all pension-related provisions in special occupational laws became void. More recently, however, there have been renewed attempts to restore some of the special pension provisions. For example, the law on judiciary adopted in June 2016 provides a very generous pension upon retirement, relative to the general regime.⁹ Therefore, it is important to consolidate all pension legislation currently spread across various laws, and to ensure a single principle for providing pensions, without privileges for any occupation (with the exception of the military).

Figure 4. Average Pension of Special Occupational Pension Recipients, January 1, 2016 (UAH)



Very early retirement ages by international standards

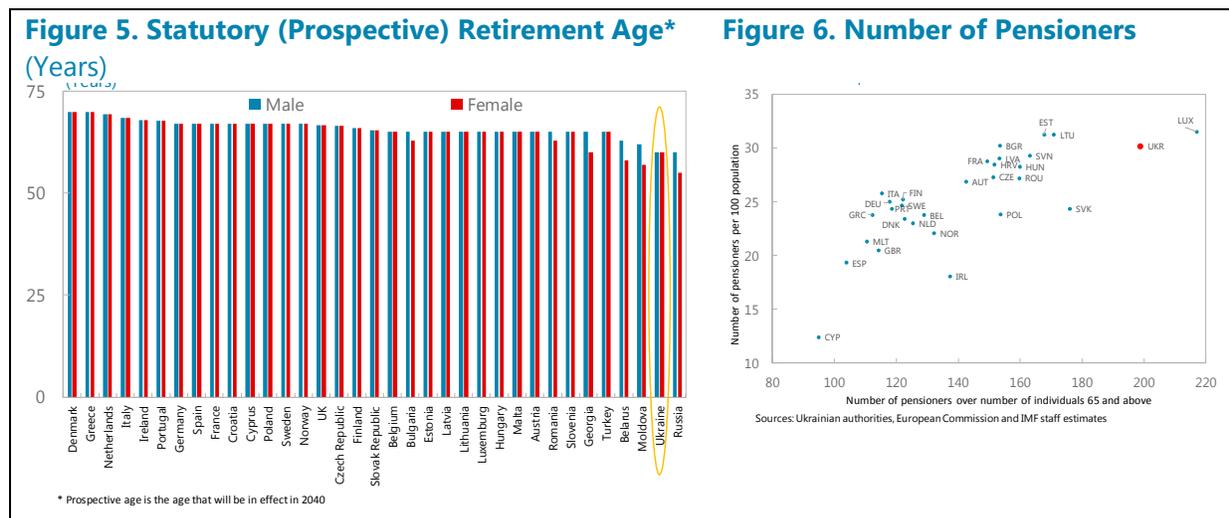
11. A large number of pensioners is the main reason behind relatively high pension expenditure. In addition to various early retirement options, general statutory retirement ages, which are set at 60 years for men and 58 years for women are among the lowest in Europe (Figure 5). The statutory retirement age is set to gradually increase further in many European countries, while in Ukraine the retirement age for women will only rise until it reaches 60 in 2021. As a result, the number of pensioners in Ukraine is large, particularly when compared with the size of the total population and the population above 65 years (Figure 6).¹⁰ Of the total number of 12.3 million pensioners in the beginning of 2016, about ¾ were old-age pensioners, about

⁸ Preferential treatment of special pension recipients results from the fact that benefits are calculated under a different formula. Specifically, benefits under special pensions are assessed according to the last or best few years of new retirees' careers, while under the general regime they are based on full-career average earnings.

⁹ According to the law, base salaries of judges are set in multiples of 30 to 50 of the minimum wage, depending on the level of the court. In addition, the total remuneration of judges includes various supplements. The amount of pension benefit is calculated as 50 percent of the total remuneration plus 2 percent for each year of service in excess of 20 years.

¹⁰ According to anecdotal evidence, the large number of pensioners could also be related to poor administration as, for example, weak flow of information regarding a pensioner's death reaches the PFU with delays, causing pension payments to continue.

10 percent were disability pensioners, and the rest were pensioners receiving survivor and early retirement pensions.



12. Widespread occupational early retirement options also contribute to the large size of the pensioner population. Reflecting in part the Soviet legacy, employees of various occupations are eligible to retire on more preferential terms than those retiring under the general regime. During the last couple of years, the government has taken some steps to tighten early retirement options, but there is room to further limit the inflow of early retirees, while improving the equity of the pension system. Individuals who earn the right to an early retirement can be grouped into two broad categories: employees in hazardous and in privileged occupations:

- *Employees in hazardous occupations.* Occupations considered hazardous are established by Cabinet resolution, and are commonly known as lists 1 and 2.¹¹ About 1.3 million people were early retirees under the two lists on January 1, 2016. The minimum prospective retirement age is set at 50 years and 55 years for those working in jobs under the lists 1 and 2, respectively.¹² In addition, these individuals need to satisfy the overall and the hazardous occupation-specific length-of-service criteria (Table 1). For example, men employed in occupations on the list 1 need at least 25 years of service of which at least 10 years in a hazardous occupation. The government made two important changes to the early retirement system for employees in hazardous jobs. First, in March 2015 the retirement age for women in occupations from both lists has begun increasing gradually by five years and the length-of-service requirement for men and women was also increased by 5 years. Second, the two lists, which were significantly outdated, have been revised in June 2016 in order to better align them with the modern job nomenclature and to remove those occupations that can no longer be considered as hazardous. This change

¹¹ The regulatory base for lists 1 and 2 include the law on pensions (#1788), cabinet resolutions on approval of the lists of industries, occupations, positions and indicators giving right to retirement on preferential terms (#36) and on approval of procedure for workplace certification in terms of safety conditions (#442).

¹² For women, the minimum retirement age of 50 years will be achieved by 2024.

should reduce the number of people eligible for early retirement on lists 1 and 2 by about 40 percent over time.

- *Employees in privileged occupations.* Individuals in various early occupational groups, which include teachers, doctors, artists, public transportation and tractor drivers and a few others, are eligible to retire early assuming they meet either only the minimum years of service or the minimum years of service and the retirement age criteria, which are established separately for each occupation (Table 2). Flight attendants and aviation dispatchers are allowed to retire at the age of 50, while for others, where the retirement age is applicable, the minimum is 55 years. However, the largest group of all are employees in healthcare and education, accounting for about 1/3rd of the annual inflow of early retirees. In order to take advantage of the early retirement option, at present teachers and doctors need to have at least 26 years of service and be 50.5 years of age.¹³ The law also requires resignation from their current job in order to qualify for early retirement.

Table 2. Early Retirement Eligibility Criteria

	Men		Women	
	Retirement age	Length of Service *	Retirement age	Length of Service *
<i>Those eligible to retire early based on the age and length of service</i>				
List 1 occupations 1/	50	25 (10)	50	20 (7.5)
List 2 occupations 2/	55	30 (12.5)	55	25 (10)
Tractor drivers 1/	55	30 (20)	55	25 (15)
Public transportation drivers 1/	55	30 (12.5)	55	25 (10)
Women employed in the textile industry 2/			55	20
Milkmaids 2/			55	20
Tobacco growing women 2/			55	20
Women employed in agriculture and				
<i>Those eligible to retire based on the length of service</i>				
Employees of education 3/	55	30	55	30
Employees of healthcare 3/	55	30	55	30
Employees of social security services 3/	55	30	55	30
Athletes		25		25
Artists 5/	55	20-35	55	20-35
Pilots and test-pilots 3/	50	30	50	25
Aviation dispatchers 4/	50	25 (12.5)	50	22.5 (10)
Flight attendants 1/	55	30 (15)	50	25 (10)
Railway workers 1/	55	30 (12.5)	55	25 (10)
Field workers (in geology, hydrology, and other) 1/	55	30 (12.5)	55	25 (10)
Lumberjacks 1/	55	30 (12.5)	55	25 (10)
Docker engineers 1/	55	30 (20)	55	25 (15)
Fishing industry workers 1/	55	30 (12.5)	55	25 (10)
Source: Ukrainian pension legislation.				
* In brackets: the minimum number of years to be spent in the job that entitles to an early retirement.				
1/ The minimum years of service for men and the minimum age requirement for women will become effective from 2024.				
2/ The minimum retirement age will become effective from 2024.				
3/ The minimum years of service will become effective from 2024 and the minimum retirement age from 2026.				
4/ The minimum years of service and the minimum retirement age for women will become effective from 2024.				
5/ The minimum retirement age will be effective from 2026.				

¹³ The minimum years of service and the minimum retirement age will go up to 30 years and 55 years by 2024 and 2026, respectively.

Large structural deficits in the pension fund

13. The current PFU revenues cover only about 2/5th of its total expenditure (Table 3). The revenues consist of social security contributions, of which about 80 percent, by Cabinet resolution, are directed to the PFU and the rest to the other social security funds. Following the 2015 tax reform, the average effective rate of social security contributions of about 40 percent was reduced to a new level of a flat 22 percent from January 1, 2016.¹⁴ As a result, the revenue from social security contributions dropped by nearly 4 percent of GDP in 2016, of which the PFU lost about 3½ percent of GDP. This revenue shortfall is fully financed by transfers from the state budget.

	2012	2013	2014	2015	2016
	Act.	Act.	Act.	Act.	Prel.
(in UAH billions)					
Revenue	158.0	166.9	165.9	169.9	112.1
Expenditure	233.7	250.4	243.5	265.7	254.8
Overall balance	-75.7	-83.5	-77.6	-95.8	-142.7
Financing	75.7	83.5	77.6	95.8	142.7
State budget transfer	64.5	83.2	75.8	94.8	143.8
Treasury loan	11.9	0.3	1.0	0.0	0.0
Other	-0.7	0.0	0.8	1.0	-1.1
(in percent of GDP)					
Revenue	11.2	11.4	10.5	8.6	4.9
Expenditure	16.6	17.1	15.3	13.4	11.2
Overall balance	-5.4	-5.7	-4.9	-4.8	-6.3
Financing	5.4	5.7	4.9	4.8	6.3
State budget transfer	4.6	5.7	4.8	4.8	6.3
Treasury loan	0.8	0.0	0.1	0.0	0.0
Other	0.0	0.0	0.1	0.1	0.0
Memorandum item:					
GDP (UAH billions)	1,405	1,465	1,587	1,979	2,280

Sources: Ukrainian authorities; and IMF staff estimates.

A weak link between benefits and contributions

14. The government provides universal support to those pensioners whose earned pension is below the subsistence minimum. Since many people report low incomes, they are all likely to be eligible for an earned pension below the minimum statutory subsistence level established every year by the law on state budget. A minimum contribution period of 35 and 30 years for men and women, respectively, guarantees that a person will receive at least the minimum pension. This implies a large number of pensioners receive a top-up in addition to their calculated earned pension benefits. If the

¹⁴ Prior to the reform, there were 67 different social security contribution rates in the range of 36.76–49.70 percent depending on the degree of hazardousness of a job. The effective rate was about 40 percent, of which 3.5 percent paid by the employee and the rest by the employer. Following the reform, a single rate of 22 percent payable only by the employer replaced the multiple rates.

contributory period is less than 35/30 years, but more than 15 years, a person can receive a top-up if the calculated earned pension benefit falls below the minimum pension, but the top-up will be reduced proportional to the shortfall from the minimum contributory period. These top-ups are not means tested and effectively reduce incentives to contribute to the pension system. Currently, there are more than seven million pensioners, out of the total of 12 million pensioners, who receive the minimum pension.

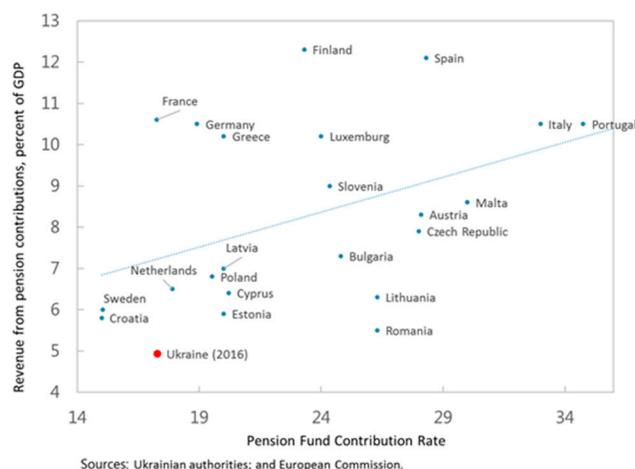
15. The constitution of Ukraine guarantees the right for all pensioners to receive a pension at the level of the subsistence minimum. The minimum subsistence level is defined as the combined value of all goods and services that are necessary for normal functioning of a human body and for satisfying an individual's cultural and social needs. The basket includes food items, and basic nonfood items and services. The minimum subsistence is determined separately for kids up to age 6 and between 6 and 18, for able-bodied individuals, and for the elderly. Minimum subsistence had been used, among other things, to determine minimum wages, minimum pensions, and various social assistance benefits. However, starting from January 1, 2017 the minimum wage will no longer equal the subsistence minimum, while the amount of minimum pension will still be determined by the size of subsistence minimum for the elderly. This will likely increase pressure to de-link the minimum pension from the subsistence level as well.

Low social security contribution revenue and taxes

16. A low contribution rate, a small number of contributors and a significant underreporting of wages are key reasons behind insufficient PFU revenues.

- *Low pension contributions.* Following the near halving of social security contributions from January 2016, the pension contribution rate has turned from one of the highest to one of the lowest in Europe (Figure 7). The key motivation behind cutting social security contributions was to reduce informality, as the high social security contribution rate was believed to encourage tax evasion. Moreover, it imposed a proportionally high burden on lower income earners as the contributions are capped. However, informality is a multivariate problem and there is little evidence that just lowering the contributions rate alone could discourage participation in the underground economy. Based on data for 2016, there appears to be only a very modest effect on improved payment compliance from lower social security contributions (Figure 8). Therefore, the revenue administration needs to increase its efforts in dealing with low compliance. Apart from lower general contribution rate, sole proprietors registered under the simplified regime for small taxpayers enjoy a privileged treatment as they pay 22 percent of one minimum wage, irrespective of the income earned, resulting in lower effective contribution rate.¹⁵

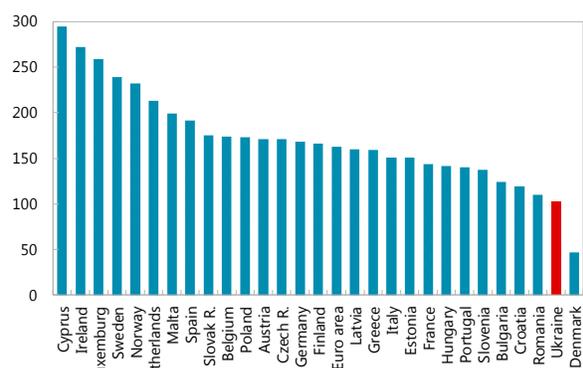
¹⁵ This regime creates an opportunity for arbitrage as it encourages hiring workers as sole proprietors.

Figure 7. Pension Fund Contributions, 2013**Figure 8. Contributions to Year-on-Year SSC Revenue Growth (UAH billion)**

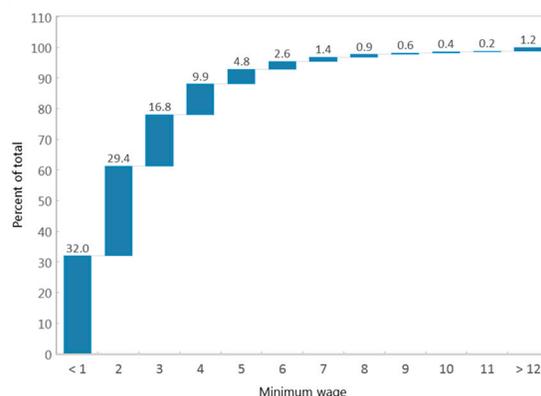
- *Low number of contributors.* Ukraine's pension system provides little incentive to contribute, leading to one of the lowest pension support ratios in Europe, with a ratio of beneficiaries to contributors of 1:1 (Figure 9). This, in part, is explained by the Soviet legacy as prior to independence almost all workers were employed and therefore have managed to accumulate sufficient number of service years to make them eligible for pensions. At the same time, Ukraine has a very small share of contributors in the working-age population. Of about 18 million people in the labor force in 2015 of which 16.4 million are estimated to be employed, only 12.3 million were paying social security contributions. The key reason behind the low number of contributors is a high degree of unofficial employment.¹⁶
- *Under-reporting of wages.* The informality affects not only employment, but also the size of reported salaries. Anecdotal evidence suggests the prevalence of salary payments in envelopes, which is corroborated by the reported data pointing to high concentration of salaries below two minimum wages. The share of employees reporting salaries below 1 and 2 minimum wages was about 30 percent and 60 percent in 2013, respectively (Figure 10). The doubling of the minimum wage effective January 1, 2017 was motivated by the need to legalize some of these informal salaries. Large underreporting of wages is also a symptom of the weak incentives to contribute.¹⁷

¹⁶ In small part, this is also explained by legal exemption from mandatory contribution payments of certain groups.

¹⁷ For example, for someone with sufficient years of service to qualify for minimum pension, the marginal benefit of reporting salaries above one minimum wage but less than two minimum wages is nearly zero because of the existing policy that requires the government to top up the earned pension to the minimum subsistence level.

Figure 9. Support Ratio, 2013

Note: Support ratio is equal to contributors / 100 pensioners, public pensions.
Sources: Ukrainian authorities; and European Commission.

Figure 10. Distribution of Employees by Income, 2013

Sources: Ukrainian authorities and IMF staff estimates.

17. Only about 0.1 percent of all pensioners are currently subject to income taxation.

According to the common practice, pension benefits are considered deferred income and are taxed at least once, either when contributions are paid or when the benefits are collected. In unfunded systems, contributions are typically exempt, while benefits are fully taxed. Most countries follow this model. In Ukraine, social security contributions are tax exempt. From January 1, 2015 the government lowered the threshold above which pension income is taxed from 10 to 3 times the minimum subsistence level established for retirees. While it still left the majority of pensioners exempt from taxation, it was a step in the right direction. However, in June 2016 parliament amended the tax code and reversed the pension taxation by reinstating the threshold at 10 times the minimum subsistence level.

Special supplements

18. Retirees possessing special status related to their civil contribution to the state or those who have endured sufferings are eligible to receive supplements to their regular pensions. These supplements are established by about half a dozen laws, and the largest groups that they are assigned to include war veterans (about 1.1 million individuals as of January 1, 2015), and the so-called children of war (about 3.3 million individuals).¹⁸ Other groups include veterans of labor, blood donors, victims of Nazi persecution, Chernobyl catastrophe victims, and people residing in mountainous locations. These supplements are established in proportion to the minimum pension or in hryvnia. For example, veterans of war receive a supplement between 25 and 50 percent of the minimum pension. These pension supplements are unrelated to contribution performance and are provided universally to all recipients who meet the eligibility criteria set out by respective laws that define the status and the related benefits. All these supplements in essence function as poorly targeted welfare transfers. Instead, if categorical pension supplements would be means tested, this would make the system more equitable and free up resources for more efficient poverty alleviation.

¹⁸ Children of war are defined as individuals who by the time the World War II ended (September 2, 1945), were 18 years of age or younger.

C. Additional Pressures from Demographic Changes

19. Unlike elsewhere in Europe, where the population decline is expected to start from the 2020s, Ukraine is already seeing a decline in its population (Figure 11). After peaking in the early nineties, the population of Ukraine has been steadily shrinking. A key factor has been the sharp drop in fertility rates, which at an average of 1.2 children per woman reached extremely low levels during 2000–05. Although fertility rates have recovered since then, the current average fertility rate of 1½ children per woman is well below the world average of 2½. Meanwhile, life expectancy at birth has been improving, but it still remains quite low (the second lowest in Europe). As a result, the old-age dependency ratio has doubled between 1960 and 2015.

20. Ukraine’s population will continue shrinking and aging further, resulting in significant changes in its demographic structure in the coming decades. Under most scenarios, Ukraine’s population will shrink and age rapidly. If both fertility and mortality rates would remain unchanged from their current levels, the population would decline further by about 30 percent by 2050. However, the UN’s medium-fertility scenario assumes a continued gradual improvement in the fertility rates over the coming decades, limiting the decline in population to about 20 percent by 2050. At the same time, the population will age rapidly and the distribution of the population by age groups will become much more even. The old-age dependency ratio is expected to nearly double by 2050, which is broadly in line with other countries in the region, but much above the rest of the world.

21. Pension spending as a percent of GDP can be projected using an identity that decomposes public pension expenditures into four key elements (following Clements and others, 2014).¹⁹ These components are: (i) the replacement rate (RR), which is calculated as the average pension over average output per worker; (ii) the coverage ratio (CR), which measures the share of pensioners in the total population above the retirement age (above 65); (iii) the old age dependency ratio (ODR), which is measured as the ratio of population above 65 to the working age population (15–64); and (iv) the inverse of labor participation (LP), defined here as the share of workers in the total working age population.

$$PE = RR \times CR \times ODR \times \frac{1}{LP} \quad (1)$$

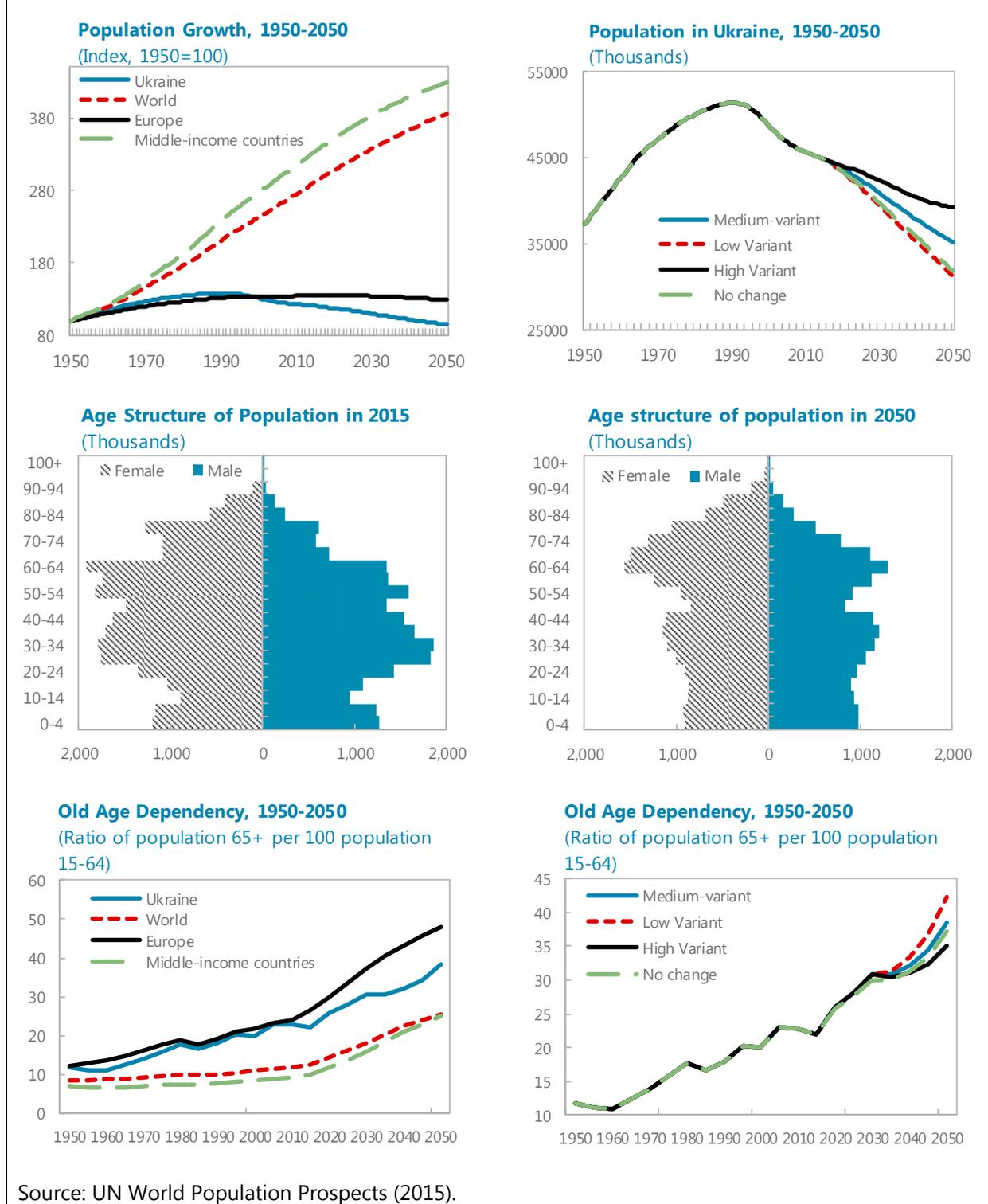
Where,

$$PE = \frac{\text{Pension expenditure}}{GDP}; RR = \frac{PE/\text{pensioners}}{GDP/\text{workers}}; CR = \frac{\text{Pensioners}}{\text{Popul 65 +}}; ODR = \frac{\text{Popul 65 +}}{\text{Popul 15 - 64}}$$

$$LP = \frac{\text{Workers}}{\text{Popul 15-64}}$$

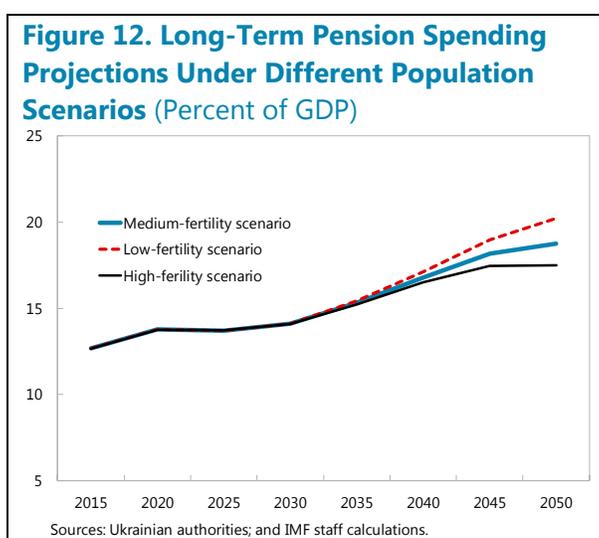
¹⁹ For more detailed information about the methodology, see Amaglobeli and Shi (2016).

Figure 11. Demographic Trends



22. Under all demographic scenarios, long-term pension spending in percent of GDP is expected to rise significantly (Figure 12). In the long term, pension spending is expected to increase by about 6 percent of GDP under the UN’s central, medium-fertility scenario. However, it

could be significantly lower or higher should the population projections follow high-fertility or low-fertility scenarios, respectively. These projections are entirely driven by demographics and assume that the existing policies remain unchanged. They also abstract from potential behavioral responses, which could result, for example, from the ongoing increase in the retirement age for women. The replacement rate is assumed to remain constant at the level of 2015.²⁰ This means higher inflation indexation than what is implied under the current rules, and that there are offsetting increases in average pensions as a result of natural attrition of pensioners receiving categorical supplements. The aggregate coverage ratio is expected to follow the respective population scenario and assumes that age- and gender-specific pension system participation rates are unchanged from their 2015 levels.²¹ The labor participation rate will be largely determined by the population dynamics and assumes that the age and gender-specific labor force participation and employment rates will be the average observed during the last five years (2010–15). As the old-age dependency ratio increases rapidly following the current population projections, it is a key factor driving the pension spending up.



D. Reform Options

The dire state of Ukraine's pension system requires a comprehensive reform effort. No single measure or marginal changes will help close the large and growing deficit of the pension system, while being able to provide adequate pensions. Therefore, the reform should combine various measures, focusing on a gradual reduction in pension expenditure to more sustainable levels mainly by limiting the inflow of new retirees. Given that the average pension is low, further reducing its level is not a viable option.

²⁰ The replacement rate used for calculations is 39 percent, which is calculated as the ratio of average pension to average economy-wide wage in 2015.

²¹ This assumption also implies that there is no effect from the decline in the number of pensioners resulting from the gradual increase in the number of individuals without sufficient number of contribution histories.

23. Since little can be done at the policy level to alter the prevailing path for demographics, Ukraine's main option is to reform its pension system. Two main alternatives could be considered in this respect: reducing the level of pension benefits and reducing its coverage. In addition, the authorities could consider increasing pension taxation for upper income groups and raising social security contributions. However, given the government's continued policy inclination toward reducing the overall tax burden on the economy, the options to increase taxes would be considered much less favorably. On social security contributions, there is significant room to improve payment compliance by addressing the problem of underreporting of wages and by reforming the simplified tax regime.

Reducing replacement rate

24. While reducing the replacement rate is an option, this policy risks a further increase in old-age poverty levels. As discussed above, the current pension system could hardly be considered generous, and reducing the replacement rate would entail further reductions in old-age incomes. On current policies, however, the decline in the average replacement rate would become unavoidable. First, the inflation-indexation rules imply that only a portion of the pension benefit will continue to be indexed, resulting in further benefit compression. Second, with the continuing decline of the share of pensioners that receive various categorical supplements, the average pension will decline faster than what is implied by the current indexation rule. Third, discontinuation of assignment of special pensions to new retirees from June 2015 and assuming no further proliferation of new special regimes will also contribute to the decline in the average benefit size. Hence, while cuts in the replacement rate could help generate fiscal savings, this option might not be socially sustainable. To avoid the natural decline in the current replacement rates, the government would need to modify the current inflation indexation rules. For illustrative purposes, a replacement rate that would stabilize pension fund spending can be calculated. Maintaining the pension fund spending at its current level without altering other policies under the current demographic trends, would require a drop in the replacement rate to around 28 percent in the long term.

Reducing the inflow of new retirees

25. To limit the inflow of new retirees into the pension system, reforms will need to be geared toward increasing the effective retirement age for men and women:

- **Raising the retirement age is the most effective option to limit the inflow of new retirees into the pension system** (see for example Swiecicki and others, 2010). Given that in terms of statutory retirement ages Ukraine is an outlier in the region, increasing these would be an obvious policy choice. Gradually raising the retirement age would help to better align retirement ages with the improvements in life expectancy and help improve the support ratio by increasing the number of contributors and reducing the number of retirees. It would help to achieve higher labor force participation of older age cohorts, counteracting the demographically-driven contraction of the labor force, and hence avoid a decline in potential growth. Higher retirement ages would not only reduce the number of beneficiaries, but would also contribute to higher

replacement rates for people who are extending their working career. If the statutory retirement age would be gradually raised to 65, which could be achieved by 2026 for men and 2031 for women (Figure 13), while raising other relevant retirement ages consistent with the increase in the general retirement age, this could help generate savings of about 3½ percent of GDP by 2050 relative to the baseline projections. Increasing the retirement age gradually to 63 could generate savings of about 2 percent of GDP by 2050 (Figure 14).

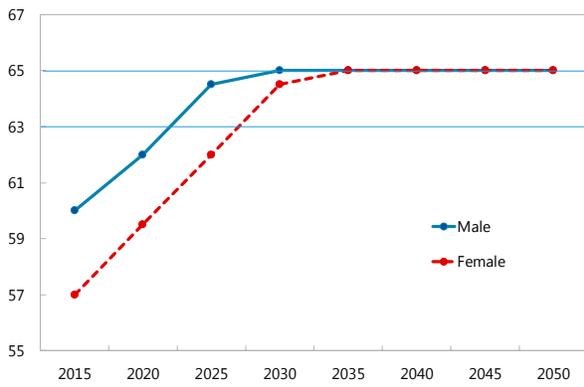
- **Further tightening early retirement options could complement efforts to reduce the inflow of new pensioners.** As discussed above, various early retirement options contribute to the large number of pensioners. Continued efforts to tighten early retirement eligibility would be effective in providing additional fiscal savings. This could be achieved primarily by bringing health and education workers under the general retirement regime. In addition, the pension reform for hazardous occupations could aim at introducing a surcharge on social security contributions for these occupations, payable by employers, and accumulating them on personified accounts that will be used as bridge financing between the early retirement and general retirement.
- **Later retirement can also be achieved by increasing the minimum years of service requirements, and by providing incentives for later retirement and disincentives for early retirement.** Individuals retiring early could be provided with reduced pension benefits (e.g., by not being eligible for a top-up to the minimum pension and by applying lower accrual rates). To encourage later retirement, individuals who meet retirement eligibility criteria but decide to continue working could for example be eligible for a higher marginal accrual rate.

26. Means-testing of categorical pension supplements and ensuring a single principle for providing pensions without privileges for any occupation. Means-testing by using, for example, income and asset criteria, would help make the system more equitable, increase the link between contributions and benefits and free up resources for more efficient poverty alleviation. In addition, the authorities should consolidate all pension legislation spread across various laws, and ensure a single principle for providing pensions without privileges for any occupation.

Additional reform options

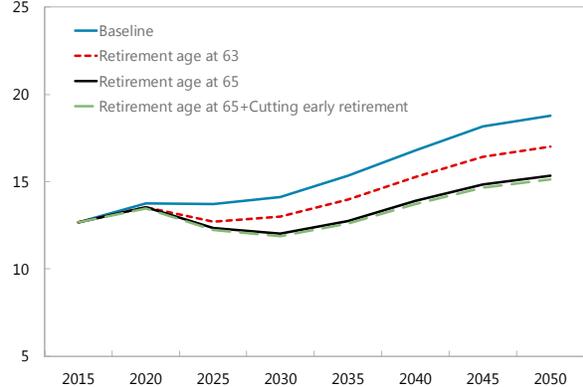
27. Broadening the social security contribution base could boost PFU revenues. Following the sharp reduction in the effective rate, broadening the base would be a natural next step. This would be less difficult to implement, given the implicit social contract with the business community to begin “de-shadowing” wages in return for the reduction in tax burden. The scale of underreporting of wages and employment suggests that there is significant scope to strengthen compliance through improvements in revenue administration. Moreover, increasing the base for taxpayers under the simplified regime, who enjoy preferential treatment and pay social security contributions not proportional to their income but based on the minimum wage, could further aid with expanding the base for social security contributions.

Figure 13. Retirement Age (Years)



Source: IMF staff calculations.

Figure 14. Pension Expenditure Projections Under Different Reform Scenarios (Percent of GDP)



Sources: Ukrainian authorities and IMF staff calculations.

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TRANSITIONING TO INFLATION TARGETING (IT) AND ENHANCING MONETARY POLICY EFFECTIVENESS¹

The National Bank of Ukraine (NBU) moved to a flexible exchange rate regime in 2014 and has recently formally adopted an inflation-targeting framework. While the exchange rate was allowed to float in February 2014, given the heightened geopolitical uncertainty and ongoing crisis, a transition to, rather than the immediate adoption of, inflation-targeting was announced at that time. Meanwhile, NBU independence has been strengthened and the NBU continued to make progress in establishing the key elements of IT, which was formally adopted in December 2016. Below we review this progress as well as the remaining challenges to ensuring an effective IT monetary policy regime.

A. Transitioning to IT

1. Ukraine has been preparing for IT for some time now, even if for many years IT adoption was held back by a fear of floating. IMF technical assistance (TA) assessing the preconditions for IT was first provided in 2004. In 2005–06, with IMF TA, the NBU developed an action plan for the transition to IT.² At the time, staff recommended that a number of steps could be taken to strengthen the preconditions for successful IT, in particular clarifying NBU's price stability mandate, introducing a short-term policy rate for monetary operations, and achieving further financial market development (2006 Article IV, Table 10). The 2008 Article IV reported that the NBU considered itself capable of executing IT,³ but worried about challenges to the effectiveness of monetary policy resulting from the open structure of the economy, low financial market development and extensive administered prices. Thus, there was no timeframe for taking the key policy decision of moving to a more flexible exchange rate. As such, for the 2008 and 2010 programs, transitioning to IT was part of the medium-term objectives, to allow time for improving the conditions for a gradual transition to a flexible exchange rate. In this regard, an important reform during this time was making the price stability mandate the priority objective (with an amendment to the NBU Law as a prior action of the 2010 SBA). However, until 2014 the exchange rate remained effectively pegged to the dollar while macro-financial imbalances worsened.⁴

¹ Prepared by Pamela Madrid (EUR) and Ivan Luís de Oliveira Lima (MCM).

² The NBU's 2005 *Monetary Policy Guidelines* articulated the plan to eventually move to inflation targeting, and in January 2006 an Action Plan was adopted.

³ NBU annual reports for 2005–07 note the ongoing analytical work and training that was conducted in support of transitioning to IT.

⁴ Ex-post evaluations of programs and staff reports (e.g., 2012 Article IV) have noted that periods of more exchange rate flexibility were forced and short lived. For example, AREAERs for Ukraine report a conventional peg (2003–06); managed float (2007); other managed float (2008–10); and stabilized arrangement (2011–12).

2. Since floating the exchange rate in 2014,⁵ macro-financial stability issues delayed initially the adoption of inflation targeting. Under the 2014 SBA program, adoption of IT was envisaged initially for the first half of 2015,⁶ following the completion of technical preparations (MEFP ¶10). These entailed enhancing the independence of the NBU, as well as strengthening the operational framework and decision making. However, the worsening macro-financial situation increased uncertainty and shifted the focus to financial stability objectives (crisis containment and stabilization).⁷ Thus, many of the envisaged precondition measures were delayed, but were part of the 2015 EFF. In particular, central bank independence was strengthened, with an amendment to the NBU Law set as a structural benchmark, while the NBU advanced on other technical prerequisites. However, formal adoption of IT was envisaged to take place only once macro-financial conditions permitted it (see Box 1). In particular, at that time, financial stability and full deregulation of prices were not yet in place, while the high rate of inflation and great uncertainty also made it particularly risky to commit to IT.

Box 1. Typical Preconditions (Pillars) and Prerequisites for Successful IT Adoption

IMF (2006) notes that there are four broad categories that have typically been suggested as preconditions or prerequisites for inflation targeting:

- **Institutional independence of the central bank.** The central bank must have full legal autonomy (with a clear price stability mandate) and be free from fiscal dominance and/or political pressures that could create conflicts with the inflation objective.
- **Well-developed analytical capabilities and infrastructure.** Data requirements for inflation targeting are more demanding than for alternative regimes and the monetary authorities must have a well-developed capacity to forecast inflation and good understanding of the transmission channel.
- **Conducive economic structure.** Inflation targeting requires that prices are fully deregulated, that the economy is not overly sensitive to commodity prices and exchange rates, and that dollarization is minimal.
- **A healthy financial system.** In order to minimize potential conflicts with financial stabilization objectives and guarantee effective monetary policy transmission, the system should be sound and developed.

⁵ In 2014 a flexible exchange rate regime was formalized in NBU regulations and Ukraine has been since then classified as floating in the AREAER, although in the context of foreign exchange transactions restrictions and capital controls.

⁶ The MEFP from the 2014 SBA request noted a medium-term target for inflation of 3–5 percent, consistent with the productivity differential with Ukraine’s trading partners, but that the exact inflation target and range would be specified in the course of introducing IT.

⁷ With intensifying conflict in August 2014, worsening banking crisis, and elections in October 2014, there was substantial FX intervention due to intense pressure on the exchange rate. Given this and macro-financial stability concerns, FX restrictions were tightened in September 2014 and then again in February–March 2015. The NBU also had to provide substantial liquidity assistance to Naftogaz, banks, and DGF during 2014 and 2015.

Box 1. Typical Preconditions (Pillars) and Prerequisites for Successful IT Adoption (concluded)

It is also noted that many of these conditions are essential for the success of virtually any systematic monetary policy framework. The elements that are more important for IT than for other regimes include the analytical/data infrastructure, given the information-intensive nature of inflation targeting. Nonetheless, weaker initial conditions appear to be associated with more frequent misses of inflation target ranges, mainly during an initial phase of disinflation.

The finding that macroeconomic performance improves under inflation targeting even with relatively weak initial technical conditions (IMF, 2005), however, also points to the importance of other factors—particularly **expectations and the credibility of the inflation targeting commitment**. In this regard, the degree of political support for the framework may be a critical element, as may be the adoption of inflation targeting as part of a broader package of economic reforms that underscores the commitment to change (Sherwin, 2000).

While not a prerequisite, it is recommended that **inflation be in the single-digits** and the **central bank acquire some anti-inflation credibility** before “hardening” their targets for inflation (Mishkin and Savastano, 2001). This reflects the tendency for more misses of inflation targets in the dis-inflation stage and also that achieving a target may be more costly (in terms of higher interest rates and lower output) if credibility is still lagging (Masson et al, 1997; Alich, 2009).

3. The current NBU management showed strong commitment to implementing an inflation-targeting monetary policy framework from early on. Since 2014, there have been continued improvements in processes, communications, and the operational framework for monetary policy (Appendix, Box 1) to put in place or support the key elements of IT (Box 2). In particular, the NBU has strengthened its decision-making processes and communication, including by: establishing a monetary policy committee (MPC) and a structured forecasting and policy analysis (FPAS) cycle; regular press conferences and press releases on monetary policy; and quarterly inflation reports with inflation forecasts. Further, in August 2015, as economic and financial market conditions were starting to improve, the NBU Board proposed new monetary policy guidelines for 2016–20 that included targets for a declining path of inflation (from 12 percent in 2016 to 5 percent from 2019 onwards) and a commitment to a flexible exchange rate. In March 2016, the NBU published its roadmap for IT implementation,⁸ which elaborated on improvements on remaining technical prerequisites and key elements of an IT framework. In October 2016, the NBU published its foreign exchange intervention (FXI) strategy, noting that FXI was not about targeting a level or path of the exchange rate, but only to build reserves, smooth excess volatility, or support the effectiveness of the policy rate.

⁸ The NBU’s IT Roadmap covers five areas: institutional capacity; monetary policy objectives and instruments; monetary policy decision-making processes; communications and transparency; and financial sector development.

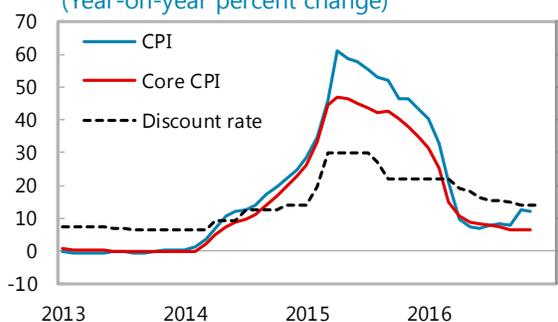
Box 2. The Five Key Elements of IT Regimes ^{1/}

1. Price stability as the explicit, primary goal of monetary policy;
2. The public announcement of quantitative inflation targets;
3. An information-inclusive strategy for setting policy instruments (i.e., not based on *only* monetary aggregates or *only* the exchange rate);
4. Transparent monetary policy strategy that ascribes a central role to communicating to the public on the plans, objectives and rationale for policy decisions.
5. Enhanced accountability mechanisms.

^{1/} Centre for Central Banking Studies, Handbook—No. 29, *State of the art of inflation targeting*—2012.

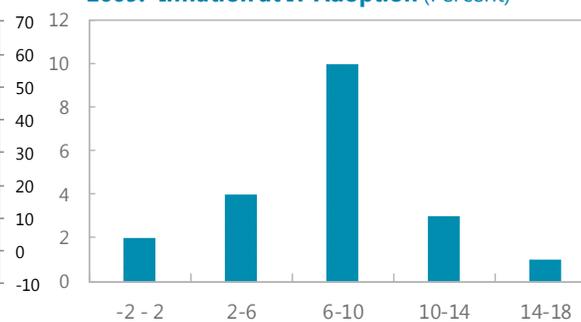
4. NBU’s strengthened monetary policy framework has already delivery improvements in inflation outcomes. Following the large depreciation in early 2015, the NBU raised interest rates sharply and kept them high on a real, forward-looking basis. It started to ease monetary policy only once inflation fell below 20 percent and forecast inflation was in line with the targets announced in August 2015. Thus, after headline and core inflation peaked around 60 and 40 percent in 2015, they fell to 8 and 6 percent by September 2016. This is in the midrange of inflation of other emerging market IT adopters at the time of adopting full-fledged inflation. While headline inflation has since then increased to around 12 percent—due largely to the adjustment of regulated energy prices to market levels—core inflation has remained around 6 percent.⁹

Inflation and the NBU Policy Rate
(Year-on-year percent change)



Source: NBU and IMF staff calculations.

Emerging Market IT Adopters 1995-2009: Inflation at IT Adoption (Percent)

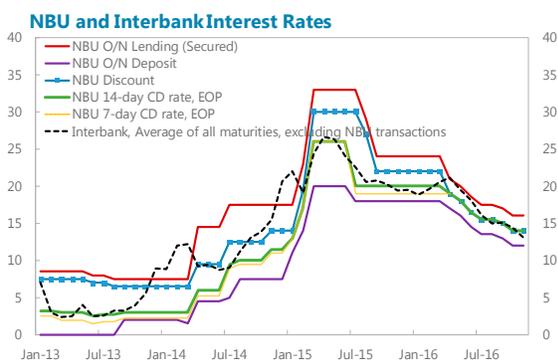


Sources: CCBS (2012) and IMF staff calculations.

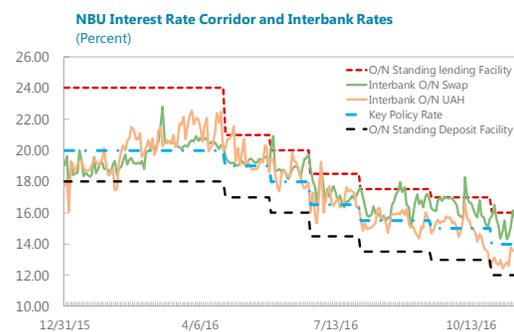
5. With the NBU Council’s approval of the new monetary policy guidelines, the NBU formally adopted the IT regime in December 2016. The five essential elements of IT (Box 2), i.e., those that distinguish an IT framework from other monetary policy frameworks, are in place. The NBU is nonetheless continuing to make progress on technical aspects to strengthen and support the IT framework.

⁹ Core inflation is sometimes used as an operational guide to policy as it tends to be a better predictor of future inflation—see Freedman and Laxton (2009) and Hammond (2012).

6. The NBU has also made progress with improving operational aspects to support the IT regime. In particular, in line with past IMF recommendations (See Appendix I, Box 2), the NBU in February–March 2016 streamlined its operating framework, strengthening the role of the policy rate and narrowing the interest rate corridor. However, the volatility of short-term interest rates is still relatively high and the interbank market remains shallow and concentrated on short maturities.¹⁰ To further spur interbank activity and strengthen market interest rate formation, the NBU could move to more active liquidity management as recommended by IMF TA.



Sources: National Bank of Ukraine and IMF staff calculations.



Sources: National Bank of Ukraine and IMF staff calculations.

7. The NBU is working to further enhance analytical support and communication on inflation-targeting. Further improvements and enhancements are envisaged to NBU's quarterly projection model (QPM).¹¹ The NBU in its IT Roadmap also envisages developing a DSGE model and extending its short-term forecasting toolkit. Recent IMF TA recommended analysis of credibility effects and monetary-fiscal policy interactions in order to recalibrate the QPM to deal with future policy issues; and to evaluate the forecasting bias of some of the short-term econometric models, replacing these with more advanced VAR methods. Further, as per its IT Roadmap, the NBU is also working on a series of technical background documents on the IT framework—such as interpretation of the inflation objective, the equilibrium real interest rate, and reaction functions to shocks; non-technical versions of the documents will be published to improve the public's understanding of IT and the NBU's monetary policy framework. As noted by IMF TA, an important aspect is to further clarify the short-run trade-offs between achieving inflation targets and output variability as well as the policy horizon.¹²

8. However, cooperation and effective support from the government for IT appear to be somewhat lagging. The NBU is free to set its price stability objective independently of the government. However, the political support for IT—a possibly critical element (Masson et al, 1997; Sherwin, 2000) in making IT a credible regime—appears shallow and narrow. An example is the

¹⁰ The UAH O/N swap has in 2016 become the dominant form of interbank lending, overtaking ordinary secured and unsecured interbank transactions (lending and deposits) in UAH.

¹¹ The quarterly projection model is based on a new Keynesian gap model (see Visnyk of September 2015).

¹² The NBU recently published a presentation on the modeled impact of a 1 pp change in either the interest rate on the inflation target on output, the exchange rate and inflation that is very useful in this regard:

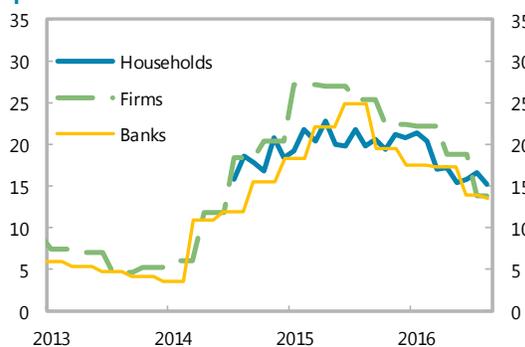
<https://bank.gov.ua/doccatalog/document?id=40253886>.

recent legislative efforts in the parliament to reduce NBU independence and return to a fixed exchange rate. Also, the recent doubling of the minimum wage does not appear to have been well coordinated with limited ex-ante analysis of its impact on the economy before it was announced. Finally, limited cooperation between the NBU and the Ministry of Finance's Treasury Department on sharing timely projections of sufficient quality hampers NBU's liquidity forecasting, which in turn could hamper a move to more active liquidity management that would further enhance the transmission mechanism of changes in the policy rate (see below).

9. Overall, despite good initial success in disinflation, a limited track record and uncertainty on achieving price stability appear reflected in still high inflation expectations.

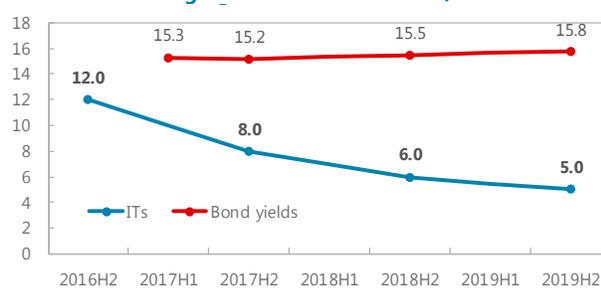
Although inflation expectations of economic agents have declined, they still remain above this year's target. Similar inflation expectations also appear imbedded in the yields on government securities (although this should be interpreted with caution as the market is quite thin). The still elevated inflation expectations, despite inflation within the NBU's 2016 inflation target range, may reflect NBU's still limited track record, as well as uncertainties about credibility of the regime and the transmission mechanism, reflecting weaknesses in initial conditions, discussed further below.

Expected Inflation 12-Months Ahead



Source: National Bank of Ukraine; and staff calculations.

NBU Inflation Targets and the Yield Curve 1/



1/ Yields on primary issuance in 2016 through Oct.

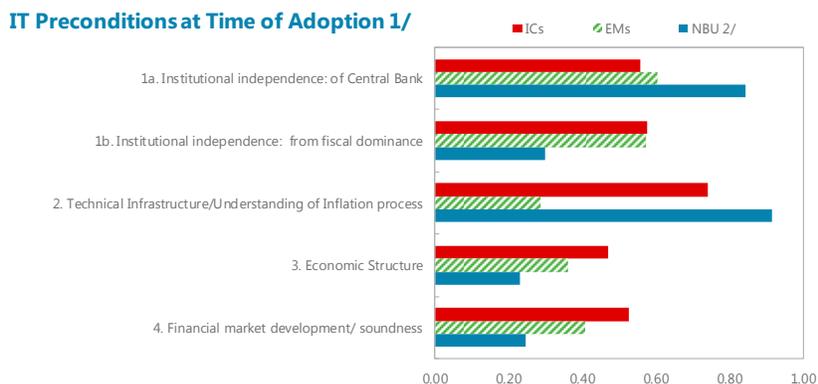
Source: NBU and IMF staff calculations.

B. Challenges and Recommendations for Monetary Policy Effectiveness

10. While some conditions for IT appear in line with or ahead of other emerging-market (EM) IT adopters, weaknesses in other areas point to challenges in anchoring expectations.

The NBU's *de jure* independence and analytical/data infrastructure appear ahead of other EM IT adopters (see figure below and Appendix II, Table 1). In addition, the pass-through from exchange rate changes seems to have fallen and exchange rate flexibility is close to the average of other EM IT adopters. However, Ukraine still has in place administrative restrictions and capital controls that need to be gradually and carefully liberalized. Further, Ukraine's economic structure, including high dollarization, make the system potentially more vulnerable and thus raise concerns that exchange rate stability or financial stability objectives may at some points take precedence over the price stability objective (Mishkin and Savastano, 2001). Also, low levels of financial development, high levels of non-performing loans (NPLs), and ongoing bank recapitalization/restructuring raise concerns about the transmission mechanism and thus the ability to deliver on the price stability objective. Further, risks of fiscal dominance or pressure on a central bank to take actions that are not

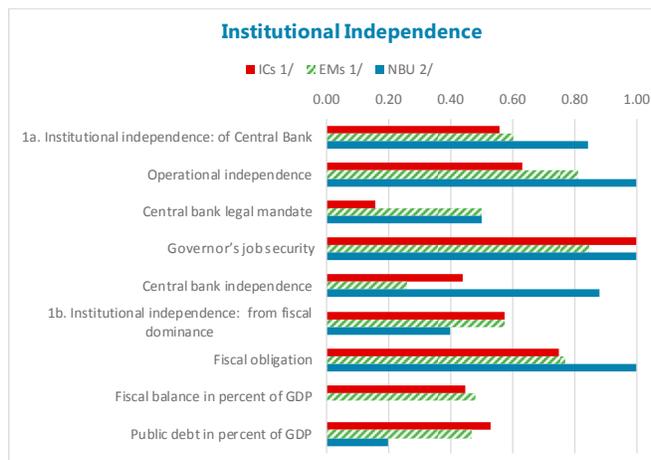
in line with the inflation objective appear high. While it is not necessary to strictly meet all the conditions to adopt IT, these weaknesses may make implementing IT more challenging. On the other hand, in some countries it appears that these conditions have improved more under IT than under other monetary regimes (IMF, 2005).¹³ These issues, which can be grouped by their impact on credibility and transmission mechanisms, are discussed further below.



Sources: IMF (2006); National Bank of Ukraine; and staff calculations.
 1/ Scores for industrial countries (ICs) and emerging markets (EMs) inflation targeting (IT) central banks as reported in IMF (2006), Table II.4. Best practice is rated 1. Overall precondition score is simple average of indicators if more than one indicator given. The first precondition on institutional independence has been divided between central bank independence and independence from fiscal dominance.
 2/ Based on NBU's recent self-assessment (most as of March 2016 Roadmap, with technical/data updates) of questions in the survey used for IMF (2006).

Credibility of IT regime

11. NBU independence has been strengthened, although some governance aspects still fall short of best practices. The NBU scores relatively high on a number of indicators of central bank *de jure* independence, in particular with the independence of the governor, who is also appointed based on the double veto principle.¹⁴ The NBU also sees itself as having strong operational independence (see chart) because it has instrument independence. However, the constitution mandates that the NBU Council approve the monetary policy



Sources: IMF (2006); National Bank of Ukraine; and staff calculations.
 1/ Scores for indicators for industrial countries (ICs) and emerging markets (EMs) inflation targeting (IT) central banks as reported in IMF (2006), table II.4. Best practice is rated 1 and 0. Overall precondition score is simple average of indicators if more than one indicator given.
 2/ Based on NBU's recent self-assessment (most as of March 2016 Roadmap, with technical/data updates) of questions in the survey used for IMF (2006).

¹³ IMF (2006) notes that it is difficult to rule out categorically that the observed benefits of inflation targeting arose from a broader shift in preferences to lower inflation and macroeconomic stability, rather than from the adoption of inflation targeting *per se*. Indeed, recent work on IT and fiscal rules (Combes et al, 2014) give support to the view that prudent fiscal policy is necessary for the success of IT (Mishkin and Savostano, 2001).

¹⁴ This balances the power of the president and the parliament and may make an appointee more neutral. However, this does not necessarily insulate the governor from political instability. For example, while the current governor has

(continued)

guidelines and exercise control over monetary policy implementation.¹⁵ Meanwhile, the council is not appointed by the double veto process possibly making members more beholden to particular political interests. The 2015 amendments to the NBU Law tried to clarify the council's oversight role, with the council making (non-binding) recommendations to the board on monetary policy implementation. However, this still leaves the council with a strong role in setting the overall monetary policy framework, including approving key IT parameters and principles.

12. Further, while *de jure* deficit financing is prohibited, the government may nonetheless try to pressure the NBU on monetary policy or take other decisions that do not support IT. *De jure* the NBU is prohibited from financing the deficit,¹⁶ and amendments to the law in 2015 eliminated the ability of the government to demand NBU profit distribution greater than what is provided for by the NBU Law.¹⁷ This gives the NBU more control over its balance sheet and the money supply. However, while the fiscal deficit (one proxy for the risk of fiscal dominance) has been substantially reduced in the last few years, public debt (the other proxy for fiscal dominance) and the government's gross financing needs are still high. Thus, while the NBU is not dependent on formal decisions or actions by the government, this could raise concerns about pressures to lower interest rates too much or not raise interest rates sufficiently to meet inflation targets, leading to lower credibility. High debt levels could also constrain monetary policy, in case interest rate increases affect government credit spreads and depreciate the exchange rate.¹⁸ This risk may be somewhat more contained currently since the NBU holds the bulk of government securities, but this may be a more important factor in the future, when most government securities would be held by the market. To begin to address concerns about fiscal dominance, a strong statement from the government in support of the NBU's independence and support for the NBU's pursuit of a price stability objective in the context of a floating exchange rate and IT regime would be important. Further, such statement should be backed up by consistent and supportive fiscal and wage policies, which would help increase the credibility of the inflation targets. This could include adopting prudent fiscal rules (Combes et al, 2014). NBU's proposal for the government to issue inflation-indexed securities to

been in place for over two years, between 2010–14 there were five governors appointed and dismissed. To discourage frequent changes in the governor, the 2015 NBU Law amendments required that the dismissal of the governor be discussed in parliament.

¹⁵ The constitution also refers to the objective on stability of the "monetary unit," which may lead to some confusion about objectives, but which the NBU Law clarifies by noting that by achieving the primary objective of price stability the NBU aims to achieve the objective of stability of the monetary unit.

¹⁶ However, there is the possibility of purchasing government securities (or providing liquidity against government securities collateral) to state-controlled entities that receive such government financing below the line.

¹⁷ Transfers above that what is provided for by the NBU Law amount to interest-free credit to the government and if these exceed realized profit, they amount to unsterilized lending to the government.

¹⁸ With high debt levels, an increase in the central bank interest rate can cause risk premiums and thus demand for foreign assets to increase, which would lead to a depreciation and higher inflation, thus the central bank may be constrained from raising interest rates. This is more likely the higher the level of debt, proportion of foreign currency denominated debt, and price of risk. In this case, fiscal policy, not monetary policy, is the right instrument to decrease inflation (Blanchard, 2004).

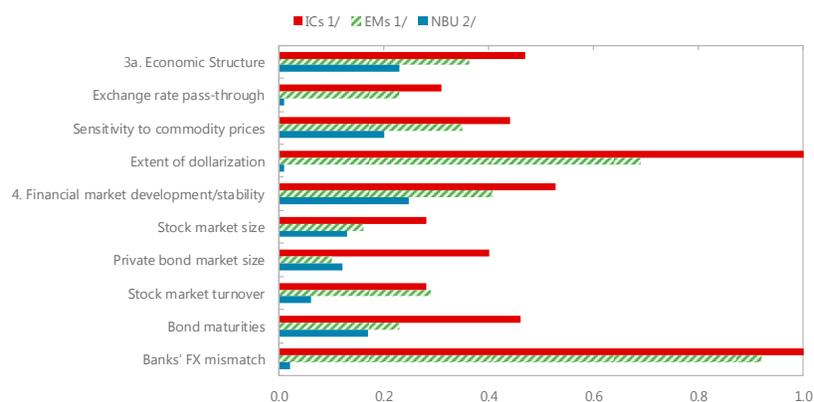
align government incentives could also be useful if the government itself commits to prudent policies.¹⁹ In this regard, issuing these in the market could be a more effective incentive mechanism than restructuring the existing NBU-held government securities into inflation-linked bonds.

13. More generally, weak governance may be a constraint to the credibility of the IT regime. There is the risk that the government or parliament would want to change the rules or otherwise pressure the NBU to favor other objectives or otherwise reduce the NBU's control over its balance sheet with possible inflation effects. Examples include the possibility of restructuring NBU holdings of government securities (sometimes included in budget laws) or of indirectly supporting directed lending.²⁰ While this risk could exist in all countries, it may be higher in countries with lower levels of governance. Indeed, the quality of governance appears to play an important role in the credibility of IT (Bordo and Siklos, 2015). In this regard, this risk to credibility may be higher in Ukraine than many other EMs that have adopted IT. This is an additional reason for the government to continue to push ahead with improving governance, as it could also signal greater respect for rules of the game and prudent policies, and thus have indirect positive impacts on the NBU's credibility.

14. Ukraine's economic structure and vulnerability to shocks may also raise concerns about the ability to achieve inflation targets or to keep price stability as the main objective.

Compared to other IT countries, Ukraine still has an economic structure that is more sensitive to exchange rate changes/volatility. In particular, it has a higher exchange rate pass-through and sensitivity to commodity prices, along with a high degree of dollarization. Further, Ukraine has lower levels of financial market stability/development, including low capital buffers and high NPLs and low financial assets depth, (discussed further below), which also make Ukraine more vulnerable to shocks that may constrain consistent policies in the future,²¹ putting financial stability objectives in conflict with the price stability objective. In addition, illiquid spot markets

Economic Structure and Financial Development/Stability



Sources: IMF (2006); National Bank of Ukraine; and staff calculations.

1/ Indicators for industrial countries (ICs), emerging markets (EMs), and inflation targeting (IT) as reported in IMF (2006).

2/ Based on NBU's recent self-assessment (most as of March 2016 Road Map, with technical/data updates) of questions in the survey used for IMF (2006).

¹⁹ The standard argument against inflation-indexed bonds is that this may lead to more general indexation and that it worsens the impact of inflationary shocks; however, this is due to monetary and fiscal policies that link money growth and the budget deficit (Fisher, 1983; Garcia and Rixtel, 2007).

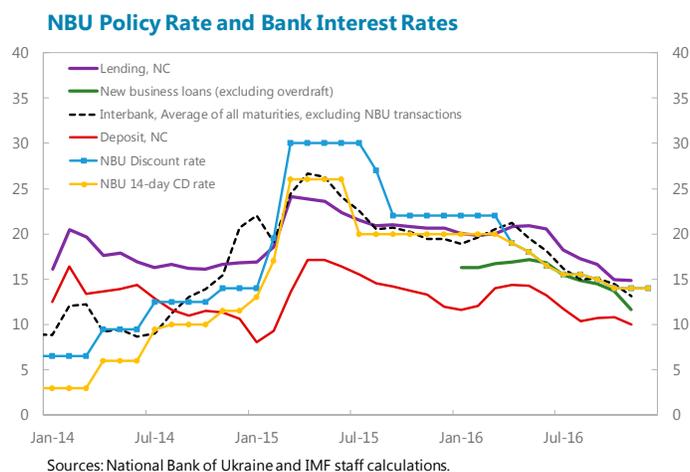
²⁰ The NBU is prohibited from giving credit to non-financial entities but could be called upon to discount or otherwise monetize credit to non-financial entities.

²¹ The latter factor is similar to the issue of fiscal dominance when debt levels are high and higher real interest rates lead to high probability of default and risk aversion, which lead to exchange rate depreciation and inflation.

stymie the development of hedging instruments, thus limiting an avenue for banks and corporations to hedge their risks and which could reduce the central bank's sensitivity to the exchange rate. Overall, this can lead countries to having effectively two targets (inflation and the exchange rate)—or at least to put more emphasis on the stability of the exchange rate (Leiderman et al, 2006). This in turn may confuse the market and ultimately lead to conflicts among objectives, in particular as the financial account is liberalized further (Vavra, 2015). To reduce these risks to the credibility of IT (i.e., primacy of the price stability objective), it is important that there is strong prudential regulation and supervision to ensure banks have adequate buffers and FX loan standards, as well as to further promote financial development.

15. The NBU's commitment to an adequate level of international reserves, as well as a clear FX intervention (FXI) strategy should also help mitigate or reduce some concerns about conflicts among objectives.

Adequate international reserves are a crucial element of macroeconomic stability and thus of confidence in the national currency, the lack of which would jeopardize inflation objectives. Furthermore, maintaining macroeconomic stability helps reduce dollarization and hence, adequate international reserves can help support improving the transmission mechanism. Also, having a consistent foreign exchange intervention strategy that is clear about the exchange rate as an instrument (Ostry et al, 2012; Vavra, 2015)—i.e., intervening to smooth excess volatility, while not targeting a specific exchange rate level or path—helps. In this regard, the NBU's transparency and commitment to implement its stated FXI strategy should help in supporting the credibility of its IT regime.²²



Transmission mechanism

16. The transmission of policy rate changes to domestic demand may be constrained by the credit (bank lending) channel. Since 2015, banks' deposit and loan rates have responded more to changes in NBU interest rates, but not fully. In early 2016, loan rates seemed more responsive to deposit or interbank interest rates (possibly reflecting liquidity conditions or exchange rate depreciation expectations)²³ rather than the policy rate. The recent cuts in policy rates since March 2016 were transmitted to loan rates, although with a delay (with new loan rate eventually almost falling in line with declines in the policy rate). This suggests that weak bank balance sheets of some banks and high NPLs may not be constraining the interest-rate pass through to loan interest

²² See NBU's FX strategy.

²³ See Ukraine 2013 Article IV, Annex IV—The Role of Devaluation Expectations in Determining the Spread Between Local and Foreign Currency Interest Rates in Ukraine.

rates for good borrowers. However, the degree of access to credit or reliance on bank lending remains relatively low while high NPLs and weak creditor rights may act to constrain future credit growth, thus potentially limiting the impact of changes in interest rates on investment and consumption (aggregate domestic demand). As noted in the NBU Roadmap, improvements in these areas are conditional on progress with the ongoing bank recapitalization plans and improvements in the creditor rights framework, as well as continued strengthening of regulation and supervision.

17. The transmission of the policy interest rate to the economy may also be constrained by shallow and illiquid financial markets (asset price channel). Illiquid foreign exchange, interbank, and securities markets tend to lead to banks holding higher liquidity buffers, which also limits credit intermediation. Further, the low levels of other financial assets and lack of a well-established yield curve also constrain the impact of policy rate changes on longer-term interest rates and other asset prices. A recent positive development in Ukraine is the return of the government to the market by regularly issuing domestic currency government securities, although the demand and holdings of these remains somewhat concentrated.²⁴ As noted in the NBU Roadmap, the gradual liberalization of FX restrictions and a more supportive legal and supervisory framework for securities and derivatives markets are also needed to support further financial development.

18. To foster the development of the interbank market in support of the monetary transmission mechanism, the NBU should move to more active liquidity management. More active liquidity management by the central bank will create incentives for interbank trading. Under the current monetary operations framework, banks that face short-term liquidity shortages would have to either resort to the shallow interbank market or borrow from the NBU 200 basis-points (bps) above the policy rate. Although this can be done for short periods and small amounts, the current framework hinders banks' appetite for holding short liquidity positions for longer periods, even when part of the market players could be taking such positions as they expect interest rates to decrease. This feeds back into the interbank market remaining mostly one sided and with limited activity. In contrast, if the NBU started making its interventions dependent on the result of a daily, accurate liquidity forecasting exercise, including the direction of the intervention, market participants' propensity to assume short positions could increase, as those with short positions would know that either (i) they would find counterparties in the market holding long positions or (ii) the NBU would intervene to provide enough liquidity to clear the market. More cooperation with the Ministry of Finance on sharing timely projections of sufficient quality could support the NBU's liquidity forecasting, which would help the NBU to move to more active liquidity management.

19. Given the greater uncertainty in Ukraine and the cost of missing targets, the NBU should stay vigilant while making gradual adjustments in the monetary stance. With the uncertainties around the transmission mechanism, the significant weight of food (commodity-related) prices in the CPI, and the importance of minimizing the loss from missing targets in order to

²⁴ Many foreign banks have limits or are prohibited by their HQs from holding Ukrainian government securities.

strengthen credibility, the NBU should move gradually when further lowering the policy rate, while also being vigilant about the possible effects of supply shocks (Alichi et al, 2009).²⁵ More gradual changes give agents time to adjust—in particular, banks may need to adjust their pricing and structure in order to preserve profitability, while also limiting excess liquidity volatility. Also, given that historical data may be revised and it takes time to assess whether some shocks are transitory or not, more gradual adjustments may also minimize policy errors. Last but not least, the lagged effect of changes in the monetary policy stance is also a factor in favor of vigilance (and not to delay policy tightening) in case of supply shock effects on inflation.

²⁵ Using a calibrated model that embodies an endogenous credibility process and a loss function that incorporates the costs of deviations of inflation from target and output from potential as well as fluctuations in interest rates (in place of the convention estimated reaction function), the loss minimizing path to the low inflation goal is more gradual than it would be if policy were 100 percent credible at the outset.

Appendix I. Improvements in Monetary Policy and Operating Framework

Box 1. Progress on Elements and Technical Requirements of an IT Framework Since 2014

Development of forward-looking decision-making process and enhanced analysis

- Monetary Policy Committee (established December 2014)
- More structured analytical inputs (cycle of analysis)¹ for the MPC
- Enhanced research and improvements in the forecasting and analytical tools (ongoing)

Enhancement of the interest-rate focused monetary operations framework (February–April 2016)

- Establishing a single policy interest rate that is operationally relevant (resolution on setting the discount rate published)
- Linking other central bank interest rates to the policy rate; narrowing the corridor (symmetric around policy rate +/- 200 bps)
- Streamlining the framework by reducing number of absorption instruments (currently just O/N and 14-day facility)

Enhanced transparency/communications

- Regular press releases following board decisions on monetary policy (since December 2014)
- Publication of Inflation Reports that include forecasts of inflation (first one issued for March 2015) as well as assessments of risks to the inflation forecast
- Increase in interviews by senior management and communications on inflation targeting²
- Proposed new monetary policy guidelines, including inflation targets for 2016–20 (August 2015)
- Publication of roadmap on IT transition (March 2016)
- Publication of FX intervention strategy (October 2016)

¹ See NBU's description of "Monetary policy decision-making process (stages)"

http://www.bank.gov.ua/control/en/publish/article?art_id=21989657.

² E.g., June 2015 presentation on "Monetary Policy Decision Making at the NBU"

<https://bank.gov.ua/doccatalog/document?id=18190693> and also September 2015 Issue of Research Journal (Visnyk) devoted to IT-related issues.

Box 2. 2013 Article IV Recommendations

Recommendations

- Increase the role of the NBU policy rate in steering market interest rates by promoting the use of an operational instrument with the interest rate closely linked to policy rate
 - Initially, set up a system with two short-term instruments (one to absorb and one to provide liquidity)
 - Interest rates on both should be preset and firmly linked to policy rate.
 - Over time, the liquidity absorption instrument (7-day or 14-day CDs) becomes key instrument, auctioned regularly, in price-setting manner.
 - 7-day or 14-day repos become the complementing liquidity providing instrument.
 - Other short-term operations as well as longer-term operations are phased out
- Introduce a corridor for short-term interest rates; should operate in a fully automatic manner for solvent banks (i.e., no stigma, on demand)
- Reserve requirement averaging; simplified system (uniform rates for DC and FC)

Status/Comments

- Implemented: 14-day CDs, offered daily, are now the key policy instrument (to absorb liquidity). To a much lesser extent the NBU also provides liquidity for 14-day terms through tenders conducted weekly, except every fourth week, when liquidity provision is for a 28-day term.
- Implemented
- Implemented

Appendix II. Precondition for Inflation Targeting

Table 1. Assessment of Inflation Targeting (IT) Preconditions Prior to Adoption 1/
(as discussed in "Inflation Targeting and the IMF" (2006))

Pre-Conditions and indicators	Post-adoption 1/		Pre-adoption 1/		NBU 2/	Staff assessment and background
	ICs	EMs	ICs	EMs		
1. Central bank independence (a)	0.79	0.77	0.56	0.61	0.85	Largely met. The 2015 amendments to NBU Law increased the independence of the Council and Board as well as the NBU's financial autonomy. Independence (both <i>de jure</i> and <i>de facto</i>) could be strengthened further, but this appears to be also the case for most other IT central banks post-adoption (i.e., as of 2005).
Operational Mandate	1.00 0.44	0.96 0.62	0.63 0.16	0.81 0.5	1.00 0.50	The constitution establishes the main objective of the stability of the monetary unit, while the NBU law establishes price stability as a primary objective in achieving the former, but also other objectives of financial stability as well as promoting sustainable economic growth and supporting government's economic policy as long as these do not interfere with the first two objectives. Multiple objectives are also common among other IT central banks. A <i>constitutional amendment would be needed to clarify that price stability is the primary objective.</i>
Governor	1.00	0.85	1.00	0.85	1.00	Due to the constitutional constraints, the appointment of the council does not embrace the double veto principle. Further, members of the Cabinet of Ministers may attend NBU Board meetings with the right to an indicative vote (although in practice they do not attend). More generally, while the NBU is not dependent on formal decisions or actions by the government, a full understanding that NBU's profit forecasts are not binding; targets appears to be lacking. <i>Along with legal amendments to further strengthen the independence of the council and the board, a social consensus should be fostered about the need of preserving the independence of the NBU and of holding it accountable.</i>
Overall	0.72	0.64	0.44	0.26	0.88	
2. Absence of fiscal dominance (a)	0.77	0.65	0.58	0.57	0.30	Partially met. <i>De jure</i> the NBU is prohibited from financing the deficit and has not purchased government securities outside of those specified by the SBA/EFF program or for bank liquidity support. Under the EFF, the primary fiscal balance should improve over the medium term. However, relatively high public debt levels could raise concerns about pressure to not raise interest rates sufficiently to meet ITs. Under the IMF program, this risk is mitigated. <i>NBU's IT roadmap seeks further government support/coordination for IT.</i>
Fiscal obligation	1.00	1.00	0.75	0.77	0.70	While there is no explicit obligation to finance the deficit, it is difficult to assess whether there wouldn't be an implicit obligation in times of crisis.
Fiscal balance	0.78	0.47	0.45	0.48	0.00	Under the EFF, it could improve to 0.33 over the medium term.
Public debt	0.54	0.47	0.53	0.47	0.20	
3. Understanding of Inflation process (a)	0.98	0.97	0.74	0.29	0.92	Largely met. NBU has good analytical capacity and NBU has been preparing for IT for several years. <i>Further, NBU's IT road map foresees ongoing improvement (which will also be supported by TA), but data issues require coordination with other institutions.</i>
Data availability	0.94	0.92	0.84	0.63	0.75	The State Statics Service, which produces CPI data, should be strengthened.
Systemic forecast process	1.00	1.00	1	0.1	1.00	
Models (conditional forecasts)	1.00	1.00	0.38	0.13	1.00	
4. Exchange rate flexibility (a) 3/	-	-	0.91	0.81	0.75	Largely met. Has been classified as floating since 2014/2015 (See AREAERs).
5. Financial market development/soundness (b)	0.60	0.48	0.53	0.41	0.25	Partially met/on an improving trend. Ukraine is in line with other EMs (except much weaker on FX mismatch and still recovering from a banking crisis). Financial markets also constrained by crisis (administrative) measures. <i>NBU's IT roadmap seeks to coordinate with the government to improve the legal framework and infrastructure for securities markets in the near term; a separate roadmap seeks to unwind administrative measures as conditions allow.</i>
Banks' CAR	1.00	1.00	0.75	0.75	1.00	CAR has been overstated in the past, but under the EFF the sector is being recapitalized and strengthened.
Stock market size	0.44	0.21	0.28	0.16	0.13	
Private bond market size	0.31	0.07	0.40	0.10	0.12	
Stock market turnover	0.35	0.22	0.28	0.29	0.06	
Banks' FX mismatch	1.00	0.96	1.00	0.92	0.00	
Bond maturities	0.52	0.43	0.46	0.23	0.17	
6. Ex-ante commitment (b)	N.A.	N.A.	N.A.	N.A.	N.A.	Largely met, but could be strengthened further. The NBU Board has announced inflation targets and is progressing with implementing the IT roadmap. <i>However, the NBU Council must still formally adopt the new IT framework. Stronger government commitment towards IT would also help.</i>

Sources: IMF, 2006; National Bank of Ukraine; and staff.

1/ Scores for industrial countries (ICs) and emerging markets (EMs) inflation targeting (IT) central banks as reported in IMF (2006), Table II.4. These are indicative of preconditions. Best practice is rated 1. N.A. denotes it was not assessed directly in IMF (2006) or other studies of IT. Overall precondition score is simple average of indicators if more than one indicator given.

2/ Based on NBU's recent self assessment (most as of March 2016 Roadmap, with technical/data updates) of questions in the survey used for IMF (2006).

3/ This precondition was not assessed in IMF (2006). Here, we report a score based on AREARs (various issues), where free float is 1, managed float is 0.75, crawling/peg with band is 0.5, crawling ER band is 0.25 and peg is 0. As NBU is classified as floating under new AREAR classifications (in effect since 2009), we score this as 0.75 (same as the former "managed," the latter being a classification that is no longer used and replaced by "floating").

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