Ukraine: Economic Appraisal and Public Investment Management

Martin Pospisil
Senior Economist, EIB Advisory/JASPERS

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Motivation

DESPITE RUSSIA'S WAR, UKRAINE IS UNDERGOING A **MAJOR PUBLIC INVESTMENT MANAGEMENT (PIM) REFORM**

A ROADMAP FOR PIM REFORM WAS DEVELOPED IN 2023, WITH AN **ACTION PLAN FOR ITS IMPLEMENTATION** ADOPTED IN JUNE 2024

THE PLAN SETS OUT STEPS FOR INTRODUCING THE **REGULATORY FRAMEWORK**, **INSTITUTIONAL CAPACITY**, **STRATEGIC PLANNING,** AND PIM **METHODOLOGY** AND **IT ARCHITECTURE**

THE ACTION PLAN HAS 72 ACTIONS, A NUMBER OF THEM RELATING TO THE **ECONOMIC APPRAISAL** AND **COST-BENEFIT ANALYSIS**

THE KEY IMPLEMENTATION BODIES ARE: MIN. OF FINANCE, MIN. OF ECONOMY, AND MIN. OF DEVELOPMENT

THE IMPLEMENTATION OF THE ROADMAP IS **KEY FOR EU INTEGRATION AND EXTERNAL FINANCING**

Selected actions of Ukraine's Public Investment Management Roadmap

Action	Responsible for implementation	Deadline
19. Development of the **procedure for appraisal of public investment projects**, including **socio-economic**, financial, ecological and risk analysis, taking into account the scale (**cost**) and the degree of urgency of meeting public needs, as well as including the **independent appraisal** of large-scale public investment projects	Min. of Economy Min. of Finance Min. of Infrastructure	February 2025
24. Development and approval of **methodological recommendations** for preparation, screening, prioritization, **appraisal**, selection, risk identification, implementation, monitoring and performance evaluation of public investment projects **at the regional and local level**	Min. of Economy Min. of Infrastructure Min. of Finance	March 2025
69. Ensuring the development of the capacity of line ministries **to carry out cost-benefit analysis**, reliable estimates of capital (and current) costs for the preparation and implementation of public investment projects	Min. of Economy Min. of Finance	ongoing

PIM Methodology

As part of the PIM Roadmap implementation, the government is currently developing PIM Procedure to **guide public capital expenditure in Ukraine**.

The system **should apply to all public investment projects** requiring state funding

The methodology is intended to ensure that **public investments in Ukraine deliver the priorities of the Ukrainian government** and retain the confidence of international partners.

The methodology is applied in six stages: Objective Setting, Identification & Development, Screening, **Appraisal**, Prioritization & Selection, and a Final Implementation Decision.

Each stage ensures that projects align with **national objectives**, meet **feasibility** requirements, and are **systematically evaluated** for strategic impact and efficiency.

The outputs of each stage feed into the next, with the cumulative results contributing to a final score used to rank projects within sectors for **prioritization, selection, funding and implementation.**

EIB Advisory/JASPERS support to the PIM Roadmap implementation

- **EIB Advisory/JASPERS** under its new **Mandate for Ukraine** provides support to the key counterparts: the ministry of Economy, Finance, and Development
- We also work with other ministries, agencies, and partners, e.g. the World Bank, TBI, the EU Delegation
- For instance, JASPERS has drafted **Guidelines on the appraisal, management and evaluation of public sector capital expenditure proposals,** which was discussed at the Seminar in Kyiv on Dec 11, 2024

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Guidelines: Appraisal Methods and Techniques

•**Compatibility with EU requirements**: Guidelines **align with EU guidelines for project appraisal**, referencing key texts such as the *2008* and *2014 Guides*, and the *Vademecum for 2021-2027*.

•**Purpose of appraisal**: Appraisal aims to help decision-makers achieve **value-for-money in investment projects** funded by public money, ensuring the most efficient use of resources. Four main techniques are used for capital investment project appraisal:

1. **Cost-Benefit Analysis (CBA)**: Compares costs and benefits of projects in monetary terms, using indicators such as Net Present Value (NPV), Benefit to Cost Ratio (BCR), and Internal Rate of Return (IRR). Supports ranking and prioritization of projects based on economic performance.

2. **Cost Effectiveness Analysis (CEA)**: Compares relative costs and outcomes when project impacts are quantifiable but hard to monetize. Useful for projects with critical, homogeneous outputs, where achieving the output at least cost is the primary objective.

3. **Least-Cost Analysis (LCA)**: Identifies the most cost-effective way to achieve a defined output when multiple approaches exist. Ranks lifecycle costs per unit of output to select the least expensive method.

4. **Multi-Criteria Analysis (MCA)**: Assesses projects using multiple criteria, assigning weights to reflect project priorities when impacts are hard to monetize.Combines qualitative and quantitative assessments to evaluate broader project effects.

•**CBA is the preferred approach** for assessing public investment projects, as it offers a robust, evidence-based analytical framework for project evaluation. However, where some or all of the impacts of a proposed project/action are not easily monetizable, other tools such as CEA, LCA and MCA may apply.

Guidelines: Suggested Economic Appraisal Technique by investment area

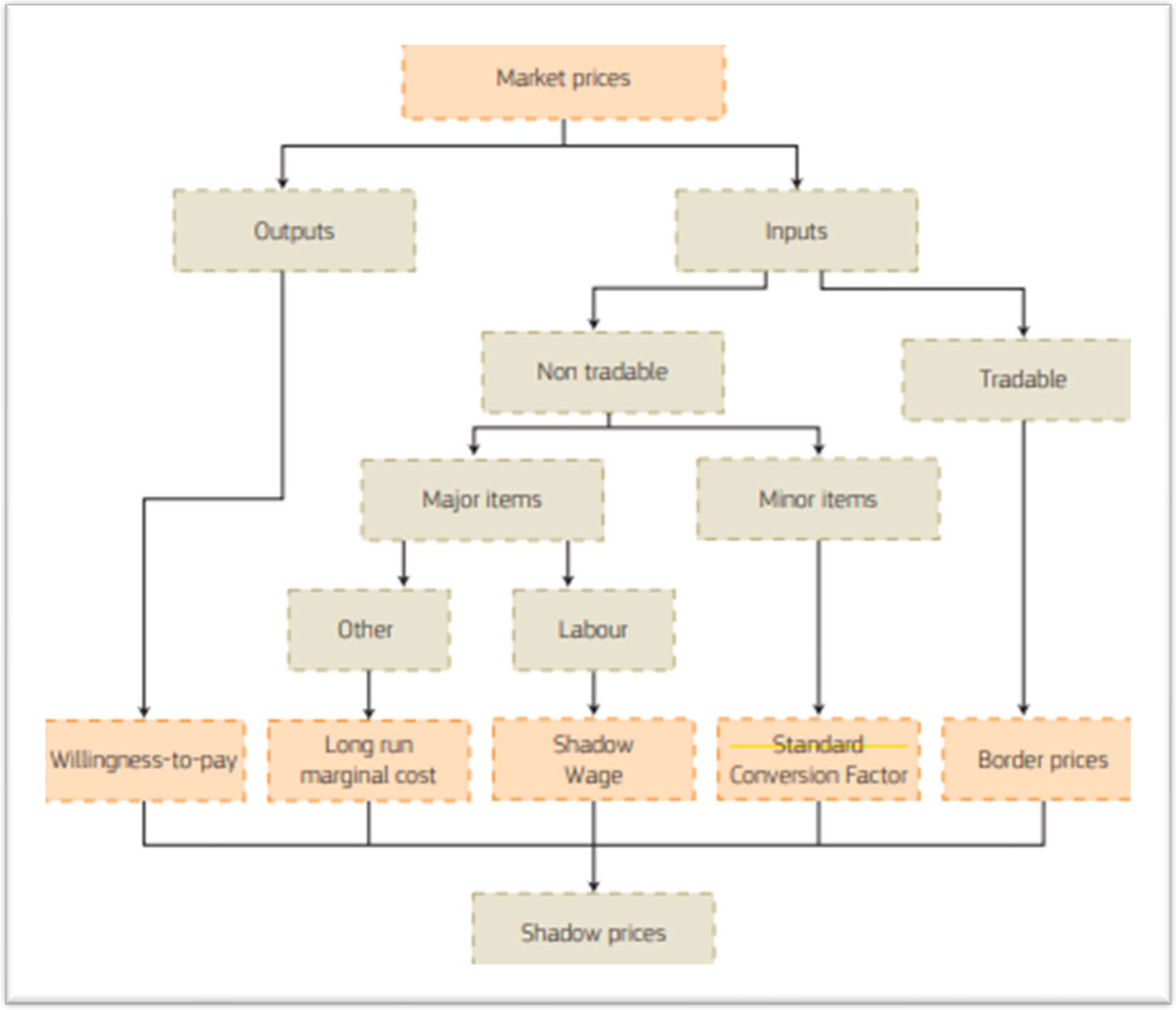
Area	Investment Area	Minor Projects	Major projects
Water and wastewater	Water and wastewater (efficiency driven)	LCA/CEA	CBA
	Water and wastewater (compliance driven)	LCA/CEA	LCA/CEA
	Flood prevention	Simplified CBA	CBA
Transport	General transport projects	CBA	CBA
	Transport infrastructure (compliance driven)	CEA/MCA	CEA/MCA
	New technology in transport	CEA/MCA	CBA/CEA/MCA
Healthcare	Disease prevention / treatment programmes / new technology	CEA/MCA	CEA
	Healthcare infrastructure	Simplified CBA	CBA
R&D and innovation	Research infrastructure	Simplified CBA	CBA
	Innovative manufacturing	Simplified CBA/CEA	CBA
	Tertiary education	Simplified CBA	CBA
Renewable energy	Electricity generation	CEA with integration of externalities	CBA
	Heat generation	CEA with integration of externalities	CBA
Energy efficiency	Energy efficiency in buildings and plant	CEA with integration of externalities	CBA
	District heating	CEA with integration of externalities	CBA
Digital economy	Broadband infrastructure	Simplified CBA	CBA
	ICT services (data centres, e-services, etc)	CEA	Depending on the area of application
Municipal waste	Collection, transport, recovery, recycling, treatment and disposal of solid waste	CEA	CBA
Sustainable urban development	Integrated territorial investment schemes or community-led local development schemes, programmes in cluster development and urban regeneration programmes	MCA (including detailed CBA/CEA for individual large projects in given sectors)	MCA (including detailed CBA/CEA for individual large projects in given sectors)

Guidelines: Cost-Benefit Analysis

- The Guidelines outline the broad requirements for cost-benefit analyses to be produced for the appraisal of investment projects
- **Incremental approach**: CBA compares a counterfactual 'without project' (WOP) scenario with a 'with project' (WP) scenario, using either a "business as usual" (BAU) or "do-minimum" (DM) scenario based on the most likely outcomes.
- **Perspective**: A long-term perspective is necessary, accounting for future costs and benefits, using an appropriate social discount rate, and ensuring all costs and benefits are converted to a common price base year.
- **Reference period**: The costs and benefits of the project are assessed over a defined reference period, which includes the investment period and the time until benefits materialize.
- **Residual value**: If benefits continue after the reference period or assets are disposed of, a residual value is included, calculated based on discounted net benefits or asset depreciation.
- **Real prices and discounting**: Real prices, adjusted for inflation, should be used, and a social discount rate (SDR) of 5% should be applied to account for the preference for current consumption over future benefits.

Guidelines: Methodology for CBA: Fiscal correction and conversion from market to factor prices

- **Tax and subsidy adjustments**: CBAs are undertaken net of taxes and subsidies, as these are transfers between groups rather than changes in welfare
- **Market price distortions**: CBA accounts for market distortions such as tariffs, quotas, and inefficiencies, especially in less developed countries, by converting market prices to real resource costs to reflect true economic impacts.
- **Conversion methods**: The appropriate method to convert financial prices to economic prices varies based on whether goods are tradable or not, or whether it is labour cost. the following conversion factors may be applied:
- **Willingness-to-pay:** maximum amount consumers are willing to pay good or service)
- **Long-run marginal cost**: additional cost of producing one additional unit of a good in the long-run
- **Shadow wage:** reflect the social value of time and effort spent working on the project.
- **Border prices**. For tradable goods



Guidelines: Methodology for CBA: Monetisation of non-market impacts and indirect effects

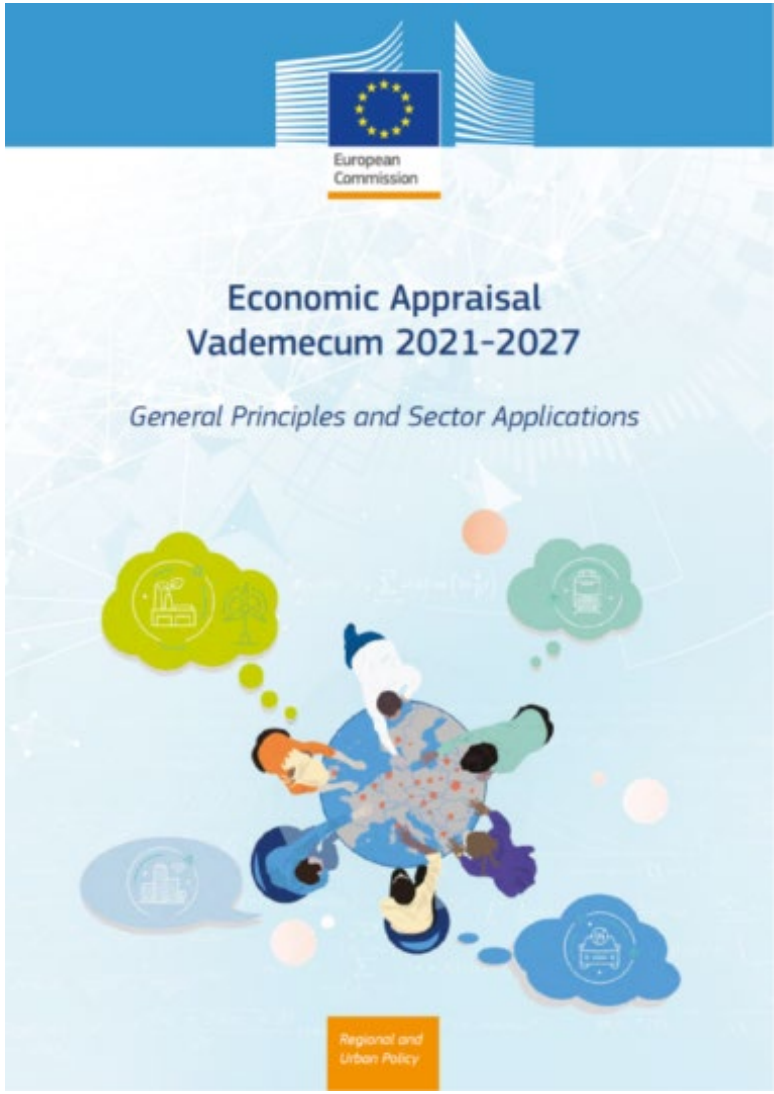
- **Monetisation of non-market impacts**: CBA includes non-market impacts such as value of time, life expectancy, and environmental factors like noise and landscape, which affect welfare but are not reflected in market prices.

- **Externalities**: Externalities, such as congestion, pollution, and road accidents, are non-market impacts that affect third parties and should be incorporated into CBAs by assigning realistic monetary values.

- **Identification of non-market impacts**: Both positive and negative non-market impacts, including externalities, must be identified and valued in the economic analysis to reflect their true effects on welfare.

- **Monetisation of indirect effects**: Indirect effects, such as price or quantity changes in secondary markets, are generally excluded from CBAs, as they are difficult to quantify and often lead to double-counting.

- **Discounting benefit and cost streams**: Social discount rates (SDR) are used to account for the preference for immediate consumption over future consumption, with an SDR of 5% currently applied for all project appraisals.



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Guidelines: Methodology for CBA: Calculation of the economic performance indicators

The last step in an economic analysis is typically the calculation of the economic performance indicators. Three main indicators are to be calculated:

Benefit to Cost Ratio (BCR). This is the ratio of the Present Value of Benefits to the Present Value of Costs.

BCR = PVB / PVC,

where PVB is the discounted value of all benefits, and PVC is the discounted value of all costs, from the project in question. PVB and PVC are calculated as follows (with i = the Social Discount Rate):

$PVB = B_0/(1+i)^0 + B_1/(1+i)^1 + \ldots + B_n/(1+i)^n$,

$PVC = C_0/(1+i)^0 + C_1/(1+i)^1 + \ldots + C_n/(1+i)^n$

Economic Net Present Value (ENPV). This is the difference between the Present Value of Benefits (PVB) and the Present Value of Costs (PVC), and can be calculated as:

ENPV = PVB – PVC

or $ENPV = (B\text{-}C)_0/(1+i)^0 + (B\text{-}C)_1/(1+i)^1 + \ldots + (B\text{-}C)_n/(1+i)^n$

or $ENPV = \sum_{t=0}^{n}((B-C)_t/^{(1+i)^t})$

Economic Rate of Return (ERR). This is social discount rate at which the Economic Net Present Value equals zero.

$0 = \sum_{t=0}^{n}((B-C)_t/^{(1+i)^t})$

Guidelines: Methodology for CBA: Benefits normally included in economic analysis

- The benefits typically monetised in CBAs are sector specific
- Whilst, in certain circumstances, **additional benefits may be monetised**, for the sectors listed below, permission should be requested from the Sanctioning Authority prior to including any benefits not included in the table below.

Sector/subsector	Benefits normally included in economic analyses
Transport	Time savings, vehicle operating cost savings, accident savings, reduction in greenhouse gas (GHG) emissions, local health impacts (non-GHG gases), noise, improvement in service quality
Water and sanitation	Improved access to drinking water / wastewater treatment services, improved drinking quality, improved surface waters and preservation of ecosystems, resource cost savings (producers and customers), improved health, reduction of GHG emissions
Waste	Reduction of health / environment hazards, reduction of landfill costs, recovery of materials, energy, compost, reduction of GHG emissions, visual amenity, noise, odours
Energy	Energy efficiency projects: Energy savings, increase in comfort, GHG / non-GHG emissions, Renewable energy projects: Reduction of energy costs, reduction of GHG emissions Electricity/gas grids and infrastructure: Increase / diversification of energy supply, increase of security and reliability of energy supply, reduction of energy costs (substitution of energy source), market integration, improved energy efficiency, reduction of GHG/non-GHG emissions
Research & innovation	Benefits to businesses (spin-offs, start-ups, development of new products and/or products, spillovers), benefits to researchers and students, benefits to general public (reduction of environmental/health risks, cultural effects for visitors)
Broadband	Increased take-up and improved quality of digital services for citizens, businesses, government and public administration

Source: 2.3.2 of Annex III, Commission Implementing Regulation (EU) 2015/207

Next steps

- EIB Advisory/JASPERS will continue **supporting the implementation of Ukraine's PIM Roadmap**
- By February 2025, the UA governments needs to develop **procedures for appraisal of public investment projects**, including **socio-economic**, financial, ecological and risk analysis, taking into account the scale (**cost**) and the degree of urgency of meeting public needs, as well as including the **independent appraisal** of large-scale public investment projects
- By March 2025, the UA governments needs to develop recommendations for preparation, screening, prioritization, **appraisal**, selection, risk identification, implementation, monitoring and performance evaluation of public investment projects **at the regional and local level**
- EIB Advisory will also **support the development capacity** of line ministries **to carry out cost-benefit analysis**, reliable estimates of capital (and current) costs for the preparation and implementation of public investment projects

Questions?

Martin Pospisil
Senior Economist – EIB Advisory/JASPERS
m.pospisil@eib.org

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