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IDEAS LEADERSHIP HOPE

Ukrainian

Reconstruction

A Blueprint for Accountability and Progress



Series on the Governance of a Marshall Plan for Ukraine

Summary

Ukraine faces immense challenges in rebuilding its infrastructure amid the ongoing war with Russia, with the total cost of reconstruction and recovery estimated to be \$486 billion over the next decade. The urgency to improve the country's construction pricing system is building, as the current framework has failed to keep up with the demands of large-scale reconstruction.

To ensure that Ukraine's reconstruction is transparent and cost-effective, the following critical reforms must be implemented rapidly. These changes are essential to address the inefficiencies in the current cost estimating system and to prevent widespread corruption and overspending during the recovery process:

Adopt International Construction Measurement Methods and Classification Systems

Ukraine should integrate internationally recognized construction measurement methods and unified classification systems for the construction industry such as Uniclass and OmniClass, which categorize and classify construction materials and project activities. Since efficient use of a unified codification system requires that those using the system possess the appropriate qualifications, the academic community and accreditation bodies must be involved.

Revise National Cost Estimating Methodologies

- Adjust profit margins and administrative costs to more reasonable levels
- Establish better quality control over price databases, including clear procedures for collecting, processing, and applying market price intelligence
- Introduce cost-estimating methods for project delivery types such as Design-Build and Turnkey engineering, procurement, and construction (EPC)
- Require contracting authorities to publish unit prices for key construction materials—especially those that account for a large portion of total costs

Implement Necessary Electronic Systems

Develop an integrated electronic system to log milestone certificates of completed construction work acts and gather final construction costs. This will facilitate cross-project cost comparisons, identify anomalies, and help prevent inefficiency and corruption. The system should benchmark detailed cost data, detecting potential price manipulation. Additionally, fast-track the adoption of Building Information Modeling (BIM) technologies. This approach will ensure transparency and accountability throughout the project lifecycle, providing an effective tool for cost control and enhanced project management.

Develop an Action Plan to Prevent Excessive Inflation in Public Construction

The government should create a plan to tackle price manipulation risks, particularly from monopolistic suppliers. This includes increasing market transparency and ensuring competitive cost estimating and pricing for critical construction materials to prevent excessive inflation and secure cost-effective recovery efforts.

Reforming Ukraine's construction cost estimating system is an essential step toward ensuring effective and transparent reconstruction. The current system lacks the mechanisms to control costs and prevent corruption. The adoption of internationally recognized construction methods of measurement, along with the introduction of electronic systems for tracking construction costs, will help streamline project delivery and provide better oversight. These reforms are critical for the efficient use of funds, which is vital to Ukraine's long-term recovery.

Ensuring Success in Ukraine's Reconstruction: The Importance of Specific Reforms

Russia's military aggression against Ukraine has not only resulted in numerous casualties and widespread destruction of infrastructure, with entire cities and villages wiped off the map, but has also acted as a catalyst to profound and long-lasting geopolitical changes. In response to these events, there has been a growing number of international discussions about how to organize Ukraine's reconstruction effectively, aiming to restore the damaged infrastructure and lay the foundation for the country's long-term and sustainable development.

As of early 2024, Ukraine's international partners estimated the total cost of reconstruction and recovery over the next decade to be \$486 billion, including \$155 billion to physically rebuild infrastructure facilities. This figure will continue to rise due to the ongoing war as well as improvements

in data collection, analysis, and damage assessment methods.

Discussions assuming that Ukraine's reconstruction is a future process, to begin only after the war ends, do not reflect reality. Reconstruction is already underway, as many Ukrainian cities are unable to provide citizens with access to basic needs or to ensure their protection. The lack of adequate infrastructure limits the population's access to essential services such as education and healthcare. Additionally, Russia continues to launch airstrikes that have already inflicted significant damage on energy infrastructure, repeatedly jeopardizing stable energy supply to the regions. Water supply systems also remain vulnerable to further attacks, especially after the catastrophic destruction of the Kakhovka Hydroelectric Plant dam, which resulted in irreversible environmental

damage and flooded regions. The reconstruction process of restoring water supply to these areas is ongoing.

The restoration and protection of these critical systems are key tasks to ensure that the population's basic needs are met in the wartime context. Consequently, a large number of reconstruction projects are already being implemented at the local, regional, and national levels.

During my time working at the State Agency for Restoration and Infrastructure Development of Ukraine, the agency coordinated hundreds of projects, with many of them overseen by subordinate structures. A significant number of these projects came from local government bodies that were involved in preparing recovery initiatives. It was not uncommon to encounter projects with unjustifiably inflated cost estimates. This was not merely an issue of lack of qualification or capacity among the executors. Rather, it indicated the presence of a systemic problem.

It became clear that inflated project costs were not due solely to human error but were also tied to outdated regulatory mechanisms that hindered transparency and objectivity in project cost formation. The large volume of projects and the need for swift implementation highlighted the urgent need to establish effective mechanisms for controlling initial cost formation and evaluating the final expenses once construction was completed. However, it also became evident that without introducing necessary reforms into the cost estimating system, establishing proper control over real project costs and conducting comprehensive analysis would be impossible.

The scale of the damage, the need for rapid project implementation to restore the functioning of towns and cities during the full-scale war, and the limited capacity of public contractors will inevitably lead to significant cost overruns during reconstruction. Therefore, Ukraine must significantly accelerate the reform of the construction regulation sector, ensure proper training of implementing agency staff for national, regional, and local infrastructure projects, and explore new methods of project management where relevant. Discussions of Ukraine's recovery often highlight the need for transparency and accountability in this process, as well as for oversight of the funds allocated for reconstruction. Anti-corruption safeguards are key for Ukraine's partners, who draw attention to the importance of proper auditing and expenditure monitoring and clear mechanisms for reporting.

However, despite the comprehensive nature of the required changes, most discussions about how these mechanisms will be implemented remain abstract. It is critically important not only to discuss general principles of transparency but also to define specific steps that should become priorities for achieving successful reconstruction. One of the key elements is the reform of the construction cost estimating system, which must become transparent, efficient, and in sync with international standards—including internationally recognized, unified construction-industry classification systems. This will ensure proper cost control, help stakeholders to detect widespread price gouging practices, and help to avoid overspending, especially during the implementation of large-scale reconstruction projects.

Cost Estimates Are Essential to the Transparency and Success of Ukraine's Reconstruction

In any construction project, regardless of the funding source, the estimated cost is determined before implementation begins. In the case of competitive bidding, this amount becomes the starting price for the tender, while in direct contracts, it essentially becomes the sum the contractor will receive. In the construction industry, the expected cost of a project is reflected in what is known as the "investment cost estimate", which is part of the project documentation and prepared by professional cost estimators.

Investment cost estimates covers all key components: the procurement of building materials, the use of equipment and machinery, the wages of workers involved in the project, funds for technical engineering supervision, contractor profits, and administrative and other expenses. Additionally, they account for inflationary risks

and risks associated with project implementation. The construction cost estimating system and the preparation of project cost estimates, along with control over this process, thus become one of the key factors in ensuring the effective and transparent reconstruction of Ukraine's infrastructure.

However, the investment cost estimate becomes a point of potential corruption risk. Collusion between individuals tasked with the development of a construction cost estimate—public and private actors—is embedded and hidden within the investment cost estimate. Individuals aiming to illegally enrich themselves typically embed illegal profits by inflating prices within the investment cost estimate. This makes the investment cost estimate a critical tool for identifying and combating corruption in the construction sector, particularly in the implementation of public projects.

The Importance of Proper Cost Formation in Ukraine

The need to objectively form the expected cost of construction projects becomes especially critical in circumstances such as Ukraine's. In well-organized tenders, market mechanisms themselves normally regulate the price, reducing it to a level that reflects the actual cost of project implementation. In a competitive environment, this process occurs naturally. However, in Ukraine, this mechanism is weakened by the Antimonopoly Committee's limited ability to detect collusion between tender participants and, accordingly, to impose sanctions or block their participation in tenders. Before the war, the Antimonopoly Committee of the executive branch, rarely identified collusion in tenders, largely due to the low capacity of its divisions to do so. Additionally, even before the conflict, the committee had limited tools

to detect concerted actions among bidders. These tools were mainly available to law enforcement agencies, which would provide the committee with relevant information based on their investigations, but the committee itself did not have these capabilities.

Additionally, during martial law, public procurement regulations allow the selection of a tender winner and the signing of a contract even if only one tender participant has submitted a bid, eliminating competition. A significant number of procurements for critically important construction projects, such as passive infrastructure protection or fortification, are conducted through direct contracts without using the public electronic procurement system. This is justified by the need to ensure confidentiality and respond quickly to urgent wartime needs, particularly following military actions. Local defense councils are entitled to bypass the usual lengthy electronic bidding procedures and enter into direct contracts

with designated contractors, circumventing general public procurement law.

However, under normal conditions, Ukraine's ProZorro electronic procurement system ensures that state purchases are transparent. The system uses an auction-based method that is protected from human interference and provides 24/7 access to procurement data for all citizens, making the tendering process transparent and accountable.

These circumstances heighten the need for transparency in project cost estimates. Reforming this system is thus a crucial step toward ensuring cost-effectiveness in state construction projects. Infrastructure projects funded by international donors are prepared by Ukrainian designers; despite the procurement and calculation rules set by international financial institutions, project costs are determined according to Ukrainian regulations.

Steps Toward Cost Transparency

An important change that has taken place in Ukraine's cost-estimating system is expected to significantly impact the transparency of cost control in public construction projects. On September 19, 2024, the Verkhovna Rada (Parliament) of Ukraine passed a law requiring contracting authorities (public agencies tendering public construction contracts) to publish documents containing

information about prices of construction materials in the electronic tender system. This is indeed a crucial step that will allow the public to exercise greater oversight over construction costs.

Before the law had been passed, analysis showed that only around 20% of Ukrainian public contracting authorities had published information about the prices of construction materials included in construction project cost estimates. In most projects, the costs of construction materials remained embedded in the unit rates and could not be obtained either through public sources or by submitting a request for public information. This lack of transparency prevented the public from analyzing the cost estimate data and identifying price gouging practices.

Public oversight has proven to be an effective safeguard against construction price gouging.² In numerous cases in Ukraine, tenders were cancelled and project cost estimates were reduced following public inquiry by civil society organizations or investigative journalists—<u>saving hundreds</u> of millions in public funds.³

The obligation to publish this information is expected to have a significant impact on more objective cost formation. However, the problem of pricing in Ukraine is much more complex. It involves a series of complicated regulations that set the rules for determining the cost of a project, and, as of now, these regulations do not allow for a fully transparent and controllable process.

In Ukraine, the document known as the "Guideline for Determining Construction Costs" plays a key role in preparing estimates for construction projects.⁴ This document serves as a standard that regulates how costs are determined at each stage of construction. The guideline defines all cost components, including the price of construction materials, the use of machinery, labor, and the administrative expenses required for project management. It also includes reserves for covering unforeseen circumstances such as inflation or risks during project implementation and sets out the process for calculating the required costs for technical supervision, the services of the contracting authority, and other associated services in construction.

In theory, the guideline is critically important for cost control in construction, and it should enable the transition to international practices in construction cost formation.

However, the current guideline has its roots in the Soviet construction cost estimating system, and so does not account for modern market realities and new construction technologies. This creates a significant gap between actual costs and estimates prepared using outdated norms. For example, general production and administrative costs, as well as company profits, are calculated based on the overall labor intensity of the project, meaning the number of people involved in the construction. But construction technologies have changed drastically, leading to increased use of machines and mechanisms and reduced reliance on human resources. As a result, even on complex projects, company profits are minimal. In such instances, the real profit margin is usually embedded in other project costs--including in the construction material cost estimates. This distorts the project cost data altogether.

Moreover, the cost estimating lacks a unified coding for types of work, making it difficult to track the final project cost and compare costs per unit of specific work. This prevents foreign companies from participating in construction projects in Ukraine, as the system does not meet international standards. Only certified Ukrainian cost estima-

tors can work with it. According to the guideline, the state contracting authority can decide to use international methods of measurement for preparing the bill of quantities. However, due to the lack of mandatory regulations, clear procedures, and integration of international methods of measurement, no public contracting authorities use international cost evaluation systems. Thus, reconstruction projects implemented in Ukraine do not consider international pricing approaches.

The outdated methods used lead to situations in which the lowest salary limit for a worker, which is most commonly set by contracting authorities, is slightly above \$300 per month—far below the actual market standards.⁵ Moreover, wages in Ukraine for qualified construction workers are rising because of the shortage in the labor market resulting from mobilization. The guideline allows for higher wages and sets only a lower limit. However, due to the existence of this lower limit, there are numerous instances of auditing bodies classifying the higher wages as losses on the part of the public contracting authorities as, according to the norm, these costs could have been reduced. This forces public contracting authorities to set wages in projects that do not match market rates, leading to inflated costs in other parts of the project to compensate for these expenses. This results in uncontrolled construction costs and increases the risk of corruption.

Thus, it is critically necessary for Ukraine to begin the integration and adoption of internationally recognized methods of measurement for vertical construction projects such as residential buildings and social infrastructure. These can include the Royal Institution of Chartered Surveyors' New Rules of Measurement (NRM). The selected methods of measurement should be translated into Ukrainian and adapted for use in the public construction industry. Implementing such methods will not only make the Ukrainian construction market more transparent and attractive to international contractors but will also provide better cost control for the state and for international partners that fund Ukraine's reconstruction predominantly via macro-financial assistance. This is an important step toward improving the quality of construction work, and it will reduce corruption risks and increase opportunities for attracting foreign investment.

A New Methodology of Cost Estimating in the Road Construction Sector: New Challenges?

In response to these challenges, a separate regulatory act on state price regulation was introduced. Since the 2014 Revolution of Dignity, Ukraine has increased its cooperation with international financial institutions to renovate its neglected road network. This cooperation has intensified under the Trans-European Transport Network mandate, one of the fruits of which was the introduction of internationally recognized methods of measurement for horizontal (linear) construction such as the UK's Civil Engineering Standard Method of Measurement (CESMM). In October 2022, changes in Ukraine's cost estimating system resulted in the approval of a distinct methodology for calculating the cost of road works and services.⁶ Amendments to the law "On Prices and Pricing" enabled the Ministry for Communities, Territories, and Infrastructure Development of Ukraine to create a separate methodology for determining the cost of road network construction. This methodology sets the expected costs for the restoration of logistics infrastructure projects—roads, bridges, and other artificial structures.

The new methodology has brought several significant changes:

Implementation of International Standards: The integration of international practices such as the use of a CESMM-based "Bill of Quantities" (BOQ) allows for more accurate measurement of work quantities and cost estimating. This enhances the

standardization of the cost-estimating process through CESMM-based unified codification of unit rates. The unified approach also simplifies the management of large infrastructure projects.

Unification of Documentation: The new methodology ensures the standardization of costestimating documentation. Previously, construction projects could use different methods of measurement, making it difficult to benchmark, analyze, and compare project costs at a granular level. Now, a unified approach to cost-estimating has improved cost monitoring and control.

Risk Consideration: Contingencies for inflation and other market risks are now allowed in cost estimating. Previously, such factors were often overlooked, leading to inaccurate calculations and cost overruns during project execution. Now, contractors can better predict budgets, taking into account potential changes and market fluctuations.

The Civil Engineering Standard Method of Measurement, Fourth Edition (CESMM4) is an international standard developed to unify and simplify the measurement of work volumes in civil engineering construction. It is used for preparing cost estimates, as it provides clear rules and structure for the description and evaluation of construction

work. The standard was introduced by the Institution of Civil Engineers in the United Kingdom more than 30 years ago. This unified system standardizes the description of work and assigns each task a unique code, making the cost estimation process more transparent and standardized. This allows clients and contractors to compare different proposals easily and reduces the opportunities for errors or manipulation.

A significant driver of changes in the cost-estimating system has been the public road construction market. However, despite the new practices in cost estimating, the methodology has also introduced new risks. It contains provisions that create unjustified advantages for the big players in the public road construction market, which in Ukraine itself is quite limited. As a result, it poses risks of overinflated costs and price-gouging practices.

The methodology for calculating the cost of road construction in Ukraine has several significant shortcomings that can lead to overspending and inaccuracies in estimates. One key issue is the absence of a requirement for public contracting authorities to monitor market prices for construction materials and to accumulate, store, process and use the historical costs of their past construction projects for the purpose of cost estimates. The methodology allows the use of data from so-called "price databases," but sufficient requirements for these databases have not been established yet. In Ukraine, the absence of verified public or private databases with up-to-date market prices creates room for manipulation and artificial inflation of construction costs, including those for construction materials.

Another problem lies in the formula for calculating company profit and general production and administrative costs. This percentage is calculated based on the total project cost and does not account for the specificity or complexity of construction work. Moreover, these percentages are significantly higher than the real needs of companies, leading to inefficient allocation of funds. Such inconsistencies in the cost estimating system require urgent revision and the implementation of more transparent mechanisms to avoid financial losses.

Another issue in the application of the road construction cost-estimating methodology is the incorrect or inconsistent coding of unit rates. Each type of work has its own unique code, which allows for cost benchmarking between projects and control over total

construction costs. This should be an effective mechanism for systematic cost analysis and quality verification of the cost estimates developed. However, an analysis of projects prepared using the new methodology has revealed that the contracting authorities have not always used these codes correctly or consistently. This results in difficulties with data collection and analysis, as the same unit rates were coded differently, making it im-

possible to implement cost control measures effectively.

Finally, bills of quantities should be supplemented with the bills of material listing materials, components, parts, and assemblies required for a specific public construction project. They must be published for public access according to new legislation.

These gaps should be addressed by the Ministry for Communities and Territories Development of Ukraine, and necessary changes should be made to lead to more transparent cost estimating in the reconstruction process.

As of now, Ukraine has two separate regulatory acts that significantly differ from each other.

Monitoring the Construction Material Costs and Resource Management Policy

The cost of construction materials is another major issue. Both methodologies for calculating construction costs—whether for road or vertical structures—stipulate that the current prices of resources in the project cost estimates are based on data provided by the contracting authority. The cost of construction materials required comprises over 65% of the total cost of reconstruction projects. Therefore, in cases of corruption aimed at siphoning funds from reconstruction, it is the prices of specific construction materials that are likely to be inflated.

The aforementioned Guideline provides that the contracting authority should establish a procedure for analyzing construction material costs and ensure that estimates used in the project design stage do not exceed the regional monthly average market prices. However, in only a few cases have contracting authorities in Ukraine approved such procedures. For the most part, the quality of such procedures has never been questioned due to the lack of historical data on how accurate they were.

In many cases, contracting authorities lack the capacity to ensure a proper process for collecting, sampling, averaging, and verifying market intelligence data. Furthermore, Ukraine does not have a consolidated and regularly updated database of construction material prices organized under a unified codification system. This leads to an inability to benchmark cost estimates against reliable market intelligence, and results in significant overspending during reconstruction. The existing "price databases" lack proper quality control over the inputs, as they are not maintained by impartial private or public institutions. Consequently, in most cases, the responsibility for market price intelligence is left to the contracting authorities or delegated to cost estimators, creating opportunities for collusion, price inflation, and embezzlement of public funds.

An analysis of reconstruction projects prepared by local governments and submitted for funding from the Fund for Liquidation of Consequences of Armed Aggression revealed that construction material costs in some projects were inflated several times over. Timely intervention led to their revision; however, such incidents are not isolated.

One of the problems caused by Russia's military aggression is the shortage of construction materials. This has led to unjustified increases in price by manufacturers due to market constraints and the lack of adequate competition. Additionally, supply chain routes have been severely disrupted, exacerbating the difficulties in accessing materials. For example, at one point, glass became scarce in Ukraine⁷, leading to price surges. The anticipated large-scale reconstruction efforts may create competition among customers for available resources, inevitably increasing demand and driving prices up further.

To avoid unjustified price inflation in construction amid these challenges, it is critically important for the government to develop a response plan and to enhance oversight of price manipulation—especially in light of the monopolistic position of certain manufacturers.

The Absence of a "Unified Dictionary" in Construction Prevents Transparency

A shared dictionary is the only possible way to ensure clear communication, and this is particularly true in the construction industry. Proper monitoring of construction material costs is impossible without a unified classification system of construction materials. As of today, Ukraine lacks

such a system, which prevents accurate cost comparisons, as each material has its own unique properties and types. The development of a national codification system of construction materials is part of the broader requirements for Ukraine's integration into the European Union in this sector, yet it has not been implemented to date.

The EU has the Construction Products Regulation (CPR), which provides standards for the marketing of construction materials.⁸
Under this regulation, the common language and harmonized assessment methods are introduced to ensure the safety of people and property, simplifying the control of their characteristics and allowing for the use of

a unified technical language to assess the performance of materials. This regulation, in particular, requires manufacturers of construction materials to provide a Declaration of Performance, which contains information on the essential characteristics of the product and includes specific marking that indicates compliance with European standards. The national classification system is expected to reduce trade barriers within the EU and ensure safety and quality standards for materials. It is expected that Ukraine's national codification system for the construction materials will fully embrace the CPR.

Additionally, Ukraine has not introduced a unified classification system for its public construction industry, nor has it yet adopted a universally recognized codification system such as Uniclass or OmniClass. Consequently, construction material cost data, when published, will not be codified, making its successful use for the detection of misconduct highly dependent on the accurate naming of a particular material. Uncodified data further complicates the ability to perform cross-project comparisons or accumulate historical or market costs effectively.

The technical regulation gap is exacerbated by the absence of regulation in Ukraine on how historical construction costs from past public projects can be utilized for estimating purposes, or how market costs should be properly collected, processed, and applied. As a result, while progressive legislative developments allow civil society to detect misconduct or price gouging retrospectively, the current framework does not push contract-

ing authorities and cost estimators to produce high-quality, transparent cost estimates upfront.

Without a standardized, internationally recognized classification system, it will remain impossible to accurately compare materials with identical characteristics or to analyze costs effectively using electronic systems. Therefore, the adoption and implementation of these globally accepted classification systems is an essential step toward reforming Ukraine's construction cost estimating system. The academic community and accreditation bodies must be involved because efficient use of a unified codification system requires that those using the system possess the appropriate qualifications.

This reform will not only provide transparency but also enable proper cost benchmarking across projects, creating a solid foundation for more efficient resource management in public construction initiatives.

Outdated Cost-Estimate Documentation Prevents Progress in Other Construction Reforms

The absence of a comprehensive cost estimating system that aligns with international standards is slowing down the implementation of critical reforms that are essential for Ukraine's effective and transparent reconstruction.

In particular, in 2021, the Cabinet of Ministers of Ukraine adopted the Building Information Modelling (BIM) Implementation Concept, which regulates the phased introduction of BIM technologies into the construction industry by 2025. BIM uses digital models to manage all aspects of construction projects throughout their life cycle. It allows architects, engineers, and builders to collaborate on projects using a single building information model. This includes the design, construction, operation, and even decommissioning of buildings.

The main advantages of BIM include:

Cost optimization: Through its comprehensive approach, BIM helps reduce construction costs by 30%, while also shortening construction timelines.¹¹

Enhanced control: BIM enables detailed monitoring of project costs and stages, contributing to greater transparency and more efficient project management.

At the same time, progress in implementing this technology in Ukraine has been relatively slow and has not yet yielded significant results. If the cost estimating system does not align with internationally accepted standards, the introduction of such technology will not be feasible. Therefore, this alignment is a necessary step for further progress.

Global experience in implementing BIM technology:

- United Kingdom: The UK is a leader in BIM adoption.¹² Level 2 BIM usage has been mandatory for all public sector projects since 2016. Approximately 73% of construction companies in the UK use BIM, particularly for large-scale infrastructure projects.
- Germany: In Germany, the use of BIM became mandatory for projects valued at over 100 million euros in 2017.¹³ Around 70% of German construction companies use BIM, primarily in the design phase of projects.
- Scandinavian countries: Finland, Sweden, and Norway have been using BIM for public projects since the early 2000s. Finland mandated the use of digital building models in public projects as early as 2007.

Time Is Running Out: The Urgency of Reform

In the pursuit of transparent and effective reconstruction, reform of the approaches to cost estimating in public construction cannot be delayed. The current system has failed to meet the challenges of unprecedented reconstruction and jeopardizes efficient financial management, creating favorable conditions for corrupt schemes. Regardless of the scale of reconstruction, without a clear, harmonized, and transparent cost estimating system, it is impossible to ensure cost control, fight wide-spread price gouging, avoid overspending, and align with international standards.

Necessary Steps:

- → Adapt and Implement Internationally Recognized Construction Methods of Measurement and Unified Classification Systems. This can include the New Rules of Measurement (NRM) from the Royal Institution of Chartered Surveyors (RICS) and unified classification systems for the construction industry such as Uniclass and OmniClass. The chosen methods of measurement should be translated into Ukrainian and adapted for use in public construction projects. Adoption of the internationally recognized unified classification systems designed to simplify and standardize the organization of construction-related data will allow Ukraine to finally transition to the Building Information Modeling (BIM) during its reconstruction.
- Revise National cost estimating Methodologies. This complex efforts should at a minimum focus on the following areas:

- Cost estimating for the progressive project delivery methods such as Design-Build and Turnkey EPC (engineering, procurement and construction)
- Adjustment of the percentage of profit, general production, and administrative expenses to a reasonable level
- Quality requirements and regulations for "price databases" as well as the detailed procedure on how the market price intelligence is collected, processed, stored and adjusted to a particular characteristic of a construction project
- Procedure on the collection, processing, storing and application of the construction project historical costs at the granular level and use of such costs for the purpose of budgeting, forecasting, benchmarking and cost estimating
- Separate formation and publication of unit prices for key construction materials materials, particularly those that comprise a significant portion of total construction costs
- → Introduce an Electronic System for the Construction Project Execution and Invoice Settlement. For all recovery projects, an electronic system should be introduced that collects the cost data from project primary records including milestone construction work certificates based on a unified codification system. The system should process machine-readable

project primary records, vetted and signed by the electronic signatures, compare costs across projects, and detect anomalies. This is the only way to gather final construction costs and prevent corruption and inefficient use of funds.

- → Implement Digital Solutions for Cost Control. Review the BIM Implementation Concept and accelerate the adoption of digital project management tools to enable real-time project cost monitoring and enhance accountability.
- → The Government of Ukraine Should Develop an Action Plan to Prevent Excessive Inflation in Public Construction Projects. The plan should include a coordination framework for the public contracting authorities at all levels (national, regional, and local) to plan their reconstruction efforts including, at the program level, enhanced oversight and control over cost estimating practices to avoid price gouging and manipulation of the construction material prices where monopolistic position risks exist. The plan should also cover measures aimed at increasing market transparency and monitoring the prices of key construction materials, and at encouraging competition among construction material manufacturers and suppliers.

Without immediate changes to the cost estimating system, any plans for the rapid recovery of Ukraine will be not only inefficient but also excessively costly.

The rapid implementation of reforms in this area is a key step to prevent overspending on reconstruction projects, ensure fair competition in the market, and enable real analysis and control over recovery costs. Improving cost estimating methodology and overseeing its application will allow for the introduction of more objective mechanisms for project cost assessment, reducing the risks of manipulation and making the process more transparent.

Endnotes

- 1 Verkhovna Rada of Ukraine, Проект Закону про внесення змін до Закону України "Про публічні закупівлі" щодо забезпечення оприлюднення замовниками у електронній системі закупівель інформації про ціни на матеріальні ресурси під час закупівель послуг з поточного ремонту та робіт з будівництва (прозоре будівництво) [Draft Law on Amendments to the Law of Ukraine "On Public Procurement" on Ensuring the Publication by Procuring Entities in the Electronic Procurement System of Information on Prices for Material Resources during the Procurement of Current Repair and Construction Services (Transparent Construction)], March 2024. https://itd.rada.gov.ua/billInfo/Bills/Card/43783
- Yaroslav Pilipenko and Boris Nesterov, "Будівельні тендери: кому і чому вигідно завищувати ціни в кошторисах" [Construction tenders: Who benefits from inflating prices in estimates and why], Dozorro, June 2024. https://dozorro.org/blog/budivelni-tenderi-komu-i-chomu-vigidno-zav-ishuvati-cini-v-koshtorisah
- 3 Anna Soroka, "Після новин «Наших грошей» і «Dozorro» утеплення житла у Дніпрі подешевшало на 76 млн" [After the news of "Nashi Groshi" and "Dozorro", housing insulation in Dnipro fell in price by 76 million rubles], Nashi Hroshi, September 2024. https://nashigroshi.org/2024/09/03/pislia-novyn-nashykh-hroshey-i-dozorro-uteplennia-zhyt-la-u-dnipri-podeshevshalo-na-76-mln/
- 4 Nataliiya Yuschenko, КОШТОРИСНІ НОРМИ УКРАЇНИ [COST ESTIMATES OF UKRAINE], Department of Pricing, Economics and Contractual Relations in Construction. https://radnuk.com.ua/wp-content/uploads/2021/12/knu-nastanova-z-vyznachennya-vartosti-budivnycztva.pdf
- 5 L.M. Sholomitska, Про затвердження Порядку розрахунку розміру кошторисної заробітної плати, який враховується при визначенні вартості будівництва об'єктів [On Approval of the Procedure for Calculating the Amount of Estimated Wages, Which Is Taken into Account When Determining the Cost of Construction of Facilities], Department of Pricing, Economics and Contractual Relations in Construction, October 2016. https://zakon.rada.gov.ua/laws/show/z1469-16#Text
- 6 Centre for Transport Strategies, "В Україні набрала чинності нова методика ціноутворення в дорожньому

- будівництві" [A new pricing methodology in road construction came into force in Ukraine], October 2022. https://cfts.org.ua/news/2022/10/18/v_ukrani_nabrala_chinnosti_nova_metodika_tsinoutvorennya_v_dorozhnomu_budivnitstvi_72291
- 7 Forbes, «Країна вибитих вікон. У жовтні в Україні очікується дефіцит скла. У чому проблема?». https://forbes.ua/authors/ulyana-bukatyuk
- 8 European Commission, "Construction Products Regulation (CPR)". <a href="https://single-market-economy.ec.europa.eu/sectors/construction/construction-products-regulation-cprencyconstruction-cprencycle-cprencyconstruction-cprencyconstruction-cprencycons-cprencycle-cprencycons-cprenc
- 9 Darius Pupeikis, Arunas Aleksandras Navickas, Egle Klumbyte, and Lina Seduikyte, "Comparative Study of Construction Information Classification Systems: CCI versus Uniclass 2015", MDPI, May 14, 2022. https://www.mdpi. com/2075-5309/12/5/656
- 10 Ministry of Communities and Territories Development of Ukraine, "Уряд затвердив Концепцію впровадження в Україні ВІМ-технологій у будівництві" [The Government approved the Concept of implementation of VIM technologies in construction in Ukraine], February 17, 2021. https://www.kmu.gov.ua/news/uryad-zatverdiv-koncepci-yu-vprovadzhennya-v-ukrayini-vim-tehnologij-u-budivnictvi
- 11 Timur Kh. Ablyazov, Igor Evsikov, and Baktybek Akaev, "Cost Reduction In Construction Industry Based On Bim Technologies", European Proceedings, April 16, 2021. https://www.europeanproceedings.com/article/10.15405/epsbs.2021.04.118
- 12 Sarah Lorek, "Global BIM Standards: Is Your Country Next?", Trimble Construction, April 5, 2018. https://constructible.trimble.com/construction-industry/global-bim-standards-is-your-country-next
- 13 Sam Steers, "Which countries are leading the adoption of BIM?", Construction Digital, June 24, 2021. https://con-struction/which-countries-are-leading-adoption-bim



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