

DOI: 10.24193/OJMNE.2026.51.07

Oleksandr ORLOV, PhD 

V. N. Karazin Kharkiv National University, Ukraine
o.v.orlov@karazin.ua

Oleksandr RADCHENKO, PhD 

University of Gdańsk, Poland
oleksander.radchenko@ug.edu.pl

Dmytro DZVINCHUK, PhD 

Ivano-Frankivsk National Technical University of Oil and Gas, Ukraine
dzvin56@ukr.net

TRANSFORMATIONAL PUBLIC GOVERNANCE FOR UKRAINE'S ECONOMIC RECOVERY: A CONCEPTUAL FRAMEWORK, SCENARIO-BASED FORECASTING AND STRATEGIC IMPERATIVES

ABSTRACT: *Ukraine's recovery requires not only large-scale reconstruction financing but also governance arrangements capable of converting resources into resilient, inclusive and productivity-enhancing transformation. This article develops a conceptual framework of transformational public governance for Ukraine by integrating four mutually reinforcing dimensions: multi-level decentralisation and institutional modernisation, integrated digital transformation, public-private co-operation and investment mobilisation, and inclusive and accountable institutions. The study combines institutional and comparative analysis with an exploratory scenario-based forecasting exercise using macroeconomic panel data for Ukraine and selected European countries. The quantitative component employs OLS and Random Forest models based primarily on investment and inflation variables. Governance-related variables considered in the initial specifications were excluded because of severe multicollinearity and model instability; accordingly, the forecasting results are not interpreted as estimates of the causal effect of governance reforms on GDP growth. Backtesting instead reveals substantial forecast error for Ukraine under wartime conditions, demonstrating the limits of conventional models in the presence of structural breaks. The article's principal contribution is therefore conceptual and policy-oriented: it separates governance-capacity indicators from economic recovery outcomes, links institutional transformation to a phased implementation architecture, and shows how scenario analysis can inform policy without overstating causal inference. The framework positions governance quality as an enabling condition for reconstruction effectiveness, investment absorption, institutional resilience and long-term convergence with the European Union.*

KEYWORDS: transformational public governance; economic recovery; institutional transformation; scenario-based forecasting; European integration.

1. Introduction

Ukraine's recovery is simultaneously a reconstruction challenge, an institutional challenge and a long-term development challenge. The latest joint Rapid Damage and Needs Assessment (RDNA5), released by

the Government of Ukraine, the World Bank Group, the European Commission and the United Nations, estimates that direct damage had exceeded US\$195 billion by 31 December 2025 and that recovery and reconstruction needs over the following decade had risen to almost US\$588 billion (Government of Ukraine et al., 2026). At the same time, the economy has demonstrated a degree of resilience that conventional post-conflict analogies do not fully capture. Real GDP expanded by 2.9% in 2024 after the initial collapse caused by the full-scale invasion, even as labour shortages, infrastructure damage and security risks continued to constrain production and investment (State Statistics Service of Ukraine, 2025). The scale and duration of the shock imply that rebuilding physical assets cannot be separated from reform of the institutions that allocate resources, co-ordinate actors, regulate markets and maintain public trust.

This article uses the term transformational public governance to describe a public-sector capacity for purposeful institutional reconfiguration under conditions in which restoring the pre-crisis equilibrium would be insufficient. The concept goes beyond administrative modernisation in a narrow sense. It encompasses changes in the distribution of authority across levels of government, the digital architecture of public services and decision-making, the relationship between public and private investment, and the mechanisms through which participation, accountability and the rule of law are embedded in recovery governance. This interpretation is consistent with broader transformative-governance scholarship, which emphasises systemic change in institutions, power relations, organisational routines and policy capacity rather than simple adaptation within an unchanged institutional regime (Chaffin et al., 2016; Bosomworth, 2018).

The central research problem is therefore not whether governance matters for economic recovery in an abstract sense, but how a governance framework can be specified without attributing causal effects that the available data cannot credibly identify. This distinction is particularly important for Ukraine. The original quantitative specifications explored governance, institutional and human-capital variables alongside macroeconomic indicators, but the governance-related variables proved highly collinear and unstable. The final OLS and Random Forest models consequently exclude those governance variables. The article therefore does not treat the forecasts as evidence that transformational governance causes a particular rate of GDP growth. Instead, the quantitative component is retained as an exploratory scenario exercise that illustrates the sensitivity and limits of forecasting in a war-affected economy.

Against this background, the article addresses three questions. First, which institutional dimensions should constitute a coherent framework of transformational public governance for Ukraine's recovery? Second, what lessons can be drawn from international experiences of post-war reconstruction, late industrialisation, digital-state development and European integration without assuming that those experiences are directly transferable? Third, what can an exploratory forecasting exercise reveal about plausible recovery trajectories and, equally importantly, about the limits of model-based inference under conditions of structural rupture?

The objective is to combine these questions in a conceptually integrated framework that is useful for public policy while remaining explicit about the evidentiary status of its quantitative component.

2. Theoretical and Comparative Background

2.1. Transformational public governance and institutional change

Institutional theory provides the first foundation for the proposed framework. North (1990) conceptualised institutions as the formal and informal rules that structure interaction, shape incentives and reduce or increase uncertainty. From this perspective, reconstruction finance is productive only to the extent that institutional arrangements can convert resources into credible commitments, co-ordinated action and enforceable rules. Acemoglu and Robinson (2012, 2019) likewise emphasise that long-run development depends on the distribution of political and economic power and on the extent to which institutions remain inclusive rather than extractive. For Ukraine, these arguments imply that recovery cannot be evaluated solely by the volume of finance mobilised or the number of assets reconstructed. The institutional environment that governs project selection, procurement, fiscal relations, regulatory enforcement and stakeholder participation is itself part of the recovery infrastructure.

Transformative-governance scholarship adds a second element. Chaffin et al. (2016) distinguish transformation from adaptation by focusing on changes to the structures and processes that define a system, while Bosomworth (2018) highlights the role of institutional logics, norms and policy-sector capacities in enabling or constraining transformation. Transposed to public governance, these insights suggest that transformational capacity involves more than adding new programmes to existing administrative routines. It requires the ability to redesign co-ordination mechanisms, redistribute decision authority where necessary, combine stability with experimentation, and create feedback systems that allow policy to adjust without losing accountability. In the Ukrainian case, the war has accelerated this need because institutions are simultaneously expected to preserve essential functions, manage emergency demands, support reconstruction and move toward EU accession standards.

This article therefore treats transformational public governance as an enabling institutional architecture rather than as a single measurable intervention. It is composed of several mutually dependent dimensions whose effects are expected to operate through intermediate mechanisms: lower transaction and administrative costs, stronger co-ordination across levels of government, greater transparency, improved investment selection, better public-service accessibility, stronger rule-of-law expectations and increased capacity to mobilise private capital. These mechanisms are theoretically linked to economic recovery, but the strength and timing of the links are empirical questions that require designs capable of addressing endogeneity, measurement error and the exceptional structural breaks produced by war.

2.2. Comparative lessons and the limits of transferability

International experience is useful primarily as a source of institutional mechanisms rather than as a catalogue of numerical benchmarks. South Korea's late industrialisation illustrates the importance of state capacity, strategic co-ordination, learning and investment discipline in a context where development required structural transformation rather than a simple return to a pre-war production pattern (Amsden, 1989). The lesson for Ukraine is not that a particular sectoral model can be replicated, but that public institutions can influence the direction and quality of capital formation when incentives, performance expectations and long-term priorities are coherently aligned.

West Germany's rapid growth in the 1950s provides a different lesson. Eichengreen and Ritschl (2009) show that the post-war shock, reconstruction dynamics and productivity catch-up interacted in ways that resist monocausal explanations. This is directly relevant to the present study because it cautions against attributing recovery outcomes to a single institutional reform. Governance, external assistance, macroeconomic stabilisation, structural conditions and the size of the initial output gap may operate jointly. For Ukraine, this reinforces the need to distinguish a governance framework from an econometric claim that governance alone explains GDP growth.

Estonia offers a more contemporary example of public-sector transformation through digital governance. OECD reviews describe a long-term process in which whole-of-government co-ordination, digital identity, interoperable services and strategic management became mutually reinforcing components of state capacity (OECD, 2015). The most recent OECD Digital Government Outlook continues to place Estonia above the OECD average on core digital-government dimensions, while also emphasising governance structures for data and artificial intelligence (OECD, 2026a). For Ukraine, the transferable lesson lies in institutional integration: digitalisation produces public value when data standards, organisational responsibility, service design, accountability and citizen needs are addressed together, not when digital tools are treated as isolated technical projects.

Ukraine's own decentralisation experience is equally important. The OECD's multi-level governance review concludes that reforms implemented since 2014 strengthened the role and capacities of municipalities and contributed to local resilience after the full-scale invasion, while also revealing persistent disparities in administrative, human-resource and fiscal capacity across territories (OECD, 2022). The 2026 OECD Public Governance Review further argues that Ukraine's wartime governance has demonstrated considerable institutional resilience but that long-term recovery requires stronger strategic planning, citizen participation, information integrity, future-ready public service capacity and trustworthy use of artificial intelligence (OECD, 2026b). These findings support a recovery model that combines decentralised capacity with national co-ordination rather than treating centralisation and decentralisation as mutually exclusive alternatives.

Comparative analysis therefore informs the framework through functional analogies: co-ordinated industrial transformation, multi-level recovery governance, digital public-sector integration and inclusive institutional capacity. It does not establish that Ukraine will reproduce the growth paths of South Korea, Germany or Estonia. Historical context, security conditions, demographic losses, EU accession requirements and the scale of external financing make Ukraine a distinct case. This limitation is incorporated into the research design rather than treated as a residual problem.

3. Research Design and Data

The study adopts a mixed conceptual and exploratory analytical design. Its principal methodological components are institutional analysis, structured comparative analysis and scenario-based macroeconomic forecasting. Institutional analysis is used to identify the governance mechanisms through which multi-level co-ordination, digital transformation, public-private co-operation and inclusive institutions may affect the effectiveness of reconstruction. Comparative analysis is used to identify transferable institutional principles while explicitly accounting for differences in historical trajectory, state capacity and geopolitical environment. The quantitative component is complementary: it illustrates macroeconomic recovery scenarios and model limitations rather than providing a causal test of governance reforms.

The exploratory forecasting exercise uses the panel dataset assembled for the original study, covering Ukraine and ten selected European comparator countries over 2015–2024. After removal of missing observations, the estimation sample contains 108 country-year observations. The dependent variable is annual real GDP growth. The initial model architecture considered investment, inflation, a lagged investment term, a Transformational Governance Index (TGI), a human-capital measure and an institutional-stability measure. In practice, the governance-related variables were strongly correlated with one another and with broader institutional measures; the TGI displayed a variance inflation factor of 34 in the initial specification. This made the coefficients unstable and unsuitable for substantive interpretation.

For that reason, the final OLS and Random Forest specifications use only investment, inflation and lagged investment. Heteroskedasticity detected in the OLS specification is addressed with robust standard errors. The Random Forest model follows the standard ensemble-learning logic introduced by Breiman (2001) and is used here for predictive comparison rather than causal interpretation. The final models therefore do not contain a governance variable. This is a decisive methodological point: any forecast generated by these models is a forecast conditional on macroeconomic predictors, not an estimate of the effect of transformational governance on GDP growth.

The article accordingly distinguishes between two analytical layers. The first is a conceptual governance framework, grounded in institutional theory, comparative evidence and contemporary Ukrainian policy

reforms. The second is an exploratory forecasting layer that tests how conventional predictive tools behave when applied to an economy exposed to extraordinary structural shocks. The layers are linked in policy discussion but not conflated empirically. The governance framework specifies mechanisms and monitoring indicators; the forecast exercise specifies macroeconomic scenarios. Establishing a causal governance-growth relationship is reserved for future research using longer time series, more robust institutional measures and identification strategies capable of addressing endogeneity.

The empirical and policy context is updated with official sources available during revision. The RDNA5 provides the current benchmark for the scale of damage and reconstruction needs (Government of Ukraine et al., 2026). The European Commission's Ukraine Facility and Ukraine Plan provide the principal EU reform-and-investment framework, while the Ukraine Investment Framework is designed to mobilise public and private investment through guarantees, grants and blended instruments (European Commission, 2024; European Commission, 2026). OECD reviews provide evidence on multi-level governance, anti-corruption, public-sector resilience and institutional reform (OECD, 2022; OECD, 2024; OECD, 2026b).

4. A Framework of Transformational Public Governance for Recovery

The proposed framework consists of four mutually reinforcing governance dimensions. They should not be treated as competing models from which policymakers select one. Their value lies in combination: multi-level governance provides territorial adaptability; digital transformation provides integrative infrastructure and information capacity; public-private co-operation extends financial and implementation capacity; and inclusive, accountable institutions provide legitimacy and safeguards against capture. The framework therefore describes a governance architecture rather than four isolated reform packages.

4.1. Multi-level decentralisation and institutional modernisation

The first dimension concerns the allocation and co-ordination of authority across national, regional and local levels. Ukraine entered the full-scale war with a substantially reformed territorial governance system. OECD analysis indicates that decentralisation strengthened municipal responsibilities and created important foundations for resilience, while also exposing uneven fiscal, administrative and strategic-planning capacities (OECD, 2022). Recovery governance should build on this institutional capital rather than replace it with a uniformly centralised reconstruction apparatus.

A transformational model therefore requires differentiated subsidiarity. Local governments should retain responsibility for place-based recovery priorities, local public services and community engagement where capacity exists, while central institutions should ensure national standards, macro-fiscal coherence, strategic infrastructure co-ordination, anti-corruption safeguards and alignment with EU obligations. Regional

and inter-municipal co-ordination mechanisms are needed for projects whose functional geography crosses local boundaries. The objective is not maximal decentralisation, but an adaptive distribution of authority linked to capability, risk and project scale.

Institutional modernisation also requires a coherent project pipeline, transparent investment appraisal and a common monitoring architecture. The 2026 OECD Public Governance Review stresses the importance of stronger strategic planning and co-ordination for recovery and long-term goals (OECD, 2026b). This supports the creation of interoperable recovery-management procedures rather than additional stand-alone agencies whose mandates overlap with existing institutions. Where new co-ordination bodies are established, their functions, reporting lines and sunset or review clauses should be explicit.

4.2. Integrated digital transformation

The second dimension is digital transformation as a governance architecture rather than a collection of electronic services. Ukraine already possesses significant digital assets, including the Diia ecosystem and digital public-finance and procurement systems. The 2026 OECD review notes the scale of citizen uptake and the contribution of digital services to administrative resilience during wartime (OECD, 2026b). The next phase should focus on interoperability, data governance, cybersecurity, auditability and user-centred service design across the full reconstruction cycle.

A transformational digital model would connect project identification, public investment management, procurement, contract implementation, geospatial monitoring and ex-post evaluation through interoperable systems. Open data can support public oversight, while risk analytics can help target audit resources. Artificial intelligence may contribute to document processing, risk detection and service personalisation, but it should be embedded in transparent accountability structures, human review and data-protection safeguards. Estonia's experience is relevant precisely because digital state capacity developed through institutional integration and governance of data rather than through technology adoption alone (OECD, 2015; OECD, 2026a). Digitalisation should therefore be assessed through public value rather than service counts. Relevant indicators include the share of recovery projects with machine-readable data, interoperability across central and local systems, processing time for core recovery services, the proportion of procurement and implementation data available for audit, user satisfaction, cybersecurity resilience and the accessibility of services for displaced people, veterans, people with disabilities and residents of war-affected territories.

4.3. Public-private co-operation and investment mobilisation

The third dimension addresses the mobilisation of private capital and implementation capacity. The

scale of Ukraine's reconstruction needs makes exclusive reliance on public finance unrealistic. RDNA5 explicitly underlines the role of the private sector and identifies business-environment reform, competition, access to finance, labour constraints and alignment with EU green and digital standards as conditions for unlocking investment (Government of Ukraine et al., 2026). The European Union's Ukraine Facility provides an institutional counterpart: its Ukraine Investment Framework uses guarantees and blended finance to reduce risk and crowd in investment, with an expected mobilisation effect substantially larger than the budgetary resources committed directly to the guarantee and grant envelope (European Commission, 2026).

For public-private partnerships, the governance challenge is more important than the formal choice of contract type. Projects require credible risk allocation, transparent procurement, realistic demand and revenue assumptions, clear contingent-liability reporting, independent appraisal and dispute-resolution mechanisms. In high-risk settings, war-risk insurance and public or multilateral guarantees may be necessary, but they should not substitute for project quality or sound fiscal assessment. Transformational governance therefore treats PPPs as one instrument within a wider public-investment framework rather than as an automatic solution to financing gaps.

The same principle applies to blended finance, infrastructure funds and investment guarantees. Their policy value depends on whether they mobilise additional investment, reduce rather than conceal risk, and support projects consistent with national recovery priorities and EU accession commitments. Monitoring should therefore include private capital mobilised per unit of public support, project additionality, procurement competition, lifecycle fiscal exposure, implementation delays and service-delivery outcomes.

4.4. Inclusive, accountable and rule-based institutions

The fourth dimension concerns the institutional conditions under which recovery decisions are perceived as legitimate and are protected from capture. Large-scale reconstruction creates exceptional opportunities for investment but also exceptional corruption and integrity risks. OECD monitoring acknowledges the strength of Ukraine's anti-corruption policy architecture while identifying continuing challenges in implementation, co-ordination and enforcement capacity (OECD, 2024). Transformational governance therefore requires that integrity mechanisms be designed into recovery systems rather than added after funds have been allocated.

Inclusive governance has a related economic function. Participation by local communities, business associations, civil society, social partners and affected groups can improve information quality, identify distributional consequences and strengthen the credibility of difficult prioritisation decisions. Inclusion should not be reduced to consultation without decision relevance. Effective participation requires clear rules on when stakeholders are involved, what information they receive, how comments are addressed and how conflicts of

interest are managed.

The rule-of-law dimension is equally central. Predictable regulation, enforceable contracts, independent oversight and credible protection of property rights influence investment decisions and the willingness of international partners to rely on national systems. In this respect, European integration is not a separate fifth governance model but a cross-cutting institutional anchor. The Ukraine Plan links financial support to reform and investment commitments and embeds recovery in an accession-oriented framework of democratic governance, regulatory alignment and administrative capacity (European Commission, 2024).

4.5. Monitoring architecture: governance capacity versus recovery outcomes

A major revision of the original evaluation methodology is the separation of governance-capacity indicators from economic recovery outcomes. The earlier composite index incorporated macroeconomic variables such as GDP dynamics and investment together with institutional indicators. Such a construction risks circularity if the index is later used to explain GDP performance. The revised framework therefore proposes a Transformational Governance Capacity Index (TGCI) that contains only governance and institutional dimensions. Economic, fiscal and social variables are monitored separately in an Economic Recovery Outcomes Dashboard.

Table 1. Proposed monitoring architecture for transformational public governance

Dimension	Illustrative governance indicators	Expected mechanism	Separate recovery outcomes
Multi-level governance	clarity of competences; municipal strategic capacity; intergovernmental co-ordination; transparent project appraisal	better matching of responsibilities to capacity and place-based needs	GDP and productivity; regional convergence; service restoration
Digital government	interoperability; open project data; processing time; auditability; cybersecurity; user accessibility	lower administrative costs, faster decisions and stronger monitoring	investment implementation; business costs; service access
Public-private cooperation	competitive procurement; risk allocation; private capital additionality; contingent-liability disclosure	mobilisation of finance and implementation capacity under controlled fiscal risk	private investment; infrastructure delivery; employment

Dimension	Illustrative governance indicators	Expected mechanism	Separate outcomes	recovery
Inclusive and accountable institutions	integrity safeguards; stakeholder participation; regulatory quality; contract enforcement; public reporting	higher trust, lower culture risk and stronger investment credibility	investment retention; inequality; trust; social cohesion	

Source: authors' framework based on institutional theory and the governance dimensions discussed in Sections 4.1–4.4.

The TGCI is intended as a future monitoring instrument, not as an empirically validated index in the present study. Its dimensions can be operationalised through publicly observable indicators and, where appropriate, survey-based measures. Weighting should be established transparently through empirical techniques or a documented expert-elicitation procedure rather than borrowed from unrelated publications. The Recovery Outcomes Dashboard, by contrast, can track GDP growth, investment, employment, labour productivity, exports, fiscal sustainability, regional disparities and social indicators without incorporating those outcomes into the governance index itself.

5. Exploratory Scenario-Based Forecasting

5.1. Model specification and interpretation

The forecasting exercise is retained to provide a quantitative complement to the conceptual framework, but its role is explicitly limited. The initial OLS specification included governance and institutional variables together with macroeconomic predictors. Severe multicollinearity, especially for the Transformational Governance Index, produced unstable coefficients. The refined OLS specification therefore takes the form $\text{GDP growth} = f(\text{investment, inflation, lagged investment})$, with robust standard errors. The Random Forest model uses the same predictors and standard ensemble parameters to explore non-linear predictive relationships.

Because the final specifications exclude governance variables, they cannot identify whether digitalisation, decentralisation, integrity reforms or PPP capacity cause higher GDP growth. Nor can the statistical performance of the models validate the conceptual governance framework. Their value lies elsewhere: they show how sensitive recovery projections are to macroeconomic assumptions and how poorly conventional models may perform when confronted with a structural break of the magnitude experienced by Ukraine.

5.2. Backtesting and scenario results

Backtesting provides the clearest empirical result. For Ukraine, actual GDP growth was 5.3% in 2023

and 2.9% in 2024. The original Random Forest model predicted -1.61% and -1.32%, respectively, while the refined OLS model predicted 1.15% and 0.84%. Both models therefore substantially underestimated Ukraine's wartime recovery. The error is not evidence that governance explains the difference; it demonstrates that the models omit major determinants associated with wartime adaptation, external financing, defence-related demand, labour-market adjustment, energy disruptions and policy responses.

The scenario outputs generated from the 2015–2024 estimation window should consequently be read as model diagnostics rather than current forecasts. In the original exercise, the Random Forest baseline scenario generated growth of 1.77% for the first forecast year and 2.63% in the subsequent years; an optimistic investment scenario generated 6.17% and 5.20%, while a pessimistic scenario generated -3.18% and -2.54%. The OLS model produced substantially higher central estimates. The width of this range, together with the poor backtest, is itself informative: point forecasts are fragile under extreme uncertainty, whereas scenario ranges can support stress-testing of policy choices.

Table 2. Diagnostic results from the original forecasting exercise

Exercise	Actual / assumption	OLS output	Random Forest output
Backtest 2023	Actual GDP growth 5.3%	1.15%	-1.61%
Backtest 2024	Actual GDP growth 2.9%	0.84%	-1.32%
Baseline scenario, first forecast year	Investment 20.0; inflation 7.0	7.07%	1.77%
Baseline scenario, subsequent years	same scenario family	6.89%	2.63%
Optimistic RF scenario	Investment 27.5; inflation 5.0	—	6.17% / 5.20%
Pessimistic RF scenario	Investment 11.0; inflation 4.4	—	-3.18% / -2.54%

Note: These are outputs from the manuscript's original 2015–2024 estimation window. They are retained as model-diagnostic scenario results and should not be treated as contemporaneous forecasts or as estimates of governance effects.

The main empirical contribution of the quantitative section is thus negative but useful: the available models do not support a causal claim linking transformational governance to a specific GDP-growth rate. This finding improves the conceptual argument because it clarifies what must be tested in future work. A credible causal design would require a governance measure that is independent of the outcome variable, sufficient cross-country and temporal variation, explicit treatment of endogeneity, and a strategy for wartime structural

breaks. Possible approaches include dynamic panel methods, quasi-experimental designs around institutional reforms, synthetic-control comparisons for specific governance interventions, and subnational analysis where reforms vary across territories.

6. Strategic Imperatives and an Adaptive Implementation Roadmap

The conceptual framework and the scenario evidence point to a set of strategic imperatives. First, recovery governance should be adaptive rather than organised around a fixed institutional blueprint. Roles and co-ordination arrangements must be reviewed as the balance shifts from emergency response to reconstruction and then to structural transformation. Second, digital systems should function as common infrastructure for planning, procurement, implementation and public oversight. Third, private investment should be mobilised through credible risk-sharing and project governance rather than through optimistic assumptions about automatic capital inflows. Fourth, inclusion and integrity should be treated as productivity and legitimacy conditions, not merely compliance requirements. Fifth, all four dimensions should be anchored in the EU accession process so that reconstruction and regulatory convergence reinforce one another.

To avoid the rapid obsolescence of calendar-based roadmaps, implementation can be organised by relative phases. Phase I covers approximately the first 0–18 months of a recovery programme and focuses on institutional readiness: clarifying responsibilities, building a unified project pipeline, strengthening local capacity, embedding integrity controls and ensuring interoperability of digital systems. Phase II covers roughly months 18–36 and emphasises scaling: expanding project implementation, crowding in private capital, broadening digital integration, supporting SMEs and strengthening regional development instruments. Phase III begins once the recovery system has moved beyond emergency reconstruction and concentrates on structural transformation, EU alignment, productivity, human capital and long-term fiscal sustainability.

Table 3. Adaptive implementation roadmap

Phase	Core priorities	Lead tasks	governance	Illustrative monitoring focus
Phase I: institutional readiness (0–18 months)	project pipeline; integrity; local capacity; digital interoperability	clarify competences; standardise appraisal; establish public reporting; strengthen municipal support		project readiness; procurement transparency; service continuity; data completeness
Phase II: scaled implementation (18–36 months)	investment mobilisation; regional recovery; SME support; digital scaling	deploy guarantees and blended finance; strengthen regional co-ordination; expand digital project management		private capital additionality; implementation delays; regional absorption capacity; user access

Phase	Core priorities	Lead tasks	governance	Illustrative focus	monitoring
Phase III: structural transformation (36+ months)	EU convergence; productivity; green and circular transition; human capital	embed EU standards; shift from repair to modernisation; institutionalise evaluation and learning	productivity; high-value investment; regulatory convergence; fiscal sustainability; inclusion		

Source: authors' elaboration. The phases are relative and should be adapted to security conditions, territorial variation and the sequencing of EU-related reforms.

The roadmap also requires a governance mechanism for learning. Recovery projects should be reviewed not only for financial compliance but for whether their institutional assumptions were correct: whether local capacity was sufficient, whether stakeholder participation changed project design, whether digital systems reduced transaction costs, whether risk-sharing mobilised additional private investment, and whether safeguards prevented capture. This converts monitoring from a reporting obligation into a mechanism of institutional adaptation.

European integration provides a practical anchor for this learning process. The Ukraine Plan and the Ukraine Facility connect financial support with reform and investment steps, while the Ukraine Investment Framework is designed to use guarantees and blended instruments to mobilise additional public and private investment (European Commission, 2024; European Commission, 2026). This architecture is particularly compatible with the proposed framework because it links governance reform, investment mobilisation and regulatory convergence rather than treating them as separate policy tracks.

7. Discussion

The revised argument differs from a conventional ‘governance causes growth’ narrative in three respects. First, governance is conceptualised as an institutional capacity that shapes the efficiency, legitimacy and resilience of recovery processes. Its economic effects are mediated through investment quality, co-ordination, transaction costs, accountability and public-service performance. Second, international examples are used to identify mechanisms, not to generate mechanically transferable numerical targets. Third, the quantitative section is explicitly exploratory and diagnostic. Its most important result is that standard predictive models perform poorly for Ukraine precisely when the economy is exposed to exceptional shocks. This repositioning strengthens rather than weakens the policy relevance of the article. Policymakers rarely operate with credible causal estimates for every governance reform, especially during war and early recovery. They nevertheless need a structured way to decide which institutional capacities must be built, which indicators should be monitored and which assumptions should be stress-tested. A conceptual framework coupled with scenario analysis is appropriate for that task if the limits of inference are transparent.

The framework also helps avoid a common measurement problem. If GDP growth, investment or employment are included inside a governance index and that index is then used to explain economic recovery, the explanatory variable partly contains the outcome it is supposed to predict. Separating the TGCI from the Recovery Outcomes Dashboard prevents this construct contamination and creates a clearer foundation for future empirical research. Governance variables can then be measured independently and their relationship with economic outcomes tested with suitable lags and identification strategies.

Several limitations remain. The comparative cases are illustrative rather than exhaustive. The forecast dataset is relatively small and contains economies with different structural characteristics; it does not include direct measures of war intensity, external financing, defence-related demand or regional destruction. The governance framework is theoretically specified but not yet validated as a composite index. The article also does not estimate the distributional effects of different recovery strategies across regions and social groups. These limitations define a research agenda rather than invalidating the framework.

Future research should therefore proceed in three directions. The first is measurement: develop a transparent, replicable governance-capacity dataset using indicators that are conceptually independent of recovery outcomes. The second is causal identification: exploit reforms, policy discontinuities or subnational variation to estimate the effects of specific governance changes. The third is comparative sequencing: examine how the appropriate balance between central co-ordination, local autonomy, private investment and stakeholder participation changes across emergency, reconstruction and long-term transformation phases. Such work would allow the conceptual framework proposed here to evolve into a stronger empirical theory of recovery governance.

8. Conclusions

Ukraine's recovery requires a governance architecture capable of doing more than restoring pre-war institutions and infrastructure. The article identifies four mutually reinforcing dimensions of transformational public governance: multi-level decentralisation and institutional modernisation, integrated digital transformation, public-private co-operation and investment mobilisation, and inclusive, accountable and rule-based institutions. Together, these dimensions provide a framework for connecting reconstruction with institutional resilience, productivity, public trust and EU convergence.

The quantitative analysis does not establish a causal econometric effect of transformational governance on GDP growth. The final OLS and Random Forest specifications exclude governance variables because the initial institutional measures were highly collinear and unstable. Backtesting shows substantial forecast error

for Ukraine in 2023–2024, confirming that structural breaks and wartime conditions sharply limit the predictive value of conventional models. The scenario outputs should therefore be interpreted as stress-testing ranges rather than as forecasts of the economic effects of governance reform.

The principal contribution of the study is consequently conceptual and policy-oriented. It separates governance-capacity indicators from economic recovery outcomes, specifies the mechanisms through which governance can enable effective reconstruction, and proposes an adaptive implementation roadmap rather than a fixed calendar of targets. This formulation is better aligned with the uncertainty facing Ukraine: governance matters not because the present models prove a predetermined growth effect, but because institutional quality shapes whether resources can be converted into legitimate, co-ordinated and sustainable recovery.

For policymakers, the implication is that recovery finance, public administration reform and European integration should be designed as a single institutional project. For researchers, the implication is equally clear: future claims about the economic effects of transformational governance should be tested with independent governance measures, longer and richer datasets, and identification strategies that explicitly address endogeneity and wartime structural change.

References

1. Acemoglu, D. & Robinson, J. A. (2012) *Why Nations Fail: The Origins of Power, Prosperity, and Poverty*. New York: Crown Business.
2. Acemoglu, D. & Robinson, J. A. (2019) *The Narrow Corridor: States, Societies, and the Fate of Liberty*. New York: Penguin Press.
3. Amsden, A. H. (1989) *Asia's Next Giant: South Korea and Late Industrialization*. New York: Oxford University Press. DOI: 10.1093/0195076036.001.0001.
4. Bosomworth, K. (2018) 'A discursive-institutional perspective on transformative governance: A case from a fire management policy sector', *Environmental Policy and Governance*, 28(6), pp. 415–425. DOI: 10.1002/eet.1806.
5. Breiman, L. (2001) 'Random forests', *Machine Learning*, 45, pp. 5–32. DOI: 10.1023/A:1010933404324.
6. Chaffin, B. C., Garmestani, A. S., Gunderson, L. H., Benson, M. H., Angeler, D. G., Arnold, C. A., Cosens, B., Craig, R. K., Ruhl, J. B. & Allen, C. R. (2016) 'Transformative environmental governance', *Annual Review of Environment and Resources*, 41, pp. 399–423. DOI: 10.1146/annurev-environ-110615-085817.
7. Eichengreen, B. & Ritschl, A. (2009) 'Understanding West German economic growth in the 1950s', *Cliometrica*, 3(3), pp. 191–219. DOI: 10.1007/s11698-008-0035-7.
8. European Commission (2024) 'Commission endorses Ukraine Plan, paving the way for regular payments under the Ukraine Facility', 15 April. Available at: https://enlargement.ec.europa.eu/news/commission-endorses-ukraine-plan-paving-way-regular-payments-under-ukraine-facility-2024-04-15_en (Accessed: 4 September 2026).
9. European Commission (2026) *The Ukraine Facility*. Available at: https://commission.europa.eu/topics/eu-solidarity-ukraine/eu-assistance-ukraine/ukraine-facility_en (Accessed: 4 September 2026).
10. Geissdoerfer, M., Savaget, P., Bocken, N. M. P. & Hultink, E. J. (2017) 'The circular economy – A new

sustainability paradigm?', *Journal of Cleaner Production*, 143, pp. 757–768. DOI: 10.1016/j.jclepro.2016.12.048.

11. Government of Ukraine, World Bank Group, European Commission & United Nations (2026) *Ukraine Fifth Rapid Damage and Needs Assessment (RDNA5): February 2022–December 2025*. Washington, DC: World Bank Group. Available at: <https://www.worldbank.org/en/news/press-release/2026/02/23/updated-ukraine-recovery-and-reconstruction-needs-assessment-released> (Accessed: 4 September 2026).

12. International Monetary Fund (2025) *World Economic Outlook Database*, April 2025. Washington, DC: IMF. Available at: <https://www.imf.org/en/Publications/WEO/weo-database/2025/April> (Accessed: 4 September 2026).

13. International Monetary Fund (2026) *Ukraine: Request for an Extended Arrangement Under the Extended Fund Facility and Cancellation of the Current Arrangement*. IMF Country Report No. 2026/058. Washington, DC: IMF. DOI: 10.5089/9798229040464.002.

14. Kirchherr, J., Reike, D. & Hekkert, M. (2017) 'Conceptualizing the circular economy: An analysis of 114 definitions', *Resources, Conservation & Recycling*, 127, pp. 221–232. DOI: 10.1016/j.resconrec.2017.08.018.

15. North, D. C. (1990) *Institutions, Institutional Change and Economic Performance*. Cambridge: Cambridge University Press. DOI: 10.1017/CBO9780511808678.

16. OECD (2015) *OECD Public Governance Reviews: Estonia and Finland: Fostering Strategic Capacity across Governments and Digital Services across Borders*. Paris: OECD Publishing. DOI: 10.1787/9789264229334-en.

17. OECD (2022) *Rebuilding Ukraine by Reinforcing Regional and Municipal Governance*. OECD Multi-level Governance Studies. Paris: OECD Publishing. DOI: 10.1787/63a6b479-en.

18. OECD (2024) *Review of Anti-Corruption Reforms in Ukraine under the Fifth Round of Monitoring: The Istanbul Anti-Corruption Action Plan*. Paris: OECD Publishing. DOI: 10.1787/9e03ebb6-en.

19. OECD (2026a) *Digital Government Outlook 2026: Estonia*. Paris: OECD Publishing. Available at: https://www.oecd.org/en/publications/digital-government-outlook-2026_d46c0555-en/estonia_f5640fed-en.html (Accessed: 4 September 2026).

20. OECD (2026b) *Public Governance Review of Ukraine*. OECD Public Governance Reviews. Paris: OECD Publishing. DOI: 10.1787/7810f059-en.

21. State Statistics Service of Ukraine (2025) 'GDP estimate for 2024', 31 March. Available at: <https://stat.gov.ua/uk/news/zdiysneno-otsinku-vvp-za-2024-rik> (Accessed: 4 September 2026).