INTERNATIONAL MONETARY FUND

REPUBLIC OF MOLDOVA

SELECTED ISSUES

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November 28, 2023

Approved By
European Department

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CONTENTS

OPPORTUNITIES AND CHALLENGES OF CLIMATE ADAPTATION POLICIES[1]

Moldova is more vulnerable to the adverse impact of climate change than the rest of Europe, due to its (i) higher sensitivity to changes in climate conditions (reflecting its heavier reliance on agriculture, a comparatively-larger rural population, high dependence on energy imports and limited diversification of energy supply sources, and limited financial resources to provide high-quality public services); and (ii) weaker adaptative capacity to climate shocks (due to its comparatively weaker disaster preparedness strategy, low adaptation in the agriculture sector and poorer quality of infrastructure). Strengthening resilience to natural disasters will require significant adaptation investments in the coming years. This paper shows that such investments can substantially reduce output losses caused by natural disasters, will be more cost-efficient than responding to disasters ex-post, and will contribute to boost Moldova's long-term economic growth and support its development objectives. However, due to limited domestic financial resources in a complex economic environment, Moldova cannot finance the most-needed adaptation investments without endangering public debt sustainability or hindering its growth potential. Therefore, external support will be critical to help meet the adaptation needs. In addition, continued progress on structural reforms (including on enhancing public investment efficiency, governance, the efficiency of education expenditure, strengthening the business environment and crowding in private investments) will support Moldova's readiness to fully benefit from climate adaptation investments.

A.   Introduction

1.   Moldova is particularly vulnerable to the challenges posed by climate change. Although its contribution to global CO2 emissions (0.026 percent) is one of the lowest in Europe, Moldova is among Europe's most vulnerable countries to climate change. Given a high share of agriculture in its economy, Moldova is heavily dependent on weather patterns, making it sensitive to the increasing frequency and intensity of extreme weather events. The country faces a rising threat of droughts, erratic precipitation, and extreme temperature fluctuations, all of which can significantly impact crop yields and food security. Furthermore, Moldova is prone to flash floods and landslides, exacerbating the vulnerability of its infrastructure and population. The socio-economic consequences of climate change in Moldova are compounded by its status as one of the poorest nations in Europe, making it challenging to finance and implement comprehensive adaptation and mitigation strategies. As global climate change continues to unfold, Moldova stands at the frontline of its adverse effects compared to other countries in Europe, underscoring the urgent need for both national and international efforts to enhance the country's resilience and sustainable development.

2.   While the authorities have ambitious emission reduction targets and adaptation goals, the persistent global changes in climate conditions will continue to pose major risks for

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[1] Prepared by Armand Fouejieu (EUR), with excellent research assistance by Dennis Zhao. Helpful comments were received from Mark Horton.

Moldova if urgent adaptation actions are not taken. To achieve these objectives, the Moldovan authorities have developed a set of strategies and plans (see Annex VII of the November 2023 Moldova Staff Report) to guide their policies. However, the Moldovan economy has been confronted with multiple crises in recent years—including the COVID-19 shock, spillovers from Russia's war in Ukraine, the energy and cost-of-living crises, and a drought in 2022—and incurred large and persistent output losses. In this complex environment, financing for investments to build climate-resilient (or adaptation) infrastructure will be challenging.

3.   **This paper investigates the sources of Moldova's vulnerability to climate risks and evaluates opportunities and challenges related to potential adaptation investments.** Based on a large set of comparative indicators, we show that Moldova's vulnerability arises from a disproportionate sensitivity to climate disruptions, partly reflecting specific country characteristics, and considerable adaptation gaps to changing climate conditions (Section B). We use the IMF's Debt-Investment-Growth and Natural Disaster—DIGNAD—Model (Section C) to simulate the impact of climate adaptation infrastructure investments on resilience to climate shocks and long-term economic growth and to explore the implications for debt sustainability of different financing options. The results (Section D) suggest that adaptation infrastructure can significantly reduce output losses from natural disaster and mitigate scarring. We also find that such investments will support sustainable long-term growth, which ultimately can reduce inequality and support Moldova's Sustainable Development Goals (the most vulnerable population may disproportionally benefit from adaptation investments, since natural disasters tend have larger impact on the poorer and those more exposed to climate risks). In addition, the growth benefits would be greater when complemented with reforms to improve public investment efficiency. However, due to limited domestic financial resources, external support—ideally on grant or concessional terms—will be critical to help meet Moldova's adaptation needs without endangering debt sustainability. The authorities' program under the IMF's Resilience and Sustainability Facility (RSF) can play a crucial role in that respect. Also, continued progress on ongoing structural reforms will bolster Moldova's readiness for effective implementation of adaptation actions (Section E).

B.   Vulnerability to Climate Change and Readiness for Adaptation Actions

4.   **Moldova's vulnerability to climate disruptions exceeds the EU average.** Moldova is one of the countries most vulnerable to natural disasters in Europe; it is also among the least prepared countries for effective implementation of adaptation actions (Figure 1). This section discusses specific related aspects, based on the Notre Dame Global Adaptation Index (Box 1).

Figure 1. Moldova: Vulnerability to Climate Risks and Readiness for Effective Adaptation Actions

Source: ND-GAIN, IMF, and IMF Staff Calculation
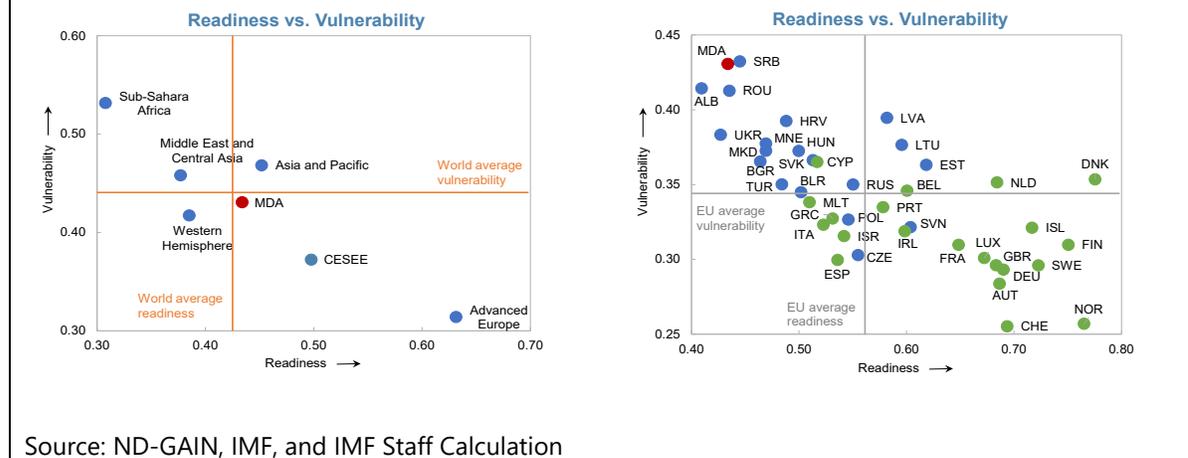
Exposure and Sensitivity

5.   Although Moldova's exposure to the adverse impact of climate change is broadly similar to that of other emerging economies in Europe, past climate disasters have been more costly (Figure 2). Moldova stands out among CESEE countries and advanced economies (AE) in Europe due to the disproportionate economic costs it has borne from climate shocks, the largest toll in past three decades—close to 12 percent of 2019 GDP, cumulatively, compared to an average of 3 percent in the region. The human and social impact of adverse climate events is also largest in Moldova when compared to emerging Europe, with on average 3 percent of the population affected by past natural disasters in the past 30 years. ND-GAIN projects Moldova's exposure to climate change to remain broadly aligned with the rest of CESEE countries (while significantly above AE), although risks appear to be larger for the agricultural sector (suggested by the index capturing the projected change of cereal yields).

6.   The higher costs of climate disasters partly reflect specific characteristics that make Moldova more sensitive to climate shocks. Moldova's sensitivity stems from its greater reliance on agriculture, with a significant portion of the labor force employed in this sector and agriculture representing, on average, 13 percent of overall GDP over the past 20 years. Climate-induced disruptions, such as extreme weather events and variations in precipitation patterns, directly impact agricultural production, resulting in substantial economic losses. A comparatively-larger rural population in Moldova also heavily depends on subsistence farming and agriculture as a source of income, making a substantial share of the overall population more vulnerable to the impact of climate change. Moldova's dependence on energy imports (more than three-quarters of gas and electricity is imported) and limited diversification of energy supply sources also represent sources of vulnerability. Additionally, limited domestic financial resources, which translate into higher dependence on external financing for healthcare and other social services, also imply higher sensitivity to climate-related events, since these resources may become unavailable or insufficient when a shock hits. The interplay of these specific country characteristics accentuates the economic and social repercussions of adverse climate events in Moldova relative to peers.

Box 1. Moldova: Notre Dame Global Adaptation Index (ND-GAIN)[1]

The ND-GAIN is composed of two aggregate indices: a *vulnerability* index, measuring the propensity or predisposition of human societies to be negatively impacted by climate hazards; and a *readiness* index, capturing preparedness to make effective use of investments for adaptation actions thanks to a safe and efficient business environment.

The vulnerability index is broken down into 3 sub-indices:

- *Exposure*: The extent to which human society and its supporting sectors are stressed by future changing climate conditions. Exposure in ND-GAIN captures physical factors external to the system that contribute to vulnerability.

- *Sensitivity:* The degree to which people and the sectors they depend upon are affected by climate related perturbations. The factors increasing sensitivity include the degree of dependency on sectors that are climate-sensitive and proportion of populations sensitive to climate hazard due to factors such as topography and demography.

- *Adaptive capacity:* The ability of society and its supporting sectors to adjust to reduce potential damage and to respond to the negative consequences of climate events. In ND-GAIN, adaptive capacity indicators seek to capture a collection of tools (e.g. disaster preparedness strategies) readily deployable to deal with sector-specific climate change impacts.

Each of the three sub-indices are constructed based on data covering six sectors: health, food, ecosystem, habitat, water, and infrastructure.

The readiness index also encompasses three dimensions:

- *Economic*: Capacity of the economy to attract adaptation investment.

- *Governance*: Capacity to promote and maintain a sound governance/institutional framework, which can contribute to attract external financing and support deployment of adaptation actions and adaptation-related policies.

- *Social*: Social characteristics, including wealth, education, and access to technology, that can help support resilience to extreme climate events and foster implementation of adaptation strategies, as well as innovation capacity that can support identification of adaptation solutions.
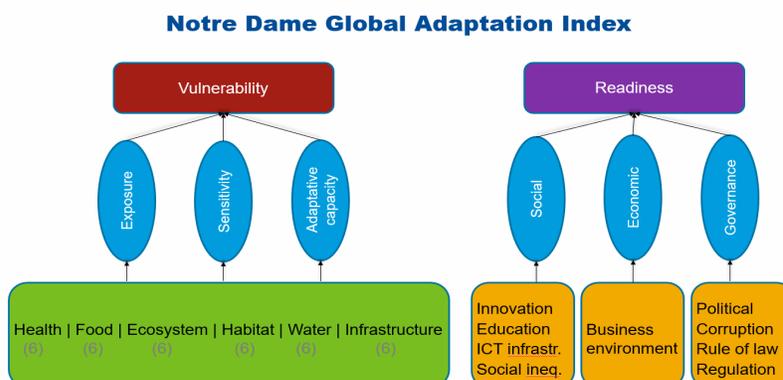
1/ See Notre Dame Global Adaptation Initiative and related technical notes for additional details.

Adaptative Capacity and Readiness

7.   Challenges in adapting to changing climate conditions also contribute to magnifying the impact of climate shocks in Moldova (Figure 2). The comparatively weaker disaster preparedness strategy especially hinders Moldova's ability to effectively cope with climate shocks, as shown by the ND-GAIN data. While similar to other CESEE countries, adaptation in the agriculture sector—captured by irrigation capacity and availability of fertilizers and automotive infrastructure—is below AE and EU averages, weakening the sector's capacity to withstand natural disasters. The quality of infrastructure, including transport and trade-related infrastructure, is also below CESEE peers and AE averages. Reliable access to water and water storage infrastructure and capacity represents another area of weakness in Moldova's capacity to adapt to stresses caused by climate change. These adaptation deficiencies expose the country to more substantial and far-reaching consequences when faced with changing climate conditions, resulting in relatively larger impact on the population and the economy.

8.   While adaptation gaps are large, Moldova appears to be comparatively less well prepared for effective implementation of adaptation actions (Figure 2). Governance challenges, for example, characterized by relatively limited institutional capacity and lack of coordination among key stakeholders, can hinder the translation of adaptation strategies into actionable measures. Although Moldova's governance quality has improved in recent years, some key governance indicators (political stability, control of corruption, respect of the rule of law, regulatory quality) remain below CESEE and EU averages, stressing significant scope for further improvement. Moldova also lags behind peers in Europe regarding its social readiness for strong adaptation measures. The ND-GAIN index measures social readiness through innovation, education, ICT infrastructure, and social inequality. Finally, a less-favorable business environment may curtail private sector involvement/investment in adaptation infrastructure, and/or limit the potential to catalyze private investment for adaptation action.

C. A Framework for Evaluating the Macroeconomic Impact of Climate-Resilient Infrastructure: The DIGNAD Model

9.   The DIGNAD (Debt-Investment-Growth and Natural Disaster) model is a dynamic general equilibrium model describing a small open economy. It can help quantify and assess the impact of climate disasters and different policy scenarios for investment in adaptation infrastructure (Box 2 summarizes key theoretical underpinnings of the investment-growth nexus and fiscal adjustment embedded in DIGNAD). The model encompasses three main and interdependent blocks (Buffie et al. 2011; Marto et al. 2018; Aligishiev et al., 2023):

Figure 2. Moldova: Costs of Past Natural Disasters and Sources of Vulnerability and Readiness
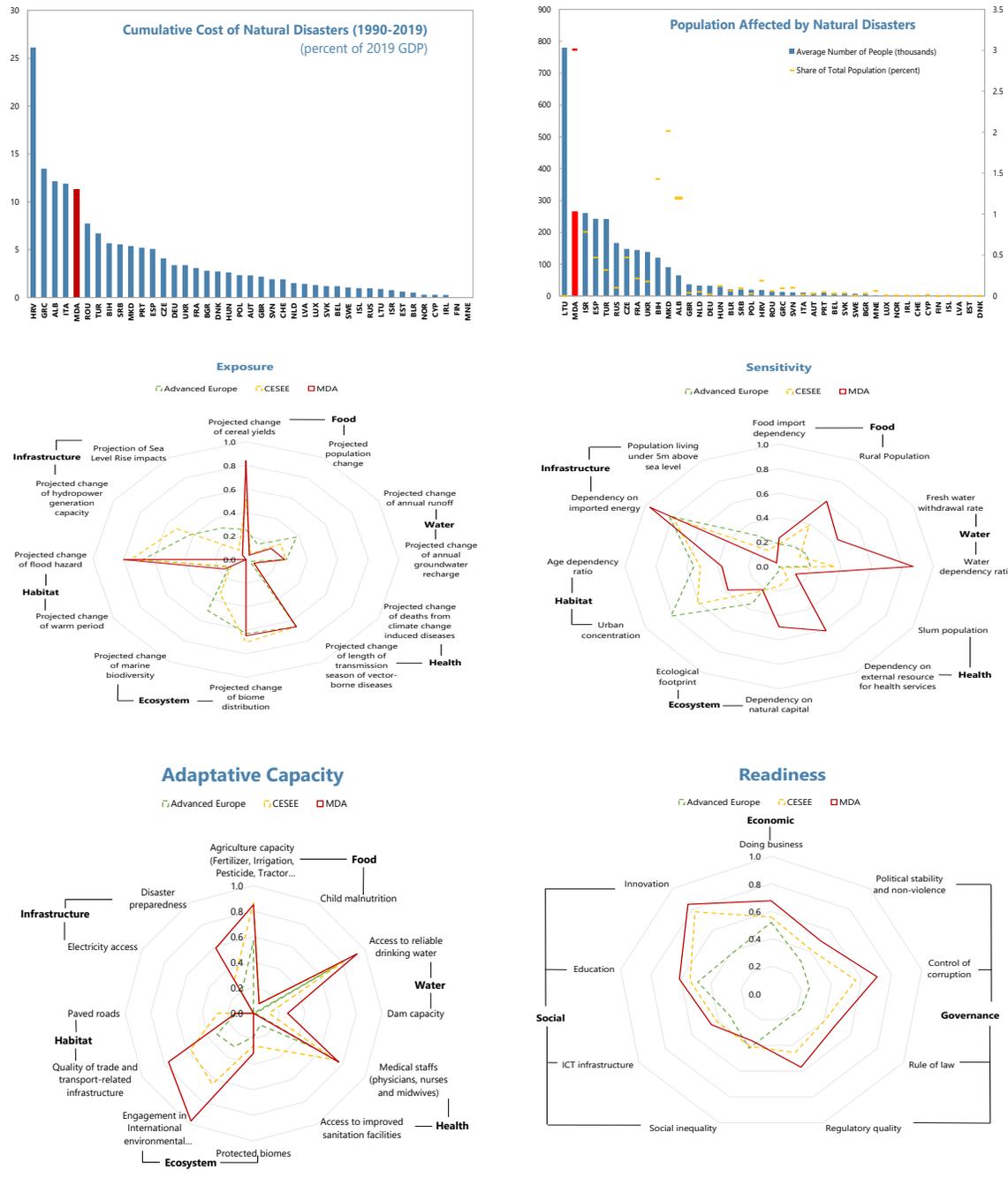
Sources: University of Notre Dame's Global Adaption Index and IMF staff calculations

- The *private demand* block describes household consumption and saving decisions, with two types of households (savers who have access to financial instruments and liquidity-constrained households who do not). Both types of households face an intratemporal decision that determines their supply of labor, whereas savers also face an intertemporal decision that determines savings. Households earn labor income, receive remittances from abroad and transfers from the government, and consume domestically-produced and imported goods.

- The *private supply block* describes firm decisions on labor and capital demand. Tradable and non-tradable goods are produced by two representative firms following a Cobb-Douglas production function with capital and labor inputs. Firm output also increases with total factor productivity (TFP), which, in turn, depends on the stock of public infrastructure (climate-resilient infrastructure and standard infrastructure).

- The *policy block* depicts a set of financing options to cover government investment plans in standard or climate-resilient infrastructure. Fiscal instruments include consumption taxes, labor taxes, and net transfers to households. The government can also issue commercial debt (domestic and/or external), external concessional debt, or receive grants or other forms of costless external financing. Government policy choices can be assessed using two perspectives in the model. First, a strict fiscal rule framework, whereby taxes adjust automatically to close the financing gap created by new investment and prevent excessive accumulation of debt. Second, a framework where there is no automatic adjustment of taxes, and debt financing is allowed.

10.   Natural disasters are assumed to affect GDP through three main channels: (1) destroying the stock of public infrastructure, (2) destroying the stock of private capital, and (3) reducing TFP. Each of these channels has different macro-fiscal implications. The stock of public infrastructure can only be rebuilt by the government, generating fiscal costs that can be financed as described above. The stock of private capital can only be rebuilt by private sector investment, which is subject to adjustment costs. TFP is exogenous and can gradually recover to its pre-disaster level at an exogenously assumed pace. Natural disasters can affect the economy via two additional mechanisms. First, by increasing government borrowing costs through an increased risk premium on external commercial debt, which may be triggered by perceived higher risk of default after a natural disaster. Second, the efficiency of government infrastructure investment may decline because of limited government capacity to manage large-scale reconstruction, especially after a natural disaster.

11.   Another key characteristic of the DIGNAD model concerns the specific features of climate-resilient infrastructure. The model assumes that the total stock of public infrastructure consists of two types of infrastructure: standard and climate-resilient. Climate-resilient (or adaptation) infrastructure reduces the output cost of natural disasters, while standard infrastructure does not. A larger share of adaptation infrastructure implies potential for larger mitigation of the impact of natural disasters (a more resilient economy). However, the cost of climate-resilient infrastructure is assumed be higher compared to the cost of standard infrastructure (e.g., it requires more qualified and scarce technical skills, more expensive materials, or advanced technologies). Adaptation infrastructure is also assumed to have a lower depreciation rate (e.g., climate-proofed

roads are more likely to withstand adverse climate events), and a higher rate of return (the low existing stock of adaptation infrastructure in many low-income countries suggests that the rate of return of initial investments may be high).

Box 2. Moldova: DIGNAD: Investment, Growth, and Fiscal Adjustment[1/]

The model captures the relationship between growth and investment via a neoclassical production function with labor, public and private capital, as inputs. The Cobb-Douglas production function type is described as follow:

$$Y_t = A_t (K_t^g)^\phi (K_t)^\alpha L_t^{1-\alpha}$$

Where Y_t is the output; A_t total factor productivity; K_t^g and K_t public capital and private capital, respectively; and L_t labor. ϕ is the parameter capturing the rate of return of public capital.

The fiscal reaction function describes the debt trajectory as a function different financing options available to the government, fiscal revenues, as well as expenditure (including investment and transfers). The budget constraint takes the following form:

$$e_t \Delta X_t + e_t \Delta Z_t + \Delta D_t = e_t r_{X,t-1} X_{t-1} + e_t r_{Z,t-1} Z_{t-1} + r_{D,t-1} D_{t-1} + I_i^g + G_t - \Lambda_t - R_t - \sum_{j=1}^n \gamma_{jt} x_{jt}$$

Where e_t is the real exchange rate. ΔX_t, ΔZ_t, ΔD_t are external commercial, external concessional, and domestic debt, respectively; r_X, r_Z, r_D their respective interest rate. Government spending covers public investment (I_i^g) and public consumption/transfers (G_t). The government receives grants (Λ_t), other revenues (R_t) and tax revenues from income and consumption ($\sum_{j=1}^n \gamma_{jt} x_{jt}$, where γ_{jt} is the tax rate, and x_{jt} consumption or income from productive sources). Grants and external concessional loans are determined exogenously to the model. In absence of enough financing to cover the assumed expenditure, taxes and transfers are adjusted to close any financing gap.

1/ See also Melina and Santoro (2021).

D.   Closing the Adaptation Gaps and Building Resilience to Future Shocks: Opportunities and Challenges

12.   This section assesses the benefits of climate adaptation investments in enhancing resilience to climate shocks and supporting medium-to-long-term growth. It also discusses policy challenges, especially with respect to financing, due to limited fiscal space in Moldova for the most-needed investments to address climate change risks. Finally, it investigates from an international donors' perspective, the intertemporal trade-off between financing adaptation investment *ex ante* or financing reconstruction *ex post*. The simulations are based on the DIGNAD model described in Section C.

Baseline Calibration

13. **The simulations cover a 20-year horizon.** Key calibration parameters are presented in Table 1. It is assumed that the government may increases investment in infrastructure (standard or climate-resilient) during the first 5 years of the simulation period. A natural disaster hits in Year 6, and the reconstruction process starts immediately afterwards. The reconstruction period—the time needed for the government to rebuild the damaged public infrastructure—lasts 5 years. The natural disaster affects the economy through the three main channels discussed above (impacting both tradable and non-tradable sectors), as well as by reducing the efficiency of government infrastructure investment. We assume no impact on risk premium on government commercial external debt since Moldova has not incurred any new commercial debt on international markets in at least the past 5 years.

<table>
<tr><td colspan="4" align="center">**Table 1. Moldova: Main Parameters Calibration**</td></tr>
<tr><td>**Parameter Description**</td><td>**Values**</td><td>**Parameter Description**</td><td>**Values**</td></tr>
<tr><td>Public infrastructure investment to GDP ratio</td><td>4.0%</td><td>Trend per capita growth rate in absence of natural disasters</td><td>6.0%</td></tr>
<tr><td>Public adaptation infrastructure investment to GDP ratio</td><td>0.0%</td><td>Value added in NT-sector</td><td>60.0%</td></tr>
<tr><td>Consumption tax rate (VAT)</td><td>20.0%</td><td>Efficiency of public infrastructure investment</td><td>65.0%</td></tr>
<tr><td>Labor income tax rate</td><td>12.0%</td><td>Ability of adaptation capital to withstand natural disaster</td><td>30.0</td></tr>
<tr><td>Public domestic debt to GDP ratio</td><td>9.6%</td><td>Cost ratio adaptation vs standard investment</td><td>25.0%</td></tr>
<tr><td>Public concessional debt to GDP ratio</td><td>26.0%</td><td>Initial return standard on infrastructure investment</td><td>25.0%</td></tr>
<tr><td>Public external commercial debt to GDP ratio</td><td>0.0%</td><td>Initial return on adaptation infrastructure investment</td><td>35.0%</td></tr>
<tr><td>Private external debt to GDP ratio</td><td>50.6%</td><td>Depreciation rate of public capital (standard infrastructure)</td><td>7.5%</td></tr>
<tr><td>Real interest rate on public domestic debt</td><td>4.0%</td><td>Depreciation rate of public capital (adaptation)</td><td>3.0%</td></tr>
<tr><td>Real interest rate on public external commercial debt</td><td>6.0%</td><td>Division of fiscal adjustment parameter - Transfers</td><td>20.0%</td></tr>
<tr><td>Grants to GDP ratio</td><td>0.5%</td><td>Division of fiscal adjustment parameter - Consumption tax</td><td>40.0%</td></tr>
<tr><td>Natural resources revenues to GDP ratio</td><td>0.0%</td><td>Division of fiscal adjustment parameter -Labor income tax</td><td>40.0%</td></tr>
<tr><td>Remittances to GDP ratio</td><td>14.1%</td><td>Public debt adj. between commercial external and domestic</td><td>50.0%</td></tr>
<tr><td>Imports to GDP ratio</td><td>58.9%</td><td></td><td></td></tr>
</table>

Standard vs. Adaptation Investment

14. **The first set of simulations aims at illustrating the benefits of climate adaptation investment.** Three scenarios are explored:

- *Unchanged policies scenario.* The key macro-variables in the baseline are kept unchanged. Especially, there is no additional public infrastructure investment beyond what is assumed in the baseline.

- *Standard investment scenario.* It is assumed that an additional 2 percent of GDP is invested in public standard infrastructure, annually.

- *Adaptation investment scenario.* Two percent of GDP is invested in public climate-resilient infrastructure, annually, to strengthen Moldova's adaptation capacity (see Box 3 on the quantification of adaptation investments needs).

15. **We further assume that the government faces a tight budgetary constraint and fiscal policy is guided by a strict fiscal rule that does not allow for debt financing.** Also, no new external grants or concessional loans are available, beyond the baseline assumptions. Therefore, any new spending is financed through tax increases or expenditure rationalization (savings from lower public transfers). Alternative financing options are discussed in the next sub-section.

16. **The simulation results show the following (Figure 3):**

- *Pre-disaster*. New infrastructure contributes to boost GDP growth by about 1 ppt above the baseline during the investment phase in both investment scenarios. However, private investment and consumption contract due to the tax increase and the cut in public transfers.

- *Shock*. In the absence of investment in climate-resilient infrastructure (unchanged policy and standard investment scenarios), the climate disaster shock causes GDP to contract by about 6 percent (similar to the drought in 2009 in Moldova). However, the scenario with pre-disaster accumulation of adaptation infrastructure shows a GDP contraction of about 2 precent, suggesting that resilient infrastructure could absorb about two-thirds of the disaster impact on economic activity. Under the unchanged policy or standard investment scenarios, the public debt-to-GDP ratio increases from 35.5 percent to about 38 percent of GDP. The public debt ratio increases by a smaller magnitude under the adaptation investment scenario (to about 36 percent of GDP). Given the stricter fiscal rule assumed for these scenarios, the debt-to-GDP increase is exclusively driven by the denominator effect (change in nominal GDP).

- *Post-disaster*. The discussion on the post-disaster period focusses on how the economy recovers from the shock. Under the unchanged and standard investment scenarios, the simulations suggest that medium-term scarring is significant, with GDP growth remaining about 2.5 to 3 ppts below the steady state 5 years after the disaster (in the longer term, GDP growth stands at 1 to 1.5 percent below the steady state more than a decade after the shock). The long-term debt-to-GDP ratio is also slightly above the steady state, by about 1 ppt. Thanks to more resilient infrastructure that limits the destruction of capital stock, economic activity recovers faster under the adaptation investment scenario also supported by the smaller contraction of investment and consumption. GDP returns to the steady state level within 10 years after the disaster, while the deb-to-GDP ratio converges back to close to 35.5 percent of GDP by the end of forecast horizon.

Box 3. Moldova: Quantifying Adaptation Investment Needs for Moldova

Quantifying the cost of adaptation investments is a difficult exercise as this involves a wide range of sectoral policies and processes to be put in place, all aiming to build resilience against future shocks, with impacts that are also difficult to estimate. For purpose of this paper, we rely on two approaches:

- *A sectoral approach*, based on an analysis from the World Bank on Moldova's climate adaptation investment planning (World Bank, 2016). The analysis performs a quantitative assessment of adaptation investment opportunities and returns across target sectors. Based on estimated costs by sector, this assessment suggests that a total adaptation cost of about 2 percent of GDP per year over the next 10– 15 years is needed.

Sector	Objectives	Period	Cost (in ml. USD)
Agriculture & water management	Rehabilitation/Modernization of centralized irrigation system	2017-2040	975
	Investments in farm irrigation technologies	2017-2040	130
	Rehabilitation/Modernization of drainage infrastructure in irrigated areas	2017-2040	120
	Institutional Reforms/Capacity Building	2017-2040	140
Forestry	Ecological reconstruction of forests	2020-2029	91.3
	Ecological reconstruction of forest belts	2020-2030	4.9
	New forest belts	2025-2034	56.5
	Afforestation of degraded land	2023-2044	199.7
	Afforestation of degraded pastures	2023-2044	28.3
Health		2017 -	0.4
Water supply	Improve municipal and industrial water system & reduce 15% of losses	capex in 1 year	29.4
	Improving rural water	na	na
	100 mcm reservoir in lower Nistru & 25 mcm reservoir in upper Nistru & 1 mcm reservoir in Reut	construction over 5 years	24.9
Water supply and sanitation (WSS)	Rehabilitation of existing and construction of new WSS infrastructure	na	439
Flood prevention	Structural flood prevention	2020-2040	360.8
	Non-structural flood mitigation	2020-2040	136.6
Disaster response		2020 -	11
Total			2747.8

Sources: World Bank and IMF Staff Calculations

- *A frontier analysis approach*, whereby we estimate an adaptation frontier using the full sample of countries in Europe (the top performers being advanced economies), and compute the distance to the frontier for CESEE countries. Based on this approach, it is estimated that investment of about 2.5 percent of GDP per year in adaptation will be needed over the next 20 years to close adaptation gaps.

Note: The adaptative capacity frontier is estimated to fit a production function with a single input, the logarithm of per capita GDP in USD.
Source: IMF staff calculations based on 2020 data from the WEO, and University of Notre Dame's Global Adaption Index
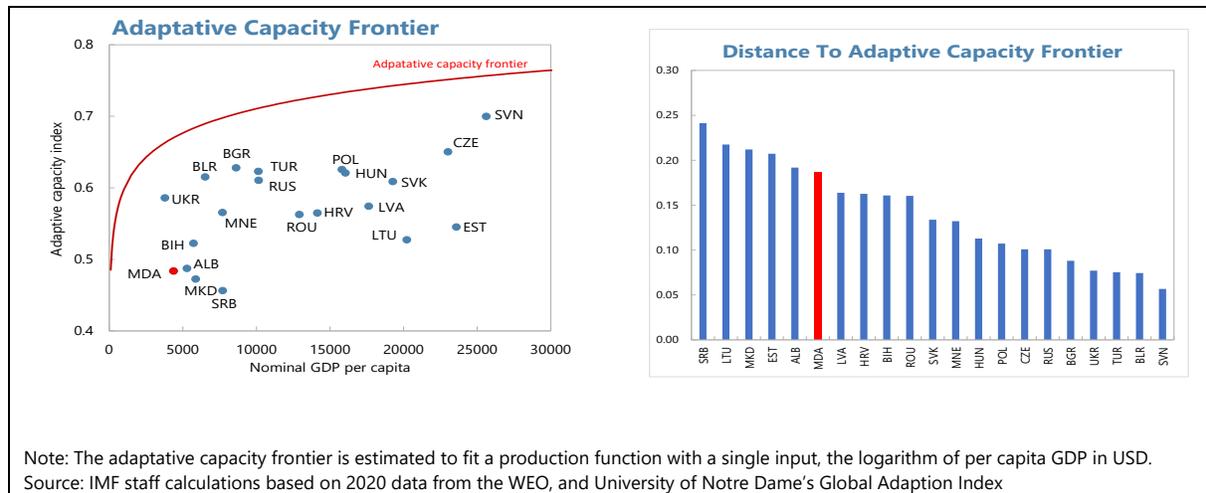
It is worth noting that Moldova's 2020 Nationally Determined Contribution estimates adaptation investment needs to be 2.5 percent of GDP per year over the next 10–15 years. We use the lower bound of these estimates range (2 percent of GDP) for the simulations in the paper.

Figure 3. Moldova: Macro Impact of Unchanged, Standard, and Adaptation Investments
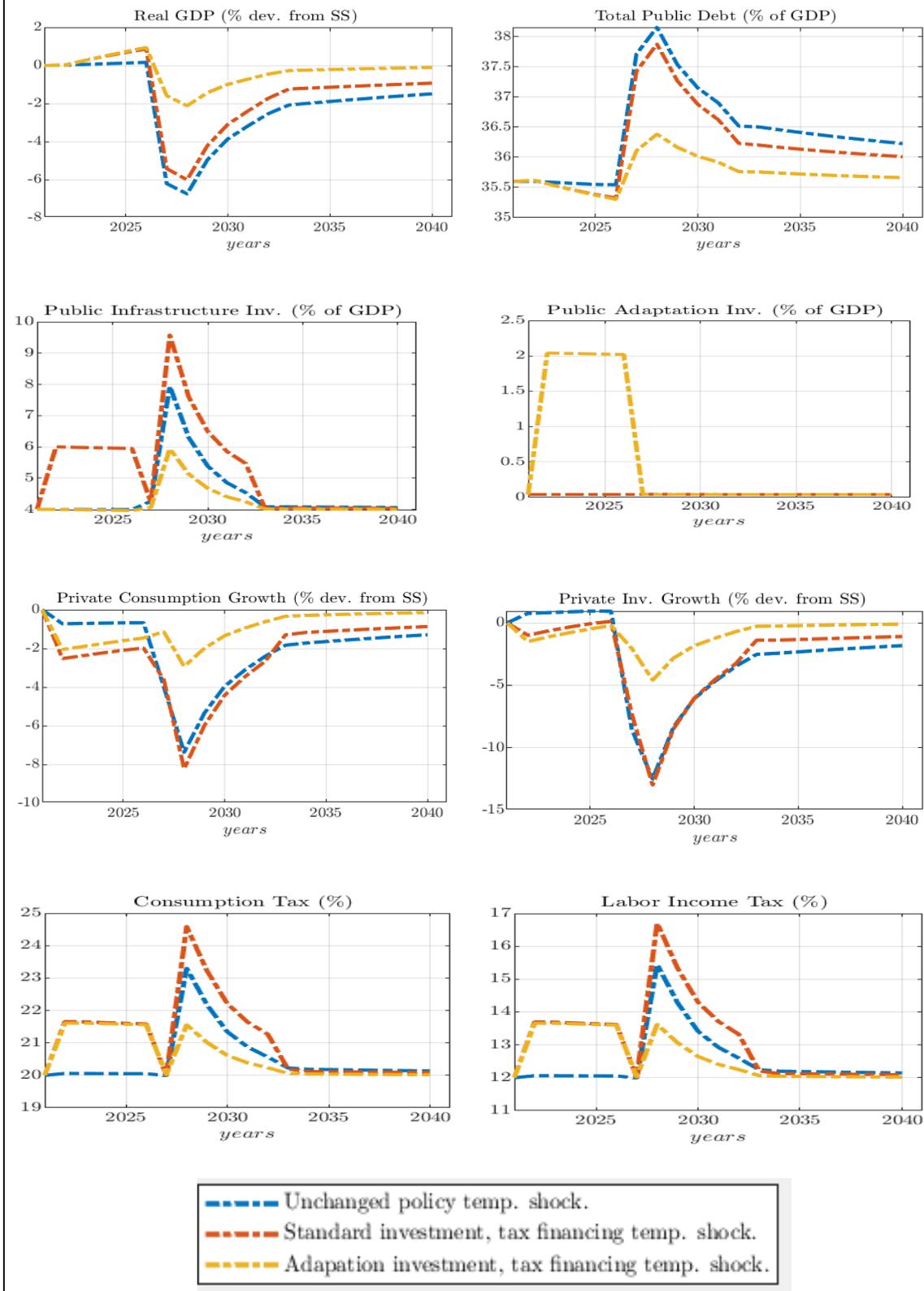
Alternative Financing Options

17.   In the following set of simulations, we explore several options of public financing of adaptation infrastructure, and their macroeconomic impacts, especially on public debt and medium-to-long-term economic growth (Table 2). We assume (i) an additional 0.5 percent of GDP of grant financing is available to the government annually (bringing baseline grant financing to 1 percent of GDP); and (ii) increased access to concessional loans by 1 percent of GDP annually.[2] This, however, leaves a financing gap of about 0.5 percent of GDP annually, to fully finance climate-resilient infrastructure. The government has two options to close the financing gap: (1) increase public commercial debt, or (2) mobilize additional tax revenues and/or generate savings from current transfers.

18.   *Public investment efficiency*. We further assess to what extent improving public investment efficiency (PIE) could support investment outcomes and growth in the medium-to-long-term. For each of the financing options discussed below, we consider a scenario where PIE increases by 15 ppts to 80 percent, similar to top performers among emerging countries.[3]

Table 2. Moldova: Parameters for Public Financing of Adaptation Investments		
	Debt financing	**Tax and exp. rationalization**
Scenario 1	All commercial debt	All tax and exp. rationalization
Scenario 2	Grant: + 0.5 ppt Concessional loans: + 1 ppt Commercial debt: ~	Grant: + 0.5 ppt Concessional loans: + 1 ppt tax and exp. rationalization: ~
Scenario 3	Grant: + 0.5 ppt Concessional loans: + 1 ppt Commercial debt ~ PIE: + 15 ppts	Grant: + 0.5 ppt Concessional loans: + 1 ppt tax and exp. Rationalization: ~ PIE: + 15 ppts

Financing Option 1: Increased Public Commercial Debt to Close the Financing Gap

19.   The simulation results for this financing option are presented in Figure 4. The scenario with additional grants and concessional borrowing (scenario 2) is compared to a scenario where such extra funding and cheaper borrowing are not available, and the government instead finances adaptation infrastructure exclusively by increasing commercial debt (scenario 1). In the latter

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[2] Such concessional financing could include funds from the IMF's Resilience and Sustainability Facility, which is expected to catalyze additional financing from international donors to support Moldova's climate adaptation efforts.

[3] Public Investment Efficient measures the share of budgeted funds effectively used for the expenditure items they were allocated to (see Dabla-Norris et al., 2011, and Aligishiev et al., 2023).

scenario, public debt would peak at about 50 percent of GDP (from about 35.5 percent) and remain broadly at that level 10 years after the shock. In line with the simulation results discussed in the previous sub-section, new investment in adaptation infrastructure boosts growth by about 1 ppt above the pre-disaster baseline, helping limit the economic impact of climate disaster by about two-thirds, and reducing medium-term scarring.

20.   Under the scenario with additional grants and concessional loan financing, the growth impact of adaptation investment is larger by about 0.2 ppt by the end of the investment cycle and over the entire post-shock period, implying significant cumulative economic benefits in the long term. This is driven, inter alia, by a smaller crowding out impact on private investment than public domestic debt financing would have generated under a fully-debt-financing scenario. The debt-to-GDP ratio reaches a maximum of 45 percent, before declining to 43 percent by end of the forecast horizon.

21.   The simulations also emphasize the role of PIE. Improving PIE is found to further support the impact of adaptation investment on growth regardless of the financing modality. Growth stands at about 0.3 ppt higher by the end of the investment phase, thanks to strengthened PIE. Post-shock, the economy recovers faster, taking growth about 0.3 ppts above levels projected in the baseline annually over the forecast horizon.

Financing Option 2: Mobilizing Tax Revenue and Expenditure Savings to Close the Financing Gap

22.   The economic impact under this financing option (Figure 5) is very similar to the *Financing Option 1*. The growth benefits of adaptation infrastructure before and after the shock, as well as resilience to climate disaster, are of comparable magnitude to the previous scenario. The growth outcomes are larger in the scenario with additional grants and concessional debt financing, compared to a scenario where adaptation investment is fully financed through taxes and expenditure rationalization. In the latter case, tax increases (on income and consumption) depress private investment and consumption, weakening the growth impact of public infrastructure investment. The positive impact of improving PIE is also in line with the results discussed in the previous scenario.

23.   However, debt sustainability implications are markedly different compared to the debt-financing option. The debt-to-GDP ratio peaks at about 40 percent following the shock and declines gradually to 37 percent by end of the forecast horizon. This financing option therefore preserves public debt sustainability, while providing a similar growth and climate-resilience impact.

Figure 4. Moldova: Macro Impact of Debt Financing of Adaptation Investments

Figure 5. Moldova: Macro Impact of Fiscal Financing of Adaptation Investments
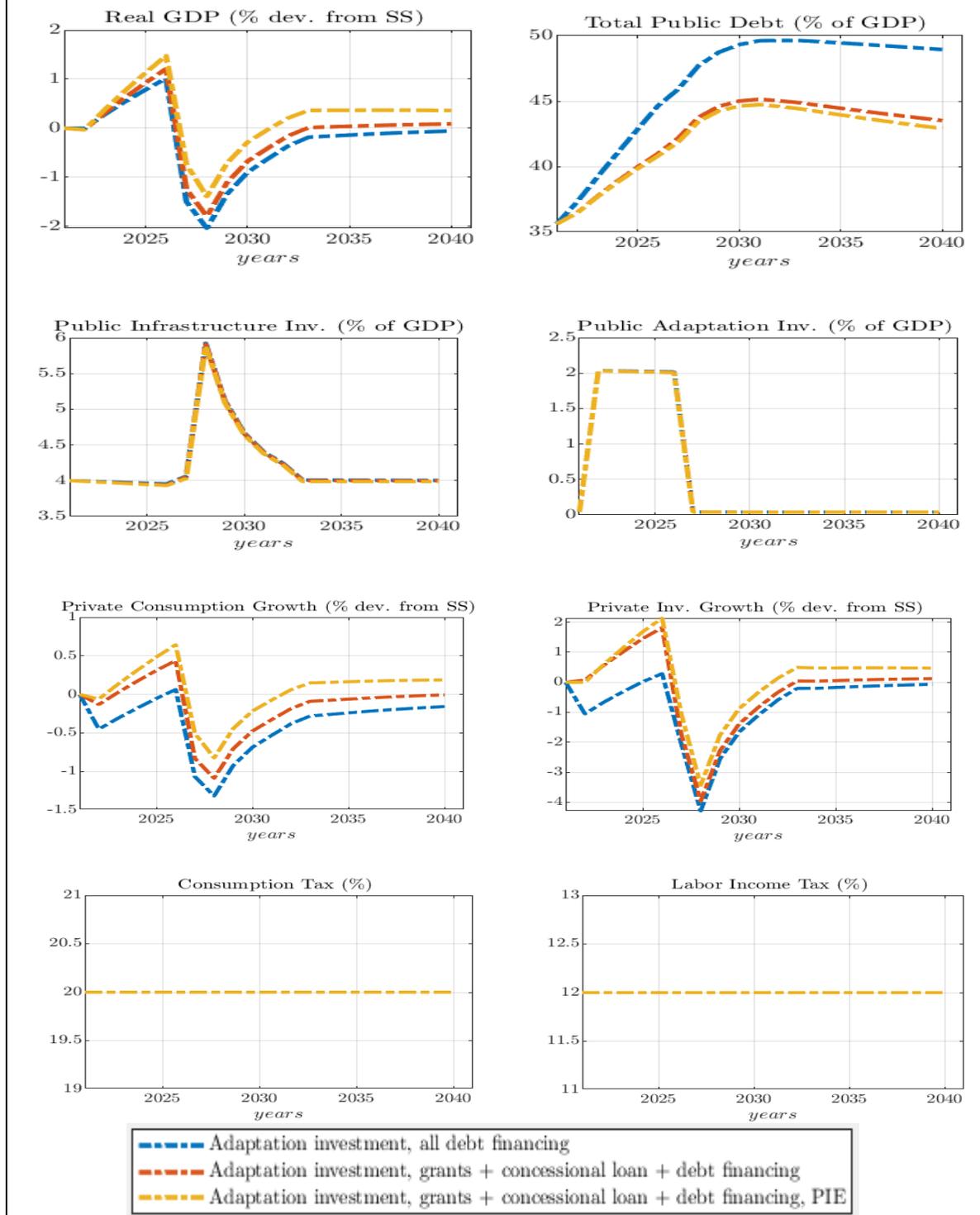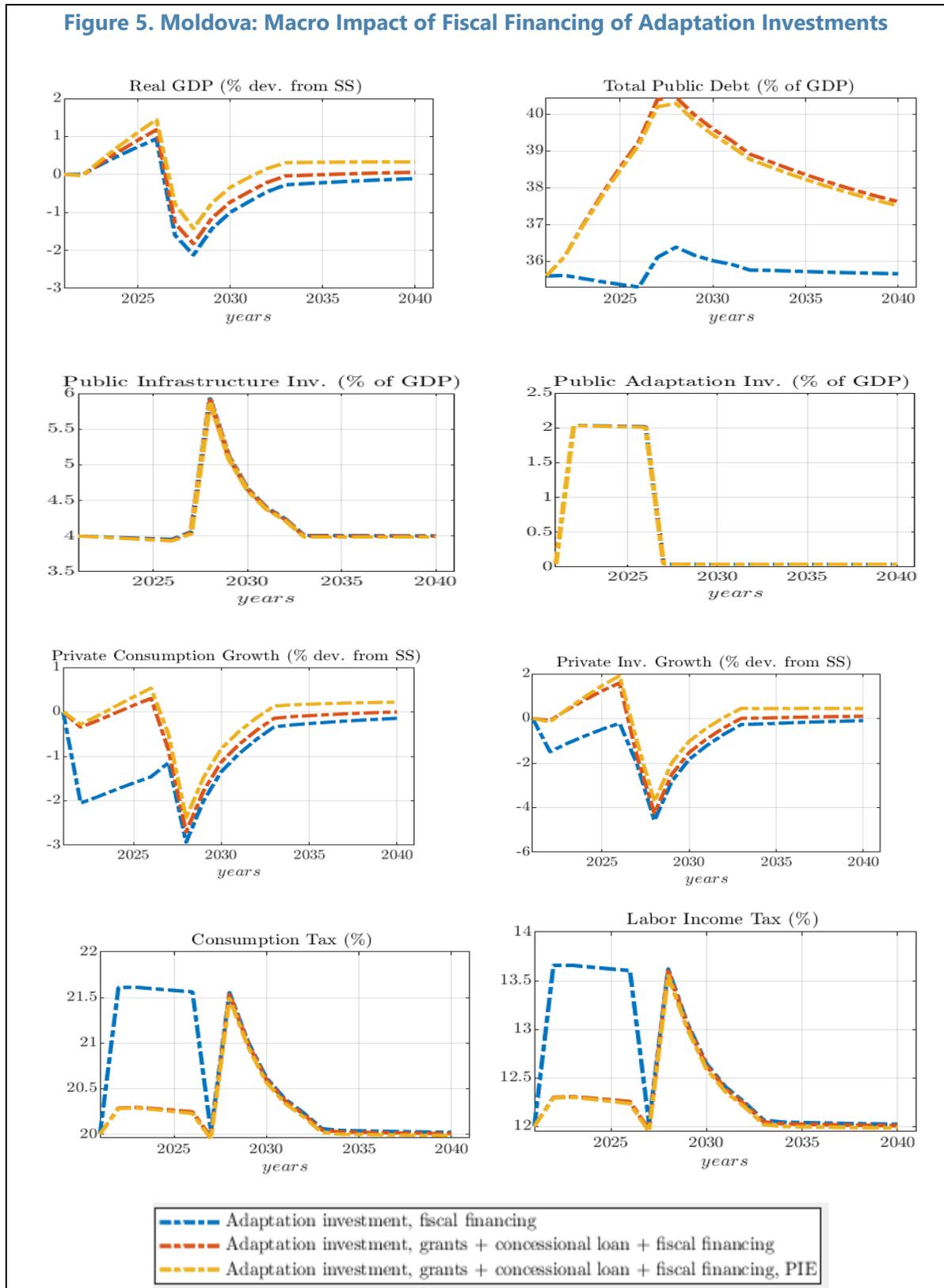
Trade-Offs and Considerations for Donors

24.   As highlighted in the previous section, closing adaptation gaps may generate trade-offs among the need to bolster the stock of climate-resilient infrastructure, supporting economic activity, and maintaining debt sustainability. Given costs and impact, it may be more reasonable and efficient to provide financial assistance to Moldova not only during the reconstruction phase, once a disaster hits, but importantly, before any disaster, to support resilient investments. This is particularly important given Moldova's limited financial resources, constrained access to commercial domestic and external debt, and limited fiscal space.

25.   This section aims to answer how large the net savings (or losses) would be if donors were to fund investments in adaptation infrastructure *ex ante* (before a climate disaster), reducing the need to support reconstruction *ex post*. The analysis assumes that donors provide financial assistance for all reconstruction efforts following a disaster. We then calculate the net present value of future costs associated with such reconstruction in the event of a climate shock. The present value of future reconstruction costs is compared to the cost of investment in climate-resilient infrastructure ex-ante.

26.   Donors' net savings from supporting adaptation investments are large. The results presented in Table 3 suggest that donors' savings would amount to about 17 percent of total *ex post* reconstruction costs if they were to support adaptation investments *ex ante*. These results are based on a disaster impact of similar magnitude of Moldova's past climate shocks. With global climate conditions continuing to deteriorate, future natural disasters will likely be of larger magnitude, and our analysis suggest that donors' savings would also be larger under such scenario. For example, donors' net savings would be equivalent to about 27 percent of reconstruction costs, should the impact of future natural disaster be 50 percent larger than historical shocks.

Table 3. Moldova: Discounted Net Savings of International Donors (in percent of reconstruction cost)	
Magnitude of Hazard	**Net Savings**
Average Impact	17.6
Average Impact + 30%	24.3
Average Impact +50%	27.3
Average Impact +100%	32.2

E.   Conclusions

27.   Moldova is one of the countries most affected by the impact of climate change in Europe. Moldova stands out among European countries due to the disproportionate human, social, and economic costs it has borne from climate shocks—the largest toll in Europe over the past three decades. Moldova's sensitivity to climate disruptions partly reflects specific country characteristics, including its heavier reliance on agriculture, a comparatively-larger rural population, high dependence on energy imports and limited diversification of energy supply sources, and limited financial resources for high-quality public services, with diversion of spending in times of external shocks. Challenges in adapting to changing climate conditions also contribute to magnifying the impact of climate shocks in Moldova. Especially, a comparatively weaker disaster preparedness strategy, low adaptation in the agriculture sector, poorer quality of infrastructure, and less reliable access to water and water storage infrastructure and capacity expose and will expose Moldova to more substantial and far-reaching consequences given increasingly changing and volatile climate conditions.

28.   Building resilience to future climate shocks will yield substantial benefits and calls for significant investments to close Moldova's adaptation gaps. This paper assesses the impact of investment in adaptation infrastructure on the resilience to climate shocks, as well the medium-to-long term economic growth. We find that adaptation infrastructure resulting from additional public investments can significantly reduce output losses from natural disasters and mitigate scarring. Especially, an accumulation of adaptation infrastructure equivalent to 2 percent of GDP per year over 5 years can reduce GDP losses from about 6 percent to 2 percent following a disaster. We also find that such investments will support sustainable long-term growth, which ultimately can reduce inequality and support Moldova's Sustainable Development Goals. Increasing PIE would also further boost GDP growth. Under the ongoing ECF/EFF program, Moldova has made progress and continues to advance in its governance reforms, including fiscal governance. Such progress, together with the implementation of the PIMA and C-PIMA recommendations, will help improve PIE.

29.   However, the analysis also reveals important challenges.

- First, limited financial resources could delay adaptation investments, leaving Moldova in a precarious position when faced with future changes in climate conditions. We find that in the absence of donors' support, the Moldovan authorities cannot finance the most needed climate-resilient investment without endangering public debt sustainability or weakening growth potential. Therefore, external support (such as through the IMF's RSF) is critical to help Moldova close the adaptation gaps. The analysis also suggests that donors' savings from such support ex-ante (to build resilience) are large relative to reconstruction costs ex-post.

- Second, Moldova appears to be relatively less well prepared for effective implementation of adaptation actions compared to other European countries. This is due to governance challenges, gaps in innovation, education, and ICT infrastructure, and the comparatively less favorable business environment, as shown by the ND-GAIN index. Continued progress to strengthen governance (including thanks to the ongoing ECF/EFF and the EU accession process) will support

Moldova's effort to the improve resilience to climate change. Boosting efficiency of education expenditure will support innovation, while ongoing efforts to promote the ICT sector will further strengthen Moldova's readiness to fully benefit from adaptation investments. Crowding in private investments for climate actions will also be critical to achieve adaptation objectives, and the authorities should continue their efforts to stimulate a favorable business environment. Reform areas related to the financial sector, under the RSF, will also help foster private sector's participation.

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CORRUPTION AND ECONOMIC GROWTH IN MOLDOVA: A REEXAMINATION[1]

This paper addresses the issue of prevalent corruption in Moldova, examining its impact on the country's economic growth and the progress in implementing the IMF's 2021 governance diagnostic's recommendations in the areas of anti-corruption and anti-money laundering (AML). Moldova, despite having sound legal and institutional frameworks, faces significant corruption challenges, hindering its growth and convergence towards EU living standards. The paper revisits the complex relationship between corruption and economic growth, and suggests that reducing corruption could accelerate Moldova's economic convergence with the EU. Drawing on regional best practices, the paper highlights successful anti-corruption reforms in nearby countries, emphasizing the role of specialized anti-corruption law enforcement authorities, robust prosecution and adjudication, and the involvement of civil society and experts with international experience. The analysis of Moldova's progress on anti-corruption and AML frameworks indicates positive steps taken, such as strengthening legal and institutional infrastructure. However, challenges persist, including delays in adjudicating corruption cases and the need for further strengthening of the AML measures. The paper concludes by recommending efforts to build the investigative capacity of the Anti-corruption Prosecution Office, and establish a specialized adjudication infrastructure to effectively combat corruption in Moldova.

A.   Introduction

1.   Corruption in Moldova is widely perceived as entrenched and widespread. Analysis conducted for a Selected Issues Paper for the 2020 Article IV Consultations (IMF 2020) found that Moldova ranked unfavorably among peer countries across a range of perception indicators on both grand and petty corruption. In 2021, on the request of the Moldovan authorities, the IMF conducted a comprehensive Governance Diagnostic (GD, see IMF 2021), analyzing the nature and severity of corruption and governance vulnerabilities in six key state functions. The GD concluded that despite having sound legal and institutional frameworks largely in place, Moldova continued to suffer from significant corruption and governance vulnerabilities. More recent data suggest some improvement in indicators of corruption in Moldova, but they still remain higher relative to other Central, Eastern and Southeastern Europe (CESEE) countries and to the EU (Figure 1). This paper provides an update on the implementation of the GD recommendations on anti-corruption and Anti-Money Laundering (AML), assesses empirically the impact that the reduction in corruption could have on growth and convergence towards EU living standards and suggests a way forward based on the progress achieved.

Figure 1. Moldova: Corruption Indicators

A variety of data sources show that corruption in Moldova is higher relative to upper middle-income countries, CESEE countries and the EU.

ICRG Corruption Index, 2022
(Lower values indicate higher corruption)

Corruption Perception Index, 2022
(Lower values indicate higher corruption)

World Bank Control of Corruption, 2022
(Lower values indicate higher corruption)

Bribery Incidence
(Latest available data; percentage of firms experiencing bribe requests)
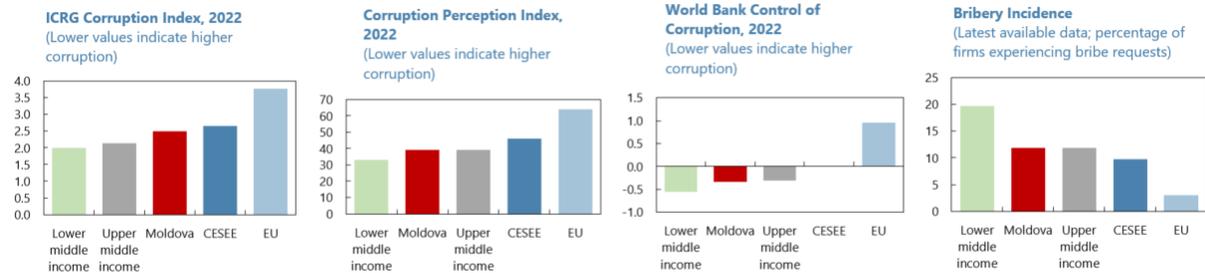
Sources: International Country Risk Guide (ICRG), Transparency International, Worldwide Governance Indicators, and Enterprise Surveys.

Corruption has been viewed as the main impediment to business development in Moldova....

....and businesses reported higher incidence of bribery relative to Europe and Central Asia.

Moldova: Top Ten Problematic Factors for Business in 2018
(Weighted scores)
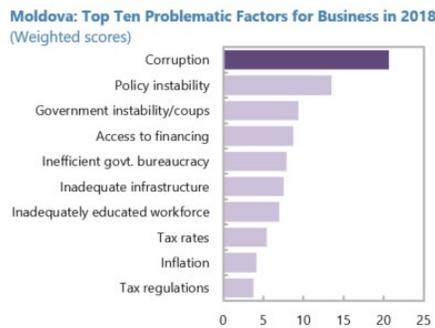
Source: Global Competitiveness Report, 2017-2018.

Firm-level Indicators of Corruption, 2019
(Percentage of firms)
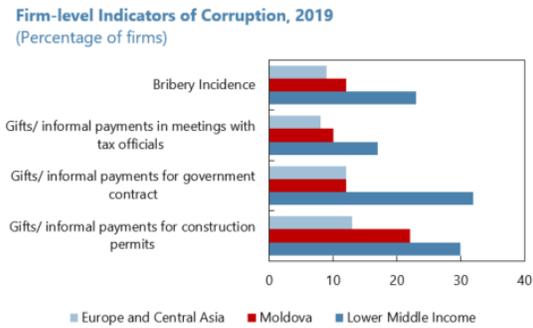
Source: Enterprise Surveys, Moldova 2019 Country Profile

Recent years have seen some improvement in indicators of corruption, with Moldova moving closer to CESEE peers. Nevertheless, the gap with the EU remains large.

ICRG Corruption Index, 2012-22
(Lower values indicate higher corruption)

Source: International Coutry Risk Guide (ICRG)

Corruption Perception Index, 2012-22
(Lower values indicate higher corruption)
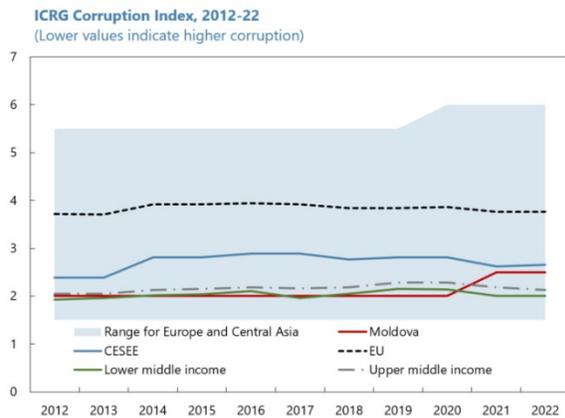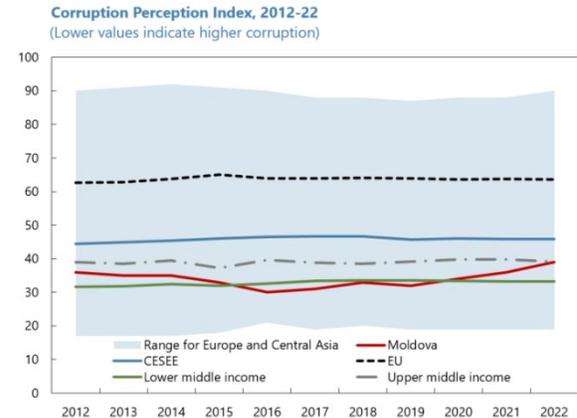
Source: Transparency International

Note: The indicators in this figure should be interpreted carefully, as they are derived from perceptions-based information. There is also some uncertainty around the point estimates.

2.   High levels of corruption can severely undermine economic growth, by reducing the quality of governance, undermining competition, weakening property rights protection, and inhibiting private investment. In June 2022, Moldova achieved EU candidate status. Despite strong growth in recent decades, Moldova continues to be among the poorest countries in Europe. The combined impact of the pandemic and Russia's war in Ukraine has exacerbated the gap in living standards between Moldova and the EU (see Staff Report ¶1). While corruption and political instability are factors affecting the economic growth of many emerging markets, these are often cited as the most problematic for doing business in Moldova (IMF 2020, Figure 1). Reducing corruption can help accelerate economic convergence to the EU. Regional experiences provide useful examples of criminal justice reforms to combat corruption. Supported by the GD as well as a Fund-supported ECF/EFF program[2], the Moldovan authorities have initiated a broad-based set of reforms aimed at reducing corruption, strengthening the rule of law, and reinforcing its anti-money laundering regime. The fight against corruption and the strengthening of the rule of law are also part of nine steps identified by the European Commission as critical elements to allow Moldova to advance its path to EU accession. While progress is ongoing, these reform efforts face resistance from vested interests, who try to leverage their access to economic and political influence to evade prosecution and undermine the efficacy of the criminal justice system.

B. Corruption and Economic Growth

3.   The theoretical relationship between corruption and economic growth is complex. There are two main theories on how corruption can impact growth.[3] An earlier view that corruption may *grease the wheels* and help the economy grow by getting around inefficient rules was replaced[4] by the *sand in the wheels* approach, which argues that corruption slows growth because it hinders efficient production and innovation. Challenges in establishing a direct cause-and-effect relationship between corruption and growth contribute to the overall complexity. The potential for reverse causality exists, where countries with higher incomes may have greater resources to tackle and mitigate corruption.

4.   Countries with lower perceptions of corruption tend to have higher GDP per capita. Figure 2 is a snapshot of this relationship using data for 2022, and shows that Moldova has a relatively high perception of corruption given its level of GDP per capita. An extensive literature exists on corruption and growth, using a variety of corruption indicators and estimation techniques and controlling for endogeneity.[5] Empirical evidence suggests that, overall, corruption tends to negatively affect growth, particularly in countries that have low investment rates and poor governance. However, it is important to note that the relationship between corruption and

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[2] See IMF Country Report No. 22/1.

[3] See Uberti (2022) for a detailed review of these theories.

[4] Tanzi (2000) notes that "the romantic view of corruption has been replaced, in more recent years, by a more realistic and much less favorable view".

[5] IMF (2017), Gründler and Potrafke (2019), and most recently Uberti (2022), provide exhaustive overviews of the empirical studies.

economic growth is complex and can be influenced by various factors. Additionally, there may be variations in the impact of corruption depending on the specific context and the nature of the corrupt practices involved.

Figure 2. Moldova: Corruption and Per Capita GDP
(Average for 2018–2022)

Sources: Transparency International and World Economic Outlook.
Note: Higher CPI values indicate lower corruption.
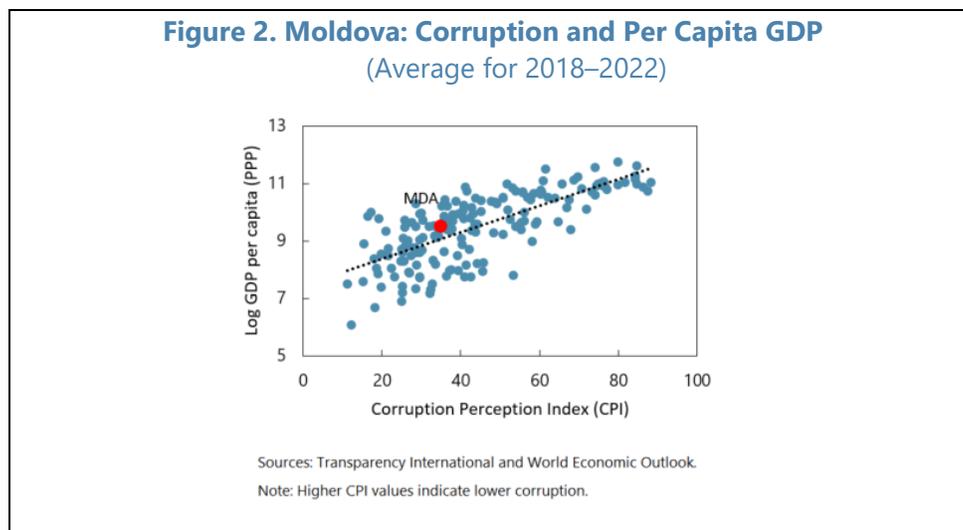
5.   Reducing corruption in Moldova could speed convergence towards EU living standards. To determine the causal effects of corruption on economic growth, we use regressions that control for growth determinants and examine the impact that corruption perceptions have on future GDP growth. To this end, we build on the IMF 2017 methodology and update it, focusing on panel data estimates covering the last 20 years. [6] Regression estimates confirm that corruption tends to have a negative effect on growth and suggest that a reduction of perceptions of corruption, represented by an increase of the Corruption Index from the International Country Risk Guide (ICRG) by one unit may raise per capita GDP growth by about 0.6 percent. Based on these findings, Figure 3 shows the projected path of Moldova's GDP per capita in proportion to the EU GDP per capita under alternative corruption levels. If Moldova is unable to lower corruption, per capita GDP will remain at about 30 percent of the EU average in 2040. If corruption is lowered to the average of EU countries (equivalent to an increase of the ICRG index by 1.3 points), per capita GDP will reach 35 percent of the EU average. However, if Moldova reduces corruption to the level of the best performing, highest ICRG level in the EU (equivalent to an increase of the ICRG index by 3 points), per capita GDP will reach 45 percent of the EU average by 2040, with accelerated convergence thereafter.

[6] Cross sectional estimates assume that the relative prevalence of perceptions of corruption in countries is stable over time, which could be a strong assumption for longer periods of time. We use panel data estimates with country fixed effects to account for over-time variation in the relationship between corruption and growth (Figure 3). Variables used in the analysis include, following IMF 2017: (i) real GDP growth per capita is the dependent variable; (ii) ICRG is used as a measure of corruption perceptions because it has the longest time series (lower ICRG values indicate higher corruption); (iii) conventional growth determinants include lagged dependent variable (to capture autocorrelation), lagged level of GDP per capita to control for mean reversion in growth, and lagged value of secondary school enrollment. Various specifications are used for robustness purposes.

Figure 3. Moldova: Impact of Corruption on Growth

The Impact of Corruption on GDP and Investment Growth, Panel Analysis

	(1)	(2)	(3)	(4)	(5)
			Real growth of per capita GDP		
One-year lagged values of:					
ICRG corruption index	0.600**	0.634***	0.630***	0.527***	0.477**
Per capita GDP growth				0.061***	0.040***
Log of GDP per capita			-2.596**	-2.606**	-2.552***
Secondary school enrollment				0.023***	0.031***
Government spending (% of GDP)		-0.099***	-0.113***		-0.131***
Constant	0.445	3.392***	33.505***	27.547***	30.792***
Observations	2,345	2,339	2,339	1,630	1,628
R-squared	0.295	0.308	0.335	0.534	0.541
Countries	118	118	118	114	114

*Note: Panel estimates cover the period 2003-2022. *** p<0.01, ** p<0.05, * p<0.1.*

Staff estimates using data from ICRG, WEO, and the World Bank.

Moldova's GDP per capita relative to EU average
(Percent, GDP measured in PPP)

Sources: WEO projections and Staff's calculations.

C.   Regional Best Practices in Criminal Justice Reforms

6.   **The experience of countries in the region provides useful examples of good practices in combatting corruption.** CESEE countries that share similar background to Moldova in terms of economic development, institutional and legal frameworks, historical legacies, or political culture appear to be the most relevant. There also appears to be a strong association between the ability to control corruption and the rates of economic growth in the region. For example, the indicator of control of corruption in Poland has been relatively high over the past thirty years and economic growth has been strong. Over this period, control of corruption perceptions in Romania have strengthened and growth followed the trajectory similar to Poland's. Conversely, Ukraine have combined a low level of perceived control of corruption and of economic growth during the last thirty years. However, following the launch of anti-corruption reforms in recent years, the control of corruption indicators have improved in these two countries—if maintained, these recent improvements in the control of corruption could contribute to improved economic performance.

7.   **Specialized anticorruption law enforcement authorities, with operational independence and strong mandates, have been at the core of anti-corruption reforms in nearby countries.** Romania, Poland, and Ukraine have each established specialized anti-corruption law enforcement agencies: Romania's National Anti-corruption directorate (DNA) in 2002, Poland's Central Anti-Corruption Bureau (CBA) in 2006 and Ukraine's National Anti-Corruption Bureau (NABU) in 2015. All three institutions were granted broad operational independence, including autonomy over staffing and the budget, clear mandates to investigate high-level corruption and broad investigative powers and capacity (e.g., special investigative techniques such as surveillance and wiretapping). These mandates and tools are aimed at reducing the influence of political and vested interests over corruption investigations and prosecutions.

8.   **Success of and support for anti-corruption reforms depend on the results in convictions and asset recovery, requiring robust prosecution and adjudication of corruption**

cases. As noted in a Selected Issues Paper for the 2017 Article IV Consultation (IMF 2017), the leadership of the anti-corruption law enforcement authorities and public support were key to strengthening and securing these institutions as investigation, judicial review, and convictions of high-level officials take time to materialize. It has been important that the leadership of these anti-corruption institutions is perceived as rule-of-law oriented, prosecuting crimes without taking into consideration the person and the political affiliation. IMF 2017 outlined how the judicial response had been a key feature of the relative success of the anticorruption agencies, particularly in Romania and Latvia[7]. IMF 2017 also noted that Romania's ranking is lower than Poland's with respect to the World Bank's indicator of rule of law and that adjudication of the cases of high-level corruption receives a special treatment in Romania.[8] Moldova ranks much lower than Romania and Poland. Ukraine's weaknesses in the rule of law, with a ranking similar to that of Moldova, was an important contributor to the decision to establish a specialized anti-corruption court, considering the low trust in the courts of general jurisdiction.

9.   **Involvement of civil society and experts with international experience has contributed to the credibility and sustainability of anti-corruption reforms.** Civil society has been actively engaged in the design of new anti-corruption agencies in the region, which has promoted credibility and support for the institutions. The experience of anti-corruption experts from the academia, think-tanks and other NGOs has also been leveraged. Involvement of experts with international experience was instrumental at the early stages of the reforms considering the limited domestic track record of successful prosecution of top-level corruption. For example, anti-corruption reforms in Romania leveraged EU conditions, while in Ukraine, experts with international experience were a key part of the selection process for top prosecutors, judges, and investigators. Efforts of investigative journalists and media have also been useful to support the work of anticorruption agencies in the region, for example to identify officials not declaring assets or exhibiting other indications of illicit enrichment.

D. Taking Stock of Moldova's Progress on Anti-Corruption and AML

10.   **This section analyzes progress in the implementation of GD recommendations in the areas of anti-corruption and AML frameworks.** The GD concluded that corruption and governance vulnerabilities are pronounced in the areas of rule of law, anti-corruption, AML, and

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[7] IMF 2017 described that 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.

[8] 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.

governance of state-owned enterprises (SOEs), while other areas assessed (public financial management, tax administration, central bank governance and financial sector oversight) presented some progress in mitigating such vulnerabilities. This section focuses on two control functions—anti-corruption and AML (Table 1)—that are critical to support the effective implementation of broader governance reform, including in the other state functions analyzed in the GD. Effective enforcement and associated dissuasive effects create incentives for compliance with good governance frameworks. Two measures from the GD anti-corruption recommendations were incorporated into the Fund-supported program as conditionality, the majority of the GD priority recommendations in the two areas analyzed were implemented, and good progress and steps to implement structural, long-term recommendations were observed on the rest. Moreover, a number of additional, non-priority GD recommendations were also implemented, highlighting the usefulness of the GD recommendations in informing the authorities' reform efforts.

Progress in the Anti-Corruption Framework

11.   The GD concluded that the anti-corruption legal and institutional infrastructure is largely in place but lacked effectiveness and needed to be insulated from undue influence. Sanctioning in corruption cases appeared lenient, with recourse to fines and reduced and suspended sentencing. Criminal enforcement efforts were focused on petty corruption and not targeted at high-level corruption. In addition, the pervasiveness of corruption and governance vulnerabilities in the anti-corruption institutional framework, including the judiciary, resulted in widespread vulnerabilities across other public agencies. The GD noted that corruption in law enforcement and the judiciary in Moldova is particularly concerning, as it allows for non-prosecution of criminals, facilitating commission of other economic crimes. The GD identified five priority recommendations to strengthen the anti-corruption framework, ranging from short-term measures to strengthen anti-corruption law enforcement and promote integrity in the prosecution service, to longer-term adjustment in the focus of anti-corruption investigative efforts to improve effectiveness of anti-corruption enforcement.

12.   One of the first implemented anti-corruption recommendations was to strengthen the selection process for the head of Anti-corruption Prosecution Office (APO). APO's mandate includes investigation and prosecution of high-level corruption, and the GD concluded that the selection process for the APO head should include additional safeguards to reflect the importance and the need for independence of this office. The GD recommended to strengthen the selection process for the head of APO with participation of experts with international experience and civil society and by allowing non-prosecutors to apply; the strengthening of the selection process for the head of APO became part of the conditionality under the ECF/EFF program of reforms (March 2020 Structural Benchmark). The authorities amended the legal framework to include a selection commission comprised of members with impeccable reputation and high professional and moral qualities in vetting candidates for the APO head in a balanced, transparent, and fair manner using objective criteria stipulated by law. The authorities promptly established such a commission, including members with international experience in anti-corruption prosecution and representatives of civil society, and initiated the selection process, appointing a prosecutor with the necessary

professional skills and irreproachable reputation as the head of APO. This was also part of the Fund-supported program (December 2022 Structural Benchmark).

Table 1. Moldova: Governance Diagnostic Priority Recommendations			
MEASURE	**AUTHORITY**	**OBJECTIVE**	**IMPLEMENTATION STATUS**
Anti-Corruption Framework			
Strengthen the selection process for APO head with participation of international experts, civil society, allowing non-prosecutors to apply.	MOJ, APO	Strengthen the independence of APO.	Implemented
Transfer the disciplinary function from the PGO to the SCP.	PGO, SCP	Promote integrity in prosecution service.	Implemented
Intensify investigations of embezzlement by public officials, illicit enrichment and declaring false information.	APO, NAC	Improve effectiveness of anti-corruption enforcement.	Continuous relevance
Conduct and publish a study of court practice and factors leading to lenient sanctions in corruption cases.	Judiciary, APO, NAC, PGO, MOJ	Improve dissuasiveness of sanctions in corruption cases.	Continuous relevance
Prioritize investigation of high-level corruption.	APO	Improve effectiveness of anti-corruption enforcement.	In progress
Anti-Money Laundering			
Conduct cross-sectoral thematic inspections of banks based on the external audit.	NBM	Improve application of preventive measures among reporting entities.	Implemented
Provide the PSA with sanctioning powers for non-compliance with registration requirements regarding the BO info.	MOJ	Improve quality of BO information in company registry.	Not implemented
Conduct a thematic inspection re banks' systems for reporting of suspicious transactions, with a particular focus on transactions relating to PEPs.	NBM, SPCML	Improve application of preventive measures by reporting entities.	Implemented
Intensify efforts to investigate and prosecute corruption-related ML in line with risk profile.	NAC, APO	Increase effectiveness of anti-corruption criminal justice.	Continuous relevance

13.   The authorities also implemented the recommendation on strengthening the independence of the disciplinary function of prosecution. At the time of the GD, the Inspection of Prosecutors, a body in charge of disciplinary proceedings against prosecutors, was insufficiently independent and subordinated to the Prosecutor General. Disciplinary cases were launched only after Prosecutor General approval, who also appointed and dismissed inspectors and chief inspectors, establishing the structure, budget and composition of the Inspection. The authorities revised the legal framework in June 2023 to transfer the Inspection of Prosecutors to the Supreme Council of Prosecutors, a self-governing body of prosecutors. The mandate and the structure of the Inspection of Prosecutors are determined by the Supreme Council of Prosecutors, which is also organizing the selection process for the inspectors who cannot be selected from among the prosecutors in office.

14.   The authorities have taken steps to enhance the dissuasiveness of sanctioning in corruption cases. The GD identified that sanctioning in corruption cases appeared lenient, with wide application of fines and reduced and suspended sentencing. Almost half of all convictions in corruption cases resulted only in a fine; a minor share of convictions resulted in imprisonment, and in these few cases, the sentences were mostly suspended. This contributed to perceptions of impunity of corrupt officials. The GD recommended to conduct and publish a study of court practice in corruption cases to identify legal provisions, operational practices, and other factors that have led to lenient sanctions. As part of the Fund-supported program, the authorities took steps to limit abuse in the existing criminal justice framework by enhancing simplified proceedings provisions by adding clear criteria and procedures and prohibiting the reduction of terms of imprisonment in corruption cases below statutory minima (prior action, third ECF/EFF review).

15.   In line with a long-term GD recommendation, the authorities have prioritized investigations of high-level corruption. The GD concluded that corruption investigations at that time were focused on petty bribery and that criminal enforcement efforts needed to be better targeted at high-level corruption. As anti-corruption reforms became a priority for the authorities, notable progress has been achieved in investigation of high-level corruption. Since January 2023, the National Anti-Corruption Centre (NAC) and APO have submitted to court over 140 corruption cases involving one former President, one former Prime Minister, one former minister, four former and current members of Parliament, three prosecutors, one judge, one former governor of the NBM and other high-level officials. APO obtained 130 sentences in the first instance court, including confiscation orders for over MDL 1.7 million. Recently, APO prosecutors obtained an appellate adjudication in a high-profile bank-fraud case, sentencing in absentia a former high-level official to 15 years imprisonment and ordering over MDL 5.2 billion confiscation.

16.   The GD recommendation to intensify investigations of embezzlement by public officials, illicit enrichment, and declaring false information has continuous relevance. At the time of the GD, some types of corruption crimes, such as embezzlement and illicit enrichment, were not adequately prosecuted. The GD report noted that considering the difficulties in detecting and prosecuting corruption in Moldova and recovering proceeds, illicit enrichment can be an important anti-corruption tool, where significant enrichment of a corrupt official provides a visible manifestation of corruption and a basis to start an investigation. However, law enforcement agencies emphasized during the GD the difficulties in establishing a case of illicit enrichment due to the need to prove that assets could not have been legally obtained; this was interpreted as a requirement of a direct proof of illegality, for instance, a link to a specific offence. A recent interpretation of the burden of proof in the illicit enrichment investigations by the Constitutional Court[9], which confirmed that the evidence of a crime that generated the illicit wealth is not required,

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[9] In November 2022, the Constitutional Court adopted a decision in which it found "*that when applying the provisions of Article 330-2 of the Criminal Code, the prosecution's task is to prove that the value of the assets owned by the accused person substantially exceeds the legally acquired means and that they could not have been obtained legally, but not to prove that his income would result from the commission of other crimes. An interpretation according to which the charge of illicit enrichment would be conditioned on the evidence of another income-generating crime would defeat the purpose for which this crime was regulated, i.e., that of preventing corruption.*"

could be instrumental in intensifying prosecution of illicit enrichment, a crime relevant due to the perceptions of large unexplained wealth of some officials.

17.   Despite the ongoing justice sector reforms, many corruption cases remain unresolved for extended periods of time, while cases against judges are mostly adjudicated in favor of the accused. The President has cited the stalling of adjudication of high-profile corruption cases and unwillingness of judges to act against unwritten rules that protect their interests as key reasons for establishing an anti-corruption court.[10] In 2020, the courts in Moldova took, on average, 324 days to reach a final decision on a case, 39 percent faster than the Council of Europe median (529 days). However, reaching a final decision in corruption cases took, on average, 3.5 years, four times slower than the national average for all criminal cases and 2.4 times slower than the Council of Europe median.[11] Moreover, the completion rate for corruption cases in 2022 (30 percent of cases examined were adjudicated) was materially lower than the completion rate for all criminal cases (50 percent).[12] Unfortunately, measures taken earlier to accelerate adjudication of complex corruption cases, such as establishment of specialized panels, did not increase the trust in judiciary[13] and have not raised the efficiency and timeliness of adjudication.

Anti-Money Laundering

18.   During the GD, Moldova's AML regime was not sufficiently used to support anti-corruption efforts or to shield the country's economy from illicit flows. The GD report noted that banks in Moldova exhibited recurring deficiencies in their application of preventive measures, particularly those aimed at identifying beneficial owners and politically exposed persons (PEPs). For identification of PEPs, Moldovan banks appeared to rely largely, if not exclusively, on self-reported information from customers, without cross-checking or verifying the information provided. The GD also stressed that the AML toolkit could also be better leveraged to support anti-corruption criminal enforcement and asset recovery efforts, while strengthened AML controls would provide fewer opportunities for the use and concealment of corruption-related illicit gains. Given these deficiencies, the GD recommended to conduct cross-sectoral thematic inspections of banks based on external audits.

19.   In line with the GD recommendation, the NBM, as an AML/CFT supervisor, has introduced thematic inspections to its system of supervision. The NBM has conducted thematic inspections focused on the identification of beneficial owners and application of customer due diligence measures for PEPs, which were also triggered by the external audit findings. In addition, during on-site inspections, the NBM reviewed the implementation of action plans developed based on the results of the external audit control.

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[10] Presidential Administration of Moldova, June 2023, Information Note to the Draft Law on Anti-corruption Court.

[11] Legal Resources Center of Moldova, 2022 "Judgment and sanctioning of corruption - analysis of judicial practice".

[12] *Idib.*

[13] Presidential Administration of Moldova, June 2023, Information Note to the Draft Law on Anti-corruption Court.

20.   To address the abuse of companies for laundering the proceeds of corruption, the GD recommended to improve the quality of beneficial ownership information in the company registry. Although a public register of beneficial owners exists in Moldova, the Public Services Agency (PSA), responsible for maintaining the register, lacks the power to sanction entities for submission of false, incorrect information or failing to report changes. The GD concluded that due to the absence of enforcement powers, the quality of information contained in the register was questionable and recommended to grant the PSA sanctioning powers for non-compliance with the registration requirements regarding beneficial ownership, powers that are currently with the Ministry of Internal Affairs.

21.   The authorities have taken measures to improve the identification of suspicious transactions and the quality of their reporting, with a focus on PEP activities. The NBM is assessing the effectiveness of the suspicious transaction reporting systems of the banks during its on-site inspections and off-site monitoring. The NBM has identified failures to identify and report suspicious transactions in banks, resulting in application of sanctions on banks, including written warnings and fines. In addition, the Office for Prevention and Combating of Money Laundering approved new Guidelines on the identification and monitoring of PEP activity and risk indicators for PEPs. The approved Guidelines also include a list of types of officials that hold prominent public positions for the purpose of identification of PEP.

E.   Conclusion and Next Steps

22.   An analysis of progress since the GD was conducted in 2021 shows strengthening of the anti-corruption and anti-money laundering framework, but further progress is needed in both areas. The authorities have implemented a wide range of recommendations provided by the GD. The perseverance of reform efforts in this area is critical and has the potential to contribute to boosting growth, fostering competition and investment, and accelerating income convergence towards the EU.

23.   Further strengthening of the AML regime is required to mitigate substantial money laundering risks from corruption-related illicit financial flows. The capacity of law enforcement to use financial intelligence and to conduct financial investigations should be strengthened to identify and trace the proceeds of corruption more effectively. The authorities should intensify efforts to prosecute corruption-related money laundering in line with the substantial risks Moldova is facing. The NBM should develop the toolkit for the risk-based supervision of the financial sector and leverage risk-based targeted and thematic on-site inspections targeting the aspects that pose elevated risks within individual financial institutions and focusing on their vulnerabilities to laundering the proceeds of corruption. The NBM should impose effective, proportionate, and dissuasive sanctions for non-compliance with AML/CFT obligations, which might be hindered by the NBM's cumbersome internal processes for sanction approval. The authorities should grant the PSA sanctioning powers for non-compliance with the beneficial ownership requirements or establish an effective mechanism of cooperation in this area between the PSA and the Ministry of Internal Affairs.

24.   Building up APO's investigative capacity is a key priority for anti-corruption reforms in Moldova. Following the strengthening of APO's mandate to cover all high-level officials and corruption-related offences (as described in the SR, para. 30), the authorities should promptly take measures to strengthen its investigative capacity. Specifically, APO should be granted the required equipment, premises, and staffing (prosecutors, investigative officers, counsels, and experts) to ensure that it has sufficient capacity to deliver on the mandate to investigate high-level corruption. In this vein, the authorities adopted a law in October 2023 to grant APO the powers to apply wiretapping, which should be accompanied with prompt allocation to APO of required equipment and staff. A timely increase in staffing would require strengthening APO's authority over its human resources, as was recommended by the GD; currently, the control over staffing is exercised by the Superior Council of Prosecutors and the Prosecutor General. Specifically, APO should have a leading role in identifying prosecutorial candidates and forming panels for selection interviews, and a decisive say in the selection and transfer of prosecutors to APO. In addition, APO is relying on investigative officers seconded from other law enforcement agencies to conduct own investigations, which is a less stable arrangement. The authorities need to continuously meet APO's investigative capacity needs to promote effectiveness and continuity of investigations. Finally, APO needs to be also safeguarded from the pressures of vested interests, including pressures to curb its investigative capacity, by preventing transfer of prosecutors or investigative officers to APO or avoiding the introduction of limits to its mandate over the high-level corruption cases.

25.   To complete the anti-corruption institutional system, Moldova should establish a specialized adjudication infrastructure. The President of Moldova has initiated the establishment of an anti-corruption court to ensure timely and specialized adjudication of corruption cases, submitting a draft law to Parliament in July 2023. The establishment of an anti-corruption court was indicated as a key justice reform priority, due to delays on high-profile corruption cases and limited successes in addressing corruption in the justice sector by the current judiciary. The authorities are currently adjusting the draft law taking into account a Venice Commission opinion with adoption of the law expected in early 2024. Several key aspects of the anti-corruption court design need to be ensured. The selection process for the anti-corruption judges should be reinforced—for example, involving experts with international experience, building on the lessons learned from the pre-vetting process for the members of the Superior Council of Magistrates. Objective and uniform selection criteria specific to anti-corruption judges should be established to promote transparency of the process. To avoid overburdening the new court, its jurisdiction should cover only cases investigated and/or prosecuted by APO, ensuring sufficient judicial staffing. Comprehensive safeguards will need to be introduced to protect the staffing, budgetary and operational autonomy of the anti-corruption court.

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