



# REPUBLIC OF MOLDOVA

## SELECTED ISSUES

December 2017

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# REPUBLIC OF MOLDOVA

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December 6, 2017

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**The European  
Department**

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# PUBLIC INVESTMENT, EFFICIENCY AND GROWTH: THE CASE OF MOLDOVA

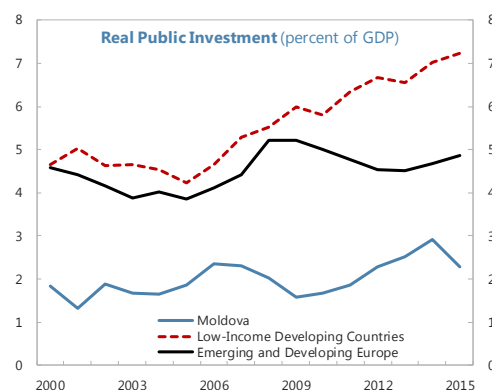
## A. Introduction

**1. Raising investment is essential to increase the economy's productive capacity and support more stable and sustainable growth over the medium term.** Public investment is widely recognized as one of the critical drivers for addressing development needs.<sup>1</sup> Particularly in low-income countries, where infrastructure gaps are significant, it helps to reduce inequality and support poverty reduction. While public investment can deliver long-term gains, there are several examples of publicly-financed infrastructure investment that delivered poor results for variety of reasons, including poor project selection and planning, cost overruns, corruption and insufficient maintenance.

**2. The scale up of public investment in Moldova should account for absorption capacity constraints and high reliance on external financing, to ensure a positive impact on growth.** It should also be accompanied by efforts to build capacity and strengthen institutions. Improving the efficiency of investment can raise potential growth and address infrastructure gaps, even if the fiscal space is limited.<sup>2</sup> Policy actions include better integration between national strategic planning and capital budgeting, in addition to strengthening the public investment management processes. More rigorous project appraisal, monitoring and implementation should be adopted to mitigate delays and cost overruns.

## B. Public Investment and Capital Stock in Moldova

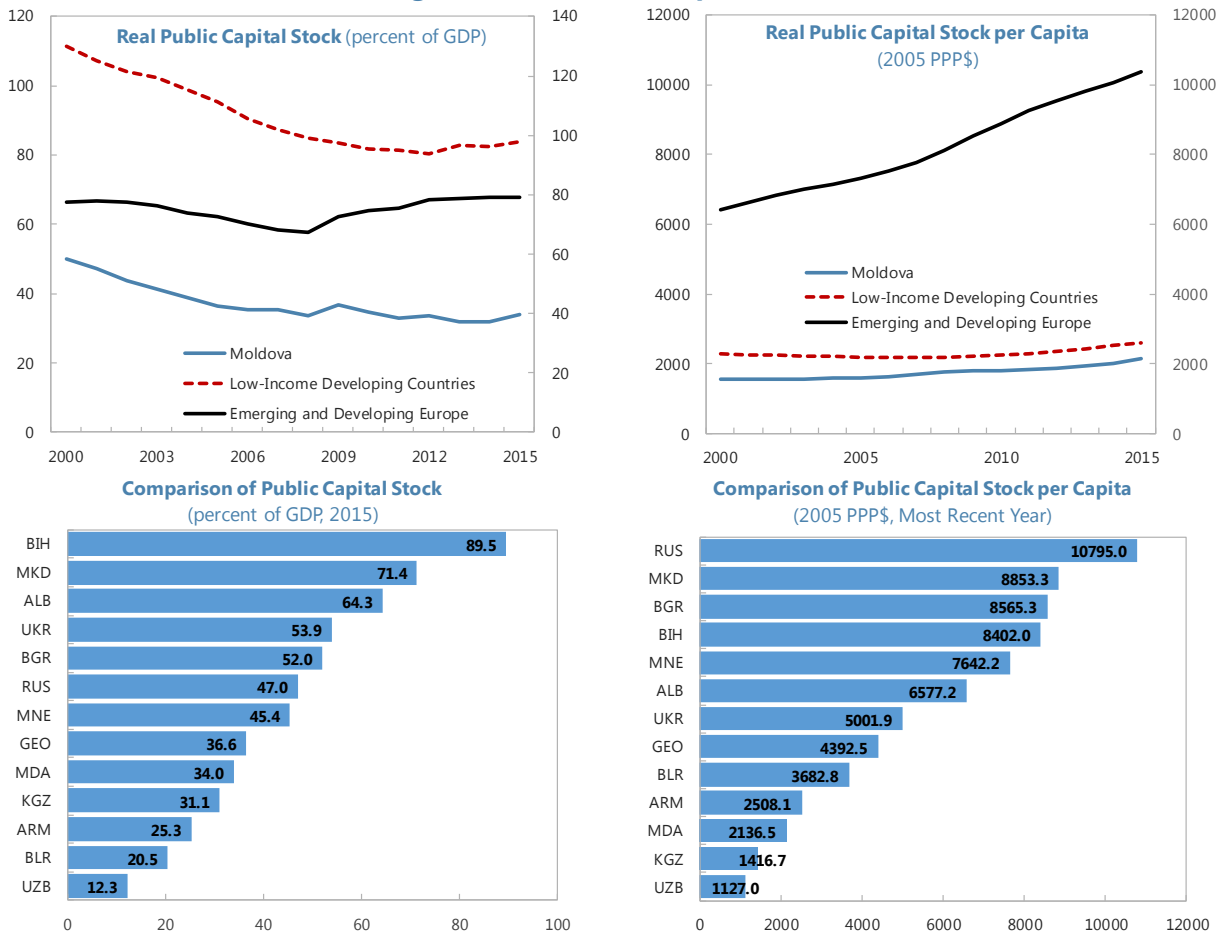
**3. In Moldova, public investment and the public capital stock are lower than the average in low-income developing countries or in Eastern Europe.** In Moldova, the recovery of public investment as a share of GDP after the recent global financial crisis was interrupted by limited external financing in 2015 and in 2016. The real value of public capital is below the average level of low-income countries as a share of GDP, but broadly in line in per capita terms. It is also comparable to other CIS countries, excluding oil-exporters.



<sup>1</sup> See Gurara, Klyuev, Mwase, Presbitero, Xu, and Bannister, 2017.

<sup>2</sup> See IMF Policy Paper "Assessing Fiscal Space: An Initial Consistent Set of considerations," 2016.

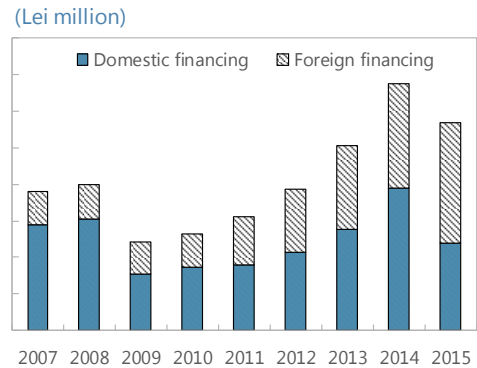
**Figure 1. Real Public Capital Stock**



Source: FAD's Investment and Capital Stock Template.

**4. Public investment in Moldova relies significantly on external loans and grants to finance capital spending.** The share of foreign financing varies across sectors, with agriculture and health relying significantly on donor support and education financed mostly domestically.

**Total Capital Expenditure**



Sources: World Bank's BOOST database.

**Figure 2. Financing of Public Investment by Sectors**  
(Lei million)

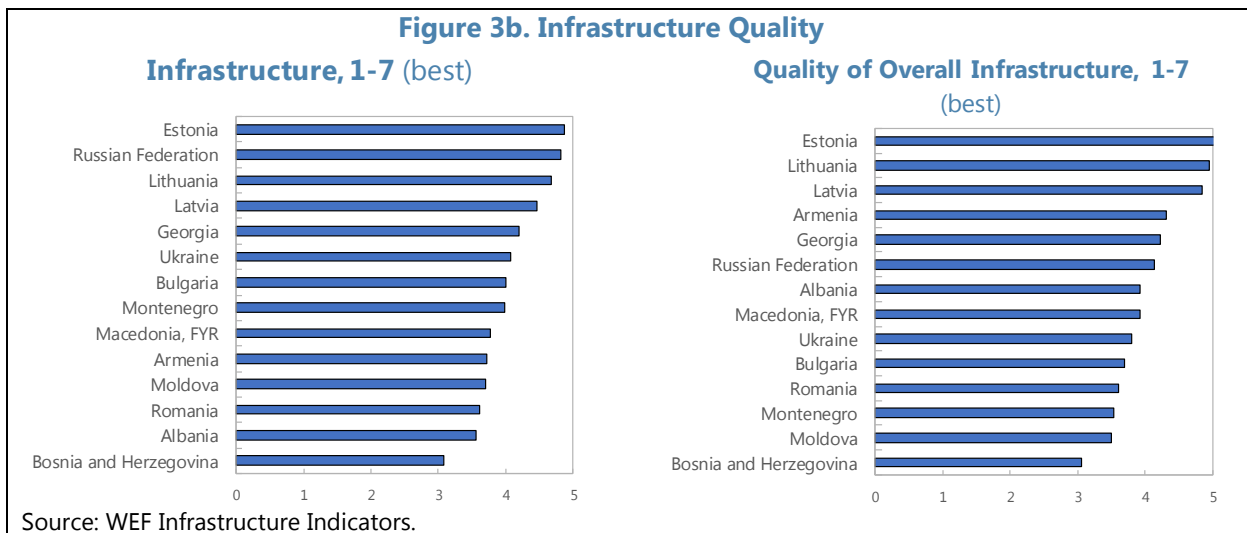
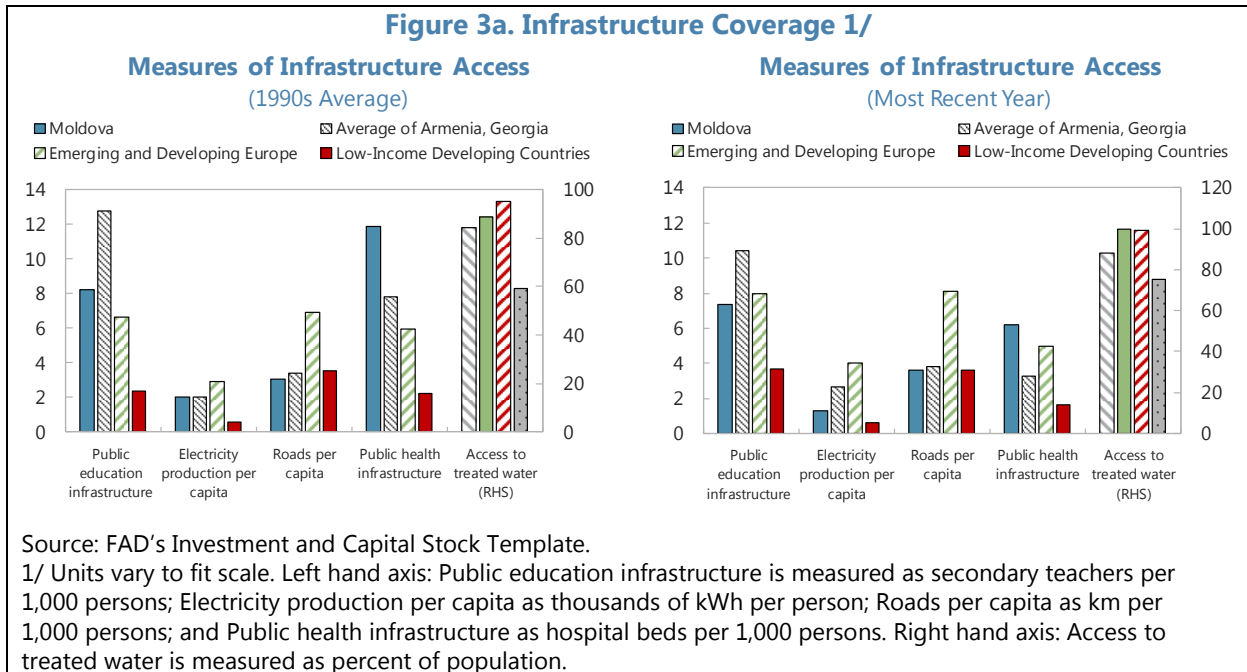


Source: World Bank's BOOST database.

### C. Infrastructure Coverage and Quality

**5. Critical infrastructure needs in Moldova broadly correspond to the priority sectors identified in the National Development Strategy Moldova 2020: energy, transport, agriculture, health, and education.** In general, infrastructure in Moldova ranks better regarding coverage than quality. Infrastructure quantity, including access and coverage of social infrastructure (schools, hospitals) and economic infrastructure (roads, water, electricity networks), is better than average for low-income countries. The efficiency score<sup>3</sup> for physical infrastructure is high: 0.92, compared to overall average of 0.59. Nonetheless improvement across sectors since the 1990s has been uneven and overall somewhat limited (see Figure 3a). The quality of public investment lags compared to peer and neighboring countries for most sectors, except for electricity and telephony infrastructure (see Figure 3b). The efficiency score for infrastructure quality is 0.69, below the average for low-income countries of 0.76 and the overall average of 0.8.

<sup>3</sup> From FAD PIE-X database. Efficiency score is calculated as the vertical distance from the efficiency frontier relative to "peer" best performers, with public capital stock per capita as input, and quantity and quality indicators as output.



## D. Public Investment Scale Up and Growth

**6. Rapid scaling up of investment is vulnerable to the interruption of foreign financing and can exacerbate growth volatility.** To assess the impact of foreign financing interruptions on growth, we apply the Debt, Investment and Growth Model (*Berg, Portillo, Buffie, Pattillo, and Zanna, 2012*). This is a general equilibrium model with two production sectors (traded and non-traded goods) based on a Cobb-Douglas production function, involving public capital, private capital, and labor. The model is designed for low-income countries to assess front-loaded investment programs on growth and debt sustainability. It allows the evaluation of different types of financing: domestic spending, domestic borrowing, external commercial or concessional borrowing options.

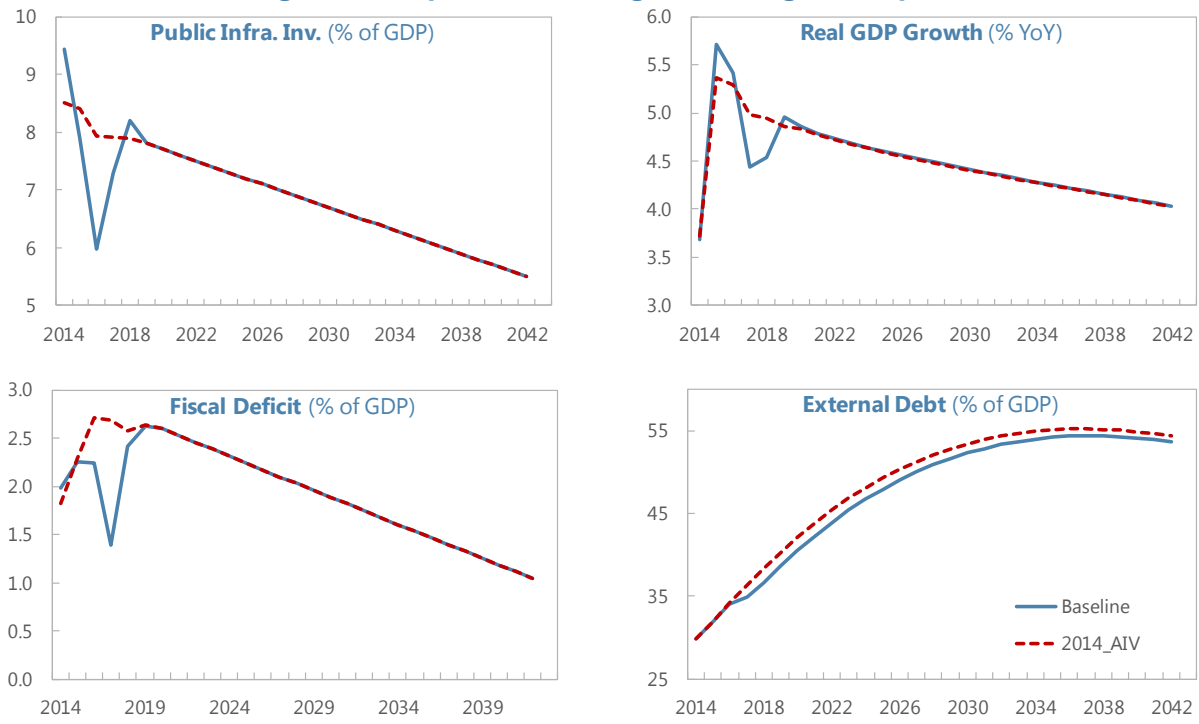
### Box 1. Key Features of the Debt Investment and Growth Model

- computable general equilibrium model, with growth as an endogenous variable.
- two production sectors: internationally traded and non-traded goods. Modeled as a Cobb-Douglas production function involving public capital, private capital, and labor.
- government's resources: external concessional borrowing, domestic borrowing, grants, and a consumption tax.
- government spending: transfers to households or public investment, and interest payments on borrowings.
- public capital: discounted by an efficiency factor that accounts for leakages of public resources.
- public investment efficiency: ratio of the public capital installed to the amount of money spent on that capital.

**7. Impact of financing interruptions on growth.** To illustrate the vulnerability of investment and growth to heavy reliance on foreign financing, we compare actual outturns and the current baseline model scenario to a scenario with the public investment path forecast at the time of 2014 Article IV before the recent banking crisis unfolded in Moldova (see Figure 4a). The estimated impact from shortfall in external financing, despite the substantial switch to domestic financing, on GDP is around 0.5–1.5 percent in 2015 and 2016, assuming other things unchanged.

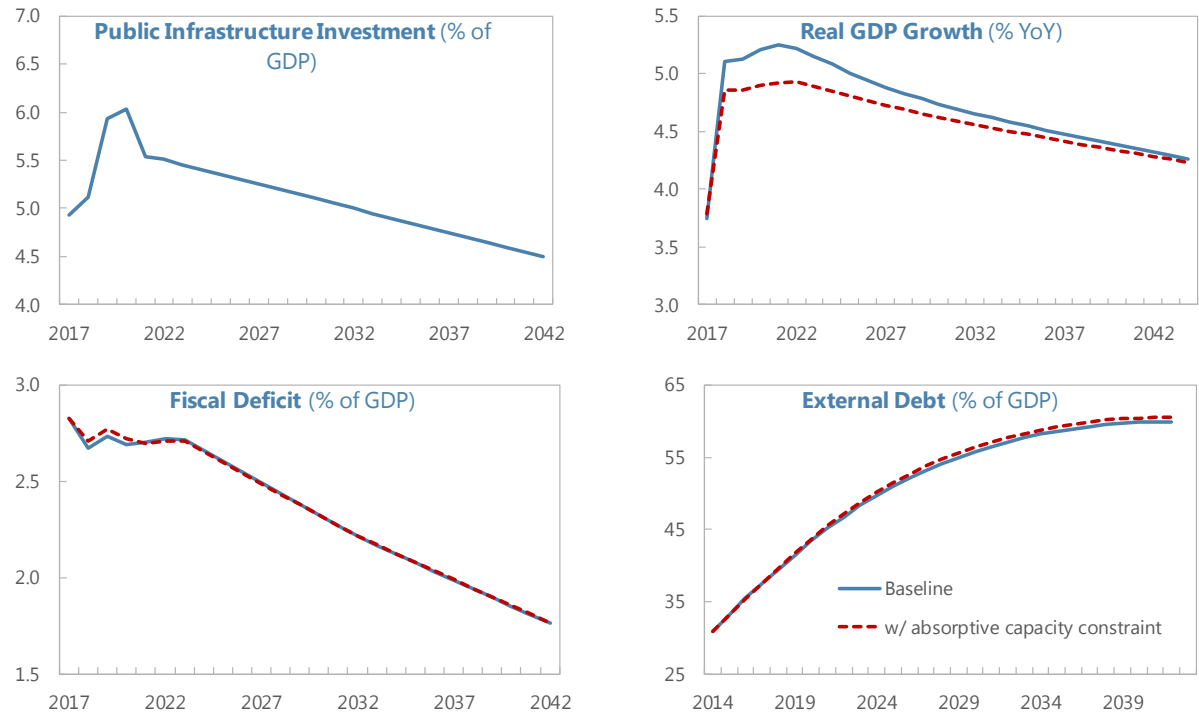
**8. Impact of the absorptive capacity constraint on growth. Coordination problems and supply bottlenecks during the implementation phase of public investment projects lead to the absorptive capacity constraint, limiting the positive impact on growth** (see Figure 4b).

**Figure 4a. Impact from Foreign Financing Interruption**



Source: IMF staff calculations.

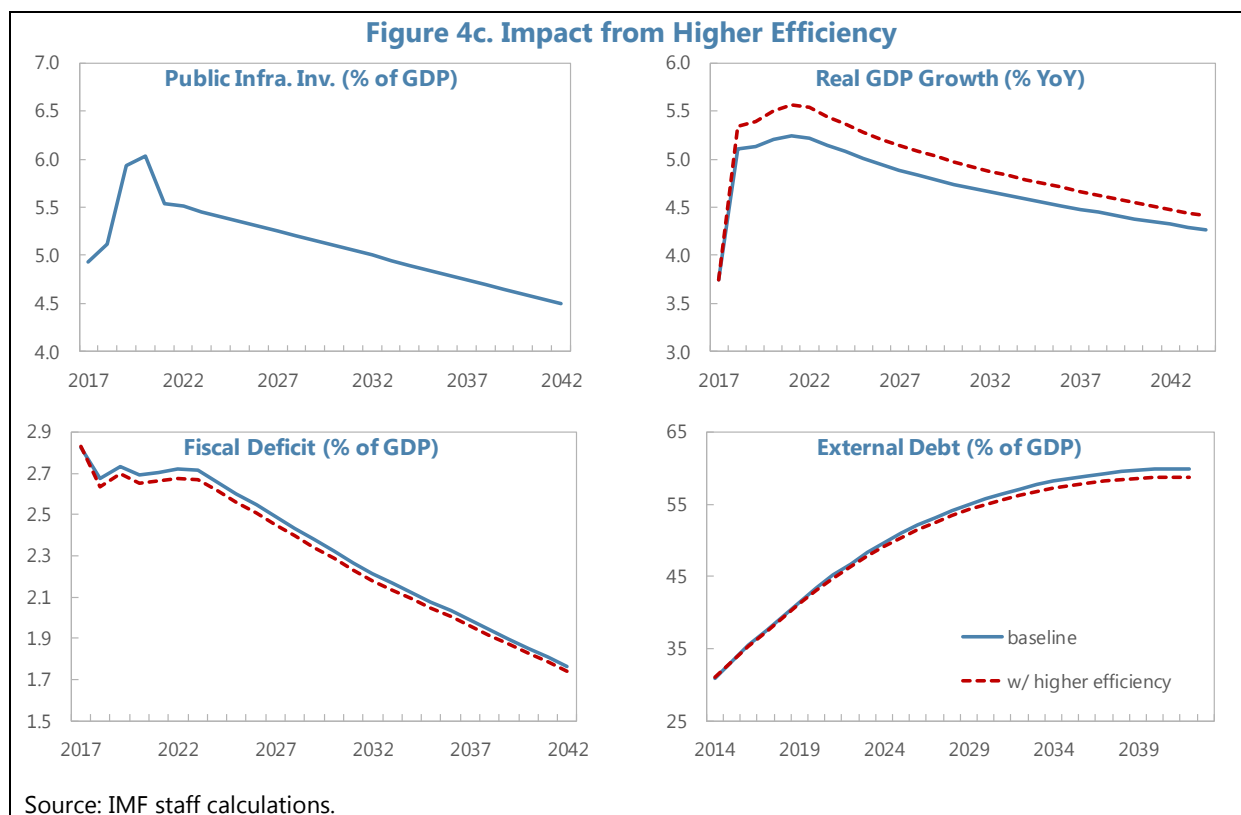
**Figure 4b. Impact from Absorptive Capacity Restraint**



Source: IMF staff calculations.



**9. In evaluating the public investment path, another important consideration is investment efficiency.** In the model, *efficiency* is the rate at which spending on public investment translates into public capital. While the relationship between public investment efficiency and growth may vary across countries, improving efficiency within any given country always has positive impact on growth. Furthermore, higher efficiency results in permanently higher potential growth (see Figure 4c).



## E. Improving Public Investment Efficiency

**10. Countries with stronger Public Investment Management institutions have more predictable, credible, efficient, and productive investments.** The literature finds that strengthening public investment management institutions could narrow up to two-thirds of the public investment efficiency gap (*IMF Policy Paper "Making Public Investment More Efficient," 2015*). Countries with stronger PIM institutions have more predictable, credible, efficient, and productive investments. The recommendations for developing economies include better integration between national strategic planning with capital spending budgeting, and strengthening the institutions related to project implementation.

**11. Moldova has a relatively high index of public investment efficiency, nonetheless there are a number of dimensions to improve investment process.** Index of Public Investment Efficiency for Moldova is 2.33 (with the maximum of 4), compared to the sample average of 1.68 (*Dabla-Norris, Brumby, Kyobe, Mills, and Papageorgiou, 2012*). Efficiency of the investment process

assessed across four stages: appraisal, selection, implementation, and evaluation. The sample consists of low- and middle-income countries.

**12. The World Bank public expenditure review for Moldova identifies specific areas for improvement of the investment process across different stages** (*Coulibaly and Diagne, 2014*):

- **Project appraisal.** Limit cost overruns.
- **Project selection and budgeting.**
  - Need for better prioritization and transparency.
  - Improve cost ineffectiveness. Resources tend to be spread thinly on small and fragmented investment projects.
  - Improve funding continuity for ongoing capital activities. Lack of continuity of funding for ongoing projects lowers the efficiency and effectiveness of public expenditure by lengthening implementation periods and delaying service improvements.
- **Project implementation and monitoring.** Focus on human resources and capacity development. In the water and sanitation sector, available external funding was not fully utilized due to project implementation weaknesses.
- **Project evaluation.** Need ex-post evaluation, not only when required by donors.
  - Need for formal assessments of project implementation performance at the central level.
  - Introduce arrangements to ensure evaluation findings and recommendations are acted upon.

**13. The Moldova-specific recommendations by sectors include:**

- **Transport:** improve strategic guidance, appraisal and implementation to address resource constraints;
- **Utilities and housing:** strengthen implementation capacity;
- **Education:** improve preliminary screening, project selection and monitoring;
- **Health:** strengthen strategic guidance, project appraisal, selection, monitoring and evaluation;
- **Agricultural:** evaluate past investment subsidy programs, appraise new programs and develop responsive monitoring systems.

## F. Conclusion

**14. Improving investment efficiency is essential to enhance growth prospects, especially for countries such as Moldova, that face unfavorable demographic trends and lower global TFP contributions.** Scaling-up of the public investment program needs to account for absorptive capacity constraints and heavy reliance on donor support. More rigorous project appraisal, monitoring and implementation should be adopted to prevent delays and cost overruns. Strengthening institutions and better integration between national strategic planning with capital spending budgeting would further enhance the positive impact on growth.

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