

## Review article

# Fiscal Conversion Capacity: How Subnational Public Finance Mediates Place-Based Policy and Transformative Regional Resilience under Compound Shocks

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**Received** 2 June 2026

**Revised** 15 July 2026

**Accepted** 27 July 2026

**Published** 31 July 2026

**Abstract:** Place-based policy has returned to regional development agendas amid persistent territorial inequality, climate transition, demographic change, and recurrent economic disruption. Comparable interventions nevertheless produce divergent regional trajectories, and spatial targeting alone does not explain the divergence. This integrative review argues that the missing mediator is fiscal conversion capacity: the capacity of a territorial governance system to convert externally granted resources and locally borne exposure into implementable, financeable, and distributively defensible action. A two-track design combined a structured search of the 2023–2026 literature, which yielded 63 eligible peer-reviewed studies across regional science, economic geography, public administration and finance, planning, and transition studies, with a purposively assembled set of 24 conceptual anchor works retrieved by citation chaining. Three findings follow. First, fiscal conversion capacity is decomposable into four dimensions — resource adequacy, revenue autonomy and diversification, expenditure flexibility, and intergovernmental risk sharing — that correspond, respectively, to the level, controllability, reallocability, and covariance-pooling of subnational resources, and that map onto but are not reducible to existing typologies of governmental financial resilience. Second, the dimensions are non-substitutable and conditionally signed: revenue autonomy and value capture raise transformative capacity where tax bases are broad and administratively secure, and lower it where bases are narrow or asset-market-linked. Third, the synthesis identifies a resilience paradox with four distinct forms — temporal displacement, balance-sheet substitution, spatial shifting, and social shifting — in which aggregate regional recovery is financed by depleting the fiscal, material, or distributive foundations of subsequent adaptation. The review formalises these findings in the Place-Based Fiscal Conversion framework and eight testable propositions, and specifies the measurement and design requirements — consolidated subnational balance sheets, functional rather than administrative treatment geographies, and sequential-shock identification — through which they can be evaluated.

**Keywords:** Place-based policy; Transformative resilience; Subnational finance; Fiscal capacity; Compound shocks; Territorial justice



ISSN 2759-7318 (Online)  
ISSN 2760-327X (Print)

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Published by Jandoo Press Co., Ltd.

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## Introduction

Persistent disparities in productivity, employment, public service quality, and political confidence have restored the case for policies tailored to particular cities, regions, and rural areas ([Barca et al., 2012](#); [Iammarino et al., 2019](#); [Rodríguez-Pose, 2018](#)).

Contemporary place-based policy addresses spatially concentrated market failures, accumulated disadvantage, transition exposure, and locally specific development assets, and its scope now extends to industrial strat-

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egy, decarbonisation, infrastructure renewal, innovation systems, demographic adaptation, and shock preparedness (Gansauer, 2025; Garcilazo & McCann, 2025; Suedekum, 2025). Evidence from European Cohesion Policy and from recent United States programmes nevertheless indicates that outcomes vary sharply with governance quality, economic structure, policy composition, and spatial spillovers (Amendolagine et al., 2024; McCullough, 2025; Neumark & Simpson, 2015). Exposure to both policy and shock travels through production networks, labour flows, financial systems, migration, infrastructure, and intergovernmental arrangements (Chu & Gong, 2026; Elekes et al., 2024; Shaheen et al., 2025; Yeung, 2024). Uniform national interventions therefore encounter radically unequal territorial conditions, and the resulting variance in outcomes is the central empirical puzzle this review addresses.

Regional resilience research has undergone a parallel conceptual shift. Early formulations emphasised resistance to output or employment loss and the speed of return to a prior path (Martin, 2012; Simmie & Martin, 2010), and subsequent evolutionary accounts introduced adaptation, adaptability, and hysteresis as competing interpretations of post-shock trajectories (Boschma, 2015; Hu & Hassink, 2017; Martin & Sunley, 2015). Current work asks whether regions can redirect the structures that generated vulnerability in the first place (Baumgartinger-Seiringer et al., 2025; Lemke et al., 2023; Trippl et al., 2024), aligning regional research with the transformability concept in resilience science (Folke et al., 2010). The distinction matters because aggregate recovery can coexist with fragile revenue systems, unequal labour markets, carbon-intensive production, and underfunded services. Interacting disruptions sharpen the tension: pandemics, supply-chain interruptions, energy-price shocks, climate hazards, property-market contractions, geopolitical fragmentation, and fiscal tightening propagate across connected systems and arrive in sequences rather than as isolated events (Helleiner, 2024; Lawrence et al., 2024).

A third literature has developed largely in parallel. Public administration research on governmental financial resilience has shown that local authorities facing austerity differ systematically in anticipatory capacity, coping capacity, and perceived financial vulnerability, and that these differences shape whether shocks produce buffering, adapting, or retrenchment (Barbera et al., 2017, 2021; Steccolini et al., 2017). Public finance research has established that the level and structure of subnational revenue, the assignment of expenditure responsibilities, and the design of transfers alter both incentives and crisis exposure (Hendrick, 2004; Ladd & Yinger, 1989; Oates, 2005; Weingast, 2009). Critical urban political economy has documented how austerity and financialisation reconfigure the municipal fiscal state and displace costs downward and forward (Peck, 2012; Pike et al., 2019).

These three literatures rarely meet. Regional resilience research treats public finance as background context; governmental financial resilience research treats the individual

local authority as the unit of analysis and seldom connects fiscal outcomes to regional development paths or territorial justice; place-based policy evaluation typically models treatment as receipt of a grant, leaving unexamined the institutional process by which a grant becomes a functioning asset, a maintained service, or a redirected development trajectory. The consequence is a missing mediator. This review names that mediator fiscal conversion capacity: the capacity of a territorial governance system to convert externally granted resources and locally borne exposure into implementable, financeable, and distributively defensible action, and to sustain that action across the interval separating one shock from the next.

The review asks three questions. First, through which fiscal mechanisms does place-based policy translate — or fail to translate — into transformative regional resilience under compound shocks? Second, which configurations of subnational fiscal institutions condition that translation, and with what sign? Third, how should the durability and the distribution of resilience be evaluated when aggregate indicators and welfare-relevant outcomes diverge?

Four contributions follow. The review specifies fiscal conversion capacity as a construct linking place-based policy, regional resilience, subnational public finance, and just transition through a shared causal sequence, and positions it against the two reviews closest to this territory — Lemke et al. (2023), which diagnoses unresolved conceptual issues in regional economic resilience without addressing public finance, and Trippl et al. (2024), which establishes preconditions and processes for transformative resilience without specifying their financing. Second, it derives four fiscal dimensions from the constraint structure of a subnational budget rather than asserting them, and establishes their correspondence with, and irreducibility to, existing typologies of governmental financial resilience and fiscal health. Third, it formalises a resilience paradox in four distinct forms, in which aggregate recovery is financed by depleting the foundations of subsequent adaptation. Fourth, it converts the framework into eight numbered propositions with specified observable implications and identification requirements, so that a conceptual synthesis becomes an empirical programme rather than a taxonomy.

## Conceptual foundations

### Place-based policy as spatially differentiated intervention

Place-based policy intentionally directs resources, authority, incentives, or public investment towards specified territories. Its economic justification rests on the spatial concentration of market failures, agglomeration externalities, coordination problems, institutional weaknesses, and social costs, and its political justification on the territorial concentration of disaffection generated by long-run divergence (Barca et al., 2012; Rodríguez-Pose, 2018). Formal evaluations have established that the welfare case is condi-

tional rather than general: place-based transfers can raise local outcomes while producing ambiguous aggregate effects, depending on mobility, spillovers, and the counterfactual use of funds ([Duranton & Venables, 2021](#); [Neumark & Simpson, 2015](#)). Recent formulations widen the approach from compensating lagging places towards enabling all regions to manage transition opportunities and risks ([Garcilazo & McCann, 2025](#); [Suedekum, 2025](#)). The resulting policy category — subsidies, enterprise zones, infrastructure, innovation systems, public employment, skills programmes, urban regeneration, fiscal equalisation, and regionally targeted green industrial policy — is heterogeneous, and its evaluation requires an explicit account of the instrument, the target geography, the affected population, and the complementary institutions on which delivery depends.

Spatial targeting does not imply spatial containment. Commuting, migration, firm relocation, supply chains, housing markets, and fiscal competition transmit effects beyond programme boundaries. Amendolagine et al. ([2024](#)) demonstrate that a spatial-econometric perspective materially changes estimated Cohesion Policy impacts. McCullough ([2025](#)) shows that neighbourhood business responses to Community Development Block Grant funding depend on pre-existing local conditions, while Gansauer ([2025](#)) distinguishes growth-oriented from equity-oriented instruments within recent United States programmes and shows that the two configurations imply different distributional consequences. Administrative eligibility, effective exposure, and realised incidence therefore occupy different spatial scales, and treating the first as a proxy for the third is a specification error rather than a measurement approximation.

Infrastructure illustrates the ambiguity. New connectivity can increase access to jobs, markets, services, and investment; it can equally strengthen dominant centres, generate development obligations in weak markets, or relocate benefits away from the jurisdiction financing complementary assets. Gansauer et al. ([2024](#)) identify material, social, fiscal, and political dimensions through which built infrastructure deepens rather than relieves peripheral disadvantage. Evaluation must therefore connect network effects, local institutional conversion, and the incidence of benefits and costs — three links that the standard treatment-effect design collapses into one.

## From discrete shocks to compound regional exposure

A shock is conventionally operationalised as a bounded event: a recession, disaster, pandemic, policy withdrawal, or market collapse. Current regional conditions increasingly involve sequences and interactions instead. A supply-chain disruption reduces employment and tax revenue, weakens municipal investment, delays infrastructure maintenance, and raises social expenditure. Climate hazards damage assets while raising insurance, borrowing, and adaptation costs, and the depth and duration of the resulting output loss depend on the liability structure and institutional quality already in place ([Clò et al., 2025](#); [Peters et al., 2023](#)). De-

mographic decline erodes tax bases and increases per-capita service costs, creating a slow-moving stress that magnifies acute disturbances. Compound exposure therefore comprises simultaneous shocks, sequential shocks, and background transitions that alter the effect of subsequent events.

Polycrisis research supplies a systems vocabulary for these interactions. Lawrence et al. ([2024](#)) formalise common stressors, domino effects, inter-systemic feedback, and synchronisation as causal mechanisms of crisis entanglement, while Helleiner ([2024](#)) situates polycrisis within structural change in economic globalisation. Regional research grounds these mechanisms in concrete networks and institutions: Elekes et al. ([2024](#)) relate resilience to inter-industry labour flows, Giannakis et al. ([2024](#)) connect productivity growth to sectoral interconnectedness, Qiao and Ji ([2024](#)) examine industry networks through stress testing, Yeung ([2024](#)) and Shaheen et al. ([2025](#)) establish the continuing salience of interregional and global production linkages, and Chu and Gong ([2026](#)) extend the analysis to cluster resilience under polycrisis conditions.

Compound exposure complicates causal inference in a specific way. The effect of a place-based programme depends on the pre-existing development path, on the timing of other shocks, and on the response of neighbouring regions. A policy introduced during recovery may appear effective because stronger places absorb funds more quickly, and may widen inequality where weaker administrations cannot prepare projects, provide matching finance, or sustain operating costs. Sequential designs must therefore treat the fiscal state bequeathed by the previous shock as a moderator rather than a nuisance parameter.

## Transformative regional resilience

Regional resilience describes a territory's capacity to withstand, adapt to, recover from, and respond to disruption. The concept remains contested because regional boundaries, outcome variables, shock definitions, and normative objectives vary across studies ([Lemke et al., 2023](#); [Martin & Sunley, 2015](#)). The evolutionary turn replaced equilibrium framings with path-dependent ones, distinguishing adaptation within an existing path from adaptability across paths ([Boschma, 2015](#); [Hu & Hassink, 2017](#)) and introducing hysteresis as a description of trajectories that do not return ([Martin, 2012](#)). Recent work links resilience explicitly to development-path change: Trippl et al. ([2024](#)) conceptualise transformative resilience through the preconditions and processes that enable regions to address environmental and societal challenges; Baumgartinger-Seiringer et al. ([2025](#)) separate vulnerability, preparedness, and responsiveness in industrial transitions; Sutton, Mendez, et al. ([2025](#)) formalise post-crisis paths through hysteresis and homeorhesis, Sutton, Kobara, et al. ([2025](#)) identify their determinants, and Fromhold-Eisebith and Fahl ([2026](#)) connect resilience to anticipatory foresight.

This review adopts a four-mode interpretation consistent with resilience science ([Folke et al., 2010](#)). Resistance limits immediate loss; recovery restores activity or service

**Table 1 | Derivation of fiscal conversion capacity and correspondence with antecedent constructs**

| Dimension                            | Budget property constrained                                             | Question it answers                                                   | Principal antecedent constructs                                                                                          | Adaptation mode primarily enabled  |
|--------------------------------------|-------------------------------------------------------------------------|-----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|------------------------------------|
| Resource adequacy                    | Level of unencumbered resources relative to assigned responsibility     | Is any discretionary response feasible?                               | Fiscal health and the capacity–need gap (Hendrick, 2004; Ladd & Yinger, 1989); buffering capacity (Barbera et al., 2017) | Resistance                         |
| Revenue autonomy and diversification | Controllability and variance of revenue; covariance with the local base | Can the government set its own instruments, and how exposed are they? | Tax assignment and incentive effects (Oates, 2005; Weingast, 2009); financial vulnerability (Barbera et al., 2017)       | Adaptation within an existing path |
| Expenditure flexibility              | Share of committed expenditure reallocable within the period            | How much of the existing budget can be redirected?                    | Budget rigidity; coping capacity (Barbera et al., 2021; Steccolini et al., 2017)                                         | Recovery and renewal               |
| Intergovernmental risk sharing       | Degree to which shock covariance is pooled across jurisdictions         | Must a locally concentrated shock be absorbed locally?                | Equalisation and insurance federalism (Oates, 2005); anticipatory capacity (Barbera et al., 2021)                        | Transformation                     |

Note. The four dimensions are derived from the constraint structure of a subnational budget. Correspondence with antecedent constructs is deliberately partial: no antecedent construct operates at the territorial scale at which place-based policy is delivered, and none connects fiscal structure to development-path change. The final column indicates the mode each dimension primarily enables, not the mode it determines.

capacity; renewal modifies instruments or sectors within the prevailing development model; transformation changes the structures that reproduce vulnerability. The four modes are not stages on a single ladder, and they can coexist across outcome domains — employment may recover while municipal finances deteriorate, or production may decarbonise while household energy poverty increases. Transformative resilience must therefore be assessed jointly across economic performance, public finance, essential services, environmental sustainability, and distributional incidence, and a claim of transformation supported on one domain alone is unidentified.

Agency shapes movement between modes and is unevenly distributed (Bristow & Healy, 2014). Rao, Mackenzie, et al. (2024) apply a dynamic-capabilities perspective to regional businesses; Ramon-Muñoz et al. (2024) use business history to reveal the institutional and firm-level foundations of adaptation; Lemke (2025) emphasises reproductive agency and the active maintenance of existing structures. Collectively this work supports a process view in which governments, firms, financial institutions, civil society, and households hold unequal capacities and pursue partly conflicting objectives — a view that requires the financing of agency to be treated as an explicit object of analysis rather than an assumed input.

## Deriving fiscal conversion capacity

Subnational fiscal capacity is conventionally defined as the ability of territorial governments to mobilise, allocate, adjust, and sustain financial resources, and is measured by revenue-raising potential relative to expenditure need (Hendrick, 2004; Ladd & Yinger, 1989). That definition is insufficient here because it describes a stock rather than a process. What place-based policy requires is conversion: the transformation of an externally determined resource flow, arriving under specified conditions and timelines, into locally implementable and sustainable action.

The four dimensions used in this review are derived from the constraint structure of a subnational budget rather than

assembled inductively. Let the feasible action set of a territorial government in a given period be bounded by its resources. Four properties of those resources bound it independently. The level of unencumbered resources relative to assigned responsibility determines whether any discretionary response is feasible at all; this is resource adequacy. The controllability and variance of resources determine whether the government can set its own instruments and how strongly its revenue co-moves with local economic conditions; this is revenue autonomy and diversification. The reallocability of committed resources within the period determines how much of the existing budget can be redirected without breaching contractual, statutory, or political constraints; this is expenditure flexibility. Finally, the extent to which the covariance between local shocks and those of other jurisdictions is pooled through transfers, equalisation, and joint financing determines whether a locally concentrated shock must be absorbed locally; this is intergovernmental risk sharing. Level, controllability, reallocability, and covariance-pooling are analytically distinct and empirically separable, and no one of them substitutes for another: a government with large reserves but fully committed expenditure, or with high formal autonomy over a single collapsing tax base, is not fiscally capable in the sense the framework requires.

Table 1 establishes the correspondence between these four dimensions and the principal antecedent typologies. The mapping is deliberately imperfect. Governmental financial resilience research identifies anticipatory capacity, coping capacity, and financial vulnerability as organisational attributes of an individual authority (Barbera et al., 2017, 2021). Rao, Musso, et al. (2023) decompose fiscal resilience into resistance, recovery, and renewal. Second-generation fiscal federalism specifies the incentive consequences of tax assignment and transfer design (Oates, 2005; Weingast, 2009). Each captures part of conversion capacity; none captures the territorial scale at which place-based policy operates, and none connects fiscal structure to development-

path change. Fiscal conversion capacity is proposed as the construct that spans them.

Recent empirical work confirms that the four dimensions behave differently. Rao, Musso, et al. (2023) identify revenue structure and countercyclical capacity as distinct contributors to different resilience modes. Prescott and Paulson Gjerde (2023) connect state fiscal policy to differential recovery from the Great Recession. Nakatani (2024) identifies a nonlinear, tipping-point relationship between revenue decentralisation and fiscal-crisis probability. Chen and Martinez-Vazquez (2024) show that decentralisation alters infrastructure maintenance expenditure. Rodrigues et al. (2026) document heterogeneous municipal fiscal resilience during recession in Brazil, and Tran et al. (2026) and Dom et al. (2026) show that local governments navigate financial shock and austerity through different financial and organisational responses at different crisis phases.

Fiscal capacity also underwrites non-financial capabilities: professional staff, data systems, project preparation, procurement, coordination, and evaluation. Budget volatility shortens planning horizons and shifts attention towards immediately monetisable projects. Dimitrijevska-Markoski et al. (2024) associate organisational capacity with service continuity during crisis, and Utami et al. (2026) connect fiscal, human, infrastructural, and governance readiness in a multilevel setting. Conversion capacity is therefore jointly fiscal and administrative, and the two components are complementary rather than additive.

Finally, the sign of the fiscal effect depends on institutional design and cannot be assumed. Revenue autonomy supports locally tailored action where tax bases are broad and administrative systems are strong, and increases vulnerability where autonomy is paired with narrow, volatile bases or unfunded mandates. Transfers stabilise budgets and equalise capacity, yet delayed, fragmented, or heavily conditional programmes reduce flexibility and raise transaction costs. Borrowing finances transformation with durable returns and can equally lock regions into debt service and asset strategies contingent on continued appreciation (Peck, 2012; Pike et al., 2019). Land finance in China provides the clearest contemporary case, because property-market exposure and local debt interact directly (Chen et al., 2023) and dependence on land-derived revenue is associated with lower green economic efficiency (Guo, 2025). The conditional sign of each dimension is not a caveat to the framework; it is the framework's central analytical claim.

## Review Design and Methods

### Review type and rationale

The review is an integrative review: a design intended to synthesise quantitative, qualitative, conceptual, and comparative evidence drawn from fields with incompatible reporting conventions, and to generate theory rather than to estimate a pooled effect (Snyder, 2019; Whittemore & Knafl, 2005). The choice follows from the question. Asking how fiscal arrangements condition the translation of place-based

policy into transformative resilience requires evidence on mechanisms that are observed in different literatures, at different scales, and through different estimands. An aggregative design would either discard most of that evidence or force it into a common metric it does not share.

Heterogeneity in outcome definitions, treatment specifications, and post-shock observation windows accordingly precludes a defensible meta-analysis: the literature measures resilience through employment, output, productivity, fiscal balance, service continuity, innovation, environmental performance, and institutional or subjective indicators, and these are not commensurable. The synthesis therefore compares mechanisms and conditions rather than pooling effects. The cost of that decision is that the review can establish which mechanisms operate and under which conditions, but not their relative magnitude.

Two commitments substitute for the transparency that an aggregative protocol would supply. First, the corpus is fully enumerated: every study on which a synthesis claim rests is named in the text, listed in the reference list, and recorded against that claim in Table 3, so that inclusion decisions and evidential support are open to inspection. Second, every synthesis claim carries an explicit grade produced by stated decision rules rather than by narrative judgement (Section 3.4).

### Two-track literature identification

Identification ran on two tracks, and the distinction is reported explicitly because it determines what the review can and cannot claim.

Track 1 (structured; evidence base). A structured search of peer-reviewed journal publications dated 1 January 2023 to 31 May 2026. The window is deliberate rather than conventional. Three developments after 2022 altered the questions the field asks: the fiscal aftermath of pandemic emergency support, the acceleration of place-based green industrial policy in the European Union and the United States, and renewed subnational fiscal stress arising from property-market contraction and higher debt-service costs. Track 1 establishes the current empirical state of the field.

Discovery combined structured queries in OpenAlex and Crossref with publisher-platform searching across Elsevier ScienceDirect, Taylor & Francis Online, Oxford Academic, Wiley Online Library, SAGE Journals, Springer Link, and Emerald Insight, followed by bidirectional citation tracing on every retained record. OpenAlex and Crossref were used as primary sources for their open, interdisciplinary coverage and reproducible metadata; publisher-platform searching compensated for lags in open-index ingestion of very recent articles.

Queries were executed in four thematic blocks rather than as a single intersection, because studies addressing one link in the causal sequence would otherwise be excluded by an over-restrictive conjunction (Figure 1). Block A combined place-based policy, place-sensitive policy, regional policy, territorial policy, cohesion policy, industrial policy, and infrastructure investment. Block B combined regional re-

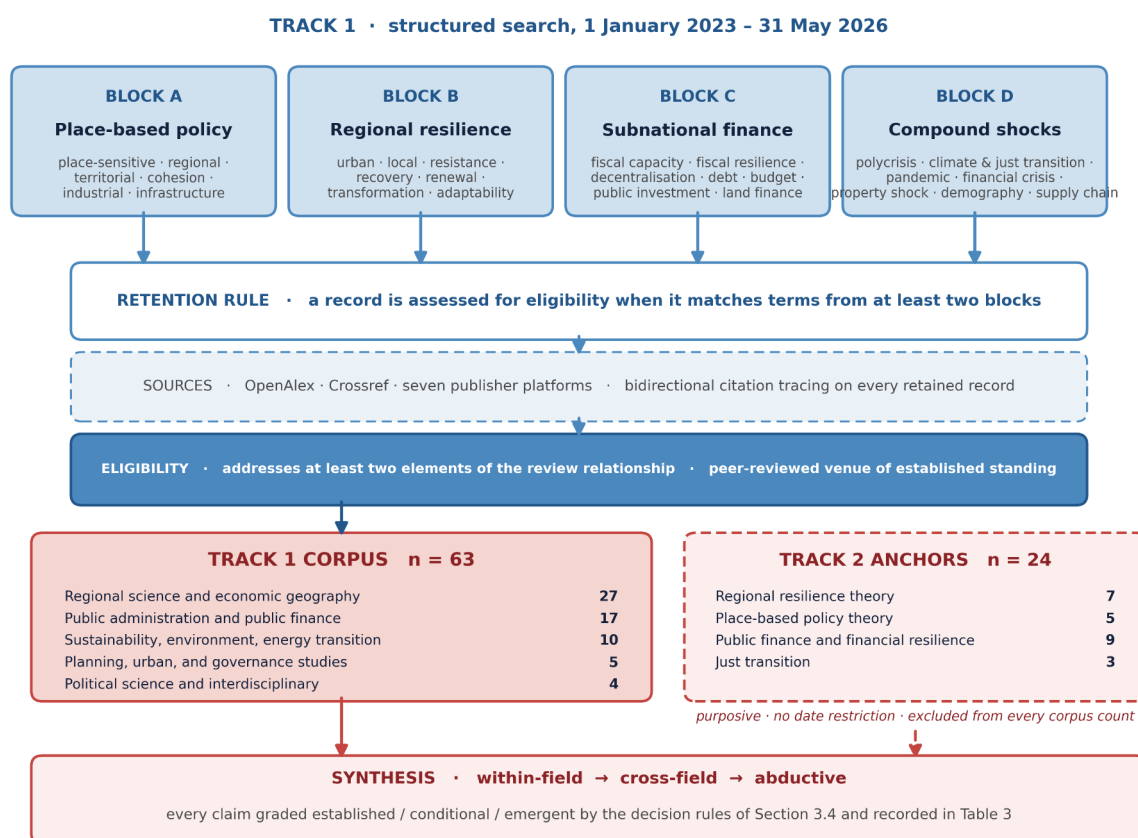


Figure 1

Note. Track 1 queries were executed as four thematic blocks and a record was retained for eligibility assessment when it matched at least two blocks; Track 2 anchors were retrieved purposively by backward citation chaining without date restriction and are excluded from all corpus counts. Field counts for Track 1 correspond to Panel A of Table 2.

silience, urban resilience, local resilience, resistance, recovery, renewal, transformation, and adaptability. Block C combined subnational finance, local fiscal capacity, fiscal resilience, fiscal decentralisation, local government debt, municipal budget, public investment, and land finance. Block D combined compound shock, polycrisis, climate transition, just transition, pandemic, financial crisis, property-market shock, demographic decline, and supply-chain disruption. A record was retained for eligibility assessment when it matched terms from at least two blocks.

Track 2 (purposive; conceptual anchoring). Foundational works were retrieved without date restriction by backward citation chaining from the Track 1 corpus and from the most-cited recent reviews in each contributing field, and were retained when they define a construct on which the synthesis depends. Twenty-four such works were retained, spanning regional resilience theory (Boschma, 2015; Bris-tow & Healy, 2014; Folke et al., 2010; Hu & Hassink, 2017; Martin, 2012; Martin & Sunley, 2015; Simmie & Martin, 2010), place-based policy theory (Barca et al., 2012; Duranton & Venables, 2021; Iammarino et al., 2019; Neumark & Simpson, 2015; Rodríguez-Pose, 2018), public finance and

governmental financial resilience (Barbera et al., 2017, 2021; Hendrick, 2004; Ladd & Yinger, 1989; Oates, 2005; Peck, 2012; Pike et al., 2019; Steccolini et al., 2017; Weingast, 2009), and just transition (McCauley & Heffron, 2018; Newell & Mulvaney, 2013; Wang & Lo, 2021). Track 2 works are used for construct definition and theoretical positioning only. They are excluded from all corpus counts, from the evidence tables, and from every statement about the state of the evidence, so that claims about what the recent literature shows remain traceable to Track 1 alone.

Separating the tracks resolves a recurrent objection to recency-bounded reviews. A review that cites only recent work cannot demonstrate command of the constructs it deploys; a review that pools recent and foundational literature into one corpus cannot state what recent evidence establishes. Explicit separation permits both.

## Eligibility and corpus

Studies were eligible when they addressed at least two elements of the review relationship: spatially differentiated policy or shock exposure; regional or local resilience; subnational fiscal or administrative capacity; transformative or

**Table 2 | Composition of the Track 1 corpus (n = 63)**

| Panel                             | Category                                                          | n  | %    |
|-----------------------------------|-------------------------------------------------------------------|----|------|
| Panel A. Field of publication     | Regional science and economic geography                           | 27 | 42.9 |
|                                   | Public administration and public finance                          | 17 | 27.0 |
|                                   | Sustainability, environment, and energy transition                | 10 | 15.9 |
|                                   | Planning, urban, and governance studies                           | 5  | 7.9  |
|                                   | Political science, international relations, and interdisciplinary | 4  | 6.3  |
| Panel B. Year of publication      | 2023                                                              | 6  | 9.5  |
|                                   | 2024                                                              | 23 | 36.5 |
|                                   | 2025                                                              | 21 | 33.3 |
|                                   | 2026 (to 31 May)                                                  | 13 | 20.6 |
| Panel C. Primary geographic focus | Europe (European Union-wide and single-country)                   | 20 | 31.7 |
|                                   | Cross-national, global, or conceptual                             | 18 | 28.6 |
|                                   | China                                                             | 9  | 14.3 |
|                                   | North America                                                     | 9  | 14.3 |
|                                   | Latin America                                                     | 3  | 4.8  |
|                                   | Australia and Oceania                                             | 3  | 4.8  |
|                                   | Asia excluding China                                              | 1  | 1.6  |

Note. Field of publication is classified by journal scope. Geographic focus is classified from the title, abstract, and stated study area; items without a single national setting are recorded as cross-national, global, or conceptual. Research design is described in Section 3.3 rather than tabulated, because a substantial share of corpus items combine conceptual and empirical components and would require multiple design codes. Percentages may not sum to 100 because of rounding.

distributional outcomes; or multilevel implementation. Empirical, conceptual, and review articles were included when the geography, mechanism, or analytical contribution could be identified. Exclusions comprised studies confined to engineering reliability, firm-level continuity without a territorial mechanism, and national macroeconomic stabilisation without subnational implications, together with non-peer-reviewed material, conference abstracts, and editorials. Publication venue was assessed as an eligibility condition: records in journals without established peer-review standing in the relevant field were excluded even where topically relevant.

The Track 1 corpus comprises 63 peer-reviewed articles published between 2023 and 2026. [Table 2](#) reports its composition. Regional science and economic geography supply the largest cluster, followed by public administration and public finance, sustainability and energy-transition research, planning and governance studies, and political science. Designs include cross-national and municipal panels, spatial econometric analyses, network models, regression-discontinuity and quasi-experimental studies, impulse-response and dynamic-panel estimation, comparative case studies, interview- and survey-based work, conceptual papers, and reviews. Many items combine conceptual and empirical components, and design is therefore described rather than tabulated.

The distribution is uneven in ways that bound the synthesis. Municipal-level evidence from low-income countries remains sparse; studies linking consolidated public balance sheets to household-level incidence are almost absent; and evidence on specific fiscal mechanisms clusters by setting, with China contributing disproportionately to the land-finance literature and the United Kingdom, Italy, Austria, and the United States to the austerity literature. These concen-

trations are reported in [Table 2](#) and carried forward as explicit scope conditions on the propositions in Section 6 rather than noted only as limitations.

### Coding, synthesis, and evidence grading

Each article was coded on eleven fields: policy instrument, shock type, temporal sequence, spatial unit, functional geography, fiscal mechanism, governance capacity, resilience mode, distributional outcome, research design, and principal limitation. The coding frame was developed deductively from the constructs specified in Section 2 and revised once during coding to separate fiscal mechanism from governance capacity, which the initial frame had conflated.

Evidence was synthesised in three stages. Within-field synthesis identified recurring findings and disagreements. Cross-field synthesis connected exposure, finance, implementation, and outcomes. Abductive synthesis developed a framework capable of explaining patterns that no single literature observes in full.

Claims are graded by explicit decision rules. A claim is established when supported by at least four Track 1 studies using at least two distinct research designs in at least two national or comparative settings, with no substantively contradicting study in the corpus. A claim is conditional when supported by at least three studies whose findings differ in sign or magnitude in a manner attributable to an identifiable institutional, spatial, or temporal moderator. A claim is emergent when supported by fewer than three studies, or by a coherent cluster confined to a single setting or design. Every synthesis claim in Sections 4 and 5 carries one of these grades, and [Table 3](#) records the grade, the supporting studies, and the moderator where one was identified. Grades describe the state of the 2023–2026 evidence base, not the truth of the claim.

**Table 3 | Synthesis claims, evidential grade, and identified moderators**

| Section | Synthesis claim                                                                               | Grade       | Principal supporting Track 1 studies                                                                                                     | Moderator                                                |
|---------|-----------------------------------------------------------------------------------------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|
| 4.1     | Resistance, recovery, and renewal draw on distinct financial features                         | Established | Prescott & Paulson Gjerde (2023); Rao, Musso, et al. (2023); Rodrigues et al. (2026); Tran et al. (2026)                                 | —                                                        |
| 4.1     | Reserves and current balances are insufficient indicators of capacity                         | Established | Aikins (2023); Peters et al. (2023); Rao, Musso, et al. (2023); Rodrigues et al. (2026); Tran et al. (2026)                              | —                                                        |
| 4.1     | Adequacy has a scale dimension because transition costs are locally concentrated              | Conditional | Benner et al. (2026); Grashof & Basilico (2025); Shapovalova et al. (2025); Weller et al. (2024)                                         | Alignment of cost geography with fiscal responsibility   |
| 4.2     | The resilience effect of revenue decentralisation is conditional and can be negative          | Established | Chen & Martinez-Vazquez (2024); Flögel & Hejnová (2024); Nakatani (2024); Rodrigues et al. (2026)                                        | Base concentration; administrative capacity              |
| 4.2     | A tipping point exists beyond which decentralisation raises fiscal-crisis probability         | Emergent    | Nakatani (2024)                                                                                                                          | Fiscal system; measurement of decentralisation           |
| 4.2     | Land- and property-based revenue is dual-signed                                               | Conditional | Chen et al. (2023); Guo (2025); Xie et al. (2025); Xie et al. (2026)                                                                     | Asset-cycle position; transaction versus recurrent basis |
| 4.2     | Accounting diversification does not imply diversification of exposure                         | Emergent    | Chen et al. (2023); Guo (2025)                                                                                                           | Consolidation scope                                      |
| 4.3     | Adjustment concentrates in postponable capital and maintenance budgets                        | Established | Chen & Martinez-Vazquez (2024); Dom et al. (2026); Jiang et al. (2025); Tran et al. (2026)                                               | —                                                        |
| 4.3     | Formal expenditure flexibility improves outcomes only where planning capacity is present      | Conditional | Dimitrijevska-Markoski et al. (2024); Dom et al. (2026); Jiang et al. (2025); Sedmihradská & Arltová (2026)                              | Budget institutions; administrative capability           |
| 4.3     | Place-based capital grants generate operating obligations that are rarely financed            | Established | Chen & Martinez-Vazquez (2024); Gansauer et al. (2024); Hardaker (2026); Xie et al. (2026)                                               | —                                                        |
| 4.4     | Transfer design determines access to support independently of need                            | Established | Aikins (2023); Porto et al. (2026); Santos et al. (2025); Dom et al. (2026)                                                              | —                                                        |
| 4.4     | Multilevel policy capacity is relational rather than jurisdictional                           | Established | Deshpande (2025); Sánchez-Hernández (2024); Singh-Peterson et al. (2024); Utami et al. (2026)                                            | Coordination rules; shared information systems           |
| 4.4     | Fiscal risk sharing feeds back into its own political sustainability                          | Emergent    | Hetzer & Burgoon (2024)                                                                                                                  | Transfer predictability and need-sensitivity             |
| 4.5     | Administrative and institutional capacity conditions whether fiscal resources become recovery | Established | Clò et al. (2025); Collazos-Ortiz & Schakel (2024); Deshpande (2025); Utami et al. (2026)                                                | Quality of administration; efficiency of revenue effort  |
| 5       | Aggregate and distribution-adjusted resilience diverge (resilience paradox)                   | Conditional | Becchetti et al. (2024); Chen et al. (2023); Clò et al. (2025); Rodríguez-Pose & Bartalucci (2024); Xie & Liao (2026); Xie et al. (2025) | Conversion capacity; adjustment channel available        |

Note. Grades follow the decision rules specified in Section 3.4 and describe the state of the 2023–2026 evidence base, not the truth of the claim. Track 2 conceptual anchors are excluded from grading thresholds. Supporting studies are those that bear directly on the claim; further corroborating work is cited in the text. An em dash indicates that no moderator was identified in the corpus.

## Scope, bias, and limitations

Six limitations bound the review. First, restriction to English-language publications excludes substantial national-language scholarship on subnational finance, particularly in French, German, Spanish, Portuguese, and Chinese, and this exclusion is unlikely to be random with respect to the fiscal institutions described. Second, restriction to peer-reviewed journal articles excludes the grey literature — audit-office reports, ministry evaluations, and international-organisation assessments — in which much subnational fiscal data first appears; the exclusion protects consistency of scrutiny at the cost of currency. Third, the 2023–2026 window captures the conceptual shift towards transformative resilience and compound shocks but affords limited historical depth on earlier regional resilience and fiscal federalism debates, which Track 2 mitigates without eliminating. Fourth, Ope-

nAlex and Crossref differ from proprietary indexes in coverage and in the treatment of online-first records, and publication lags delay evidence on the most recent policy experiments.

Fifth, the review does not report independent double-screening or inter-coder agreement statistics. The consequence is that selection and interpretation risk is not quantified. It is mitigated, not removed, by full enumeration: every included study is named in the text and matched to the claim it supports in [Table 3](#), so a reader can assess whether the corpus sustains the reading placed on it. Sixth, no formal risk-of-bias instrument was applied, because standard appraisal tools are calibrated to effect-estimating designs and would have discounted the qualitative, comparative, and conceptual work on which the governance components of the synthesis depend. Claims are therefore graded by con-

vergence across designs and settings rather than by study quality, and a claim graded established should be read as robust to design and setting rather than as derived from studies of uniformly high internal validity.

## Synthesis: How Fiscal Conversion Capacity Conditions Transformative Resilience

This section synthesises the Track 1 evidence across the four dimensions derived in Section 2.4. Claim grades follow the rules in Section 3.4 and are recorded in **Table 3**.

### Resource adequacy and the capacity to act

Resource adequacy is the most direct fiscal constraint, because local governments facing shocks must simultaneously maintain essential services, meet debt obligations, support vulnerable populations, and finance recovery, while national programmes frequently require local co-financing. Where resources are inadequate, visible capital projects displace maintenance, social spending, and institutional development, and fiscal stress delays action until project costs and social losses have increased.

The recent evidence supports three graded claims. First, fiscal resistance, recovery, and renewal draw on distinct financial features rather than on a single stock of capacity (established). Rao, Musso, et al. (2023) show that the reserves supporting short-run resistance are not the same instruments as the revenue elasticity supporting recovery or the borrowing capacity supporting renewal; Prescott and Paulson Gjerde (2023) find corresponding differences in state-level recovery from the Great Recession; and Rodrigues et al. (2026) and Tran et al. (2026) document phase-specific responses in Brazilian and Australian municipalities respectively. A single adequacy indicator — most commonly the unreserved fund balance — therefore cannot predict the mode of adaptation a jurisdiction will enter.

Second, reserves and current balances provide only partial information about capacity (established). Capacity also depends on the stability of intergovernmental support, the elasticity of own-source revenue with respect to the local base, the duration of expenditure commitments already entered into, and the structure of local credit. Peters et al. (2023) show for 284 Chinese prefecture-level cities that the persistence of output loss after extreme-weather shocks varies with municipal debt levels and with the composition of the local banking sector, so that two cities with comparable balances but different liability structures follow different recovery paths. Aikins (2023) shows for United States local governments during the pandemic that the share of intergovernmental revenue significantly suppressed reserve drawdown, while revenue loss and expectations about future federal support increased it, which locates part of measured adequacy outside the jurisdiction's own accounts. This is the point at which the fiscal-health tradition (Hendrick, 2004; Ladd & Yinger, 1989) and the recent evidence converge: measured capacity must be net of committed obli-

gations and conditional on the covariance between revenue and need.

Third, adequacy has a scale dimension, because nationally significant transitions impose locally concentrated costs (conditional; moderator: the alignment between the geography of transition cost and the geography of fiscal responsibility). Municipalities in carbon-intensive regions require finance for worker support, land remediation, infrastructure repurposing, and economic diversification precisely as their tax bases weaken. Benner et al. (2026), Shapovalova et al. (2025), and Weller et al. (2024) frame just transition as an intrinsically place-sensitive process with quantifiable local costs, extending the earlier normative literature (McCauley & Heffron, 2018; Newell & Mulvaney, 2013) into measurement. The capacity to offset those costs is itself unequally distributed, since Grashof and Basilico (2025) show that green technology diversification concentrates in regions that were already technologically advantaged. Whether exposed places receive resources proportionate to transition costs, and whether support persists long enough to build new capabilities, is determined by fiscal architecture rather than by programme intent.

### Revenue autonomy, diversification, and exposure

Revenue autonomy allows local governments to tailor responses and to capture part of the value that development generates. Its resilience effect is conditional on base diversity, administrative capacity, and interregional inequality, and the recent evidence establishes that the conditionality is strong enough to reverse the sign.

The resilience effect of revenue decentralisation is conditional and can be negative (established). Nakatani (2024), Chen and Martinez-Vazquez (2024), Flögel and Hejnová (2024), and Rodrigues et al. (2026) each find that greater local fiscal responsibility improves outcomes only under specified structural conditions and worsens them otherwise. The mechanism is procyclicality: a narrow local base falls precisely as service demand rises, so greater local reliance on that base amplifies rather than dampens the shock. Second-generation fiscal federalism anticipated the incentive component of this result (Oates, 2005; Weingast, 2009); the recent evidence supplies the crisis-period magnitudes. The stronger claim that a tipping point exists beyond which further decentralisation raises fiscal-crisis probability rests on a single direct estimate (Nakatani, 2024) and is graded emergent pending replication in other fiscal systems.

The same statutory authority yields systematically unequal resources across territories (established). Autonomy is capacity-equalising only under a prior distribution of tax bases that does not obtain in practice; absent equalisation, decentralised authority widens territorial capacity gaps at the moment the gaps matter most. This finding directly qualifies the case for autonomy as a resilience instrument.

Land- and property-based revenue is dual-signed (conditional; moderators: asset-market cycle position, revenue recurrence versus transaction dependence). Infrastructure and planning raise land value and can therefore finance de-

velopment. Where local governments depend on continued transactions or appreciation, value capture becomes balance-sheet exposure. Chen et al. (2023) connect land finance, real-estate markets, and local debt risk in China; Guo (2025) finds that land-finance dependence is associated with reduced green economic efficiency; and Xie et al. (2025) show that land-value capitalisation from infrastructure follows network-time exposure rather than administrative boundaries, so that the fiscal benefit and the fiscal obligation accrue to different jurisdictions. The resilience effect therefore depends on whether value-based revenue broadens the fiscal option set or intensifies exposure to a single asset-market cycle.

Diversification of accounting categories is not diversification of underlying exposure (emergent). Fees, asset sales, public-enterprise dividends, and off-budget borrowing can multiply revenue lines while preserving a common underlying driver. A consolidated perspective must trace economic sources, counterparties, collateral, guarantees, and contingent liabilities rather than budget headings. The distinction is essential in development models where local governments, public corporations, and financing vehicles share fiscal functions, and it is precisely the distinction that the financialisation literature identifies as the mechanism through which municipal risk is obscured (Peck, 2012; Pike et al., 2019). The grade is emergent because the corpus contains few studies that construct consolidated measures.

### **Expenditure flexibility, maintenance, and policy continuity**

Expenditure flexibility permits redirection during disruption. Excessive rigidity delays response; unrestricted cuts erode services and long-run capability. The composition and reversibility of spending are therefore decisive, and the evidence identifies maintenance as the systematically vulnerable category.

Debt service, payroll, and contractual obligations bind adjustment, so adjustment concentrates in postponable capital and maintenance budgets (established). Chen and Martinez-Vazquez (2024) connect fiscal decentralisation to infrastructure maintenance expenditure across countries, establishing a link between fiscal architecture and asset durability that most resilience research does not observe. Because maintenance deferral is invisible in annual accounts and visible only in asset condition, it constitutes an unrecorded transfer of adjustment cost to future periods.

Formal flexibility improves outcomes only where informational, institutional, and planning capacity is present (conditional; moderator: budget institutions and administrative capability). Jiang et al. (2025) find that budget performance management reform improves local fiscal resilience through expenditure structure, risk, and efficiency channels. Dimitrijevska-Markoski et al. (2024) connect organisational capacity to service continuity, and Dom et al. (2026) show how perceived vulnerability and financial distress shape local responses under austerity. Sedmíhradská and Arltová (2026) use a regression-discontinuity design

around the Czech debt-ratio threshold to show that municipalities adjust debt and savings anticipatorily even where the rule carries no immediate financial penalty, which indicates that budget institutions operate through expectation and reputation as well as through constraint. Abrupt reallocation without these capabilities produces short-term continuity at the expense of maintenance, prevention, or equity — the pattern the austerity-urbanism literature describes as devolved retrenchment (Barbera et al., 2017; Peck, 2012).

Place-based capital grants generate long-lived operating obligations that are rarely financed (established). Transport systems, innovation facilities, industrial parks, and public amenities require staffing, maintenance, utilities, and eventual renewal. A capital grant unmatched by an operating-finance commitment therefore increases the recipient's future fiscal exposure. Gansauer et al. (2024) identify the fiscal and political dimensions of infrastructure provision in peripheral regions, and Xie et al. (2026) show for county-level high-speed rail that land-use and fiscal-pressure consequences can outlast and reverse the initial accessibility gain. Project appraisal that omits lifecycle cost, revenue risk, and effects on essential services will systematically overstate net benefit in exactly the places least able to absorb the shortfall.

### **Intergovernmental risk sharing and policy capacity**

Intergovernmental transfers and joint financing pool the covariance between local shocks, equalise unequal tax bases, and support projects with cross-boundary benefits. Their design determines whether they do so.

Transfer design determines which places can access support, independently of need (established). Santos et al. (2025) show for European Cohesion Policy that the pace at which allocated funds are actually spent depends on programme governance arrangements and on territorial characteristics rather than on allocation alone, so that formally equal entitlements produce unequal realised transfers. Aikins (2023) shows that the composition of intergovernmental revenue, not merely its level, determines whether local governments can preserve reserves during a shock. Porto et al. (2026) trace the adjustment path following changes in equalisation transfers across Argentine local governments and find that expenditure responds faster than own-source revenue, generating deficits in the short run and a permanently higher expenditure level in the long run. Predictable formula-based transfers permit planning and capacity retention; emergency and competitive grants favour visible losses and administrations with stronger application capacity; matching requirements exclude fiscally weak jurisdictions; and programme fragmentation raises transaction costs and induces project selection by funding availability rather than by local priority. Realised allocation can therefore diverge from designed allocation in a direction that is regressive with respect to need.

Multilevel policy capacity is a relational rather than a jurisdictional property (established; moderator: durable coordination rules and shared information systems). Utami et al.

(2026) connect regional policy capacity to fiscal, infrastructural, human, and environmental readiness; Singh-Peterson et al. (2024) show local government to be the operative site at which economic resilience is made concrete; Deshpande (2025) shows municipal climate responses to be conditional on institutional capacity; and Sánchez-Hernández (2024) adds citizen participation and social responsibility as components of local governance capability. Anticipatory capacity, in the sense developed by Barbera et al. (2021), is thus partly external to the individual authority and resides in the intergovernmental arrangement.

Fiscal risk sharing has political consequences that feed back into its own sustainability (emergent). Hetzer and Burgoon (2024) show that regional experience of multiple crises shapes preferences for higher-level fiscal risk sharing, connecting territorial exposure to the perceived legitimacy of intergovernmental solidarity. Equalisation and transition funds sustain collective action where allocation rules are transparent and need-sensitive; poorly aligned transfers deepen the perception that some places finance benefits elsewhere or receive obligations without corresponding authority. The grade is emergent because the corpus contains a single direct study of this loop, and its confirmation requires designs linking transfer-rule variation to attitudinal data.

### Configuration effects and the determination of adaptation mode

The four dimensions combine rather than aggregate. Adequate, diversified, and flexible resources allow regions to maintain services and invest in new capabilities, while strong intergovernmental arrangements pool risk and coordinate at functional scales. These conditions support transformation when political and institutional actors use them to alter vulnerable structures. Fiscal conversion capacity expands the feasible set; it does not determine which element of that set is chosen (established, by construction from section 4.1–4.4 and consistent with Bristow & Healy, 2014).

Administrative and institutional capacity conditions whether fiscal resources become recovery (established). Clò et al. (2025) find for Italian NUTS-3 regions that hydrogeological disasters are followed by full or better-than-pre-disaster output recovery where institutional quality is high and by structural decline where it is low. Collazos-Ortiz and Schakel (2024) exploit a reform that cut royalty revenue to producing municipalities in Colombia and find that administratively more efficient municipalities responded with significantly higher fiscal effort, which identifies administrative capacity as causally prior to fiscal response rather than merely correlated with it. Together with Deshpande (2025) and Utami et al. (2026), this evidence establishes that fiscal and administrative capacity are complements: neither substitutes for the other, and measured fiscal capacity overstates conversion capacity wherever administrative capability is weak.

Weak conversion capacity produces three recurrent patterns, each of which can be mistaken for successful adaptation. Retrenchment cuts maintenance, social support, and

institutional expenditure, preserving the budget constraint by consuming future capacity. Substitution replaces a volatile revenue source with borrowing, asset sales, or temporary transfers while leaving the development model unchanged. Selective adaptation protects visible sectors or places and shifts costs onto less organised groups or neighbouring jurisdictions. All three generate apparent recovery alongside accumulating latent vulnerability, and all three are consistent with the retrenchment and buffering patterns identified in the governmental financial resilience literature (Barbera et al., 2017; Steccolini et al., 2017).

Regional agency and network structure condition the relationship between capacity and mode. Lemke (2025) shows that agency can actively reproduce existing paths; Muscio et al. (2026) find distinct resilience configurations within innovation policy; and Hardaker (2026) demonstrates that identical instruments operate differently across regional settings. Fiscal conversion capacity interacts with these processes by financing coordination, experimentation, learning, and compensation for groups facing losses — the four activities through which adaptability is produced (Boschma, 2015; Hu & Hassink, 2017) and the four that are cut first under fiscal stress.

### The Resilience Paradox: Four Forms of Displaced Adjustment

The most consequential pattern in the synthesis is not that weak places recover more slowly, but that recovery itself can be financed by depleting the foundations of subsequent adaptation, so that measured resilience rises while actual resilience falls. This review terms the pattern the resilience paradox and distinguishes four forms (Figure 2). The typology is the review's principal analytical contribution, and it is generated by asking, for each observed recovery, from where the adjustment cost was drawn.

Form 1: temporal displacement. Adjustment is met by deferring expenditure whose omission is not recorded in the current period. Deferred maintenance, postponed asset renewal, reserve drawdown, and extended debt maturities all restore the current balance by transferring cost to a future one. The mechanism is identified in the maintenance-expenditure evidence (Chen & Martinez-Vazquez, 2024), in the phase-dependent responses observed across crisis stages (Tran et al., 2026), and in the determinants of reserve drawdown during the pandemic (Aikins, 2023). Its diagnostic signature is a stable or improving fiscal balance accompanied by a deteriorating asset-condition or maintenance-backlog series.

Form 2: balance-sheet substitution. Adjustment is met by converting stocks into flows. Asset disposals, land conveyance, sale-and-leaseback arrangements, and the transfer of obligations to public corporations or financing vehicles improve the operating account while reducing the net asset position and creating contingent liabilities that consolidated accounts would reveal. Chen et al. (2023) document the in-

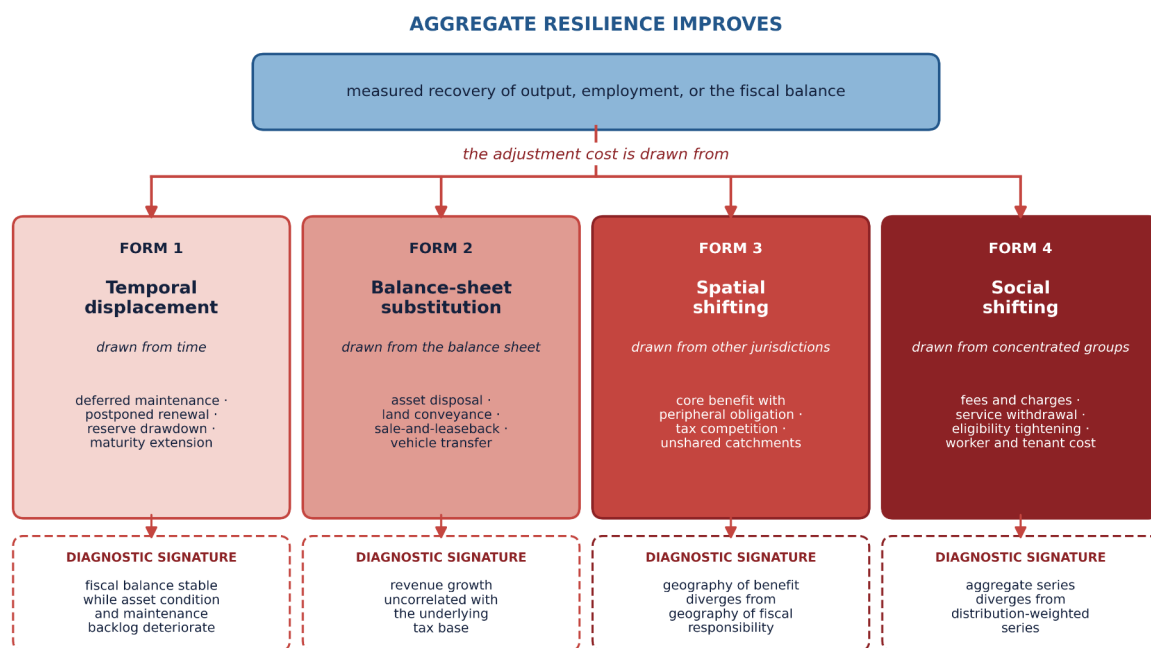


Figure 2

Note. Each form converts a stock into a flow along a different dimension. The diagnostic signature identifies the pair of series whose divergence reveals that form; no single series identifies the paradox on its own. Mechanisms and supporting evidence are given in Section 5.

teraction between land finance, real-estate markets, and local debt risk; Guo (2025) links land-finance dependence to lower green economic efficiency; and the financialisation literature identifies the institutional machinery through which the substitution is executed and obscured (Pike et al., 2019). Its diagnostic signature is revenue growth uncorrelated with the underlying tax base.

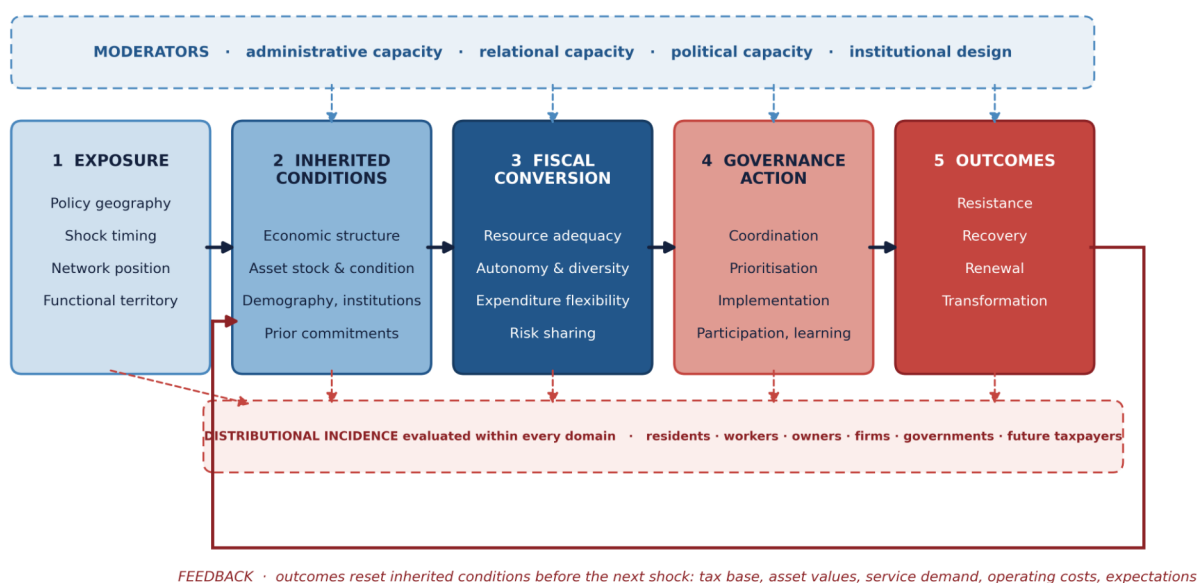
Form 3: spatial shifting. Adjustment in one jurisdiction is financed by cost borne in another. Infrastructure that concentrates benefit in a core while obligations fall on peripheral authorities, tax competition that erodes neighbours' bases, and functional-area services financed by a subset of the jurisdictions that consume them all displace adjustment across space. Gansauer et al. (2024) theorise the mechanism for peripheral infrastructure; Xie et al. (2025) show that capitalisation follows network exposure rather than administrative boundary, so that fiscal benefit and fiscal obligation systematically separate; and Xie et al. (2026) trace the resulting spatial-equity consequences for county-level cities. Its diagnostic signature is divergence between the geography of measured benefit and the geography of fiscal responsibility.

Form 4: social shifting. Aggregate adjustment is achieved through regressive incidence. Fee and charge increases, service withdrawal, eligibility tightening, and transition costs concentrated on workers and tenants restore aggregate indicators while worsening the position of those least able to absorb the change. Clò et al. (2025) provide the corpus's clearest demonstration: across Italian NUTS-3 regions, poverty,

inequality, and human development deteriorate after hydro-geological disasters irrespective of institutional quality, and therefore irrespective of whether aggregate output recovers. Becchetti et al. (2024) connect regional resilience to household financial exposure; Rodríguez-Pose and Bartalucci (2024) show green-transition vulnerability to be territorially and socially concentrated; Gather et al. (2025) identify context-dependent pathways in the Global South; and Neuherber (2025) locates social infrastructure and welfare provision as the bridge between transformative resilience and just transition. Its diagnostic signature is divergence between aggregate and distribution-weighted outcome series.

The four forms are analytically distinct and empirically separable, each requiring a different diagnostic series, but they share a common structure: each converts a stock into a flow along a different dimension — time, balance sheet, space, or social distribution. Xie and Liao (2026) illustrate the interaction of at least three of them in the post-shock rebalancing of Chinese county-level cities, where policy priorities shifted so as to stabilise the operating account while relocating adjustment across periods, jurisdictions, and social groups.

Two implications follow. First, aggregate resilience is an incomplete welfare criterion, and its use as the dependent variable in place-based policy evaluation will systematically overstate programme performance in the settings where displaced adjustment is easiest — that is, in fiscally weak jurisdictions with few alternatives. Second, transformative resilience requires a distribution-adjusted definition. This re-



**Figure 3**

Note. Domains are connected by directed relations, not adjacency. Administrative, relational, and political capacity moderate every link; distributional incidence is evaluated within every domain rather than at the terminal stage; and outcomes reset inherited conditions before the next shock. The four dimensions listed in domain 3 are defined in Section 2.4 and derived in Table 1.

view proposes: the capacity to alter vulnerability-producing structures while maintaining fair access to services, opportunity, voice, and fiscal security, and without financing that alteration through the depletion of future, external, or distributively concentrated capacity. The negative clause is essential. Without it, all four paradox forms satisfy the definition.

Distributional evaluation must accordingly separate residents, workers, property owners, firms, governments, and future taxpayers, and must distinguish core cities, suburbs, peripheral towns, and rural areas within functional regions. Weller et al. (2024) specify substantive, procedural, and distributive dimensions of transition that operationalise the first requirement, and Shapovalova et al. (2025) demonstrate the place-based measurement that operationalises the second. Because the just-transition concept has been used to describe both procedural and outcome claims (Wang & Lo, 2021), the review keeps participation and incidence distinct.

## The Place-Based Fiscal Conversion framework Structure

The framework integrates the evidence through five linked domains connected by directed relations rather than by adjacency (Figure 3).

Spatial exposure captures the geography and timing of policy and shocks across networks and functional territo-

ries, and is measured on the mechanism-appropriate geography rather than the administrative one. Inherited conditions comprise economic structure, infrastructure stock and condition, demography, institutional quality, social vulnerability, and pre-existing fiscal commitments. Fiscal conversion describes how exposure alters revenue, expenditure need, assets, liabilities, transfers, and borrowing conditions, and is characterised by the four dimensions of Section 2.4. Governance action covers coordination, prioritisation, implementation, participation, and learning. Outcomes comprise resistance, recovery, renewal, transformation, and distributional incidence, evaluated jointly.

Three features distinguish the framework from a stage model. First, administrative, relational, and political capacity moderate each link, so an identical transfer supports transformation in one jurisdiction and produces low absorption or fragmented spending in another. Second, distributional incidence is evaluated within every domain rather than treated as a terminal outcome, because incidence is determined at the point of fiscal conversion as much as at the point of delivery. Third, outcomes feed back into inherited conditions before the next shock: place-based investment changes the tax base, asset values, service demand, operating costs, and political expectations, so that a strategy broadening skills, recurring revenue, and social infrastructure expands future response options while dependence on a narrow asset market contracts them. The appropriate observation window is therefore defined by the interval to the next shock rather than by the programme period.

**Table 4 | Propositions of the Place-Based Fiscal Conversion framework, evidential status, and required tests**

| Proposition                     | Core claim                                                                                 | Status in the Track 1 corpus                                                              | Design and data required for a test                                                                                          |
|---------------------------------|--------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| P1 Adequacy threshold           | Below a capacity threshold, transfers yield resistance and recovery but not transformation | Consistent with §4.1; threshold never estimated                                           | Interaction of grant receipt with pre-shock unencumbered balance net of commitments; estimated rather than imposed threshold |
| P2 Conditional sign of autonomy | Autonomy raises transformative capacity only where the base is diversified and secure      | Directionally supported; sign reversal not tested                                         | Three-way interaction of autonomy, economic base concentration, and shock exposure                                           |
| P3 Value-capture reversal       | Value capture raises short-run capacity and medium-run vulnerability                       | Both limbs observed separately; joint estimation absent                                   | Dynamic panel spanning a full asset-price cycle, with cycle-position controls                                                |
| P4 Lifecycle mismatch           | Capital-only grants reduce post-programme fiscal resilience                                | Mechanism theorised; not estimated                                                        | Project registers linked to municipal accounts; event study around programme end                                             |
| P5 Matching regressivity        | Uniform co-financing makes realised allocation regressive relative to need                 | Asserted in policy literature; not quantified                                             | Comparison of eligibility-weighted and disbursement-weighted allocation against an independent need index                    |
| P6 Sequence dependence          | Treatment effects depend on the fiscal state left by the previous shock                    | Recognised conceptually; no sequential design identified                                  | Stacked event study or multistate model with pre-treatment buffer-restoration strata                                         |
| P7 Risk-sharing legitimacy loop | Transfer predictability, not volume, sustains support for risk sharing                     | Single direct supporting study                                                            | Transfer-rule variation linked to individual or regional preference data                                                     |
| P8 Resilience paradox           | Aggregate and distribution-adjusted resilience diverge as conversion capacity falls        | Documented in fragments; one corpus study observes both series jointly (Clò et al., 2025) | Paired aggregate and distribution-adjusted indices on identical units and periods                                            |

Note. Scope conditions for each proposition are stated in Section 6.3. Status refers to the Track 1 corpus only.

## Propositions

The framework yields eight propositions. Each is stated with its observable implication and its identification requirement, and each carries the scope conditions implied by the corpus composition reported in [Table 2](#). [Table 4](#) summarises the propositions, their evidential status in the current literature, and the design required to test them.

P1 (Adequacy threshold). Below a threshold of unencumbered resources relative to assigned responsibility, place-based transfers produce resistance and recovery but not renewal or transformation, irrespective of programme design. Observable implication: the marginal effect of transfer receipt on path-change indicators is nonlinear in pre-shock unencumbered balance. Identification: interaction of grant receipt with a pre-shock capacity measure net of committed obligations, with the threshold estimated rather than imposed.

P2 (Conditional sign of autonomy). Revenue autonomy raises transformative capacity where the local base is diversified and administratively secure, and lowers it where the base is narrow or asset-market-linked. Observable implication: the autonomy coefficient reverses sign across strata of base concentration. Identification: three-way interaction of autonomy, base concentration measured on economic rather than accounting categories, and shock exposure.

P3 (Value-capture reversal). Land- and property-based value capture raises short-run investment capacity and raises medium-run vulnerability, producing an inverted-U relationship between value-capture intensity and transformative resilience. Observable implication: the sign of the value-capture coefficient depends on horizon and on asset-cycle position. Identification: dynamic panel with explicit cycle-position controls and a horizon long enough to include one full asset-price cycle.

P4 (Lifecycle mismatch). Capital-only place-based grants without committed operating finance reduce post-programme fiscal resilience, and the reduction increases with asset specificity and maintenance intensity. Observable implication: maintenance backlog and operating deficit rise in recipient jurisdictions relative to matched non-recipients after the grant period. Identification: project registers linked to municipal accounts, event study around programme end rather than programme start.

P5 (Matching regressivity). Uniform co-financing requirements make realised allocation regressive relative to need, so programme incidence diverges from programme design. Observable implication: the gap between designed and realised per-capita allocation is increasing in a need index. Identification: comparison of eligibility-weighted and disbursement-weighted allocation against an independent need measure.

P6 (Sequence dependence). The effect of a place-based intervention on transformation depends on the fiscal state bequeathed by the previous shock, so identical treatments diverge according to whether buffers were restored. Observable implication: treatment effects differ across strata defined by pre-treatment buffer recovery, conditional on contemporaneous covariates. Identification: stacked event study or multistate model with buffer-restoration strata defined before treatment.

P7 (Risk-sharing legitimacy loop). Predictable, need-sensitive equalisation raises both transformative capacity and political support for further risk sharing, whereas discretionary emergency transfers raise neither. Observable implication: transfer predictability, not transfer volume, predicts attitudinal support for higher-level risk sharing. Identification: variation in transfer rules linked to individual- or re-

gional-level preference data, following the design logic of Hetzer and Burgoon (2024).

P8 (Resilience paradox). Aggregate and distribution-adjusted resilience diverge systematically where adjustment occurs through deferred maintenance, asset disposal, spatial cost-shifting, or regressive incidence, and the divergence is larger where conversion capacity is weaker. Observable implication: rank correlation between aggregate and distribution-adjusted resilience indices declines as conversion capacity falls. Identification: construction of paired indices on the same jurisdictions and periods, with the four paradox forms identified by their diagnostic series specified in Section 5.

## Scope conditions

The propositions are stated for territorial governments that hold a non-trivial share of expenditure responsibility and at least some own-source revenue. They are not expected to hold in fully deconcentrated systems where subnational bodies are administrative agents without budgetary discretion, nor in settings where local finance is dominated by resource rents accruing directly to a central authority. P3 is stated for systems in which land or property rights are locally transactable and locally taxable; the Track 1 evidence for it is drawn predominantly from China, and its external validity to systems with recurrent rather than transaction-based property taxation is untested. P5 and P7 are stated for multilevel systems with formal transfer rules and are untested in settings where allocation is predominantly discretionary. These conditions follow directly from the corpus concentrations reported in Section 3.3 and constitute the review's principal claim boundaries.

## Research Agenda

### Spatial exposure and shock sequences

Future research should distinguish administrative eligibility, effective exposure, and realised incidence, and should stop treating the first as a proxy for the others. Treatment indicators can incorporate network travel time, commuting intensity, market access, supply-chain linkage, service catchment, and fiscal spillover; labour-flow networks, polycentric urban systems, and spatial spillover analysis provide complementary foundations (Değerli Cifçi & Duran, 2025; Elekes et al., 2024; Kim & Kim, 2025), and data-driven regional monitoring makes such indicators feasible at scale (Cheng et al., 2024). The spatial unit should follow the mechanism under study, with explicit tests for displacement rather than an assumption of containment.

Temporal design requires comparable attention to shock order. Event studies should separate announcement, implementation, shock, recovery, and maturation phases, and should represent prior disturbances through reserves, debt, employment structure, institutional staffing, or service backlogs rather than absorbing them into fixed effects. Sequence analysis, multistate models, and stacked event studies can then compare adaptation paths across regions enter-

ing a shock from different fiscal states, which is the empirical content of P6 and extends the systems logic of Lawrence et al. (2024).

### Fiscal architecture and policy capacity

Subnational fiscal measurement must move from the general budget to the consolidated position. Headline debt and annual balance omit exposure held in special funds, public enterprises, guarantees, land and property revenue streams, deferred maintenance obligations, and conditional transfer entitlements. Consolidated accounts separate current liquidity from structural capacity and establish whether apparent diversification rests on genuinely independent sources — the measurement requirement on which P2 and the emergent claim of Section 4.2 both depend. Linking fiscal accounts to project lifecycles would make P4 testable.

Comparative designs can exploit variation in transfer rules, borrowing authority, tax assignment, equalisation formulas, municipal fragmentation, and insolvency regimes. Fiscal decentralisation should be treated as a multidimensional institutional configuration rather than as a scalar ratio, a point established in principle by second-generation fiscal federalism (Oates, 2005; Weingast, 2009) and demonstrated empirically by the divergent findings of Chen and Martinez-Vazquez (2024), Flögel and Hejnová (2024), Nakatani (2024), Porto et al. (2026), and Rodrigues et al. (2026). Cross-national and within-country designs can then identify which configurations support adaptation in metropolitan, peripheral, shrinking, and resource-dependent regions respectively.

Policy capacity should itself be modelled as an outcome of intervention rather than as a fixed covariate: repeated short-term grants generate administrative churn, whereas long-horizon programmes sustain staff, data systems, partnerships, and learning. Evaluations should therefore measure change in project preparation, procurement, coordination, participation, and assessment capability, for which Deshpande (2025), Dimitrijevska-Markoski et al. (2024), and Utami et al. (2026) supply usable constructs.

### Transformation and distributional incidence

Research designs should pre-specify the development structure expected to change, since diversification, decarbonisation, revenue reform, new governance arrangements, social infrastructure, and reduced dependence on asset markets are not interchangeable objects of transformation. Outcome panels should track economic performance, fiscal exposure, public services, environmental burdens, and distribution jointly, over a horizon extending to the subsequent shock. Baumgartinger-Seiringer et al. (2025), Sutton, Mendez, et al. (2025), and Trippl et al. (2024) supply the conceptual apparatus for distinguishing stabilisation, renewal, and transformation; the measurement apparatus is what remains missing.

Distributional evaluation should identify who gains, who pays, and who carries forward risk. Linked administrative, property, labour, household, firm, and fiscal microdata can

reveal incidence across owners and renters, sectors, income groups, generations, and subregional locations. Place-based just-transition measures can be integrated with fiscal incidence and service access (Benner et al., 2026; Gather et al., 2025; Shapovalova et al., 2025; Weller et al., 2024). The construction of paired aggregate and distribution-adjusted resilience indices, as required by P8, is the single highest-value methodological investment the field could make, because it would render the resilience paradox observable rather than inferential. Clò et al. (2025) demonstrate that the approach is feasible on existing data by tracking output alongside poverty, inequality, and human development on the same regional units.

## Policy Implications

Policy design should begin with a territorial diagnosis connecting economic structure, transition exposure, social vulnerability, and public finance. Because the relevant geography frequently crosses administrative borders, funding and governance arrangements should correspond to functional territories and assign explicit responsibility for coordination and cost sharing. Programme appraisal should incorporate recurring operating cost, maintenance, revenue volatility, debt service, contingent liabilities, and effects on essential services. Capital funding without committed operating finance weakens future resilience, and uniform matching requirements exclude places with weak tax bases or limited administrative capacity — the two design features that P4 and P5 identify as most consequential and most readily corrected.

Funding architecture should combine predictability with adaptive flexibility: multi-year baseline support enables planning and capacity retention, while contingency components accommodate unforeseen shocks. Because absorption rates and short-term output are weak evidence of transformation, performance conditions should instead measure public value, fiscal durability, distribution, and learning. Equalisation formulas should account for transition costs and for slow-moving stresses including ageing, population decline, and climate exposure, which alter expenditure need without appearing as shocks.

Policy packages should protect social and institutional infrastructure explicitly, since workforce support, education, health, mobility, affordable housing, and participatory governance determine residents' access to new development paths and sustain legitimacy where transition costs concentrate. Evaluation should continue beyond the immediate crisis, because a response that restores activity through asset sales, deferred maintenance, or temporary debt reduces capacity at the next disturbance. Post-shock review should therefore update fiscal exposure, asset condition, distributional incidence, and institutional capability rather than report recovery alone; repeated assessment on these four series is what distinguishes temporary stabilisation from durable transformation.

## Conclusion

Place-based intervention produces durable transformation through institutions that convert spatial exposure and public resources into coordinated action. This review has argued that subnational public finance governs that conversion, and has specified fiscal conversion capacity as the construct linking place-based policy, regional resilience, public finance, and territorial justice. Its four dimensions — resource adequacy, revenue autonomy and diversification, expenditure flexibility, and intergovernmental risk sharing — correspond to the level, controllability, reallocability, and covariance-pooling of subnational resources; they are non-substitutable, and the sign of their effect is conditional on institutional design rather than fixed.

The synthesis of 63 recent studies establishes that these dimensions determine which mode of adaptation a region can enter, and identifies a resilience paradox in four forms — temporal displacement, balance-sheet substitution, spatial shifting, and social shifting — through which aggregate recovery is financed by depleting the foundations of subsequent adaptation. Aggregate recovery can therefore coexist with service erosion, debt accumulation, peripheral decline, and unequal transition costs, and its use as an evaluation criterion overstates programme performance most severely where conversion capacity is weakest.

The Place-Based Fiscal Conversion framework relates territorial exposure and inherited conditions to fiscal conversion, governance action, and resilience outcomes, and the eight propositions specify what would confirm or refute it. Their evaluation requires consolidated subnational balance sheets, treatment geographies defined by mechanism rather than administration, sequential-shock identification, and paired aggregate and distribution-adjusted outcome measures. Building that measurement infrastructure would allow regional resilience to be assessed through the durability and distribution of transformation rather than through the speed of return to a path whose vulnerabilities produced the shock.

**Data availability:** This review analyses published literature. Every study comprising the Track 1 corpus and the Track 2 conceptual anchor set is identified in the text and listed in the reference list; no new data were generated or analysed.

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