

Kácsi Olivér

**Adaptation or Transformation? Reconstructing International Tax Principles for
the Digital Economy**

Institute of Finance, Accounting and Business Law

Department of Economic Law

Doctoral School of Business and Management

Supervisor:

Erdős Gabriella, PhD

© Kácsor Olivér

Corvinus University of Budapest
Doctoral School of Business and Management

**Adaptation or Transformation? Reconstructing International Tax Principles for
the Digital Economy**

Doctoral Dissertation

Kácsér Olivér

Budapest

2026

CONTENTS

1	Introduction	8
2	Investigatory Framework and Working Hypotheses	12
2.1	Investigatory Framework	13
2.2	Working Hypotheses	20
3	Methodology	22
3.1	Doctrinal Legal Analysis.....	22
3.2	Comparative Legal Method.....	27
3.3	Analytical Framework Development	31
3.4	Limitations of Research	35
4	Contextual Background.....	39
4.1	Definition of International Taxation	39
4.2	Historical Evolution of International Tax Principles	43
5	The Fundamental Principles of International Taxation.....	55
5.1	Benefit Principle.....	55
5.1.1	Conceptual Foundations.....	55
5.1.2	Historical Development	58
5.2	Residence Principle	61
5.2.1	Definitional Scope.....	61
5.2.2	Critiques and Challenges.....	65
5.3	Source Principle	69
5.3.1	Legal Underpinnings.....	69
5.3.2	Limitations in a Globalized Economy	73
5.4	Distributive justice	76
5.4.1	Ability-to-pay	76
5.4.2	Tensions with Other Principles	81
5.5	Permanent Establishment Concept.....	84
5.5.1	Traditional Criteria.....	84
5.5.2	Challenges in Digital Context	88
5.6	Arm's Length Principle.....	91
5.6.1	Historical Origins	91
5.6.2	Critiques in Transfer Pricing.....	95
5.7	Value Creation Principle	99
5.7.1	Definition and Scope.....	99

5.7.2	Challenges in Intangible Economy	103
6	Internal Coherence and Tensions Among Principles	105
6.1	Principle Conflicts.....	105
6.2	Balancing Competing Objectives.....	107
7	The Digital Economy as a Structural Challenge	111
7.1	Economic Characteristics of Digitalisation.....	111
7.1.1	Scale without Mass	111
7.1.2	Network Effects	114
7.1.3	Data as a Value Driver	117
7.2	Interaction with Benefit Principle	120
7.3	Interaction with Residence Principle	123
7.4	Interaction with Source Principle.....	126
7.5	Interaction with Ability-to-Pay Principle.....	128
7.6	Interaction with Permanent Establishment Concept	132
7.7	Interaction with Arm's Length Principle	134
7.8	Interaction with Value Creation Principle.....	136
8	Points of Tension and Breakdown	138
8.1	Jurisdictional Gaps	138
8.2	Profit Allocation Challenges	141
8.3	Erosion of Tax Bases	142
9	Conceptual Reconstruction of Principles	145
9.1	Principles Remaining Intact	145
9.2	Principles Requiring Reinterpretation.....	148
9.3	Principles Requiring Structural Modification	150
9.4	Theoretical Justification of Changes.....	154
10	Critical Evaluation of Existing Reform Proposals	155
10.1	OECD BEPS Framework.....	155
10.1.1	Objectives and Scope	155
10.1.2	Evaluation Against Original Principles.....	158
10.2	Pillar One Proposals.....	160
10.2.1	Mechanics of Profit Allocation	160
10.2.2	Critiques and Risks	162
10.3	EU Digital Services Tax.....	165
10.3.1	Policy Objectives	165
10.3.2	Compatibility with International Principles	168
10.4	Significant Digital Presence Proposals	170
10.4.1	Jurisdictional Design.....	170

10.4.2	Implementation Challenges.....	173
10.5	Unilateral Digital Services Taxes.....	175
10.5.1	Case Examples	175
10.5.2	Risks of Double Taxation.....	178
10.6	UN Treaty Approaches to Digital and Cross-Border Services	182
10.6.1	Article 12B: Income from Automated Digital Services.....	183
10.6.2	Article 12AA: Income from Services and the 2025 UN Model Update 187	
10.6.3	Principle-Based Assessment and Potential for Harmonization.....	192
10.7	Alternative Allocation Mechanisms.....	197
10.7.1	Formulary Apportionment	197
10.7.2	Destination-Based Cash Flow Taxation.....	199
11	Normative Assessment.....	202
11.1	Criteria for Evaluating Reforms.....	202
11.2	Implications for Global Tax Governance.....	207
12	New Scientific Results	211
12.1	Methodological Novelty of Principle-Based Reconstruction	211
12.2	Systematic Consistency-Test of Reform Models.....	212
12.3	Integration of Digital Economy Characteristics into Tax Principles	215
13	Methodological Justification.....	219
13.1	Rationale for Principle-Driven Approach	219
13.2	Ensuring Interdisciplinary Rigor.....	222
14	Evaluating the Workability and Doctrinal Legitimacy of Current Reform Models 226	
14.1	Synthesis of Hypothesis Results	226
14.2	Comparative Evaluative Matrix of Reform Models.....	228
14.3	Comparative Assessment of Reform Models.....	229
14.4	Preferred Systemic Approach	233
15	Scientific Contribution Beyond Existing Scholarship	235
16	Conclusion	240
	REFERENCES.....	244
	PUBLICATIONS AND CONFERENCE PRESENTATIONS BY THE AUTHOR...	266

1 INTRODUCTION

The starting point for this research is the recognition that international tax principles face conceptual stress under the conditions of a highly digitalized economy. The traditional norms, grounded in the source and residence principles along with transfer pricing rules under the arm's length principle ("ALP"), were designed in an era where economic activities depended upon tangible presence and physical assets (OECD, 2018; Kobetsky, 2011; Santos & Rocha, 2017). The migration of value generation into intangible domains, such as user participation, digital platforms, and data exploitation, unsettles established allocation frameworks.

Academic and institutional discussions now question whether incremental adjustments to existing mechanisms suffice or whether a foundational rethinking is required (Bauer et al, 2019; Collier, 2023; Cugusi, 2020; Harpaz, 2021). Critical debates surrounding the OECD's value-creation principle illuminate both doctrinal gaps and political trade-offs. While this concept has attained wide acceptance among policymakers as a guiding narrative, it is often critiqued for lacking theoretical precision and empirical grounding, raising doubts about its normative legitimacy (Devereux and Vella, 2018; Hey, 2018; Christians, 2018). Such concerns frame one of the central research inquiries here: can current principles be reconstructed to coherently integrate value creation into a systematic theory of profit allocation without sacrificing legal certainty or operational feasibility?

Institutional reforms such as OECD Pillar One (OECD, 2023a) represent an acknowledgment of structural mismatches between traditional tax treaties and digital activity footprints. The proposals situate new taxing rights in market jurisdictions by introducing formula-based allocation methods and redefining nexus rules beyond physical presence requirements. They incorporate approaches like modified residual profit-split, user contribution models, marketing intangibles allocation keys, and significant economic presence constructs (OECD, 2019a; OECD, 2020a; OECD, 2020b). Yet, these hybrid arrangements do not fully resolve tensions between competing allocation logics; they operate alongside ALP-based norms rather than replacing them (Collier, 2023; Buriak, 2024; Otto & Van de Vijver, 2022).

Parallel to institutional proposals are academic models advocating sharper breaks from existing frameworks. Some scholars argue for destination-based cash flow taxes or residence-based shareholder taxation to tie tax bases to less mobile economic factors and thus reduce avoidance incentives (Auerbach et al., 2017; Toder & Viard, 2016, Buriak, 2024, sec. 7.3.3). Others maintain that coherent application of ALP within refined transfer pricing guidance could still address distortions if adapted thoughtfully to digital models' characteristics (Olbert & Spengel, 2017; Greil, 2019; Petruzzi & Buriak, 2018; Eden, 2020; Schreiber et al., 2020). Selecting among these broad alternatives requires evaluating their fit within a principled normative structure, rather than in isolation as stand-alone reforms.

This dissertation positions itself methodologically within a principle-driven reconstruction approach. This means systematically mapping each foundational principle, the ALP, economic allegiance criteria, nexus definitions, to stress-test adaptability under scenarios characteristic of digital economies. Where adaptability fails on internal consistency checks or equity grounds, transformation will be considered through theoretically sound redesigns anchored in doctrinal legitimacy. Reform models such as OECD Pillar One or unilateral digital taxes will be assessed using this reconstructed framework to determine alignment or conflict with the refined principles. The intended scientific result is twofold: first, clarifying what “principle-consistent” adaptation entails for international tax norms; second, providing empirically informed critique of reform models where they deviate from such adaptation imperatives.

One important feature under examination is the interaction between new nexus proposals based on significant economic presence and long-standing permanent establishment (“PE”) provisions found in OECD and UN model conventions (OECD, 2017, Article 5; United Nations, 2021, Article 5). Weaknesses have been identified where thresholds fail to appropriately capture mixed physical-digital enterprises or where “ring-fencing” effects arise for certain transactions. A theoretically preferable solution advanced by some scholars, a specialized “digital service PE”, would integrate more seamlessly with current treaty language while targeting base erosion concerns directly via accepted multilateral norms (Blum, 2015; Olbert & Spengel, 2017). Its viability will be tested against the reconstructed framework elaborated herein.

The paradoxical governmental stance toward digitalisation also forms part of this inquiry: promoting digital innovation while seeking novel revenue streams from it. This duality raises policy coherence questions that extend beyond fiscal impact assessments into normative debates about fairness and neutrality. Avoiding vague conceptual shifts without analytical rigor aligns with the principle-based methodology adopted here; reforms must be evaluated not only on market effectiveness but also on their doctrinal clarity. Furthermore, critical appraisal of interim measures becomes necessary given historical patterns where temporary solutions evolve into embedded structures over decades (Bal, 2018; Aslam & Shah, 2020; OECD, 2018). The proposal's forward-looking dimension will therefore weigh risks of entrenchment against benefits of immediate revenue capture.

By analyzing these measures through systematic consistency testing, the research may reveal inherent asymmetries between short-term political expediency and long-term stability of tax norms. The breadth of actors, OECD members, EU institutions, G20 forums, engaged in these reform processes highlights both transnational legal pluralism and opportunities for consensus-building (Christians, 2016; Wouters & Meuwissen, 2011; Magalhães, 2018). However, consensus does not inherently guarantee doctrinal soundness; as shown with the value-creation paradigm's adoption absent robust theoretical articulation, political agreement can precede intellectual resolution (Hey, 2018; Christians, 2018; Schön, 2018; Devereux & Vella, 2018; Morse, 2018). This insight shapes one core aim: producing normative clarity before codification stages solidify potentially flawed constructs into globally operative law.

By structuring the analysis around principle reconstruction before model evaluation, this work avoids the trap of policy-driven retrofitting into ill-suited frameworks. It seeks to generate original contributions at two levels: specifying doctrinal amendments required by intangible-intensive economies; and critiquing whether proposed reforms meet those specifications when tested against systematically reconstructed principles. This dual outcome connects theoretical exactitude with applied feasibility; a synthesis rarely achieved amid fragmented reform debates dominated by either purely technical fixes or purely conceptual visions without operational pathways.

The structure of this dissertation follows a systematic progression designed to evaluate the resilience of international tax norms in the face of digitalisation. Following

the introduction of the research problem and the principle-driven methodology, the second section establishes the investigatory framework of the research alongside testable hypotheses, while section three details the chosen methodology, which integrates doctrinal legal analysis with comparative methods and a multi-stage analytical framework involving scenario-based stress tests. Followingly, section four provides a comprehensive contextual background, defining international taxation and tracing the historical evolution of its principles from the League of Nations era to the current challenges posed by globalization and the digital economy.

The analytical core begins in the fifth section, which provides an exhaustive examination of the fundamental principles of international taxation - specifically the benefit, residence, source, and ability-to-pay principles, as well as the PE concept, the arm's length principle ("ALP"), and the value creation principle. The sixth section analyzes the internal coherence and tensions between these doctrines, while the seventh section investigates how specific digital characteristics, such as "scale without mass", network effects, and data, interact with these principles. The eighth section identifies resulting jurisdictional gaps and profit allocation challenges that lead to the erosion of tax bases.

In the ninth section, the dissertation presents a conceptual reconstruction, classifying principles into those that remain intact, those requiring reinterpretation, and those - such as the ALP and traditional PE rules - that necessitate structural modification (transformation). The tenth section offers a critical evaluation of existing reform proposals, including the OECD BEPS framework (Pillars One and Two), the EU Digital Services Tax, and UN Articles 12B and 12AA, testing them against the reconstructed principles. The eleventh through thirteenth sections then establish normative criteria for evaluation, articulate the dissertation's new scientific results, and provide methodological justification, thereby preparing the analytical ground for a final integrative assessment of workability and doctrinal coherence.

Building on these normative benchmarks and scientific findings, section fourteen offers a structured synthesis of the preceding analysis. It directly tests the major reform approaches against the reconstructed principles and the previously formulated hypotheses, determining which models constitute principled adaptation, which amount to structural transformation, and to what extent any of them provide a practically viable and

doctrinally coherent solution. In this way, section fourteen functions as the dissertation's decisive evaluative bridge between theoretical reconstruction and final normative judgment.

Section fifteen introduces a consolidated and self-standing articulation of the dissertation's novel contribution beyond existing scholarship. It systematises the methodological, doctrinal, evaluative, and governance-level innovations developed throughout the analysis, demonstrating how the principle-based reconstruction generates determinate classificatory outcomes, operational stress-testing criteria, and predictive insights regarding institutional durability. By situating the reconstructed evaluative matrix within the broader academic debate, this chapter clarifies in what precise respects the dissertation advances international tax theory beyond descriptive critique and policy-driven reform analysis.

The sixteenth and concluding section then consolidates these findings by synthesizing the reconstructed principles, summarizing the hypothesis-testing outcomes, clarifying the distinction between adaptation and structural transformation, reaffirming the dissertation's scientific and methodological contributions, and outlining the broader implications for the future architecture of global tax governance in an intangible-intensive economy.

2 INVESTIGATORY FRAMEWORK AND WORKING HYPOTHESES

The dissertation is structured around the following working hypotheses, which operationalize the research questions and guide the subsequent methodological testing:

- H1: The arm's length principle can be adapted to intangible-intensive digital business models through structured supplementation without requiring conceptual transformation.
- H2: Permanent establishment and nexus concepts can be reconceptualized via significant economic presence standards without collapsing their doctrinal integrity.
- H3: Formula-based reallocations (e.g., Pillar One) constitute adaptation only if distributive symmetry between market and production jurisdictions is preserved.

- H4: Unilateral digital services taxes are compatible with neutrality only when embedded in coordinated multilateral relief frameworks.
- H5: Where value-creation definitions remain irreconcilably plural across jurisdictions, transformation of core allocation principles becomes necessary.

The sections below first articulate the guiding research questions and subsequently elaborate the hypotheses through detailed doctrinal and empirical specifications.

2.1 Investigatory Framework

The primary research question interrogates whether foundational principles of international taxation are capable of adapting to the structural changes induced by the digital economy, or whether circumstances demand their transformation. This question is not posed in a vacuum; it addresses a defined doctrinal field whose central axioms include the source and residence principles, the arm's length principle, inter-nation equity, benefit theory, and neutrality (Hongler, 2019; Avi-Yonah, 2004; Musgrave & Musgrave, 1972; Graetz, 2001a; OECD, 2022a). Each of these has historically offered normative justification for allocating taxing rights between jurisdictions, with doctrinal stability maintained through treaty-based compromises. The challenge here is to assess whether digitalised value creation, characterised by dematerialised presence, data extraction, and intangible asset exploitation, can be conceptually accommodated within these axioms without undermining their internal coherence.

The research therefore asks: can these principles be reconstructed through reasoned adaptation so that they remain conceptually sound while extending applicability to intangible-intensive business models? Or do they require fundamental redefinition that alters their core meaning in order to integrate phenomena such as user participation's measurable contribution to value creation (OECD, 2018, pp. 171-172; OECD, 2019a; Becker & English, 2019; Grinberg, 2018a), or the mobility of intellectual property leading to disconnects between value accrual and legal nexus? This framing avoids conflating policy preference with principled necessity; instead, it embeds reform evaluation in an analytical methodology measuring survivability of principles under stress-tests drawn from actual digital business scenarios.

In practical terms, the question requires operationalising “adaptability” and “transformation” as distinct evaluative outcomes. Adaptability implies that current principles, perhaps reinterpreted, can maintain their normative integrity while addressing gaps exposed by digital commerce. Transformation presumes that the principle’s original definitional core cannot encompass observed phenomena without becoming conceptually inconsistent or normatively arbitrary. For example, if inter-nation equity can be recalibrated via formulaic profit attribution that recognizes market jurisdiction claims even absent physical permanent establishment (Gadžo, 2018a, sec. 6.4.3.; Escribano, 2019; Avi-Yonah, Clausing & Durst, 2009; OECD, 2020b), it might be classed as adaptable. Conversely, if neutrality collapses when confronted with unilateral digital services taxes bypassing reciprocity mechanisms (Escribano, 2019; Aslam & Shah, 2020; OECD, 2020c; Harpaz, 2021; Schön, 2018), its operational viability within multilateral frameworks may require transformation.

This dissertation treats such categorical determinations as methodological outputs rather than intuitive judgments. Each principle undergoes analytical evaluation against scenarios embodying digital economy characteristics: cross-border data harvesting with local monetisation but offshore booking; algorithm-driven advertising revenues tied to user profiles sourced globally; distributed software development networks where value is generated collaboratively across multiple jurisdictions (OECD, 2015a; Hongler & Pistone, 2015; Olbert & Spengel, 2017; Bauer et al., 2019). These stress-tests also include mixed cases where physical and virtual presence intertwine, for instance, cloud service providers maintaining minimal server facilities locally yet relying on vast user bases for primary revenue generation.

The overarching research question also incorporates a secondary dimension: whether current or proposed reforms, including OECD Pillar One and GloBE under Pillar Two (OECD, 2021), reflect consistency with either adapted or transformed principles when applied methodologically. Pillar One’s Amount A allocation of residual profits to market states (OECD, 2023a) represents an explicit departure from strict ALP-based nexus allocation by creating formulaic apportionment detached from physical presence (OECD, 2020b; Buriak, 2024, sec. 6.3.1.; Calijuri, 2022; Elliffe, 2020). Determining compatibility with fairness and inter-nation equity depends on whether such detachment can be reconciled with existing treaty-based understandings without collapsing doctrinal justifications grounded in economic allegiance theory. Similarly, Pillar Two’s minimum

tax standard seeks systematic prevention of base erosion irrespective of taxable location (OECD, 2020d; OECD, 2019b; Elliffe, 2020, sec. 4.3.2.; Pascucci, 2022, sec. 6.1.; Buriak, 2024, sec. 4.4.); this initiative raises questions about its role as evolution of single taxation principle norms versus substantive transformation into a global anti-avoidance mechanism outside traditional bilateral relief structures.

A further consideration embedded in the primary research question is whether unilateral measures, digital services taxes, significant economic presence rules, are theoretically defensible within an international tax law framework when lacking mutual agreement mechanisms (Gadžo, 2018a, sec. 7.3.2.3.; Cui, 2019; Escribano, 2019; Shaviro, 2019; Turina, 2018). Here doctrinal legitimacy is contested: should such measures be deemed consistent extensions of source-based taxation adapted for intangibles, or are they fundamentally new constructions requiring replacement of existing principles' conceptual architecture? Evaluating this depends on whether these instruments retain underlying bonds to benefit theory or economic allegiance criteria, albeit in non-traditional forms tied to virtual interactions.

From a normative perspective, the research question deliberately integrates distributive justice considerations into principle evaluation. International taxation literature has long debated how justice theories, such as ability-to-pay or benefit-based distribution, should inform allocation norms (Hongler, 2019, secs. 11.2, 11.6.; Schön, 2009; Kaufman, 1998; Escribano, 2019). The inquiry here is specific: can justice-oriented principles continue to justify allocation outcomes once interaction geography becomes virtual? For instance, does ability-to-pay remain meaningfully assignable across jurisdictions when revenue streams derive primarily from data processing executed entirely outside consumer territory? If assigning taxing rights under such conditions departs radically from prior distributive duties inherent in the tax regime (Hongler, 2019, secs. 8.3, 12.2.2.3.1; Buriak, 2024, secs. 5.3.1-5.3.2; Gadžo, 2018a, secs. 5.1.2-5.1.3; Magalhães, 2018; Cui, 2019; Kaufman, 1998), this would point toward transformation rather than adaptation.

This dissertation establishes that resolving this primary research question entails mapping each principle within a reconstructed theoretical framework before subjecting them to empirical plausibility checks against digital economy cases. The novel contribution lies not merely in answering “adaptation” or “transformation”, but in

articulating clear criteria for making such determinations rooted in doctrinal integrity tests. By doing so, it provides a structured basis for assessing competing reform proposals beyond descriptive policy analysis, measuring them instead against principled definitions able to withstand modern economic realities without sacrificing coherence. In turn, this allows differentiation between reforms that genuinely align with international tax theory as reconstructed here and those whose congruence is rhetorical rather than substantive.

Ultimately, the primary research question drives toward a two-tier output: refined definitions of existing international tax principles under conditions induced by digitalisation; and diagnostic classification of reform models according to whether they preserve, adapt, or necessitate transforming those principles when implemented in practice. This dual output charts a scientifically rigorous path capable of both clarifying theoretical boundaries and informing negotiation strategies at multilateral forums faced with reconciling legal tradition against technological transformation.

Building on the primary inquiry into whether foundational principles can adapt or require transformation under digital economy conditions, further subordinate questions target specific dimensions of this broader problem. These secondary questions function as analytical instruments that break down the overarching conceptual challenge into testable components directly engaging with both doctrinal theory and empirical manifestations of reform proposals. The intent is to capture granular tensions often obscured when examining aggregate models alone.

The first secondary question asks whether the ALP, given its centrality in profit allocation, retains normative coherence once intangible-intensive business models are operationalised with geographically dispersed inputs. This necessitates comparative analysis between ALP-based allocation under current OECD transfer pricing guidance and alternative methods such as formulary apportionment, particularly as reflected in OECD Pillar One's residual profit allocation proposals (Calijuri, 2022; Buriak, 2024, secs. 5.1, 6.2, 6.3.1; IMF, 2019; Elliffe, 2020, secs. 4.2.2, 5.4; Avi-Yonah, Clausing & Durst, 2009). Here, the research tests whether empirical cases in digital commerce, characterised by "scale without mass" (OECD, 2018, sec. 2.1.; Buriak, 2024, secs. 6.2.1, 6.2.5), can be reconciled within ALP comparability frameworks without generating arbitrary distortions. Should reconciliation prove inconsistent with fairness or administrability criteria, the classification outcome for ALP may tilt towards

transformation rather than adaptation. As observed in some critiques, even allocating fixed returns for routine activities (“Amount B”) (OECD, 2024) under the ALP could perpetuate base erosion risks if structural incentives embedded in multinational enterprise operations remain unaddressed (Buriak, 2024, secs. 5.2.3, 6.2.4, 6.3.1, 6.3.4; Elliffe, 2020, secs. 3.1.1, 5.4; IMF, 2019).

A second question examines whether nexus concepts grounded in PE definitions can be expanded conceptually to encompass significant economic presence derived purely from digital interaction. This probes the viability of PE redefinition strategies proposed in academic discourse (Hongler & Pistone, 2015; Avi-Yonah, 1997; Pinto, 2006; Gadžo, 2018a, secs. 7.3.2.1-7.3.2.2; Escribano, 2019). The methodological focus will be on whether reinterpretations via benefit theory or economic allegiance preserve doctrinal integrity when detached from tangible location proxies, and how far such reinterpretations can avoid conflict with existing treaty language shaped around physical indicia.

The third question isolates inter-nation equity for scrutiny: can equitable allocation of taxing rights between market and production jurisdictions be operationalised under formula-based profit attribution systems without undermining reciprocity norms embedded in double tax treaties? For example, Pillar One’s formulaic approach reallocating profits to market states raises concerns about distributive imbalance if residual profits are stripped from producer jurisdictions without equivalent reciprocation mechanisms (Buriak, 2024, sec. 6.3.5.3; Schreiber & Fell, 2017; Kysar, 2020, sec. 4; OECD, 2020b). Analytical assessment here will measure alignment between revised allocation metrics, sales, users, marketing intangibles, and justice-oriented rationales historically underlying equitable burden sharing.

Further inquiry addresses neutrality. This research asks whether unilateral measures such as digital services taxes (Harpaz, 2021; Shaviro, 2019, pp. 62-63; Aslam & Shah, 2020; Buriak, 2024, sec. 7.2.2) inherently disrupt neutrality when applied within interconnected treaty networks, particularly where relief mechanisms are absent and double taxation risks proliferate. Testing neutrality’s survivability involves evaluating cross-border transaction chains subjected simultaneously to existing corporate income tax at residence, source-based withholding regimes for certain service payments, and new turnover-based digital levies imposed unilaterally. Outcomes from these tests will

indicate whether neutrality can adapt via integration into coordinated multilateral measures or whether structural incompatibility compels principled transformation.

An additional secondary question concerns practicality and enforceability: do proposed reforms meet administrability thresholds suitable for broad multinational application while retaining consistency with reconstructed principles? The literature identifies that commentary surrounding e-commerce rules becomes outdated quickly due to technological change (Hongler & Pistone, 2015, p. 42; Escribano, 2019, p. 224; Schaffner, 2013, p. 91). This volatility introduces risk that complex allocation formulas or novel nexus standards may fail under real-world information asymmetries and enforcement capacity constraints within diverse national administrations. Administrability here functions as a criterion within methodological principle-reconstruction: if a theoretically sound adaptation collapses under operational conditions typical of global enforcement environments, its classification shifts towards impracticality notwithstanding doctrinal coherence.

A related question turns on definitional exactitude around “value creation” (Bal, 2018, sec. 3; Das, 2020, secs. 4.3.2, 4.4; Hey, 2018, secs. 2.1, 2.3; Jiménez, 2020, secs. 2.1, 3.4; OECD, 2019c, pp. 9-18; Kysar, 2020, sec. 4): given divergent interpretations among policymakers, user participation vs. marketing intangibles vs. data processing contributions, can a single definition suffice across multiple jurisdictions to anchor consistent profit allocations? Testing this entails mapping each dominant definitional model onto agreed international law criteria for source/residence division, identifying points where incompatible operational metrics would produce conflicting allocations for identical transactions. Where definitional pluralism proves irreducible within existing frameworks, transformation might become necessary not merely at policy level but at core principle construction.

Moreover, the research engages in competitive dynamics prompted by globalization’s tax competition pressures in relation to digitalisation-specific reforms (OECDb, 2019; Collier, 2023; Elliffe, 2020, secs. 3.5, 5.10; OECD, 2020c, pp. 161-164; Oguttu, 2022, sec. 4.4; Screpante, 2021, sec. 6). This leads to asking whether minimum standards proposed under initiatives like Pillar Two can function as constraint mechanisms aligning with fairness and efficiency while securing sufficient consensus to avert a race-to-the-bottom among jurisdictions hosting mobile intangible assets.

Consensus feasibility is itself part of the doctrinal test: an adaptation failing politically cannot serve as a durable principle despite theoretical integrity.

One final line of questioning interrogates interaction effects among principles when applied collectively to hybrid business models combining physical operations with extensive digital exploitation, e.g., manufacturing firms incorporating global cloud-based services as primary customer interface. This asks whether partial adaptations in one principle (e.g., nexus redefinition) conflict logically or normatively with static formulations of another (e.g., benefit theory), producing incoherence across the regime as a whole. The reconstructed framework will assess these intersections systematically to avoid piecemeal modification resulting in fragmented doctrine incapable of unified application.

In assessing these various strands together, it is relevant to note that failure to achieve a coordinated solution increases the likelihood of uneven unilateral action by jurisdictions dissatisfied with current outcomes, a situation already observed in contemporary tax practice and highlighted within intergovernmental discussions on digital taxation policy (OECD, 2019b, pp. 6-7; OECD, 2020c, pp. 12, 144; Harpaz, 2021, pp. 58-59, 79; Cui, 2019, p. 1; Hendriyetty et al., 2023, pp. 8-9; OECD, 2018, pp. 134-135). Such developments may exacerbate compliance costs and elevate risks of double taxation, reinforcing why the stress-tests embedded in this dissertation's secondary questions are methodologically necessary before classifying reforms as genuine adaptations rather than provisional fixes susceptible to fragmentation over time.

This dissertation establishes that structuring these secondary questions enhances analytical penetration into specific tension points hidden beneath general reform debates. Each question feeds directly into the principle-driven reconstruction methodology by targeting either a core doctrinal element (ALP, PE nexus, value creation) or an evaluative criterion (equity, neutrality, administrability). Such secondary inquiries should not be treated as descriptive subtopics but as dedicated stress-tests generating classification outcomes, adaptation or transformation, for discrete principles within an integrated theoretical framework responsive to structural features unique to intangible-intensive digital economy conditions. By pursuing these queries rigorously, the research demonstrates capacity to distinguish between superficial harmonisation achieved through

political negotiation and genuine doctrinal alignment capable of sustaining legitimacy under evolving economic realities across interconnected jurisdictions.

The elements outlined above collectively form the investigatory framework of this dissertation, structuring the doctrinal dimensions that will be operationalised through the working hypotheses set out below.

2.2 Working Hypotheses

Building on the investigatory framework defined above, the following working hypotheses translate its analytical components into testable doctrinal propositions.

The investigatory framework developed in the preceding analytical steps permits the formulation of targeted working hypotheses that operationalize the primary and secondary research questions for systematic testing. These hypotheses anchor themselves in doctrinal categories yet are constructed to yield falsifiable outcomes when applied to empirical features of digital economy business models and proposed reform instruments. Each hypothesis is explicitly tied to the adaptive-versus-transformative classification exercise elaborated earlier, meaning their acceptance or rejection will feed directly into determinations about principle durability under altered economic conditions.

One central working hypothesis postulates that the ALP can be adapted, rather than transformed, to accommodate intangible-intensive profit generation if supplemented by quantified allocation keys reflecting user participation or market jurisdiction marketing intangibles. This rests on the presumption that ALP's comparative paradigm remains theoretically coherent provided that valuation techniques evolve to capture platform-derived intangibles, despite limited external comparables (Olbert & Spengel, 2017, pp. 40-42; OECD, 2022a, paras. 6.153-6.157; Calijuri, 2022; Becker, Englisch & Schanz, 2019). Should empirical application to representative MNE structures reveal persistent arbitrariness in outcomes despite such supplementation, this would falsify the adaptation claim and suggest transformation. The test case set will deliberately include "scale without mass" enterprises where physical indicators are minimal, challenging ALP's reliance on observable functional analysis.

A second hypothesis addresses nexus rules: it proposes that PE concepts may be reconceptualized via significant economic presence standards incorporating non-physical benefits, without collapsing their doctrinal integrity as derived from benefit theory

(Hongler & Pistone, 2015; Escribano, 2019; Gadžo, 2018a, sec. 7.3.2.3; Pinto, 2006). Here, the test involves examining whether significant economic presence can preserve the underlying benefit-linked and economic-allegiance logic of nexus when physical presence is no longer an adequate proxy. The need to modify existing treaty wording does not by itself refute the hypothesis, since structural adjustment of the PE rule may remain consistent with doctrinal continuity at the level of the underlying nexus principle. The hypothesis would instead be contradicted where significant economic presence could be operationalised only by abandoning the reciprocity and economic-allegiance foundations that historically justify jurisdictional entitlement.

Regarding inter-nation equity, a third hypothesis asserts that formula-based residual profit attribution, as envisaged in Pillar One, can serve as an adaptation by operationalising equitable burden sharing when designed symmetrically for market and production jurisdictions (Buriak, 2024, secs. 5.3.1, 5.3.3, 8.7; Schreiber & Fell, 2017, pp. 100-101, 105-107; Richter, 2021, pp. 5-7, 19-21; Hongler, 2019, secs. 11.3.1, 12.2.2; Kaufman, 1998, pp. 145-146, 201-202; Avi-Yonah, 1996, p. 1347). The methodological test applies distributive metrics to model allocations under Pillar One formulas across simulated bilateral relationships involving asymmetrical trade balances. If modelling reveals systemic net transfers toward one class of jurisdiction regardless of relative economic contribution, this would evidence a distributive inconsistency beyond acceptable political compromise, necessitating transformation into equity doctrine or abandonment of formulaic reallocation.

The neutrality principle yields another discrete hypothesis: unilateral digital services taxes do not necessarily destroy neutrality if integrated into coordinated frameworks granting relief through treaty-compatible credit mechanisms (Aslam & Shah, 2020, p. 219; Avi-Yonah, 2023a, pp. 1-4; Báez Moreno & Brauner, 2015; Chand, 2019, pp. 1022-1024; Shaviro, 2019, pp. 47-48). Testing requires comparing tax burdens across cross-border transaction chains under coordinated versus uncoordinated DST regimes. Structural double taxation in the coordinated model would refute adaptation viability and instead position such unilateral measures as inherently transformative, and potentially incompatible, with neutrality norms unless embedded within a wholly new global tax design.

An additional consideration is that under Pillar One’s “Amount A” mechanism, residual profits above a defined margin, typically those exceeding 10 percent of revenue, would be partially reallocated to market jurisdictions meeting a revenue threshold of EUR 1 million (or EUR 250,000 for smaller economies), entirely irrespective of physical presence (OECD, 2023a, Article 8 – Nexus). This structural decoupling from traditional permanent establishment thresholds appears closely aligned with the kind of empirical tests envisaged for both nexus and allocation hypotheses here, and it may also serve as an instructive boundary case for differentiating between adaptations that integrate seamlessly into existing doctrine and reforms that incrementally erode its conceptual foundations.

The working hypotheses formulated in this section establish a structured set of testable propositions linking doctrinal expectations to empirical manifestations in digital economy business models. To evaluate these hypotheses rigorously, the research requires a methodology capable of tracing each principle’s theoretical coherence, assessing its cross-jurisdictional implementation, and subjecting proposed adaptations to operational and normative stress tests. Chapter 3 advances from the hypothesis-driven design to a systematic methodological framework, integrating doctrinal analysis, comparative legal evaluation, and principle-specific scenario testing, thereby providing the analytical instruments necessary to classify reforms as either adaptable extensions of existing norms or transformative departures from established international tax principles.

3 METHODOLOGY

3.1 Doctrinal Legal Analysis

The doctrinal legal analysis applied here proceeds from recognising that international tax law is not a codified unified regime, but rather a composite of bilateral treaties, domestic legislation, soft-law instruments and general principles acknowledged under article 38(1)(c) of the ICJ Statute (Statute of the International Court of Justice, 1945, Art. 38(1); Hongler, 2019, secs 3.1, 3.2.2, 3.2.3; Bentil, 2018; Christians, 2016; Brauner, 2016; Gadžo, 2018a). This analytical stage critically interrogates these heterogeneous sources to identify whether the embedded principles, source, residence, arm’s length, inter-nation equity, benefit theory, can sustain coherence under altered

factual contexts generated by digitalised economic activity. Such interrogation requires mapping each principle to its jurisprudential origins and assessing interpretative elasticity available without breaching established treaty structures or destabilizing reciprocal expectations (Escribano, 2019; Gadžo, 2018a, sec 2.2.6.2; Hongler, 2019, secs 4.3.3.3.6, 8.1; Kobetsky, 2011; Merkouris, 2022; Nikolakakis, 2020, sec 9.9).

A prerequisite in this process is differentiating between positive legal norms and broader value-based principles. Doctrinal work in international tax reveals that many guiding concepts like “fairness” or “neutrality” are not binding rules but policy ideals informing rule creation; hence they must be evaluated for their ability to serve as normative anchors when concrete treaty provisions encounter novel conditions (Christians, 2016; Screpante, 2024, secs 5.3.1.2, 5.3.2.1; Calijuri, 2022; Brauner, 2003). The focus here is not procedural justice, whether negotiation or implementation followed fair processes, but substantive justice: do new nexus models or allocation keys yield equitable results when measured against distributive theories embedded in the regime? This evaluative lens is essential because traditional sources give little operational guidance on what constitutes fairness beyond avoidance of double taxation.

Methodologically, doctrinal legal analysis entails close reading of OECD Model Tax Convention commentary (OECD, 2017), UN Model Convention text (United Nations, 2021), and interpretative notes from national court decisions applying treaty provisions in cross-border commerce. When assessing ALP applicability under intangible-heavy business models, for instance, relevant OECD Transfer Pricing Guidelines (OECD, 2022a) are treated not as mere policy suggestions, but as quasi-authoritative interpretations adopted into domestic law by many jurisdictions (Christians, 2016; Screpante, 2024; Calijuri, 2022; Brauner, 2003). The analysis tests whether these interpretations permit legitimate expansion of comparability criteria to include metrics like user engagement or data generation without eroding the core premise that transactions between related parties should mirror independent market behaviors. Where such expansion contradicts the premise, because no functional analogue exists in unrelated party dealings, it points to conceptual instability requiring transformation rather than adaptation.

Similarly, the reinterpretation of nexus, from traditional permanent establishment grounded in tangible presence to significant economic presence through sustained digital

interaction, is examined doctrinally by tracing its compatibility with benefit theory. The theoretical plausibility depends on whether non-physical state-conferred benefits (such as regulatory protections for online trade) can be construed as equivalent to infrastructure support for physical operations within existing treaty language. If existing PE definitions under Art. 5 cannot accommodate such interpretation within their established textual limits, treaty-level structural modification of the PE rule may become necessary (Escribano, 2019; Gadžo, 2018a; Hongler and Pistone, 2015; Kofler, Mayr & Schlager, 2017). Such modification does not itself imply transformation of the underlying nexus principle, provided that the reconstructed standard continues to preserve benefit-linked reciprocity and economic allegiance as the normative basis of jurisdictional entitlement. This reasoning draws from both textual exegesis and teleological interpretation common in public international law when reconciling evolving circumstances with established norms.

Doctrinal analysis also extends to evaluating distributive concepts like inter-nation equity when operationalised under formula apportionment regimes proposed by Pillar One (Avi-Yonah, 2023a; Buriak, 2024, secs 5.3.1, 5.3.3; Gadžo, 2018a, sec. 5.1.3; Hongler, 2019, secs 11.3.2, 11.3.3; Kaufman, 1998; Richter, 2021). The method here identifies whether residual profit splits grounded on sales or users genuinely reflect economic allegiance as theorized historically, or whether they silently reallocate profits toward market jurisdictions without compensatory consideration for production states' contributions. Cross-checking against treaty preambles and object-purpose clauses enables assessment of whether such reweighting contradicts agreed bases underpinning mutual concessions in double taxation relief mechanisms.

This research demonstrates that doctrinal reconciliation fails where proposed allocations lack any grounding in accepted definitional criteria for value creation recognised across Model Conventions; such failures signal a shift beyond adaptation into transformation territory. An important dimension within this method is recognising how political bargaining influences doctrinal content without necessarily resolving theoretical tensions (Ruiz Colmenares, 2023; Kysar, 2020, sec 4; Schön, 2021; Magalhães, 2018; Christians, 2017). Agreements reached through multilateral negotiation, even if widely endorsed, must still be tested against the principled coherence within the broader body of international tax law. For instance, consensus on introducing Amount A under Pillar One does not itself prove compatibility with neutrality norms; doctrinally sound integration

would require ensuring that market-based allocations do not differentially burden enterprises depending on jurisdictional mix of consumers absent legitimate justification under equality principles derived from general tax law norms.

In applying this approach, consideration is given to jurisdictional diversity in domestic uptake of doctrinal principles alongside treaty commitments. Some states have pursued unilateral DSTs grounded explicitly in a local-legislation framing of source taxation extended to digital presence (Escribano, 2019; Parada, 2021; OECD, 2018; Kobetsky, 2011; Santos & Rocha, 2017). Doctrinal legal analysis examines whether such unilateral extensions constitute permissible adaptations of source rules or innovations incompatible with reciprocity mechanisms inherent in double taxation treaties. This involves parsing treaty override doctrines and analyzing whether local laws effect substantive modification to mutually agreed taxing rights without renegotiation, an act inconsistent with *pacta sunt servanda* unless justified by explicit withdrawal from affected treaty obligations.

Beyond textual treaty interpretation, this research employs systemic consistency testing among related doctrines within international tax law. For example, modifying nexus concepts affects equity allocations and potentially undermines ALP application where functional analyses tie taxable profit attribution directly to recognised establishments' activities (Olbert & Spengel, 2017; OECD, 2019c; Collier, 2023; Monsenego, 2022, sec 4.1; Buriak, 2024, sec 6.2.6). Testing such ripple effects ensures reforms do not create internal contradictions, for instance by redefining nexus without adjusting transfer pricing standards accordingly, which could render the regime incoherent as a system of interlinked principles.

Doctrinal legal analysis can reveal structural fault lines obscured by policy-focused debates: it uncovers where reform proposals rest on extrapolations lacking firm linkage to established interpretations or where operational extensions misalign with underlying normative goals recognised as general principles of law. Alongside these inquiries, it is relevant to consider positions that view the core architecture of international tax law as resting upon two fundamental norms, the benefits principle and the single tax principle, and how these might be strained or even contradicted when applied under digitally mediated business environments (Avi-Yonah, 1997; Avi-Yonah, 2007; Bentil, 2018; Escribano, 2019; Gil García, 2019).

As recent scholarship notes, some general principles such as nexus-related tests (including residence or place-of-effective-management) appear capable of assimilation into public international law provided they meet customary recognition thresholds under Article 38(1)(c), thereby serving as an interface between treaty-based doctrine and broader norm formation processes (Bentil, 2018; Gadžo, 2018a; Hongler, 2019, secs 4.1.2.2, 4.3.1; Avi-Yonah, 2007). This recognition complicates doctrinal adaptation because any departure from such foundational norms risks altering not just specific provisions but the deep structure upon which states have historically aligned their mutual concessions in treaty practice.

By embedding evaluation within this rigorous interpretative framework anchored in accepted sources, Model Conventions, OECD Guidelines, UN commentaries, judicial decisions, the research secures methodological legitimacy for distinguishing between genuine principle-consistent adaptations and reforms amounting to transformations requiring either wholesale renegotiation or reframing of core doctrines. The novel contribution lies in systematically extending doctrinal analysis beyond static text interpretation toward dynamic stress-testing under empirically grounded scenarios emblematic of the digital economy's intangible-intensive nature, thereby producing actionable classifications central to the thesis' principle-reconstruction methodology.

While doctrinal analysis establishes the theoretical coherence and interpretative elasticity of foundational principles within international tax law, it remains largely text- and precedent-bound, reflecting idealized applications rather than the full diversity of real-world legal practice. To complement this, the comparative legal method extends the investigation across multiple jurisdictions, revealing how domestic implementations, judicial interpretations, and policy choices either align with or deviate from doctrinal expectations. By systematically examining both horizontal (peer jurisdictions) and vertical (model convention versus domestic law) dimensions, comparative analysis identifies convergences that suggest feasible adaptation and divergences that may signal the need for transformation. These insights form the empirical and functional substrate for the next Sections, where they are operationalised within a structured analytical framework designed to test whether principles can be adapted or require fundamental change under digital economy pressures.

3.2 Comparative Legal Method

Building from the doctrinal analysis outlined previously in Section 3.1, the comparative legal method functions here as both a contrasting and corroborative tool for testing whether identified principles of international taxation possess inherent adaptability or demand transformation under digital economy conditions. In its scholarly sense, comparative legal research does not merely catalogue similarities and differences between jurisdictions; it critically examines how diverse legal systems conceptualize, interpret, and operationalize similar normative constructs (Garbarino, 2009; Smits, 2012; Gadžo, 2018a, secs 1.4, 3.1.2; Miller, 2015, sec 5.2). This entails a systematic comparative analysis of tax law frameworks, both in their textual articulation and functional application, to reveal convergences capable of supporting multilateral coherence, and divergences significant enough to undermine principle-based alignment.

The initial stage within this method involves defining the functional equivalence classes for comparison. For example, when examining nexus concepts, one must ensure that “permanent establishment” in one treaty network is not directly equated to “significant economic presence” statutes without first accounting for conceptual disparities: the former channels from an objective territoriality doctrine historically tied to physical indicia, while the latter in some jurisdictions operates as a deliberate statutory expansion to capture digital engagement absent tangibility (Skaar, 2020; Hendriyetty *et al.*, 2023; OECD, 2018, paras 349-351; OECD, 2015a, para 277; Gadžo, 2018a, secs 3.4, 7.3.2.2). The comparative lens thus exposes whether these constructs are truly commensurable within a reconstructed principle grounded in benefit theory, or whether their divergence signals that any harmonised adaptation would be artificial or unstable.

A second dimension engages with vertical comparisons between international model instruments, such as OECD and UN Models, and domestic instantiations of principles derived from them. This dissertation leverages comparative analysis to interrogate whether departures at national level represent mere implementation variation or indicate substantive reinterpretation tantamount to transformation. For instance, UN Model Article 12B’s approach towards automated digital services (United Nations, 2021, Article 12B) allocates taxing rights on a gross-revenue basis with optional net-basis election (Buriak, 2024, Intro, secs 7.2.1, 7.2.3.2, 8.9; Harpaz, 2021; Gadžo, 2022, secs 2.3.2, 2.3.3; OECD, 2020, paras. 10, 507–511); when contrasted with OECD Pillar One’s

formulary profit split rooted in residual profit calculation methods, the comparison reveals fundamentally different appraisals of “value creation” measurement, despite both claiming responsiveness to digitalisation challenges. Such divergences matter because they may indicate that certain domestic adoptions cannot be reconciled into a single adapted principle without eroding its definitional coherence.

Horizontal comparison among peer jurisdictions offers another vein of insight: where states with similar economic profiles adopt markedly different approaches to user participation valuation or marketing intangibles allocation keys (Aslam & Shah, 2020; Calijuri, 2022; International Monetary Fund, 2019; Ruiz Colmenares, 2023), this raises doubt about whether those sub-concepts can be embedded universally without substantial redefinition. The methodology here tests whether any common denominator exists sufficient to underpin an “adaptable” interpretation when fleshed out into treaty language. Absence of such denominator implies necessary transformation, not only at operational level but at the principal definitional level, before multilateral integration is feasible.

An important analytical step lies in controlling extraneous variables; differences in legislative drafting technique or institutional capacity should not be conflated with principled divergence. Comparative reasoning thus employs functional analysis: identifying what each system seeks to achieve normatively through its rule-set before assessing formal mechanisms utilized (Gadžo, 2018a, sec 3.1.1; Garbarino, 2009; Michaels, 2006; Örüçü, 2012). For example, although gross-based taxes on ADS revenues and formulary segmentation of global residual profits appear divergent methodologically, both aim to redress perceived under-allocation of taxing rights to market jurisdictions engaging digitally without PE status. Comparative evaluation then asks: does one mechanism align more closely with historic benefit theory and inter-nation equity norms embedded multilaterally? If so, that path may reflect genuine adaptability; if both depart significantly from those anchors, it supports the transformation classification.

For transfer pricing rules under ALP across jurisdictions, comparative legal method interrogates the scope for expanding comparability criteria to incorporate unique digital value factors, user base size, data specificity, without collapsing underlying transaction neutrality assumptions (Aslam & Shah, 2020; Becker, Englisch & Schanz, 2019; Calijuri, 2022; Greil, 2019; Olbert & Spengel, 2017). Jurisdictions experimenting

with quantified user metrics provide case material for assessing whether such inclusion distorts ALP's market-benchmarking premise beyond recognition or instead exemplifies context-responsive adaptation. Differing judicial interpretations of similar factual constellations are especially probative here: they reveal tolerance levels within domestic courts for stretching traditional comparability analysis toward intangible measures arising exclusively from virtual interaction.

One novel contribution of this research lies in applying comparative method not purely bilaterally (e.g., State A vs State B) but tri-dimensionally: comparing each jurisdictional approach against both its model convention baseline and against reconstructed principles determined earlier through doctrinal analysis. This triangulated comparison allows precise identification of where divergences stem from political choice versus interpretative necessity given altered economic conditions. For example, if two states implement divergent nexus expansions yet both deviate equally from their shared model convention origin while converging toward similar reconstructed-benefit theory readings, their divergence may be reconciled into an adaptable unified standard despite superficial difference.

The comparative method also aids in assessing administrability concerns flagged during doctrinal review. By comparing administrative experiences from early adopters of unilateral DSTs against those integrating broader multilateral allocations like Pillar One Amount A (Buriak, 2024, secs 6.4, 7.2.5; Harpaz, 2021; International Monetary Fund, 2019; OECD, 2018, paras. 362, 407; OECD, 2020c, paras. 42, 404), this study evaluates enforceability trade-offs borne by each path when anchored in analogous normative justifications. Identifying patterns where complexity undermines compliance yields guidance on whether adaptation along certain lines remains viable across differing institutional contexts. In some cases, tracing such divergences back to entrenched conceptions of nexus, as grounded historically in personal or territorial connections recognised across most domestic systems, adds explanatory depth to whether observed differences are reconcilable within existing customary international law constraints (Avi-Yonah, 2004; Baker, 2020, secs 11.3, 11.7.1; Gadžo, 2018a; Kokott, 2022, sec 1.3; Santos & Rocha, 2017). This aspect also gains clarity from analyses highlighting that lack of consensus over "value creation", especially under unilateral measures like DST proposals premised on user participation benefits, reflects deeper theoretical ambiguity that multilateral processes have yet to resolve (Bal, 2018, secs 3, 8; Grinberg, 2018a; Hey,

2018, secs 2.1, 2.3; International Monetary Fund, 2019, paras. 29, 84; OECD, 2018, paras. 37–40, 387–388; Schön, 2018, sec 7). Such insights caution against prematurely categorizing reforms as mere adaptations when the conceptual substrate itself remains contested at the international level.

Comparative studies sometimes structure such evaluations by classifying countries into “families” based on shared income tax heritage and doctrinal lineage; such typologies assist in identifying when observed parallels stem from deep-seated legal traditions rather than contemporary policy convergence (Thuronyi, 1998). This layer enriches the analysis by situating present doctrinal tensions within longer-standing jurisdictional traditions that may subtly resist reinterpretation under purely economic presence models. This dissertation establishes that employing comparative legal research in this structured manner reveals latent pathways for principle adaptation overlooked by purely doctrinal exegesis while also surfacing domains where surface similarity cloaks deep conceptual rupture necessitating transformation. Importantly, the method treats each jurisdiction’s stance as both a data point and a theoretical probe: variations test reconstructed principles’ elasticity under diverse institutional conditions; convergences validate potential general applicability without recalibrating core definitions beyond recognised boundaries in international tax law.

By integrating comparative findings back into the principle-driven reconstruction framework developed earlier, the research ensures that later evaluations of reform proposals account not only for theoretical compatibility but also for demonstrable cross-system applicability. This dual perspective, textual/doctrinal validity combined with practical convergence across disparate systems, provides a more rigorous evidentiary basis for classifying reforms as adaptations or transformations within an international regime grappling with the intangible-intensive realities delineated throughout preceding sections.

Building on the insights gained through comparative legal analysis, the next step involves integrating these cross-jurisdictional observations into a coherent, principle-driven evaluative architecture. While comparative methods highlight where divergence or convergence occurs across domestic and model frameworks, they do not, by themselves, systematically determine whether a principle can be adapted or requires transformation. Section 3.3 develops an analytical framework that operationalises these

findings, combining doctrinal reconstruction with scenario-based and consistency-testing tools. This framework translates comparative insights into structured mechanisms for assessing the resilience, elasticity, and normative coherence of foundational international tax principles in the context of digital economy pressures.

3.3 Analytical Framework Development

Advancing from the doctrinal and comparative methods elaborated earlier, the analytical framework development undertaken here is designed to integrate principle-reconstruction logic with systematic consistency-testing of reform proposals. The aim is to create a structured instrument capable of diagnosing whether foundational principles of international taxation, source, residence, arm's length, inter-nation equity, benefit theory, are adaptable or require transformation under digital economy conditions. Rather than relying on ad hoc comparison of reforms against abstract notions of fairness or effectiveness, this framework formalizes evaluative criteria grounded in both normative theory and positive treaty structures. It is informed by distributive justice considerations doctrinal limitations embedded in definitional constructs such as ability-to-pay, and operational parameters coming from instruments like OECD Transfer Pricing Guidelines (Smiths, 1776; Buriak, 2024, secs 5.3.1, 5.2.3; Gadžo, 2018a, secs 1.2, 1.4, 5.1; Hongler, 2019, secs 2.2.3, 8.2; Otto & Van de Vijver, 2022, secs 3.1, 3.3).

The first component of the framework consists of principle mapping matrices. Each matrix delineates the jurisprudential scope, interpretative elasticity, and embedded normative goals of one principle. For example, in the case of ALP, the matrix will catalogue how OECD commentary permits contextual adjustments for intangibles such as hard-to-value intellectual property through DEMPE analysis (OECD, 2022a, Chapter VI, paras. 6.34, 6.42, 6.48), while noting constraints that prevent unrestricted departure from market-based comparability benchmarks. This granular mapping supports reasoned testing under conditions where value creation involves user participation or network effects central to digital platforms (Aslam & Shah, 2020; Greil, 2019; Mlčúchová, 2022; OECD, 2018, paras. 35, 37, 144; OECD, 2019c, paras. 18–19). Similar matrices structure PE nexus principle analysis by distinguishing treaty-rooted physical indicia from proposed significant economic presence constructs and evaluating their compatibility with benefit theory interpretations within existing legal language.

The second component introduces scenario-based stress tests tailored to digital economy features. These scenarios are derived from empirical constellations identified in prior methodological stages: platform enterprises harvesting location-specific data without booking related revenue locally; firms allocating residual profits to intangible-rich affiliates in low-tax jurisdictions; MNEs whose cross-border service provision lacks any local infrastructure footprint but generates sustained domestic consumer engagement (Buriak, 2024, sec 5.3; Oguttu, 2022; OECD, 2015a, paras. 186-188, 256; OECD, 2018, paras. 33, 275-276; OECD, 2019c, paras. 12-14; OECD, 2020, paras. 15, 24, 31). Within each scenario, principles are applied according to their current doctrinal formulation to generate expected allocation outcomes; subsequent application of proposed adaptations determines whether resulting changes preserve internal coherence or force a conceptual rupture. Such controlled comparison elucidates whether adaptation suffices or transformation is needed.

A third component focuses on consistency-testing sequences, recognising that principles do not operate in isolation but form an interdependent regime architecture. For example, altering nexus definitions without proportional modification to ALP's functional analysis creates inconsistency where profit attribution depends on recognised establishment activities. Sequence testing evaluates reform proposals across multiple linked principles simultaneously, for instance, applying Pillar One's formulary residual profit split not only within ALP's comparative paradigm but also against inter-nation equity metrics derived historically from source-residence compromises (Buriak, 2024, secs 5.2.1, 5.3.1; International Monetary Fund, 2019, paras. 34, 88; Otto & Van de Vijver, 2022, secs 3.1, 3.2, 3.3; Hongler, 2019, sec 11.1). Inconsistencies arising between allocation logic and reciprocity norms signal structural incongruence that cannot be resolved through minor reinterpretation alone.

The fourth element incorporates normative evaluation lenses drawn from international distributive justice theory as adapted for tax contexts (Buriak, 2024, secs 5.3.1, 5.3.2; Gadžo, 2018a, secs 5.1, 5.2; Hongler, 2019, secs 2.2.3, 8.3, 11.2, 11.4; Otto & Van de Vijver, 2022, sec 3.3). Criteria include fairness (equitable burden distribution between jurisdictions), neutrality (the avoidance of unjustified distortions in enterprise behaviour and competitive conditions between economically comparable taxpayers), and legitimacy (compatibility with treaty-based consent structures). Here, ability-to-pay principles are subjected to digital-specific scrutiny: testing whether they remain

assignable when economic capacity manifests via globally distributed intangibles. Failure under these lenses signals deficiencies that doctrinal rewording may not remedy.

For the purposes of this dissertation, neutrality is assessed primarily from the perspective of enterprise investment, location, organisational and market-entry decisions. This analytical perspective does not assume that the legal incidence of a tax coincides with its ultimate economic incidence, which may be distributed among shareholders, employees, consumers or other economic actors.

Another critical part involves coding operational feasibility constraints into the framework. Administrability thresholds function alongside normative tests: if an adaptation yields theoretical results consistent with reconstructed principles but collapses under realistic enforcement conditions, due to information asymmetry or excessive complexity, it is marked impractical within the system design logic (Calijuri, 2022, p. 7; Escribano, 2019, pp. 60, 226–227; Gadžo, 2018a, secs 5.3, 7.3.3; Hongler, 2019, sec 2.2.3; OECD, 2015a, p. 135). Comparative method outputs feed into this by revealing varied domestic capacities and willingness to implement complex profit splits or granular nexus assessments.

Integration of reform model overlays completes the architecture. Each major proposal, OECD Pillar One Amount A allocations (OECD, 2023a), Pillar Two minimum tax standards (OECD, 2021), UN Model Article 12B gross-based ADS taxation (United Nations, 2021), is parsed through matrices, scenarios, sequence tests, normative lenses, and feasibility filters consecutively. Reform models are classified according to their cumulative performance across these stages rather than through a mechanical pass-fail rule. Where identified inconsistencies can be accommodated without altering the relevant doctrinal core, the model may remain within the sphere of adaptation; where failures reveal structural incompatibility with one or more foundational principles, the model is classified as partially or more comprehensively transformative.

This dissertation establishes that embedding principle-specific mapping within multi-stage scenario testing presents a scientifically rigorous means of assessing adaptability versus transformation claims. The novel contribution lies in operationalising doctrinal concepts directly alongside empirical stressors emblematic of intangible-intensive commerce within a single evaluative structure. By making tensions explicitly visible, such as where formulary allocations clash with ALP integrity or where significant

economic presence lacks benefit-theory correlation, the framework enables precise classification grounded in both legal-theoretical and applied-economic reasoning.

Additionally, integrating distributive justice metrics as part of core evaluative stages ensures that reforms are not merely administratively feasible but also normatively defensible within the broader international tax order's guiding values. This approach goes beyond descriptive assessment by requiring reforms to withstand layered scrutiny across independent yet interconnected criteria set, a methodological improvement over single-axis evaluation common in policy-driven analyses. Finally, because the analytical framework is rooted entirely in accepted sources, model conventions, OECD guidelines, multilaterally endorsed principles, it avoids speculative norm creation detached from recognised authority bases.

Systemic consistency is preserved by ensuring that any classified adaptation can be transposed back into existing treaty structures without creating unresolved interpretative margins likely to generate disputes before tribunals or arbitration bodies. In contrast, models falling into transformation categories within this framework can be clearly documented as incompatible with current regimes except through renegotiation or new multilateral codification, a distinction crucial for maintaining transparency in academic recommendations and for informing policymakers seeking principled pathways for reform under digital economy pressures. Historic controversies over aligning nexus rules with value creation demonstrate how deep-seated treaty design legacies influence adaptation capacity even today; attempts at semantic extension of traditional source rules for digital business valuation reveal persistent frictions between doctrinal continuity and novel economic presence concepts (Dean, 2020, pp. 3–4; Escribano, 2019, secs 4.02[A], 4.03; Gadžo, 2022, sec 2.1; Jogarajan, 2018, pp. 253–255; Martín Jiménez, 2020, secs 3.1, 3.2; OECD, 2018, paras. 376–379).

Having outlined the structure and operational logic of the analytical framework, it is necessary to recognise the inherent boundaries within which a principle-driven methodology operates. While the multi-stage mapping, scenario testing, and normative evaluation mechanisms offer a rigorous lens for classifying reforms as adaptations or transformations, their application is inevitably shaped by constraints in source material, empirical accessibility, and jurisdictional variability. Section 3.4 turns to a critical examination of these limitations, highlighting where doctrinal assumptions, data

availability, and contextual heterogeneity may influence or restrict the predictive and normative power of the framework, and situating the subsequent analysis within these realistic bounds.

3.4 Limitations of Research

A principle-driven methodological design, while offering structured clarity, inevitably grapples with inherent limitations shaped by both the doctrinal nature of international taxation research and the evolving features of digital economy case studies.

One constraint arises from the reliance on normative and interpretative sources that themselves embody the political compromises of their drafting context. As addressed in Section 3.3, model conventions, OECD guidelines, and UN commentary articulate principles like the arm's length standard or permanent establishment nexus in formulations that were negotiated with specific geopolitical balances in mind (Gadžo, 2018a, secs 2.2.7, 4.3, 4.4; Genschel & Rixen, 2015, pp. 159–161; Jogarajan, 2018, pp. 253–255; Lennard, 2009; Ruiz Colmenares, 2023). This means the interpretative elasticity tested in the analytical framework remains tethered to language and assumptions whose legitimacy has not been recalibrated for intangible-dominated value creation, potentially narrowing the scope for adaptation without textual revision. Such reliance can lead to an overestimation of doctrinal stability where political acceptance masks conceptual obsolescence.

Another important limitation lies in the asymmetry between theoretical reconstruction exercises and empirical validation capacity. Although scenario-based stress tests were integrated into this thesis to simulate conditions such as platform-driven residual profit generation or data harvesting without local asset presence, these simulations inevitably simplify complex operational realities of multinational enterprises' global governance networks. In practice, obtaining granular transactional data across multiple jurisdictions, particularly concerning intangible transfer chains, remains problematic due to confidentiality barriers and data non-disclosure prevalent even among cooperative regimes. Without comprehensive access to such datasets, comparative functional analyses between ALP adaptations and formulary allocation outcomes rest on stylized modelling rather than full evidentiary reconstruction. This methodological

dependence risks skewing classification outcomes toward adaptation or transformation categories based more on doctrinal plausibility than empirical certainty.

Jurisdictional heterogeneity introduces another challenging boundary for universal applicability of findings. The comparative legal method employed here revealed substantial divergence in how states construe constructs like “value creation” under automated digital services taxation or “significant economic presence” nexus expansions (Bal, 2018, secs 2, 6; Hendriyetty et al., 2023, sec 3.3.3; Martín Jiménez, 2020, secs 3.4, 3.5; OECD, 2018, paras. 342, 350–353; Ruiz Colmenares, 2023). These divergences are not simply implementation varieties but often rooted in domestic constitutional constraints, administrative capacities, or broader fiscal policy objectives tied to national development strategies. As a result, reform proposals evaluated against reconstructed principles may perform coherently within certain configurations yet fail when transposed into systems with fundamentally different legal architectures or socio-economic priorities. The diagnostic classifications must therefore be interpreted as conditional on a baseline degree of treaty commitment and administrative competence that is far from universally present.

The dependency on treaty language presents further limitations where unilateral measures, such as gross revenue-based DSTs, operate outside multilateral coordination structures (Collier, 2023, secs 3.2.4, 3.3.2; Harpaz, 2021, pp. 80, 85; IMF, 2019, paras. 26, 28; OECD, 2018, paras. 414–416, 421; OECD, 2020c, paras. 46–48, 301–302; Schön, 2018, sec 10). While doctrinal analysis can test such measures against benefit theory or neutrality norms abstractly, their ultimate viability hinges on cross-border interactions beyond legal doctrine alone, including retaliatory measures and negotiation dynamics within forums like the OECD Inclusive Framework. Because these political contingencies lie outside strictly legal evaluation yet heavily influence whether an adaptation holds operationally, there exists a methodological gap between principle-consistent classification and real-world practical feasibility.

Temporal instability of technological drivers forms another axis along which limitations accrue. Many definitional models for user participation value or marketing intangibles allocation keys are premised on current dominant digital business paradigms (Aslam & Shah, 2020, pp. 189, 191–192; Chand, 2019, pp. 1025–1026; Grinberg, 2018b, pp. 83–84; OECD, 2019c, paras. 18–19, 28; Shaviro, 2019, p. 3). However, shifts in

platform architectures, monetisation strategies, or underlying technologies could alter profit-generation mechanisms faster than treaty renegotiation cycles can adapt. This lag risks rendering otherwise coherent adaptations obsolete before they achieve broad codification, particularly where narrowly specified allocation metrics cannot accommodate emergent forms of economic engagement absent substantial re-design.

In addition, an epistemic limitation emerges from the interdependence of principles within international tax law architecture. While systemic consistency-testing sequences were deployed to identify ripple effects, for example between nexus redefinition and ALP functional analysis, these remain contingent upon assumptions about how legal doctrines interact under coordinated application across jurisdictions (Elliffe, 2020, secs 2, 3; Gadžo, 2018a, sec 7.4.1.3; Monsenego, 2022, sec 4.2; OECD, 2018, p. 176 note 9; Ring, 2007, pp. 49–50, 84–93). Variations in domestic interpretation of ostensibly identical treaty provisions can fracture such coordination, meaning that coherences observed at analytical level may disintegrate under heterogeneous adjudicative contexts. This variability curtails predictive certainty about whether principles classified herein as adaptable will retain integrity once embedded into diverse legal ecosystems.

The framework's normative lenses also introduce subjectivity constraints despite grounding in distributive justice theories recognised within tax scholarship (Buriak, 2024, secs 5.3.1, 5.3.2; Hongler, 2019, secs 1.3, 7.7.3; Kaufman, 1998, p. 172; Lindsay, 2019, p. 120; Magalhães, 2018, p. 523; Ring, 2007, pp. 49–50). Fairness assessments necessarily balance quantitative equity outcomes with qualitative judgments about legitimate jurisdictional claims; such judgment calls remain sensitive to scholarly perspective and weighting preferences between competing justice theories (e.g., benefit vs ability-to-pay). This sensitivity implies that alternative evaluators employing similar methods but privileging different distributive criteria might offer divergent classification results for identical reform models.

Moreover, operational feasibility filters embedded in evaluative stages highlight capacity disparities but cannot fully anticipate behavioural responses from taxpayers and administrations once reforms are enacted. Even when administrability appears sound *ex ante*, based on existing compliance infrastructures, actors may alter structures or strategies specifically to exploit untested margins within new rulesets. Anticipating such

adaptive behavior exceeds the remit of doctrinal-comparative synthesis absent longitudinal post-implementation data; hence predictions about sustained coherence carry inherent uncertainty.

It should also be acknowledged that applying the arm's length standard has grown more complex in light of integrated corporate group operations and unique intangibles, making both conceptual framing and practical enforcement more demanding (Kobetsky, 2011, pp. 74–75, 83; Olbert & Spengel, 2017, pp. 10–11; Screpante, 2024, sec 3.2; Vann, 1998, p. 783). This difficulty not only compounds measurement challenges noted earlier but also reinforces the sector-wide pattern in which long-standing standards strain under structural shifts they were never designed to accommodate. Furthermore, some authors have noted that digitalisation exacerbates structural mismatches between substantive taxing rights based on value creation concepts and actual enforcement capabilities when physical presence is no longer a prerequisite for market engagement; this disconnection heightens concerns about administrability and effectual jurisdictional reach (Escribano, 2019, sec 4.02; Gadžo, 2018a, sec 7.3.2.3.3; Santos & Rocha, 2017, secs 2.05, 2.06; Senyk, 2022, sec 9.1; Traversa, 2022, sec 1.3.1.2).

This dissertation establishes that while principle-reconstruction combined with multi-layer scenario testing offers rigorous means for classifying reforms as adaptations or transformations, any resulting determinations must be read within these contextual limits: constrained source material shaped by historical compromise; restricted empirical granularity; jurisdictional diversity undermining universal transposability; extra-doctrinal political contingencies influencing actual uptake; technological change outrunning codification; heterogeneous domestic interpretation fragmenting system coherence; subjective inflections within fairness criteria application; and unpredictability in behavioural responses post-enactment. The novel contribution lies not only in systematically documenting these limits but in integrating awareness of them into cautious framing of reform evaluation outputs, thereby maintaining intellectual integrity while acknowledging principle-driven scientific rigor alone cannot erase uncertainties intrinsic to applying international tax theory under digital economy conditions (Bal, 2018, sec 8; Christians, 2017, pp. 6–11; Collier, 2023, sec 5; Hongler, 2019, secs 2.1.2, 11.1, 13.1; Magalhães, 2018, sec 2.1).

Despite these methodological and practical constraints, the preceding analysis provides a structured foundation for evaluating core doctrines of international taxation. With awareness of empirical, doctrinal, and technological limitations, the subsequent chapters systematically examine the comprehensive contextual background, defining international taxation and tracing the historical evolution of its principles from the League of Nations era to the current challenges posed by globalization and the digital economy and the fundamental principles - benefit, residence, source, and ability-to-pay - assessing their conceptual underpinnings, historical evolution, and adaptive capacity within digital economy contexts. This principled review establishes the framework for determining how traditional norms can be reconciled with contemporary cross-border value creation.

4 CONTEXTUAL BACKGROUND

4.1 Definition of International Taxation

International taxation, in its doctrinal essence, refers to the body of rules and normative principles governing how states can impose tax on income or gains that have connections to more than one jurisdiction, whether through cross-border activities or the presence of foreign elements in transactions. At its core, this framework stems from two fundamental concepts: jurisdiction to tax and methods for avoiding juridical double taxation.

Jurisdictional claims are typically justified through the principles of source and residence, each grounded in differing notions of economic allegiance and fairness. Source-based taxation attributes taxing rights to the state where income is generated, while residence-based taxation allocates these rights to the state of the taxpayer's legal residence. The interaction between these principles creates overlapping claims, resolved historically by double tax treaties that seek equilibrium between fiscal sovereignty and equity in shared tax bases. From an international law perspective, a genuine or minimum connection between the taxing state and the income in question has often been argued as a requisite for legitimate jurisdiction (Baker, 2020, sec 11.3; Gadžo, 2018a, secs 2.2.2, 2.2.4; Gadžo, 2018b, secs 1, 2.2.1, 2.2.2; Kokott, 2022, sec 1.3; Monsenego, 2012, sec 2.3.2). This link is interpreted variably across domestic legislations and treaty practice,

reflecting diversity in normative positions but also exposing fault lines when these regimes confront novel forms of cross-border economic activity.

Traditional allocation formulas rely heavily on physical presence tests, such as permanent establishment provisions, which presuppose tangible assets or personnel within a jurisdiction. As explored previously, this assumption falters under conditions where value creation derives predominantly from intangible assets and virtual operations. Historically, the international tax regime expanded through bilateral treaties aimed at preventing double taxation while facilitating cross-border trade and investment. The underlying objective was not purely technical; it was anchored in the principle that fair taxing rights allocation should prevent both double taxation and double non-taxation (Avi-Yonah, 1997, 2015; De Lillo, 2018, sec 1.2.2.2; Gil García, 2019, sec 3.1; Muster, 2023, pp. 547–551). These treaties operationalize such fairness through mechanisms like credits, exemptions, or reduced withholding rates. The single tax principle emerged within scholarly debate as an extension of fairness norms, proposing that each item of income ought to be taxed once globally, either at source or residence, but never omitted entirely from taxation (Avi-Yonah, 1997; Avi-Yonah, 2015, pp. 306-310; De Lillo, 2018, sec. 1.2.2; Gil García, 2019, secs. 3, 3.1; Muster, 2023, p. 271). Yet, contemporary critiques highlight that treaty networks designed with goods trade in mind lack clear historical justification for their application to services and intangibles, creating doctrinal gaps (Escribano, 2019; Gadžo, 2018a, secs. 6.3, 6.3.1.2; Kobetsky, 2011; Li, Bao & Li, 2019, p. 1124; Miller, 2015, secs. 3.10, 4.1.1, 4.4).

The systemic view developed by commentators frames international taxation not as a comprehensive enforceable regime but as a loosely coherent set of principles shaped by pragmatism and political compromise rather than rigid theoretical formalism (Christians, 2017, pp. 6-11; Gil García, 2019, secs. 4, 4.1, 5; Graetz, 2001b; Graetz & O'Hear, 1997, pp. 1090-1094, 1104; Jogarajan, 2018, pp. 82, 251; Rosenbloom, 2000, pp. 137-166). This flexibility allows adaptation over time; however, it also results in uneven treatment across jurisdictions. Fairness and effectiveness - two policy principles endorsed by institutions like the OECD - serve here as evaluation criteria rather than binding rules. It is plausible to suggest that this normative openness permits experimentation but also risks incoherence when fundamental reforms, such as those addressing digital economy phenomena, are introduced without harmonized interpretive baselines.

Within more recent reform contexts such as OECD Pillar One proposals, “international taxation” takes on an expanded meaning by incorporating formula-based profit allocations beyond traditional nexus constraints for certain global enterprises. By shifting certain residual profits into market jurisdictions irrespective of physical presence requirements (Avi-Yonah & Lempert, 2023, sec. 4.2; Elliffe, 2020, secs. 4.2.1, 4.2.2; Harpaz, 2021, pp. 69–71; OECD, 2019c, paras. 24, 64–65; OECD, 2020a, Annex 1, paras. 10–11, 15; OECD, 2020b, paras. 3, 6–7, 186), these measures challenge earlier configurations tied closely to territoriality doctrines. Inter-nation equity, or inter-jurisdictional equity, is thereby reinterpreted to balance national gains and losses from cross-border commerce by ensuring an equitable portion of residual profits is assigned according to revised criteria (Buriak, 2024, secs. 5.3.1, 8.7; Gadžo, 2018a, sec. 5.1.3; Hongler, 2019, sec. 11.3.1; OECD, 2015a, para. 12; Otto & Van de Vijver, 2022, sec. 3.4.1.1). This represents not an abandonment but a transformation of long-standing distributive ideals within international taxation.

The inclusion of revenue-based taxes on automated digital services income further complicates definitional boundaries (Aslam & Shah, 2020, pp. 220–221; Buriak, 2024, secs. 7.2.2, 7.2.4; Harpaz, 2021, pp. 82–83, 87; Hendriyetty et al., 2023, p. 71; OECD, 2015a, paras. 268–271). Such measures pursue economic rents specific to location without necessarily aligning with conventional definitions of “carrying on business” under treaty law. Here arises a tension: should these unilateral taxes form part of “international taxation” when lacking multilateral codification? A narrow definition might exclude them; yet substantively they serve similar purposes, allocating taxing rights relative to economic activity spread over multiple jurisdictions.

From a conceptual angle aligned with this dissertation’s methodological structure, international taxation can be defined not merely descriptively but normatively: it constitutes a dynamic set of legal principles guiding allocation of taxing rights over cross-border income with embedded commitments to fairness, effectiveness, avoidance of double taxation/non-taxation, and respect for fiscal sovereignty boundaries. This framing situates definitional clarity as essential for principled evaluation in later sections. Without anchoring reform debates within precise theoretical definitions, policy innovations risk incoherence or conflict with established doctrine.

This research demonstrates that current usage often blurs doctrinal limits by conflating domestic anti-avoidance devices with internationally coordinated principles. The novel contribution here lies in proposing a reconstructed definition that explicitly distinguishes between internationally agreed norms (e.g., source/residence coordination through treaties) and unilateral extensions motivated by base erosion concerns but lacking embedded reciprocity mechanisms. This distinction enables systematic consistency-testing when reforms such as Pillar One or national digital service taxes claim compliance with international tax law standards while structurally departing from them.

While some commentators emphasize treaty-based coordination as the essence of international taxation, others note that even absent treaties remains a minimal set of personal and territorial limits on jurisdiction rooted in international law practice (Avi-Yonah, 2004, pp. 498–500; Braumann, 2020, pp. 747–750; Gadžo, 2018a, secs. 2.2.1, 2.2.2, 2.2.4; Gadžo, 2018b, secs. 1, 2.2.2, 4; Kokott, 2022, sec. 1.3). In addition, historical analyses indicate that no prohibitive rules under public international law prevent cases where overlapping jurisdictional connections give rise to actual double taxation; rather, states have retained discretion provided some nexus exists between taxing authority and taxpayer or income (Baker, 2020, sec. 11.3; Gadžo, 2018a, sec. 2.2.2; Gil García, 2019, sec. 3.3; Hongler, 2019, sec. 4.3.2.8.3.4; Kokott, 2022, sec. 1.3; Monsenego, 2012, secs. 2.3.3, 2.3.4, 8; Norr, 1962, pp. 431, 438; Ruiz Colmenares, 2023).

Ultimately, international taxation, as reconceived within this analytical framework, emerges as both a legal-technical concept anchored in treaty practice and a normative project responsive to changing modes of cross-border value generation. By treating definitional precision as foundational rather than incidental, subsequent analysis can rigorously assess adaptability or necessary transformation when confronting intangible-intensive economies that erode classical nexus-based structures.

Understanding international taxation as a dynamic set of principles governing cross-border income allocation provides the necessary foundation to trace its historical development. While Section 4.1 defined the normative and legal contours of taxing rights, the evolution of these principles reveals how residence and source doctrines, the arm's length principle, and distributive norms were shaped over time to address practical challenges such as double taxation, economic allegiance, and fairness. Section 4.2 examines the historical trajectory of international tax principles, highlighting how early

treaty practice and model conventions established the core doctrines that underpin today's responses to digitalised and intangible-intensive business activities.

4.2 Historical Evolution of International Tax Principles

The emergence of international tax principles in the early twentieth century was closely intertwined with concerns about juridical double taxation, which impeded cross-border capital flows and created potential distortions in economic allocation. Early post-World War I commercial relations revealed the inadequacy of purely domestic rules for addressing income that straddled multiple jurisdictions.

The 1920 Brussels conference of the International Chamber of Commerce provided an initial transnational forum to articulate these challenges, formally prompting the League of Nations to commission a foundational study into possible global solutions (Graetz & O'Hear, 1997, p. 1067, note 185; United Nations, 1980, pp. 6-7). This engagement was less an exercise in academic theory than a pragmatic attempt to stabilize growing economic interdependence through agreed conventions on taxing rights. The subsequent 1923 Report by the four economists appointed by the League's Financial Committee ("1923 Report") (League of Nations, 1923) became a formative moment, articulating a compromise between residence and source taxation models. At its core, the report endorsed exemption of certain income from source tax where residence state taxation applied, thereby aiming to eliminate duplicated claims over the same base (League of Nations, 1923, pp. 39-42, 45-51; Avi-Yonah, 2023a, pp. 428-429; Graetz & O'Hear, 1997, pp. 1076-1078; Jogarajan, 2018, pp. 19-20; Kobetsky, 2011, pp. 112-113; Schaffner, 2013, pp. 29-31). The 1923 Report's framing reflected prevailing economic allegiance theories but also unsurprisingly prioritized the administrative capacities and interests of capital-exporting states. From this early period, principles were forged through deliberate balancing acts rather than absolute adherence to one doctrinal position.

During treaty practice expansions through the mid-twentieth century, negotiators incorporated reciprocal arrangements that operationalised the 1920s compromise without fully resolving underlying conceptual disagreements. Instead, they created a workable network of bilateral treaties that blended relief from double taxation with mutual restraint in aggressive jurisdictional assertions. In doctrinal terms, two primary allocation bases emerged: residence principle (taxation by the state where a taxpayer is resident) and source principle (taxation by the state where income is generated). This binary was not

evenly weighted in all contexts; developing economies often pressed for stronger source-based claims, seeking to tax foreign investors' local activities.

Industrialized nations frequently sought to protect their multinationals from extensive foreign source taxation, resulting in formulaic treaty clauses that standardised permanent establishment thresholds and profit attribution methods. These arrangements assumed economic activity could be located reasonably within territorial boundaries via tangible presence indicators, premises, staff, equipment, and that contractual relations reflected actual profit-generating functions (Avi-Yonah, 1997, pp. 517–518; Escribano, 2019, sec. 3.03[C]; Graetz & O'Hear, 1997, pp. 1088–1089; Kobetsky, 2011, pp. 124–125, 143–144; Li, Bao & Li, 2019, pp. 1118–1120; Miller, 2015, secs. 1.1, 4.1.1; Screpante, 2021, sec. 2; Tavares, 2016, secs. 1, 4). This assumption was held under conditions where trade in goods dominated cross-border exchange and services or intangibles were relatively immobile. Normative expressions such as “equitable distribution of burdens” recurred in both academic commentary and intergovernmental negotiations, highlighting distributive fairness rather than exhaustive coverage as a guiding ideal.

Across the post-war decades, incremental refinement materialized through model conventions published by international organizations, notably the OECD Model Tax Convention (OECD, 1963) and later the UN Model Double Taxation Convention (United Nations, 1980), which codified widely accepted principles while allowing space for political bargaining. The OECD Model generally favored residence-based allocation reflecting its membership composition; conversely, the UN model incorporated modifications granting wider taxing rights at source to accommodate developing countries' revenue interests (Ash & Marian, 2020, p. 166; Bianco & Tomazela Santos, 2016, sec. 1; Brauner, 2016, p. 981; Goradia, 2020, sec. 13.2.2; Hongler, 2019, sec. 4.3.4.3.3; Kobetsky, 2011, pp. 50, 106; Magalhães, 2018, p. 510; United Nations, 1980, p. 6; Vann, 1998, p. 724).

By the late twentieth century, globalisation and deregulation reshaped these frameworks' context. Growth in multinational enterprises' integrated value chains have amplified mismatches between legal form and economic substance. In transfer pricing law, reliance on the ALP remained dominant but grew contested as financial engineering and intra-group transactions facilitated base erosion. ALP functioned under an implicit

consensus that market outcomes among unrelated parties provided appropriate benchmarks for related-party dealings (Avi-Yonah, 1996, p. 1340; Buriak, 2024, secs. 6.2.2, 6.2.5; Escribano, 2019, sec. 3.01[C]; Greil, 2019, p. 3; Grinberg, 2018a, p. 2; OECD, 2022a, paras. 1.2, 1.6, 1.33). As long as tangible production factors anchored value creation geographically, this approach sustained general acceptance despite acknowledged measurement difficulties. However, academic discourse began registering concern over new business models exploiting digital channels, intangible assets mobility, and minimal physical presence thresholds.

From the mid-1990s onward, cross-border e-commerce challenged traditional nexus requirements embedded in tax norms (Avi-Yonah, 1997, pp. 531–532; Bauer et al., 2019, pp. 1–2; Cockfield, 2014, p. 934; Collier, 2023, secs. 2, 2.1; Hendriyetty et al., 2023, pp. 151, 258; Tillinghast, 1996, p. 524; U.S. Department of the Treasury, 1996, sec. 7.1.5). Calls emerged for adaptations ranging from targeted anti-avoidance measures within existing structures to wholesale redesigns untethered from physical presence tests. Notably, such pressures reproduced patterns seen historically: challenges arising from altered modes of economic integration lead first to fragmented unilateral responses before coalescing into more generalized frameworks. Just as early bilateral treaties accreted into loosely harmonised networks via model conventions, twenty-first century debates on digitalisation have moved towards institutionally brokered multilateral initiatives like the OECD’s Base Erosion and Profit Shifting (“BEPS”) project (OECD, 2013a) and subsequent Pillar One and Pillar Two proposals (OECD, 2020b, 2020d). These initiatives confront similar tensions between codifying consensus around high-level normative ideas, such as “value creation”, and ensuring operational clarity in application across diverse national systems.

This dissertation establishes that historical cycles display a recurring gap between adoption of guiding narratives at political levels and their rigorous conceptual formulation within legal doctrine. For example, “full taxation” has been positioned rhetorically as a principle analogous to double taxation relief mechanisms but often lacks grounding beyond avoidance of less-than-single incidence taxation (Mason, 2020, pp. 370–376, 385–388; Parada, 2021, pp. 730–732, 747–752, 764–766; Ruiz Colmenares, 2023, sec. 2; Traversa, 2022, sec. 2.2). As with earlier compromises over residence versus source allocation, vague formulations risk perpetuating indeterminacy or tilting outcomes toward dominant negotiating blocs’ preferences. From this longitudinal perspective,

contemporary reforms can be situated not as breaks with precedent but as continuations of adaptive processes wherein functional shifts in economic organization prompt recalibration of jurisdictional claims and methodological tools. What differentiates current conditions is the diminished utility of traditional allocation proxies when intangible value drivers transcend physical geography entirely (Aslam & Shah, 2020, pp. 189–190; Autio, Mudambi & Yoo, 2021, pp. 3–16; Collier, 2023, secs. 2, 4; Elliffe, 2020, sec. 3.1.2; OECD, 2018, paras. 33–34, 384–385; Valente, 2018). This tension is amplified when arm’s length benchmarks fail to reflect production structures dispersed across global value chains; unitary approaches using formulary apportionment have been proposed but avoided within mainstream BEPS reform largely because they require politically charged negotiation over formula variables rather than reliance on transactional comparability tests (Buriak, 2024, secs. 6.2.3, 6.2.6; Greil, 2019, pp. 27–28; IMF, 2019, para. 82; Kobetsky, 2011, pp. 419–420; OECD, 2013b, p. 14; OECD, 2022a, paras. 1.22–1.23).

Historical commentary has noted that while voluntary consensus among states formed one of twentieth-century international law’s unexpected successes by creating a coherent tax treaty network grounded in those early League-era principles, this stability has always coexisted with structural weaknesses exposed when economic conditions changed drastically; such duality, enduring cooperation coupled with inherent fragility, suggests that newer pressures like digitalisation may simply be repeating an older cycle rather than representing a fundamentally new policy challenge (Andersson, 2018, pp. 1–2; Avi-Yonah, 1996, pp. 1303–1304; Avi-Yonah, 2000, p. 169; Brauner, 2016, pp. 975–976, 984; Dean, 2020, p. 12; Magalhães, 2018, pp. 510–511). Indeed, some authors point out that foreign tax credit mechanisms or exemptions could be adopted unilaterally even prior to formal treaty negotiation; such steps reveal how political preferences about residence or source priority were not uniformly contingent on multilateral bargaining outcomes (Cui, 2021, p. 28; Avery Jones, 2012, pp. 11–13; Avi-Yonah, 2013; Brauner, 2003, pp. 308–309; Graetz & O’Hear, 1997, pp. 1022, 1045–1046; Muster, 2023, p. 246; Ring, 2007, pp. 32, 34–35). Early bilateral agreements over registration or inheritance duties had already experimented with territoriality concepts linked to sovereign taxing rights limited by geographic borders; these antecedents show how notions later embedded in “source” rules developed from sector-specific accommodations long before modern treaty harmonisation (Avi-Yonah, 2023a, sec. 2; League of Nations Fiscal Committee,

1946; Muster, 2023, p. 166; Savitskiy, 2021, pp. 574–577). The fact that scholars across jurisdictions now tend to agree that the 1923 Report effectively laid down the architecture for today’s international tax regime reflects how enduring its influence has been on treaty drafting techniques and institutional coordination methods (Ault, 2013, p. 1195; Avi-Yonah, 2005, pp. 319–322; Avi-Yonah, 2023b, pp. 427–431; Jogarajan, 2020, pp. 14–15, 27; Muster, 2023, pp. 1–3; Vann, 2020, sec. 3).

By tracing these historical developments systematically, from League-era foundations through model convention proliferation to digital economy challenges, this research demonstrates how embedded structural compromises have shaped both stability and constraint within international tax law. The novel contribution here lies in identifying historical patterns that inform principled reconstruction: namely that durable reforms tend to arise where broad normative agreement coincides with administratively implementable standards tethered to observable economic connections. This insight will guide later evaluation of whether proposed digital economy measures possess analogous balancing features capable of sustaining legitimacy over time.

The historical evolution of international tax principles illustrates that foundational doctrines, from residence and source allocation to the arm’s length principle, were constructed around tangible economic activity and geographically fixed points of commercial presence. These frameworks functioned effectively in industrial-era contexts where value creation aligned closely with observable physical factors. However, the rise of digitalised business models introduces structural shifts that challenge these assumptions: value can now be generated collaboratively across borders, user interactions contribute directly to profits, and intangibles such as data and intellectual property dominate revenue streams. Thus, it should be examined how the emergence of the digital economy destabilizes traditional nexus and benefit-theory constructs, highlighting the interpretative strain these developments place on existing principles and the subsequent need to assess whether adaptation or transformation of international tax norms is required.

The transition from industrial to digital modes of economic organization represents not merely a technological shift but a structural transformation in the sources and geography of value creation. As discussed, earlier international tax norms were anchored to assumptions about tangible production factors and geographically fixed points of commercial presence. The digital economy alters all core variables underpinning

these assumptions: production may depend on algorithmic processes, distribution occurs through virtual channels, and consumption can be globalised without proportional local infrastructure. In this altered context, conventional nexus rules, built around permanent establishment criteria relying on physical place, encounter interpretative strain; what emerges is a mode of commerce where intangibles, particularly data and intellectual property assets, form dominant profit drivers. These intangibles may be developed collaboratively across jurisdictions or extracted directly from user interactions within platforms operating independently of geographic proximity (Aslam & Shah, 2020, pp. 189–191; Collier, 2023, sec. 4; Hendriyetty et al., 2023, pp. 6–7; Olbert & Spengel, 2017, sec. 5.2.3; OECD, 2015a, paras. 2, 248, 253–254; OECD, 2018, paras. 33–35).

User participation manifests not purely as passive consumption but as active generation of economically valuable inputs, reviews, uploads, clickstreams, which platforms convert into marketable metrics and targeted advertising opportunities. This process spatially decouples value from the location of production facilities or corporate headquarters. Traditional treaty provisions attribute taxing rights based on where such facilities or offices exist, leaving gaps when value accrual bears no necessary connection to those sites. OECD’s treatment of these developments under Action 1 frames the problem partly as one of nexus failure: companies can maintain a “significant digital presence” in a jurisdiction without satisfying any physical threshold that would trigger taxation under current rules (Escribano, 2019, secs. 4.02[A], 4.02[B]; OECD, 2013b, p. 14; OECD, 2015a, paras. 3, 248; OECD, 2019c, paras. 4, 12, 50–51). With marketable location-relevant data gathered from local users but revenue booked elsewhere, source states encounter systematic difficulties aligning taxable profit with domestic economic contribution. Attempts to address this mismatch have produced divergent prescriptions. The UK’s “user participation” model seeks direct recognition of user-generated value in profit allocation keys; US proposals emphasize marketing intangibles as central allocation criteria (Bauer et al., 2019, pp. 2, 22; Collier, 2023, pp. 197, 204; Greil, 2019, p. 23; IMF, 2019, para. 89; OECD, 2019c, paras. 18, 24, 30, 48); G24 economies advocate reintroduction of concepts like “Digital PE” to capture significant economic presence regardless of tangibility (Greil, 2019, pp. 24–25; OECD, 2019c, paras. 50–51). These approaches illustrate marked disagreement over both normative framing (what counts as value creation) and operational design (how to measure and allocate such value).

From an analytical standpoint, the nexus concept becomes unstable when applied to digital activities whose territorial footprint is virtual rather than physical. The benefit theory, traditionally used to justify source-based taxing rights by linking taxation to benefits provided by the state to the taxpayer (infrastructure, legal systems), appears adaptable if broadened to include services supporting digital operations, such as telecommunications networks or regulatory protections for online transactions (Chand, 2019, pp. 1025–1026; Escribano, 2019, sec. 2.02[B]; Gadžo, 2018a, sec. 6.4.3; Hongler & Pistone, 2015, sec. 3.3; OECD, 2015a, para. 32; Traversa, 2022, sec. 2.2.2). Yet, incorporating these non-physical benefits into legal doctrine requires rethinking evidentiary thresholds and allocation mechanics within double tax treaties. Here lies an important methodological question for principle-driven reconstruction: whether adaptation is feasible through reinterpretation of existing theoretical bases or whether transformation demands drafting new categories untethered from traditional definitions of permanent establishment.

Current fiscal sovereignty claims reflect friction between unilateral expediency and multilateral coherence. Some states have introduced direct taxes on revenues from automated digital services targeting non-resident firms that engage substantially with domestic users despite lacking local presence. While politically attractive, such measures pose coordination problems within treaty networks: they risk double taxation unless corresponding credits or exemptions are granted abroad, yet they operate without embedded reciprocity mechanisms by design.

The absence of consensus over these unilateral responses further complicates negotiations toward OECD Pillar One’s formulaic residual profit reallocations. Pillar One attempts structural reform by divorcing new nexus rules from physical presence entirely and assigning portions of residual global profits to market jurisdictions using agreed formulas (Buriak, 2024, secs. 4.1, 6.3.1; Elliffe, 2020, secs. 4.2.1, 4.2.2; Harpaz, 2021, p. 70; OECD, 2019a, paras. 10, 51–52; OECD, 2020b, paras. 3, 7, 10, 497; Screpante, 2021, sec. 4). Whether this constitutes doctrinal adaptation or wholesale transformation hinges on definitional choices around value creation made in its final implementation phase, a subject central to subsequent evaluation chapters. Examining the trajectory from early digitization into platform-dominated markets shows how integrated network effects shape competitive advantage and hence taxable profit flows. Once a critical mass of users interacts within a platform environment, data accumulation enables targeted marketing

and pricing strategies unavailable to competitors without similar datasets (Aslam & Shah, 2020, pp. 193–194, 200; Buriak, 2024, secs. 3.4.3, 4.3.2.2; Chen, 2020, pp. 4, 17; Greil, 2019, pp. 15–17; OECD, 2015a, paras. 138, 178; OECD, 2018, paras. 52, 140, 182–184, 197).

The monetisation step translates behavioural data into revenue streams detached from production geography, amplifying tension between economic accrual location and legal allocation under current norms. Such detachment is not incidental but intrinsic to digitally mediated business models, thus persistent unless addressed structurally in international taxation principles. Incremental fixes, such as adding supplementary allocation factors within ALP frameworks, face practical limits because arm’s length comparability requires market analogues that rarely exist for unique platform datasets. The novel contribution here lies in recognising big data’s role as an intangible parallel to traditional research and development (“R&D”) functions: it demands investment (in algorithms, infrastructure) and yields outputs with long-term commercial utility akin to patented inventions (Aslam & Shah, 2020, pp. 195–196; Becker, Englisch & Schanz, 2019, p. 19; Buriak, 2024, sec. 3.4.3; Calijuri, 2022, pp. 1–2; Olbert & Spengel, 2017, pp. 7, 35–36; OECD, 2015a, paras. 152, 166). Yet, current transfer pricing guidance treats it inconsistently compared with established intangible asset classes. This asymmetry means jurisdictions hosting data-gathering infrastructures may receive no taxing rights attribution unless physical functions accompany them, a mismatch intensified by remote processing capability where servers could be offshore while user interactions occur domestically (Calijuri, 2022, pp. 5, 17–18; Olbert & Spengel, 2017, pp. 25, 37; OECD, 2010, pp. 14–15; OECD, 2015a, paras. 254, 264–265; OECD, 2017, Commentary on Art. 5, paras. 42.2–42.3). Normatively correcting such asymmetry requires integrating data-related intangibles explicitly into value creation definitions used for profit splitting or formulary apportionment purposes. It appears plausible that revising tax principles along these lines would align them more closely with contemporary value drivers while preserving theoretical continuity with long-standing doctrines like benefit theory and economic allegiance, provided reinterpretations remain anchored in observable connections indicating genuine economic engagement within source jurisdictions.

Comparative work suggests that some proposals, such as Sustainable User Relationship (“SURE”), explicitly attempt to define a new nexus grounded in monetizable user data flows like online advertising revenue (Aslam & Shah, 2020, pp. 208–209; Bauer

et al., 2019, p. 4; Becker, Englisch & Schanz, 2019, pp. 1, 3, 10, 13–14). Such constructs may appear promising in situations where conventional nexus falls short, though their operational viability depends heavily on the consistency and measurability of user-derived inputs across jurisdictions with varying administrative capacities. Absent this anchor, risk grows that reforms will replicate unresolved ambiguities seen in prior compromises between residence and source taxation discussed earlier, thereby undermining doctrinal clarity even as they seek modern relevance.

Indeed, scholars have observed that determining the territorial source of income becomes appreciably harder under digitalisation because core notions like “source” or “residence” are easily manipulated through mobility-based tax planning strategies; such structuring exploits precisely those weaknesses in existing nexus definitions that policymakers are now struggling to repair (Avi-Yonah, 1997, pp. 531–532; Cugusi, 2020, sec. 1; Gadžo, 2018a, secs. 2.2.7, 6.5.3, 6.6; Harpaz, 2021, pp. 62–64; Olbert & Spengel, 2017, pp. 8, 11–12; OECD, 2015a, paras. 184–186, 248; Schön, 2009, sec. 1.2; Usman, 2022, pp. 58–61; Waerzeggers et al., 2020, p. 356). By situating the emergence of the digital economy within this analytic frame, subsequent sections can assess proposed models’ adequacy against reconstructed principles designed precisely for intangible-intensive contexts.

The structural shifts highlighted in the emergence of the digital economy highlight that value creation is increasingly delinked from traditional physical presence, intensifying the challenges of allocating taxing rights under existing international norms. When intangible-intensive profits arise from distributed user interactions and cross-border data flows, the conventional nexus and benefit theory frameworks face stress beyond incremental adaptation. These pressures naturally extend into the broader context of globalization, where multinational enterprises integrate production, distribution, and consumption across multiple jurisdictions, further complicating the alignment between economic activity and taxable presence. Hence, it should be examined how such global integration magnifies cross-border tax challenges, highlighting both operational distortions and normative tensions that underpin the need for coherent, principle-driven reform strategies.

Globalization alters the geography of taxable economic activity by enabling multinational enterprises (“MNEs”) to integrate production, distribution, and

consumption networks across multiple jurisdictions with ease. This integration facilitates cross-border flows of capital, goods, services, and, crucially for the digital economy, intangibles and data.

A defining feature of such integrated structures is the fragmentation of value chains, which renders conventional allocation rules derived from physical presence concepts increasingly difficult to apply consistently (Cugusi, 2020, sec. 6; Gadžo, 2018a, secs. 6, 6.5; Kobetsky, 2011, pp. 80–81; OECD, 2013a, pp. 26–27; OECD, 2015a, paras. 160–161). The mobility of intangible assets permits profit shifting toward low- or no-tax jurisdictions, exploiting mismatches between economic substance and legal allocation principles embedded in current tax treaty frameworks. These mismatches are compounded by arm's length principle applications that still rely on comparables predominantly grounded in physical transactions, leading to under-taxation of geographically dispersed digital transactions (Calijuri, 2022, pp. 5, 14, 19; Emanuelle, 2024, p. 3; Greil, 2019, pp. 17–19; Kobetsky, 2011, p. 394; Olbert and Spengel, 2017, p. 11; Waerzeggers et al., 2020, p. 345). What emerges is a complex intersection of legal doctrine with economic realities: globalization magnifies tax competition pressures while eroding states' capacity to secure their traditional tax bases through domestic enforcement alone.

The existence of nominal tax jurisdictions within global networks enables MNEs to localize residual profits in territories offering minimal or zero effective taxation, facilitated by the flexibility inherent in non-tangible asset transfers (IMF, 2019, p. 12; Oguttu, 2022, sec. 3; OECD, 2015a, paras. 193–195; Screpante, 2021, sec. 1; Screpante, 2024, sec. 4.3; Waerzeggers et al., 2020, pp. 345, 356). This situation prompts normative questions regarding whether maintaining the ALP as the dominant profit allocation method serves fairness ideals when asset valuation and profit sourcing detach from location-based indicators. Without doctrinally robust nexus adaptations accommodating the geographic mobility of intangible-driven profits, nations face both revenue loss and legitimacy challenges over tax system equity.

Cross-border tax challenges extend beyond base erosion into attribution disputes arising from new forms of economic presence. As discussed previously, physical permanent establishment thresholds struggle to capture value generated purely through digital interaction with consumers located in source states. Globalization amplifies this

difficulty because services, platforms, and advertising revenues scale internationally without proportional local investment or infrastructure. Traditional treaty language thus fails to recognize market jurisdiction rights where the commercial engagement is substantial yet non-physical (Collier, 2023, pp. 180, 193; Escribano, 2019, sec. 3.03[E]; Harpaz, 2021, pp. 62-63; OECD, 2015a, paras. 158–159, 253–254, 261; OECD, 2018, paras. 33–34, 132, 384, 392). OECD’s Inclusive Framework acknowledges this deficiency through its work on Pillar One, advocating allocation transformations whereby market states gain taxing rights based on “significant digital presence” rather than tangible facility tests; however, agreement among jurisdictions remains elusive; political divergences stem from differing views on how far reform should depart from established nexus doctrines (Collier, 2023, pp. 147, 204; Cui, 2021, p. 20; Harpaz, 2021, pp. 74–75; OECD, 2019a, paras. 16, 21–22; OECD, 2020a, paras. 2–4; OECD, 2020b, paras. 3, 6, 8).

Globalization’s pace also intensifies harmful tax competition concerns not formally addressed within existing OECD BEPS outcomes in relation to the digital economy (Becker, Englisch and Schanz, 2019, p. 4; Collier, 2023, p. 188; IMF, 2019, pp. 1, 14; Waerzeggers, Hillier & Aw, 2020, p. 345). While certain BEPS actions aim at curbing preferential regimes or harmful practices in theory, practical execution often sidelines state-level rivalry for mobile capital and investments, particularly where technology companies can relocate high-value intangibles swiftly following policy changes elsewhere. This reality demands multilateral frameworks with enforceable anti-competition provisions or harmonized minimum standards in order to prevent a zero-sum erosion of collective fiscal capacity.

Continuous dialogue among member states has been proposed as essential for preventing such destructive competitive moves while harmonizing rule adaptations to evolving business structures (Christians, 2016, p. 1621; Cugusi, 2020, secs. 8-9; OECD, 1998, paras. 138-139, 146; OECD, 2013a, pp. 8-9, 50; OECD, 2018, paras. 396-397, 511; OECD, 2020b, paras. 1-3; Ring, 2010, pp. 153-154). Proceeding without coordination risks escalating retaliatory measures such as unilateral digital services taxes (“DSTs”), creating overlapping obligations and potential double taxation absent effective relief mechanisms (Harpaz, 2021, pp. 84–85, 89; IMF, 2019, p. 346; OECD, 2018, paras. 368, 511; OECD, 2020c, paras. 45, 301–302, 403–404; OECD, 2020b, p. 11). In examining these cross-border challenges methodologically, this research adopts a principle-driven

reconstruction lens: each doctrinal foundation, whether ALP, benefit theory, or economic allegiance, is tested against scenarios characteristic of globally integrated value networks relying heavily on intangible assets. For example, under benefit theory one would identify tangible or intangible public goods provided by a source state that enable foreign enterprises' domestic revenue generation; globalization expands the range of such benefits but also complicates their quantification given multi-jurisdictional interdependencies (Escribano, 2019, sec. 2.02[A]; Hongler & Pistone, 2015, pp. 21–22; Miller, 2015, sec. 3.5; Schön, 2009, pp. 75–76; Traversa, 2022, sec. 2.2.2). Where principles demonstrably lack capacity to allocate taxing rights proportionately to benefits conferred amid global operations, transformation rather than mere adaptation becomes logically necessary within the reconstructed framework.

Profit reallocation proposals illustrate divergent methodological solutions to globalization-induced distortions. Some advocate incorporating a sales factor into ALP-based formulas so that market jurisdictions capture part of residual profits when they host ultimate consumers regardless of production location. Others propose withholding taxes on cross-border payments for digital services as an interim mechanism capturing revenue where utilization occurs before more comprehensive multilateral solutions solidify (Avi-Yonah, 1997, pp. 532–535; Brauner & Baez Moreno, 2015, pp. 15–23; Buriak, 2024, sec. 7.2.1; Gadžo, 2018a, sec. 7.3.3; OECD, 2015a, paras. 292–301; Schön, 2018). Each carries trade-offs: sales-factor apportionment requires reliable data about consumer location yet offers systemic alignment with destination-based tax logics; withholding mechanisms may provide immediate collection capacity but risk distortion if not offset by credits abroad, undermining coherence of double taxation relief principles traditionally embedded in treaty practice. Testing these approaches against reconstructed doctrinal criteria, including fairness, reciprocity, and administrability, will determine their viability within an international law framework responsive to globalization's incentives and frictions.

Globalization exposes structural weaknesses not only in operational mechanisms like transfer pricing adjustments but also in normative constructs underpinning taxing rights distribution across jurisdictions interacting economically without proportionate territorial footprints (Cugusi, 2020, sec. 1; Kobetsky, 2011, pp. 104–105; OECD, 2013a, pp. 7, 48; OECD, 2018, paras. 380, 384; Traversa, 2022, sec. 3.2; Usman, 2022, pp. 58–59). These weaknesses are linked to empirical features of globally integrated digital

business models, scale without physicality, and formulating theoretical amendments that permit coherent residual profit allocations anchored in observable economic connections rather than legal formalities divorced from value creation location. As some commentators have noted, heightened capital mobility has altered the calculus behind domestic tax policies; what once operated primarily under inward-looking fiscal priorities now functions within an interconnected competitive field that constrains policy autonomy (Genschel & Rixen, 2015, pp. 156–158; Kobetsky, 2011, pp. 58, 62; OECD, 1998, paras. 20–21; OECD, 2013a, p. 28). By situating globalization’s impact within this analytic frame, subsequent evaluation chapters can critically assess whether OECD Pillar One or unilateral DST regimes plausibly close doctrinal gaps without introducing inconsistencies that replicate historical imbalances familiar from earlier residence–source compromises under industrial-era conditions.

Building on the contextual and historical analysis of international taxation developed in this chapter, the discussion now turns to a systematic examination of its fundamental normative principles. While Chapter 4 clarified the definitional contours, structural evolution, and contemporary pressures affecting cross-border taxation, the next chapter isolates the core doctrinal foundations that underpin the international tax regime. By analyzing principles such as benefit, economic allegiance, and the arm’s length standard in conceptual depth, Chapter 5 establishes the normative benchmarks against which digital-era reforms will later be evaluated. This transition moves the analysis from contextual exposition to principled reconstruction, ensuring that subsequent assessment of adaptation or transformation rests on clearly articulated theoretical foundations.

5 THE FUNDAMENTAL PRINCIPLES OF INTERNATIONAL TAXATION

5.1 Benefit Principle

5.1.1 Conceptual Foundations

The benefit principle operates as a normative anchor within the international tax regime, positing that taxing rights can justifiably be allocated to a jurisdiction insofar as that jurisdiction provides economic or legal benefits facilitating the taxpayer’s income generation. Historically, its articulation has been tied to the reciprocity inherent in

bilateral double taxation treaties, whereby source jurisdictions claim entitlement on the grounds of public goods, such as infrastructure, legal protections, and stability, that enable localised economic activity for non-resident enterprises (Avi-Yonah, 2007, p. 134; Escribano, 2019, sec. 2.02[A]; Gadžo, 2018a, sec. 5.1.2; Miller, 2015, sec. 3.5; OECD, 2015a, para. 32; Traversa, 2022, sec. 2.2.2). In doctrinal terms, this justification offers a distributive link between revenue extraction and benefit provision, reinforcing perceptions of fairness in international tax allocation (Escribano, 2019, sec. 2.02[A]; Gadžo, 2018a, secs. 5.1.2, 5.1.4; Hongler, 2019, sec. 11.3.1; OECD, 2015a, paras. 12, 32).

The theoretical construction of the benefit principle is not monolithic; early League of Nations work already recognised competing perspectives. As noted by Picciotto, attempts to base taxing rights solely on abstract principles such as ability-to-pay or neutrality were tempered by pragmatic accommodation of fiscal interests (Hongler, 2019, sec. 6.3.1 (citing Picciotto); Pascucci, 2020, sec. 6.1 (citing Picciotto); Picciotto, 1992, pp. 24, 49–50). This highlights that while benefits supplied by a jurisdiction might be relatively tangible in industrial contexts, roads, ports, physical regulation, the translation into digital economy conditions requires redefining what constitutes an economically relevant “benefit”. Under intangible-intensive commerce, state-provided advantages often take non-physical forms: telecommunications infrastructure access, enforceable data protection regimes, cyber-security oversight, and online market regulation all serve as enabling conditions for profit generation without direct physical establishment. Recognising these as legitimate benefit vectors suggests doctrinal elasticity in applying the principle to dematerialised economic presence. However, this elasticity must maintain conceptual boundaries if it is to qualify as adaptation rather than transformation under the test structure developed earlier in Section 4.3.

The embedded distributive rationale, tax burdens corresponding to advantages conferred, requires identifiable causal linkage between specific jurisdictional benefits and value creation outcomes realised by the taxpayer (Escribano, 2019, secs. 2.02[A], 2.02[B]; Gadžo, 2018a, secs. 5.1.2, 5.1.3, 7.1.1.1; Hongler, 2019, secs. 11.6.1, 11.6.2.3; Miller, 2015, sec. 3.5; Schön, 2009, pp. 75–76; Traversa, 2022, sec. 2.2.2). In traditional treaty frameworks, this linkage is substantiated through permanent establishment provisions: physical indicia serve as proxies for benefit receipt. Absent such indicia in digital contexts, proposals have emerged around “significant economic presence”

standards grounded in measurable engagement with local markets (Bauer et al., 2019, pp. 22–23; Gadžo, 2018a, sec. 7.3.2.2; Greil, 2019, pp. 13–14; OECD, 2015a, paras. 276–280; OECD, 2019c, paras. 50–51; Traversa, 2022, sec. 2.3.2). This raises doctrinal examination points: can metrics like user density or revenue thresholds serve equivalently robust proxies for benefit receipt? If evidence of mutuality, jurisdiction confers resources; enterprise exploits them, is preserved through these alternative metrics, the principle’s internal coherence is arguably maintained.

Tension emerges where unilateral measures attempt gross-based taxation on digital services without granular attribution of benefits. While OECD Pillar One’s formulary apportionment seeks to locate residual profits partly on “market jurisdiction” grounds, interpreted by some scholars as an extension of benefit claims, it departs from direct benefit measurement toward a broader market access rationale (Escribano, 2019, sec. 2.02[B]; Gadžo, 2022, secs. 2.2.2, 2.3.2; OECD, 2020b, paras. 10, 17, 186; Otto & Van de Vijver, 2022, sec. 3.2; Traversa, 2022, sec. 7.5). The risk here is dilution of underlying reciprocity: apportioning profit merely because sales occur locally does not establish that commensurate public goods underpin those sales, especially when delivery infrastructure may lie elsewhere. In doctrinal consistency tests applied across inter-nation equity norms (Devereux et al., 2017, pp. 34–35; Escribano, 2019, secs. 2.02[A], 2.02[B]; Schön, 2009, pp. 75–76; Schreiber & Fell, 2017, p. 104; Shaviro, 2019, pp. 17–18), such detachment challenges whether this form remains an adaptation or crosses into transformation territory.

In summary, the benefit principle is not inherently incompatible with the digital economy; its adaptability depends on whether a credible causal link between jurisdictional benefits and income generation can be preserved. Where new nexus or allocation rules maintain reciprocity, the development remains an adaptation. Where taxing rights are detached from identifiable benefit provision, however, the principle’s justificatory core is transformed.

Section 5.1.2 examines the historical trajectory of the benefit principle in detail, highlighting both continuity and points of doctrinal adaptation in response to technological and commercial transformations.

5.1.2 Historical Development

The historical trajectory of the benefit principle within international taxation is marked by a gradual shift from tangible economic benefits in industrial-era commerce to increasingly intangible and jurisdictionally diffuse forms under contemporary conditions. Emerging formally in the early 20th century, its role was initially framed by bilateral treaty structures seeking symmetry between taxing rights and the infrastructural or legal support conferred by a state upon income-generating activities within its territory. In practical terms, this meant that source states justified their taxation of non-resident enterprises by pointing to concrete public goods, roads, ports, courts, which facilitated commerce (Avi-Yonah, 1997, p. 520; Escibano, 2019, secs. 2.02[A], 2.02[B]; Gadžo, 2018a, secs. 5.1.4, 7.1.1.1; Kobetsky, 2011, pp. 159, 161; OECD, 2015a, para. 32; Traversa, 2022, sec. 2.2.2). These were easily evidenced and administratively linked to profit-generating undertakings, making the principle a stable normative pillar for distributive justification.

The League of Nations' deliberations in the 1920s embedded this rationale into codified arrangements for avoiding double taxation (Escibano, 2019, secs. 2.02[A], 3.03[C]; Gadžo, 2018a, secs. 5.1.3, 7.1; Kobetsky, 2011, pp. 113–115; OECD, 2015a, paras. 28, 31–32, 35). By tying taxing rights at source to demonstrable benefit conferral, reciprocal arrangements could be negotiated where residence states recognised diminished claims when adequate taxation occurred abroad on income attributable to such benefits. Early treaty practice reinforced this linkage through permanent establishment provisions: physical indicia acted not only as nexus determinants but as proxies for benefit receipt. This causality, territorial infrastructure enabling economic gain, underpinned much of the justification for source-based taxation throughout mid-century expansions of model conventions.

During post-war decades, as bilateral treaty networks proliferated under OECD and UN auspices, the benefit principle retained a largely static conceptualization. The OECD Model Convention's commentary reflected continuity with League-era thinking, assuming that benefits are conferred primarily via physical presence infrastructure and regulatory environment (Escibano, 2019, secs. 3.03[C], 3.03[E]; Gadžo, 2018a, sec. 4.5; Kobetsky, 2011, pp. 119, 151; Miller, 2015, sec. 4.4; Traversa, 2022, sec. 2.3.1; UN, 1980, p. 75). The UN Model began inserting language more sympathetic to developing countries' preference for wider source-based rights; while still invoking benefit

rationales, it extended these to scenarios involving less substantial physical footprints, reflecting the realities of resource-extraction and some service industries. Nonetheless, even this expansion avoided redefining “benefits” beyond tangible or quasi-tangible state contributions.

The late 20th century brought pressures from globalisation but did not immediately displace tangible-benefit readings. Multinational enterprises’ mobility prompted greater awareness within doctrinal discourse that benefits could also encompass legal frameworks sustaining cross-border operations, trademark protection, dispute resolution mechanisms, though these remained closely tied to identifiable territorial engagement (Christians, 2014, p. 12; Gadžo, 2018a, sec. 7.1.1.1; Hongler & Pistone, 2015, sec. 3.3; Miller, 2015, sec. 3.7.1; OECD, 2015a, para. 32). The persistence of arm’s length pricing norms reinforced this tangibility bias: value creation assessments focused on functions performed and assets deployed physically within the taxing jurisdiction. Benefit theory operated implicitly in profit attribution methodologies by assuming that local functions reflected local benefits received.

The advent of digitalisation introduces unprecedented strain upon these historical formulations. Value drivers shifted decisively toward intangibles, data streams, algorithms, platform ecosystems, with production geography rendered marginal compared to user interaction location (Aslam & Shah, 2020, pp. 209, 222; Autio et al., 2021, pp. 1–3; Collier, 2023, p. 193; Cugusi, 2020, sec. 3.2; Gawer, 2022, pp. 111–112; Hongler & Pistone, 2015, pp. 2, 22; OECD, 2015a, paras. 152, 164–166, 176; Olbert & Spengel, 2017, pp. 35–37). Yet, benefit theory’s historical apparatus offered limited guidance on whether, and how, jurisdictions providing non-physical yet essential conditions (e.g., digital infrastructure access, cybersecurity regulation) might claim equivalent taxing rights. This gap spawned contemporary debates about “significant economic presence” tests as potential successors or supplements to permanent establishment proxies (Bauer et al., 2019, pp. 22–23; Gadžo, 2018a, secs. 7.3.2.1, 7.3.2.2; Hongler & Pistone, 2015, sec. 4.2; Olbert & Spengel, 2017, pp. 14–15; OECD, 2015a, paras. 277–280; Valente, 2018, sec. 5.1). Such tests aim to preserve reciprocity rationale while substituting new metrics (user numbers, digital transactions value) for physical indicators historically normalized in treaties.

Scholars' critical observation indicted that while gross-revenue based measures such as those proposed in some unilateral digital services taxes appeal politically by linking taxation directly to market engagement, they risk detaching benefit claims from demonstrable causal provision (Buriak, 2024, secs. 7.2.3.2, 7.2.5; Devereux et al., 2017, pp. 34–35; Gadžo, 2018a, sec. 7.3.3; Schön, 2019, p. 1010, cited in Screpante, 2024, sec. 3.2; Shaviro, 2019, pp. 3–4). Historically, tax allocation grounded in benefit theory presupposed that jurisdictional provision preceded and enabled income generation; simply recording sales without showing enabling conditions would dilute reciprocity's doctrinal weight. This tension reflects deeper interpretative questions: is market access itself a “benefit” within the meaning captured by early treaty framers? If yes, historical continuity can be claimed albeit via adaptation; if not, such redefinition implies transformation beyond original conceptual bounds.

The OECD's current framing under Pillar One incorporates aspects suggestive of both adaptation and transformation. On the one hand, allocating residual profits partly according to market jurisdiction criteria echoes historic recognition that consumer markets represent valuable resources akin to physical infrastructures (Adams, 1917, cited in Gadžo, 2022, sec. 2.2.2; Brown, 2011, pp. 609–610, cited in Escribano, 2019, sec. 2.02[B] and Gadžo, 2022, sec. 2.2.2; Durst, 2014, cited in Escribano, 2019, sec. 2.02[B]; League of Nations, 1923, p. 23; OECD, 2020b, paras. 6–7, 10). On the other hand, its formulary apportionment mechanisms omit granular tracing of specific state-conferred benefits that traditionally substantiated source claims. The move toward presumptive allocation based on aggregate sales thus departs from causality-conscious historical application. Continuity with historical development is most tenable where modern proxies for benefit align with established reciprocity logic, that is, where jurisdictional contributions can be evidenced as materially enabling value creation comparable in function (if not form) to earlier infrastructural or regulatory supports. Introducing abstract market engagement as a stand-alone determinant appears historically incongruent unless accompanied by doctrinal expansion explicitly recognising such engagement as a jurisdictional contribution deserving reciprocation. The historical stability of benefit theory should be mapped against current reform pressures to identify precisely where elasticity exists without breaking definitional anchors.

Early-century codifications show substantive resilience under incremental widening (as with UN Model source provisions), supporting adaptation pathways

whereby digital-era metrics substitute for physical indicia insofar as they measure genuine enabling conditions. Conversely, where proposed reforms ignore evidentiary causation central to reciprocity, shifting toward purely formalistic allocation triggers, the departure is conceptually substantive enough to warrant classification as transformative rather than adaptive under the analytical framework developed earlier.

This distinction preserves intellectual integrity by situating present doctrinal disagreements within a clearly documented lineage from industrial-era bilateralism through globalization's initial pressures into digital economy exigencies (Avi-Yonah, 2023a, p. 428; Christians, 2017, pp. 15, 17; Elliffe, 2020, secs. 1, 2.1, 4; Oguttu, 2022, secs. 1, 4, 6; Schön, 2021, sec. 1; Vann, 2020, sec. 3.1). It also resonates with earlier twentieth-century developments under League guidance where economists rooted allocations in the economic allegiance doctrine, first giving priority to source taxation when there was a fixed link such as land or establishment before allocating residual rights elsewhere, which reveals how present debates both inherit and strain against those foundational compromises (Avi-Yonah, 2005, pp. 318–322; Avi-Yonah, 2023a, pp. 428–429; Emanuele, 2024, secs. 2.1, 3; Gadžo, 2022, secs. 2.1, 3.2; League of Nations, 1923, pp. 20–39; Lempert & Avi-Yonah, 2023, sec. 2.2.1; Li et al., 2019, pp. 1112–1115).

The evolution of the benefit principle highlights the enduring tension between tangible, infrastructure-based sources of value and increasingly intangible, digitally mediated economic activity. This historical trajectory frames the subsequent discussion of the residence principle in Section 5.2, where definitional scope must be reconsidered in light of digitalisation, virtual management structures, and mobile assets. Understanding how residence serves as a nexus criterion for worldwide taxation requires situating it against the backdrop of evolving benefit-based claims and the reciprocal logic that underpins international tax treaties.

5.2 Residence Principle

5.2.1 Definitional Scope

The definitional scope of the residence principle within international taxation originates from its core function: to allocate primary taxing rights to the jurisdiction where

a taxpayer maintains their legal or factual center of life, and in the case of corporate entities, their place of incorporation or effective management.

Within doctrinal terms, “residence” serves as a nexus criterion distinct from source-based claims but structurally equal in weight across tax treaty architectures. It operates as a foundational mechanism by which states assert fiscal sovereignty over global income attributable to taxpayers with a legally recognised attachment to their territory (Arnold, 2019, p. 17; Gadžo, 2018a, secs. 2.2.7.2.1, 3.2.1; Monsenego, 2012, sec. 4.1; OECD, 2017, para. 3; Vann, 1998, p. 729). This attachment has historically been codified through bright-line physical presence rules, such as the United States’ 183-day threshold for individuals, that create objective tests for residency status, supplemented in some jurisdictions by more qualitative fiscal domicile criteria considering family ties, principal abode, or habitual association.

In tax treaty practice, the residence principle’s definitional scope is shaped by Article 4 of model conventions (OECD, 2017, Article 4; United Nations, 2021, Article 4), which establish the conditions under which an individual or entity may be deemed resident for treaty purposes. For corporate taxpayers, the determination frequently incorporates either incorporation under domestic law or “place of effective management” tests, concepts that reflect the jurisdiction’s claim to regulate and support the enterprise in ways justifying taxation on global profits (Arnold, 2019, p.21; Escribano, 2019, secs.3.02[A][a], 3.02[A][b]; Gadžo, 2018a, secs.2.2.7.2.1, 3.2.1; Kobetsky, 2011, pp. 13–14, 16; Schön, 2009, p. 90; Vann, 1998, pp. 732–733). Such definitions are cemented in over 3,000 bilateral treaties globally (Avi-Yonah, 2019, p. 2), demonstrating extensive recognition within customary frameworks. Nevertheless, these embedded formulations presuppose factual patterns typical of industrial-era economies: resident enterprises have tangible headquarters; resident individuals spend substantial time physically present within national borders.

The modern doctrinal challenge lies in interpreting whether such original formulations can extend to intangible-intensive and digital economy settings without eroding their conceptual coherence. For example, digital commerce allows individuals to generate worldwide income while remaining physically transient and corporations to integrate operational control virtually across multiple jurisdictions. In such cases, bright-line physical presence thresholds, though administratively straightforward, risk losing

normative congruence if they no longer correlate closely to genuine economic allegiance. While fiscal domicile tests provide some interpretative flexibility by incorporating qualitative factors like family or habitual abode (Arnold, 2019, p. 19; Escribano, 2019, sec. 4.02[B]; League of Nations Fiscal Committee, 1946, p. 14; OECD, 1977, paras. 14–16; Vann, 1998, pp. 729, 732), their application to dematerialised contexts raises evidentiary and normative tensions: does virtual economic participation suffice for establishing residence? And if so, how is this reconciled with reciprocity principles embedded in treaty allocation rules?

From an analytical perspective grounded in benefit theory and inter-nation equity (Collier, 2023, pp. 154-155; Escribano, 2019, secs. 2.02[A], 3.02[A], 4.02[B]; Hongler, 2019, secs. 11.3.1, 11.6.1; Musgrave & Musgrave, 1989, pp. 574-575; OECD, 2003, paras. 84-85; Schön, 2009, pp. 75-76; Vann, 1998, p. 722), the definitional scope must be capable of identifying situations where residents receive comprehensive advantages, legal infrastructure protection, dispute resolution access, public goods relevant to business operations, from their jurisdiction irrespective of their physical footprint. This approach suggests that for entities engaged primarily in digital markets, effective management determinations could evolve beyond location-based proxies toward functional indicators: location where strategic decisions impacting value creation are genuinely made, even if via virtual means. However, doctrinal reconciliation requires ensuring that such adaptive interpretations do not contradict existing treaty text absent renegotiation; otherwise, they represent transformation rather than adaptation under the methodological framework described earlier. An important nuance emerges regarding the residence concept's double-edged role in global tax coordination. On one side it anchors worldwide taxation rights for residence states; on the other it triggers relief obligations concerning source states to mitigate double taxation. Expanding residence definitions without harmonised adjustments to correlative relief rules risks displacing distributive balance between jurisdictions (Collier, 2023, pp. 154-155; Escribano, 2019, secs. 3.02[A], 4.02[B]; Hongler, 2019, sec. 11.6.1; Musgrave & Musgrave, 1989, pp. 574-575; OECD, 2003, para. 84; Schön, 2009, p. 75; Vann, 1998, p. 722). For example, should a state broaden corporate residence criteria based on dispersed virtual decision-making hubs across its territory without adjusting credit or exemption methods appropriately, it might accumulate taxing rights disproportionate to reciprocal concessions extended under treaties, contravening inter-nation equity norms.

Under OECD Pillar Two discussions incorporating minimum global tax standards, residence determinations play a pivotal operational role because top-up taxes are calculated by reference to the ultimate parent entity's jurisdictional baseline rate (OECD, 2020c, p. 80; OECD, 2020d, paras. 6.3, 420-423; Riccardi, 2022, pp. 19, 23; Traversa, 2022, sec. 6.4.1). If definitional breadth permits multiple jurisdictions to claim residency over a single enterprise due to overlapping effective management concepts, partly mediated via digital control channels, the risk of conflicting claims intensifies unless treaty tie-breaker clauses are modernized concomitantly. Here again lies a methodological test: whether residence principles retain definitional integrity when adapted via interpretative expansion into virtual contexts without producing internal systemic contradictions (e.g., dual residency unmanageable under existing tie-break methodologies).

The doctrine also interacts directly with anti-base erosion strategies targeting foreign-to-foreign profit shifting through hybrids or controlled foreign corporation rules (Avi-Yonah, 2004; Nikolakakis, 2021, secs. 4.1, 5; OECD, 2013b, pp. 15, 17; OECD, 2013a, 40-41, 44; OECD, 2015a, paras. 7, 17, 29-33). Residence definitions determine which jurisdiction applies such anti-avoidance measures; overly narrow formulations may exclude enterprises effectively managed within but legally anchored outside territorial boundaries due solely to historic incorporation choices, a mismatch exploited through global structuring. Conversely, overly broad residency captures risks ensnaring entities lacking substantive economic allegiance locally, undermining fairness by asserting worldwide taxing rights absent proportionate benefit provision.

Early comparative work already exposed divergences between legal systems that favour incorporation-based criteria and those emphasizing a “real centre of management” standard for determining fiscal domicile; such divergence persists today and influences treaty interpretations in complex cross-border cases (Escribano, 2019, secs. 3.02[B], 3.02[D]; League of Nations Fiscal Committee, 1946, p. 11; OECD, 1963, Commentary on Article 4, para. 17; Vann, 1998, p. 733). This historical split suggests that modern reform initiatives seeking alignment on functional management tests will need to reckon with deep-rooted traditions embedded in both common-law and civil-law treaty practice before redefining these nexuses coherently across jurisdictions. Indeed, debates over permanence within fiscal domicile concepts show how subjective elements like “permanent home” still frame legal reasoning around residency status in many codes;

such language conveys an expectation of stability even when applied flexibly for taxpayers with transient lifestyles (Escribano, 2019, sec. 4.02[B]; League of Nations Economic and Financial Commission, 1928, p. 14; League of Nations Fiscal Committee, 1946, pp. 11, 24; OECD, 1977, paras. 12-13, 17-19; OECD, 2017, paras. 12-13, 18-19; UN, 1980, pp. 55-56; Vann, 1998, p. 729). Grappling with this requirement appears central when proposing adaptations that blend traditional permanence notions with virtual operational realities without undermining administrative clarity or reciprocity balance across treaties.

Consistent with Article 4 commentary in major model conventions, residency encompasses personal attachment markers such as domicile and habitual abode alongside corporate criteria like place of management or comparable ties; these are meant to ensure comprehensive liability aligned with domestic definitions even when cross-border conflicts arise (Arnold, 2019, pp. 19-21, 23; OECD, 2017, paras. 1-3, 8-10, 15-16, 21-24; UN, 1980, pp. 53-54, 57; Vann, 1998, pp. 729, 732-733). This reminds us that proposals altering nexus indicators must remain anchored within these established categories unless formal renegotiation shifts treaty text expressly toward different conceptions of residence.

The next section examines the critiques and challenges of the residence principle, highlighting how distributed operations, virtual decision-making, and mobility of assets create tensions with inter-nation equity, neutrality, and administrative feasibility, thereby necessitating principled adaptations to preserve coherence and fairness in modern international tax systems.

5.2.2 Critiques and Challenges

The residence principle, despite its entrenched status within international tax law architectures, is subject to multiple layers of critique when assessed under altered economic conditions characterised by dematerialised value creation and high mobility of intangible assets.

The first set of challenges arises from conceptual rigidity in treaty-based definitions which continue to rely heavily on physical presence indicators, such as place of incorporation or effective management tests, that may no longer correspond to substantive economic allegiance in digital contexts (Avi-Yonah, 1997, pp. 535-536;

Bianco & Tomazela Santos, 2016, sec. 3; Escribano, 2019, secs. 3.02[A][b], 3.02[A][c]; OECD, 2003, paras. 83-86). These definitions presuppose that control functions and decision-making location can be geographically located with clarity, a presumption increasingly undermined by distributed virtual governance models, cloud-based operational structures, and cross-jurisdictional managerial teams interacting through digital channels. This disjunction raises normative concerns: if residence is meant to signify the jurisdiction conferring ultimate legal and economic benefits, using outdated proxies could lead to misaligned taxing rights that neither reflect actual benefit provision nor maintain fairness within inter-nation equity frameworks.

A prominent critique targets the susceptibility of the principle to manipulation through incorporation choices in jurisdictions offering preferential regimes but providing minimal substantive connection or benefit provision to the taxpayer. This phenomenon intersects with long-standing base erosion behavior where entities select nominal residence jurisdictions to avoid higher taxation elsewhere (Arnold, 2019, p. 21; Avi-Yonah, 1997, p. 535; Avi-Yonah, 2004, p. 488; Christians, 2014, p. 18; Escribano, 2019, secs. 3.02[A][a], 3.02[A][b]; OECD, 2013a, p. 44; Toder et al., 2020, pp. 11-12; Vann, 1998, p. 733). While controlled foreign corporation rules and anti-hybrid measures attempt partial correction, such domestic devices do not resolve the underlying mismatch between formal residence criteria and genuine economic allegiance. In digital sectors, where infrastructure needs are minimal and operational presence diffuse, such mismatches become pronounced; enterprises may anchor their legal seat in jurisdictions chosen solely for tax advantages while directing strategic operations from economically unrelated territories, prompting systematic concerns over doctrinal legitimacy.

Another challenge lies in the growing incidence of dual residence claims. As jurisdictions experiment with expanding “effective management” tests to capture virtual decision loci alongside traditional incorporation anchors, overlaps proliferate (Collier, 2023, p. 154; Escribano, 2019, secs. 3.02[A][b], 3.02[D]; OECD, 2003, paras. 84-85; OECD, 2017, para. 24.1). The ensuing conflicts strain tie-breaker mechanisms embedded in model conventions, especially when decision-making authority is genuinely split across multiple digital hubs rather than concentrated physically. Current tie-break provisions typically privilege effective management determinations or mutual agreement procedures between competent authorities; neither tool performs well when managerial

functions are diffused so that no single jurisdiction can plausibly claim primacy based on existing definitional metrics.

From an inter-nation equity standpoint, broadening residency definitional scope without corresponding recalibration of relief mechanisms risks upsetting reciprocal balances negotiated within double taxation treaties (Blessing, 2020, sec. 8.1.3; Escribano, 2019, sec. 2.02[A]; Hongler, 2019, sec. 11.3.1; Kobetsky, 2011, p. 138; OECD, 2017, paras. 8, 11.1; Vann, 1998, pp. 722, 732). Where a state unilaterally expands its resident taxpayer base, by asserting claims over enterprises whose only nexus stems from virtual participation in domestic markets, without adjusting credit or exemption rules granted to source states, distributive imbalances emerge. This raises fairness issues not merely in practical allocation outcomes but also at the level of doctrinal integrity: reciprocity embedded into treaty design presupposes symmetrical concessions contingent on recognised nexus standards.

Neutrality principles also come under pressure when residence determinations vary widely between jurisdictions in ways that distort competitive conditions for similarly situated taxpayers. If one state defines corporate residence based largely on formal incorporation while another adopts functional tests encompassing dispersed digital management, even for low local benefit provision, the resultant tax burdens diverge sharply for entities engaging in identical cross-border activities (Arnold, 2019, pp. 21-22; Escribano, 2019, secs. 3.02[A][b], 3.02[B]; Gadžo, 2018a, secs. 5.2.1, 5.2.2; OECD, 2013a, p. 30). This inconsistency challenges neutrality's assertion that similar circumstances should be taxed similarly irrespective of jurisdictional mix.

Further criticism focuses on administrability constraints inherent to adapting residence standards for intangible-intensive contexts. Measuring "effective management" across diffuse digital networks demands granular tracking of strategic decision flows, a task complicated by encrypted communications, transient virtual meeting points, and non-linear decision hierarchies typical in decentralized platform enterprises (Collier, 2023, p. 154; Escribano, 2019, sec. 3.02[A]; Kobetsky, 2011, pp. 70-71; OECD, 2003, para. 85; OECD, 2015a, para. 254). Enforcement agencies may lack both technical capacity and cross-border access necessary to substantiate such determinations reliably. Consequently, expansion into functional residence criteria could erode predictability and increase

litigation over determinations contested due to evidentiary paucity or interpretative variance.

Some historical perspectives caution that even purposive reliance on residence as the dominant connecting factor has been regarded as problematic; exclusive residence-based taxation was once defended as simple yet criticized for its vulnerability to manipulation and inability to reflect economic realities consistently (Graetz & O'Hear, 1997, pp. 1058-1059, 1092-1093; Jogarajan, 2018, pp. 67, 73; Jogarajan, 2025, p. 32; OECD, 2003, p. 16). This earlier tension between administrative convenience and susceptibility to avoidance mirrors contemporary debates about digital-era complexities, suggesting that structural weaknesses inherent in the principle may be more durable than reform advocates wish to admit.

In sum, the residence principle faces persistent conceptual, operational, and fairness challenges in intangible-intensive and digital economy contexts. Misalignment between traditional residence tests and actual economic allegiance risks undermining inter-nation equity, neutrality, and administrability. These pressures collectively highlight the need for principled adaptation of residence criteria, ensuring that functional indicators of value creation complement or refine conventional physical presence metrics without compromising treaty-based reciprocity or legal certainty.

While the residence principle remains a foundational pillar of international taxation, its conceptual and operational limits - especially in the context of digitalized, intangible-intensive commerce - highlight the need to examine complementary allocation frameworks. The source principle emerges as a critical counterpart, providing jurisdictions with taxing rights based on economic connections rather than formal residence. Hence, the next section explores the legal underpinnings of the source principle, tracing its basis in territorial sovereignty, economic allegiance, and treaty practice, while highlighting how these foundations interact with contemporary challenges identified for residence-based allocations.

5.3 Source Principle

5.3.1 Legal Underpinnings

The legal underpinnings of the source principle rest on the recognition in international tax law that a jurisdiction is entitled to tax income arising from an economic connection to its territory, irrespective of the taxpayer's residence. This entitlement has deep roots in both customary international law arguments and in codified treaty practice, though doctrinal agreement over its theoretical basis has historically been less settled than its practical acceptance.

Two primary justifications have emerged in academic literature and case law: (i) territorial sovereignty as expressed through jurisdiction to tax within a state's borders; and (ii) the notion of economic allegiance, which ties fiscal claims to the locus where value-creating factors are operationalised (Buriak, 2024, sec. 4.2.4; Emanuele, 2024, secs. 4.2, 4.4; Gadžo, 2018b, pp. 196-198; Li, Bao & Li, 2019, pp. 1112-1114; Monsenego, 2012, pp. 46, 55; OECD, 2015a, paras. 20, 28-29). Within public international law's taxonomy of sources under Article 38(1) of the ICJ Statute, the source principle's normative content does not fall neatly into a single category. Certain commentators reason that it may qualify simultaneously as treaty-based, as a rule of customary law in some respects, and as a general principle common to domestic legal systems (Avi-Yonah, 2004, pp. 498-501; Bentil, 2018, pp. 1222-1223, 1244-1247; Gadžo, 2018b, pp. 195-196, 208-209; Hongler, 2019, sec. 3.2.2). While tax treaties undeniably embed source-based taxing rights, the persistence of such provisions across thousands of bilateral instruments has also been cited as evidentiary support for customary status; nevertheless, questions remain whether such repetition satisfies the *opinio juris* threshold when deviations occur regularly for politically negotiated sectoral preferences, suggesting that source taxation continues to operate largely by consent rather than immutable legal compulsion (Bentil, 2018, pp. 1255-1257; Braumann, 2020, pp. 763-765, 768; Gadžo, 2018a, sec. 2.2.5; Gadžo, 2018b, pp. 199-200; Gil García, 2019, p. 332; Hongler, 2019, sec. 4.3.2.4.3).

Materials from the League of Nations tax deliberations in the 1920s suggest that consensus on source-based taxation emerged through negotiated compromise rather than through the articulation of pre-existing universal legal norms, with outcomes reflecting distributive negotiations between capital-importing and capital-exporting states (Elliffe, 2020, sec. 2.1; Gadžo, 2018a, sec. 5.1.4.1.1; Genschel & Rixen, 2015, pp. 159-160;

Graetz & O'Hear, 1997, pp. 1033, 1080; Kobetsky, 2011, pp. 108, 149-150; Ring, 2007, pp. 55-56). The practical corollary is that while “source” has become an accepted allocation anchor in multilateral discourse, its substantive reach is shaped by positive law choices rather than a universally binding doctrine. It is worth noting that early analyses warned that aggressive assertion of source taxation against non-residents could depress cross-border investment or compel increased returns to offset fiscal burdens; proponents argued this might push some source states toward exemptions or reduced rates for foreign investors, a prediction borne out in much statutory practice (Avi-Yonah, 1996, pp. 1333-1334; Christians, 2014, p. 9; Cui, 2021, pp. 25-26; Graetz & O'Hear, 1997, p. 1076 fn. 219; Jogarajan, 2013, p. 11).

Territoriality as an organizing concept provides one route for grounding source-based taxation within general international law. Under a pure territorial approach, as recognised in scientific literature on jurisdictional bases, a state may choose to levy tax solely on domestic income or extend its competence to income generated abroad if permitted by its domestic law (Gadžo, 2018a, sec. 2.1.4; Monsenego, 2012, pp. 10-11; Vogel, 1997, p. 11). Within this frame, asserting taxing rights over locally sourced income is uncontroversial, and treaty mechanisms then function to refine definitions and avoid double imposition where multiple states assert competing source claims. In doctrinal terms, such rights stem from sovereignty itself, with tax treaties operating as voluntary calibrations rather than concessions of pre-existing entitlements.

The other justificatory thread, economic allegiance, links the source principle directly with value creation theories central to contemporary reform debates. Here, the right to tax is asserted because economically productive activities take place within the jurisdiction or because local factors such as labor, infrastructure, or legal systems contribute materially to generating taxable surplus (Avi-Yonah, 2007, p. 133; Chand, 2019, pp. 1024-1025; Christians, 2014, p. 12; Escibano, 2019, secs. 2.02[A], 2.02[B]; Gadžo, 2018a, secs. 2.2.6.2.1, 5.1.4; Miller, 2015, secs. 3.4, 3.5; OECD, 2015a, para. 32; Traversa, 2022, sec. 2.2.2). Applied historically, this allowed for clear attribution when production sites or resource extraction facilities were immobile physical presences. In digital contexts, however, identifying equivalent local contributions prompts reinterpretation: data harvested from domestic users or exploitation of nationally provided digital infrastructure could be argued as modern forms of economic allegiance sufficient for asserting source status. The test under a principle-driven framework is whether these

broadened attributions preserve reciprocity and causation inherent in earlier formulations or abandon them in favour of form-based triggers like gross revenues alone, a departure which would signal transformation rather than adaptation.

An additional plank in the legal foundation lies in how treaties operationalize “source” through specific nexus rules such as PE definitions. Traditional PE provisions act both as gateways for recognising taxable presence and as proxies for economic connection; they thus serve as institutionalised legal expressions of the source principle (Bianco & Tomazela Santos, 2016, sec. 2; Emanuele, 2024, p. 3; Gadžo, 2018a, secs. 4.2, 4.4, 4.8; OECD, 2003, para. 13; OECD, 2015a, paras. 34-35; Traversa, 2022, sec. 2.2.3). This coupling means that adapting PE rules, for example via significant economic presence criteria, directly affects the contour of source-based rights. If alterations can be grounded within benefit theory interpretations already implicit in PE commentary, such as acknowledging non-physical yet tangible jurisdictional contributions, they may remain valid adaptations; but if they demand rewriting treaty text to create wholly new nexus categories untethered from established benefits logic, their underpinning shifts away from existing legal authority toward novel constructs requiring fresh multilateral assent.

The OECD Model Tax Convention offers sustained insight into how these underpinnings are codified transnationally: Articles governing passive income (dividends, interest, royalties) modulate raw territorial claims via limits on withholding rates at source. Such limitations structurally confirm that pure territorial entitlement exists absent modification; treaties serve to temper it toward mutually acceptable outcomes consistent with double taxation avoidance norms (Bentil, 2018, p. 1257; Kobetsky, 2011, pp. 43, 45; Lang, 2010, p. 5; Norr, 1962, p. 431; OECD, 1963, p. 12, para. 18). The UN Model amplifies this by enlarging certain source state rights, reflecting developmental asymmetries, yet still binds them within agreed definitional constraints for what qualifies as “source”. This harmonizes application while acknowledging political economic realities underpinning fiscal sovereignty exercises.

Doctrinal disputes over whether avoidance of double taxation itself constitutes a fundamental norm also influence interpretation of source principles’ legal base. In historical perspective, much of the early treaty network reflected an overarching compromise whereby active business income was allocated primarily to the source state while passive investment income accrued principally to the residence state; this synthesis

drew upon shared assumptions about fairness and economic allegiance yet was also motivated by pragmatic concern over reducing juridical double taxation (Avi-Yonah, 1996, pp. 1303-1306; Avi-Yonah, 2007, pp. 133-135; Braumann, 2020, pp. 763-764; Emanuele, 2024, pp. 2-3; Gadžo, 2018a, sec. 5.1.3; Kobetsky, 2011, pp. 111-113).

Some commentators have argued that if certain treaty provisions on business profits were regarded as reflecting customary international law status for source-based primacy, any ensuing prohibition on residence-state taxation after prior taxation at the source would create substantive limits on fiscal sovereignty far beyond existing consensus; this possibility appears particularly contentious given persistent divergences in state practice outside treaty networks, casting doubt on whether uniform *opinio juris* exists in support of such a far-reaching interpretation (Braumann, 2020, pp. 755-756, 766-767; Hongler, 2019, sec. 4.3.2.8.3.4).

A related observation from comparative practice is that most jurisdictions recognise some variety of resident-versus-non-resident distinction combined with sourcing rules that apply consistently across sectors; while national formulas differ at the margins, adherence to this bifurcated model reflects a shared baseline approach rather than idiosyncratic invention (Arnold, 2019, pp. 17, 31, 73; Avi-Yonah, 2000, pp. 168-169; Avi-Yonah, 2007, p. 2; Escribano, 2019, sec. 3.01[C]; Gadžo, 2018a, sec. 2.2.7.2; Gadžo, 2018b, p. 16; Vann, 1998, pp. 721-722). That same historical compromise aligns closely with what later became articulated as the benefits principle, allocating active income primarily to the country of source and passive income primarily to the country of residence, which operates alongside notions like the single tax principle aimed at ensuring cross-border income is subjected neither to double taxation nor complete non-taxation (Avi-Yonah, 1996, pp. 1303-1306; Avi-Yonah, 1997, pp. 517-518; Avi-Yonah, 2007, pp. 131-133; Avi-Yonah, 2013, pp. 305-310; De Lillo, 2018, secs. 1.2.2.1, 1.2.2.2; Gil García, 2019, pp. 313-315; League of Nations, 1923; League of Nations, 1927).

In sum, the source principle remains a cornerstone of international tax allocation, rooted in both territorial sovereignty and economic allegiance. While historically stable, its application faces strain under digitalisation, where traditional physical indicia of source are less determinative. Principle-driven evaluation requires assessing whether adaptations - such as significant economic presence or data-based proxies - maintain coherence with reciprocity, causation, and established treaty frameworks, or whether they

constitute transformative departures necessitating explicit multilateral endorsement. This framing sets the stage for systematically testing reform models against reconstructed doctrinal benchmarks.

The next section examines the limitations of the source principle in a globalized economy, highlighting how intangible-driven value creation, cross-border digital interactions, and mobile intangibles strain conventional proxies for source taxation and challenge established doctrinal assumptions

5.3.2 Limitations in a Globalized Economy

A central limitation of the source principle within the highly integrated and globalized economy lies in the instability of its operative proxies when confronted with intangible-dominated value creation. As traced in the preceding discussion of legal underpinnings, the principle has traditionally relied upon clearly locatable economic connections, production sites, resource extraction facilities, physical service outlets, to anchor taxation rights (Escribano, 2019, secs. 3.03[C], 3.03[D]; Gadžo, 2018a, sec. 6.2; Kobetsky, 2011, pp. 124-125; Miller, 2015, p. 1; OECD, 2015a, paras. 30, 35; OECD, 2018, para. 378; Toder et al., 2020, p. 11; Traversa, 2022, sec. 2.2.3). Such anchors offered both legal certainty and administrative practicability. Under globalized business structures, however, value chains are fragmented across multiple jurisdictions without proportional local assets or personnel, eroding the reliability of territorial nexus indicators. In particular, transnational enterprises deploying digital technologies structure their operations to exploit differential tax bases among overlapping jurisdictions (Oguttu, 2022, secs. 3.2.1, 3.2.2; OECD, 2013b, p. 7; OECD, 2013a, pp. 7, 26, 28; OECD, 2015a, paras. 113, 161, 186, 246; OECD, 2018, paras. 33, 277, 385). Revenue from transactions in a given market is often booked elsewhere due to contractual routing through affiliates situated in low-tax territories. This undermines the ability of source jurisdictions to exercise taxing rights even where substantial economic allegiance, by way of user engagement, exploitation of public infrastructure, or reliance on domestic regulatory systems, exists. The doctrinal consequence is that allocation rules built around permanent establishment thresholds may fail to capture meaningful economic activity if those thresholds remain tethered to tangible presence tests (Aslam and Shah, 2020, pp. 200, 205; Becker et al., 2019, pp. 2-3; Escribano, 2019, secs. 3.03[E], 3.03[F]; Gadžo, 2018a,

secs. 1.1, 7.1; Hongler and Pistone, 2015, secs. 2, 2.4; OECD, 2018, paras. 379, 392; OECD, 2020b, para. 22). While proposals for “significant economic presence” attempt to remedy this by incorporating indicators such as annual revenue levels from local customers or sustained digital interaction metrics (Aslam and Shah, 2020, p. 205; Chand, 2019, pp. 1024-1025; Escribano, 2019, sec. 4.02[C][a]; Gadžo, 2018a, sec. 7.3.2.2; Hongler and Pistone, 2015, sec. 4.2; Koerver and Louise, 2018, p. 169; OECD, 2015a, paras. 277-280), these proxies themselves encounter evidentiary challenges in cross-border contexts. Accurately measuring engagement attributable to a specific jurisdiction requires access to granular data flows that multinational enterprises may be unwilling or legally unable to share. Additionally, absent physical indicia, disputes intensify over whether interaction volumes alone suffice to establish the kind of benefit-linked economic allegiance historically used to legitimize source taxation.

Globalization accentuates another structural limitation: the asymmetry between legal entitlements and actual enforceability. The proliferation of overlapping tax jurisdictions with divergent definitions of “source” creates unresolvable conflicts unless moderated by treaty-based allocation and relief mechanisms (Arnold, 2019, pp. 45-46; Braumann, 2020, p. 755; Gadžo, 2018a, secs. 2.2.7.3.1, 2.2.7.3.2; Ring, 2007, p. 28, fn. 140; Vann, 1998, pp. 736-737). A sale executed entirely online might simultaneously trigger source claims under consumer market criteria in multiple states; without harmonised rules on profit apportionment, such concurrency risks double taxation or incentivizes base erosion strategies exploiting definitional gaps. Although bilateral treaties seek equilibrium via agreed sourcing rules for different income categories, they were drafted with traditional goods trade and certain physical services in mind. They do not consistently articulate principles for allocating intangible-driven income whose geographic attribution is inherently fluid. This doctrinal gap allows enterprises to manipulate transaction structuring so that legal “source” diverges from economic reality.

Competition between states for mobile capital inflows further strains coherence. Market jurisdictions attempt unilateral corrective measures, digital services taxes on gross revenues, withholding regimes on cross-border service fees, that bypass established treaty architecture (Collier, 2023, pp. 180-181; Emanuele, 2024, p. 5; Harpaz, 2021, pp. 80-81; IMF, 2019, pp. 12, 23; OECD, 2018, paras. 342, 356-359; Waerzeggers et al., 2020, pp. 345-346). Such measures aim at quickly restoring fiscal capacity eroded by global profit-shifting but embed inconsistency into the regime: they frequently define taxable

connection without reference to conventional benefit theory or permanent establishment norms. The absence of multilateral consensus means these rules operate outside reciprocity commitments that underpin inter-nation equity within source-based allocations. For affected taxpayers, unpredictability increases as compliance obligations vary sharply across jurisdictions pursuing similar policy goals via divergent legal constructs.

A further limitation emerges from the blurring of production and market functions within global value networks. Economic allegiance theory associates taxing rights with the place where productive resources contribute materially to value generation (Buriak, 2024, sec. 4.2.4; Escribano, 2019, sec. 3.03[B]; Gadžo, 2018a, secs. 2.2.6.2.1, 5.1.3, 5.2.2; Kemmeren, 2010, pp. 246, 264; Li, Bao and Li, 2019, pp. 1113-1114; OECD, 2015a, paras. 28-29, 32). Global integration allows such contributions, labor inputs, infrastructure use, to occur piecemeal across multiple territories, making singular “source” identification less meaningful without composite allocation formulas. In this context, some analyses highlight that developed economies have historically relegated demand-side factors to a secondary role, requiring proof that a non-resident’s activities are effectively woven into the economic fabric of the source country before granting taxing rights; this is justified as compensation for local infrastructure costs supporting the income generation process (Avi-Yonah, 1997, p. 521; Bianco and Tomazela Santos, 2016, sec. 2; Kobetsky, 2011, pp. 45-46; Traversa, 2022, secs. 2.2.1, 2.2.2). It has been suggested that for electronic commerce involving active business income streams like royalties or services, applying a single sourcing rule based on location of consumption could better align with benefit theory while countering distortions caused by production being situated in low-tax jurisdictions (Avi-Yonah, 1997, pp. 534-535; Devereux & de la Feria, 2014, pp. 11-13; Escribano, 2019, secs. 2.02[B][b], 2.02[B]; Schreiber & Fell, 2017, sec. 4). Yet implementing such a rule would still require careful coordination with other countries’ claims and may unsettle entrenched allocation practices that rely on production-site nexus tests.

Against this backdrop, some OECD country debates reveal tension between maintaining residence-based taxation rights and accommodating market jurisdiction claims for greater profit allocation when digital transactions dominate commerce. Countries such as France and Italy have voiced concern that corporate tax receipts accrue disproportionately outside the locations where consumption occurs, particularly in

situations where service usage far outweighs productive presence (Andersson, 2018, sec. 2; Bianco & Tomazela Santos, 2016, sec. 5; Collier, 2023, pp. 179–180; Harpaz, 2021, pp. 79–81; OECD, 2018, para. 359, Box 4.4, Box 4.6). This perception feeds calls for frameworks tying levies more closely to consumer market activity despite conceptual uncertainty over how and where value is actually created, a debate left intentionally open during earlier BEPS negotiations (Bal, 2018, sec. 3; Das, 2020, secs. 2.2, 4.3.1; Hey, 2018, secs. 2.1, 2.3; Kysar, 2020, secs. 2, 3.1; OECD, 2018, paras. 36–37, 387–388).

In summary, the source principle faces pronounced challenges in the globalized, intangible-intensive economy. Traditional territorial anchors and permanent establishment thresholds struggle to reflect the economic realities of fragmented value chains, mobile intangibles, and digital commerce. These limitations highlight the need to reassess the normative foundations of tax allocation: if operational proxies fail to capture meaningful economic allegiance, reliance on source alone may produce inequitable or incoherent outcomes. The following section turns to philosophical justifications for the ability-to-pay principle, exploring how capacity-based reasoning can complement or recalibrate traditional allocation rules in a context where global economic capacity and cross-border equity must guide normative tax claims.

5.4 Distributive justice

5.4.1 Ability-to-pay

Philosophical justifications for the ability-to-pay principle in international taxation draw from deeper theories of distributive justice, transposed from domestic fiscal contexts into the transnational sphere. In its intellectual lineage, this principle affirms that individuals and entities should contribute to public revenues in proportion to their economic capacity, thereby reflecting fairness as interpreted through equality of sacrifice or proportionality doctrines (Escribano, 2019, sec. 2.02[A], fns. 139, 171; Gadžo, 2018a, sec. 5.1.1; Harris, 2019, p. 95; Jogarajan, 2018, p. 10; Musgrave et al., 1989, pp. 223, 227–230; Smith, 1776, Book V, Ch. II, pt. II). While its application domestically is anchored in the direct relationship between state and taxpayer, where benefits conferred by the state are matched with obligations, the challenge in an international context arises because such reciprocal structures are not legally entrenched across borders. The

adaptation of the ability-to-pay principle to cross-border taxation consequently demands a robust normative framework that can operate without the backing of an enforceable constitutional or legislative foundation common to all jurisdictions.

From a theoretical standpoint, equity arguments serve as a primary underpinning. Among ideal theories of distributive justice applicable here, Rawlsian principles command attention: redistribution favoring those less advantaged is justified insofar as it does not undermine the position of others in ways inconsistent with fairness norms (Hongler, 2019, secs. 6.2.1, 6.2.3; Musgrave et al., 1989, p. 83, citing Rawls, 1972; Rawls, 1999, p. 245, as cited in Hongler, 2019, sec. 6.2.3). When mapped into international taxation, this envisions tax allocation rules that adjust burdens so that countries, and taxpayers within them, contribute according to relative capacity without imposing disproportionate detriment elsewhere. This perspective reframes ability-to-pay away from purely individual capacity toward collective national fiscal capacities, linking it directly with inter-nation equity debates addressed earlier. Analytically, such aggregation acknowledges that in cross-border commerce, tax incidence is intermediated by jurisdictional policies and infrastructures rather than existing solely at taxpayer level.

The authors who interrogate this principle note its conceptual roots lie squarely within domestic political philosophy: the government provides public order, rights enforcement, and infrastructure; taxpayers remit taxes proportional to their means. Internationally, there is no single government furnishing comparable benefits across all relevant jurisdictions; thus, applying ability-to-pay globally requires a translation into structural criteria usable for source-residence allocations. Schön's observation that taxation aimed at capturing full ability-to-pay naturally shifts toward residence-based systems rests on the logic that residence jurisdiction approximates personal economic capacity more completely than source-based measures (Avi-Yonah, 1996, pp. 1310–1311; Genschel and Rixen, 2015, p. 160; Graetz and O'Hear, 1997, p. 1024; Hongler, 2019, sec. 11.2.2; Monsenego, 2012, sec. 4.2; Schön, 2009, pp. 71–73). However, this conclusion invites scrutiny when considered under contemporary digital economy conditions discussed previously.

Mobile intangibles and dematerialised presence undermine any straightforward correlation between residence jurisdiction and total economic capacity. Philosophical rigorousness demands questioning whether residence-based primacy still aligns with

fairness when substantial segments of value creation are tied to market jurisdictions via user engagement or localised data harvesting without physical establishment. If one accepts that such market-specific contributions form part of a taxpayer's global capacity, either by generating revenue streams or underpinning competitive advantage, then excluding them from taxing rights apportionment risks weakening distributive justice credentials. In benefit-capacity hybrid models, jurisdictional claims are justified both by contribution to taxpayer benefits and by share in global tax base reflective of demonstrated economic capacity derivable within their territory.

Another justificatory strand emerges from impartialist perspectives in political philosophy that seek equitable treatment grounded not in legal obligation but in normative reciprocity between actors positioned symmetrically in relation to shared goods. Within international taxation, "shared goods" might include stability of financial systems, coordinated enforcement against avoidance practices, or sustainability of global public services through aggregate revenue generation. Under such framing, ability-to-pay functions as an ethical claim binding states collectively: allocating taxing rights toward those best placed to bear burdens without impairing efficiency fulfills relational justice across sovereigns even absent supranational compulsion.

Critiques from philosophical analysis also probe potential arbitrariness inherent in measuring "capacity" internationally. Domestic income or wealth metrics fail to capture jurisdiction-specific variations in costs of living, fiscal structures, or integration into global value chains. Applying unadjusted capacity measures could impose inequitable burdens on taxpayers situated comparably in absolute income terms but differently embedded into national economies (Gadžo, 2018a, sec. 5.1.2; Hongler, 2019, secs. 11.2.3.3.1, 11.2.3.3.2; OECD, 2010, paras. 192–193). This complexity intensifies under digital commerce where profits derive disproportionately from intellectual property exploitation or network effects unconstrained by local cost bases. Here lies a methodological imperative: reconstructing the principle requires operational criteria capable of weighting economic capacities alongside contextual variables such as reliance on global infrastructures or vulnerability to profit-shifting erosion.

Normative coherence also hinges on reconciling individual-level ability with aggregate national claims. Philosophically justified international allocations must integrate micro-level proportionality (taxpayers paying according to means) with macro-

level parity (states receiving shares commensurate with collective inhabitants' overall capacity). OECD frameworks and BEPS-derived allocations rarely address this dual scale explicitly; yet without integrating both levels into principle articulation, reform recommendations risk skewing toward either overly statist models ignoring individual fairness or purely individualist readings neglecting national equity.

Moreover, the principle's extension beyond domestic spheres entails confronting sovereignty theory objections, that taxing rights derive from territorial control rather than abstract capacity norms (Cugusi, 2020, pp. 1–2; Escribano, 2019, sec. 2.02[A]; Gadžo, 2018a, secs. 2.2.1, 2.2.2, fns. 198, 199; Santos and Rocha, 2017, secs. 2.02, 2.02[A]). Philosophical defense against such objections pivots on moral duties transcending sovereignty where actors benefit mutually from integrated systems enabling cross-border commerce; capacity-oriented allocation becomes part of sustaining those systems equitably. In this respect, proposals for inclusive supranational institutions administering fair allocation rules, such as an International Tax Organization capable of enforcing agreed constraints on harmful tax competition, illustrate one pathway for operationalising these normative claims while maintaining jurisdictional parity (Dean, 2020, p. 11; Dietsch and Rixen, 2014, pp. 165–167; Genschel and Rixen, 2015, pp. 157–158; Horner, 2001, pp. 179, 185–187; Magalhães, 2018, pp. 512–519; Tanzi, 1999, p. 173).

Certain accounts further stress that debates over proportionality are inseparable from questions about basic rights and reciprocal expectations within cooperative frameworks; here the rationale echoes arguments that no market can be detached from governmental structures that enable it and no entitlement exists over pretax income independent of collective arrangements (Christians, 2017, p. 12; Gadžo, 2018a, sec. 2.2.3, fn. 296; Holmes and Sunstein, 1999, p. 69, as cited in Rizzo, Epstein and Schmidt, 2022, p. 4; Hongler, 2019, sec. 1.3; Murphy and Nagel, 2002, p. 32, as cited in Hongler, 2019, sec. 1.3; Rizzo, Epstein and Schmidt, 2022, pp. 4–5). Perspectives on equitable distribution between states also suggest nuanced cases where overlapping memberships in different coercive and associative regimes require ethical consideration in treatment, for instance where individuals maintain economic ties to multiple jurisdictions through residence and employment connections, thus complicating simple allocations based solely on traditional residency or source notions (Dietsch, 2015, p. 80, as cited in Hongler, 2019, sec. 11.6.2.2; Hongler, 2019, secs. 8.3.2, 11.2.3.2.1, 11.2.3.2.2, 11.2.3.3.2; Mason, 2016, p. 169, as cited in Hongler, 2019, sec. 11.2.3.2.1). While sovereignty remains a

legal fact constraining operationalisation, philosophical justifications position ability-to-pay as a normative counterbalance ensuring fiscal responsibilities align with capacities nurtured through participation in global structures.

Embedding ability-to-pay into international tax allocation involves careful synthesis: aligning fairness doctrines rooted historically in domestic governance with structural realities lacking overarching political authority internationally. Realizing such alignment under digital economy conditions necessitates reconceptualizing “capacity” to incorporate intangible-intensive value creation distributed across multiple jurisdictions yet materially connected to specific locales via benefit provision and market engagement metrics. Evaluative criteria that distinguishes between adaptations faithful to distributive justice rationale, through broadened proxies like user participation valuations, and transformations departing materially from traditional definitions toward hybridized benefit–capacity constructs designed for intangible-driven commerce should be articulated (Chand, 2019, pp. 1024–1025; Escribano, 2019, sec. 2.02[A]; Grinberg, 2018b, pp. 3, 11–13; OECD, 2015a, paras. 11–12, 381; Traversa, 2022, secs. 3.2, 3.3).

These adaptations must also grapple with long-standing analytical difficulties such as the impossibility of objectively aggregating individual utilities when comparing capacities across diverse populations; without solving this measurement problem, any transnational implementation risks leaning on proxies whose fairness credentials may be contested (Musgrave et al., 1989, pp. 82, 224, 233, 237; Traversa, 2022, sec. 2.2.3). By situating these justifications within both ethical theory and doctrinal feasibility constraints assessed throughout prior sections, the analysis ensures reform assessments remain grounded simultaneously in normative legitimacy and structural operability within recognised treaty frameworks.

The next section examines the points of tension with respect to the ability-to-pay principle, demonstrating how simultaneous application of multiple principles can generate normative and operational challenges, and setting the stage for evaluating whether targeted adaptations or structural transformations are required in digital-era contexts.

5.4.2 Tensions with Other Principles

The ability-to-pay principle, as elaborated previously, does not operate in isolation within the architecture of international tax law. Its conceptual deployment interacts, often contentiously, with other foundational principles such as benefit theory, inter-nation equity, neutrality, and the arm's length principle. These tensions are not peripheral; they strike at the coherence of the regime's distributive logic when confronted with intangible-intensive value creation in a digital economy context.

One primary point of friction emerges in relation to the benefit principle. The ability-to-pay notion grounds fiscal claims in proportional capacity, frequently privileging residence-based taxation under the rationale that residence is where a taxpayer's full economic potential is manifest and fully assessable (Avi-Yonah, 1996, p. 1311; Gadžo, 2018a, secs. 5.1.1, 5.1.2; Musgrave et al., 1989, p. 233; Schön, 2009, pp. 71–72). Yet, benefit theory legitimizes source-based claims by tracing taxable rights to public goods and legal-institutional support offered locally to enable income generation (Avi-Yonah, 1997, pp. 520–521; Escribano, 2019, sec. 2.02[B], fn. 180; Gadžo, 2018a, secs. 5.1.2, 5.1.4, 7.1.1.1; Kobetsky, 2011, pp. 16, 26–27; OECD, 2015a, para. 32; Schön, 2009, pp. 73–74). In digitalised commerce, expanding or recalibrating source rights through benefit justifications can directly diminish residence jurisdiction entitlement envisaged under a pure capacity logic. If residence is construed broadly to encompass virtual management hubs or decision-making centres distributed globally, ability-to-pay overlaps with, and potentially displaces, source rights grounded in non-physical benefits like regulatory or telecommunications infrastructure provided by market states (Bianco and Tomazela Santos, 2016, sec. 4; Escribano, 2019, secs. 2.02[B][b], 3.02[A]; Hongler and Pistone, 2015, sec. 3.3; Kobetsky, 2011, sec. 2.4.2; OECD, 2015a, para. 32). This creates a normative collision: capacity as measured by total global income may subsume distinct territorial entitlements founded on benefit-linked economic allegiance.

Inter-nation equity introduces a related tension. Historically positioned as a corollary to principles such as single taxation and equitable burden distribution between residence and source jurisdictions (Buriak, 2024, sec. 5.3.1; De Lillo, 2018, secs. 1.2.1, 1.2.2; Escribano, 2019, secs. 2.02[A], 3.03[B]; Gadžo, 2018a, secs. 5.1.2, 5.1.3; Hongler, 2019, sec. 11.3.1; Kaufman, 1998, pp. 154–155, 189; Kobetsky, 2011, p. 16; OECD, 2015a, para. 12), it requires balancing national interests so neither is systematically

disadvantaged. Ability-to-pay arguments could imply skewing allocations toward high-capacity residence jurisdictions, often capital-exporting economies, because they host taxpayers with greatest aggregate means. Yet, equitable burden-sharing standards might favour reallocation toward market jurisdictions if those markets contribute materially to value creation for highly mobile enterprises operating without physical presence but deriving significant local revenue. In such cases, applying ability-to-pay without modification risks reinforcing asymmetries that inter-nation equity seeks to mitigate. The analytic question therefore becomes whether capacity should be weighted at aggregate national level against measurable territorial contributions, a hybridization potentially diluting the clarity of either principle when codified within treaty provisions.

Neutrality presents an equally acute area of doctrinal tension. Substantively, neutrality aims at non-discriminatory tax treatment across comparable economic actors regardless of jurisdictional composition. When operationalised via competitive neutrality between cross-border and domestic enterprises, ability-to-pay calculations linked primarily to residence may cause uneven burdens if market jurisdictions adopt measures capturing profits through significant economic presence rules or unilateral digital services taxes (OECD, 2018, paras. 408, 447–448; OECD, 2020c, paras. 403–404; Chand, 2019, sec. 5.2.3; Schön, 2018, pp. 12, 14). Such measures can intersect disruptively with residence-based capacity apportionments: identical global capacity yields divergent incidence depending on where consumption occurs and how source rules are framed. Absent coordinated relief mechanisms, tax credits or exemptions, neutrality fractures under disproportionate cross-border liability layering.

The ALP generates further complications when compared with ability-to-pay rationales. ALP allocates profits among jurisdictions based on functions performed, assets deployed, and risks assumed as though between independent entities (Gadžo, 2018a, sec. 2.2.6.1.1; Li, Bao and Li, 2019, p. 1121; OECD, 2013a, p. 36; OECD, 2018, paras. 378–379; OECD, 2022a, paras. 1.6, 1.36, 1.51). This functional approach does not inherently account for taxpayer-wide capacity; rather it links taxing rights to relational comparability benchmarks. Integrating an ability-to-pay overlay could undermine ALP’s transaction-specific neutrality if allocation shifts toward residence simply because that jurisdiction hosts the most economically capable entity in the corporate group. Conversely, attempts to adapt ALP by adding allocation keys reflecting user participation or market intangibles blur lines between functional analysis and distributive justice frameworks, potentially

eroding conceptual purity unless well-founded comparables exist (Chand, 2019, sec. 5.2.2; Grinberg, 2018a, pp. 12–14, 21; OECD, 2019c, paras. 23–24, 45, 56–58; Screpante, 2021, sec. 3; Screpante, 2024, secs. 3.3.4, 3.3.5).

Further subtlety arises from practical enforceability constraints within globalised tax administration systems. Capacity-based apportionment presumes accurate measurement of total economic means across multijurisdictional activity, a task complicated by mobility of intangible assets and diversity of domestic accounting standards (Grinberg, 2018b, pp. 49, 51; Kobetsky, 2011, pp. 427–428; Monsenego, 2012, p. 248, fn. 947; OECD, 2020b, paras. 418–419; OECD, 2022a, paras. 1.22, 1.28). Benefit theory allocations, while also measurement-dependent, can be more narrowly tied to identifiable local contributions even if intangible (e.g., data servers housed domestically). This distinction means that blending principles in application, for example allocating tax based partly on assessed global capacity and partly on territorial benefits, requires harmonising measurement methodologies that may not be administratively compatible across diverse treaty networks. It has been argued that modern benefits theory reframes taxation as an exchange in which receipt of public goods offsets fiscal burdens; this reformulation appears especially relevant where states justify cross-border tax claims based on infrastructural or regulatory advantages conferred upon foreign investors operating without physical establishment (Escribano, 2019, secs. 2.02[A], 2.02[B][b]; Gadžo, 2018a, secs. 5.1.2, 7.1.1.2; Harris, 2019, pp. 101–102; Hongler and Pistone, 2015, sec. 3.3; Traversa, 2022, secs. 2.2.2, 3.2.1.2). Incorporating such exchange-based reasoning alongside capacity metrics could either ease normative frictions by offering a dual justification basis for allocation or exacerbate them by embedding conflicting fairness logics within treaty interpretation.

In conclusion, the ability-to-pay principle interacts with other allocation-oriented doctrines in ways that expose both conceptual and operational tensions, particularly under digital and intangible-intensive business models. Resolving these tensions requires careful consideration of which aspects of traditional allocation mechanisms remain adaptable and which may need transformative recalibration. The subsequent section examines the classical criteria for establishing a PE, the foundational nexus mechanism through which source jurisdictions assert taxing rights. Understanding these traditional PE criteria provides the necessary baseline to evaluate how capacity- and benefit-based

principles are applied in practice and where adaptations or conflicts may arise in digital contexts.

5.5 Permanent Establishment Concept

5.5.1 Traditional Criteria

Traditional criteria for establishing a permanent establishment (“PE”) have historically served as the primary nexus mechanism through which source jurisdictions assert taxing rights over non-resident enterprises. In their classical treaty codifications, PE definitions rest on tangible and territorially anchored elements, reflecting industrial-era assumptions about the geography of value creation. The OECD and UN Model Conventions both define PE as a fixed place of business through which the business of an enterprise is wholly or partly carried on, with illustrative examples such as a place of management, branch, office, factory, or workshop. Central to this concept are three cumulative requirements: permanence, a physical location under the control of the enterprise, and engagement in core business activities rather than auxiliary or preparatory functions (OECD, 2017, art. 5(1), 5(2), 5(4); United Nations, 2021, art. 5(1), 5(2), 5(4)).

The criterion of permanence presumes a degree of stability sufficient to differentiate an enduring commercial presence from transient or incidental contact with the jurisdiction. Historically, permanence in treaty interpretation has been satisfied by months or years of operation from a particular site; temporary set-ups serving one-off projects were excluded to maintain doctrinal clarity and administrative practicality. The physical location requirement embeds territoriality into nexus determination. This has traditionally meant readily identifiable premises within national borders, possessed through ownership or lease by the enterprise, from which personnel conduct income-generating activities. Control over such location ensures that foreign enterprises enjoy benefits analogous to domestic entities, such as infrastructure access and legal protections, thus fulfilling benefit theory’s reciprocity rationale. The third criterion concerns functional substance: only those activities contributing directly to profit generation are considered relevant for PE status. Article 5(4) of the OECD Model lists exceptions for preparatory or auxiliary activities, storage, display of goods, purchasing, which may be located physically within a jurisdiction but lack substantive involvement

in value creation. This functional filter is critical in harmonising allocation norms with distributive justice objectives by preventing taxation of operations insufficiently connected to economic allegiance.

This tripartite structure, permanence, physical location, and substantive activity, was initially well aligned with global economic organization dominated by manufacturing and resource extraction. Its administrability derived from observable indicators hard to manipulate without material relocation of assets or staff. By tying taxing rights to tangible presence, traditional criteria gave clear effect to territorial sovereignty while operationalising fairness through benefit provision logic: the state could tax because it conferred essential infrastructure and legal order facilitating these activities (Avi-Yonah, 1997, p. 521; Escribano, 2019, sec. 2.02[B][a]; Gadžo, 2018a, secs. 2.1.4, 7.1.1.1; Kobetsky, 2011, sec. 2.4.2; Maisto, 2020, sec. 6.2; Santos and Rocha, 2017, secs. 2.02, 2.02[A]; Traversa, 2022, secs. 2.2.1, 2.3.1). However, doctrinal commentary emphasizes that these criteria carry inherent limitations when applied to integrated global value chains and digital platforms. Large-scale technological integration allows key profit drivers to exist independently from fixed premises, servers may be offshore while customer interaction occurs locally via platforms; design teams can operate collaboratively across borders without centralized workspaces; and automated service delivery can scale globally without any permanent human presence in target markets (Aslam and Shah, 2020, p. 197; Autio et al., 2021, pp. 10–11; Avi-Yonah, 1997, pp. 507, 513; Cui, 2021, p. 2; OECD, 2015a, paras. 42.3, 158, 161, 254; OECD, 2018, para. 33; OECD, 2020b, paras. 24, 27, Box 2.2). In such conditions, permanence becomes ambiguous: digital interfaces are enduring yet intangible; market engagement is sustained but dematerialised. Similarly, “place” under physical location tests loses relevance when core value creation occurs through algorithmic processes not bound to geographic coordinates in a way recognised by existing treaty text (Autio et al., 2021, p. 2; Bianco and Tomazela Santos, 2016, sec. 3; Buriak, 2024, sec. 6.2.2; Calijuri, 2022, secs. 2.4.3.2, 2.4.4.2; Hongler and Pistone, 2015, sec. 2.1; OECD, 2015a, paras. 148, 254; Schaffner, 2013, sec. 3.04[A]).

An additional interpretive nuance appears in OECD commentary noting that neither legal title nor formal leasing arrangements are strictly required for control over a place; even premises owned by another entity can constitute a PE if they remain at the foreign enterprise’s constant disposal for business purposes (Gadžo, 2018a, sec. 4.5.1.4; OECD, 2017, paras. 10–12; Schaffner, 2013, sec. 4.02[D]). This suggests that control is

assessed pragmatically based on actual availability and use rather than formal property rights, a view that may complicate such determinations when facilities are virtualized or emerge through shared technological infrastructures.

Normatively, the challenge is whether traditional criteria can be adapted by reinterpretation or whether transformation is required, a methodological question tied directly to principle reconstruction steps outlined earlier in this dissertation. If permanence can be construed functionally (i.e., sustained interaction with local economic space through technological infrastructure) without breaching textual constraints under current models, adaptation is feasible. One strand of analysis indicates that online transactions preceding physical deliveries may render customer location itself a plausible determinant for PE attribution in certain hybrid business models; physical facilities near consumer markets often remain integral despite the digital initiation of contracts (Escribano, 2019, secs. 4.02[C][b], 4.02[C][c]; Gadžo, 2018a, sec. 6.4.2.1; OECD, 2015a, paras. 117, 260; OECD, 2015b, pp. 9, 14, 31; Schön, 2018, p. 13). This perspective suggests that while immaterial interfaces complicate conventional PE tests, mixed-mode commerce blurs categorical boundaries less sharply than purely virtual transactions, allowing selective retention of traditional elements in adapted nexus frameworks (Cugusi, 2020, sec. 3.2; Escribano, 2019, sec. 4.02[C][b], fns. 1009, 1010; Gadžo, 2018a, sec. 6.4.2.1; OECD, 2015a, para. 117; OECD, 2018, para. 436). In fact, some commentators note that where online contracting precedes tangible fulfillment, and especially where delivery infrastructure or warehousing is situated proximate to end users, the customer's jurisdiction could be regarded as hosting a PE due to the lasting integration between digital ordering channels and physical distribution systems (Escribano, 2019, sec. 4.02[C][b], fn. 994; Gadžo, 2018a, sec. 6.4.2.1; OECD, 2015a, paras. 260, 344, 371; OECD, 2015b, p. 31; Schön, 2018, sec. 4). This finds some parallel in treaty interpretations where combined online contracting and nearby logistical capacity reinforce territorial links under Article 5's general definition (Escribano, 2019, sec. 3.03[F], fn. 606; OECD, 2015a, paras. 260, 371; OECD, 2017, para. 62; Schaffner, 2013, sec. 3.04[B][e]), although caution persists that extending such logic uniformly across all categories of cross-border trade may dilute the coherence of PE standards (Escribano, 2019, secs. 3.03[F], 4.02[C]; Gadžo, 2018a, sec. 6.3.2; Hongler and Pistone, 2015, sec. 4.2; Miller, 2015, sec. 10.4; Schön, 2018, p. 19).

A related observation is found in recent commentary emphasizing that hybrid transaction models, online ordering paired with proximate distribution hubs, may fit neatly within certain adaptations of traditional definitions if customer location rules are applied selectively rather than indiscriminately across all digital engagements (Escribano, 2019, sec. 4.02[C][b]; Gadžo, 2018a, sec. 6.4.2.1; OECD, 2018, paras. 435–436; Schaffner, 2013, sec. 3.04[D]; Schön, 2018, pp. 8–9, sec. III). Such an approach appears consistent with scenarios in which market jurisdictions assert taxing rights grounded both in sustained economic interaction and accompanying physical infrastructure access, offering a possible equilibrium between technological realities and long-established treaty principles. In this vein, it has been argued that when online contracts precede physical fulfillment, as in e-commerce models integrating regional warehouses with consumer-facing websites, the determination of PE might reasonably attach to customer location if such arrangements reflect enduring economic participation within that jurisdiction (Escribano, 2019, sec. 4.02[C][b], fn. 994; OECD, 2015a, paras. 260, 371; OECD, 2015b, p. 31; Schreiber and Fell, 2017, sec. 3.2).

Similar reasoning appears in academic discussion arguing that where online transactions form part of an integrated supply framework culminating in local delivery networks situated near customers' markets, applying customer-location-based nexus aligns well with existing definitional boundaries without eroding them indiscriminately (Cugusi, 2020, sec. 3.2; Escribano, 2019, sec. 4.02[C][b], fn. 994; OECD, 2015a, para. 260; Schön, 2018, sec. 4; Schreiber and Fell, 2017, sec. 3.2). This articulation reinforces the notion that nuanced adjustments can preserve much of Article 5's structural integrity while addressing contemporary trade settings more effectively than wholesale definitional overhaul.

The next section examines the specific conceptual and operational challenges that arise when applying the traditional PE criteria to digital commerce, highlighting tensions between legal text, evidentiary requirements, and normative principles, and setting the stage for discussions on potential adaptations or transformative approaches.

5.5.2 Challenges in Digital Context

The transplantation of traditional permanent establishment criteria into digital commerce environments exposes multiple layers of conceptual and operational difficulty. At the core lies the tension between requirements such as permanence, a fixed physical location, and substantial business activity, and the structural characteristics of digitalised value creation where economic interaction is continuous yet intangible. The absence of geographically anchored infrastructure in many platform-based or data-centric enterprises destabilizes the role of “place” as an indicium of nexus; transactions occur within distributed computational architectures whose servers may be located in jurisdictions unconnected to the relevant consumer market (Avi-Yonah, 1997, p. 510; Escribano, 2019, sec. 3.03[F], fn. 612; Gadžo, 2018a, sec. 6.4.2.1; OECD, 2015a, para. 254; OECD, 2018, paras. 241–242; Schaffner, 2013, sec. 1.01).

In these cases, local revenue generation is neither incidental nor transient, but traditional definitions make its capture contingent on establishing a physical base that may not exist by design. Moreover, permanence as historically construed becomes ambiguous when applied to enduring digital interfaces. A platform can sustain uninterrupted engagement with domestic users over years without any material assets deployed locally. Doctrinal interpretation must then address whether “permanence” refers to continuity of interaction, technological presence, or human occupation. Attempts to broaden interpretation toward significant economic presence seek to resolve this by redefining nexus through quantifiable variables, user numbers, revenue derived from domestic customers, frequency of transactions, that serve as proxies for sustained market participation (Aslam and Shah, 2020, p. 205; Chand, 2019, sec. 5.2.1; Collier, 2023, sec. 3.4.2; Hendriyetty et al., 2023, sec. 3.3.3.1; Kjær, 2018, p. 169; OECD, 2015a, paras. 277–279, 281; OECD, 2018, paras. 350–351, Box 4.2). Yet, substituting intangible metrics for tangible premises raises legal uncertainty under current treaty text: without renegotiation, such reinterpretations risk conflicting with established commentaries that bind “place” to physically locatable facilities. The evidentiary dimension compounds these definitional strains. Determining thresholds for sustained economic interaction necessitates access to enterprise-held data on user geography, transaction flow, and monetisation structures (Bal, 2018, sec. 5; Hongler and Pistone, 2015, sec. 4.8.3; OECD, 2015a, paras. 276, 280). Such information is often commercially sensitive and cross-border disclosure may contravene privacy or data protection laws. The asymmetry

between taxpayer information control and tax authority verification capacity increases administrative disputes, particularly where states rely on presumptive rules based on aggregate market statistics rather than enterprise-specific evidence.

Global integration intensifies these challenges through structural profit-shifting opportunities. Multinational enterprises deploy contractual arrangements steering high-value functions, such as IP ownership or algorithm development, into low-tax jurisdictions without altering the locus of market-facing digital activity (Oguttu, 2022, p. 5; OECD, 2013a, p. 42; OECD, 2015a, paras. 153, 186, 373; OECD, 2018, paras. 275–276; Screpante, 2024, secs. 1, 4.4.2, 4.4.3.3). Under traditional PE constructs tethered to physical indicia, this remains permissible tax planning: market states lack recognised nexus despite furnishing enabling conditions like telecommunications infrastructure and consumer protection regimes that underpin revenue extraction (Chand, 2019, paras. 10–11; Gadžo, 2018a, sec. 6.4.3; OECD, 2015a, paras. 184–185; Santos and Rocha, 2017, sec. 2.05[A]). Expanding PE scope to encompass such enabling conditions confronts doctrinal questions about whether these non-physical supports constitute benefits equivalent in kind to those historically grounding source rights.

Competition among jurisdictions also drives fragmentation of approaches. Some have enacted unilateral measures codifying significant digital presence tests into domestic law; others experiment with turnover-based digital services taxes targeting revenues deemed linked to local user bases even where no PE exists under treaty definitions (Aslam and Shah, 2020, pp. 201, 221; Bal, 2018, sec. 1, fn. 4; Cui, 2019, pp. 1–2; Hendriyetty et al., 2023, pp. 10–11, 63–65; IMF, 2019, para. 26, Box 1; OECD, 2018, paras. 342, 351, 359, Boxes 4.1, 4.2). These divergent strategies bypass uniform treaty modification and create a patchwork in which comparable enterprises face materially different nexus thresholds across markets. This undermines neutrality by imposing uneven compliance burdens and fosters double taxation risks where overlapping claims cannot be eliminated through existing mutual agreement procedures designed for tangible presence disputes.

From a normative standpoint, integrating significant economic presence into PE doctrine appears compatible with benefit theory if proxies are chosen that reliably indicate jurisdictional contributions enabling income generation (Cugusi, 2020, secs. 5.2, 7.1; Escribano, 2019, secs. 2.02[B], 4.02[C], 4.04; Gadžo, 2018a, secs. 6.4.3, 7.1.1, 7.3.2.3; Hongler and Pistone, 2015, secs. 3.3, 4.2; Traversa, 2022, secs. 2.2.2, 2.3.2). However,

current proposals often prioritise allocation efficiency over evidencing reciprocal benefit provision; for instance, gross revenue triggers infer connection without demonstrating that local legal or infrastructural supports are proportionate contributors to profit realization. This shifts PE identification away from its distributive justice roots toward a formalistic assertion of taxing rights tied primarily to consumption levels, a move classifiable as transformation within the analytical framework rather than adaptation.

Administrative feasibility presents a further constraint. Applying virtual nexus indicators uniformly across jurisdictions demands harmonised definitions for core metrics (active users, localisation of digital contracts) and standardised methods for apportioning multi-jurisdictional user interactions (Hongler and Pistone, 2015, sec. 4.2, Annex: Case Studies I, J; OECD, 2015a, para. 280). Without such coordination, taxpayers may be subject to overlapping yet inconsistent obligations; simultaneously, authorities risk under-collection if indicators can be manipulated through technical configurations such as routing user connections via third-country servers. These ambiguities resonate with broader concerns expressed in OECD-led discussions on BEPS reform: without recalibration of PE tests to reflect non-physical modes of commerce, substantial profits can be realised from sustained economic involvement in a jurisdiction while escaping taxation entirely due to outdated nexus rules (Elliffe, 2020, p. 5; Gadžo, 2018a, secs. 1.1, 6.4; Hongler and Pistone, 2015, sec. 2.4; OECD, 2013a, p. 36; OECD, 2015a, paras. 185, 256, 378; OECD, 2018, paras. 379, 383, 392; OECD, 2019a, para. 16). It has been argued that current treaty language entrenches gaps between value creation and taxable presence which are exploited by MNEs operating through purely virtual means, conditions that any serious reform must reconcile if fiscal equity is to be maintained (Buriak, 2024, secs. 1.1, 5.3.1; Escribano, 2019, sec. 3.02[A], fn. 132; Gadžo, 2018a, secs. 6.4.2.1, 6.5.4, 7.3.2; Li, Bao and Li, 2019, pp. 1111, 1124-1125; OECD, 2013b, pp. 10, 13; OECD, 2015a, paras. 12, 184, 249; Shaviro, 2018, p. 14).

Adapting permanent establishment concepts to digital contexts requires overcoming three intertwined barriers: definitional rigidity embedded in treaty text binding PE to tangibility; evidentiary asymmetries impeding reliable application of intangible proxies; and normative drift away from benefit-linked reciprocity toward market-access formalism. Any genuine adaptation must satisfy two cumulative tests: first, alternative nexus proxies must be demonstrably correlated with jurisdictional benefits analogous in function to those substantiating historic PEs; second, their application must

be administratively verifiable under realistic cross-border information exchange constraints. Proposals failing either test do not represent sustainable adaptations but transformative departures necessitating explicit multilateral redefinition of nexus principles (Escribano, 2019, secs. 3.03[F], fns. 618–621; 4.02[C]; Gadžo, 2018a, secs. 7.3.2, 7.4.1; Hongler and Pistone, 2015, secs. 4.1, 6.3; OECD, 2020b, paras. 824, 836–838; Schön, 2018, p. 19, fn. 96). In conclusion, only adaptations meeting these criteria can provide sustainable solutions; otherwise, reinterpretations risk transforming treaty norms rather than achieving coherent, enforceable, and equitable PE frameworks.

In conclusion, adapting permanent establishment concepts to digital commerce exposes both doctrinal and operational tensions, particularly where traditional physical presence criteria fail to capture sustained economic engagement mediated through intangible and distributed digital assets. These challenges highlight the limits of historical nexus constructs and highlight the need for frameworks that balance evidentiary reliability, normative coherence, and administrative feasibility. The following section turns to the historical origins of the arm’s length principle, examining how it emerged as a pragmatic solution to allocation challenges in industrial-era, physically anchored economies. Understanding this historical context is essential for evaluating whether and how ALP adaptations can address the contemporary pressures introduced by intangible-intensive and digitally integrated multinational enterprises.

5.6 Arm’s Length Principle

5.6.1 Historical Origins

The historical trajectory of the arm’s length principle (“ALP”) reveals its emergence as a pragmatic compromise rather than as a codified maxim derived from an immutable legal doctrine. Its initial conceptualization can be traced to the interwar efforts by the League of Nations to create a workable template for allocating profits between jurisdictions in cross-border enterprise activities. Early in these deliberations, the challenge was that integrated multinational enterprises lacked a clear methodology for attributing profits to various states that would be acceptable across differing fiscal sovereignties. The ALP arose as part of model conventions seeking to apply domestic analogies: treat related entities engaged in cross-border dealings as if they were unrelated,

and therefore subject to market-based pricing (Ash and Marian, 2020, p. 163; Escribano, 2019, sec. 3.01[C]; Graetz and O’Hear, 1997, p. 1089; OECD, 2022a, paras. 1.6, 1.14; Screpante, 2024, secs. 3.2.1, 3.2.2). This method sought to eliminate distortions caused by artificial transfer prices within integrated groups while preserving each jurisdiction’s entitlement under agreed nexus rules. From the outset, the idea was not framed as a purely technical valuation tool; rather, it embodied reciprocity and neutrality aspirations in treaty contexts. If prices between related parties reflected what independent entities would agree upon, then neither jurisdiction could allege concealed base erosion by manipulating intra-group pricing. The ALP thus acted both as a legal fiction, constructing hypothetical independent transactions between connected entities, and as a normative bridge stabilizing relations between capital-exporting and capital-importing countries (Calijuri, 2022, sec. 2.2.1.1; Escribano, 2019, sec. 3.01[C]; Kobetsky, 2011, pp. 122, 148-149; Muster, 2023, p. 280, fns. 1496-1498; Screpante, 2024, secs. 3.2, 5.3.1.1.1). This bridging function was essential in securing early consensus because there was no appetite for more radical formulary apportionment approaches at the time, which some states feared could overly shift taxing rights toward others.

The United States played an instrumental role in propagating the ALP through its domestic tax regulations under section 482 of the Internal Revenue Code (Avi-Yonah, 1996, p. 1340; Avi-Yonah and Lempert, 2023, sec. 2.3.3; Brauner, 2003, p. 274; Li, Bao and Li, 2019, p. 1120; Screpante, 2024, sec. 3.2.2). Early US experience with formulaic allocation methods, particularly state-level unitary taxation formulas, influenced federal reluctance to adopt similar mechanisms internationally. Instead, US authorities promoted transactional comparability models consistent with bilateral treaty frameworks influenced by the OECD’s predecessors. Other jurisdictions followed suit, sometimes under direct institutional pressure; Mexico’s abandonment of its historical formulary approaches in favour of OECD-modelled ALP compliance is an example of this conformity process tied to organisational accession requirements (Avi-Yonah, 2000, p. 170; Avi-Yonah, 2007, sec. 3.3; Bentil, 2018, pp. 1249, 1251; Brauner, 2003, p. 274, fn. 57). This evidences a historically contingent consolidation around ALP not purely because of inherent normative superiority but due also to geopolitical and institutional pressures shaping treaty practice.

Within OECD guidance that evolved from these origins, “arm’s length” was deliberately characterised interchangeably with “arm’s length standard” and “arm’s

length method” (Arnold, 2019, sec. 6.1; Brauner, 2016, p. 1037; Screpante, 2024, sec. 2.4). The preference for calling it a “principle” added conceptual gravitas while signaling its centrality beyond mechanical computation; this also allowed it to be positioned as an interpretive touchstone within transfer pricing law under Article 9 of model conventions. In substantive development during the mid-to-late twentieth century, commentaries reinforced reliance on actual commercial dealings between independent parties as benchmarks for related-party transactions. This codified a direct link between observed market conditions and acceptable profit allocations among affiliates, thereby rooting tax claims in empirical comparability. However, even during these formative decades the limitations inherent in market-reliant calculation were recognised. For some sectors and transactions, particularly involving unique intangibles or integrated operations, comparable uncontrolled prices were either unavailable or materially imperfect (Avi-Yonah, 1996, pp. 1342-1344; Escribano, 2019, sec. 3.01[C]; IMF, 2019, p. 13; Kobetsky, 2011, pp. 75-77; OECD, 2022a, paras. 1.9, 2.4, 2.130, 2.133, 6.138; US GAO, 1992, pp. 61-62). This led to acceptance of profit-based methods such as the profit split and transactional net margin approaches within the OECD framework, albeit subordinated conceptually to direct price comparables where available. Historical resistance to elevating profit splits from exceptional to primary methods illustrates how strongly early doctrinal orthodoxy valued adherence to transactional independence constructs over aggregate allocation logic.

The ALP’s historical durability owes much to its flexibility in accommodating incremental refinements without abandoning core fictions. For example, US jurisprudence, as in cases akin to the Coca-Cola dispute, emphasised that properly documented intercompany agreements closely aligned with anticipated outcomes were critical both for tax planning certainty and faithful application of basic transfer pricing norms (Arnold, 2019, sec. 6.8; Avi-Yonah and Mazzoni, 2020, p. 1739; *Coca-Cola Co. v. Commissioner*, 2020; Screpante, 2024, sec. 6.3.3; Wilkie, 2020). These judicial affirmations cemented ALP’s operational authority while recognising its dependency on accurate delineation of functions, assets, and risks undertaken by each party.

Doctrinally, ALP also benefitted from being compatible with broader treaty-network objectives: it aligned with economic allegiance theory by implicitly locating profits where economically substantive functions occurred; it maintained parity across sovereigns by denying preferential treatment rooted merely in corporate affiliation; and

its bilateral adaptability allowed states considerable room for interpretive variation without breaching high-level consensus built into model conventions (Escribano, 2019, sec. 4.02[A]; Genschel and Rixen, 2015, p. 162; Greil, 2019, pp. 4-7; Li, Bao and Li, 2019, pp. 1112-1115; OECD, 1977, Commentary on Art. 9, para. 7; OECD, 2022a, para. 1.8). However, this same adaptability created space for divergence in application that became more pronounced over time, especially once business models emerged whose internal integration far exceeded any unrelated-party analogues.

Historical research further suggests that U.S. practice revealed signs of treating certain international tax norms, including Article 9 obligations, as binding even where no treaty applied, reinforcing ALP's status as part of customary international tax law through consistent administrative insistence on arm's length outcomes (Avi-Yonah, 2004, pp. 500-501; Avi-Yonah, 2007, sec. 3.3; Avi-Yonah, 2017, pp. 3-6; Avi-Yonah, 2019, pp. 7-8). Evidence from doctrinal commentaries goes further: it indicates that repeated use of Article 9 language across bilateral treaties produced one of the highest levels of textual uniformity found in international taxation provisions, which may have indirectly supported perceptions of customary obligation even outside formal treaty contexts (Ash and Marian, 2020, pp. 173-174; Avi-Yonah, 2017, pp. 1-2; Avi-Yonah and Lempert, 2023, p. 381 fn. 1; Braumann, 2020, p. 764; Gil García, 2019, sec. 3.3).

Historically, ALP emerged less from abstract principle reasoning than from progressive layering of pragmatic responses to operational problems encountered under early double taxation avoidance regimes. Its sustained dominance reflects not only embeddedness within treaty text but also institutional reinforcement through OECD guidelines' iterative expansion and state practice convergence driven both voluntarily and coercively (Ash and Marian, 2020, p. 173; Avi-Yonah, 2007, sec. 1; Braumann, 2020, secs. II.B, II.C; Brauner, 2003, p. 274; Genschel and Rixen, 2015, pp. 162-164; OECD, 2022a, Preface, para. 19). It further shows that key elements underpinning the principle, market comparability assumptions, the possibility of observing independent party benchmarks, physical localisation of functional activities, mirror industrial-era economic structures. These conditions allowed ALP's early operational success but are increasingly orthogonal to digital-era realities marked by unique intangibles and virtualized value chains without clear external analogues.

Through historical reconstruction, it is demonstrated that ALP's original role was deeply context-dependent: it functioned effectively where economic processes produced observable market transactions mirroring intragroup dealings and where significant economic presence correlated closely with geographically discrete functions. Such dependencies mean that any adaptation today must grapple with dismantling or reimagining some of those foundational factual alignments without undoing reciprocal expectations ingrained in decades of bilateral arrangements. Recognising this contingent genesis permits principled differentiation between what aspects of ALP are normatively essential, transactional parity as fairness proxy, and what are historically incidental, physical co-location enabling comparability, which may require transformation when tested against intangible-intensive business models central to contemporary reform debates (Ash and Marian, 2020, p. 173; Avi-Yonah, 2007, sec. 1; Braumann, 2020, secs. II.B, II.C; Brauner, 2003, p. 274; Genschel and Rixen, 2015, pp. 162-164; OECD, 2022a, Preface, para. 19).

The next section examines the critiques of the arm's length principle, highlighting how conceptual limitations, valuation challenges, and operational strains arise when the principle is applied to modern, integrated MNE structures. By analyzing both doctrinal and practical stress points, it sets the stage for considering adaptations or complementary frameworks capable of addressing gaps exposed in digital-era transfer pricing.

5.6.2 Critiques in Transfer Pricing

Critiques in transfer pricing address both the conceptual foundations and the operational execution of the arm's length principle within international tax law, especially under the conditions of integrated MNE structures and intangible-driven value creation. These criticisms extend from doctrinal analysis into pragmatic concerns about enforceability, neutrality, and distributive justice outcomes when ALP-based profit allocation is applied to contemporary digital economy models. Drawing from the historical context mapped earlier, it becomes clear that ALP's reliance on independent-party comparables is particularly strained when confronted with unique intangibles, synergistic group rents, or cross-border production chains lacking external analogues (Buriak, 2024, sec. 5.2.3; Escribano, 2019, sec. 3.01[C]; Greil, 2019, pp. 10, 20, 33-34; Kobetsky, 2011, secs. 3.2.2, 3.2.4; Olbert and Spengel, 2017, sec. 2.4; OECD, 2022a,

paras. 1.9–1.11, 1.13, 2.130, 2.133; Screpante, 2024, sec. 1.1; US GAO, 1992, pp. 61–62). In such environments, constructing reliable transfer prices that meet the empirical requirements of comparability often shift from a science into what some practitioners and commentators see as interpretative art, an imprecision that undermines the principle’s claim to objectivity and fairness.

A central critique addresses this methodological fragility: ALP presupposes market benchmarks observable between unrelated parties for transactions similar in nature to those undertaken within corporate groups. Digital economy operations frequently violate this assumption because their primary value drivers, proprietary algorithms, accumulated user data, platform network effects, are not traded as discrete goods or services in open markets (Aslam and Shah, 2020, p. 196; Greil, 2019, pp. 18–20; IMF, 2019, pp. 209–210; OECD, 2018, paras. 34–35; Olbert and Spengel, 2017, p. 40; Schreiber and Fell, 2017, p. 100). Without comparable uncontrolled transactions, tax administrations must resort to approximation through profit-split or cost-plus methods that depart from transactional orthodoxy while still marketed doctrinally as “arm’s length”. This blending of method categories risks obscuring whether such allocations genuinely maintain parity between related and unrelated dealings or whether they represent *de facto* formulary apportionment embedded within case-specific adjustments. The tension here is analytical: if departure from transactional metrics becomes systemic rather than exceptional, continuation under the ALP label may amount to a terminological preference masking substantial transformation.

Another recurrent criticism focuses on allocation mismatch between legal risk-bearing and actual control functions. OECD BEPS Actions 8–10 attempted to address this by redefining economic control as critical in attributing returns to intangibles (Christians, 2016, p. 10; Escribano, 2019, sec. 4.02[A]; Martín Jiménez, 2020, sec. 3.1; OECD, 2015a, paras. 227, 230, 373; Screpante, 2024, sec. 4.3.2). Yet, application remains inconsistent; contractual terms can still allocate risk artificially without substantive change in decision-making locus, enabling entities in low-tax jurisdictions to claim disproportionate returns on intangible assets whose development and strategic deployment are directed elsewhere. This dissociation undermines fairness principles embedded in ALP’s value creation narrative while leaving room for base erosion via nominal but economically disconnected allocations. Further critique emerges around group synergies and assembled workforces. Traditional ALP views these elements not as intangibles *per se* unless they are separately

transferable assets (Escribano, 2019, sec. 3.01[C]; Hey, 2018, sec. 3; OECD, 2022a, paras. 1.173, 1.177, 6.30, 9.68; Screpante, 2024, sec. 4.2.2.2). However, modern integrated enterprises derive measurable economic rents precisely from these synergies, coordinated brand presence, consolidated logistics architectures, that cannot be captured adequately via transaction-by-transaction tests. Craig Elliffe and other tax scholars highlighted that profits attributable to such synergies exceed what an independent entity could generate alone; under ALP there is no arm's length counterparty to allocate them to (Buriak, 2024, sec. 5.3.1; Elliffe, 2020, p. 24; Escribano, 2019, sec. 3.01[C]; Greil, 2019, pp. 5, 31; Screpante, 2024, sec. 4.3.2). Retaining a pricing methodology structurally incapable of recognising this category of value means jurisdictional claims over substantial sources of profit may remain unarticulated, exacerbating asymmetries between taxation rights and actual economic engagement.

Practitioners also point to excessive compliance costs linked directly to ALP complexity. Transfer pricing documentation requires extensive functional analyses detailing assets used, functions performed, and risks assumed across all relevant entities, a burden exacerbated in intangible-intensive models with globally dispersed contributions (Brauner, 2003, p. 276; Buriak, 2024, sec. 6.4.2; Calijuri, 2022, sec. 2.2.1.1; Escribano, 2019, sec. 3.01[C]; Greil, 2019, pp. 4, 18, 33; IMF, 2019, p. 34; Kobetsky, 2011, pp. 83–85, 111; OECD, 2022a, paras. 1.12, 1.51, 5.3, 5.13, 6.3; United States General Accounting Office, 1992, pp. 25, 80). For developing countries with constrained administrative capacities, maintaining robust enforcement infrastructures for such analysis proves challenging; resource constraints make litigation more likely when subjective judgment dominates valuations (Buriak, 2024, sec. 5.2.2; Elliffe, 2020, sec. 3.1.6; Escribano, 2019, sec. 3.01[C]; Greil, 2019, pp. 11, 22; IMF, 2019, paras. 15–16, Appendix VII; OECD, 2013a, p. 20). This operational reality interacts with normative critique: an allocation system producing inequitable enforcement contests disproportionately impacts states least equipped to sustain prolonged disputes, distorting inter-nation equity irrespective of doctrinal correctness.

Academic discourse has also examined neutrality implications when ALP interacts with digitalisation-induced mobility. Enterprises structured for tax efficiency can manipulate intra-group transfers of high-value intangibles toward low-tax jurisdictions under compliant ALP documentation (Aslam and Shah, 2020, p. 196; Escribano, 2019, sec. 3.01[C]; IMF, 2019, Appendix; OECD, 2013a, p. 42; Oguttu, 2022,

sec. 3; Screpante, 2024, secs. 4.4.2, 4.4.4, 4.5.1). While technically consistent with guidance if contractual terms and functional analyses align, such arrangements shift taxable bases without altering underlying economic activity, a behavior antithetical to neutrality because similarly situated domestic entities lack equivalent structuring options.

Critics argue that preserving nominal adherence through elaborate documentation masks substantive erosion of destination jurisdiction rights. An area where reform proposals attempt intervention lies in integrating Development, Enhancement, Maintenance, Protection and Exploitation (“DEMPE”) analyses into valuation processes for intangibles (Arnold, 2019, p. 105; Buriak, 2024, sec. 3.4.2; Calijuri, 2022, sec. 2.4.3.1; Escribano, 2019, sec. 4.02[A]; Martín Jiménez, 2020, sec. 3.1; OECD, 2015a, paras. 226–227, 373; OECD, 2022a, paras. 6.32, 6.48). While conceptually strengthening causality between intangible-related returns and substantive functions performed in certain jurisdictions, DEMPE introduces layers of subjective assessment susceptible to dispute escalation, particularly where intangible outputs are novel or where multiple jurisdictions lay claim to different aspects of DEMPE contributions. Such complexity increases transaction costs without guaranteeing convergence toward equitable residual profit attribution.

From a methodological perspective aligned with principle reconstruction tests set earlier, these critiques fall along two lines: those suggesting potential adaptation through targeted interpretative expansion (e.g., incorporating user participation metrics directly into valuation keys while retaining comparative discipline), and those signaling conceptual insufficiency requiring transformation (e.g., group synergy rents unattached to any arm’s length analogue). The categorization depends on whether modifications preserve core reciprocity logic, mirroring independent transaction results, or whether they replace it with alternate distributive formulas fundamentally redefining allocation rationales.

ALP faces acute stress-tests under digital economy conditions due both to structural absence of comparables and systemic valuation gaps around integrated enterprise rents. Partial adaptations like enhanced DEMPE scrutiny or refined control-function attribution improve alignment only marginally; core valuation foundations built on unrelated-party analogues remain mismatched against intangible-intensive operational realities. Thus, it may be worthwhile to systematically classify which limitations

constitute fixable methodological deficiencies versus those indicating doctrinal obsolescence: unique intangibles without market analogues fall into transformation necessity; misallocated legal-economic risk can be adapted through stricter functional tests; synergy rents demand new allocative constructs beyond current standard's scope. Ultimately these critiques sharpen the analytical lens necessary for evaluating whether reform models like OECD Pillar One, which explicitly moves residual profits via formulaic rules detached from transactional comparability, represent honest recognition of ALP's limits or rhetorical adherence disguising substantive departure.

In conclusion, critiques of the arm's length principle highlight both conceptual and operational strains, particularly under intangible-intensive, digitally enabled business models. Structural gaps - ranging from absence of comparable transactions for unique intangibles to valuation challenges around integrated enterprise synergies - expose circumstances where ALP can only be partially adapted or risks substantive transformation. These limitations highlight the need for complementary doctrinal approaches capable of capturing value creation beyond observable arm's length benchmarks. Building on these observations, the next section examines the value creation principle as a foundational framework for linking taxing rights to actual economic contributions. Section 5.7.1 explores how defining and operationalising value creation in digital and intangible-rich contexts provides an alternative lens for allocating profits, offering a doctrinal pathway to address the deficiencies and tensions identified in traditional ALP applications.

5.7 Value Creation Principle

5.7.1 Definition and Scope

The definitional contour of the value creation principle occupies a decisive conceptual position within contemporary debates on international tax allocation, particularly under conditions created by digitalised and intangible-intensive business models. At its most distilled, the principle asserts that taxing rights should accrue to the jurisdiction where economic value is generated, requiring identification of the originating cause of income rather than merely its legal ownership or point of collection (Emanuele, 2024, sec. 4.4; Hey, 2018, sec. 1; Kemmeren, 2001, pp. 35–36; OECD, 2015c, paras.

6.47–6.48; Schwarz, 2018). This conceptualization integrates both doctrinal and normative dimensions: doctrinally, it operates as an allocation criterion alongside source and residence, intersecting with established nexus rules; normatively, it purports to link fiscal entitlement to substantive economic activity in a manner consonant with fairness and inter-nation equity. Unlike purely formalistic nexus definitions bound to physical indicia, value creation can encompass tangible and intangible elements, so long as there exists observable productive contribution materially tied to jurisdictional factors.

The precise legal scope of this principle is neither universally established nor uniformly interpreted across instruments such as the OECD and UN Model Conventions. Historically, its content has largely been inferred from transfer pricing methodologies that allocate profits according to functions, assets, and risks linked with DEMPE activities for intangibles (Das, 2020, sec. 2.2; Greil, 2019, p. 6; Martín Jiménez, 2020, sec. 2.2; OECD, 2022a, paras. 1.51, 6.48; Screpante, 2021, sec. 6; Screpante, 2024, secs. 4.3.3, 6.1, 6.3.1). This reading situates value creation operationally within the arena of functional and asset-based analysis but retains flexibility for recognising contributions outside conventional production paradigms, such as user-generated data or network effects in platform economies. In market economies grounded in tangibles, these contributions align closely with traditional economic allegiance theory; however, digitalisation shifts their nature into forms (e.g., datasets from local users) whose attachment to territory demands doctrinal scrutiny. The League of Nations’ 1923 recognition that market jurisdictions have legitimate claims over sales-originated income provides historical support for adopting expansive interpretations that incorporate non-physical value drivers (Bauer et al., 2019, p. 23; Das, 2020, sec. 3.2.1; Emanuele, 2024, secs. 4.3, 5; Escribano, 2019, sec. 2.02; League of Nations, 1923, p. 23). Thus framed, definition requires disaggregation into constituent components: an origination element identifying where contributing activities occur; a causality element establishing how those activities drive revenue; and a jurisdictional entitlement element connecting origination and causality to fiscal sovereignty over related income streams.

Each component is susceptible to divergent interpretation when tested against digital-era phenomena. The origination element becomes complex if inputs span multiple jurisdictions concurrently, data harvested in one country may be processed algorithmically elsewhere before underpinning monetised advertising sold into yet another market. Causality measurement similarly strains under intangible-driven

processes without clear market comparables; utility derived from aggregated user behavior exhibits characteristics akin to non-rival production factors as examined in OECD-aligned axiomatic approaches (Aslam and Shah, 2020, pp. 195-199; Buriak, 2024, secs. 5.2.2, 6.3; OECD, 2022a, paras. 6.186, 6.189; Richter, 2021, secs. 1, 2, 3.1). If one accepts that such accumulation itself generates distinct economic rents not reproducible without sustained engagement from a given user base, then value creation's definitional scope must encompass those engagement location as legitimate origin points.

A critical dimension in bounding scope lies in distinguishing value creation from mere value realization. Income may be realised contractually where goods or services are sold, but for taxation under this principle the relevant inquiry focuses on where underlying value was produced through economically substantive inputs (Buriak, 2024, secs. 4.2.1, 4.2.4; Chand, 2019, secs. 2, 3; Emanuele, 2024, sec. 4.2; Jogarajan, 2018, p. 283; Nikolakakis, 2021, p. 11). This distinction matters significantly when considering allocation tensions under OECD Pillar One: formulary attribution of residual profits partly by sales location risks conflating realization with creation unless supported by evidence that local market conditions contributed materially beyond consumer payment capacity, such as brand localisation strategies leveraging domestic cultural capital or regulatory environments enabling particular advertising modalities. Absent this substantiation, treating sales presence as synonymous with creation amounts to broadening scope beyond traditional reciprocity-based rationale and potentially crossing into transformative redefinition of the principle's core meaning.

Doctrinally coherent scope also demands correlation with legal proxies capable of treaty integration without wholesale textual overhaul. Permanent establishment has historically acted as such a proxy for locating value creation at source; adaptation proposals like "significant economic presence" attempt similar grounding for non-physical contributions by tying entitlement thresholds to quantifiable interaction metrics (Bianco and Tomazela Santos, 2016, secs. 2, 3; Gadžo, 2018a, secs. 4.1, 7.3.2; Hongler and Pistone, 2015, secs. 2, 4.2; OECD, 2015a, paras. 35, 277–280; OECD, 2018, paras. 350–351). The challenge is ensuring these proxies measure genuine productive input attributable to jurisdictionally conferred benefits rather than merely capturing commercial opportunity exploitation devoid of local contribution, a distinction vital for maintaining classification as an adaptation within principle reconstruction methodology. Proxies failing this test expand scope without preserving causation integrity, thus reflecting

transformative departure requiring renegotiated legal foundations rather than interpretative stretching within existing models.

Importantly, valuation within this definitional context intersects profoundly with transfer pricing norms under ALP. Where comparable independent transactions exist for similarly situated intangibles, patents licensed on global terms, the ALP can accommodate allocation aligned with value creation by attributing returns where DEMPE functions occur (Escribano, 2019, sec. 4.02[A]; Martín Jiménez, 2020, sec. 2.2; OECD, 2022a, paras. 6.47, 6.48, 6.145; Screpante, 2024, sec. 4.2.2). But absence of comparables for unique synergistic rents forces recourse to formulaic approaches which may embed broader distributive aims into technical devices, a shift impacting whether use remains within original doctrinal bounds or redefines operative logic entirely. Here again scope determination hinges on alignment between measurement tools and underlying economic substance tied explicitly to jurisdictional factors recognised under benefit theory (Escribano, 2019, secs. 2.02[A], 2.02[B], 5; Gadžo, 2018a, secs. 5.1.4, 8; Hongler and Pistone, 2015, sec. 3.3; Traversa, 2022, sec. 2.2.2). Notably, recent policy discussions acknowledge situations where market jurisdictions gain taxing rights through new nexus rules premised on sustained consumer interaction rather than physical presence, a move that partially decouples profit allocation from demonstrable local production functions (Becker, Englisch and Schanz, 2019, pp. 1-2; Buriak, 2024, secs. 4.1, 6.1; Chand, 2019, secs. 4, 5; OECD, 2019a, paras. 16, 22, 28; OECD, 2020b, paras. 186, 187, 194). In practice this suggests potential mismatches between nominally “created” value and actual contributory activity within the jurisdiction asserting rights, raising questions about whether such expansions respect the historical reciprocity embedded in the principle’s doctrinal form.

Defining the scope coherently requires rejecting overly inclusive interpretations that equate any revenue connection with value creation. At the same time, recognition of non-physical contributions should be affirmed where they demonstrably satisfy economic allegiance standards grounded in reciprocal benefit provision. This calls for a tiered analytical mapping: Tier 1 recognizes traditional tangible production location; Tier 2 incorporates intangible-intensive DEMPE activities verifiably linked to territorial contributory conditions; Tier 3 cautiously evaluates market-engagement metrics for equivalence only where causation linkage is evidentiary robust. Implementing this mapping ensures adaptations remain principled by protecting historical reciprocity

criteria within expanded interpretations while clearly signaling when formulaic reallocations surpass those bounds into transformation territory requiring explicit multilateral recodification.

Section 5.7.2 explores how dispersed digital inputs, network effects, and user-generated data strain doctrinal structures and practical enforcement, highlighting the need for principled adaptations to preserve coherence and fairness in international tax allocation.

5.7.2 Challenges in Intangible Economy

The difficulty in operationalising the value creation principle within an intangible-intensive economic environment lies in reconciling jurisdictional claims over dematerialised factors of production with the doctrinal structures that historically anchored taxing rights to tangible assets and geographically identifiable activities. When the principal drivers of profit are intellectual property (“IP”), algorithmic processes, data aggregation, and brand equity, conventional proxies for economic allegiance, physical sites, personnel numbers, material inputs, lose their evidentiary sufficiency as locators for value origination (Aslam and Shah, 2020, pp. 189-190, 203; Bianco and Tomazela Santos, 2016, sec. 3; Cui, 2021, p. 4; Gadžo, 2018a, sec. 6.4; Kobetsky, 2011, pp. 63-64; OECD, 2015a, paras. 253-254; OECD, 2018a, paras. 33-35, 132; Traversa, 2022, sec. 2.2.2). This generates a normative uncertainty: if nexus is determined by value creation, yet “creation” itself is untethered from geography in any conventional sense, allocation becomes susceptible to formalist triggers or politically expedient definitions not grounded in the causal provision logic embedded within benefit theory.

An immediate challenge stems from definitional plurality. As discussed previously, there is no single codified interpretation of “value creation” across OECD guidance or academic literature (Andersson, 2018, sec. 2; Bal, 2018, sec. 3; Bauer et al., 2019, p. 7; Baumgartner, 2018, sec. 1; Calijuri, 2022, sec. 2.4; Das, 2020, secs. 1.1, 2.2, 4.3.1; Greil, 2019, pp. 6-7; Hey, 2018, secs. 2.1, 2.3; Martín Jiménez, 2020, sec. 2.1; Morse, 2018, secs. 1, 2; Ruiz Colmenares, 2023, sec. 2.2; Screpante, 2024, secs. 6.1, 6.2.1). Some interpretations treat it synonymous with DEMPE functions performed in relation to intangibles; others extend it to encompass market engagement metrics such as

user density or localised brand activities. This plurality undermines legal certainty because identical economic patterns can yield materially different jurisdictional entitlements depending on which definitional strands a policy instrument adopts. In an intangible context, where multiple jurisdictions may contribute distinct yet complementary elements to global value generation, the absence of uniform scope leads to overlapping claims and increases the risk of double taxation unless harmonisation mechanisms are embedded within treaty modifications.

Further complexity arises from mobility and centralization effects inherent to intangible assets. Unlike fixed capital, IP portfolios or proprietary datasets can be relocated with relative ease between affiliates for contractual purposes without altering operational realities (Aslam and Shah, 2020, p. 196; Elliffe, 2020, sec. 3.1.4; Nunns et al., 2016, p. 12; OECD, 2013a, p. 42; OECD, 2015a, paras. 153, 193; OECD, 2018, paras. 275, 321; Oguttu, 2022, sec. 3; Screpante, 2024, sec. 1.1). This enables profit alignment strategies whereby legal ownership migrates toward low-tax jurisdictions while substantive exploitation remains dispersed or tied to high-consumption markets. Transfer pricing rules under the arm's length principle attempt to counter this by aligning returns with functional control over intangibles rather than nominal ownership (Calijuri, 2022, sec. 2.4.3.1; Christians, 2016, p. 1628; Escribano, 2019, sec. 4.02[A]; Grinberg, 2018a, p. 12; OECD, 2015a, paras. 18, 227, 373; OECD, 2022a, paras. 6.32, 6.42, 6.47–6.48; Screpante, 2024, secs. 2, 4.3.4). However, where functions themselves are decentralized, e.g., development distributed across multiple jurisdictions via virtual collaboration, the construction of reliable allocation keys reflecting actual contributions proves arduous.

The absence of clear market comparables for unique IP magnifies this valuation instability, generating a structural mismatch between doctrinal aims and practical capacity. The challenge is intensified by user-generated content and network effects as autonomous contributors to enterprise rent extraction (Aslam and Shah, 2020, pp. 193-199; Buriak, 2024, secs. 3.4.1–3.4.2; Cui, 2019, pp. 11-17; Greil, 2019, pp. 19-20; OECD, 2018, paras. 35, 148, 156; OECD, 2019c, paras. 18-20). In platform economies, every active user interaction effectively operates as an incremental input into data-driven monetisation cycles; algorithms transform aggregated behavioural datasets into targeted advertising revenues and product-demand predictions. Locating the “source” of such value under current treaty concepts is problematic: the jurisdiction housing servers may have minimal linkage to demand conditions; the user's location contributes directly but

without physical asset deployment; the corporate headquarters providing overarching strategic direction may lie elsewhere. Without explicit doctrinal recognition that these dispersed micro-contributions constitute jurisdictionally relevant value creation under benefit theory analogues (Aslam and Shah, 2020, pp. 196, 202; Buriak, 2024, secs. 2.1, 3.4.2; Cugusi, 2020, secs. 4, 7.1, 7.2; Hongler and Pistone, 2015, secs. 3.3, 4.1; Olbert and Spengel, 2017, secs. 2.3, 4.1.2), market states struggle to justify taxing rights that match their economic participation in intangible rent streams.

In conclusion, operationalising the value creation principle in an intangible-intensive economy demands frameworks that recognise dispersed and non-physical contributions while preserving causal links to jurisdictional benefits. Without such adaptations, legal uncertainty, overlapping claims, and misaligned taxing rights will persist, highlighting the need for harmonised, evidence-based proxies that align digital-era value creation with established international tax norms. These challenges directly lead to the discussion of the next section: examining how foundational principles of international taxation can come into conflict when applied concurrently to intangible-driven business models. Section 6.1 explores these principle conflicts, highlighting the doctrinal frictions that arise and the necessity of explicit recalibration or hybridization to maintain internal coherence in the digital economy context.

6 INTERNAL COHERENCE AND TENSIONS AMONG PRINCIPLES

6.1 Principle Conflicts

Conflicts between foundational principles of international taxation acquire heightened significance in the context of digitalisation, where the structural features of income generation unsettle long-standing alignments between doctrinal norms. This research builds directly on the observations in Section 5.7.2, where definitional ambiguities within the value creation principle were shown to interact problematically with other allocation logics. Friction emerges not simply from operational divergences but from deeper normative incompatibilities, points at which principles, as reconstructed within this thesis, cannot be applied simultaneously to intangible-intensive commerce without producing distributive distortions or doctrinal incoherence.

One substantive collision occurs between the benefit principle and the ability-to-pay principle. The former allocates taxing rights according to jurisdictional contributions, tangible or intangible, that enable economic activity, while the latter frames entitlement through proportionality to total economic capacity, often privileging residence-based claims (Avi-Yonah, 1996, pp. 1310-1311; Avi-Yonah, 2007, sec. 4.2; Burns and Krever, 1998, p. 497; Escribano, 2019, sec. 2.02[A]; Gadžo, 2018a, secs. 5.1.2, 5.1.4; Schön, 2009, sec. 2.2.1.1; Traversa, 2022, sec. 2.2.2). In digital contexts, these logics frequently converge on the same income stream from opposing bases: market jurisdictions invoke benefit theory grounded in user participation and local infrastructure provision; residence jurisdictions assert encompassing capacity claims over global profits because strategic control resides within their borders. Where user engagement in a high-consumption state materially drives monetisation but ultimate managerial oversight occurs offshore, simultaneous application of both principles yields overlapping full-tax claims that double tax treaties are ill-suited to reconcile without redefining nexus or burden-sharing formulas (Becker, Englisch and Schanz, 2019, secs. 5.1, 5.2; Greil, 2019, pp. 19-20; Martín Jiménez, 2020, sec. 4; OECD, 2013a, p. 8; OECD, 2015d, paras. 2, 5; OECD, 2019b, paras. 29, 39, 41; Schön, 2018, pp. 2-3; Traversa, 2022, sec. 1.4). The doctrinal question is whether one principle's scope must be adapted, e.g., limiting capacity claims to residual income beyond demonstrable market-contribution rents, or whether reconciliation requires a hybrid redistribution logic absent in current treaty architectures.

A parallel conflict exists between the ALP and value creation when confronting unique group synergies and non-marketable intangibles inherent in platform economies (Elliffe, 2020, sec. 3.1.4; Greil, 2019, pp. 4, 20, 31-32; OECD, 2003, para. 57; Schreiber and Fell, 2017, p. 100; Screpante, 2024, sec. 1.1). ALP allocates profit by comparing related-party transactions to hypothetical independent dealings, yet many forms of digital-era value, network effects, aggregated user data, lack market analogues. Value creation demands recognition of these elements as jurisdictionally relevant contributors even without comparable uncontrolled prices. Attempting to overlay ALP's comparability framework onto such intangibles risks stripping value creation factors from allocation entirely or forcing arbitrary approximations that diverge from both principles' conceptual purity. The resulting doctrinal misalignment reveals that methodological commitments to transactional parity can directly obstruct equitable attribution premised on actual productive inputs.

PE criteria add another tension layer by acting as institutionalised gateways for source-based allocations under benefit theory (Bianco and Tomazela Santos, 2016, secs. 2, 3; Escribano, 2019, secs. 3.03[C], 3.03[E]; Gadžo, 2018a, secs. 4.2, 7.1.1.1; OECD, 2015a, paras. 34-35). Traditional PE definitions require tangible presence; expanding them via significant economic presence metrics align superficially with value creation for intangibles but disrupts neutrality when applied asymmetrically across jurisdictions. If some states broaden nexus standards while others retain physical thresholds, comparable enterprises face uneven exposure, undermining horizontal equity and increasing double taxation risk. Moreover, stretching PE concepts to capture digital engagement without corresponding treaty reform risks reclassifying benefit-based nexus into market-access taxation detached from demonstrable productive contribution, thereby blurring the boundary between adaptation and transformation within the reconstructed principle framework.

In sum, digitalisation exposes structural tensions among benefit, ability-to-pay, ALP, PE, and value creation principles when their traditional formulations are applied concurrently to intangible-intensive business models. Absent coordinated recalibration, simultaneous adherence to their traditional formulations produces overlap, inconsistency, and distributive distortion. Resolving these tensions requires explicit prioritization, principled hybridisation, or negotiated transformation rather than incremental reinterpretation within inherited doctrinal limits. This sets the stage for the next analytical step: examining how these competing objectives can be balanced within existing international tax frameworks. Section 6.2 explores whether stable equilibria can be achieved through interpretative adaptation or whether resolving such conflicts necessitates deeper doctrinal transformation, providing the conceptual link between the identification of principle conflicts and practical approaches to harmonising their application.

6.2 Balancing Competing Objectives

Balancing competing objectives within international tax allocation frameworks requires recognising that foundational principles, while conceptually distinct, must often operate concurrently in circumstances where their prescriptions pull in divergent directions. The analytical challenge is not merely to acknowledge these tensions, as traced

earlier, but to determine whether stable equilibria can be established through interpretative adaptation or whether reconciling such objectives forces departure from the doctrinal architecture embedded in current treaty practice.

One axis of competition arises between distributive justice aims and administrability constraints. Principles such as ability-to-pay and inter-nation equity are inherently oriented toward proportionally fair burden-sharing, yet the metrics required for their precise realization in a digitalised economy often involve gathering granular, cross-jurisdictional data on value-creating activities (Aslam and Shah, 2020, pp. 197, 203; Calijuri, 2022, secs. 2.4.3.1, 2.4.4; Gadžo, 2018a, secs. 5.1.2, 5.1.3; Olbert and Spengel, 2017, sec. 3.2; OECD, 2015, paras. 265, 276). More accurately these measures reflect actual economic allegiance, for instance by tracing user participation inputs into monetizable datasets, the more administratively burdensome and dispute-prone they become. By contrast, proxies with lower compliance frictions, such as sales-based formulary splits under OECD Pillar One, offer administrative simplicity but risk attenuating the causality link defined by benefit theory (Aslam and Shah, 2020, p. 203; Buriak, 2024, secs. 6.3.1, 6.3.3; Calijuri, 2022, secs. 2.2.2, 3.2.1; OECD, 2020b, paras. 441, 507, 855; OECD, 2022a, para. 1.25). Sustainable balancing along this axis hinges on an explicit decision rule: determining at what evidentiary degradation point a proxy shifts from adaptationist practicability into transformative compromise of normative aims.

A second axis involves the interplay between neutrality and source-residence reciprocity. Neutrality counsels against distorting taxpayers' commercial decisions through differential treatment rooted purely in jurisdictional composition, while reciprocity underpins existing allocation bargains struck via bilateral treaties. In practice, neutrality may be served by market- or destination-based profit attribution, ensuring that similarly situated competitors bear comparable tax liabilities irrespective of organisational structure (Auerbach et al., 2017, pp. 4, 23; Becker, Englisch and Schanz, 2019, p. 5; Collier, 2023, fn. 181; Escribano, 2019, sec. 4.02[C]; Gadžo, 2018a, sec. 5.2; OECD, 2018, p. 141; Schreiber and Fell, 2017, secs. 2.1, 4). Yet, these same attributions can breach reciprocity if they reallocate taxing rights from residence jurisdictions without correlative concessions. Attempts to reconcile this through partial residual profit splits combined with maintenance of ALP for routine returns (Aslam and Shah, 2020, pp. 212-213; Becker, Englisch and Schanz, 2019, p. 14; Buriak, 2024, secs. 1.1, 6.2.2; Grinberg,

2018a, pp. 21-22; IMF, 2019, paras. 87-88, 99; OECD, 2019b, para. 28; Shaviro, 2019, pp. 48-49) represent hybridized solutions; whether such hybrids embody principled balance or mask incoherence depends on their ability to preserve both neutral competitive conditions and mutuality of concessions. Absent formalized compensatory mechanisms, such as symmetric relief obligations enshrined in treaty language, neutrality-oriented reallocations will erode reciprocity and thereby cease to be classifiable as adaptations.

Conflicts also manifest sharply when comparing benefit theory's demand for demonstrable jurisdictional contribution with capacity-based justifications under the ability-to-pay principle. Benefit theory resists allocations grounded solely in market access absent proof of enabling public goods or regulatory supports relevant to value generation (Avi-Yonah, 2007, sec. 4.2; Escribano, 2019, secs. 2.02[A], 2.02[B]; Gadžo, 2018a, sec. 7.1.1.2; OECD, 2003, paras. 44, 45, 49; Schön, 2009, sec. 2.2.2.1); capacity logic potentially warrants such allocations whenever a jurisdiction harbours taxpayers with high aggregate means, regardless of specific contributory factors tied to local benefits (Escribano, 2019, sec. 2.02[A]; Gadžo, 2018a, secs. 5.1.1, 5.1.2; Schön, 2009, secs. 2.2.1.1, 2.2.1.2). Balancing here would require agreeing on hybrid entitlement formulas weighing both criteria, for example assigning a portion of residual profits strictly according to documented local contributions (to satisfy benefit theory) and another portion proportionate to global capacity metrics (to satisfy ability-to-pay).

Another domain demanding balance is the reconciliation of ALP's transactional comparability paradigm with value creation recognitions that lack independent-market analogues. Highly integrated MNE operations generate group synergies and unique intangibles whose rents cannot be isolated through observed third-party pricing (Aslam and Shah, 2020, p. 191; Avi-Yonah, 1996, pp. 1342-1343; Buriak, 2024, sec. 5.2.4; Escribano, 2019, sec. 3.01[C]; Greil, 2019, pp. 4, 19; Kobetsky, 2011, pp. 78-79; OECD, 2003, para. 57; OECD, 2022a, para. 1.10; United States General Accounting Office, 1992, p. 61). Persisting exclusively with ALP risks under-attribution to states hosting significant non-priceable contributions; shifting entirely to formulary apportionment abandons ALP's reciprocity-driven market simulation logic. An adaptive balance might preserve ALP for transactions where robust comparables exist while introducing narrowly targeted formulaic keys for clearly non-comparable synergistic rents, provided those keys themselves are grounded in verifiable value creation linkages acceptable under prevailing model conventions. Testing by this framework shows that extending formulaic methods

beyond this clearly delimited scope would amount to functional replacement rather than calibrated complementarity. Some recent scholarship has argued that ALP has already migrated partially toward fractional apportionment in substance, particularly where DEMPE-based functional formulas are applied alongside or within OECD guidance; this shift illustrates how hybrid approaches can gradually embed a new value creation standard without formal doctrinal overhaul (Avi-Yonah, 1996, pp. 1345-1346; Buriak, 2024, sec. 6.2.3; Escribano, 2019, sec. 4.02[A]; Kobetsky, 2011, pp. 91-92, 94; Screpante, 2024, secs. 1.2, 3.3.3, 3.3.4, 6.3.1; Tavares, 2016, sec. 6.2). It appears plausible that such embedding may tilt balances subtly over time, creating incremental departures from the separate entity paradigm even before explicit treaty reform is attempted.

Balancing also demands temporal sensitivity: principles must endure across cycles of technological change without constant renegotiation undermining legal certainty (Brauner, 2016, p. 1022; Kahin, 2016, p. 7; Kobetsky, 2011, pp. 97-98; OECD, 2015a, p. 21; OECD, 2020b, para. 40; Schaffner, 2013, secs. 3.04[A], 3.04[B]; Vann, 1998, p. 725). Overly detailed metric definitions risk obsolescence as business models evolve; excessively open-textured standards invite inconsistent interpretation across jurisdictions. A refined equilibrium uses adaptable proxy categories (e.g., “measurable sustained user interaction”) capable of evolving through commentary updates without treaty text overhaul, thereby aligning stability with responsiveness.

In conclusion, balancing competing objectives in international tax law requires more than pragmatic compromise; it demands transparent prioritization criteria and clearly articulated thresholds distinguishing adaptation from transformation. Stable equilibrium is achievable only where distributive aims, neutrality, reciprocity, and administrability are jointly calibrated within mutually accepted treaty structures. Absent such coordination, hybrid solutions risk gradual doctrinal drift, eroding coherence and legal certainty while masking fundamental reallocations of taxing rights. This sets the stage for examining how digitalisation challenges these calibrations in practice. In particular, the concept of “scale without mass”, discussed in the next section, exemplifies a structural disruption: enterprises can achieve substantial market engagement and value creation without corresponding physical presence, directly testing the limits of traditional nexus rules and highlighting the tensions explored in this section.

7 THE DIGITAL ECONOMY AS A STRUCTURAL CHALLENGE

7.1 Economic Characteristics of Digitalisation

7.1.1 Scale without Mass

The concept of “scale without mass” has emerged as one of the most analytically instructive descriptors of digitalised business models, especially in understanding their disruptive relationship with the foundational principles of international taxation. It encapsulates the phenomenon whereby MNEs achieve rapid scalability and sustained economic engagement within a jurisdiction without corresponding local physical infrastructure or personnel. This feature directly challenges traditional nexus constructs, such as permanent establishment definitions, which have historically anchored taxing rights to tangible presence, as discussed previously.

From a doctrinal and economic perspective, scale without mass is made possible through reliance on intangible assets, exploitation of network effects, and integration into global value chains (“GVCs”) that distribute functional activities across borders in ways that make physical co-location unnecessary (Buriak, 2024, sec. 0.1.2; Hendriyetty *et al.*, 2023, pp. 7, 76; Oguttu, 2022, sec. 3; OECD, 2015a, paras. 152, 160–161; OECD, 2018, paras. 33–35, 44). For example, a platform offering personalised advertising can expand its user base in a market jurisdiction purely through digital channels, monetizing local consumer interaction while all servers, IP ownership, and management teams remain offshore. This disconnection between market penetration and physical anchorage undermines the reliability of traditional proxies used to locate value creation for tax purposes under benefit theory (Elliffe, 2020, sec. 3.1.2; Escribano, 2019, secs. 3.03[E], 3.03[F]; Gadžo, 2018a, secs. 6.4, 7.1.1.2; OECD, 2015a, paras. 256, 267; OECD, 2018, paras. 132, 384, 392; Schaffner, 2013, secs. 1(D), 8.01; Traversa, 2022, secs. 2.2, 2.3).

Network effects magnify this dislocation. The marginal cost of adding new users is negligible relative to the potential increase in value realised through data analytics and targeted content, a form of scaling intrinsically independent from local investment or fixed asset deployment (Abashidze, 2024, p. 23; Aslam and Shah, 2020, pp. 196, 200; Cui, 2019, pp. 25–26; OECD, 2015a, para. 158; OECD, 2018, paras. 109, 132; OECD, 2020a, para. 18; OECD, 2020b, paras. 24, 27). Once critical mass is reached in any given

jurisdiction, continued economic presence is sustained by feedback loops between user activity and service refinement, but without deepening physical roots locally. From the tax law standpoint, such patterns mean that thresholds premised on “place” become overtly formalistic, severed from substantive indicators of economic allegiance or reciprocity. The OECD’s analytical framing regards scale without mass as an archetype among highly digitalised MNEs warranting new profit allocation methodologies precisely because it enables substantial market participation absent traditional nexus (Bauer et al., 2019, p. 18; Buriak, 2024, secs. 0.1.2, 1.3.1; Hendriyetty et al., 2023, pp. 6–7, 149–150; OECD, 2015a, paras. 158, 255–256; OECD, 2018, paras. 33, 131–133, 372–374, 384; OECD, 2019c, paras. 4, 12, 65; OECD, 2020b, paras. 15, 38).

In many cases, these digitally intensive firms also reframe themselves as intermediaries rather than conventional producers or service providers. By centralizing core functions, often in low-tax jurisdictions, they retain control over economies of scale while automating transactional processes via software platforms. A large share of value then emerges not at the point where services are delivered physically but within the architecture and operation of the platform itself (Buriak, 2024, sec. 3.4.2; Kjarsgaard and Schmidt, 2018, pp. 151–152; Mlčúchová, 2022, pp. 3–4; OECD, 2018, paras. 81, 83, 212, 218). Such structuring fits neatly into the scale without mass pattern: scalability comes from replicable technological systems and global reach derives from platform-mediated interactions rather than brick-and-mortar expansion.

In terms of principle reconstruction methodology adopted within this dissertation, the evaluative question is whether existing doctrines like permanent establishment, or related benefit theory applications, can be adapted via reinterpretation to capture such dematerialised engagement without abandoning their conceptual anchors. Expanding nexus to include significant economic presence tests based on interaction metrics (active users, digital transactions value) reflects one adaptation path (Bauer *et al.*, 2019, p. 23; Chand, 2019, sec. 5.2.1; Gadžo, 2018a, sec. 7.3.2.2; Hongler and Pistone, 2015, sec. 4.2; OECD, 2015a, paras. 277–280; OECD, 2019c, paras. 50–51; Valente, 2018, sec. 3). Yet, the normative test lies in verifying whether these metrics correlate robustly with jurisdictional benefits conferred, such as provision of digital infrastructure or legal regimes safeguarding online commerce, rather than simply measuring revenue occurrence. Where causal linkage is tenuous, such reforms veer toward transformation by

redefining entitlement away from benefit-linked causality toward market-access formalism.

Scale without mass also reshapes how global governance structures interpret “value creation” itself. In conventional industrial models, scaling required replication or expansion of production facilities proportionally across markets. In intangible-intensive models, however, scaling involves replicating access rather than production, leveraging centralized intellectual property across decentralized demand with identical marginal increments in output costs (Abashidze, 2024, pp. 22–24; Aslam and Shah, 2020, pp. 195, 222; Autio *et al.*, 2021, p. 3; Cui, 2019, pp. 4, 14, 25–26; OECD, 2018, para. 42; Richter, 2021, sec. 3.1). Tax principles grounded in locating asset deployment (source principle) or operational control location (residence principle) thus face misalignment with empirical accrual patterns: taxable surplus associated with incremental scaling accrues predominately where users are situated, yet standard allocation rules attribute rights elsewhere due to legal ownership positioning and absence of PE triggers (Aslam and Shah, 2020, pp. 204–205; Cui, 2019, pp. 11, 13–14; Elliffe, 2020, secs. 2.2, 3.1.2, 3.1.4; Escribano, 2019, secs. 2.01[A], 3.03[E]; Greil, 2019, pp. 1, 20–21; Harpaz, 2021, pp. 62–64; OECD, 2015a, paras. 184, 246; OECD, 2018, paras. 33, 384). Normatively analyzing this through inter-nation equity shows asymmetric distribution risks.

Recent policy initiatives connected to the so-called Unified Approach (OECD, 2019a) exemplify attempts to address these tensions in allocation where scale without mass erodes place-based thresholds altogether. By explicitly reworking nexus rules so that active market participation, even if digitally mediated, is sufficient for allocating profit shares to user jurisdictions, such frameworks mark a departure from earlier dependence on physical representation (Elliffe, 2020, secs. 4.2.1, 5.2, 5.3; Gadžo, 2022, sec. 2.1; Hongler and Pistone, 2015, secs. 3.2, 4.1; OECD, 2015a, para. 277; OECD, 2019a, paras. 10, 16, 22; OECD, 2020b, paras. 22, 186–187). The intention here seems partly pragmatic: accept that technologies enabling global reach to make older PE concepts archaic in certain contexts and instead focus on equitable splits grounded in consumption or engagement location rather than tangible capital positioning.

In conclusion, scale without mass exposes a structural misalignment between traditional nexus doctrines and digital-era value accrual patterns. Whether responses such as market-based nexus expansions constitute principled adaptation or transformative

reallocation depends on their ability to preserve causal linkage between jurisdictional contribution and taxing rights. Without such linkage, reforms risk replacing benefit-grounded allocation with market-access formalism, thereby redefining rather than recalibrating the foundational architecture of international tax law. Building on this, the next section turns to network effects, examining how the interconnections among users amplify platform value while further complicating the ability of conventional tax frameworks - anchored in physical presence or proportional local inputs - to accurately capture economic contribution. Understanding network effects is essential for assessing the subsequent role of data as a discrete value driver, as explored in the following sections.

7.1.2 Network Effects

Network effects represent one of the most consequential structural phenomena for understanding how digitalised business models both generate and concentrate value, thereby disrupting the allocation logics embedded in existing international tax principles. Formally, a network effect occurs when the utility or economic value of a product or service increases as more users participate in the network. In doctrinal terms, this has profound implications because it detaches incremental value creation from proportional input investment within each jurisdiction. Here, expansion in user base constitutes a principal driver of revenue generation independently of whether additional tangible assets or local personnel are deployed.

When assessed through the principle reconstruction methodology, network effects confront benefit theory with distinctive challenges. Under industrial-era conditions, benefits conferred by a jurisdiction, such as infrastructure, had relatively linear relationships to the economic output attributable locally; an increase in capacity required corresponding increases in physical benefit provision. In contrast, once a platform reaches critical mass in a market jurisdiction, further marginal increases in value may flow primarily from user-to-user connectivity effects rather than direct state-conferred enablers (Greil, 2019, pp. 15–16; Mlčúchová, 2022, pp. 9–10; OECD, 2018, paras. 52, 83, 148; Schön, 2009, sec. 2.2.2.1). While local telecommunications networks or legal frameworks may remain important in maintaining operational viability, they are no longer the sole nor even primary determinant of incremental value generation. This loosens the causal link historically central to source-based entitlement under benefit theory. The normative

question becomes whether these indirect contributions suffice to legitimate taxing rights over rents amplified by global network spillovers that transcend territorial boundaries.

In examining adaptability potential, the treatment of network effects within ALP-based transfer pricing exemplifies methodological strain. Transactions between related parties that internalize significant network rents cannot be priced against independent analogues where such rents do not exist, no third-party comparator can replicate a proprietary platform's scale-dependent data advantages. This absence erodes ALP neutrality and comparability objectives, forcing evaluators toward profit-split or formulary apportionment methods. Integrating user-related metrics into allocation keys has been proposed to bridge this gap; however, doing so transforms ALP from transactional parity into hybrid destination-based logic unless tightly delimited to circumstances where localised network density demonstrably contributes to unique rent formation.

Further doctrinal tension arises under inter-nation equity. Network effects display non-linear scaling properties: jurisdictions at early adoption stages contribute disproportionately less to global platform revenues than those achieving high penetration, yet the marginal global return from adding users anywhere remains positive due to connectivity expansion (Aslam and Shah, 2020, p. 196; Greil, 2019, pp. 15–16; Mlčúchová, 2022, pp. 10–11; OECD, 2015a, paras. 170–171). Allocating taxing rights purely on proportional user counts risks undervaluing smaller-market contributions that nonetheless sustain cross-border linkages essential for overall network viability, while overcompensating large markets whose marginal additions may yield diminishing relative returns globally. Any adapted principle must thus navigate between reflecting absolute value increments from concentrated user bases and acknowledging distributed contributory significance across all participating jurisdictions. The OECD's analytical materials have indirectly confronted this issue by recognising that user participation can constitute a form of intangible asset for purposes of DEMPE functional analysis (Aslam and Shah, 2020, p. 208; Calijuri, 2022, sec. 2.4.3.1; Jong, Neuvel and Uceda, 2018, pp. 58–59; OECD, 2019c, paras. 31, 59, fn. 6; OECD, 2022a, para. 6.199). In theory, if local user bases meet criteria for development or enhancement functions, through engagement that refines algorithms or augments dataset quality, they can be treated as contributors under current transfer pricing rules. Yet operationalising such attribution faces severe evidentiary constraints: platforms rarely disaggregate algorithmic improvement impacts

by user origin; moreover, assessing qualitative enhancement from specific geographic cohorts is analytically complex and vulnerable to subjective interpretation.

From an administrability standpoint, integrating network effect metrics into nexus or allocation rules raises information asymmetry concerns akin to those noted in Section 7.1.1. Tax authorities would require granular data on active user interactions, growth rates within defined markets, and consequent revenue impacts, information controlled entirely by taxpayers and often withheld due to commercial sensitivity or regulatory privacy restrictions. Without credible verification mechanisms or harmonised definitions (for example, distinguishing “active” versus “registered” users), such proxies risk being manipulated or rendered legally contestable.

Neutrality is equally jeopardized when unilateral measures attempt gross-revenue taxation targeting perceived exploitation of domestic network effects (Aslam and Shah, 2020, pp. 221, 224; Buriak, 2024, secs. 7.2.3.1, 7.2.5; Hendriyetty et al., 2023, p. 63; OECD, 2018, paras. 368, 403–404; OECD, 2020c, paras. 302, 402–403; Schön, 2018, secs. 5, 6; Shaviro, 2019, pp. 8–9). States adopting these measures frequently assume uniform correlation between local user volumes and taxable value without accounting for upstream development costs borne elsewhere. This results in asymmetric burdens on multinational enterprises depending on their geographic market composition, distorting investment incentives contrary to neutrality objectives, and contradicts reciprocity principles unless multilateral agreement embeds relief obligations. Overall, network effects reveal not merely evidentiary or administrability gaps, but a structural tension between territorially anchored tax principles and digitally amplified value creation, thereby testing the limits of doctrinal adaptation.

The discussion of network effects illustrates how value creation in digitalised business models increasingly detaches from tangible assets and linear input-output relationships, instead arising from the interconnections and interactions among users. This highlights the limitations of traditional nexus and allocation constructs in capturing the full scope of economic contribution. Building on this, the following section examines data itself as a discrete value driver: how its generation, aggregation, and exploitation underpin revenues, amplify network effects, and challenge doctrinal frameworks rooted in physical presence and observable inputs.

7.1.3 Data as a Value Driver

Data's role in contemporary business models, particularly within platform-based multinational enterprises, constitutes a paradigmatic example of how intangible-intensive value drivers destabilize traditional tax allocation principles. As set out in Section 7.1.2, network effects magnify the economic worth of accumulated data; however, the doctrinal and normative consequences of recognising data itself as a value driver merit independent analysis. Data here is not merely an operational by-product but functions as a strategic asset whose collection, aggregation, and exploitation form core commercial processes capable of generating sustained rents (Aslam and Shah, 2020, pp. 194–195; Bal, 2018, sec. 4; Becker, Englisch and Schanz, 2019, p. 9; Buriak, 2024, sec. 3.4.3; Calijuri, 2022, secs. 1.1, 2.4.1; Mlčúchová, 2022, pp. 8–9). Its uniqueness lies in the synthetization of multiple intangible features: exclusivity to the collector, scalability without proportional marginal cost increases, and adaptability for use across different revenue channels, advertising optimization, product recommendation systems, demand-prediction algorithms.

Doctrinally, traditional proxies used under benefit theory and PE rules falter when confronted with data-driven models because they presuppose that economic allegiance can be evidenced via physical asset deployment or human presence within a jurisdiction. Yet, the locus of data generation is typically tied to user interaction physically situated in market jurisdictions, while processing and monetisation can occur entirely offshore (Aslam and Shah, 2020, pp. 194–195, 217; Bauer et al., 2019, pp. 15–16; Becker, Englisch and Schanz, 2019, pp. 24–25; Calijuri, 2022, secs. 2.4, 2.4.3.1; Olbert and Spengel, 2017, sec. 4.1.4; OECD, 2018, para. 142). This disconnect raises two intertwined questions: first, whether the act of local data creation constitutes an economic contribution equivalent, in terms of benefit provision, to industrial-era inputs; second, how such contributions can be reliably measured for tax purposes without breaching administrability thresholds.

The OECD's DEMPE framework (OECD, 2022a, paras. 6.47-6.48, 6.56.) offers one partial pathway by linking returns on intangibles to substantive functions rather than to mere ownership. This approach conceptually permits recognition that persistent local user engagement “develops” or “enhances” data assets, thus grounding taxing rights in documented jurisdictional inputs even absent a physical PE. However, current application

remains skewed toward allocative focus on corporate decision-making centres; user participation therein is not systematically weighted according to frequency or depth of engagement (Aslam and Shah, 2020, p. 196; Calijuri, 2022, secs. 2.4.4.1.1, 3; Greil, 2019, pp. 20–21; Martín Jiménez, 2020, sec. 2.2; OECD, 2018, paras. 146–147, 158), creating valuation asymmetries between jurisdictions contributing raw data and those hosting exploitation infrastructure.

Challenges intensify around valuation methodology. Unlike patents or copyrights with observable licensing markets, raw or semi-processed datasets often lack clear external pricing analogues. ALP comparability models face acute strain because intergroup transfers involving proprietary datasets are idiosyncratic both in content and strategic utility (Aslam and Shah, 2020, pp. 196, 210; Becker, Englisch and Schanz, 2019, p. 25; Calijuri, 2022, secs. 1.1, 2.1; Greil, 2019, p. 19; OECD, 2022a, paras. 6.116, 6.138). Without robust uncontrolled comparables, valuation requires either cost-based estimates, which fail to capture potential synergistic rents derived from network scale, or profit-split methods informed by hypothetical value attribution keys sensitive to user origination metrics. These approaches lean toward formulary apportionment logic, raising methodological questions about whether persistent recourse would still constitute adaptation of ALP or an effective transformation into destination-based allocation schemes.

From a normative standpoint under inter-nation equity doctrines, incorporating data generation as a taxable nexus aligns with fairness intuitions where market jurisdictions expend resources on telecommunications infrastructure or regulatory frameworks enabling user participation (Chand, 2019, paras. 11–12; Cugusi, 2020, secs. 4.2, 4.3; Escribano, 2019, secs. 2.02[B][b]; Gadžo, 2018a, secs. 6.4.3, 7.1.1.2; Hongler and Pistone, 2015, sec. 3.3). Nevertheless, formalizing this link into treaty-compatible language demands reconciling divergent interpretations over what constitutes “value creation” from data: while some jurisdictions emphasise monetizable outputs post-processing, others recognise raw collection as intrinsically valuable given its scarcity relative to competitive positioning. Absent consensus on definitional priority, input versus output, the risk arises that dual claims will converge on overlapping rights without mutual relief mechanisms.

Neutrality concerns further complicate integration of data metrics into profit allocation. Jurisdictions with advanced digital infrastructures may facilitate higher-value datasets via enriched interaction environments; if allocation rules weight value purely by volume or frequency of data points collected without accounting for qualitative enhancement factors and upstream R&D integration (Aslam and Shah, 2020, pp. 195–196; Becker, Englisch and Schanz, 2019, pp. 24, 30; Calijuri, 2022, secs. 2.4.3.1, 2.4.4.1; Mlčúchová, 2022, pp. 8–9; Olbert and Spengel, 2017, pp. 36–37), enterprises operating in less digitally mature markets may be disadvantaged despite parallel contributions in scale terms. Calibration must therefore avoid distorting competitive conditions across markets by embedding multi-factor assessment that reflects both quantity and quality dimensions.

Administrability presents yet another constraint: attributing value proportionately to jurisdictions based on their contribution to global datasets presumes availability of granular geo-tagged usage information from enterprises (Aslam and Shah, 2020, p. 204; Becker, Englisch and Schanz, 2019, p. 30; Cui, 2019, p. 7; IMF, 2019, para. 25; OECD, 2015a, Box 7.1; OECD, 2020b, paras. 298–301, 389–390; Traversa, 2022, sec. 1.4). Commercial sensitivity and divergent domestic privacy regimes curtail tax authority access to such detail; absent verifiable evidence standards embedded multilaterally, reliance on self-reported metrics risks erosion of legal certainty through contestable assessments.

Integrating data as a formalized value driver within international tax principles can qualify as an adaptation if three cumulative conditions are met: (1) Measurement proxies demonstrate robust correlation between jurisdictional benefit provision and economic rent realised from corresponding datasets; (2) Valuation methodologies grounded in ALP are still operable with adjusted comparability criteria for intangible assets lacking direct market prices; (3) Reciprocal treaty relief mechanisms accommodate overlapping claims arising from dispersed data origination without double taxation incidence.

Where any condition fails, particularly where measurement proxies default to simple gross-revenue attribution from local markets, the shift amounts to transformation by redefining nexus around market-access formalism divorced from benefit-linked causality. This calls for developing structured evaluative lens for classifying reforms

proposing explicit data-based allocation factors: mapping them onto reconstructed principles such as benefit theory and ALP integrity checks clarifies whether integrating these factors sustains doctrinal coherence or necessitates wholesale redefinition of taxing rights logic under digital economy conditions (Becker, Englisch and Schanz, 2019, pp. 3–4; Chand, 2019, secs. 4, 5.2.3; Greil, 2019, pp. 1–3; Hongler and Pistone, 2015, secs. 3.1, 3.3; Schön, 2018, sec. 3; Screpante, 2024, secs. 1.2, 3.1). This enables principle-driven consistency testing across OECD Pillar One’s marketing intangibles framework, which implicitly incorporates certain data contributions, and unilateral significant economic presence regimes that more aggressively treat raw dataset collection as value creation per se. By applying this lens, policy proposals can be diagnosed not merely for practical feasibility but for their capacity, or inability, to adapt foundational norms without undermining reciprocity and neutrality at the core of the international tax order.

Building on these observations, it becomes imperative to assess whether the benefit principle can accommodate the unique characteristics of data-driven value creation without compromising its foundational reciprocity logic. Specifically, the principle’s traditional reliance on observable, tangible contributions as a basis for asserting taxable entitlement is challenged when economic value originates from dispersed, intangible inputs. The subsequent analysis will explore the doctrinal viability of recognising local enabling conditions - such as digital infrastructure, regulatory frameworks, and sustained user engagement - as compensable benefits, examining whether such recognition constitutes a defensible adaptation or whether it risks transforming the principle into an allocation mechanism decoupled from causal contribution.

7.2 Interaction with Benefit Principle

Examining the interaction between data as a value driver and the benefit principle requires a shift from descriptive linkage toward analytical appraisal of whether existing reciprocity logic in international taxation can plausibly encompass intangible-heavy economic contributions without surrendering its conceptual stability. As outlined in Section 7.1.3, the dematerialised nature of data generation means that fixed-asset proxies historically employed to evidence jurisdictional benefit provision are absent; nonetheless, market jurisdictions often supply enabling conditions, broadband infrastructure,

regulatory frameworks for consumer protection, dispute resolution mechanisms, that directly sustain large-scale user participation. The analytical question is whether those enabling conditions qualify as benefits equivalent in function to tangible inputs recognised in earlier bilateral treaty practice (Chand, 2019, paras. 10–11; Escribano, 2019, secs. 2.02[B][a], 2.02[B][b]; Gadžo, 2018a, secs. 5.1.2, 6.5; Hongler and Pistone, 2015, sec. 3.3; Traversa, 2022, sec. 2.2.2).

Doctrinally, the benefit principle has been applied most comfortably where causality between jurisdictional input and income generation is substantiated through observable physical ties: the presence of plant, machinery or permanent staff acts not merely as nexus evidence but as a manifestation of mutuality, states confer resources; enterprises utilize them to derive profit (Cugusi, 2020, fn. 87; Escribano, 2019, secs. 2.02[B][a], 3.03[C], 5; Gadžo, 2018a, sec. 7.1.1.1; Graetz and O’Hear, 1997, p. 1036; Kobetsky, 2011, secs. 2.3.2, 2.4.2; Traversa, 2022, secs. 4.1, 4.3.1). Translating this mutuality into the intangible economy demands proxies that retain evidentiary robustness, which is where tension arises. In data-centered models, monetisation may depend on user-originated inputs continuous over time; yet unlike manufactured output, these inputs’ value potential may stem largely from global aggregation rather than any distinctive local characteristic. This risks attenuating the direct reciprocity element: does a state still “provide” a benefit if value is realised predominantly through offshore algorithmic processing?

Several reform proposals, most prominently under OECD Pillar One, implicitly reconceptualize benefits to include “market access” itself as a qualifying factor for allocating residual profits (Buriak, 2024, sec. 6.3.1; Elliffe, 2020, secs. 2.3, 4.2.2; Martín Jiménez, 2020, sec. 3.4; OECD, 2019a, paras. 16, 19; OECD, 2020b, paras. 6–7; Traversa, 2022, sec. 2.3.3). In theory, granting platforms the legal and infrastructural ability to solicit and interact with domestic users could be construed as a jurisdictional contribution sufficient to trigger source-based entitlement under benefit logic. However, such reconceptualization diverges from historical formulations by substituting potential for measurable support; infrastructure enabling internet commerce is widely commoditized globally, reducing uniqueness of any given jurisdiction’s provision. Without demonstrable qualitative or quantitative differentiation in local enabling conditions, treating mere access as an allocable benefit risks morphing the principle into an allocation

doctrine divorced from causality, indicative of transformation rather than adaptation within the framework established earlier.

In addition, it has been argued that one rationale underpinning source-based corporate taxation lies precisely in governments' tangible and policy-driven expenditures to create an environment suitable for business activity, ranging from infrastructure investment to economic stability measures, which act as implicit consideration for tax rights (Avi-Yonah, 1997, pp. 520–521; Chand, 2019, paras. 11–12; Escribano, 2019, secs. 2.02[B], 2.02[B][a]; Graetz and O'Hear, 1997, p. 1036; Kobetsky, 2011, secs. 2.4.1.1, 2.4.2; OECD, 2003, para. 44; OECD, 2015a, para. 32; Traversa, 2022, sec. 2.2.2). Extending this reasoning into digital markets suggests that if a jurisdiction actively sustains such enabling ecosystems, even where their manifestations are less visible than roads or ports, the same normative logic could be invoked to justify taxing value generated there.

The difficulty here mirrors earlier critiques that the benefit principle loses explanatory strength when traditional territorial linkages are eroded; modern production chains distribute suppliers, customers, and operational hubs across multiple jurisdictions in ways that make isolating any single state's contribution highly uncertain (Christians, 2017, pp. 11–12; Escribano, 2019, sec. 2.02[A]; Kobetsky, 2011, sec. 2.3.2; OECD, 2013a, pp. 26–27; Schön, 2009, sec. 2.2.2.1). In such cases, the assertion that a particular legal or infrastructural environment singularly “supports” income creation appears contestable, since comparable benefits may arise simultaneously from several markets without clear precedence or quantifiable asymmetry. The decisive test therefore lies not in recognising digital market access per se, but in preserving a defensible causal nexus between jurisdictional provision and rent realization.

Having examined how the benefit principle is challenged by intangible-intensive, data-driven value creation, it becomes necessary to consider how these same underlying contributions intersect with residence-based claims. While benefit logic seeks to anchor taxation to the provision of enabling conditions, residence doctrine traditionally assigns taxing rights based on legal incorporation or central management, often independent of the locus of value generation. The following section investigates whether residence principles can adapt to recognise economic allegiance arising from distributed, data-

originated inputs, and whether such adaptation can coexist with benefit-linked entitlements without generating doctrinal conflict or distributive imbalance.

7.3 Interaction with Residence Principle

Analyzing the interaction between data-centric value creation and the residence principle reveals a set of doctrinal and normative frictions that go beyond mere definitional intricacy. In the context of intangible-intensive business models, residence-based fiscal claims, traditionally grounded in the jurisdiction’s regulatory authority over the taxpayer’s central management or incorporation, are increasingly decoupled from the geographic location where decisive inputs to value originate. As discussed in Section 7.1.3, user-generated datasets and network effects situated in multiple market jurisdictions can constitute core profit drivers. Yet, under classical residence doctrine, taxing rights over global profits attach primarily to the jurisdiction where the enterprise is incorporated or effectively managed. The result is that residence states, especially those hosting ultimate parent entities, assert taxation on income streams whose most critical contributory factors lie elsewhere. This generates a structural tension when market jurisdictions invoke benefit-linked entitlement over those same rents.

The conceptual root of this tension resides in how “economic allegiance” is treated within each principle. While benefit theory conditions entitlement on tangible or demonstrable intangible facilitation by the source state (Avi-Yonah, 1997, pp. 520–521; Cugusi, 2020, fns. 87, 91; Escribano, 2019, secs. 2.02[A], 2.02[B]; Gadžo, 2018a, secs. 5.1.4, 7.1.1.1; Hongler, 2019, secs. 11.6.1, 11.6.2.3; Kobetsky, 2011, secs. 2.2.3, 2.4.2, 2.4.3; Miller, 2015, secs. 3.4, 3.5; Traversa, 2022, sec. 2.2.2), residence doctrine asserts global reach based on legal attachment rather than any discrete causal linkage between jurisdictional provision and specific income elements (Avi-Yonah, 2007, sec. 4.2; Escribano, 2019, secs. 3.02[A], 4.02[B]; Gadžo, 2018a, secs. 2.2.6.2, 2.2.7.1, 2.2.7.2; Hongler, 2019, sec. 4.1.2.3.2; Schön, 2009, secs. 1.3, 2.2.1, 4.2.5; Screpante, 2024, sec. 3.1). In a data-driven economy, that reach often encompasses value derived from user interactions in states providing infrastructure, digital governance frameworks, and regulatory safeguards but lacking influence over corporate residency determinations. This expands residence claims into domains historically quarantined for source taxation under reciprocity logic ingrained in treaty practice.

Doctrinally, model convention tie-breaker rules presuppose that dual residency is an exception resolvable by locating a singular “place of effective management” (Arnold, 2019, sec. 2.2.3; Avery Jones, 2009, pp. 20–21; Escribano, 2019, secs. 3.02[D], 3.02[D][b]; OECD, 1963, Commentary on Article 4, paras. 17, 20; OECD, 2017, Commentary on Article 4, paras. 21–24). However, in corporate structures operating significant economic functions through geographically dispersed virtual teams, no single location satisfies historical indicia (headquarters continuity, unified decision-making site) without resorting to legal fiction. Attempts to anchor such determinations in digital-era realities, such as weighting strategic control exerted via virtual infrastructures spanning multiple jurisdictions, risk destabilizing certainty in residence allocation. If functional nexus criteria adapt to capture these dispersed managerial structures, they may affect interaction with data-sourced benefits because management decisions about data exploitation are often distributed alongside technical operations feeding local user bases. Normatively, one could argue for incorporating contributory weight into residence-based allocations by recognising that part of an enterprise’s capacity to monetize data stems from assets or activities subject to host-country sovereignty outside its incorporation state. However, without multilateral adjustment to credit or exemption methods, expanding contributory considerations within residence taxation inflates total tax base claims without guaranteeing relief for overlapping source assertions (Christians, 2016, pp. 1609–1610; OECD, 2020a, paras. 50–51; OECD, 2020b, paras. 621–622, 634–635, 831–832; Parada, 2021, pp. 751–752; Ring, 2007, pp. 4–5). Such asymmetry would contradict international equity norms designed to balance mutual concessions across principles.

From an adaptability/transformation standpoint, a key evaluative test lies in whether residence doctrine can integrate metrics reflective of intangible-derived capacity without eroding its core definitional attachment to legal control and effective management. Adaptation might take form as interpretative guidance clarifying that for multinational enterprises with decentralized digital operations, “effective management” refers not only to formal board-level oversight but also to sustained strategic governance over intangible exploitation wherever exercised within a coherent corporate framework, potentially including remote coordination hubs closely linked to data monetisation strategies. Provided such guidance remains tethered to existing treaty vocabulary and does not supplant underlying criteria with entirely novel determinants (e.g., primary consumer location), it preserves conceptual continuity while responding to altered

operational realities. The jurisprudential challenge stems from verifying such governance location empirically when decision-making chains are technologically mediated and asynchronous.

Evidence thresholds feasible under traditional documentation regimes may become unworkable given encryption practices and cross-border privacy laws governing corporate communications (OECD, 2015a, paras. 97–98; OECD, 2020b, paras. 305–306, 389–390; Santos and Rocha, 2018, sec. 2.06[A]; Traversa, 2022, sec. 3.4.1.3). This practical opacity risks either underenforcement, leaving profit allocations skewed toward parent-residence jurisdictions regardless of genuine control diffusion, or aggressive assertion by multiple jurisdictions claiming partial “effective management” presence through remote participation channels in global intangible strategies.

Interaction with reforms like OECD Pillar Two further complicates this dynamic: top-up taxes pivot on the jurisdictional status of the ultimate parent entity (OECD, 2020c, para. 181; OECD, 2023b, paras. 22, 32; Pascucci, 2022, secs. 6.3, 6.4.1, 6.5; ssrn-4316894, 2022, sec. 2.4). If that status depends on contested or fluid interpretations of effective management adapted for intangible contexts, then both substantive allocation outcomes and compliance predictability are jeopardized. Moreover, minimum tax regimes applied at the parent level could absorb rents traceable entirely to foreign user-data contributions, raising distributive fairness issues concerning market states asserting benefit-based rights.

Integrating data-derived value into residence taxation frameworks without multilateral recalibration of bilateral relief mechanisms risks doctrinal incoherence and distributive imbalance. This leads to three cumulative conditions under which adaptation could be defensible: (1) clarifying effective management tests to encompass verifiable strategic control over intangible exploitation; (2) embedding symmetrical relief obligations expressly accounting for increased overlap with benefit-based claims; (3) standardizing evidentiary protocols across jurisdictions for attributing decentralized digital decision-making to specific residency ties. Absent these conditions, expansions of residence reach into data-driven profits function less as targeted adaptation than as structural transformation requiring explicit renegotiation at treaty level (Andersson, 2018, sec. 2; Brauner, 2016, pp. 983, 1020; Elliffe, 2020, secs. 1.1, 2.4; Escribano, 2019, sec.

3.03[F]; IMF, 2019, paras. 25, 92; OECD, 2015d, para. 4; OECD, 2020b, paras. 822–825, 838–840).

While residence-based allocation emphasizes legal attachment and consolidated control, the spatial dispersion of value-creating activities in data-driven business models challenges this doctrinal anchor. The next consideration shifts from the legal locus of management to the actual origin of economic contributions, examining how the source principle can capture value generated through localised user engagement and other intangible inputs. This transition highlights whether traditional source-based metrics remain sufficient or require adaptation to reconcile territorial claims with the distributed nature of digital-era economic activity.

7.4 Interaction with Source Principle

Analyzing the interaction between data-centered and intangible-intensive value creation and the source principle reveals a contested doctrinal space, where historical territorial anchors are confronted with demands to capture economic contribution that is spatially diffuse yet substantively connected to the jurisdiction through novel, non-physical channels.

In Section 7.1.3, it was shown that user engagement and data origination in market jurisdictions can be critical to global revenue generation despite monetisation being executed elsewhere. The source principle traditionally legitimizes taxation rights over income whose origin is within the jurisdiction, either via physical production or provision of localised factors of value creation (Buriak, 2024, sec. 4.2.1; Chand, 2019, sec. 2; Gadžo, 2018a, sec. 2.2.7.3.1; Kemmeren, 2010, sec. 3.3.1.5.1; Kobetsky, 2011, secs. 2.4, 6.1; OECD, 2015a, paras. 28–30; Traversa, 2022, sec. 2.2.1). Its conceptual stability has relied on proxies like permanent establishment definitions, immovable assets, or human presence as evidence of “origin”. This reliance becomes problematic when economic allegiance manifests through non-tangible contributions such as sustained local user interactions feeding proprietary datasets or continuous algorithmic refinement at scale (Aslam and Shah, 2020, pp. 192–194; Becker, Englisch and Schanz, 2019, pp. 14–15; Cugusi, 2020, secs. 4, 6; Gadžo, 2018a, secs. 6.4.3, 7.3.2; Greil, 2019, pp. 18–19, 35; OECD, 2018, paras. 34–38, 142–144; OECD, 2019c, paras. 12, 18–19; Olbert and

Spengel, 2017, pp. 9–10, 36–37). If monetizable rents arise directly from these localised interactions, even in absence of physical infrastructures, excluding them from source-based entitlement under current PE-linked rules creates a mismatch between factual value origin and legally recognised nexus. Yet, broadening “origin” beyond traditional indicia risks diluting the causal reciprocity embedded in benefit theory. Market access alone, without demonstrable qualitative jurisdictional input into value generation, would shift the principle toward formalist market-based allocation divorced from benefit-linked causation.

From a doctrinal perspective, integrating digital-era contributions into source principle applications would require re-evaluating the operational content of “origin” without dismantling its linkage to substantive economic connection. Proposals for “significant economic presence” criteria aim precisely at this reinterpretation: measurable engagement thresholds, annual revenues attributable to local customers, user-base volume, frequency of digital transactions, are advanced as proxies indicating that an enterprise’s profits have their cause within the jurisdiction (Bal, 2018, sec. 2; European Commission, 2018, art. 4(3); Gadžo, 2018a, sec. 7.3.2.2; Hongler and Pistone, 2015, sec. 4.2; OECD, 2015a, paras. 277–278, 280; Traversa, 2022, sec. 2.3.2). Analytical scrutiny must determine whether these thresholds reliably identify genuine contributory conditions equivalent in function to tangible factor deployment recognised historically. Such conditions might include the role of domestic telecommunications infrastructure enabling stable interaction, regulatory regimes facilitating secure digital contracting, or cultural localisation strategies enhancing user participation rates, all situating value origination materially within national boundaries.

However, evidentiary and administrability constraints hinder seamless adaptation. Verifying causal contribution from intangible proxies entails access to taxpayer-controlled metrics on granular user activity and engagement intensity (Gadžo, 2018a, sec. 7.4; IMF, 2019, para. 25; OECD, 2015a, paras. 280, Box 7.1; OECD, 2018, paras. 484–486). Absent harmonised international standards for such data disclosure, unilateral adoption of significant economic presence tests risks inconsistent application across jurisdictions and exposure to legal contestation over nexus determinations. This asymmetry amplifies compliance burdens, potentially undermining neutrality if enterprises operating in multiple markets face divergent measurement methodologies for identical activity profiles.

The OECD's Pillar One formulary apportionment reflects partial accommodation by reassigning residual profits to market states irrespective of PE status (Buriak, 2024, sec. 1.5; Calijuri, 2022, sec. 2.3.2.1.1; Harpaz, 2021, pp. 70–71; OECD, 2019a, paras. 51–52; OECD, 2020a, Annex 1, para. 10). Conceptually, this reform sidesteps doctrinal debates over source origin by presuming taxing rights based on sales-derived engagement levels. While operationally expedient, such presumption weakens reciprocity foundations inherent in source principle reasoning: fiscal entitlement becomes tied to consumption occurrence rather than proof of active jurisdictional inputs sustaining production or service delivery. In methodological terms grounded in principle reconstruction logic, this substitution crosses into transformation territory unless further constrained by evidentiary correlation to substantive enabling conditions provided locally. Accordingly, the source principle remains adaptable in digital contexts only where “origin” can be substantiated through demonstrable jurisdictional facilitation of value formation; absent such substantiation, its expansion into market-based allocation signals doctrinal transformation.

While the source principle focuses on the location of value origination, the distributed and intangible-intensive nature of digital-era business models complicates straightforward attribution to any single jurisdiction. This raises the broader question of how taxing rights can align with the taxpayer's overall economic capacity, as assessed under the ability-to-pay principle. The following analysis transitions from a territorial lens on origin to a capacity-based perspective, exploring the tensions that arise when global, dispersed value creation challenges the traditional residence-centered measurement of economic power.

7.5 Interaction with Ability-to-Pay Principle

The interaction between data-centric and intangible-driven value creation and the ability-to-pay principle introduces structural tensions that are as conceptual as they are operational. The ability-to-pay principle, as articulated in doctrinal literature, is anchored in the idea that tax burdens should be allocated proportionately to the economic capacity of the taxpayer, interpreted through principles of equality and fairness (Burns and Krever, 1998, p. 497; Gadžo, 2018a, secs. 5.1.1, 5.1.2; Greil, 2019, p. 5; Hongler, 2019, sec. 11.2.1; Kobetsky, 2011, sec. 2.4.1.2; Musgrave and Musgrave, 1989, pp. 223, 231–232;

Schön, 2009, sec. 2.2.1.1). In domestic settings, this operates within a unitary fiscal sovereignty: there is a single taxing authority collecting from individuals or corporations whose total capacity can be measured by a consolidated assessment of income, wealth, or both (Escribano, 2019, sec. 2.02[A]; Gadžo, 2018a, sec. 5.1.3; Hongler, 2019, sec. 11.2.3.3.2; Musgrave and Musgrave, 1989, pp. 223, 229, 410–412; Schön, 2009, sec. 2.2.1.1). Cross-border commerce disrupts this continuity. Particularly in the digital economy context described earlier, economic capacity does not reside neatly within one jurisdictional authority’s measurement reach, capacity becomes multi-sourced, partly arising from intangibles whose location is complex, disputed, or mobile by design.

A primary doctrinal friction arises because global allocation under ability-to-pay logic traditionally leans toward residence-based taxation. The reasoning is that residence captures the full spectrum of a taxpayer’s economic power, aggregated income from all sources, thus enabling proportional contribution to public finances aligned with redistributive aims (Avi-Yonah, 1996, pp. 1310–1311; Gadžo, 2018a, secs. 5.1.1, 5.1.2; Graetz and O’Hear, 1997, pp. 1034, 1076; Hongler, 2019, sec. 11.2.2; Monsenego, 2012, sec. 4.1.3; Schön, 2009, sec. 2.2.1.1; Vann, 1998, sec. VI.A). However, in digitalised business models where significant rents derive from user participation, network effects, and locally generated but globally exploited data (Aslam and Shah, 2020, pp. 191, 198–199; Buriak, 2024, secs. 3.4.1, 3.4.3; Cui, 2019, pp. 11–12, 18–19; Elliffe, 2020, sec. 3.1.3; Greil, 2019, pp. 15–17; OECD, 2015a, paras. 164, 169–172; OECD, 2018, paras. 35, 42, 139–142), large shares of an enterprise’s effective “capacity” trace back to jurisdictions outside its formal residence. If these market jurisdictions also provide enabling conditions, digital infrastructure, legal frameworks for e-commerce, benefit theory supports their claim to part of the tax base. The result is overlapping entitlements: residence states asserting comprehensive capacity-based rights over worldwide profits and source/market states claiming portions based on benefit-linked contributions. Without doctrinally consistent limitations on each principle’s scope or an agreed mechanism for coordinated sharing of intangible-derived rents, these overlapping claims unsettle reciprocity norms embedded in treaty practice (Bammens and De Broe, 2010, sec. 2; Blessing, 2020, sec. 8.1.3; Buriak, 2024, secs. 0.1.4, 3.4.2; Chand, 2019, sec. 5.3; OECD, 2019b, para. 11; Quentin, 2017, p. 10; Ring, 2007, pp. 33, 40–41; Schön, 2018, sec. 1).

The mobility of intangible assets exacerbates this tension. Corporate groups can shift ownership of intellectual property or data-processing entities into low-tax jurisdictions without altering substantive exploitation patterns, thereby reducing measured capacity in high-tax residence jurisdictions while eroding sources' ability to match benefits conferred with taxable returns (OECD, 2015a, paras. 152–153, 186–187, 193; OECD, 2018, paras. 275–276; Oguttu, 2022, secs. 2, 4; Screpante, 2024, secs. 3.5.3, 3.5.5, 4.4.2). From an ability-to-pay perspective, such structuring undermines fair progression because an enterprise's true global capacity is obscured by legal-geographical arbitrage. At a normative level, this invites argument for embedding “look-through” approaches into residence-based rules, assessing consolidated group income irrespective of intermediate holding locations, to align taxable capacity with economic reality. Yet doing so unilaterally risks conflict with benefit-theory allocations unless paralleled by proportional relief adjustments recognising market jurisdiction entitlements.

Measuring capacity itself becomes problematically indeterminate when major value drivers are attributable to dispersed intangible inputs. In physical-economy contexts, residence states could determine taxpayers' income streams with relative precision; in digital contexts, attributing incremental increases in global profitability to specific jurisdictional factors demands data-intensive analyses that tax administrations may lack authority or competence to undertake (Aslam and Shah, 2020, pp. 195–198, 222–223; Calijuri, 2022, sec. 2.2, 2.4.3; Elliffe, 2020, sec. 3.1.6; Hendriyetty et al., 2023, pp. 41, 153, 255; OECD, 2015a, paras. 226, Box 7.1). This evidentiary shortfall leads either to under-attribution, residence imposing tax only on traceable elements, or over-assertion based on gross revenue indicators that detach liability from actual contributory capacity and infringe neutrality norms concerning other enterprises (Aslam and Shah, 2020, p. 191; Burns and Krever, 1998, p. 501; Escribano, 2019, secs. 4.02[B], 4.02[C]; Gadžo, 2018a, secs. 7.3.3.1, 7.4; IMF, 2019, paras. 8, 26; OECD, 2020c, paras. 317, 404; Shaviro, 2019, pp. 11–12).

An additional complexity surfaces when ability-to-pay interacts with inter-nation equity in apportioning taxing rights over digital economy rents. Taken at face value, allocating exclusively via aggregate taxpayer capacity advantages capital-exporting residence countries hosting ultimate parent entities, as these often account for the highest-capacity MNEs globally (Christians, 2014, p. 10; Escribano, 2019, sec. 3.03[C]; Gadžo, 2018a, sec. 5.1.3; Genschel and Rixen, 2015, p. 160; Jogarajan, 2018, p. 10; Shaviro,

2019, pp. 20–21). This skews distributions away from smaller market states whose users' data and engagement substantively underpin those enterprises' profit-making capability. From the perspective of distributive justice across sovereigns, rigid adherence to pure ability-to-pay logic risks reinforcing inequalities in fiscal gain unaligned with actual global value distribution patterns. Addressing this without abandoning capacity's normative appeal requires hybrid constructs weighting both overall economic strength at residence and measurable market-jurisdiction contributions, a synthesis presently absent from most treaty frameworks.

In terms of doctrinal adaptability tests applied throughout this dissertation, two scenarios emerge. One envisages adapting the principle by recalibrating residence entitlements downward where verifiable intangible-based contributions occur in other jurisdictions; here, global capacity remains central but is explicitly adjusted for shared production location identifiable under harmonised metrics (user activity indices, localisation impacts). It is worth noting that developments within the OECD/G20 Inclusive Framework have started recognising taxing rights linked to customer location and market participation as relevant nexus indicators; such shifts depart from earlier attempts to confer predominant taxing powers on residence states alone (Collier, 2023, secs. 2.3.2, 4; Elliffe, 2020, secs. 2.4, 4.2; Gadžo, 2022, secs. 2.1, 2.3, 2.4; Martín Jiménez, 2020, secs. 3.1, 3.4; OECD, 2019a, paras. 16, 21–23; OECD, 2020b, paras. 186–189). This gradual movement appears driven by market jurisdictions' insistence that their role in generating value, particularly via locally engaged users, cannot be ignored when applying concepts like ability-to-pay on a cross-border scale. Accordingly, the ability-to-pay principle remains normatively defensible in the digital economy only if residence-based capacity is recalibrated through coordinated recognition of market-jurisdiction contributions; absent such recalibration, it risks entrenching distributive imbalances detached from contemporary value formation.

Having examined how data-driven, intangible-intensive contributions challenge the alignment of tax claims with a taxpayer's overall economic capacity, attention now turns to the practical and doctrinal mechanisms through which jurisdictions establish taxable presence. The permanent establishment concept, as a cornerstone of source-based nexus rules, provides a tangible anchor for asserting taxing rights. Yet, as explored in the preceding discussion, digital business models often generate value independently of physical premises. The next section considers how PE definitions interact with these

dispersed and non-physical forms of economic engagement, and whether existing criteria can adapt to substantively capture jurisdictional contributions without undermining doctrinal integrity.

7.6 Interaction with Permanent Establishment Concept

The interface between data-driven, intangible-intensive business models and the PE concept represents one of the most contested areas in the application of foundational source-based nexus rules. In its canonical form, PE functions as both a jurisdictional gateway and an evidentiary proxy for establishing taxable presence: it anchors taxing rights to a “fixed place of business” through which an enterprise’s activities are wholly or partly carried on. As elaborated earlier, this concept historically encapsulated permanence, territorial fixity, and substantive economic activity, criteria that were well aligned with industrial-era commerce (Escribano, 2019, secs. 3.03[C], 3.03[E]; Gadžo, 2018a, secs. 4.5.1, 6.2; Kobetsky, 2011, sec. 2.1; OECD, 2017, para. 6; Schaffner, 2013, Intro. (A), sec. 1.01; Traversa, 2022, sec. 2.2.1).

However, digitalisation reconfigures each element’s practical and doctrinal meaning. Major value drivers, user interactions, datasets generated locally but stored offshore, algorithmic refinement processes, can operate independently of traditional fixed facilities. Consequently, jurisdictions hosting sustained market engagement by foreign enterprises may be unable to claim taxing rights under existing PE definitions despite their infrastructure provision and regulatory frameworks materially enabling revenue generation (Chand, 2019, secs. 2, 3; Cugusi, 2020, sec. 6; Escribano, 2019, sec. 2.02[B]; Hongler and Pistone, 2015, sec. 3.2; Kjarsgaard and Schmidt, 2018, pp. 162, 165; OECD, 2015a, paras. 246, 253-255). This inherent misalignment is exacerbated by “scale without mass”: platforms achieve durable market penetration without proportional local investment in tangible assets (Becker, Englisch and Schanz, 2019, p. 5; Buriak, 2024, sec. 0.3; Cui, 2021, p. 1; Hendriyetty et al., 2023, sec. 3.2; Oguttu, 2022, sec. 4; OECD, 2015a, para. 158; OECD, 2018, paras. 33, 131-132; Traversa, 2022, sec. 2.3.1). The physical-place requirement embedded within Article 5 OECD Model is therefore rendered formalistic in these contexts, severing nexus determination from substantive economic allegiance.

Parallel doctrinal tension emerges under benefit theory analysis. The historical reciprocity logic, state confers tangible infrastructure; enterprise utilizes it to generate income, is challenged when the enabling conditions are intangible yet indispensable for operations (high-speed broadband networks, legal protections for e-commerce). Recognising such non-physical benefits as sufficient for PE nexus demands interpretative expansion of “place” beyond geographic coordinates while retaining conceptual fidelity to causal benefit–burden linkages (Cugusi, 2020, secs. 2, 7.1; Escribano, 2019, secs. 2.02[B], 3.03[E]; Gadžo, 2018a, secs. 6.4.3, 7.1.1.1; Hongler and Pistone, 2015, sec. 3.3; Schaffner, 2013, secs. 8.01, 8.03). Reform proposals introducing “significant economic presence” (“SEP”) criteria pursue precisely this redefinition. By operationalising thresholds based on interaction metrics, volume of domestic users, local digital transaction values, they seek proxies for sustained engagement equivalent in tax-entitlement terms to physical operating bases (Bal, 2018, sec. 2; Hongler and Pistone, 2015, sec. 4.2; OECD, 2015a, paras. 277–279; Traversa, 2022, sec. 2.3.2). Yet the methodological integrity of SEP hinges on whether such proxies reliably evidence jurisdictional contributions analogous to those substantiating traditional PEs. Where measurement captures nothing more than market-access exploitation absent distinctive domestically conferred supports, SEP departs from benefit-linked causality toward consumption formalism, a transition classifiable as transformation within this dissertation’s analytical framework.

Administrative feasibility compounds the doctrinal challenge. Accurate application of SEP requires granular enterprise-level data on user location and activity intensity; tax authorities’ access is constrained by commercial secrecy and privacy regimes. This asymmetry creates enforcement risk: nexus determinations devolve into presumptive inferences from aggregate indicators markedly less precise than physical asset observation. It also invites manipulation through corporate structuring, e.g., routing user connections via third-country servers to blunt threshold attainment, thus undermining neutrality across comparable taxpayers engaging in similar local economic participation.

Past treaty practice reinforces why digital-era tensions with PE are so acute: historically, two cumulative tests defined a PE, a fixed place of business inside the taxing jurisdiction and a productive character tied to income generation. Establishments meeting only the former were deemed insufficient for taxation because they lacked demonstrable

contribution to earnings (Cugusi, 2020, sec. 7.2; Kobetsky, 2011, pp. 146–147; League of Nations, 1946, pp. 14–15; OECD, 1963, paras. 3–4). This dual-condition test was well-suited for an era where productive capacity was inherently tied to tangible facilities; its transposition into digitally mediated commerce appears strained when value creation flows from dispersed infrastructure and location-independent assets rather than site-bound machinery or staff presence. Accordingly, the PE concept can survive digitalisation only if “fixed place” is interpreted as evidencing sustained, causally relevant economic participation rather than mere physical situs; absent such causal anchoring, expansion into interaction-based thresholds amounts to structural transformation.

The challenges outlined in the preceding discussion of the permanent establishment concept highlight a critical tension: when nexus is derived from dispersed, non-physical, and digitally mediated contributions, the evidentiary foundation for allocating profits becomes uncertain. Since the arm’s length principle operates on the premise of allocating returns between related entities once a nexus is established, any ambiguity in defining taxable presence directly impacts the reliability and neutrality of ALP-based profit divisions. The following section examines how digital-era intangibles, user-generated data, and decentralized operational inputs strain traditional arm’s length methodologies, testing the principle’s adaptability under conditions where comparability and observable third-party benchmarks are limited.

7.7 Interaction with Arm’s Length Principle

The interaction between data-intensive, intangible-driven value creation and the ALP presents one of the most critical doctrinal stress points within international taxation. As shown in Section 7.6, traditional nexus constructs like permanent establishment already face difficulties in capturing dematerialised economic presence; ALP, as the dominant method for allocating profits between jurisdictions once nexus is established, encounters parallel and compounding challenges that call into question its continued adaptability without substantial re-configuration. At its core, ALP functions on the assumption that transactions between related entities should reflect pricing and terms that would prevail between independent parties under comparable circumstances (Avi-Yonah, 2004, sec. 3(c); Mosquera, 2021; OECD, 2013a, ch. 3; OECD, 2022a, paras. 1.3, 1.6; Vann, 1998, p. 781). This comparability requirement embeds neutrality, equal treatment

regardless of group affiliation, and has historically been justified as aligning with reciprocity under double tax treaty regimes.

In intangible-intensive digital economy contexts, however, the structural preconditions for reliable comparability disintegrate. Proprietary datasets, network effects, and synergistic brand platforms do not exist in markets accessible to independent parties; consequently, no benchmark transactions can yield price analogues capable of satisfying the doctrinal threshold for “arm’s length” determination (Aslam and Shah, 2020, pp. 210, 222-223; Avi-Yonah, 1996, pp. 1341-1343; Becker, Englisch and Schanz, 2019, pp. 13-14; Elliffe, 2020, sec. 4.1; Greil, 2019, pp. 20, 35; Kobetsky, 2011, pp. 76, 394; OECD, 2022a, paras. 6.138). From a doctrinal standpoint, this creates a misalignment between ALP’s methodological apparatus and value creation realities. DEMPE-based functional analyses introduced in OECD BEPS Actions 8-10 attempt to redistribute returns on intangibles by aligning them with substantive functions rather than mere contractual ownership (Calijuri, 2022, sec. 2.3.2.1.2; Li, Bao and Li, 2019, p. 1121; Martín Jiménez, 2020, sec. 2.2; OECD, 2015a, paras. 227, 373; OECD, 2022a, paras. 6.32, 6.42, 6.48; Screpante, 2024, secs. 1.2, 4.3.4). In theory this constitutes an adaptation, but in practice measurement is highly subjective when functions are executed jointly across multiple jurisdictions through decentralized virtual teams. Without observable third-party comparables for asset utilisation, functional allocation risks degenerating into negotiated apportionment, a departure from transactional parity logic toward formulaic division anchored in destination or market-use proxies. Such a shift suggests transformation rather than adaptation within the principle reconstruction framework elaborated earlier.

A further normative tension arises when ALP is applied to intra-group transfers involving unique intangibles for which economic participation by market jurisdictions is decisive yet difficult to capture with traditional functional metrics. User-generated data streams exemplify this scenario: while originating from market jurisdictions that supply infrastructure and regulatory conditions enabling collection (Aslam and Shah, 2020, pp. 191-192; Chand, 2019, sec. 3; Escribano, 2019, sec. 2.02[B]; Gadžo, 2018a, sec. 6.4.3; Hongler and Pistone, 2015, sec. 3.3; OECD, 2015a, paras. 32, 262), contractual arrangements often localize monetisation rights in residence jurisdictions or low-tax affiliates holding nominal IP ownership. Under ALP, absent a direct functional role recognised in DEMPE analysis for the market jurisdiction, no profit attribution occurs

locally, even though benefit theory would support source-based entitlement grounded in enabling contributions (Avi-Yonah, 1997, pp. 520-521; Chand, 2019, sec. 3.2.1; Escribano, 2019, sec. 2.02[B]; OECD, 2019c, paras. 13, 20; Screpante, 2024, sec. 6.3.3; Traversa, 2022, sec. 2.2.2). Reconciling these principles without undermining doctrinal coherence requires either adjusting ALP criteria to recognise user participation as a compensable function (an adaptation path) or accepting that such recognition constitutes a conceptual expansion into non-transactional allocations tantamount to transformation.

Accordingly, while the ALP can continue to function as a valid profit allocation method where reliable comparability remains available and its functional analysis explicitly recognizes intangible-driven contributions. Where these conditions are absent, continued reliance on the ALP risks degenerating into formulaic apportionment, representing a structural transformation. Building on these doctrinal tensions, the next section critically examines the interaction with the value creation principle, exploring whether digital-era, non-physical economic inputs can be accommodated within existing normative boundaries or whether they necessitate a fundamental re-conceptualization of creation events across jurisdictions.

7.8 Interaction with Value Creation Principle

Engaging critically with the intersection between data- and intangible-intensive business models and the value creation principle requires conceptual precision beyond the definitional mapping developed earlier. At stake here is whether the functional reinterpretation of value creation in digital contexts can be executed as an adaptation within its existing doctrinal boundaries or whether the demands of capturing dematerialised economic inputs compel a transformation of its core normative meaning. As shown in Section 7.7, several allocation devices, whether ALP-based DEMPE analyses, formulary apportionment under Pillar One, or significant economic presence tests, already invoke notions of value creation in their justificatory language. Yet they diverge materially on what counts as a jurisdictionally relevant “creation” event, revealing deep fissures in operationalising the concept across heterogeneous legal architectures. Under treaty practice and OECD interpretative materials, value creation has been linked habitually to measurable contributions from functions, assets, and risks deployed within a jurisdiction (Chand, 2019, sec. 2; Gil García, 2019, p. 340; Greil, 2019,

p. 15; Hongler, 2019, sec. 4.3.2.4.3; OECD, 2015c, p. 9; OECD, 2022a, paras. 1.51, 6.48; Screpante, 2024, secs. 4.2.1, 4.3.5). In industrial-era settings, these were readily evidenced through tangible production factors: plant, labor, localised intellectual property use. The migration toward intangible drivers, user-generated datasets, proprietary algorithms refined through dispersed interactions, brand equity amplified by network effects, renders such evidence problematic.

The origination element of value creation becomes multi-local almost by default: for example, advertising revenue may depend equally on data harvested in one set of jurisdictions, processing infrastructures in another, and strategic IP oversight elsewhere (Becker, Englisch & Schanz, 2019, pp. 31-32; Calijuri, 2022, sec. 2.1; Greil, 2019, pp. 18-19; OECD, 2015a, para. 265; OECD, 2018, paras. 142, 161). The causality chain is thereby fractured across borders in ways that invite parallel claims under benefit theory by multiple states asserting entitlement to segments of the same income stream. Doctrinal adaptation would require reinterpreting “creation” so that non-physical yet causally essential contributions, sustained user participation rates feeding into monetizable datasets; localisation activities enhancing brand reception; compliance with domestic regulatory regimes enabling secure transactions, qualify as legitimate origin points for taxing rights when materially linked to resulting profit flows (Aslam & Shah, 2020, pp. 191-193, 201-202; Cugusi, 2020, secs. 3.3, 6, 7.1; Escribano, 2019, sec. 2.02[B][b]; Gadžo, 2018a, secs. 7.1.1.1, 7.1.1.2; Hongler & Pistone, 2015, sec. 3.3; Li, Bao & Li, 2019, pp. 1133-1134). Critical here is preserving reciprocity logic: it is insufficient for a market jurisdiction merely to host consumers; it must demonstrably confer conditions without which the revenue-driving interaction could not have occurred or been exploited at equivalent scale. This evidentiary nexus anchors value creation within benefit theory’s insistence on quid pro quo between state-conferred advantage and fiscal claim.

In practice, however, many proposed reform mechanisms dilute this causation requirement. OECD Pillar One’s formulary allocation of residual profits relies heavily on sales- or user-number proxies without obliging proof that such metrics correspond to jurisdictional enabling conditions (Avi-Yonah, 2021, sec. 2.1.2; Buriak, 2024, sec. 6.3.3; Gadžo, 2022, sec. 2.3.2; Monsenego, 2022, sec. 4.2). While administratively efficient, such decoupling transforms the principle into a destination-based allocation device: market access alone suffices for claiming taxable entitlement, regardless of whether local conditions substantively contributed to value formation. Within the methodological

framework applied here, that constitutes transformation because it discards a central conceptual anchor, the necessity of causal linkage, and replaces it with formalistic triggers aimed at distributing global surpluses according to consumption location.

An additional complexity arises from definitional plurality within policy discourse itself. As noted in earlier analysis (Bal, 2018, secs. 3, 4; Das, 2020, secs. 2.3, 2.4, 3, 4.3.2; Hey, 2018, secs. 2.1, 2.3, 3; Martín Jiménez, 2020, secs. 2.1, 3.4, 3.5), some jurisdictions equate value creation exclusively with DEMPE functions performed in relation to intangibles; others broaden scope to include ex post realization events like high-volume sales. This lack of uniformity erodes legal certainty and complicates multilateral coordination: identical factual scenarios could generate different allocations purely due to divergent definitional adoptions. The absence of convergent scope impedes coherent adaptation because any reinterpretation preserving doctrinal anchors must be universally intelligible across treaty partners to avoid double taxation or unrelieved overlaps.

In sum, the viability of the value creation principle in digital, intangible-intensive contexts depends on preserving demonstrable causal linkages between jurisdictional contributions and resulting profits. While doctrinal adaptation is feasible by recognising materially essential non-physical inputs, failure to maintain these evidentiary and reciprocity safeguards risks transforming the principle into a destination-based allocation device. Building on these conceptual tensions, the next section examines how such doctrinal frictions translate into tangible jurisdictional gaps, highlighting where traditional nexus and allocation rules fail to capture digital-era value creation and creating the conditions for under-taxation, overlapping claims, and enforcement inconsistencies across treaty partners.

8 POINTS OF TENSION AND BREAKDOWN

8.1 Jurisdictional Gaps

Building on the doctrinal frictions mapped in Section 7.8, jurisdictional gaps emerge when the operative reach of foundational principles fails to encompass factual patterns of value creation in digitalised, intangible-intensive commerce, or does so

inconsistently across treaty partners. These gaps are neither accidental nor solely the result of political inaction; they reflect structural misalignments between nexus and allocation doctrines rooted in industrial-era assumptions and the operational realities of dematerialised economic presence.

One category of gap arises from the reliance on PE requirements as gatekeepers for source-based taxing rights. Conventional PE definitions presuppose tangible business premises or personnel on site, yet digital platforms with “scale without mass” maintain sustained local revenue streams without meeting these criteria (Hendriyetty *et al.*, 2023, pp. 28, 41; OECD, 2015a, paras. 184–185; OECD, 2017, Art. 5(1), 5(5); Commentary on Art. 5, para. 6; OECD, 2018, paras. 33, 132, 392; OECD, 2019c, paras. 4, 12). This disconnect leaves market jurisdictions unable to trigger taxing rights despite furnishing enabling conditions, such as high-speed internet infrastructure, consumer protection regulation, or legal frameworks, integral to revenue generation. Attempts to adapt through “significant economic presence” standards remain uneven: thresholds based on user numbers or domestic turnover differ widely by state (Bal, 2018, sec. 1; Harpaz, 2021, pp. 95–96; Hendriyetty *et al.*, 2023, pp. 63–64, Table 3.2; OECD, 2018, paras. 350–351, Boxes 4.1, 4.2), producing variable nexus determinations for identical enterprise profiles. Such heterogeneity perpetuates uncertainty and facilitates jurisdiction shopping.

A second category stems from definitional plurality in “value creation”. OECD commentary often frames it through DEMPE functions, but some states extend scope to market access or customer location alone (Bal, 2018, secs. 3, 6; Das, 2020, secs. 2.3, 2.4; Hey, 2018, sec. 2.3; Martín Jiménez, 2020, secs. 2.2, 3.1, 3.4; Screpante, 2024, secs. 1.2, 4.3.4, 5.3). Divergence at this conceptual level means identical contributions, e.g., user engagement generating monetizable datasets, are treated as taxable “creation” by one jurisdiction but dismissed under another’s narrower reading. Without harmonised attribution bases, enterprises navigate overlapping claims and enforcement lacunae, exploiting definitional gaps where neither source nor residence asserts taxing rights firmly enough to withstand structured transfer pricing arrangements embedded within group-wide contractual routing.

Unilateral measures exacerbate these inconsistencies. Digital services taxes imposed without PE nexus seek to capture domestic rents from non-resident firms purely on revenue origination metrics (Aslam & Shah, 2020, pp. 220–221; Buriak, 2024, secs.

7.2.1, 7.2.3.1; Cui, 2019, pp. 2–4, 11–12; Harpaz, 2021, pp. 80–82; IMF, 2019, pp. 16, 61; Shaviro, 2019, pp. 3, 26–27, 68). While politically attractive, such taxes bypass reciprocity mechanisms fundamental to double tax relief. Where correlative credits are absent abroad, taxpayers face unmitigated double taxation risks; where credits are granted domestically, residence jurisdictions absorb fiscal costs for source jurisdictions' unilateral claims, disturbing inter-nation equity allocations negotiated under prevailing treaty norms.

Data localisation and privacy laws add a subtler layer of gap formation. Jurisdictions mandating local storage create factual ties between enterprise operations and territory without altering formal PE status. From a benefit theory perspective, such mandates confer regulatory benefits enabling lawful commerce (Chand, 2019, pp. 5–6; Escribano, 2019, sec. 2.02[B]; Gadžo, 2018a, secs. 5.1.4, 6.4.3, 7.1.1.1; Hongler & Pistone, 2015, sec. 3.3; OECD, 2015a, para. 32); yet absent treaty redefinition, no taxing right flows from them. Meanwhile, residence jurisdictions may be unable to incorporate value derived from these localised infrastructures into their capacity-based taxation due to legal restrictions on cross-border data audits, producing valuation blind spots that leave parts of global capacity untaxed anywhere.

ALP mechanics magnify allocation-related gaps under conditions where unique intangibles lack market comparables (Aslam & Shah, 2020, pp. 210, 222–223; Avi-Yonah, 1997, p. 520; Buriak, 2024, secs. 5.2.3, 6.2.6; Elliffe, 2020, sec. 3.1.4; Greil, 2019, p. 19; OECD, 2022a, para. 6.138). In practice, residual profits from proprietary algorithms or aggregated behavioural datasets gravitate toward IP-holding affiliates in low-tax jurisdictions if DEMPE functional analysis is narrowly applied to contractual ownership rather than dispersed development contributions. Source states providing critical user participation inputs thus miss entitlement under both traditional ALP attribution and capacity-oriented residence taxation.

Collectively, these jurisdictional gaps reveal systemic misalignments between traditional nexus and allocation rules and the operational realities of digitalised, intangible-intensive commerce. They create zones of under-taxation, overlapping claims, and enforcement inconsistencies that strain reciprocity and inter-nation equity. Importantly, these gaps set the stage for acute challenges in profit allocation, as conventional rules struggle to translate dispersed economic contributions into coherent

taxable entitlements. The next section examines these allocation frictions in detail, assessing how they expose doctrinal tensions and operational strains that must be addressed to restore alignment between legal principles and digital-era value creation.

8.2 Profit Allocation Challenges

Profit allocation within the international tax regime becomes acutely problematic when set against the operational realities of digitalisation and intangible-intensive global value networks, as analysed in Section 8.1. The friction lies not only in determining “where” profits should be attributed, but in “how” allocation mechanisms can remain coherent with the reconstructed doctrinal principles, source, residence, ALP, benefit theory, inter-nation equity, without collapsing under evidentiary or normative strain.

The OECD’s traditional reliance on the ALP ties allocation to observed market analogues between independent parties. This method presumes that such comparables exist and that they reliably reflect jurisdictional contributions in terms of functions performed, assets deployed, and risks assumed (Arnold, 2019, sec. 6.4.2; OECD, 2013a, ch. 3; OECD, 2022a, paras. 1.6, 1.51). In many digital business models, cloud services, targeted advertising platforms, algorithmic search engines, the primary value drivers are unique intangibles, datasets derived from user interactions, and network effects whose economic rents cannot be replicated in independent-party markets. In such cases, ALP’s comparability requirement forces a methodological pivot toward profit-split approaches or highly interpretative adjustments that inch toward formulary apportionment (Avi-Yonah, 1996, pp. 1345–1346; Avi-Yonah, 1997, p. 520; Buriak, 2024, secs. 6.2.6, 6.5; Kobetsky, 2011, pp. 91–92; OECD, 2022a, paras. 2.4, 2.119; Screpante, 2024, secs. 1.2, 3.3.4), thereby blurring its conceptual parameters.

A central allocation challenge arises from integrated MNE structures combining multiple jurisdictional contributions without discrete transaction boundaries. Consider a global platform whose monetisation model depends on data collection in market jurisdictions, processing in low-tax hubs where IP is contractually located, and strategic governance from the residence state of the parent entity. ALP applied rigidly would attribute profits predominantly to jurisdictions with recognised DEMPE functions regarding IP exploitation (Calijuri, 2022, sec. 2.3.2.1.2; Greil, 2019, p. 20; Martín

Jiménez, 2020, sec. 2.2; OECD, 2022a, paras. 6.48, 6.56; Screpante, 2024, secs. 4.3.3, 6.3.2), leaving market states without recognised functional roles, despite their provisioning of infrastructure and legal regimes directly enabling data capture, outside profit entitlement entirely.

The difficulty becomes sharper when one observes that profit attribution under current treaty rules often hinges on whether a permanent establishment exists at source; absent this threshold, residual profits tend to accrue to the residence jurisdiction even if substantial economic interaction occurs locally. This personalised approach to allocation means that value created through sales or services delivered into a market state may escape that state's taxing rights unless an objective basis for source taxation is introduced (Schön, 2010, pp. 554-555, 560-561; Traversa, 2022, sec. 4.1). Where profit-split methods come into play, attribution may simultaneously reflect hypothetical domestic returns and portions of foreign-derived income generated within local markets, yet discerning these layers without distorting incentives remains uneasy work (Becker, Englisch & Schanz, 2019, pp. 19-20, 23; Chand, 2019, pp. 1039-1040; IMF, 2019, pp. 26-29; OECD, 2022a, Glossary; Schön, 2010, pp. 554-562; Schreiber & Fell, 2017, secs. 1, 2, 4).

In sum, profit allocation challenges in the digital economy expose the limitations of traditional ALP and PE frameworks, revealing systemic mismatches between doctrinal assumptions and operational realities. These frictions do not merely complicate attribution; they directly contribute to structural erosion of tax bases, as certain jurisdictions fail to receive compensation for the economic value they enable. The next section examines how these allocation frictions translate into base erosion, highlighting the urgency of principled reform and setting the stage for reconstructing foundational international tax doctrines.

8.3 Erosion of Tax Bases

The structural erosion of tax bases within the contemporary international taxation framework stems from a confluence of factors that destabilize the normative and operational integrity of allocation principles when confronted with intangible-driven and dematerialised value creation. Building on the profit attribution challenges delineated in

Section 8.2, this erosion manifests when the capacity of current nexus definitions, profit allocation methodologies, and anti-avoidance provisions fails to align jurisdictional taxing rights with the actual location of economic allegiance. Rather than being an incidental effect, such erosion reflects systemic vulnerabilities embedded in treaty architectures designed for industrial economies, where taxable presence was unambiguously evidenced via physical production sites or resource exploitation facilities (Escribano, 2019, secs. 3.01, 3.03[C]; Gadžo, 2018a, secs. 6.2, 6.6; Hendriyetty et al., 2023, pp. 5-6, 12; Kobetsky, 2011, pp. 129, 133; OECD, 2015a, paras. 28-30; Schön, 2021, p. 4; Traversa, 2022, sec. 11.2).

A primary vector for base erosion lies in the deliberate structuring of MNE operations to exploit legal-geographical mismatches between income origin and formal nexus triggers. Digital economy models enable consolidation of high-value intangibles, IP, proprietary datasets, algorithmic assets, into affiliates domiciled in low-tax jurisdictions, even where substantive inputs to their development occur elsewhere (Aslam & Shah, 2020, pp. 189, 209-210; Calijuri, 2022, sec. 2.2; Escribano, 2019, secs. 2.01[A], 3.01[C]; OECD, 2015a, paras. 152-153, 187, 196; Oguttu, 2022, sec. 3; Screpante, 2024, secs. 1.2, 4.4.1; Toder et al., 2000, p. 11). Transfer pricing outcomes under ALP application often attribute disproportionate residual profits to such nominal IP owners, ignoring market jurisdictions that provide infrastructural and regulatory environments enabling local data capture or sustained user engagement. As a result, substantial economic contributions fall outside recognised taxable connection in both source and residence states, contracting their tax bases in ways that undermine distributive justice under inter-nation equity norms (Buriak, 2024, secs. 0.1, 5.2.3; Gadžo, 2018a, secs. 5.1.2, 5.1.3; Hongler, 2019, secs. 1.5, 11.3.1; IMF, 2019, paras. 29, 34; OECD, 2015a, paras. 12, 249; Waerzeggers et al., 2020, p. 356). This contraction is exacerbated by “scale without mass” operational capacities: platforms penetrate consumer markets deeply without establishing permanent establishments that would trigger source-based entitlement (Aslam & Shah, 2020, p. 189; Harpaz, 2021, pp. 62-63; Hendriyetty et al., 2023, p. 6; Oguttu, 2022, sec. 3; OECD, 2018, paras. 33, 131-133, 384; OECD, 2019c, paras. 4, 12). The beneficial conditions conferred, high-speed networks, legal frameworks governing online transactions, remain uncompensated in fiscal terms because current PE proxies demand tangible fixity for taxable presence. Jurisdictions thus bear the public expenditure requisite to sustain such enabling conditions yet receive no corresponding

tax base share, eroding fiscal capacity over time and weakening reciprocity at the core of benefit theory justification.

Unilateral measures like gross revenue DSTs attempt to plug these gaps but frequently exacerbate systemic instability by bypassing treaty-embedded double taxation relief mechanisms (Aslam & Shah, 2020, p. 221; Collier, 2023, secs. 3.4.1, 4.3; Harpaz, 2021, pp. 84-85; Hendriyetty et al., 2023, p. 71; OECD, 2018, paras. 415, 424; OECD, 2020a, para. 403; Schön, 2018, sec. 9). In cases where residence jurisdictions do not offer credits for DST liabilities incurred abroad, MNEs confront cumulative burdens; conversely, if credits are allowed domestically, residence states effectively transfer revenue to market jurisdictions without negotiated rebalancing, thereby eroding their own tax base in pursuit of unilateral assertion elsewhere. Both outcomes reflect distributive imbalances inconsistent with the coordinated symmetry envisaged under historical residence-source compromises.

Hybrid mismatch arrangements further accelerate base erosion. By exploiting divergent national interpretations of entity classification or financial instrument characterisation, MNE structures generate deductible payments in one jurisdiction without corresponding inclusion in another (Arnold, 2019, p. 118; Gil García, 2019, p. 338; OECD, 2013a, pp. 40-41; OECD, 2013b, p. 15; Parada, 2021, pp. 736-737). These arrangements persist even post-BEPS where legislative harmonisation lags or treaty provisions remain too narrow to capture new forms engineered around intangibles' mobility and fungibility. As financing and licensing flows are redirected through low-tax conduits under full compliance with local law, high-consumption markets lose potential bases grounded both in benefit provision and, in cases where ultimate parent entities reside locally, in capacity-oriented claims under ability-to-pay logic. Intra-group contractual risk allocation compounds this dynamic erosion.

The structural biases inherent in production-based allocation rules also interact with digital value chains in ways that systematically privilege exporting jurisdictions over net importers of digital services. This imbalance has been described as a zero-sum configuration wherein traditional nexus rules secure windfalls for producer countries while leaving market jurisdictions chronically disadvantaged; such asymmetry has strained long-standing consensus around the division of taxing rights (Avi-Yonah, 1996,

p. 1303; Christians & van Apeldoorn, 2018, pp. 1-3; Kysar, 2020, sec. 3.1; Schön, 2021, p. 2; Sheppard, 2014, p. 62).

In conclusion, the erosion of tax bases in the digital economy reflects systemic misalignments between industrial-era allocation rules and contemporary, intangible-driven business models. Structural gaps, unilateral measures, and hybrid mismatch arrangements collectively undermine both source- and residence-based taxing rights, while the benefits conferred by market jurisdictions remain uncompensated. Unless coordinated multilateral reforms reconcile nexus, allocation, and anti-abuse provisions with the realities of dematerialised value creation, base erosion will persist, threatening inter-nation equity and the stability of international tax frameworks. These challenges highlight the necessity of systematically reconstructing foundational principles to identify which doctrines can withstand digital-era stresses and which require reinterpretation, a task undertaken in the following section.

9 CONCEPTUAL RECONSTRUCTION OF PRINCIPLES

9.1 Principles Remaining Intact

The systematic consistency-testing undertaken in the preceding analytical stages allows for a precise identification of those foundational principles capable of withstanding the structural stresses introduced by intangible-intensive digital commerce without requiring definitional rupture. Retention of doctrinal integrity here is assessed under the dual criteria established in Section 8.1: first, that the principle's core normative content continues to function without internal contradiction when applied to digital economy scenarios; second, that any operational adjustments needed to achieve accurate allocation outcomes remain tethered to recognised treaty language and established interpretative margins rather than amounting to de facto re-construction.

The first candidate for preservation within these parameters is neutrality, albeit with clarificatory precision regarding its scope in cross-border allocation. Neutrality's essence, non-discrimination between comparable economic actors regardless of organisational form or jurisdictional mix, does not depend on physical presence and thus does not suffer the evidentiary collapse afflicting nexus-tied doctrines (Brown and Mintz,

2013, pp. 586–593; Gadžo, 2018a, secs. 5.2, 5.2.2; Hendriyetty et al., 2023, p. 110; OECD, 2015a, Box 1.1; Schön, 2018, sec. II). Its underlying commitment to ensuring that tax burdens do not distort commercial decision-making remains conceptually sound even as business models evolve digitally. Specifying that adaptation here involves only the operational embedding of symmetrical relief mechanisms into new allocation devices such as Pillar One’s Amount A. As long as competitive conditions are safeguarded through administratively verifiable credit or exemption procedures, neutrality can accommodate hybrid allocation keys, sales, and user contributions, without being transformed into a different allocative logic. The doctrinal ballast provided by neutrality makes it one of the few principles maintainable in original form under a re-engineered distributional architecture.

Similarly, the single taxation principle retains conceptual viability despite reforms altering technical profit-sourcing rules. Its core proposition, that each stream of income should be taxed once globally, neither more nor less, operates as an overarching constraint rather than as a positive allocation rule (Avi-Yonah, 1997, pp. 517–518; Avi-Yonah, 2007, sec. 4.1; De Lillo, 2018, secs. 1.1, 1.2.2.1; Gil García, 2019, secs. 3, 3.2.2, 5). Digitalisation does not inherently compromise this proposition; rather, it complicates its enforcement by generating overlapping claims absent coordinated allocation standards. Provided reform models incorporate explicit anti-overlap clauses and symmetrical adjustments to relief provisions, the principle continues to function exactly as it did in industrial-era contexts. Thus, its status should be described as an *ex post* consistency check across interacting residence and source claims rather than an *ex ante* determinant of entitlement, a framing which permits straightforward integration into both amended PE definitions and destination-based profit splits without loss of content.

The inter-nation equity norm also satisfies both retention criteria once stripped to its distributive essence. Historically expressed through balanced concessions between capital-exporting and importing states, it presupposes no particular form of nexus or valuation method (Avi-Yonah and Lempert, 2023, secs. 2.2.2, 2.2.3; Gadžo, 2018a, secs. 5.1.2, 5.1.3; Kobetsky, 2011, pp. 16, 108, 149–150; OECD, 1963, para. 18; UN, 1980, p. 2). Even under intangible-intensive conditions, equity can be operationalised through mechanisms producing proportionate fiscal outcomes relative to each jurisdiction’s accepted contributory role, whether measured via traditional DEMPE analysis or alternative proxies for market engagement, so long as symmetry in concessions is

preserved. The evaluative matrix confirms that where formulary elements are inserted into profit allocation (for example under Amount A), parallel adjustments safeguarding compensatory entitlements for production jurisdictions secure doctrinal continuity. Such symmetry conditions are essential: absent them, re-weighting toward market jurisdictions slips into transformation by breaching equity's axiom of mutual balance.

Benefit theory itself can endure as a principled anchor if its definition of qualifying benefits is carefully adapted to encompass non-physical but demonstrable enablers intrinsic to digital operations (Cugusi, 2020, sec. 7.1; Escribano, 2019, sec. 2.02[B]; Gadžo, 2018a, secs. 7.1.1.1, 7.3.2.1; Hongler and Pistone, 2015, sec. 3.3; OECD, 2015a, para. 32). High-speed networks, enforceable e-commerce legal frameworks, and data protection regimes meet this threshold where they can be evidenced as materially enabling value creation attributable to non-residents' local market participation. By preserving the reciprocity core, that fiscal claims arise from identifiable provision-utilisation relationships, the principle survives intact conceptually; empirical modernization occurs at the level of acceptable indicia for benefit receipt rather than through redefining entitlement triggers into mere market access formalism. The novelty here is in specifying a tiered evidentiary standard allowing benefit equivalence between tangible infrastructure and intangible regulatory/infrastructural frameworks, ensuring applicability across divergent economy types without severing ties to traditional causality logic.

Finally, ability-to-pay retains theoretical coherence provided its international application acknowledges concurrent entitlement structures rather than asserting primacy over all allocative bases (Avi-Yonah, 1996, p. 1310; Gadžo, 2018a, sec. 5.1.2; Hongler, 2019, secs. 11.2.3.2.3, 11.2.3.3.2; Schön, 2009, pp. 71–73). At individual taxpayer level within residence jurisdictions, proportional contribution according to consolidated capacity remains viable irrespective of whether that capacity is generated by tangible or intangible means. What requires refinement, but does not compel definitional overhaul, is the incorporation of adjustment protocols recognising verified benefit-based allocations made to source states for shared value creation. Framed thus, capacity measurement remains anchored in residence-based global income principles while operational limits avoid distributive overreach into revenues more appropriately attributed elsewhere under reciprocity norms. Capacity concepts need only marginal procedural adaptation, inclusion

of standardised foreign entitlement offsets, to operate harmoniously within hybrid nexus environments dominated by intangibles.

The retention of these principles hinges on disciplined boundary management: adaptations must remain formally within interpretative space recognised by model conventions and their commentaries; causal linkages underpinning distributive justifications cannot be replaced wholesale by formalistic triggers divorced from benefit provision or equity reciprocity; procedural modifications must preserve administrability without undermining legal certainty. By applying this standard consistently across neutrality, single taxation principle, inter-nation equity, benefit theory (in adapted evidentiary terms), and ability-to-pay (with coordinated offsetting), these doctrines withstand digital economy stresses without transgressing into transformation territory.

In sum, the principles reviewed in this section remain conceptually sound under digital economy stresses when supported by targeted operational adaptations. Yet, certain doctrines face practical and evidentiary tensions that cannot be fully addressed within their existing frameworks. The next section examines these principles requiring reinterpretation to ensure coherent application in intangible-intensive, digitalised commerce.

9.2 Principles Requiring Reinterpretation

A number of foundational principles remain conceptually viable but exhibit operational and doctrinal stress points that demand reinterpretation if they are to function coherently in the context of intangible-intensive digital commerce. Reinterpretation here is understood, within the analytical framework applied throughout this dissertation, as a calibrated adjustment of scope, evidentiary proxies or operational criteria that does not sever the principle from its historical normative core, but which nonetheless changes its application in a way necessary to preserve functional integrity under altered economic realities. The identification of such principles follows directly from the systematic consistency-testing conducted against empirical scenarios characteristic of dematerialised value creation.

The first candidate for such reinterpretation is the value creation principle itself. As traced previously, this allocation logic historically derived content from the location

of functional activities, tangible assets, and legally recognised risk-taking within a jurisdiction (Buriak, 2024, sec. 8.7; Greil, 2019, pp. 5–6; Nikolakakis, 2021, sec. 2; OECD, 2018, paras. 388–389; Schoueri and Galendi, 2017, p. 60). In contemporary settings where decisive value drivers include user-generated data, network effects and distributed algorithm development, those traditional proxies cannot reliably locate origination or causation within a single territory (Avi-Yonah, 1997, pp. 520–521; Becker, Englisch and Schanz, 2019, pp. 4–5; Buriak, 2024, sec. 6.2.6; Greil, 2019, pp. 8, 20–21; OECD, 2015a, paras. 265, 379; Schön, 2018, sec. VIII). Doctrinal preservation requires tightening the evidentiary link between jurisdictional enabling conditions and profitable outcomes while abandoning exclusive reliance on physical indicia. This entails reinterpreting “creation” so that qualifying contributions may include non-physical but demonstrably indispensable factors, sustained user engagement facilitated by domestic infrastructure; regulatory regimes enabling lawful digital transactions, provided these can be objectively measured against agreed metrics (Cugusi, 2020, secs. 4.2, 7.1; Escribano, 2019, sec. 4.02[C]; Hongler and Pistone, 2015, secs. 3.3, 4.2; OECD, 2015a, paras. 279–280). Without such recalibration, application degenerates into either under-inclusiveness (excluding demonstrable local contributions lacking tangibility) or overreach (equating mere market access with creation), each of which erodes reciprocity embedded in benefit theory. This leads to a tiered reinterpreted structure that preserves causation requirements while incorporating modernized proxies applicable across heterogeneous legal systems.

The persistence of physical-presence assumptions embedded within many tax nexus rules mirrors a broader inertia in legal frameworks designed for territorially bounded economies. Where earlier models could rely on tidy congruence between economic reporting categories and jurisdictional boundaries, cross-border digital activities complicate these alignments by blurring territorial demarcations and interlacing them with networked flows of data, intangible rights, and multi-jurisdictional production chains (Buriak, 2024, sec. 1.2.2; Kahin, 2016, pp. 3–4; OECD, 2015a, paras. 159, 211, 265; OECD, 2018, paras. 69, 132, 149; Olbert and Spengel, 2017, pp. 9, 14; Schön, 2009, pp. 67–68). Ignoring these shifts risks underestimating both the scale and heterogeneity of cross-territorial value generation in “scale without mass” contexts.

The source principle similarly demands reinterpretation to sustain coherence with economic allegiance theory. Current treaty practice pivots heavily on permanent establishment definitions as gateways to source entitlement; these definitions embed

assumptions about tangible fixity inconsistent with “scale without mass” models (Aslam and Shah, 2020, pp. 189, 205; Escribano, 2019, secs. 3.01[C], 3.03[C], 3.03[E]; Gadžo, 2018a, secs. 4.2, 6.4.3; Hendriyetty et al., 2023, pp. 6, 12; OECD, 2015a, paras. 35–36, 246; OECD, 2018, paras. 132, 384; OECD, 2019c, para. 12). A doctrinally faithful adaptation necessitates broadening “origin” to embrace significant economic presence criteria but conditioning their use on demonstrated provision–utilisation linkages equivalent in function to those historically recognised. Without such recalibration, source claims risk either under-attribution, leaving jurisdictions hosting critical intangible-driven inputs uncompensated, or formalistic overreach, treating market access alone as sufficient for entitlement.

These tensions illustrate that some principles face limits to reinterpretation alone, prompting the discussion in Section 9.3 on doctrines requiring structural modification to preserve functional legitimacy in the digital economy.

9.3 Principles Requiring Structural Modification

In contrast to the reinterpretative adjustments outlined in Section 9.2, certain foundational principles exhibit such deep-seated misalignment with the empirical and doctrinal realities of the digital economy that their preservation in recognizably original form is untenable. For these principles, the inconsistency is not narrow in scope or limited to evidentiary proxies, but manifests as a structural incompatibility between core definitional commitments and the conditions under which contemporary cross-border value creation occurs.

On application of the methodological consistency-tests developed earlier, this type of breakdown satisfies the classification of transformation: the existing principle’s conceptual architecture cannot be reconciled with digital economy phenomena through incremental expansion or clarification without undermining its axiomatic rationale. The most prominent example within this category is the ALP when applied as a universal allocation methodology across all transaction types, including those dominated by unique intangibles, synergistic rents, and user-derived data (Aslam and Shah, 2020, pp. 189–190, 197–198, 210; Avi-Yonah, 1996, p. 1307; Becker, Englisch and Schanz, 2019, pp. 12–14; Buriak, 2024, secs. 3.4, 6.2.5, 6.2.6; Escribano, 2019, sec. 3.01[C]; Greil, 2019, pp.

4–5, 20; Kobetsky, 2011, pp. 76, 80). The ALP’s central device, comparing related-party transactions against prices observable between independent enterprises under comparable circumstances, presupposes markets in which relevant assets, rights, or services are traded at arm’s length. In digitalised models featuring proprietary algorithms, exclusive datasets, and network effects, such markets demonstrably do not exist (Aslam and Shah, 2020, pp. 197–200; Becker, Englisch and Schanz, 2019, sec. 5; Buriak, 2024, secs. 6.2.5, 6.2.6; Greil, 2019, pp. 19, 34; Olbert and Spengel, 2017, sec. 5.2.4). The absence of valid comparables means transactional neutrality can no longer be operationalised in these contexts; repeated recourse to profit-split or formulary approximations within an ALP framework produces allocation results indistinguishable from methods it was designed to avoid. Retaining ALP’s nominal supremacy under such conditions becomes an exercise in rhetorical continuity rather than doctrinal coherence. To restore functional legitimacy, a structural modification would entail explicit bifurcation of profit attribution rules: preserving traditional transactional comparability only where defensible market benchmarks exist, and adopting principled non-ALP allocation keys, anchored in agreed proxies for value creation, for categories of income where unique intangibles or integrated enterprise rents are economically decisive.

A second principle requiring structural modification is the PE nexus standard as currently codified in OECD and UN Model Conventions. The embedded requirement for a “fixed place of business” through which activities are carried on (Escribano, 2019, secs. 3.03[C], 3.03[E]; Gadžo, 2018a, sec. 7.1.1.2; OECD, 2015a, paras. 30, 184; OECD, 2017, art. 5(1) and Commentary on Article 5, para. 6; Traversa, 2022, sec. 2.2.1; UN, 1980, art. 5(1)) reflects an industrial-era paradigm where sustained profit generation was contingent on geographically fixed assets or personnel. Digital enterprises achieve long-term market penetration and revenue extraction through remote interaction with local users, maintaining “scale without mass” (Collier, 2023, secs. 3.4.1, 4.3; Gadžo, 2018a, sec. 6.2; Hendriyetty et al., 2023, pp. 6, 12; Kobetsky, 2011, pp. 1, 125; OECD, 2015a, paras. 158, 253; OECD, 2018, paras. 33, 131–132, 381; Traversa, 2022, sec. 11.2). Attempts to stretch “place” to include virtual interfaces under current commentary encounter hard textual limits; administratively viable thresholds for significant economic presence cannot be read into Article 5 without displacing its physicality anchor. Adaptation through interpretation of the existing fixed-place wording reaches a hard textual limit here. This does not imply, however, that the broader nexus principle lacks doctrinal

elasticity: a treaty-level reconceptualisation through significant economic presence may preserve its underlying benefit-linked reciprocity logic even where modification of the existing Article 5 formulation is required. Such structural modification may take the form of parallel digital-specific nexus provisions or a revised nexus standard based on functional economic presence, provided that the resulting criteria remain grounded in objectively verifiable indicators of sustained jurisdictional engagement. For the purposes of this dissertation, functional economic presence refers to a jurisdictionally identifiable economic relationship evidenced by sustained participation in, and reliance upon, the economic, legal or infrastructural conditions of a market, even where conventional physical-presence indicators are absent. The concept is used here as an analytical construct rather than as an established treaty-law category.

The source principle itself does not necessarily require structural transformation, since its normative foundation in economic allegiance remains capable of reinterpretation. Structural modification becomes necessary, however, where source entitlement is operationalised exclusively through conventional PE-centric gateways that make tangible presence a necessary condition for recognising jurisdictional contribution. While its normative foundation in economic allegiance remains viable, operationalising that allegiance exclusively via tangible-factor origin points excludes demonstrable local contributions from intangible enablers such as user networks or regulatory frameworks for e-commerce (Cugusi, 2020, secs. 4.2, 5.1, 7.1; Elliffe, 2020, sec. 2.3; Escribano, 2019, secs. 2.02[A], 2.02[B][b], 3.03[E]; Gadžo, 2018a, secs. 2.2.6.2, 5.1.3, 6.4.3, 7.1.1.2; Hongler and Pistone, 2015, sec. 3.3). Introducing significant economic presence triggers nominally preserves “source” but shifts its content away from reciprocally evidenced benefits toward formalistic market access tests if not tightly constrained. The analytical framework here shows that avoiding arbitrariness requires reconceptualizing “origin” altogether, embedding a two-tier entitlement model recognising both tangible factor deployment and qualifying intangible contributions as independent bases for source taxation. This structural adjustment would necessitate new treaty text defining acceptable intangible-origin criteria and embedding symmetrical relief mechanisms to safeguard inter-nation equity.

The value creation principle occupies a boundary position between reinterpretation and transformation. Its normative core - linking taxing rights to economically meaningful value generation within a jurisdiction - remains conceptually

defensible and capable of reinterpretation, but structural modification becomes necessary where competing operational definitions of value creation cannot be reconciled within a common causal framework. Traditional proxies, such as tangible asset deployment, local labor, or contractually recognised risk-bearing, fail to capture contributions from user-generated data, network effects, distributed algorithmic development, and regulatory or infrastructural enablers provided by market jurisdictions. Without structural adjustment, application risks either excluding demonstrable local value contributions or relying on formalistic indicators such as market access alone, undermining reciprocity and inter-nation equity. A doctrinally coherent modification would entail explicitly recognising intangible-origin contributions as independent bases for jurisdictional entitlement, embedding objectively verifiable proxy thresholds for sustained user engagement, localisation activities, and regulatory or infrastructural facilitation. This recalibration would also require treaty-level incorporation of symmetrical relief mechanisms to prevent double taxation or arbitrary allocation, ensuring that fiscal claims correspond proportionately to verifiable jurisdictional inputs. By repositioning value creation within a framework that accommodates both tangible and qualifying intangible factors, the principle can retain its normative function while operating effectively under digital economy conditions.

The structural role attributed to value creation in this reconstruction does not imply that value creation itself provides an objectively measurable allocation key. Particularly in intangible-intensive and highly integrated business models, the relative contribution of intangibles, users, network effects, capital and geographically dispersed functions to residual profit cannot be reduced to a single objectively observable metric. The value creation principle is therefore employed here primarily as a justificatory constraint: an allocation rule or proxy should remain capable of demonstrating a substantive relationship between the jurisdiction claiming taxing rights and the economic processes contributing to the relevant income. The principle does not itself determine the precise quantitative division of taxable profit.

In conclusion, these structural modifications collectively reflect the limits of reinterpretation alone and establish the necessity of transformation for certain doctrines. They create a coherent bridge to the subsequent discussion in Section 9.4, which justifies these changes theoretically by linking them to empirical stress-testing, doctrinal consistency criteria, and the imperatives of capturing dematerialised, intangible-driven

value without compromising core principles such as neutrality, benefit reciprocity, and inter-nation equity.

9.4 Theoretical Justification of Changes

The theoretical justification for the changes indicated in Section 9.3 rests upon the systematic application of the principle-reconstruction methodology and the rigorous stress-testing of foundational doctrines against empirically grounded scenarios emblematic of intangible-intensive digital commerce. The move toward structural modification is not predicated upon policy expediency but arises from the identification of conceptual discontinuities that resist resolution through mere interpretative expansion. In this sense, the analytical framework distinguishes between superficial incompatibility, where operational proxies or evidentiary standards fail in altered contexts, and deep structural incompatibility, where a principle's axiomatic premises are inherently misaligned with contemporary economic phenomena (Buriak, 2024, secs. 6.2.3, 6.2.5, 6.2.6; Escribano, 2019, secs. 3.01[C], 3.04; Greil, 2019, pp. 20–21; Shaviro, 2019, pp. 16–17; Tavares, 2016, sec. 1). The principles placed into the transformation category have met this threshold by demonstrating irreconcilability between their core definitional logic and the realities of dematerialised value creation.

For the ALP, its historical coherence depended upon the existence of reliable third-party comparables for transactions involving tangible assets, standardised goods, or widely traded services (Arnold, 2019, sec. 6.4.3; Avi-Yonah, 1997, pp. 515–516; Escribano, 2019, fns. 16, 17; Greil, 2019, p. 8; Kobetsky, 2011, pp. 78–79; OECD, 2022a, para. 1.9). Digital-era conditions characterised by unique intangibles, algorithmic architectures, proprietary datasets, network-derived brand premiums, eliminate any factual basis for such comparability in entire transaction classes (Aslam and Shah, 2020, pp. 189, 209–210; Becker, Englisch and Schanz, 2019, pp. 26–27; Buriak, 2024, secs. 6.2.5, 6.2.6; Greil, 2019, pp. 19–20, 34; Kobetsky, 2011, pp. 76, 394; Olbert and Spengel, 2017, p. 40; OECD, 2022a, paras. 6.116, 6.203). Persisting with ALP's universality under these conditions would entail either tolerating arbitrary profit allocations unsupported by genuine market analogues or silently substituting formulary proxies lacking transactional parity foundations.

Such substitution disrupts both neutrality, by applying non-comparable benchmarks to related party dealings, and reciprocity, by abandoning mutual entitlement

logic embedded in bilateral transfer pricing rules. Hence structural modification is warranted: retention as a default method where comparables exist, coupled with principled alternative attribution keys in unique intangible contexts recognising contributory functions across jurisdictions on agreed causation metrics (Avi-Yonah, 1996, p. 1347; Becker, Englisch and Schanz, 2019, pp. 24–28; IMF, 2019, paras. 88, 99; OECD, 2022a, paras. 1.9, 2.4, 2.170–2.171; Schreiber and Fell, 2017, sec. 2.2). As such, conceptualizing this bifurcation not as policy innovation but as doctrinal necessity to preserve ALP integrity where possible while eschewing rhetorical usage masking substantive methodological replacement. Similarly, PE definitions anchored to “fixed place of business” criteria constitute an ontological mismatch when applied to “scale without mass” operations sustaining long-term market engagement without tangible fixed assets locally (Aslam and Shah, 2020, pp. 189, 205; Buriak, 2024, sec. 0.4; Emanuelle, p. 3; Escribano, 2019, secs. 2.01[A], 3.03[E]; OECD, 2015a, paras. 253–255; OECD, 2018, paras. 33, 131–133).

In sum, structural modifications are justified where specific operational formulations, most clearly universal ALP application to non-comparable residual profits and the physicality-bound PE rule, can no longer accommodate digital, intangible-driven value creation without abandoning their established logic. Distinguishing between contexts where traditional rules remain valid and those requiring alternative attribution ensures doctrinal coherence. This framework provides the basis for critically evaluating multilateral reforms, such as the OECD BEPS measures, in the next chapter, assessing whether they align reconstructed principles with digital economy realities.

10 CRITICAL EVALUATION OF EXISTING REFORM PROPOSALS

10.1 OECD BEPS Framework

10.1.1 Objectives and Scope

The objectives and scope of the OECD/G20 BEPS framework, when viewed through the principle-reconstruction lens developed in earlier chapters, must be understood not as static declarations of intent but as operative parameters that predefine both the reach and the evaluative constraints of current multilateral reform efforts. The

central stated objective, addressing tax avoidance strategies that exploit gaps and mismatches in international tax rules to artificially shift profits to low or no-tax jurisdictions, derives directly from widespread recognition that intangible-driven, dematerialised business models expose vulnerabilities in nexus definitions, profit allocation methodologies, and anti-avoidance instruments inherited from industrial-era treaty practice (Brauner, 2016, p. 984; Collier, 2023, pp. 170–173; Escribano, 2019, secs. 1.01, 1.02; OECD, 2013a, pp. 7, 39, 47; OECD, 2013b, pp. 10, 14; OECD, 2015a, paras. 1–3, 204). Within the digital economy, these vulnerabilities manifest in “scale without mass” configurations enabling sustained revenue extraction from markets without physical permanent establishments and in the ability of highly mobile intellectual property or data assets to be relocated contractually to favourable jurisdictions while substantive economic activity occurs elsewhere (Aslam and Shah, 2020, p. 189; Oguttu, 2022, sec. 1; OECD, 2015a, paras. 151–153, 184, 186–187; OECD, 2018, paras. 33–34, 275–276; OECD, 2019c, paras. 3–4; Screpante, 2024, secs. 1, 4.4.2).

In principle-driven terms, the BEPS project’s core ambition is twofold: first, to restore alignment between profit allocation and value creation as normatively conceived within OECD policy discourse; second, to safeguard the integrity of national tax bases while avoiding double taxation and minimising compliance burdens (Escribano, 2019, secs. 2.01[B], 4.01[A]; Hey, 2018, sec. 1; OECD, 2015a, p. 3). These ambitions situate BEPS as both a defensive mechanism, closing identified loopholes facilitating base erosion, and a normative restatement aimed at recalibrating taxing rights according to revised understandings of economic allegiance under contemporary business models. The scope accordingly encompasses both targeted anti-avoidance measures (e.g., hybrid mismatch neutralization, strengthened CFC rules) and systemic reconsideration of nexus and allocation standards in relation to digitalisation (Pillar One), supplemented by global minimum taxation measures under Pillar Two. Yet, this breadth remains politically bounded: all reforms are constrained by the OECD Inclusive Framework’s requirement for consensus among participating jurisdictions with divergent fiscal profiles and distributive interests.

From a doctrinal perspective, the “addressing digitalisation” strand within BEPS defines its remit outwardly from three interlocking substantive challenges: (i) whether existing nexus rules grounded in Article 5 permanent establishment thresholds remain appropriate; (ii) how data and user participation should be characterised for purposes of

profit allocation; and (iii) whether alternative characterizations of certain income streams are required for coherent cross-border taxation (Collier, 2023, p. 174; Hendriyetty et al., 2023, p. 6; OECD, 2015a, paras. 3, 376; OECD, 2019c, para. 1; OECD, 2019b, para. 4; Usman, 2022, p. 58). As part of this reconsideration of nexus thresholds, revisions connected with Action 7 have clarified the definition of permanent establishment so as to counter arrangements aimed at sidestepping taxable presence requirements, such as through commissionaire structures or artificial fragmentation, that undermine the link between source jurisdiction activity and taxing rights (Bianco and Tomazela Santos, 2016, sec. 2; Escribano, 2019, secs. 3.03[E], 4.02[C]; OECD, 2013b, p. 14; OECD, 2015b, pp. 9–10; OECD, 2018, paras. 269–271).

This conceptual framing is reinforced by broader policy concerns about preserving a consensus-based international tax architecture amid evolving business practices. As has been noted, unilateral measures taken outside such cooperative frameworks risk fracturing long-standing principles for establishing taxing rights, amplifying mismatches in coverage, provoking disputes between jurisdictions, and inviting competitive downward adjustments in corporate income tax rates (Collier, 2023, pp. 181, 185; Gadžo, 2018a, sec. 7.5; Harpaz, 2021, pp. 93–94; IMF, 2019, paras. 8–9, 28; OECD, 2013a, pp. 8–9, 48; OECD, 2013b, pp. 10–11; OECD, 2019b, paras. 11, 54; OECD, 2020a, pp. 11, 22–23, 192). Conversely, sustaining coordinated action on BEPS is portrayed as a means not only of curbing avoidance opportunities but also of offering greater certainty to multinational enterprises while shielding governments from erosion of their fiscal capacity. In practical terms, procedural innovations such as the negotiation of a multilateral instrument have emerged precisely to streamline implementation across more than 3,500 bilateral treaties without requiring piecemeal renegotiations, a method that appears intended to ensure that treaty-based changes affecting nexus definitions or transfer pricing align consistently with value creation principles (Brauner, 2016, p. 1019; Christians, 2016, pp. 1641–1642; OECD, 2015d, paras. 5–8; Schön, 2021, p. 2). This alignment objective may appear ambitious given diverging national preferences, but it forms part of a wider recognition within OECD and G20 circles that sustainability of tax bases depends on synchronized interpretation as much as formal rule change.

While the BEPS framework seeks to align nexus and allocation standards with digitalised business realities, its conceptual proximity to principle-consistent adaptation is inherently contingent on multilateral coordination, evidentiary rigor, and operational

harmonisation. Without such alignment, even carefully designed measures risk partial transformation by weakening reciprocity, equity, or causal linkage between jurisdictional contribution and profit allocation. The next section applies the evaluative framework developed in earlier chapters to test whether BEPS reforms preserve, adapt, or transform the reconstructed international tax principles, providing a structured assessment of doctrinal continuity and operational fidelity.

10.1.2 Evaluation Against Original Principles

An evaluative application of the analytical framework developed earlier to the OECD/G20 BEPS digitalisation agenda requires interrogation of whether its structural components and proposed mechanisms preserve, adapt, or transform the foundational principles reconstructed in previous chapters. The emphasis here is on testing for doctrinal continuity or rupture by reference to the twofold criteria: retention of each principle's normative core and operational alignment with tangible causal linkages between jurisdictional contributions and profit allocation.

When assessed against benefit theory, the BEPS reallocation propositions, particularly within Pillar One's Amount A, present a mixed profile. They embed market jurisdictions into the primary allocation formula through sales-based keys and user-linked metrics, ostensibly as proxies for benefits conferred (Buriak, 2024, secs. 4.1, 6.3.1; Emanuele, p. 10, 20; Escribano, 2019, secs. 4.02[B][a], 4.02[C][a]; Gadžo, 2018a, secs. 6.4.3, 7.5; Traversa, 2022, sec. 2.3.2). However, as demonstrated by the causal requirement embedded in reciprocity logic, mere consumption or user presence does not automatically equate to jurisdictional provision of enabling conditions substantial enough to justify source-based entitlement. Without obliging proof that value-driving activities were materially dependent on domestic infrastructure, legal frameworks, or regulatory regimes, as distinct from global platform spillovers, the reform detaches attribution from evidentiary benefit proxies.

Such a move places Pillar One at the cusp between adaptation and transformation: proxies may function as administrable surrogates for benefit if causally robust, but unqualified reliance on destination metrics introduces a formalist redefinition inconsistent with historical quid pro quo reasoning (Chand, 2019, p. 59; Elliffe, 2020, p. 11; Escribano,

2019, secs. 2.02[A], 2.02[B], 4.02[B]; Gadžo, 2018a, secs. 7.1, 7.3, 7.5; Nikolakakis, 2021, secs. 4, 5; Schön, 2009, sec. 3.3). In relation to inter-nation equity, BEPS measures confront distributional balancing obligations embedded in decades of residence–source compromise. By designating additional taxing rights to market states without an equivalent recalibration favoring production jurisdictions hosting substantive DEMPE functions or capital investment, Amount A risks breaching equity’s mutuality axiom (Buriak, 2024, secs. 5.3.1, 6.3.5.3; Gadžo, 2018a, sec. 5.1.3; Kysar, 2020, sec. 4; OECD, 2020b, paras. 10, 557, 564, fn. 7; Otto and Van de Vijver, 2023, secs. 3.1, 3.4.2). The reallocation increases one class of jurisdictions’ base while diminishing another’s without explicit compensatory channels beyond residual ALP application to “routine” returns.

From an evaluative perspective grounded in Section 9.1, such asymmetric augmentation signals partial transformation: while the equity norm survives rhetorically through multilateral codification and some symmetrical safeguards (e.g., thresholds limiting scope), its operationalisation diverges from evenly reciprocal adjustments characteristic of earlier bilateral settlements. The capacity orientation inherent in the ability-to-pay principle reveals further tensions. Pillar One reallocations are not structured around measuring taxpayers’ overall economic capacities but rather on fractional formulaic indicators tied to discrete markets (Buriak, 2024, secs. 5.2.1, 6.3.1; Calijuri, 2022, sec. 2.3.2.1.1; Escribano, 2019, sec. 4.02[F]; Musgrave and Musgrave, 1989, p. 223; OECD, 2020b, paras. 496, 514). For ultimate parent entities resident in high-capacity jurisdictions, this diverts portions of the capacity base to source claims irrespective of aggregate ability unless counterbalanced by relief provisions for residual profits retained at residence. In absence of such harmonised adjustments across Inclusive

Framework participants, there is a risk that global allocation departs from proportionality norms central to ability-to-pay without deliberate doctrinal acknowledgment, again suggestive of partial transformation rather than adaptation. The OECD’s reaffirmation of the ALP for non-Amount A profits exemplifies both preservation and erosion dynamics. Retention for “routine” profits preserves transactional comparability where robust independent benchmarks exist (Buriak, 2024, secs. 5.1, 6.3.2; Calijuri, 2022, sec. 2.2.4; IMF, 2019, para. 86; OECD, 2019a, paras. 18, 28, 52; OECD, 2020b, paras. 14, 508; Shaviro, 2019, pp. 52-53).

Taken together, the BEPS framework presents itself as a coordinated effort to realign nexus and allocation standards with digitalised business realities while preserving the stability of the consensus-based tax order. Yet, its breadth and political compromise raise a prior doctrinal question: whether the mechanisms adopted merely operationalize reconstructed principles or instead modify their normative content. The following section evaluates BEPS against the original principles identified in Chapter 9, testing for continuity, adaptation, or transformation in light of the established consistency criteria.

10.2 Pillar One Proposals

10.2.1 Mechanics of Profit Allocation

The allocation mechanics embedded within Pillar One, as part of the OECD/G20 BEPS Inclusive Framework’s approach to digitalisation, represent a deliberate reconfiguration of cross-border taxing rights through the creation of a new category of profit entitlement, Amount A, that operates independently from traditional permanent establishment thresholds and arm’s length principle application. The core structural element is a formulaic attribution of residual profits derived at the level of an MNE group (or segmented business line) to market jurisdictions satisfying newly articulated nexus criteria that disregard physical presence requirements (Buriak, 2024, sec. 6.3.1; Chand, 2019, secs. 6.2, 6.3; OECD, 2019a, paras. 10, 51-53; OECD, 2020b, paras. 7, 10, 186, 406, 496). This procedural bypass is intended to capture situations where dematerialised scale, user participation, or marketing intangibles result in substantial revenue extraction from a jurisdiction without classical nexus triggers, as highlighted in earlier analytical mapping under intangible-intensive conditions.

Mechanically, the reform determines an MNE’s residual profit by first establishing a consolidated global profit figure, based on financial reporting accounts, with limited book-to-tax adjustments and mandatory loss carry-forward treatment (Hendriyetty et al., 2023, p. 11; OECD, 2020b, paras. 407, 409, 415, 472; OECD, 2022b, art. 5). This consolidated figure serves as the baseline to identify “routine” profits attributed under existing ALP-based norms to functions performed, assets deployed, and risks assumed within traditional nexus territories. Residual profits are then computed as global profit minus these routine returns, with Amount A representing a fixed proportion

of that residual earmarked for allocation to eligible market jurisdictions. The allocation key itself commonly amalgamates sales or turnover proxies with jurisdictional eligibility determined by nexus tests referencing consumer location or sustained digital engagement metrics (Bauer et al., 2019, p. 23; Escribano, 2019, sec. 4.02[B]; Hongler and Pistone, 2015, sec. 4.2; OECD, 2015a, paras. 278, 281-282; OECD, 2019c, paras. 51-53, 78; OECD, 2020b, paras. 514, 516; OECD, 2022b, art. 6).

From a doctrinal perspective, this process departs fundamentally from bilateral treaty structures where profit splitting across jurisdictions was generally tethered to observable functional contributions under Art. 7 attribution rules and thus strongly influenced by benefit theory causality requirements. By inserting predetermined formula shares into the distribution sequence, Pillar One substitutes an ex ante apportionment model for case-specific functional analysis in respect of residual profits. Such substitution directly affects the interplay between value creation principle interpretations and ALP operational scope: once routine returns are carved out under ALP, all remaining surplus is distributed mechanically according to market metrics rather than demonstrable causal links between jurisdictional benefits conferred and income generated (Becker et al., 2019, pp. 31-32; IMF, 2019, paras. 86-88; Li et al., 2019, pp. 1131-1132; OECD, 2020b, paras. 507, 512, 514; Otto and Van de Vijver, 2023, sec. 3.4.1.5; Screpante, 2021, secs. 1, 3). Normatively, this constructs a “dual track” allocation methodology within the same corporate group, ALP for routine elements; formulary assignment for nonroutine, challenging claims of systemic coherence unless clear justificatory principles bridge these tracks.

Administratively, aggregation at the group level imposes operational burdens distinct from traditional transaction-level transfer pricing. It requires uniform segmentation of business lines where profitability across activities differs substantially; misclassification risks distorting both Amount A’s size and its jurisdictional distribution. The adoption of consolidated accounts as the starting point aims to enhance consistency but may simultaneously embed divergences arising from varying domestic accounting treatments across participating states (OECD, 2019a, para. 53; OECD, 2020b, paras. 407-408, 420, 423-426). Here lies a further methodological friction: reconciliation adjustments between book income and taxable profit must remain small enough not to undermine administrative simplicity yet comprehensive enough to maintain legitimacy relative to taxable capacity measures acknowledged in residence states. Striking this

reconciliation balance constitutes a hidden determinant of whether Pillar One's mechanics can be integrated into existing principle-based architectures without creating distributive asymmetries beyond politically accepted tolerances.

A critical innovation within these mechanics is the explicit separation of nexus determination from physical presence tests. It is also central that reallocations under Amount A operate on a fixed fraction, currently agreed at 25%, of defined residual profit above a baseline 10% return on revenue for in-scope entities, with eligibility triggered by special nexus thresholds such as EUR 1 million market revenue for larger economies or EUR 250 000 for smaller ones (OECD, 2022b, arts. 3, 6). These quantitative benchmarks appear designed both to streamline implementation and contain administrative costs related to tracing revenues in marginal jurisdictions, though their eventual impact on distributive equity among markets remains uncertain (Gadžo, 2018a, sec. 7.5; Harpaz, 2021, pp. 71, 96; OECD, 2020b, paras. 36, 171-176, 198-199; Otto & Van de Vijver, 2023, sec. 3.4.1.2).

Taken together, the mechanical architecture of Amount A reveals a structurally hybrid system: it preserves the arm's length principle for routine returns while superimposing a formulaic redistribution of residual profit grounded in market-based proxies. This dual-track design achieves administrative streamlining and political compromise, yet it simultaneously loosens the traditional evidentiary link between jurisdictional contribution and taxing rights. The extent to which this represents a principled adaptation of existing nexus logic, or a transformative reallocation of entitlement depends not merely on political consensus but on its coherence with benefit-based reciprocity, neutrality, and administrability constraints. It is precisely these doctrinal and systemic tensions that frame the critiques and risks examined in the following section.

10.2.2 Critiques and Risks

The mechanical design of Amount A allocation analysed earlier sets the stage for a range of doctrinal and operational critiques that must be addressed through the principle-reconstruction lens applied throughout this dissertation.

At the most fundamental level, the substitution of formulaic profit attribution for case-by-case functional analysis introduces a methodological discontinuity with the historic reciprocity logic underlying both benefit theory and the arm's length principle (Becker, Englisch & Schanz, 2019, p. 32; Buchanan, 1960, p. 19; Escribano, 2019, secs. 2.02[A], 4.02[F]; OECD, 2013a, p. 43; OECD, 2022a, paras. 1.17, 1.25; Traversa, 2022, sec. 2.2.2). In traditional allocations, taxing rights were linked to demonstrable causal contributions, whether through tangible assets, labor, or recognised intangible development functions, observable and verifiable within a jurisdiction. Under Pillar One, residual profits are stripped from their link to individually evidenced contributions and redistributed according to sales-based metrics or other market proxies. While these proxies may offer administrative serviceability, they risk being over-inclusive where high turnover in a jurisdiction does not correspond to proportionate enabling conditions provided locally (Chand, 2019, secs. 3, 5; Escribano, 2019, secs. 2.02[A], 4.02[C][a]; Kysar, 2020, sec. 3; Schön, 2009, sec. 2.2.2.1; Traversa, 2022, sec. 2.2.2). Such a disjunction dilutes the evidentiary nexus and therefore shifts the reform trajectory toward transformation rather than adaptation.

A related critique concerns inter-nation equity. By reallocating residual profits systematically toward market jurisdictions without embedding symmetrical mechanisms to adjust entitlements for production jurisdictions hosting substantive DEMPE functions, Pillar One threatens to breach mutuality of concessions that has historically underpinned residence-source compromises (Buriak, 2024, secs. 6.3.5.3, 8.7; Christians, 2017, sec. 1.02[B]; Muster, 2023, p. 280; OECD, 2020b, paras. 561, 565, 593; Schön, 2021, p. 11). The continued application of ALP to “routine” returns cannot itself guarantee distributive balance if residual allocations substantially reduce the revenue yield from intangible-intensive activities otherwise attributable to producer states under current treaty norms. Without embedded compensatory formulas or negotiated offsets, there exists a structural risk that reallocation will create persistent fiscal winners and losers across jurisdictional classes, undermining long-term legitimacy.

From a neutrality perspective, basing entitlement on gross sales or user-number thresholds risks differential treatment between enterprises with similar economic functions but divergent market footprints. Firms heavily concentrated in fewer large markets could face materially higher global reallocation percentages than diversified enterprises of equal profitability but with dispersed turnover patterns. This contradicts

neutrality's central premise that comparable taxpayers under similar economic conditions should bear equivalent relative burdens (Gadžo, 2018a, secs. 5.1.1, 5.2, 5.2.1; Harpaz, 2021, pp. 96-98; OECD, 2015a, p. 20, Box 1.1, Annex A Box A.1; Peters, 2010, sec. 3.1; Shaviro, 2019, pp. 7-8; Traversa, 2022, sec. 4.2). If such discrepancies are substantial and systematic, they would embed competitive distortions into the international tax order, breaching one of the few principles evaluated as capable of intact preservation in earlier analytical stages.

Administrability concerns carry significant weight in critiquing the feasibility of Pillar One's mechanics as applied to complex MNE structures. The reliance on consolidated group financials with limited book-to-tax adjustments presumes both accounting comparability across jurisdictions and the absence of material intra-group segmentation disputes (OECD, 2019b, paras. 27, 36; OECD, 2019a, para. 53; OECD, 2020b, paras. 10, 406-409, 419-426, 443-446, 466-467). Divergences in domestic accounting standards can distort residual profit computations before allocation; contested segmentation between eligible and ineligible business lines could produce divergent bases for Amount A calculations across participating states. Furthermore, accurate implementation depends on coordinated recognition of market jurisdiction nexus based on agreed thresholds, an area already subject to political divergence within Inclusive Framework deliberations.

Measurement error risk is amplified by the sensitivity of allocation outcomes to small changes in residual profit percentages or nexus scope definitions. A marginal shift in routine return benchmarks can produce disproportionate redistributive swings for highly profitable groups given the scale at which Amount A operates. Absent robust dispute prevention and resolution mechanisms aligned across all implementing jurisdictions, such volatility invites protracted controversy that could undermine compliance certainty, a cornerstone requirement for viable adaptation under this dissertation's evaluative criteria.

Another structural risk resides in interaction effects with existing treaty provisions. Because Amount A reallocations operate alongside, rather than within, the traditional Article 7 and Article 9 framework, overlapping entitlement claims may arise where treaty-based profit attribution continues to apply to routine returns while residual profit is simultaneously redistributed under Pillar One rules. This parallelism risks

generating normative tension between treaty-embedded reciprocity and multilateral formula allocation, particularly where domestic implementation diverges in timing or scope. Absent comprehensive coordination mechanisms and binding dispute resolution structures, the coexistence of these regimes could fragment the coherence of the international tax order rather than incrementally adapting it.

Taken together, the foregoing critiques reveal that Pillar One's architecture embodies not merely technical recalibration but a structural rebalancing of taxing rights whose legitimacy depends on its coherence with reconstructed principles of benefit-based reciprocity, neutrality, and administrability. While the reform aspires to stabilize the digital-era allocation framework through coordinated multilateral agreement, its hybrid design exposes tensions that blur the boundary between principled adaptation and systemic transformation. These tensions become even more visible when contrasted with alternative unilateral or regional responses to digitalisation. The following section turns to the European Union's Digital Services Tax Proposal, examining whether its policy objectives represent a complementary adaptation within the same normative framework or a more explicit departure from treaty-based allocation logic.

10.3 EU Digital Services Tax

10.3.1 Policy Objectives

The analytical focus here is to examine the policy objectives of the European Union's Digital Services Tax Proposal ("DST Proposal") through the normative and methodological lens developed in earlier parts of this research, moving beyond descriptive enumeration to consider how those objectives intersect with, reinforce, or collide with reconstructed principles of international taxation. The DST Proposal originates within a wider institutional recognition at EU level that highly digitalised business models enable sustained revenue extraction from member state markets without triggering traditional nexus criteria based on physical presence. This perceived mismatch creates both distributive and legitimacy concerns: market jurisdictions are contributing enabling resources, infrastructure, legal systems, consumer protections, yet remain unable to claim taxing rights proportional to their role in profit generation under current treaty constraints.

From a principle-driven perspective, one central policy objective is reasserting source-based entitlement over revenue streams linked to local user participation and digital interaction. The DST operationalises this by targeting gross turnover from specified categories of automated digital services and online advertising provided by non-resident enterprises to domestic users, thereby sidestepping permanent establishment requirements (Bal, 2018, sec. 1; Harpaz, 2021, pp. 80-83; IMF, 2019, para. 26; OECD, 2018, paras. 359-360; Shaviro, 2019, pp. 3, 62-63). Doctrinally, this reflects an attempt to recast benefit theory proxies: where traditional benefits were evidenced through physical plant or personnel, DST policy asserts that sustained access to a domestic user base constitutes an equivalent jurisdictional benefit. In terms of the evaluative criteria laid out earlier, this meets the adaptation threshold only if empirical correlation between such access and local enabling conditions can be substantiated. Without such causal linkage, gross turnover apportionment risks becoming consumption formalism, a transformation away from benefit-linked reciprocity.

A second major objective is to address competitive distortions within the internal market arising from asymmetric taxation of comparable economic functions depending on whether they are delivered via digital cross-border channels or through domestically established operations. Here, neutrality functions as both policy aim and doctrinal reference point. By imposing tax liability on foreign-based suppliers in parity with resident firms for targeted digital activities, the DST Proposal seeks to equalize fiscal burdens without regard to corporate structure or place of incorporation. However, neutrality's intact preservation requires coordinated relief mechanisms at member state level to prevent overlapping taxation where residence jurisdictions also assert taxing rights over the same revenues. The absence of embedded bilateral adjustment provisions means that neutrality risks erosion in practice unless paralleled by treaty-compatible credits or exemptions.

Another embedded objective lies in safeguarding EU member states' fiscal capacity against base erosion driven by intra-group profit shifting toward non-EU low-tax jurisdictions facilitated through intangibles' mobility (Harpaz, 2021, pp. 63–64, 79–80; OECD, 2013a, p. 42; OECD, 2015a, paras. 152–153; OECD, 2018, paras. 367–368, 385; Oguttu, 2022, secs. 1, 3). As highlighted throughout this dissertation's reconstruction methodology, intangibles, especially proprietary algorithms and data sets, can be contractually relocated without altering substantive patterns of exploitation in target

markets. DST policy confronts this vector indirectly: by taxing gross revenues where consumers are located, it attempts to interdict the wholesale removal of taxable surplus from market jurisdictions regardless of internal group asset routing. Normatively, this amounts to bypassing ALP's reliance on functional analysis for intangible attribution in favour of destination-based allocation triggers. Within the framework applied here, such bypass cannot be classed as pure adaptation because it replaces transactional parity foundations rather than augmenting them; it constitutes structural modification akin to formulary apportionment for specific income categories.

The initiative also pursues a collective bargaining objective at global level by positioning EU reforms as leverage in OECD Inclusive Framework negotiations on Pillar One allocations (Bauer et al., 2019, pp. 3–4; Calijuri, 2022, sec. 2.3.1; Cui, 2019, p. 1; Grinberg, 2018a, pp. 11–12; Harpaz, 2021, p. 81). By signaling readiness to implement coordinated unilateral measures should multilateral consensus stall, EU policy aims both to incentivize timely agreement and to ensure that any eventual Pillar One formula embeds elements favourable to market jurisdiction claims typical among member states. Strategically, this reflects inter-nation equity ambitions, realigning global taxing rights toward a balance perceived as fairer for digital-era value distribution, although operationalisation through unilateral gross-based levies carries risks for reciprocity norms absent parallel capital-exporting concessions.

From an administrative design angle, DST objectives include simplicity and rapid implementation (Avi-Yonah & Lempert, 2023, sec. 4.3; Buriak, 2024, sec. 7.2.1; IMF, 2019, Box 1; OECD, 2018, paras. 457–458; Shaviro, 2019, pp. 68–69; Traversa, 2022, sec. 2.3.2). By adopting fixed-rate levies on gross turnover above specified thresholds, both at group global level and within each relevant jurisdiction, the measure reduces compliance complexity relative to detailed transfer pricing documentation or ALP-based profit segmentation for discrete services.

Taken together, the DST Proposal's policy objectives reveal a deliberate shift from transaction-based allocation logic toward destination-oriented revenue triggers justified through reinterpreted benefit and neutrality claims. Whether these objectives remain within the adaptive perimeter of international tax principles depends not on their political attractiveness, but on their doctrinal compatibility with reconstructed normative

cores. The following section moves from policy intention to structural assessment, testing the DST's design against the consistency criteria developed throughout this dissertation.

10.3.2 Compatibility with International Principles

Assessing the compatibility of the DST Proposal with the reconstructed principles outlined earlier requires a principle-specific consistency test, rather than a superficial comparison with stated policy objectives in Section 10.3.1. The analytical task is to determine whether the DST's design and operational elements fit within the normative cores of foundational doctrines, benefit theory, neutrality, inter-nation equity, ability-to-pay, single taxation, and their treaty-based instantiations, or whether they depart so fundamentally that they must be classified as doctrinal transformations.

From the perspective of benefit theory, compatibility hinges on whether the DST's gross-turnover base reflects genuine jurisdictional benefits conferred on taxable enterprises (Escribano, 2019, secs. 2.02[A], 4.02[C][d]; Hongler & Pistone, 2015, sec. 3.3; Kysar, 2020, sec. 1; Schön, 2009, sec. 2.2.2.1; Shaviro, 2019, pp. 8–9). Historically, these benefits were tangible: infrastructure, regulatory protection for business operations, and enforceable dispute resolution mechanisms. In digital contexts, intangible enablers, telecommunications networks, stable legal frameworks for consumer data protection, can be recognised as functionally equivalent in enabling revenue extraction by non-resident entities (Chand, 2019, secs. 2, 3; Escribano, 2019, sec. 2.02[B]; Gadžo, 2018a, sec. 6.4.3; Hongler & Pistone, 2015, sec. 3.3; OECD, 2015a, para. 32). For this equivalence to hold doctrinally, causal linkage must be demonstrable: local user engagement should be dependent on these jurisdictional provisions in more than a purely incidental way. The DST's reliance on revenue thresholds tied to domestic user interactions assumes such dependency but does not require its evidentiary proof; this displaces benefit theory's reciprocity logic from causal demonstration toward formalistic inference. Without embedded verification mechanisms, for example, qualitative indicators linking monetisation models to domestic enabling conditions, the DST operates outside the adaptation space defined for benefit theory and veers into transformation territory by redefining "benefit" as mere access to consumers. Some commentators note that unilateral measures like the DST may still be defended as congruent with value creation narratives or alternative corporate tax theories, destination sales or distributive justice,

even if they bypass traditional benefit-based evidentiary requirements (Cugusi, 2020, sec. 7.1; Cui, 2019, pp. 1, 3–4, 24–25; Escribano, 2019, sec. 4.02[C]; Hongler, 2019, sec. 11.2; Shaviro, 2019, pp. 4, 9–10, 44–45). This suggests partial normative shelter under broad “value creation” arguments, yet such shelter may remain contested when it reframes reciprocity merely as market contact without substantiated public-service accrual.

Neutrality analysis reveals partial alignment alongside latent incompatibilities. In theory, the DST equalizes treatment between foreign-based providers of targeted digital services and domestically established entities engaged in comparable economic activities (Collier, 2023, fn. 181; Cui, 2019, p. 10; Harpaz, 2021, pp. 79–80; OECD, 2015a, paras. 302, 357; OECD, 2018, para. 358; Schön, 2018, sec. 4). This addresses structural distortions arising when permanent establishment rules exempt non-resident market participants from tax burdens faced by domestic competitors. However, neutrality compatibility weakens where the DST’s gross-revenue base disregards profitability differentials and cost structures across comparable enterprises. Entities generating identical turnover but operating under materially different margin profiles may bear disproportionate effective burdens, thereby diverging from neutrality’s requirement that similarly situated taxpayers under comparable economic conditions incur equivalent relative tax pressure. Moreover, in the absence of coordinated credit or exemption mechanisms in residence jurisdictions, cumulative taxation risks re-emerging, potentially distorting cross-border competition rather than correcting internal market asymmetries. Thus, while the DST addresses certain structural neutrality gaps linked to permanent establishment constraints, it introduces new neutrality tensions at the systemic level.

Overall, the DST occupies an intermediate doctrinal position. While it invokes reconstructed principles such as benefit theory and neutrality to justify destination-based taxation, its gross-turnover architecture relaxes the evidentiary and reciprocity conditions that historically grounded those doctrines. In the absence of embedded causal verification and coordinated relief mechanisms, the measure cannot be classified as a fully principled adaptation within the reconstructed framework developed in this dissertation. Rather, it represents a structurally transformative response that redefines allocation triggers through destination formalism. This classification provides an essential benchmark for evaluating alternative nexus reforms, particularly proposals centered on significant digital presence, which seek to modernise jurisdictional design while retaining closer continuity with treaty-embedded allocation logic. The following section examines whether SDP models

succeed where the DST departs, namely in reconciling digital-era nexus expansion with the preservation of normative coherence.

10.4 Significant Digital Presence Proposals

10.4.1 Jurisdictional Design

Designing jurisdictional rules for a “significant digital presence” (“SDP”) nexus within the context of the European Union proposals raises foundational questions about the alignment of allocation triggers with reconstructed principles such as benefit theory, economic allegiance, neutrality, and inter-nation equity. Although similar concepts have also appeared in certain national legislative initiatives, the primary analytical reference point here is the supranational EU framework, as it represents the most structured attempt to operationalize an SDP-based allocation model. The task is not merely to craft operational thresholds but to ensure that the normative underpinnings of taxing rights retain internal coherence when extended into dematerialised business contexts characterised by “scale without mass” (Escribano, 2019, sec. 4.02[C]; Hongler & Pistone, 2015, secs. 3.1, 4.1; OECD, 2015a, paras. 2, 255–256; OECD, 2018, paras. 33–34, 384; Schön, 2018, secs. 2, 7).

At the doctrinal level, SDP proposals challenge the embedded conceptual correlation between nexus and tangible presence that has anchored source principle application in both OECD and UN Model Conventions. Article 5’s fixed-place definition historically encapsulates permanence, physical location, and substantive economic activity; substituting user-interaction metrics or digital service value thresholds as proxies for “presence” constitutes a profound departure unless such proxies are demonstrably equivalent in evidentiary terms (Cugusi, 2020, secs. 3.2, 5.1; Gadžo, 2018a, secs. 4.5.1, 7.3.2.2; Hongler & Pistone, 2015, secs. 2.1, 3.2, 4.2; OECD, 2015a, paras. 35–36, 277, 279; Santos & Rocha, n.d., sec. 2.05[A]–[B]; Traversa, 2022, sec. 2.3.1). Equivalence is possible only if jurisdictional design incorporates causation tests showing that local conditions, digital infrastructure availability, enforceable regulatory frameworks for online transactions, domestic consumer trust mechanisms, are materially enabling inputs into the value creation process. Without clear causal proof, the link between fiscal entitlement and mutual provision/benefit collapses into market-access formalism, which

this dissertation classifies as transformation rather than adaptation within the principle-reconstruction methodology.

Operationalising SDP requires choosing eligibility metrics that balance normative fidelity to benefit theory with administrability across heterogeneous jurisdictions. Proposals drawing from annual gross revenues attributable to local customers or aggregate active-user counts risk over-inclusion where high interaction volumes are driven by global platform dynamics rather than distinctive domestic contributions (Aslam & Shah, 2020, pp. 211–212; Becker, Englisch & Schanz, 2019, pp. 11–12; Chand, 2019, sec. 5.1.2; Cugusi, 2020, sec. 4.2; Olbert & Spengel, 2017, sec. 5.2; OECD, 2015a, paras. 280, 305). Conversely, overly restrictive criteria, such as requiring evidence of server infrastructure physically located within the jurisdiction, fail to capture cases where revenue origination depends on sustained non-physical engagement. This leads to specifying a hybrid metric design: quantitative thresholds (turnover, user counts) should operate only after satisfaction of qualitative indicators evidencing jurisdictionally conferred benefits functionally analogous to traditional PE supports. Such multi-factor nexus design preserves reciprocity logic while modernizing proxies for non-physical environments.

An additional design dimension concerns temporal continuity. The permanence criterion implicit in historic PE rules serves to distinguish enduring commercial participation from transient or incidental contact. In digital contexts, permanence must be reconceived to cover sustained interaction patterns, daily active users over extended periods; recurrent contractual deliverables to domestic consumers secured via platform interfaces (Becker, Englisch & Schanz, 2019, pp. 10–12; European Commission, 2018; Gadžo, 2018a, secs. 4.5.1.2.2, 7.3.2.1; OECD, 2015a, paras. 277, 279, 282; OECD, 2017, paras. 28–29, 98; Traversa, 2022, sec. 1.4.1). Embedding minimum engagement duration requirements into SDP frameworks guards against fleeting market entry triggering disproportionate fiscal claims, thereby respecting neutrality by treating sporadic cross-border activity consistently across industries.

Inter-nation equity considerations impose further constraints on jurisdictional architecture. Allocating taxing rights to market states on the basis of significant digital presence reweights distributive balances struck under residence-source compromises; absent compensatory concessions or coordinated rule adoption across treaty partners,

persistent allocative asymmetry may arise (Avi-Yonah, 1997, pp. 538–542; Brauner, 2016, p. 1031; Christians, 2017, secs. 1.02, 1.04[A]; Elliffe, 2020, secs. 2.1, 4; OECD, 2015d, paras. 7–8, 17; OECD, 2019b, para. 11; OECD, 2020c, paras. 404, 409; Schön, 2018, secs. 1, 7). Designing SDP within a multilateral instrument mitigates this risk by standardizing thresholds and relief mechanisms, ensuring that increased claims for one class of jurisdictions are reciprocated by recognizable concessions elsewhere in the system. Unilateral SDP implementation without such coordination shifts the regime toward politically contingent fragmentation and away from principle-consistent adaptation.

Neutrality’s preservation depends critically on harmonised definitional scope for SDP-qualifying activities. Divergent national lists, some focusing narrowly on targeted advertising services; others encompassing all automated digital service provision, invite distortive competitive effects between firms operating across multiple markets with similar service portfolios (Aslam and Shah, 2020, pp. 221–224; Harpaz, 2021, pp. 82–83; Hendriyetty et al., 2023, sec. 3.4; IMF, 2019, paras. 26–28, Box 1; OECD, 2018, paras. 359–361, 511; OECD, 2020c, paras. 403–404). Uniform activity definitions incorporated into jurisdictional design reduce scope for strategic structuring to exploit definitional gaps while sustaining comparability of treatment essential for neutrality’s intact survival.

The foregoing analysis illustrates that SDP proposals possess greater conceptual proximity to principle-consistent adaptation than gross-based unilateral measures; yet this proximity remains fragile. Treaty renegotiation requirements, evidentiary constraints, dispute resolution capacity, threshold calibration disputes, and attribution coordination collectively determine whether SDP matures into a coherence-preserving reform or drifts toward fragmented transformation. The practical translation from design to law across multiple jurisdictions exposes residual fragilities: without institutional coordination, even well-conceived models risk drifting toward structural transformation. The following section examines these implementation challenges in detail, highlighting doctrinal, operational, and political pressures that shape whether SDP reforms ultimately sustain the reconstructed principles of benefit theory, neutrality, inter-nation equity, and economic allegiance, or generate unintended fragmentation in the digital economy tax architecture.

10.4.2 Implementation Challenges

Implementation of an SDP nexus as articulated in the preceding discussion presents a series of doctrinal, operational, and political challenges that go beyond the drafting of threshold criteria or definitional clauses. The methodological framework applied throughout this dissertation requires that these challenges be interrogated for their potential to undermine doctrinal coherence with reconstructed principles, particularly benefit theory, neutrality, inter-nation equity, and economic allegiance, rather than treating them as merely administrative hurdles. In this respect, the translation from conceptual design into functioning tax law across multiple jurisdictions exposes residual fault lines that can decisively shape the practical viability of SDP as either an adaptation or a transformation.

A first doctrinal challenge lies in reconciling SDP triggers with existing bilateral treaty language. Current OECD and UN Model Conventions embed permanent establishment definitions premised on physical fixity. Direct insertion of interaction-based thresholds, annual turnover attributable to domestic customers, active-user counts, transaction frequency, cannot be read into such provisions without contravening interpretative limits set by decades of commentary (Cugusi, 2020, sec. 4.1; Escribano, 2019, sec. 3.03[F]; Kofler, Mayr and Schlager, 2017, p. 529; Schreiber and Fell, 2017, sec. 3). Absent formal renegotiation or supplementary protocols explicitly enshrining digital nexus criteria, unilateral implementation risks treaty overrides that violate *pacta sunt servanda* and destabilize reciprocity arrangements foundational to benefit theory (Blessing, 2020, sec. 8.1.3; Escribano, 2019, sec. 3.03[F]; Kobetsky, 2011, pp. 98-99; OECD, 2015e, para. 23). While domestic legislation can create parallel nexus rules for non-treaty situations, applying them to covered relationships without coordinated amendment moves the reform out of adaptation territory: it represents structural modification by supplanting agreed textual anchors in favour of new entitlement triggers outside multilateral consensus.

Administrability constitutes a second vector of complexity. Operationalising user or turnover metrics presumes access to granular enterprise data on domestic market engagement patterns (Gadžo, 2018a, sec. 7.3.2.3.3; OECD, 2015a, paras. 270, 280; OECD, 2020b, paras. 289-291, 299-301, 310-312, 389-390). Where platforms are unwilling, or legally restricted under privacy regimes, to supply geo-tagged usage

statistics, administrations must rely on proxies derived from aggregate traffic estimates or payment processor reports. These substitutes carry substantial measurement error risks and open scope for taxpayer manipulation through technical routing strategies, such as channeling user logins via third-country servers to obscure origin counts (Escribano, 2019, sec. 4.02[C]; OECD, 2015a, para. 271; OECD, 2020b, paras. 305-306; Schreiber & Fell, 2017, sec. 4.2). Without verifiable evidence standards embedded in implementing regulations and supported by enforceable information exchange agreements among participating jurisdictions (Escribano, 2019, sec. 4.02[C][e]; Gadžo, 2018a, secs. 7.3.2.3.3, 7.3.3; OECD, 2015a, p. 104; OECD, 2018, paras. 485-487), metric-based nexus becomes contestable in adjudication and may produce divergent determinations on identical factual activity across states, undermining neutrality by creating non-comparability in treatment of similar enterprises.

Dispute resolution capacity forms another critical implementation pressure point. Nexus expansions invite disagreement not only over whether thresholds are met but also regarding valuation consequences once nexus is established. Under current tax treaty mutual agreement procedures (“MAP”), digital presence disputes could multiply and congest resolution pipelines already stretched under traditional permanent establishment controversies. The absence of binding arbitration in many networks exacerbates delay risk; unresolved cases prolong uncertainty, eroding compliance incentives. Embedding pre-allocation concordance mechanisms within SDP agreements, a form of advance bilateral validation of qualifying activity, could mitigate this problem but requires political commitment to cooperative administration that may be lacking among states with divergent fiscal priorities (Brauner, 2016, pp. 989, 1018, 1033-1034; OECD, 2020b, paras. 68-70, 705-706, 748, 786; OECD, 2022a, paras. 4.134, 4.173, Annex II paras. 9-10, 16; Vann, 1998, sec. VIII.C).

Inter-nation equity imposes an implementation constraint tied directly to threshold calibration and scope uniformity. As established in Section 10.4.1, redistributive reweighting toward market jurisdictions must be matched by reciprocal concessions or relief adjustments elsewhere if it is to remain an adaptation consistent with mutuality norms (Avi-Yonah, 1996, sec. IV; Maisto, 2020, sec. 8.1.3; OECD, 1977, paras. 54-55; OECD, 2020b, paras. 531, 629, 633, fn. 7; Ring, 2005, pp. 56, 60). In practice, aligning SDP thresholds globally has proven contentious: large economies press for lower revenue or user counts to maximize base capture; smaller states with less market volume fear

exclusion from entitlement despite proportionally significant contributions to global value networks. Differentiated thresholds fracture uniformity and introduce competitive distortions, firms could reorganize customer routing flows geographically to fall below nexus points strategically in high-rate markets while breaching them in lower-rate jurisdictions. This behavior contravenes neutrality's core aim by allowing structuring advantages unrelated to genuine economic function differentials. Interaction effects with existing allocation rules also pose substantive difficulty.

Taken together, these implementation constraints demonstrate that the viability of an SDP nexus depends less on conceptual ingenuity than on institutional coordination. Where treaty amendment, evidentiary standards, dispute resolution capacity, and threshold harmonisation are not aligned, the reform's classificatory position shifts progressively from principled adaptation toward structural transformation. The fragility revealed at the implementation stage explains why several jurisdictions have pursued alternative unilateral instruments outside the treaty framework. It is necessary to examine whether such digital services taxes preserve, reconfigure, or displace the reconstructed principles analysed above. Section 10.5 undertakes this assessment through concrete case studies of unilateral measures.

10.5 Unilateral Digital Services Taxes

10.5.1 Case Examples

Examining concrete jurisdictional deployments of unilateral DSTs provides an evidentiary substrate against which the principle-reconstruction framework developed in earlier chapters can be applied to assess whether these measures constitute adaptations consistent with foundational doctrines, or whether they operate as transformative departures.

The French DST offers a salient example in this respect. Adopted in 2019, it imposes a 3 % levy on gross revenues generated from defined categories of digital interface services and targeted advertising when such activities involve access to the French market beyond specified global and domestic turnover thresholds (Douvier & Ankri-Avy, 2023; Harpaz, 2021, pp. 80-82; Hendriyetty et al., 2023, Annex 3.1; Traversa, 2022, fn. 11; Calijuri, 2022, fn. 27). From a benefit theory standpoint, the French design

explicitly locates taxable connection in the sustained availability of a domestic user base and concomitant engagement with local consumers. However, while these metrics ostensibly map onto jurisdictionally conferred benefits, such as telecommunications infrastructure and consumer protection regimes, they are presumed rather than demonstrated, with liability triggered on revenue origin indicators without an evidentiary test of causal dependence between the benefit and the income stream. Such presumption displaces reciprocity's causation requirement; absent verifiable linkage mechanisms, the measure fits classification as structural modification rather than principled adaptation.

Operationally, the French DST exposes tensions with neutrality and inter-nation equity. Neutrality is challenged where gross-turnover liabilities apply solely to foreign-based suppliers above turnover thresholds, exempting smaller domestic providers engaged in identical economic functions within France. This asymmetric treatment risks creating competitive distortions incompatible with neutrality's commitment to equal treatment for comparable actors (Harpaz, 2021; Hendriyetty et al., 2023; OECD, 2015a; OECD, 2018; Schön, 2018). Inter-nation equity concerns arise because revenue is captured at source without reciprocal adjustments or offset obligations toward residence jurisdictions whose fiscal capacity is correspondingly diminished, a distributive reweighting implemented unilaterally outside treaty-based negotiation structures. These features confirm its placement toward the transformation end of the classificatory spectrum developed by this dissertation's methodological apparatus.

The United Kingdom's DST provides a second illustrative case, imposing a 2% tax on gross revenues from social media platforms, search engines, and online marketplaces deriving value from UK user participation above set turnover triggers (Obuoforibo, 2019; Cui, 2019; Grinberg, 2018a; Harpaz, 2021; Hendriyetty et al., 2023; Shaviro, 2019). The design explicitly incorporates "user location" as a nexus determinant irrespective of physical establishment. This foregrounding of user-participation metrics signals an attempt to incorporate into nexus criteria non-physical factors identified in OECD debates around marketing intangibles and significant economic presence. Doctrinally, however, by assigning taxing rights purely on volume-based proxies without distinguishing between jurisdictions conferring qualitatively distinct enabling conditions for such participation, the measure risks redefining benefit theory into mere market access entitlement, an interpretative shift qualifying as transformation under the evaluative framework. Moreover, while the UK has articulated this measure as temporary pending

OECD consensus, its interaction with existing double tax treaty provisions remains unsettled; absent clear crediting in counterpart jurisdictions, double taxation becomes structurally embedded in ways antithetical to single taxation norms traditionally safeguarding systemic coherence.

India's Equalisation Levy illustrates another unilateral path, initially introduced at 6% on consideration for online advertisement services provided by non-resident entities to Indian businesses and later broadened via a 2% levy on e-commerce operators' gross revenues from online sales facilitating goods or services to Indian customers (The Income-Tax Act, 1961; Mehta, 2016; Wagh, 2016; Buriak, 2024; Cui, 2019; Harpaz, 2021; Hendriyetty et al., 2023). Notably, India situates its measure within an articulated reinterpretation of source principle under domestic law by deeming income accruing from business connections with India, including through digital interactions, as taxable regardless of physical presence. In terms of doctrinal reconstruction, this represents an explicit attempt to transform existing nexus standards: rather than adapting permanent establishment concepts through agreed protocols (e.g., in line with significant economic presence proposals), it asserts new statutory bases for treaty override in favour of unilateral expansion of taxing rights framed as protecting domestic tax base erosion from dematerialised commerce. While defensible politically as addressing perceived fairness deficits between foreign digital suppliers and domestically taxed entities, this redefinition displaces the reciprocity equilibrium embedded in bilateral allocation arrangements; under the consistency tests outlined earlier, such displacement confirms classification within transformation territory rather than adaptation space.

Italy's DST (3% on revenues from online advertising, digital interface provision, and data transmission derived from users located domestically) highlights administrative challenges inherent in unilateral adoption absent multilateral coordination (Stevanato, 2020, p. 74; Buriak, 2024, sec. 7.2.1; Harpaz, 2021, pp. 80–81; IMF, 2019, para. 28; OECD, 2018, paras. 362, 368; OECD, 2020c, paras. 401, 404). Extensive reporting requirements to establish user location for liability calculation demand granular data access from enterprises often headquartered abroad; enforcement depends heavily on self-declaration complemented by limited audit capacity within domestic administrations. Where verification lags or inconsistencies arise between taxpayer self-reporting to different jurisdictions deploying similar levies but with varied scope definitions or threshold calculations, divergences threaten both administrability, via increased dispute

incidence, and neutrality, through inconsistent treatment of materially identical cross-border transactions.

Within this dissertation's evaluative framework, such structural frictions evidence that unilateral DSTs not only recalibrate substantive principles but also degrade operational predicates necessary for their coherent functioning across interconnected systems. Across these cases, France, UK, India, Italy, it can be demonstrated through detailed application of reconstructed principles that unilateral DSTs uniformly privilege expedient revenue capture over preservation of doctrinal continuity with benefit theory causality standards, reciprocity under inter-nation equity norms, neutrality's comparability requirement, and single taxation safeguards anchored in treaty practice.

Taken together, these case studies show that unilateral DSTs operate outside the reciprocity architecture of treaty-based allocation and relief. Their reliance on gross-revenue proxies without embedded coordination mechanisms shifts the analysis from classificatory questions of adaptation versus transformation to the concrete consequences of overlapping fiscal claims. The next section examines whether and how such unilateral designs generate risks of juridical and economic double taxation within the existing international tax framework.

10.5.2 Risks of Double Taxation

The structural risks of double taxation inherent in unilateral DSTs stem from their deliberate departure from multilateral nexus and allocation frameworks anchored in bilateral treaties, a departure evidenced in the case examples evaluated previously in Section 10.5.1. These measures assert source-style taxing rights over gross turnover from specific digital activities without embedding the reciprocal relief mechanisms that have historically safeguarded single taxation norms (Aslam and Shah, 2020, p. 221, fn. 31; Harpaz, 2021, pp. 84–85; IMF, 2019, para. 26; OECD, 2018, paras. 447–448; OECD, 2020c, paras. 403, 407; Schön, 2018, pp. 14, 27). In doctrinal terms, the absence of such relief is not a marginal procedural omission; it directly erodes the coherence of principles like inter-nation equity and benefit theory by allowing overlapping fiscal claims on identical income streams from two or more jurisdictions without coordinated mitigation. Under established treaty practice informed by OECD and UN Model Conventions, double

taxation is avoided by design through either exemption or credit methods applied by residence jurisdictions to income taxed at source. The juridical architecture permits concurrent claims, residence tax on worldwide income; source tax under agreed nexus but tempers them via mutual concession so that each item of income bears tax once globally. Unilateral DSTs intervene outside this architecture. They calculate liability based on indicators such as user location, domestic turnover, or interaction volume (Escribano, 2019, sec. 4.02[C]; European Commission, 2018, art. 4(3); Harpaz, 2021, pp. 83–84; OECD, 2015a, paras. 278–280; Traversa, 2022, sec. 3.2.1), then levy a gross-rate tax disconnected from net profit attribution under the ALP. When residence jurisdictions do not recognise such levies for credit purposes, either because they classify them as non-income taxes or view them as treaty-incompatible overrides, the same revenue stream becomes subject to unreduced cumulative burdens: corporate income tax at residence plus DST at source-like jurisdiction. This outcome directly contravenes the single taxation principle’s doctrinal commitment to eliminate juridical double taxation (Avi-Yonah, 1997, p. 517; De Lillo, 2018, sec. 1.2.2.1; Gil García, 2019, secs. 3, 3.2.1.1; Harpaz, 2021, p. 84; OECD, 2017, paras. 1–3).

The practical transmission channels for double taxation risk are diverse. One channel operates where a market jurisdiction imposes DST on gross domestic revenues from an MNE’s digital interface operations, while the MNE’s residence country continues to levy corporate income tax on aggregated net profits including those same revenues. Without credit relief, the taxpayer pays full liability twice over distinct bases, the DST non-deductible against residence taxable profit and the corporate tax unadjusted for DST paid abroad (Harpaz, 2021, pp. 84–85; OECD, 2018, paras. 429, 447; OECD, 2020c, para. 403). Given that DST bases frequently diverge from corporate income calculations, being turnover-based and omitting expense offsets, the aggregate effective rate can be substantially higher than under coordinated systems. Such cumulative taxation creates a neutrality concern where it materially alters the competitive conditions or investment, pricing, location or market-entry decisions of cross-border enterprises relative to economically comparable domestic competitors.

Another high-risk configuration emerges where multiple market jurisdictions impose DSTs over overlapping segments of global digital supply chains. For example, user data captured in Jurisdiction A feeds into advertising services delivered via an online marketplace accessible in Jurisdiction B; if both classify the relevant interaction as within

their taxing scope based solely on user presence criteria, each levies on the same contractual revenue. Where upstream contractual structuring cannot cleanly segment flows per jurisdiction's definitions, especially given divergent scope clauses for qualifying services, overlap becomes unavoidable (Aslam and Shah, 2020, pp. 218, 224; IMF, 2019, para. 28; OECD, 2018, paras. 361, 368; OECD, 2020b, paras. 48–51, 442). Disputes over which jurisdiction's metric thresholds govern a transaction exacerbate exposure: taxpayers must defend multi-front assessments absent any MAP procedure covering non-treaty taxes like DSTs, leaving no pathway for bilateral resolution. Normatively, such overlaps undermine benefit theory reciprocity. While some domestic systems might offer unilateral relief through exemption or credit mechanisms, experience shows that such provisions rarely extend to unconventional levies when there are material discrepancies in source definitions between states or when economic double taxation arises from adjustments not recognised under existing treaty-based frameworks (Avi-Yonah, 2024, pp. 1–2; Kobetsky, 2011, pp. 43–44; OECD, 2015e, para. 15.3; OECD, 2020b, para. 634). This gap makes clear that wider treaty coverage and alignment of classification standards would likely temper the most severe cases of juridical overlap resulting from unilateral measures such as DSTs.

It is worth noting that even traditional treaty networks have long struggled to resolve all forms of double taxation when jurisdictions disagree over classifications of residence or source. Conflicts arising from hybrid mismatches illustrate how items of income may remain doubly taxed simply because states cannot reconcile definitional divergences within existing norms (Gil García, 2019, sec. 4.2.1.1; OECD, 2013a, p. 40; OECD, 2017, paras. 18–20; Parada, 2021, pp. 737–738). This history suggests that unilateral DST impositions are entering an environment already prone to unresolved overlap, thereby magnifying potential friction rather than introducing a novel problem in isolation.

Furthermore, instances where domestic law fails to grant unilateral relief for economic double taxation, such as when transfer pricing adjustments in one jurisdiction are not matched by corresponding recognition in another, show how pre-existing systemic gaps can compound under new taxing approaches like DSTs (Buriak, 2024, sec. 6.2.3; Kobetsky, 2011, pp. 43–44, 76; OECD, 2015e, para. 15.3; OECD, 2022a, paras. 4.2, 4.32). Even where treaties exist, if there are wide divergences in source rules or differing classifications of taxable items, such mechanisms may leave portions of cross-border

trade exposed to repetitive burdens that neutralise intended allocative balance within international tax arrangements (Avery Jones, 2012, p. 68; Hattingh, 2013, p. 24; OECD, 2015e, para. 15.3; OECD, 2017, paras. 32.1–32.5; Vann, 1998, pp. 737, 747–748, sec. VIII). This risk is further intensified by the bilateral and non-uniform character of treaty networks. The same income stream may be subject to different distributive rules where one treaty incorporates an expanded source rule for cross-border services while another applicable treaty retains conventional permanent-establishment-based allocation. Multiple jurisdictions may consequently assert source-based taxing rights over economically overlapping income under different treaty relationships. The coordination problem therefore concerns not only how “source” is defined, but also how competing source claims generated by heterogeneous treaty rules are reconciled across the wider treaty network.

Historical negotiation records highlight that many governments have preferred sovereignty-preserving coordination frameworks which define rights to tax but stop short of harmonising domestic laws, precisely so national autonomy remains intact; such an approach is inherently sensitive to divergence in unilateral measures like DSTs and amplifies risks when common disentangling rules are absent (Avi-Yonah and Lempert, 2023, sec. 2.4; Genschel and Rixen, 2015, p. 159; OECD, 2013b, p. 9; OECD, 2018, paras. 346–347, 368). In this regard, some commentators argue that the current regulatory stance disallowing foreign tax credits for DSTs fails to account for their functional role as “in-lieu-of” taxes designed to capture otherwise untaxed digital earnings; adopting a more accommodating credit regime could mitigate recurrent overlap pressures without dismantling national taxing autonomy (Avi-Yonah, 2024, pp. 1–3).

Taken together, these considerations demonstrate that the double taxation risks associated with unilateral DSTs are not incidental but structurally embedded in their extra-treaty design. Yet the underlying coordination problem is not eliminated merely by relocating expanded source taxation into a treaty. This raises a more specific question: whether new source-country taxing rights can be integrated into bilateral treaty architecture while preserving a coherent relationship between nexus, profit allocation and double-taxation relief. Articles 12B and 12AA of the UN Model provide a particularly relevant test because they expand source-country taxing rights beyond conventional permanent-establishment requirements while retaining the formal structure of treaty-based allocation. The following section therefore examines whether this approach

resolves the structural weaknesses identified above or instead relocates some of them within the treaty framework.

10.6 UN Treaty Approaches to Digital and Cross-Border Services

The United Nations Model Tax Convention has progressively developed a distinct source-oriented response to the taxation of cross-border services in circumstances where traditional permanent establishment requirements restrict the taxing rights of the jurisdiction from which income economically or financially originates (Miller, 2015, secs. 4.2, 4.4; Michel, 2025, pp. 4, 16). This trajectory is particularly visible in Article 12B on income from automated digital services (“ADS”), introduced in the 2021 United Nations Model Convention, and in Article 12AA on income from services, introduced as part of the 2025 update of the Model (United Nations, 2021, Article 12B; United Nations, 2025a, Article 12AA; Michel, 2025, pp. 14). Although both provisions expand source-country taxing rights beyond conventional physical-presence thresholds, they address different categories of income and should therefore be distinguished analytically rather than treated as components of a single digital-services regime (United Nations, 2021, Article 12B; United Nations, 2025a, Article 12AA; Michel, 2025, pp. 14, 16).

Article 12B constitutes a targeted treaty response to highly automated digital business models capable of supplying services remotely and at scale without establishing a conventional permanent establishment in the jurisdiction from which payments arise (United Nations, 2021, Article 12B and Commentary; Buriak, 2024, secs. 7.2, 8.9). Article 12AA reflects a broader development. The provision replaces the former Article 12A on fees for technical services and Article 14 on independent personal services and extends the source-oriented logic of the UN Model to cross-border service income more generally (United Nations, 2025a, Article 12AA; Michel, 2025, pp. 14–16). The 2025 reform therefore represents not merely an extension of digital taxation rules but a broader reconsideration of physical presence as the principal operational proxy for source-country entitlement in relation to service income.

The distinction between the two provisions is important for the analytical framework developed in this dissertation. Article 12B responds directly to characteristics associated with digitalisation, particularly scale without mass, automation and the limited

relevance of conventional asset- and personnel-based nexus indicators (OECD, 2020, paras. 15, 18; United Nations, 2020, paras. 4, 33; Buriak, 2024, secs. 7.2, 8.9). Article 12AA, by contrast, illustrates a more general shift towards payment-based source taxation of services irrespective of whether the underlying transaction is intrinsically digital (United Nations, 2025a, Article 12AA; Michel, 2025, pp. 14, 16). Both provisions therefore test the elasticity of traditional source and nexus concepts, but they do so through different substantive scopes. Their common significance lies in demonstrating how treaty architecture may accommodate expanded source taxation without abandoning the bilateral framework through which taxing rights and double-taxation relief are traditionally coordinated (United Nations, 2021, Article 12B; United Nations, 2025a, Article 12AA; Buriak, 2024, secs. 7.2.3, 8.9).

Accordingly, this Section examines Article 12B first as a specifically digital treaty response, then considers the broader implications of Article 12AA and the 2025 UN Model update, before assessing the two provisions against the reconstructed principles developed earlier in this dissertation. Particular attention is given to benefit-based causation, inter-nation equity, neutrality, ability-to-pay, administrability, single taxation and systemic coherence, since these principles determine whether expanded source taxation can be classified as an adaptation of the existing architecture or whether it moves towards structural transformation.

10.6.1 Article 12B: Income from Automated Digital Services

Article 12B of the 2021 United Nations Model Convention represents a treaty-based response to the taxation of income from automated digital services in circumstances where the service provider may derive substantial income from a jurisdiction without maintaining a conventional physical presence there (United Nations, 2021, Article 12B; Buriak, 2024, secs. 7.2, 8.9). Rather than creating a digital levy outside the treaty system, Article 12B modifies the allocation of taxing rights within bilateral treaty architecture by permitting the State in which ADS income arises to impose source taxation without requiring the existence of a permanent establishment (United Nations, 2021, Article 12B, paras. 1–2; Buriak, 2024, secs. 7.2.3, 8.9).

Article 12B applies to automated digital services defined by reference to supply through the Internet or an electronic network with minimal human involvement by the service provider. It permits source-country taxation on a gross basis, while providing the beneficial owner with an alternative qualified-profits mechanism (United Nations, 2021, Article 12B, paras. 2–4; Buriak, 2024, secs. 7.2.3–7.2.4, 8.9). For the present analysis, the significance of these mechanics lies principally in their departure from the conventional nexus and net-profit attribution architecture rather than in their detailed computational operation.

From the perspective of the reconstructed nexus principle, Article 12B represents a significant departure from the conventional relationship between nexus and profit attribution. Under the traditional Article 7 architecture, source-country taxation of business profits generally presupposes a permanent establishment, after which profits attributable to that establishment are determined by reference to its economically significant functions and circumstances. Article 12B does not merely extend this attribution process to a newly recognised form of establishment. It permits source taxation precisely where the conventional permanent-establishment nexus may be absent and therefore establishes a distinct distributive entitlement outside the traditional PE-based attribution sequence. In this respect, its incorporation into treaty architecture should not be equated with continuity with the conventional nexus–ALP relationship.

The resulting question is whether the connecting factor chosen by Article 12B adequately reflects the economic relationship that is invoked to justify the new taxing right. If expanded source taxation is justified by sustained participation in a market, access to its users or reliance upon jurisdictionally supplied enabling conditions, the origin of payment does not necessarily identify that relationship. Payment may provide a clear and administrable legal connecting factor, but it can identify the contractual or financial origin of revenue without establishing where the economically relevant market participation or income-producing activity occurs. The payment criterion should therefore be distinguished from the substantive nexus that it is intended to approximate. Where that approximation is weak, the reform moves beyond adaptation of the traditional source principle towards a more fundamental transformation of the basis upon which source-country entitlement is established.

A related difficulty concerns the distinction between automated digital services and other cross-border services. Automation and minimal human involvement provide administratively identifiable characteristics, but they do not by themselves establish why economically comparable service income should be subject to a different nexus and allocation regime. This concern becomes particularly visible where the same or closely comparable service may fall under different distributive rules depending upon its degree of automation or the existence of a conventional physical presence. Article 12B therefore cannot be justified solely by the proposition that physical presence has become an inadequate proxy. Its doctrinal coherence also depends upon whether the replacement criteria provide a sufficiently principled connection between the jurisdiction claiming taxing rights and the underlying business activity.

Inter-nation equity provides a parallel rationale. Article 12B allows source jurisdictions to obtain a share of income that under conventional Article 7 rules could remain predominantly taxable in the residence State because the foreign enterprise lacks a permanent establishment (United Nations, 2021, Commentary on Article 12B; Buriak, 2024, secs. 7.2.3, 8.9). This modifies the distributive balance between residence and source jurisdictions and is particularly relevant for jurisdictions that are significant importers or consumers of digital services (Buriak, 2024, sec. 0.3; Michel, 2025, pp. 4, 16). The provision therefore responds to the perceived under-allocation of taxing rights to source and market jurisdictions in intangible-intensive business models (United Nations, 2021, Commentary on Article 12B; Buriak, 2024, secs. 0.1, 8.9). Yet distributive correction does not by itself determine whether the reform constitutes adaptation. Where additional source rights are introduced without an underlying causal or reciprocal justification, redistribution becomes an independent normative objective and the reform moves towards structural transformation. Article 12B therefore illustrates the broader finding of this dissertation that expanded market or source taxation remains adaptive only where distributive change is anchored in reconstructed principles rather than justified solely by the desired fiscal outcome.

From an administrative perspective, Article 12B offers a significant practical advantage. Gross-basis taxation reduces the need for source administrations to determine deductible expenses or reconstruct the net profitability of a non-resident enterprise, thereby limiting enforcement difficulties that may arise where tax administrations lack access to reliable information concerning foreign cost structures or transfer pricing

arrangements (United Nations, 2021, Commentary on Article 12B; Miller, 2015, sec. 9.9). This feature is particularly relevant for developing jurisdictions with limited administrative capacity (United Nations, 2021, Commentary on Article 12B; Buriak, 2024, sec. 8.9).

The same design, however, generates tension with the ability-to-pay principle. Gross revenue does not necessarily correspond to net economic capacity (Buriak, 2024, sec. 7.2.5; Escribano, 2019, sec. 4.02[C]). Enterprises with similar revenues may incur materially different costs and therefore possess materially different profit margins. A tax calculated on gross payments may consequently impose disproportionate effective burdens on low-margin or temporarily loss-making taxpayers (OECD, 2020, sec. 4.6; Buriak, 2024, secs. 7.2.3, 8.9). The qualified-profit election provided by Article 12B mitigates this tension by permitting an alternative basis more closely connected to profitability, but the additional calculation also reduces some of the administrative simplicity that motivates gross-basis taxation in the first place (United Nations, 2021, Article 12B, para. 3; Buriak, 2024, secs. 7.2.3.2, 8.9).

Article 12B has a potential coordination advantage over unilateral digital services taxes because it is designed to operate within bilateral treaty architecture rather than as an autonomous domestic levy. This advantage is conditional rather than inherent: it materialises only where contracting States accept the revised distributive rule and, in existing treaty relationships, are willing to modify the previously negotiated allocation of taxing rights. Nevertheless, adoption of Article 12B does not itself ensure identical effective tax burdens. The provision deliberately leaves the maximum gross-basis rate to bilateral negotiation, meaning that treaty partners may adopt different rates (United Nations, 2021, Article 12B, para. 2; Buriak, 2024, sec. 7.2.3). Its harmonising effect should therefore be understood primarily as convergence in the legal architecture, characterisation and relief treatment of ADS income rather than complete convergence in tax outcomes.

A further potential systemic advantage of Article 12B lies in its capacity to operate together with treaty-based double-taxation relief once the provision has been incorporated into the applicable bilateral treaty. Because the provision reallocates taxing rights within the treaty rather than creating an autonomous levy outside it, source taxation can interact with the credit or exemption mechanisms contained in Articles 23A and 23B (United

Nations, 2021, Commentary on Article 12B; Buriak, 2024, secs. 7.2.3, 8.9). This does not eliminate every risk of overlapping taxation, particularly where classification disputes arise, but it allows such conflicts to be addressed through the existing treaty machinery, including mutual agreement procedures (United Nations, 2021, Articles 23 and 25 and Commentaries; Buriak, 2024, secs. 6.3.4, 7.2.3). In this respect Article 12B is materially more compatible with the single-taxation principle than unilateral DSTs, whose legal separation from covered income taxes frequently prevents conventional treaty relief (OECD, 2020, sec. 4.6; Buriak, 2024, secs. 7.2.3, 8.9).

The foregoing analysis therefore suggests that Article 12B occupies an intermediate position within the adaptation-transformation framework. It preserves important components of the existing treaty architecture: residence taxation remains operative, source rights are introduced through a negotiated distributive article, and double-taxation relief remains structurally available. At the same time, the provision weakens the traditional relationship between business-income taxation and physical presence and relies upon a payment-based source proxy that may not always correspond directly to substantive value creation (United Nations, 2021, Commentary on Article 12B; Buriak, 2024, sec. 7.2.5). Its principal doctrinal attraction is therefore not that it perfectly reproduces the traditional architecture, but that it reallocates taxing rights through a coordinated treaty mechanism while retaining a substantial degree of systemic continuity.

10.6.2 Article 12AA: Income from Services and the 2025 UN Model Update

The 2025 update of the United Nations Model Tax Convention significantly extended the source-oriented development of the Model through the introduction of Article 12AA on income from services (Michel, 2025, pp. 14–16). Article 12AA replaces the former Article 12A on fees for technical services and Article 14 on independent personal services (United Nations, 2025a, Article 12AA; Michel, 2025, pp. 14–16). Whereas the former Article 12A was confined to specified categories of managerial, technical and consultancy services, Article 12AA adopts a broader approach to cross-border service income and further reduces reliance on physical presence as a prerequisite for source-country taxation (Michel, 2025, pp. 14–16).

Article 12AA permits the State in which fees for services arise to tax those fees notwithstanding the absence of a conventional permanent establishment or fixed base, subject to the specialised distributive rules preserved elsewhere in the Model (United Nations, 2025a, Article 12AA; Michel, 2025, pp. 14–16). The concept of “fees for services” is deliberately broad and is not limited to digital or highly automated activities (United Nations, 2025a, Article 12AA; Michel, 2025, pp. 14–16). The source rule consequently extends beyond the specific problem addressed by Article 12B and reflects a more general policy choice concerning the allocation of taxing rights over remotely supplied cross-border services. The 2025 update therefore marks a broader shift in the UN Model away from requiring the physical performance of services within a jurisdiction as the exclusive basis for source taxation (Michel, 2025, p. 16).

Article 12AA should nevertheless be distinguished conceptually and structurally from Article 12B. Article 12B remains a specialised rule for income from automated digital services and is expressly preserved within the wider architecture of Article 12AA (United Nations, 2025a, Articles 12AA and 12B; Michel, 2025, pp. 14–16). Article 12AA is therefore not an administrative supplement to Article 12B, nor does it merely operationalise digital nexus provisions. It represents a separate and broader distributive rule for service income. The coexistence of Articles 12AA and 12B consequently produces a layered structure: highly automated digital services remain subject to a specifically designed ADS provision, whereas other service income may fall within the wider source-taxing framework of Article 12AA.

This development has particular significance for the distinction between adaptation and transformation. On one interpretation, Article 12AA demonstrates the adaptability of the traditional source principle. The provision retains treaty-based allocation, continues to divide taxing rights between contracting jurisdictions and replaces the physical-presence proxy with a payment-based source rule capable of operating in an economy where services are increasingly supplied remotely. To that extent, the reform can be regarded as operational reconstruction rather than abandonment of source taxation.

A principle-based analysis, however, reveals a more substantial change. The payer-based source rule identifies where a legally recognised payment arises; it does not necessarily identify where the service is performed, consumed or economically exploited,

nor does it independently establish where the activities responsible for the corresponding profit are undertaken (Michel, 2025, pp. 14–16; Miller, 2015). Article 12AA therefore strengthens source-country taxing rights without necessarily establishing the benefit-based or value-creation causality that this dissertation identifies as central to the doctrinal legitimacy of reconstructed source concepts. A legally administrable connecting factor should consequently not be treated as equivalent to a substantive value-creation nexus merely because both permit source taxation.

This distinction reinforces the finding reached in the analysis of nexus principles earlier in the dissertation. The inadequacy of physical presence as a universal operational proxy does not imply that any alternative quantitative or payment-based criterion automatically constitutes doctrinally legitimate adaptation. A replacement proxy must remain connected to the underlying economic allegiance or benefit relationship that justifies source-country entitlement (Gadžo, 2018, sec. 5.1.4; Szudoczky, 2023, sec. 4.1). Article 12AA represents a particularly important stress test in this regard because its breadth makes explicit the possibility that source taxation may increasingly be justified by payment origin and fiscal jurisdictional claims rather than by demonstrable physical or functional participation (Michel, 2025, pp. 14–16).

The reform has a strong inter-nation equity dimension. The UN Model has historically afforded source jurisdictions greater taxing rights than the OECD Model, reflecting the interests of jurisdictions that import capital, technology and services and may otherwise surrender substantial elements of their domestic tax base under residence-oriented treaty rules (Kobetsky, 2011, ch. 11; Michel, 2025, p. 4). Article 12AA continues this trajectory by allowing source taxation of a substantially broader category of cross-border service payments (United Nations, 2025a, Article 12AA). From the perspective of distributive equity between States, this reduces the extent to which remote service income remains exclusively or predominantly taxable in the residence jurisdiction merely because the service provider lacks physical presence in the payer jurisdiction (Bianco and Tomazela Santos, 2016, sec. 4.2; Michel, 2025, p. 16).

Yet the same feature gives rise to the reciprocity problem identified throughout this dissertation. Expanding source-country taxing rights is not inherently inconsistent with inter-nation equity, but distributive legitimacy depends upon the extent to which the resulting allocation reflects a reciprocal and mutually acceptable division of fiscal

entitlement (Hongler, 2019, sec. 11.3.1; Cui, 2021, sec. III). If payment origin becomes sufficient in itself to support source taxation regardless of substantive economic participation, the reform shifts from reconstructing an existing proxy towards redefining the normative foundation of source taxation. The classification of Article 12AA therefore cannot be determined solely by its formal incorporation into the treaty architecture.

The tension between administrability and ability-to-pay is also pronounced. Gross-basis withholding can provide source administrations with a comparatively simple mechanism for enforcing tax on remote service providers and avoids the practical difficulties associated with determining the foreign provider's deductible expenses (United Nations, 2021, Commentary on Article 12B; Miller, 2016, sec. 9.3.2). For jurisdictions facing significant information and administrative constraints, this constitutes a substantial institutional advantage. At the same time, taxation based on gross payments necessarily weakens the relationship between liability and net profitability (Buriak, 2024, sec. 7.2.5; Escribano, 2019, sec. 4.02[C]). The broader the service categories brought within such a system, the greater the likelihood that heterogeneous businesses with materially different cost structures will face similar source-tax burdens despite possessing different levels of net economic capacity.

A further conceptual difficulty concerns the boundary between taxation of income and taxation of gross receipts. The formal incorporation of a gross-basis source rule into an income tax treaty does not by itself resolve whether the resulting taxable base remains sufficiently connected to income rather than turnover (OECD, 2018, paras. 417–418; Buriak, 2024, secs. 7.2.3, 7.2.5). As the tax base becomes increasingly detached from net profitability, the substantive justification for locating the levy within the conventional income-tax architecture becomes less self-evident (Escribano, 2019, sec. 4.02[C]; Buriak, 2024, secs. 7.2.5, 8.9). This does not necessarily place Article 12AA outside the scope of treaty-based income taxation, but it raises a doctrinal question that cannot be answered solely by the provision's formal inclusion in the Model Convention (United Nations, 2025a, Article 12AA; Michel, 2025, pp. 14–16). The distinction reinforces the broader methodological point that formal treaty incorporation and substantive continuity with established international income-tax principles must be assessed separately.

Article 12AA therefore reinforces a broader conclusion developed in this dissertation: administrability is an essential component of a workable international tax

system, but it cannot alone justify a distributive rule. Operational simplicity must remain constrained by proportionality, neutrality and single-taxation safeguards. A source rule that is readily enforceable yet systematically disconnects taxation from economic capacity may perform strongly as an administrative mechanism while remaining normatively incomplete (Buriak, 2024, sec. 7.2.5; Escribano, 2019, sec. 4.02[C]).

The breadth of Article 12AA may also make the provision more resilient to technological change. Unlike Article 12B, its scope is not confined to the specific definitional framework applicable to automated digital services (Michel, 2025, pp. 14–16; Buriak, 2024, sec. 8.9). This broader formulation, however, is accompanied by reduced precision concerning the substantive economic connection that justifies source entitlement (Miller, 2015, chs. 9–10; Michel, 2025, pp. 14–16). Article 12AA thus illustrates the recurring trade-off between technologically durable legal categories and sufficiently determinate doctrinal limits.

These questions remain active within the United Nations work programme. Following adoption of the 2025 Model, the UN Tax Committee initiated further evaluation of the interaction between Article 12AA, Article 12B, services permanent establishments and emerging technologies, including artificial intelligence (United Nations, 2025b). This continued work does not alter the legal status of the 2025 Model but indicates that the relationship between payment-based source rules, non-physical nexus and emerging service models remains unsettled at the level of implementation and policy design.

Article 12AA therefore broadens the analytical significance of the UN approach beyond digital taxation narrowly understood. Whereas Article 12B asks whether a specialised treaty rule can respond to highly automated digital services without abandoning the established treaty structure, Article 12AA asks a more fundamental question: whether physical presence can cease to function as the dominant operational gateway for the source taxation of services generally while the underlying source principle remains doctrinally intact. The answer depends upon whether the payer-based connecting factor can be reconciled with benefit, reciprocity and proportionality rather than upon the mere fact that the rule is incorporated into a bilateral treaty.

10.6.3 Principle-Based Assessment and Potential for Harmonization

The combined development of Articles 12B and 12AA demonstrates the capacity of the UN Model to accommodate expanded source taxation within treaty architecture rather than through autonomous domestic measures (Buriak, 2024, secs. 7.2.3, 8.9; Michel, 2025, pp. 14–16). Their principal systemic advantage over unilateral responses is therefore institutional. Both provisions provide standardisable treaty rules through which contracting States can define income categories, allocate concurrent taxing rights and integrate source taxation with established mechanisms for the elimination of double taxation (Buriak, 2024, sec. 8.9; Broekhuijsen and Mosquera Valderrama, 2021, p. 90). Harmonisation in this context should not be understood as complete uniformity of rates or fiscal outcomes, but as sufficient convergence in the legal and allocative architecture to permit the reconstructed foundational principles to operate without systemic fragmentation (Brauner, 2003, pp. 262, 291).

From the standpoint of benefit theory, the UN approach has conditional harmonising potential. Treaty-based recognition of source rights creates a common legal framework in which non-physical economic relationships can be recognised as capable of supporting taxation (Gadžo, 2018, sec. 5.1.4; Hongler and Pistone, 2015, sec. 4.1). Article 12B is particularly relevant because the absence of conventional physical presence is intrinsic to many ADS business models (OECD, 2020, para. 15; Buriak, 2024, secs. 0.1, 8.9). Article 12AA extends the same general source-oriented trajectory across a broader range of services (Michel, 2025, pp. 14–16). Both provisions therefore reduce dependence on a nexus proxy that has become progressively less capable of capturing remotely supplied economic activity (Buriak, 2024, sec. 4.2; Gadžo, 2018, sec. 2.4).

Nevertheless, formal agreement on a payment-based source rule does not resolve the underlying doctrinal question. The reconstructed benefit principle developed earlier in this dissertation requires an identifiable causal relationship between jurisdictionally supplied enabling conditions and the taxable economic activity (Hongler, 2019, sec. 11.6.2; Gadžo, 2018, sec. 2.2.2). A payer-based criterion is administratively observable, but its evidentiary value as a proxy for benefit varies across transactions (Buriak, 2024, secs. 7.2.5, 7.4; Miller, 2015, sec. 10.9). Harmonisation based solely on common drafting may consequently produce formal convergence without substantive agreement as to why a jurisdiction is entitled to tax the income (Ruiz Colmenares, 2023, sec. 2). For adaptation

to remain doctrinally credible, payment or revenue criteria should therefore be interpreted as operational indicators of a broader economic relationship rather than as self-justifying sources of fiscal entitlement.

Inter-nation equity produces a similar conditional assessment. The expansion of source rights under Articles 12B and 12AA responds to the imbalance perceived by jurisdictions that import digital and other services while possessing limited taxing rights over non-resident providers (Buriak, 2024, sec. 0.3; Michel, 2025, p. 4). This redistribution is consistent with the UN Model's longstanding source-oriented position and may correct allocations that otherwise favour residence jurisdictions because remote service providers do not meet physical-presence requirements (Kobetsky, 2011, ch. 11; Michel, 2025, p. 4). Yet harmonisation cannot be identified simply with a uniform increase in source-country taxation. Sustainable inter-nation equity requires mutually acceptable limits on competing fiscal claims and effective relief where concurrent taxing rights overlap (Hongler, 2019, sec. 11.6.2.4; Broekhuijsen and Mosquera Valderrama, 2021).

This point is especially important for the adaptation–transformation distinction. Redistribution remains compatible with adaptation where the revised allocation preserves an intelligible relationship between the jurisdiction's contribution and its fiscal entitlement. Where source rights expand solely because a transaction generates a payment from a jurisdiction, without further reciprocal or causal justification, the distributive rule moves towards transformation. The UN approach therefore demonstrates that treaty coordination is necessary but not sufficient for doctrinal continuity: a coordinated transformation remains possible where States collectively adopt a new basis for allocating taxing rights.

Neutrality provides another dimension of the assessment. Compared with unilateral DSTs, Articles 12B and 12AA offer a materially more coherent legal structure because equivalent transactions may be classified and taxed through recognised treaty provisions rather than through heterogeneous domestic levies (Buriak, 2024, secs. 7.2.3, 8.9; Michel, 2025, pp. 14–16). This reduces the risk that digital or remote service providers encounter entirely different legal tax categories merely because they operate across different markets (Buriak, 2024, sec. 7.2.3; Gadžo, 2022, ch. 2). The provisions can therefore contribute to competitive neutrality by reducing fragmentation in the legal

treatment of cross-border services (Buriak, 2024, secs. 7.2.3, 8.9; Collier, 2023, pp. 183, 190).

Neutrality does not, however, require identical nominal tax outcomes in every jurisdiction. The applicable maximum gross-basis rate under Article 12B is determined through bilateral negotiation (United Nations, 2021, Article 12B, para. 2). More generally, differences in the effective source-tax burden resulting from treaty design and bilateral implementation do not necessarily constitute evidence of defective implementation. The relevant neutrality question is whether such differences distort the competitive or investment decisions of enterprises in ways insufficiently justified by legitimate differences between jurisdictions (Kobetsky, 2011, sec. 2.2.4; Escibano, 2019, sec. 3.03[B]). The harmonising contribution of the UN provisions consequently lies primarily in common classification, treaty integration and relief architecture rather than in uniform rate setting.

This interpretation is consistent with the neutrality principle reconstructed earlier in this dissertation. Neutrality is not treated as the proposition that every tax must impose an economically identical burden upon every participant. Rather, the relevant inquiry is whether the tax architecture introduces distortions into enterprise behaviour or competitive conditions that are unrelated to substantive economic differences (Otto and Van de Vijver, 2022, ch. 3). Gross-basis taxation may therefore create neutrality concerns where cumulative or unrecovered source taxation materially alters location, pricing or market-entry decisions, but the existence of source taxation itself does not establish a neutrality violation (Miller, 2015, secs. 9.1, 10.9; Buriak, 2024, secs. 7.2.3.3, 8.9).

Ability-to-pay remains one of the more significant limitations of the UN approach. Gross-basis taxation offers substantial advantages in enforceability and verifiability because the source jurisdiction does not need to determine the foreign enterprise's complete cost structure (Miller, 2015, secs. 9.9, 10.9; Gadžo, 2022, sec. 2.3.3). Yet revenue is at best an imperfect approximation of economic capacity. The same gross receipts may correspond to high profits in one business and minimal or negative profits in another (Buriak, 2024, secs. 7.2.5, 8.9; Gadžo, 2022, ch. 2). This problem is particularly relevant to Article 12B, although its qualified-profit election provides a partial response (United Nations, 2021, Article 12B, para. 3; Buriak, 2024, secs. 7.2.3.2, 8.9). More generally, the expansion of gross-basis source taxation under the 2025 services

architecture intensifies the need to balance administrative feasibility with proportionality (Michel, 2025, pp. 14–16).

The trade-off should therefore not be framed as a choice between perfect net-income taxation and administratively workable gross taxation. Rather, the question is whether the simplification achieved through gross-basis mechanisms remains proportionate to the divergence that may arise between taxable payments and actual economic capacity. Low negotiated rates, alternative net or profit-oriented mechanisms and coordinated relief can reduce this divergence (Buriak, 2024, secs. 7.2.3, 8.9; Goradia, 2020, sec. 13.3). They cannot, however, eliminate the conceptual distinction between revenue and profit. Accordingly, the UN approach exposes a recurring trade-off between administrability and ability-to-pay proportionality, which becomes relevant to the later comparative assessment of Article 12B.

Single taxation provides an important argument in favour of treaty-based approaches. Articles 12B and 12AA operate within the distributive architecture of the UN Model and can therefore interact directly with the credit or exemption methods used to relieve juridical double taxation (United Nations, 2021, Article 23 and Commentary; Buriak, 2024, secs. 7.2.3, 8.9). This distinguishes them from unilateral DSTs, which commonly fall outside the scope of bilateral income-tax treaties and may consequently produce overlapping tax burdens without an integrated relief mechanism (Collier, 2023; Buriak, 2024, secs. 7.2.3, 8.9; IMF, 2019). Treaty integration also provides access to mutual agreement procedures where contracting States disagree regarding characterisation or entitlement (United Nations, 2021, Article 25 and Commentary; Nikolakakis, 2020).

The advantage remains dependent upon coherent implementation. Disputes concerning whether a particular transaction constitutes ADS falling under Article 12B, a broader service covered by Article 12AA, or income governed by another specialised treaty provision may still result in overlapping claims (Michel, 2025, pp. 14–16; Goradia, 2020). Consistent Commentary and clear ordering rules are therefore important to the effective operation of single-taxation safeguards (OECD, 2015; Michel, 2025, pp. 14–16). The harmonising strength of the UN approach lies not in eliminating interpretative disputes altogether but in placing them within a recognised treaty framework capable of resolving them.

Systemic coherence provides an important basis for distinguishing the UN approach from fragmented unilateral measures. Articles 12B and 12AA modify distributive rules without discarding the treaty architecture within which residence and source claims interact. They preserve bilateral negotiation, relief mechanisms and the classification-based structure of international tax treaties (Buriak, 2024, secs. 7.2.3, 8.9; Dean, 2020). This institutional continuity allows significant modifications to nexus and source rules to occur without the wholesale replacement of Articles 5, 7 and 9 across all categories of business income (OECD, 2020; Gadžo, 2022).

At the same time, institutional continuity should not be confused with substantive adaptation. Article 12B departs from physical-presence-based business-profit taxation for a defined class of automated services (United Nations, 2021, Article 12B and Commentary; Buriak, 2024, secs. 7.2.3, 8.9). Article 12AA goes further by extending payment-based source taxation across services more generally (United Nations, 2025a, Article 12AA; Michel, 2025, pp. 14–16). Both therefore demonstrate different degrees of structural modification within an otherwise familiar treaty form. The analytical framework developed in this dissertation requires these dimensions to be kept separate: a reform may preserve systemic form while transforming part of the underlying allocation rationale.

Comparison with Pillar One further illustrates this distinction. Pillar One Amount A similarly recognises that physical presence cannot remain the exclusive basis for market-jurisdiction taxing rights, but it responds through a formulaic allocation of a defined portion of residual profit rather than through gross-basis source taxation of specified payment streams (OECD, 2020, paras. 6–7; Buriak, 2024, sec. 0.1.1). The convergence between the two approaches therefore lies in their willingness to recognise non-physical taxing claims, not in their underlying allocation mechanism. Pillar One reallocates residual profit using market-based formulaic rules, whereas Articles 12B and 12AA rely predominantly on source rules attached to cross-border payments (OECD, 2020, paras. 6–7; Michel, 2025, pp. 14–16). The instruments should accordingly not be treated as interchangeable expressions of the same principle.

In conclusion, the UN treaty approach possesses genuine harmonising potential because it relocates expanded source taxation within a coordinated treaty framework capable of supporting double-taxation relief, common classification and negotiated limits

on taxing rights (Buriak, 2024, secs. 7.2.3, 8.9; Michel, 2025, pp. 14–16). Article 12B represents a targeted response to automated digital services, while Article 12AA demonstrates a broader movement away from physical presence as the dominant prerequisite for source taxation of cross-border services (Michel, 2025, pp. 14–16). Their principal strength lies in systemic integration and administrability; their principal doctrinal vulnerability lies in the extent to which payment-based source rules can become disconnected from net economic capacity and from verifiable benefit or value-creation linkages (Buriak, 2024, sec. 7.2.5; Miller, 2015, secs. 9.9, 10.9).

The resulting classification is therefore conditional rather than binary. To the extent that Articles 12B and 12AA replace obsolete physical-presence proxies with coordinated indicators that continue to reflect substantive economic allegiance, they can operate as adaptations of the existing source and nexus architecture. To the extent that payment origin itself becomes an autonomous justification for allocating taxing rights irrespective of benefit, reciprocity or economic contribution, they embody a more transformative redistribution of fiscal entitlement. The UN approach thus reinforces the broader conclusion of this dissertation: digitalisation and the expansion of remote service provision do not require wholesale abandonment of the international tax architecture, but preserving systemic coherence increasingly requires selective structural modification where traditional operational proxies no longer correspond to the economic relationships they were designed to represent.

10.7 Alternative Allocation Mechanisms

10.7.1 Formulary Apportionment

Formulary apportionment, when set against the principle-driven evaluative framework built earlier in this research, demands a layered analysis that differentiates between its conceptual premises, doctrinal compatibility with reconstructed international tax principles, and operational viability in intangible-intensive contexts. As an allocation mechanism, formulary apportionment replaces transaction-specific determination under the ALP with an ex ante distribution of consolidated group profits across jurisdictions according to agreed ratios, typically incorporating factors such as sales, assets, and payroll (Arnold, pp. 111–112; Calijuri, 2022, sec. 2.2.2.1; IMF, 2019, paras. 78–79; OECD,

2022a, Glossary, paras. 1.16–1.17, 1.29). This substitution constitutes not merely a methodological shift but an epistemological one: profit attribution is divorced from individual transaction analysis and anchored instead in macro-level indicators designed to approximate each jurisdiction’s contribution to value creation.

Doctrinally, the substitution confronts several reconstructed principles directly. Under benefit theory, fiscal entitlement derives from demonstrable jurisdictional enabling conditions, whether tangible infrastructure or intangible regulatory supports, that materially contribute to income generation (Avi-Yonah, 1997, p. 520; Escribano, 2019, secs. 2.02[A], 2.02[B]; Graetz, 2001b, p. 298; Hongler and Pistone, 2015, pp. 22–23; OECD, 2015a, para. 32). A formulary key premised on gross sales aligns imperfectly with this causality requirement: sales location may be a proxy for market access but does not necessarily evidence substantive local contributions beyond consumer demand. Where formulary designs incorporate multi-factor models including asset location and payroll, causal alignment strengthens relative to pure destination keys because tangible production factors and human capital are more easily correlated with jurisdictionally conferred benefits. Nevertheless, in digitalised economies where decisive value drivers reside in mobile intangibles and globally dispersed user engagement, physical asset and payroll factors underweight contributory elements central to modern benefit provision. Unless intangible-specific proxies, such as user participation indices or data origination metrics, are embedded into the formula alongside traditional factors, benefit theory’s reciprocity logic remains only partially satisfied (Aslam and Shah, 2020, pp. 210–211; Escribano, 2019, sec. 4.02[C]; de Jong, Neuvel and Uceda, 2018, sec. 6; OECD, 2018, paras. 33–35).

The interaction with inter-nation equity reveals similar tensions. One of equity’s core demands is symmetrical rebalancing: any reallocation of taxing rights toward one class of jurisdictions should be matched by compensatory concessions to others, preserving mutuality of burdens. Formulary apportionment’s appeal lies partly in its systemic uniformity, once factors are fixed multilaterally, they apply equally to all participating states (Avi-Yonah, 1996, p. 1347; IMF, 2019, para. 76; Kobetsky, 2011, pp. 407, 419–421; OECD, 2003, paras. 310–311; OECD, 2022a, paras. 1.22, 1.25). However, factor weighting determines distributive outcomes. Heavy weighting on destination-side sales systematically favors consumption jurisdictions; conversely, heavy weights on tangible factors serve production states hosting facilities and personnel. In intangible-rich

sectors without significant physical presence outside residence jurisdictions, such factor sets can bias allocations toward markets irrespective of actual contributory inputs measured under economic allegiance theory (Aslam and Shah, 2020, pp. 211–212; Grinberg, 2018b, pp. 99, 102–103; IMF, 2019, paras. 79–80; Kobetsky, 2011, sec. 4.3.6). A principled weighting schema should be formulated that integrates destination-linked metrics only where they correlate evidentially with substantive market contributions (e.g., demonstrated reliance on local infrastructure or regulation), thus preserving equity beyond formalistic parity in formula application.

In sum, formulary apportionment represents not a mere technical refinement of existing allocation rules but a structural reconfiguration of the underlying entitlement logic. By replacing transaction-based causality with pre-determined distributive ratios, it shifts the normative foundation of taxing rights from demonstrated contribution to collectively agreed approximation. Its compatibility with reconstructed principles depends less on mechanical uniformity and more on whether factor design evidentially reflects jurisdictional benefit and preserves reciprocal balance. Absent such principled calibration, formulary apportionment constitutes transformation rather than adaptation of the international tax framework, warranting explicit normative re-justification rather than incremental adjustment.

10.7.2 Destination-Based Cash Flow Taxation

In considering destination-based cash flow taxation (“DBCFT”) as an alternative profit allocation mechanism within the analytical framework elaborated earlier, it is essential to focus on its conceptual architecture, its points of tension with reconstructed foundational principles, and its potential classification as adaptation or transformation.

Unlike incremental modifications to the arm’s length principle or discrete nexus refinements, DBCFT recasts the international corporate tax base by shifting from an origin-based to a destination-based approach while taxing economic rents rather than normal returns on investment. It thereby engages directly with the normative and doctrinal elements examined in previous sections, especially those concerning benefit theory, neutrality, inter-nation equity, and ability-to-pay. At its core, DBCFT operates as

a tax on domestic consumption funded out of business cash flows. It adopts the “destination” principle, broadly mirrored in value-added tax, in that exports are exempt from tax and imports are disallowed as deductions (Auerbach et al., 2017, pp. 4, 14–15, 31; Buriak, 2024, sec. 7.3.2.3; IMF, 2019, paras. 60–62; Waerzeggers et al., 2020, p. 349). Within cross-border scenarios this treatment amounts to a border adjustment: outflows for imported inputs do not reduce the domestic tax base; inflows from exports are excluded from it (Auerbach et al., 2017, pp. 14–15, 17, 27–28; Buriak, 2024, sec. 7.3.2.3; IMF, 2019, paras. 60, 65). Labor costs remain deductible, distinguishing DBCFT from pure VAT models (Auerbach et al., 2017, pp. 16–17; Buriak, 2024, sec. 7.3.3; IMF, 2019, paras. 60, 62). Normatively, advocates present DBCFT as incentivizing locational stability of taxable bases because profit-shifting through relocation of reported production functions becomes ineffective: taxing rights follow the jurisdiction of final consumption rather than production location (Auerbach et al., 2017, pp. 4, 15, 23; Buriak, 2024, sec. 7.3.2.3; IMF, 2019, para. 65; Schreiber and Fell, 2017, p. 100; Shaviro, 2019, p. 54).

From the vantage point of benefit theory, however, the doctrinal coherence of this reorientation requires scrutiny. The traditional causality link between jurisdictionally conferred benefits and taxable profit attribution shifts under DBCFT from productive activity toward market access benefits: entitlement to tax rests on goods or services being consumed domestically. The infrastructure or legal protections enabling production in an origin jurisdiction become irrelevant to tax allocation once goods/services cross borders; instead, the relevant “benefit” justifying fiscal claim is arguably state-secured access to local consumers. Such reconceptualization represents more than proxy substitution, it dilutes reciprocity logic by subordinating benefit provision in producer states and elevating consumption market size as the primary entitlement determinant. Where no demonstrable qualitative enhancements are provided by the market state beyond generic openness to commerce, locating taxing rights appears conceptually closer to consumption taxation norms than to traditional source-based business profit taxation.

The interaction with inter-nation equity principles is equally complex. Because DBCFT reallocates bases toward net consumer jurisdictions, systemic winners tend to be large importers of goods and services relative to their export profile; exporters face erosion of their share in residual profit taxation despite potentially hosting substantive DEMPE functions and capital formation. This distributive reweighting lacks inherent symmetry unless accompanied by negotiated compensatory parameters, for example

adjustments in other income categories, ensuring mutuality across jurisdiction classes. Absent such balancing arrangements built into implementation frameworks, adoption within multilateral settings would constitute a transformation of equity norms away from balanced concessions toward unilateral reorientation favoring demand-side economies.

Neutrality analysis reveals both strengths and risks. On the one hand, pricing decisions under DBCFT exclude cross-border production cost differentials from influencing after-tax outcomes, imports non-deductible; exports untaxed, the incentive to relocate mobile intangibles or tangible production for purely fiscal reasons diminishes. This addresses competitive neutrality distorted under origin-based corporate income taxes by transfer pricing manipulation (Auerbach et al., 2017, pp. 21–22, 27–29; IMF, 2019, para. 65; OECD, 2013a, p. 8). On the other hand, alignment with neutrality presumes coordinated multilateral adoption. If implemented unilaterally, border adjustments may alter effective tax rates along global value networks arbitrarily depending on supply chain geography; exporters from non-adopting jurisdictions could face asymmetric treatment relative to domestic producers serving the same market.

From an ability-to-pay perspective, assessing compatibility requires distinguishing between domestic distributive effects and international allocation fairness. At taxpayer level within adopting jurisdictions, cash-flow taxation exempts normal returns and taxes only above-normal rents net of deductible labor costs; this may align with proportionality ideals internally where measurement integrity is high. Internationally, however, allocating taxing rights on a destination basis disregards substantial segments of global capacity attributable to residents' outward investment generating foreign consumption; residence jurisdictions would forego revenue from external earnings despite their taxpayers' retained capacity to contribute based on aggregate incomes (Auerbach et al., 2017, pp. 14–15, 43; Avi-Yonah, 1996, pp. 1310–1311; Burns and Krever, 1998, p. 497; Gadžo, 2018a, sec. 5.1.2; Kemmeren, 2001, p. 286; Monsenego, 2012, p. 66; Musgrave et al., 1989, p. 332). In principle-driven terms this is a deliberate departure: capacity measured globally no longer serves as guiding allocation anchor across jurisdictions.

Interactions with existing treaty frameworks further highlight transformative characteristics. Current OECD and UN Models embed source-residence balances via permanent establishment concepts tethered to physical presence; DBCFT's consumer-

location nexus operates orthogonally. Integrating it would require wholesale replacement of Article 7-9 architectures for in-scope groups with formulary-like apportionment based exclusively on sales by destination, a structural modification not achievable through interpretation within existing text margins.

DBCFT cannot be characterised as a marginal refinement within the existing residence-source compromise. By relocating taxing rights exclusively to destination markets and decoupling entitlement from production-linked contributions, it redefines the normative anchor of international business taxation. Its compatibility with reconstructed principles is conditional and partial at best, and its integration would require explicit treaty re-engineering rather than interpretative adjustment. The following chapter subjects DBCFT, alongside other reform models examined, to the structured normative criteria developed in this dissertation in order to determine systematically whether such transformation can be justified.

11 NORMATIVE ASSESSMENT

11.1 Criteria for Evaluating Reforms

Establishing criteria for evaluating reforms in the international tax regime under digital economy conditions is an exercise that must be grounded in the principle-driven methodology applied throughout this dissertation. The analytical imperative is to formulate standards that are not only normatively robust in light of reconstructed doctrinal cores, but also operationally workable within existing treaty architectures unless a reform is expressly designated as a transformation requiring renegotiation. These criteria serve as the bridge between the systematic mapping of foundational principles and their adaptability limits, and the empirical-doctrinal assessment of proposals such as OECD Pillar One, DSTs, significant digital presence measures, or UN Article 12B within the preceding critical evaluations.

The evaluative framework presented in this section is an original criteria system developed specifically for this dissertation to address the lack of a unified theoretical foundation in current international tax reform debates. While existing literature often evaluates proposals through isolated lenses - such as purely economic efficiency or

administrative feasibility - (Gadžo, 2018a, secs. 5, 5.2.1; Graetz, 2001b, p. 294; Hongler, 2019, secs. 2.1.3, 11.4.1; Ring, 2007, p. 87; Schön, 2009, secs. 2.3.1, 3.1.4; Shaviro, 2014, p. 371; Vann, 1998, p. 718), this research argues that a systematic consistency-test is required to determine whether a reform constitutes a principled adaptation or a structural transformation of the international tax order. By synthesizing normative principles (such as inter-nation equity and ability-to-pay) with operational constraints (such as verifiability and systemic coherence), this framework moves beyond ad hoc policy analysis toward a structured, principle-driven reconstruction approach. This original methodology is necessary because political compromises often result in policy drift, where new rules are retrofitted into existing frameworks without regard for doctrinal integrity. Consequently, the following eight criteria - principle fidelity, reciprocity preservation, neutrality integrity, ability-to-pay proportionality, administrability/verifiability, systemic coherence, single taxation compatibility, and stability under technological change - serve as an integrated evaluative matrix designed to ensure that any proposed modification remains anchored in the reconstructed normative core of international taxation.

The first criterion derives from what may be called “principle fidelity”: any reform purporting to operate within the international tax framework must either preserve the substantive core of each implicated principle or make explicit that it proposes a transformation. For instance, benefit theory’s reciprocity logic demands a demonstrable causal link between jurisdictional contributions, tangible or intangible, and taxable entitlement (Avi-Yonah, 2007, p. 11; Escribano, 2019, secs. 2.02[A]; Gadžo, 2018a, secs. 5.1.4, 7.1.1.1; Hongler and Pistone, 2015, p. 20; OECD, 2015a, para. 32). A reform passing this criterion will present proxies for such benefits (e.g., user-engagement metrics) that are evidentially correlated with jurisdictional enabling conditions. If these proxies act merely as formal market-access indicators without causation substantiation, they breach fidelity and must be classified as transformative rather than adaptive under the framework developed earlier. Many destination-oriented allocation keys fail this test when deployed without qualitative conditioning on local contributions, producing distributive outcomes untethered from recognised benefit provision.

A second criterion follows from “reciprocity preservation”, central to inter-nation equity’s functional survival (Hongler, 2019, secs. 8.4.4, 11.3.3; Kobetsky, 2011, sec. 2.2.3; Musgrave et al., 1989, p. 332; OECD, 1963, para. 18). The metric here is whether reallocation to one class of jurisdictions (e.g., market states) is balanced by compensatory

adjustments that maintain mutuality in burdens and benefits across all contracting states. This does not imply exact revenue neutrality, political compromise inevitably shifts balances, but it requires that systemic reweighting not occur unilaterally absent negotiated concessions elsewhere in the distributive architecture. A reform consistent with this criterion structures symmetrical offsets into its design, such as reciprocal entitlements for producer jurisdictions or alternative gains in other income categories. Reforms reallocating residual profits solely to markets without such symmetry, for example some implementations of Pillar One Amount A, score poorly here and risk erosion of long-standing residence-source compromise foundations.

A third evaluative standard is “neutrality integrity” (Arnold, n.d., pp. 6, 75; Escribano, 2019, secs. 3.03[B]; Greil, 2019, pp. 4–5; OECD, 2015a, p. 20; OECD, 2017, Commentary on Article 24; Thuronyi, 1998, pp. xxiii, 803–804), which requires that tax rules avoid unjustified distortions in the competitive and investment decisions of economically comparable enterprises irrespective of legal form, ownership structure or jurisdictional mix. In allocation terms, neutrality is preserved where differences in tax treatment reflect substantively relevant economic differences rather than the mere residence, organisational form or geographic configuration of the taxpayer. Differences in effective tax burdens do not in themselves establish a neutrality failure; the relevant question is whether they materially alter competitive conditions or enterprise behaviour without adequate economic justification. Reforms therefore fail this criterion where factor weightings, nexus designs or cumulative tax burdens generate systematic competitive advantages or disadvantages unrelated to substantive functional or economic differences.

The fourth criterion addresses “alignment with ability-to-pay proportionality” (Bianco and Tomazela Santos, 2016, sec. 3; Buriak, 2024, secs. 7.2.1, 7.2.5; Escribano, 2019, sec. 4.02[C]; Gadžo, 2018a, secs. 5.3, 7.3.3; Hendriyetty et al., 2023, p. 71; OECD, 2015a, para. 360 & Ottawa Taxation Framework Conditions). This holdover from distributive justice theory evaluates whether reformed allocations bear a proportionate relationship to taxpayer (or consolidated group) capacity as measured on an aggregate basis. In international application, conformity implies that taxing rights assigned to jurisdictions correlate with components of taxpayers’ global economic power traceable there, either through residence consolidation or attributable source contributions, ensuring no jurisdiction captures base grossly disproportionate to contributory capacity while another loses entitlement despite hosting significant capacity elements. Gross-basis

taxes like DSTs often fail here by ignoring profitability variance; high turnover but low margin business lines are taxed equivalently to high-margin activities solely on sales location, severing proportionality from liability determination.

“Administrability and verifiability” form a fifth necessary criterion (Gadžo, 2018a, secs. 5.3, 5.3.1; Graetz and O’Hear, 1997, pp. 1095, 1101; Musgrave et al., 1989, pp. 216–217; OECD, 2015a, pp. 20–21; Ring, 2007, pp. 8–9; Vann, 1998, p. 718). Operational viability demands that reforms offer clear rules whose application can be consistently verified by administrations possessing realistic access to needed information across borders through reliable exchange frameworks. Metrics must be capable of measurement without excessive subjectivity; subjective multi-factor valuation formulas invite dispute escalation undermining compliance certainty. Reforms depending on enterprise-level data (user geo-location, transaction volumes) must embed enforceable disclosure obligations compatible with privacy regimes; absent verifiability, even theoretically principled designs falter in practice and risk arbitrary application that distorts outcomes against original aims of neutrality and equity.

Next is “coherence within the systemic architecture”, recognising that principles are interdependent within treaties rather than operating in silos. An adaptation which corrects nexus misalignments but disrupts ALP application mechanics or undermines double taxation relief violates systemic coherence and opens instability channels leading toward transformation territory by default (Becker et al., 2019, sec. 2; Brauner, 2003, pp. 266–267; Collier, 2023, pp. 158, 176; OECD, 2015a, para. 285; OECD, 2019c, paras. 13, 80–82). Evaluative consistency-testing sequences thus assess ripple effects: for example, introducing significant economic presence standards without recalibrating Article 7 profit attribution rules creates misalignment between new nexus concepts and continuing ALP governance over profit splits; coherence fails unless both ends are harmonised contemporaneously.

A seventh closely related measure concerns “compatibility with single taxation norms” (Avi-Yonah, 1997, p. 517; Avi-Yonah, 2015, pp. 309–310; De Lillo, 2018, sec. 1.2; Gil García, 2019, secs. 3, 3.1; League of Nations, 1927, p. 23). Any reform operating within an agreed multilateral framework must include mechanisms preventing juridical double taxation: explicit credit/exemption clauses in treaties for new source rights; alignment of gross-basis imposts with recognition for relief in residence states; avoidance

of concurrent assertions by multiple markets over identical streams without mitigation procedures. Violation here not only creates inequities at taxpayer level but also destabilizes mutual concession frameworks foundational to modern treaty networks.

Another important normative yardstick is “stability under technological change”, which gauges whether a reform’s operative definitions maintain relevance beyond current dominant business models without requiring constant renegotiation, a recognised weakness in static-drafted policy under digital acceleration (Chand, 2019, sec. 4; Greil, 2019, p. 38; Kobetsky, 2011, pp. 104–105; OECD, 2015a, paras. 10, 351; Otto and Van de Vijver, 2022, sec. 3.2.1). Criteria fulfilment entails drafting proxy categories at a level of abstraction allowing inclusion of emergent value drivers (e.g., future forms of virtual interaction) while retaining enough specificity for administrable interpretation via updated commentaries rather than wholesale text revision.

These criteria together produce an integrated evaluative matrix binding normative consistency requirements to operational feasibility constraints:

- Principle fidelity, preserve or declare doctrinal change explicitly;
- Reciprocity preservation, maintain mutuality across jurisdiction classes;
- Neutrality integrity, avoid structural discriminations among comparables;
- Ability-to-pay proportionality, link liability size to attributable capacity contribution;
- Administrability/verifiability, ensure measurement objectivity and enforceable access;
- Systemic coherence, align changes with interconnected principles;
- Single taxation compatibility, embed relief against double claims;
- Stability under change, anticipate durability beyond current models.

These intertwined criteria should be formalized as both individual pass-fail benchmarks for discrete doctrines and cumulative stress-tests for composite reforms acting on multiple principles simultaneously. Applying them systematically allows classification decisions on adaptation versus transformation to rest on transparent

analytical standards rather than post hoc policy preference rationalization. Moreover, considering the relative importance of individual criteria in light of the principles implicated by a particular reform enables nuanced judgments where partial failures might still warrant adoption if compensatory strengths exist elsewhere, for example, minor administrability issues offset by strong reciprocity preservation and principle fidelity in core allocation logic.

Taken together, the criteria articulated above do more than structure doctrinal evaluation; they delineate the conditions under which reform proposals can be legitimately integrated into the existing international tax order. Where multiple criteria fail cumulatively, the implication is not merely technical deficiency but systemic strain on cooperative equilibrium. The following section considers the governance implications of this evaluative matrix, examining how global decision-making fora must internalize these normative constraints if reform is to preserve legitimacy, reciprocity, and long-term institutional stability.

11.2 Implications for Global Tax Governance

The evaluative criteria articulated in Section 11.1 provide the immediate analytical bridge to any principled consideration of global tax governance under digital economy conditions. Global tax governance here is not treated as a static institutional arrangement, but as a dynamic normative and operational system in which doctrinal principles, source, residence, benefit theory, inter-nation equity, neutrality, ability-to-pay, single taxation, interact with procedural mechanisms for consensus building and enforcement across jurisdictions with divergent fiscal profiles. The classification of reforms into adaptation or transformation categories in prior chapters directly shapes the governance implications because it determines both the compatibility of proposals with existing treaty-based architectures and the degree of political negotiation required for their implementation.

The first implication concerns the structural capacity of current global tax governance institutions, primarily the OECD Inclusive Framework, supplemented by UN Model treaty processes, to integrate transformative measures without destabilizing foundational reciprocity arrangements that underpin cross-border cooperation. Reforms

classified as transformative, such as wholesale replacement of arm's length principle application for unique intangibles or rewriting permanent establishment definitions to remove physicality anchors (Aslam and Shah, 2020, pp. 209–210; Buriak, 2024, sec. 6.2.2; Elliffe, 2020, sec. 1.1, fn. 12; Gadžo, 2018a, sec. 7.3.2; OECD, 2015a, Annex C), cannot be smuggled into existing frameworks under the guise of mere interpretation without creating legitimacy deficits. Governance systems premised on *pacta sunt servanda* require transparent signaling when legal architecture changes at axiomatic levels; absent such signaling, adoption processes risk undermining trust among contracting states and eroding willingness to implement cooperative dispute resolution. This requirement should not be framed simply as procedural transparency but as an embedded principle-fidelity check within governance design: oversight bodies must be mandated to classify proposed reforms against established normative cores before consensus ratification proceeds. In this respect, evidence of substantive linguistic convergence across thousands of treaties may suggest the presence of shared constitutional features in international tax law that strengthen claims for principled reform pathways (Ash and Marian, 2020, pp. 152–155, 189–190; Avi-Yonah, 2007, pp. 131–133; Brauner, 2003, pp. 259, 291; Dean, 2020, pp. 3–4, 10–11; Hongler, 2019, secs. 4.4.1, 4.4.4), yet such convergence alone does not resolve underlying disagreements about binding force or enforcement reach.

Secondly, global governance must address distributional asymmetry risks inherent in digital-era reweighting toward market jurisdictions when no compensatory entitlements are extended to producer states hosting substantive DEMPE functions or capital formation (Buriak, 2024, sec. 6.3.5; Dagan, 2018, pp. 146–165; Greil, 2019, pp. 20–21; Kysar, 2020; OECD, 2020b, paras. 608–610, 646). Inter-nation equity's preservation within multilateral systems depends on governance rulesets that institutionalize reciprocal adjustment mechanisms alongside reallocation formulas. This dissertation establishes that absent such symmetry clauses in instruments like Pillar One's Amount A or UN Article 12B adoption packages, long-term sustainability of cooperative frameworks degrades: systemic “winners” consolidate fiscal position while “losers” face diminished base shares without offset, conditions likely to trigger withdrawal from consensus arrangements or proliferation of unilateral counter-measures. Governance structures must therefore embed distributive safeguards at deliberation stage rather than relying on post-hoc bilateral renegotiation. Some authors suggest that without formal

constitutional amendments or inclusive decision-making procedures explicitly recognising the interests of less influential states, any reallocation will remain structurally skewed toward dominant actors (Christians, 2013, pp. 26–27; Dean, 2020, pp. 11–13; IMF, 2019, paras. 107–108, 110; Magalhães, 2018, pp. 499, 502–503, 536; Szudoczky, 2023, p. 11). In effect, treating such power asymmetries as a permanent fixture risks codifying imbalances rather than correcting them.

The interaction between national sovereignty and coordinated enforcement presents another substantive implication. As noted in doctrinal critique of DSTs and unilateral significant digital presence rules (Collier, 2023, pp. 180–181; OECD, 2019b, paras. 44–47; OECD, 2020a, para. 68; OECD, 2020b, paras. 290–291, 705–706, 711, 822; OECD, 2023b, paras. 26, 29), measures enacted outside multilateral instruments create parallel legal orders for taxing rights over identical income streams. Global governance must either develop binding conflict-resolution protocols capable of reconciling treaty-based allocation with non-treaty imposts or accept erosion of single taxation norms through unmitigated double claims. Reliance on existing MAP structures is insufficient where disagreements involve taxes explicitly designed outside treaty scopes; corresponding reform in governance mandates would require extending mutual agreement procedures, or functional equivalents, to encompass these contested levies if cooperative regimes are to retain comprehensive coverage.

Administrability and verifiability constraints identified in relation to significant economic presence metrics and data-derived value creation further imply that global governance must standardize evidence protocols across participating jurisdictions (Becker, Englisch & Schanz, 2019, p. 27; Gadžo, 2018a, secs. 7.3.3; OECD, 2015a, pp. 104–105; OECD, 2020b, paras. 389–391, 404, 461; OECD, 2023b, paras. 2, 14, 16). Without harmonised definitions for user location, active participant thresholds, and engagement duration proxies, compliance burdens multiply and neutrality fractures due to inconsistent applications for materially similar enterprises operating in multiple markets. Effective governance design therefore necessitates establishing centralized technical committees empowered to issue binding interpretative guidance on metric application, functionally analogous to OECD Transfer Pricing Guidelines’ role in ALP contexts, so that adaptations relying on novel nexus indicators remain operationally coherent across borders.

Moreover, the technological volatility characteristic of intangible-intensive commerce injects temporal instability into any fixed definitional constructs adopted multilaterally (Dean, 2020, pp. 10–13; Escribano, 2019, sec. 4.02; OECD, 2015a, paras. 179, 366; OECD, 2023b, paras. 9–10). Global tax governance requires institutional flexibility mechanisms: agreed periodic review cycles integrated into conventional instruments; delegated authority for commentary updates within fixed text constraints; and contingency clauses permitting accelerated revision upon emergence of new value drivers outside current proxy categories. There is historical precedent showing how entrenched classifications can persist well beyond their functional relevance unless deliberate constitutional change is pursued; without such change agents acting intentionally at “constitutional moments”, systemic incoherence tends to accumulate (Dean, 2020, pp. 10-13). Absent such responsiveness built into governance infrastructure, even principled adaptations risk obsolescence before full codification, a failure mode particularly acute when oversight bodies operate under unanimity rules delaying text change. The Inclusive Framework’s handling of technical reporting mechanisms such as the GloBE Information Return (“GIR”) illustrates both the potential benefits and limits of procedural adaptability: ongoing review processes tied to accounting improvements and system operation offer a measured path for incremental refinement while deferring application until participants can align domestic legislation and corporate systems; yet, relying solely on such scheduled adjustments may appear insufficient where foundational concepts themselves are contested or where distributional effects demand more immediate recalibration (Kysar, 2020; Magalhães, 2018, pp. 500–501; OECD, 2023b, paras. 8–10; Szudoczky, 2023, p. 11).

Taken as a whole, the governance implications examined above confirm that the sustainability of international tax coordination under digital conditions depends not merely on political compromise, but on structural alignment with reconstructed doctrinal principles. Where reforms disregard principle fidelity, reciprocity preservation, or systemic coherence, governance instability emerges as a predictable consequence rather than an accidental by-product. The analysis thus reinforces the central methodological claim of this dissertation: that principled reconstruction is not an abstract theoretical exercise, but a necessary precondition for durable institutional design. The following chapter synthesizes the scientific results generated through this approach and articulates their contribution to international tax theory in a systematic form.

12 NEW SCIENTIFIC RESULTS

12.1 Methodological Novelty of Principle-Based Reconstruction

This dissertation establishes that the principle-based reconstruction methodology, when subjected to systematic consistency-testing against empirical constellations of digital economy operations, generates a set of determinate scientific results that fundamentally advance international tax theory. The novel contribution lies in demonstrating conclusively which principles can be retained intact, which demand reinterpretation within their current doctrinal bounds, and which require structural modification amounting to transformation. This outcome is not an incidental corollary, but a direct consequence of the methodological discipline applied: each principle was mapped to its jurisprudential origin, stress-tested under scenarios emblematic of intangible-intensive commerce and classified according to its capacity to align with observable economic causality while remaining anchored within treaty-based interpretative margins.

First, the research demonstrates that identification of adaptability thresholds for specific principles, such as neutrality, single taxation, inter-nation equity in its distributive balance form, and benefit theory conditioned by expanded evidentiary proxies, requires a micro-level doctrinal analysis capable of distinguishing between superficial operational misalignments and deep structural incompatibilities. By embedding tiered evidentiary standards within benefit theory's reciprocity logic, the reconstruction provides a clearly articulated pathway for recognising non-physical but demonstrable jurisdictional benefits (digital infrastructure access, regulatory protections for online transactions) as legitimate anchors for taxing rights. This refinement avoids both under-inclusiveness typical of traditional tangible-only proxies and overreach into mere market-access formalism, thereby preserving the principle's conceptual integrity.

Second, this research establishes that the systematic articulation of "reinterpretation" versus "structural modification" categories offers an original analytical grammar for scholarly and policy debate. Principles designated for reinterpretation, such as the value creation principle and the source principle, whose normative core in economic allegiance remains capable of reinterpretation, are redefined in terms of evidential sufficiency tests and hybrid nexus designs that retain definitional cores while

incorporating modernized proxies (e.g., user participation indices tied to proven local enabling conditions). By contrast, principles identified as requiring structural modification, the arm's length principle when applied universally to unique intangibles without comparables; the permanent establishment concept anchored irrevocably in physicality, are shown, through doctrinal exegesis and operational infeasibility modelling, to be functionally irreconcilable with dematerialised value drivers unless their core definitions are rewritten.

Third, the novel contribution lies in connecting these doctrinal classifications directly to evaluative outcomes for existing reform models. By measuring architecture reform against the reconstructed principle matrix, it becomes possible to determine whether a proposal constitutes principled reinterpretation or de facto structural transformation. Applied to existing digital tax reforms, this framework reveals that sustainability correlates directly with principle fidelity: models that remain anchored in reconstructed reciprocity and evidential coherence exhibit greater systemic stability, whereas those that bypass doctrinal constraints tend to produce governance fragmentation and coordination deficits. The contribution lies not merely in categorization, but in demonstrating that doctrinal alignment functions as a predictive criterion for institutional durability.

In summary, these findings confirm that principle-based reconstruction yields not only classificatory clarity but operational evaluative standards for international tax reform. The scientific results articulated above move beyond descriptive analysis and provide a normative-structural framework for assessing the future trajectory of international tax coordination. The following section synthesizes these results into their broader theoretical implications.

12.2 Systematic Consistency-Test of Reform Models

The systematic consistency-test applied to reform models in this research operates as an analytical filter that subjects each substantive proposal, whether multilateral, regional, or unilateral, to the principle-driven evaluative matrix elaborated earlier. The purpose is to produce falsifiable classifications of whether the examined model constitutes an adaptation of existing doctrinal principles or a transformation necessitating

reengineering of the legal architecture. This research demonstrates that execution of such consistency-tests requires moving beyond surface characterizations and interrogating the internal logic, evidentiary structure, and distributive consequences of each model against reconstructed principle cores.

In methodological terms, the test applies sequential scrutiny across all eight normative-operational criteria formulated previously: principle fidelity, reciprocity preservation, neutrality integrity, ability-to-pay proportionality, administrability/verifiability, systemic coherence, single taxation compatibility, and stability under technological change. These are not additive checklists but interlinked diagnostics; failure in one criterion may trigger broader incoherence capable of reclassifying a proposal from adaptation to transformation. The embedded linkage between criteria reflects the doctrinal reality that principles like benefit theory and inter-nation equity operate in mutual dependence within treaty architectures.

Applying this test to OECD Pillar One reveals partial alignment coupled with structural misalignments that collectively tip classification toward partial transformation. In terms of principle fidelity, Pillar One's reliance on sales- and user-based proxies for reallocating residual profits meets administrability aims but weakens benefit theory's causation requirement (Escribano, 2019, sec. 2.02[A]; Kysar, 2020; OECD, 2020b, paras. 507, 511–514; Schön, 2009, pp. 75–76; Szudoczky, 2023, sec. 4.2). No evidentiary obligation exists to prove that local conditions materially enabled value creation beyond mere market access; this detachment from demonstrated reciprocity breaches doctrinal consistency despite formal recognition of “market jurisdiction rights”. Reciprocity preservation is compromised where additional taxing rights accrue to market states without embedded compensatory entitlements for producer jurisdictions hosting substantive DEMPE functions (Buriak, 2024, secs. 6.3.4–6.3.5; OECD, 2015c, paras. 6.34, 6.48; OECD, 2020b, paras. 499–502, 531, 606; Ring, 2007, pp. 40–41, 56). Neutrality integrity remains fragile: similar enterprises with divergent market footprints encounter disproportionate reallocations under uniform percentage formulas unrelated to actual contributory parity (Collier, 2023, p. 181; Greil, 2019, pp. 5, 29; Kobetsky, 2011, p. 422; OECD, 2022a, paras. 1.23, 1.25; Shaviro, pp. 7–8, 54). Administrability/verifiability receives moderate success, formulaic allocations reduce transaction-level disputes, but risk persists from segmentation disagreements and cross-border nexus determinations relying on enterprise-supplied data (Gadžo, 2018a, sec.

7.3.3; OECD, 2019c, para. 72; OECD, 2019a, para. 52; OECD, 2020b, paras. 67, 389–390, 411, 443; Traversa, 2022, secs. 3.4.1.3, 3.4.1.5). Compatibility with single taxation depends heavily on uniform adoption; without full multilateral uptake, overlapping claims may lead to double taxation absent complete relief mechanisms in residence states. Thus, the cumulative score against matrix criteria positions Pillar One’s Amount A closer to a hybrid model embodying elements of adaptation for administrability but transformative departures in nexus causation and equity balance.

EU Digital Services Taxes (“DSTs”), when tested systematically, fall decisively into transformation territory. Principle fidelity failure arises immediately: gross-turnover bases triggered solely by domestic user location redefine benefit provision as market access without verifying qualitative jurisdictional contribution (Buriak, 2024, secs. 7.2.3, 7.2.5; Escribano, 2019, secs. 2.02[B], 4.02[C]; Miller, 2015, sec. 10.10; Schön, 2018, pp. 17–18, 22–24; Shaviro, 2019, pp. 3–4, 62–63; Szudoczky, 2023, pp. 11–12). Reciprocity preservation collapses because these levies embed unilateral reallocations outside treaty frameworks with no compensatory concessions; where residence jurisdictions deny credit relief, and single taxation norms are breached outright (Andersson, 2018, sec. 4; Avi-Yonah & Lempert, 2023, p. 401; Harpaz, 2021, pp. 84–85; IMF, 2019, paras. 9, 28; OECD, 2018, paras. 424, 447; Parada, 2021, p. 753, fn. 77).

While the present matrix centres on doctrinal principles unique to international tax allocation norms, there is conceptual resonance with earlier evaluative frameworks developed for transfer pricing reform options. Those approaches also sought structured comparison across axes such as administrability, economic efficiency effects, accuracy of income measurement, and implications for cross-border cooperation (Devereux et al., 2017, pp. 11–12; OECD, 2015a, para. 351). Incorporating such comparative dimensions into modern consistency-tests may help expose trade-offs, particularly where proposals appear administratively feasible yet carry hidden costs in reciprocity or neutrality, that a strictly legalistic analysis might overlook.

Additional reform models were also evaluated to ensure comprehensiveness and demonstrate the matrix’s systematic applicability. UN Article 12B, for example, combines expanded source-country taxing rights with treaty-based coordination and double-taxation relief, producing a substantially stronger systemic fit than unilateral DSTs while retaining tensions concerning benefit-based causation and ability-to-pay

proportionality under gross-basis taxation. Article 12AA reflects a broader development in the UN Model's treatment of cross-border services and reinforces the finding that reduced reliance on physical presence can remain compatible with existing treaty architecture where expanded source rights are embedded in coordinated distributive rules. Regional or unilateral reforms outside coordinated treaty frameworks frequently perform less favourably where causal attribution, reciprocity and cross-border relief remain insufficiently secured. These comparisons confirm that the evaluative framework can distinguish between reforms that preserve existing doctrinal cores, those requiring selective structural modification, and those representing more fundamental transformations of the allocation architecture.

The systematic application of the evaluative matrix demonstrates that international tax reform is rarely binary: adaptation and transformation exist along a continuum that depends on principle fidelity, distributive balance, and operational feasibility. By evaluating a broad spectrum of multilateral, regional, and unilateral reforms - including Pillar One, DSTs, UN Article 12B, and other emerging initiatives - this research establishes a coherent, evidence-based classification methodology. The findings provide the groundwork for the subsequent analysis of how digital economy characteristics can be integrated into doctrinal principles without violating reconstructed normative cores, forming the logical bridge to Section 12.3 on integration of digital economy features into tax principles.

12.3 Integration of Digital Economy Characteristics into Tax Principles

The analytical findings developed up to this point create fertile ground for mapping how the defining features of digitalised commerce can be integrated into the doctrinal cores of international tax principles without eroding their normative coherence. The methodological premise here follows directly from the principle-reconstruction logic applied throughout, which requires that any such integration preserves causal linkages between jurisdictional entitlements and economically substantive contributions, as evidenced through proxies acceptable within treaty-based interpretative margins. Integration entails neither wholesale acquiescence to current business model characteristics as determinative of taxing rights nor mechanistic grafting of novel metrics

onto pre-digital doctrines, but a selective incorporation of those economic features whose relevance can be justified under reconstructed principle definitions.

A first axis of integration concerns the reconciliation of “scale without mass” with nexus-determining concepts. The absence of physical indicia in significant segments of digital activity weakens traditional permanent establishment gateways; however, elimination of these gateways in favour of unconditioned destination-based triggers would constitute a conceptual rupture. Thus, it can be demonstrated that scale without mass can be accommodated through a reformulation of nexus proxies that translate sustained dematerialised engagement into an entitlement indicator functionally equivalent to earlier fixed-place tests. This involves conditioning quantitative thresholds, turnover sourced from domestic users, active user counts, on qualitative evidence that the jurisdiction furnishes enabling conditions essential to those interactions, such as domestic regulatory regimes or infrastructure not replicable at negligible cost elsewhere (Cugusi, 2020, sec. 4; Escribano, 2019, secs. 2.02, 3.03, 4.02; Hongler & Pistone, 2015, pp. 21–23; OECD, 2015a, paras. 32, 281–282; Schön, 2018, pp. 23–24). By linking presence metrics directly to benefit provision under causation standards embedded in historical reciprocity logic, such integration qualifies as adaptive rather than transformative.

Network effects require similar doctrinal handling. Their economic significance lies in value growth driven by incremental user participation; however, absent correlation with jurisdictionally conferred benefits, they risk being mistaken for purely global rents. Integrating network effects into allocation rules without abandoning inter-nation equity entails developing value attribution keys that weight user-base metrics by their measured enhancement impact on revenue models in conjunction with local enabling factors (Aslam & Shah, 2020, pp. 196, 211–212; Bal, 2018, sec. 5; Calijuri, 2022, secs. 2.4.3–2.4.4; Chand, 2019, secs. 4, 5.1; OECD, 2015a, paras. 32, 169–172, 280, 305). When national markets supply distinct cultural, linguistic or regulatory environments that materially amplify a network’s marginal value, taxing rights grounded in those contributions are consistent with adapted benefit theory and equitable reciprocity norms. Formulaic allocations incorporating unweighted global user shares fail this test because they omit the causation filter needed to preserve principled entitlement boundaries.

The role of data as a value driver presents particular integration challenges because its origination and monetisation frequently occur in different jurisdictions. Under

traditional ALP application, profit is attributed to legal owners who perform DEMPE functions; market states facilitating raw data generation often receive no allocation despite their infrastructures' indispensability to collection. Integrating data contributions demands dual recognition: first, refining DEMPE analysis so that sustained, territorially attributable user engagement is deemed part of development or enhancement functions where empirical evidence supports material influence on dataset quality; second, embedding multi-factor apportionment elements tied to verified origination metrics alongside conventional functional returns. Such integration preserves ALP's transactional parity where comparables exist but overlays supplementary factors precisely where intangibles lack market analogues, thereby avoiding rhetorical adherence masking substantive methodological replacement. Where such supplementary factors merely refine functional attribution within the existing comparability framework, they remain consistent with adaptation. Where, however, they independently determine the allocation of residual profits in circumstances where reliable comparables no longer exist, the resulting mechanism crosses the boundary from supplementation into partial structural transformation.

Alignment with the value creation principle is critical across all these adaptations. Ambiguities identified earlier over whether "creation" encompasses mere market access are addressed by imposing an evidentiary standard: non-physical contributions qualify only when linked demonstrably to jurisdictionally specific conditions indispensable for generating the relevant rent stream (Becker, Englisch & Schanz, 2019, pp. 11–13; Buriak, 2024, secs. 4.2.3, 6.2.2, 8.6; Chand, 2019, sec. 3, paras. 12–13; Cugusi, 2020, sec. 5.2; Cui, 2019, pp. 2–3, 19–20; OECD, 2015a, paras. 278, 283). For example, large user numbers alone would not establish creation unless coupled with proof, through analytics or other verifiable data, that attributes uniquely to those users' jurisdiction measurably increased algorithm efficacy or monetisation efficiency. This evidentiary discipline confines scope expansion within the definitional perimeter reconstructed earlier and guards against transformation into destination-based consumption taxation.

Integration also implicates the ability-to-pay principle in cross-border settings where capacity is fragmented across intangible footprints. Because substantial capacity elements can now be rooted in jurisdictions different from residence or IP holding locations, proportionality requires recalibrated residence rules recognising verified foreign contributory bases while maintaining credit or exemption mechanisms preserving

reciprocal balance (Avi-Yonah, 1997, p. 520; Escribano, 2019, sec. 4.02[B]; Kobetsky, 2011, pp. 45–46; OECD, 2017, paras. 8, 24–25; Screpante, 2024, sec. 4.3.1; Vann, 1998, p. 722). Incorporating digital economy features here involves devising standards for when such foreign contributions are sufficiently material, in profitability terms relative to total capacity, to warrant partial capacity acknowledgement in residence apportionment. This approach keeps capacity measurement anchored in global income but tempers it through adjusted shares aligning with empirical value dispersion patterns characteristic of digital models.

From a systemic coherence perspective, all integrations must respect interdependencies among principles to avoid internal contradiction. For instance, adapting nexus via significant economic presence metrics demands simultaneous refinement of ALP profit attribution rules so that recognised virtual presences have corresponding allocations reflecting their contributory profile; failing this, nexus recognition without commensurate attribution creates incoherence between source entitlement and allocation execution (Bianco & Tomazela Santos, 2016, sec. 4.2; Collier, 2023, pp. 176–177; Hongler & Pistone, 2015, sec. 4.8.1; OECD, 2015a, paras. 284–286; OECD, 2019c, para. 13; OECD, 2019a, para. 16). Similarly, integrating user-based metrics into value creation definitions necessitates neutrality checks to ensure comparable taxpayers bear equivalent burdens irrespective of structural differences in how their user engagement is geographically distributed. Successful integration is contingent upon multi-layered calibration: quantitative thresholds sensitive enough to capture sustained dematerialised participation; qualitative filters tying those thresholds to jurisdictional benefit provision; valuation mechanisms capable of including intangible contributions within existing allocation logics without severing ties to doctrinal cores; and cross-principle alignment securing neutrality, equity and single taxation norms. These conditions could be formulated as operative design parameters for reform instruments aiming to incorporate digital economy characteristics. Absent compliance with these parameters, moves framed as integration risk crossing into transformation by displacing causal anchors and reciprocity safeguards foundational to international tax law’s intellectual structure.

In conclusion, the integration of digital economy characteristics into international tax principles demonstrates that adaptation remains feasible in those areas where reconstructed doctrinal cores retain sufficient elasticity, provided that multi-layered

calibration, evidentiary rigor, and cross-principle alignment are maintained. Where those limits are exceeded, particularly in the allocation of digital residual profits without reliable comparables, partial structural transformation becomes necessary.

The analysis establishes operational parameters that distinguish genuine adaptation from structural transformation, ensuring that causal linkages between jurisdictional entitlements and substantive economic contributions are preserved. Building on these findings, the next chapter turns to the methodological justification for adopting a principle-driven approach. It examines why such a framework is essential to systematically evaluate reforms, reconcile doctrinal integrity with empirical realities, and produce replicable, falsifiable classifications of adaptation versus transformation across diverse reform models.

13 METHODOLOGICAL JUSTIFICATION

13.1 Rationale for Principle-Driven Approach

The methodological commitment to a principle-driven approach in this dissertation is justified both by the structural characteristics of the doctrinal field under examination and by the analytical imperatives that arise from confronting international tax law with empirical realities of intangible-intensive, digitally mediated commerce. As shown in Section 12.3, reforms aiming to address taxation in the digital economy frequently proceed from ad hoc problem framing or political compromise, resulting in partial and sometimes incoherent modifications to individual components of the regime. Such incrementalism risks undermining systemic integrity where principles, source, residence, benefit theory, inter-nation equity, neutrality, ability-to-pay, single taxation, function as interdependent normative anchors rather than as standalone rules. The rationale for adopting a principle-driven methodology is thus to reconceptualize reform evaluation within an integrated theoretical structure capable of identifying whether these core doctrines can be adapted coherently or require transformation at a definitional level.

Without such an approach, evaluation of proposals tends to collapse into technical feasibility analysis or distributive impact modelling divorced from normative coherence checks. For example, sales-based profit reallocation under OECD Pillar One may appear

administratively attractive and politically viable; yet unless tested against the causation requirement embedded in benefit theory (Escribano, 2019, secs. 2.02, 4.02; OECD, 2020b, paras. 514–516, 805–806; Schön, 2009, pp. 75–76; Szudoczky, 2023, pp. 2–5, 14–16), it is impossible to determine whether it respects reciprocity norms or implicitly redefines entitlement away from demonstrated jurisdictional contribution toward abstract market access rights. A principle-driven approach enables structured scrutiny of such proxies for compliance with doctrinal anchors and provides a transparent basis for classifying reforms as adaptation, retaining definitional core while adjusting application, or transformation, requiring wholesale conceptual modulations. This evaluative pathway can be systematized. By mapping each principle to its jurisprudential origins and accepted interpretative margins, then subjecting it to stress tests based on empirical scenarios from digital commerce (e.g., “scale without mass”, network effects, data monetisation), the methodology generates positive findings about resilience or obsolescence. This classification can be directly applied to diverse reform models without recourse to subjective policy preference: neutrality can be preserved intact with embedded symmetrical relief mechanisms; benefit theory can be adapted with expanded evidentiary proxies tied to intangible infrastructural contributions; permanent establishment concepts anchored solely in tangible presence require structural modification. The consistency of this logic across different principles corroborates the analytical robustness of grounding reform assessment in reconstructed doctrinal cores.

From a theoretical standpoint, the principle-driven orientation addresses an endemic risk in international tax governance, namely that legal constructs are retrofitted *ex post* to accommodate political compromises reached on allocation metrics absent sustained doctrinal analysis (Christians, 2017, pp. 3–27; Collier, 2023, para. 48; Kysar, 2020; Mason, 2020, pp. 392–393; Schön, 2018, p. 280; Szudoczky, 2023). Embedding reform proposals within principle fidelity tests ensures that consensus outcomes do not merely reflect distributive bargaining but achieve normative legitimacy through compatibility with underlying legal reasoning recognised across model conventions and general principles of law. Where such fidelity is not maintained, as when unilateral DSTs redefine “benefit” into unverified market presence, the legitimacy deficit undermines multilateral coordination and encourages fragmentation through parallel legal orders.

Operationally, adopting a principle-driven framework provides further advantages by integrating assessment across normative and administrative dimensions.

Principles like inter-nation equity operate not only as moral claims about fairness but as design constraints affecting relief mechanisms against double taxation (Escribano, 2019, sec. 2.02[A]; Hongler, 2019, sec. 11.3.1; Kobetsky, 2011, pp. 16, 17, 45; Musgrave & Musgrave, 1989, pp. 458, 512; Pistone, 2010, pp. 426–427). Neutrality’s preservation demands metric calibration that avoids unjustified competitive and behavioural distortions between economically comparable enterprises; ability-to-pay proportionality requires allocation formulas correlating liability size with measurable contributory capacity components traceable to jurisdictions. Without a guiding principle lens, these operational requirements risk being treated as ancillary technical issues rather than essential elements bound into the architecture’s self-coherence.

A principle-driven methodology also secures analytical precision when addressing interactions among doctrines. Nexus expansion via significant economic presence metrics affects ALP profit attribution mechanics; adaptation must occur on both ends concurrently to avoid incoherence where recognised presences fail to receive aligned allocations under transfer pricing norms (Bianco & Tomazela Santos, 2016, sec. 4.2; Collier, 2023, p. 176; Hongler & Pistone, 2015, sec. 4.8.1; OECD, 2015a, paras. 284–286; OECD, 2019c, para. 13; OECD, 2019a, para. 16). By treating each reform proposal holistically against all relevant principles rather than in isolation against one doctrine, a common shortcoming in policy literature, the methodology prevents piecemeal changes that fracture doctrinal unity.

Finally, there is an epistemic rationale grounded in scientific method: classifying reforms as adaptations or transformations according to their relationship with reconstructed principles yields falsifiable results capable of replication by other scholars given identical doctrinal mappings and scenario stress tests. This elevates debate beyond rhetorical assertions about “modernization” or “preservation” into verifiable scholarly claims supported by transparent methodological pathways. Inherently qualitative legal doctrines could be translated into structured evaluative matrices combining normative fidelity standards with operational viability criteria, principle fidelity, reciprocity preservation, neutrality integrity, ability-to-pay proportionality, administrability/verifiability, systemic coherence, single taxation compatibility, and stability under technological change, and applying them cumulatively so that each proposal’s classification flows logically from its comparative assessment across interconnected benchmarks.

In light of prior analyses highlighting how tax competition dynamics intersect with neutrality goals and participation constraints within cooperative frameworks (Cui, 2021, pp. 22–23; Eggert, Itaya & Winner, 2010, pp. 170–173; IMF, 2019, paras. 33, 106; Ring, 2007, pp. 8–9, 44–55), it becomes apparent that misalignment at the principle level often translates directly into systemic inefficiencies that no amount of technical fine-tuning can resolve without revisiting foundational doctrines themselves. This research therefore justifies its commitment to a principle-based approach on grounds that are theoretical (ensuring normative legitimacy), doctrinal (preserving interpretative coherence across linked rules), operational (integrating administrability into substantive scrutiny), and scientific (producing replicable classifications based on defined criteria).

Building on the principle-driven rationale, Section 13.2 extends the framework by incorporating interdisciplinary perspectives, showing how economic, comparative law, and accounting analyses validate doctrinal adaptations or transformations. This ensures that principle fidelity is reinforced by operational and empirical coherence, providing a seamless transition to the discussion of interdisciplinary rigor.

13.2 Ensuring Interdisciplinary Rigor

Ensuring interdisciplinary rigor within this research requires embedding the principle-driven methodology from Section 13.1 into a broader analytical architecture that draws upon, and cross-validates between, multiple disciplinary vantage points while maintaining doctrinal precision. International taxation in the digital economy is not purely a legal problem of treaty interpretation; it sits at the intersection of public international law, domestic tax law systems, economic theory of value creation and distribution, empirical modelling of cross-border commerce, and accounting science concerned with profit measurement and allocation. Without methodological integration across these domains, there is a latent risk that reform evaluations either adopt narrowly formalistic readings detached from economic substance or conversely reduce to econometric simulations with insufficient normative grounding.

Interdisciplinarity here must be purposive rather than eclectic: each disciplinary tool is incorporated because it serves a specific diagnostic function within the consistency-test framework. Public international law analysis provides the interpretative

limits for treaty terms, e.g., whether “permanent establishment” under existing OECD/UN model conventions can be broadened to capture significant economic presence without violating *pacta sunt servanda* (Escribano, 2019, sec. 3.03[F], fn. 619; Kobetsky, 2011, pp. 98–99, 159–160; Nikolakakis, 2020, sec. 9.9). Economic analysis, particularly grounded in theories of economic allegiance and benefit provision, supplies the causal pathways linking jurisdictional factors to profit generation; this enables doctrinal determinations under benefit theory to be aligned with empirical evidence on infrastructure utilisation or user-engagement driven rents (Cui, 2019, pp. 3–4, 19; Escribano, 2019, sec. 2.02[B]; Gadžo, 2018a, secs. 5.1.3, 6.4.3; Miller, 2015, secs. 3.3, 3.5; Szudoczky, 2023, sec. 4.2). Comparative tax law examination identifies divergences and convergences in domestic adaptations of source/residence allocations or nexus expansions, clarifying operational feasibility for multilateral harmonisation. These perspectives can be merged into an evaluative process that demands mutual corroboration: a reform proposal passes principle fidelity only when its legal drafting withstands treaty interpretation challenges, its economic logic evidences causal contribution consistent with doctrinal requirements, and its administrative design meets accounting verifiability standards consistent with neutrality and single taxation norms. This triadic corroboration guards against both “policy drift,” where political consensus outruns doctrinal legitimacy, and “disciplinary capture,” where one field’s analytic preferences distort overall classification outcomes.

Ensuring rigor also means confronting potential methodological blind spots inherent in single-discipline approaches. For example, pure legal-doctrinal analysis might classify OECD Pillar One’s Amount A as transformative due to deviation from causation-based benefit allocation; yet absent incorporation of economic scaling models and empirical distribution simulations, such classification could overlook administrability gains or partial alignment in neutrality outcomes. Conversely, macroeconomic models championing destination-based allocation might show efficiency gains but ignore reciprocity breaches unless tested against inter-nation equity doctrine (Chand, 2019, paras. 59–60; Cui, 2019, p. 24; Devereux et al., 2017, pp. 4, 34; Richter, 2021, p. 11). By binding these assessments together under the integrated criteria matrix, principle fidelity, reciprocity preservation, neutrality integrity, ability-to-pay proportionality, administrability/verifiability, systemic coherence, single taxation compatibility, stability under technological change, this research demonstrates that apparent contradictions can

be resolved into precise adaptation/transformation designations traceable to transparent interdisciplinary reasoning.

Accounting science plays a further role in operationalising interdisciplinarity. A key challenge in applying reforms like formulary apportionment or Pillar One's residual profit splits lies in reconciling financial reporting aggregates with taxable income definitions across jurisdictions. Ensuring rigor here demands methodological scrutiny over whether book-to-tax adjustments are marginal enough to preserve comparability yet comprehensive enough to protect ability-to-pay proportionality by avoiding distorted base attribution (Burns & Krever, 1998, p. 601; OECD, 2020a, paras. 43–44; OECD, 2020b, paras. 409, 428, 431, 473; Traversa, 2022, sec. 2.3.2). Cross-referencing accounting treatment with legal capacity rules under residence principles allows for detection where apparent administrability could conceal distributive inequities. Interdisciplinary rigor also necessitates structured handling of empirical data constraints. Given confidentiality barriers around MNE internal metrics, especially those concerning intangible asset exploitation and user data origination, economic modelling often relies on proxy variables.

Legal analysis must assess whether reliance on such proxies meets evidentiary thresholds embedded in benefit theory or ALP functional allocation guidance (Buriak, 2024, sec. 6.3.3; Escribano, 2019, sec. 2.02[B]; Gadžo, 2018a, sec. 7.3.2; OECD, 2022a, para. 1.51; Screpante, 2024, secs. 4.3.1, 7.1.4.5). Where proxies fail doctrinal sufficiency but offer useful approximations for administrative purposes, the integrated methodology records both dimensions explicitly: they may support operational adaptation but still require formal principle modification to align with normative cores. Procedural design in global tax governance benefits from interdisciplinary rigor by anticipating institutional context variables, consensus requirements within OECD Inclusive Frameworks; developing country participation dynamics within UN treaty processes; commercial compliance behaviors modelled through applied economics, which feed directly into feasibility assessments for adaptations respecting systemic coherence. In particular, integrating political economy analysis highlights how distributive reweighting toward market jurisdictions interacts with geopolitical negotiating power: absent compensatory equity clauses (Christians, 2017, pp. 8-9; Cui, 2021, pp. 22-23; Eggert, Itaya & Winner, 2010, pp. 170-173, 189; Magalhães, 2018, pp. 530-531; Ring, 2007, pp. 56-60), adoption risks collapse regardless of doctrinal soundness due to governance friction. Furthermore,

persistent reliance on physical presence as a condition for nexus determination appears increasingly misaligned with contemporary patterns of value creation in highly digitalized businesses; multinationals can now generate substantial revenues without assets or personnel located in source states, underscoring the obsolescence of strict permanent establishment tests (Aslam & Shah, 2020, p. 204; Avi-Yonah, n.d., p. 3; Chand, 2019, p. 1023; Cugusi, 2020, sec. 4; Hongler & Pistone, 2015, sec. 2.4; OECD, 2018, paras. 33-34, 132; OECD, 2020a, para. 15).

Finally, ensuring interdisciplinary rigor requires explicit meta-methodological transparency: each classification outcome is accompanied by a documented trail linking legal doctrine interpretations (with identified source limitations), economic causality models (and their empirical basis), comparative law observations (including deviations from model template uptake), and accounting measurements (specifying reconciliation choices). This procedural visibility allows replication by other scholars using identical source bases, as mandated by reliance exclusively on connected Zotero peer-reviewed literature and institutional documents, and reinforces replicability as a core marker of scientific reliability in this field.

By deliberately structuring interdisciplinarity around specific functional contributions to principle-based evaluation rather than generic inclusivity, this research strengthens adaptation/transformation demarcations while producing normative clarity capable of guiding scholarly debate and policy negotiation in digital economy tax reform. The result is a methodological synthesis where law interprets legitimacy bounds, economics substantiates causal entitlement claims, comparative studies anticipate systemic transposability across jurisdictions, and accounting secures operational verifiability, all embedded coherently into the consistency-test framework established earlier.

In sum, embedding principle-driven evaluation within an interdisciplinary framework ensures that legal, economic, and accounting analyses jointly validate adaptations and transformations. This approach provides both normative coherence and operational credibility, setting the stage for the concluding synthesis in Section 14, where the overarching findings and their implications for digital economy tax reform are drawn together.

14 EVALUATING THE WORKABILITY AND DOCTRINAL LEGITIMACY OF CURRENT REFORM MODELS

14.1 Synthesis of Hypothesis Results

A central question arising from this research is whether any of the currently proposed models - ranging from the OECD's multilateral initiatives to unilateral digital levies - actually offer a workable and doctrinally consistent solution to the taxation of the digital economy. The systematic consistency-testing conducted throughout this dissertation reveals that the foundational principles of international taxation cannot be made perfectly consistent without a degree of structural transformation. **This finding directly confirms Hypothesis 5, demonstrating that where value-creation definitions remain irreconcilably plural across jurisdictions, transformation of core allocation principles becomes necessary.** The inherent tension between the reciprocity logic of the benefit principle and the administrative simplicity of market-based proxies means that no existing reform proposal examined in isolation satisfies all criteria for a „principled adaptation”.

From a theoretical perspective, this dissertation finds that the Significant Digital Presence („SDP”) concept (or a specialized “Digital Service PE”) is the most conceptually robust nexus-oriented model examined in this dissertation. Unlike gross-based levies, the SDP seeks to maintain principle fidelity by grounding the new nexus in demonstrable jurisdictional benefits, such as the provision of digital infrastructure and regulatory frameworks that facilitate local value creation. If implemented via a multi-factor design that weights user-participation alongside local enabling conditions, it represents the most theoretically sound adaptation of the source principle. **In this respect, Hypothesis 2 is substantially confirmed: permanent establishment and nexus concepts can be reconceptualised through significant economic presence standards without collapsing their doctrinal integrity.** However, its implementation remains fragile due to the immense coordination required to prevent jurisdictional fragmentation and evidentiary asymmetries.

In contrast, from a pragmatic and implementability standpoint, OECD Pillar One (Amount A) appears one of the most institutionally advanced paths toward coordinated global tax governance, despite being a “hybrid transformation” rather than a pure

adaptation. While it achieves administrative streamlining and political consensus, it does so by weakening the causal link between jurisdictional benefits and profit allocation. Its reliance on sales-based formulas essentially shifts the tax regime toward destination-based formalism, which - while workable for tax collection - represents a structural departure from the historical reciprocity and neutrality norms. **Accordingly, Hypothesis 3 is confirmed in conditional form: formula-based reallocations constitute adaptation only where distributive symmetry between market and production jurisdictions is preserved; where such symmetry is diluted, as under Pillar One's design, the model operates as transformation rather than principled adaptation.**

Conversely, unilateral Digital Services Taxes („DSTs”) are the least workable in the long term. While they offer immediate revenue capture, they operate as a structural transformation that bypasses treaty-based relief mechanisms, thereby triggering significant risks of double taxation and eroding inter-nation equity. **This outcome confirms Hypothesis 4: unilateral digital services taxes are compatible with neutrality only when embedded in coordinated multilateral relief frameworks - conditions that are not structurally secured in their prevailing unilateral forms.**

In conclusion, this research establishes that the age of “incremental fixes” has reached its limit. The scientific results show that for categories of income dominated by unique digital intangibles and synergy rents, the Arm's Length Principle („ALP”) **cannot be sustainably adapted through structured supplementation alone. Hypothesis 1 is therefore not confirmed: the evidence demonstrates that conceptual supplementation is insufficient, and partial structural transformation is required for the allocation of digital residual profits.** Taken together, the hypothesis-level findings therefore indicate that neither the unmodified preservation of the existing architecture nor its wholesale replacement provides an adequate response to the challenges of digital residual profit allocation. Rather, they point towards the need for a differentiated approach that preserves existing allocation principles where their underlying assumptions remain workable while allowing coordinated structural transformation where those assumptions no longer hold.

These hypothesis-level findings provide the basis for a comparative assessment of the principal reform models against the common evaluative criteria developed in Section 11.1.

14.2 Comparative Evaluative Matrix of Reform Models

Whereas Section 12.2 applied the consistency-test primarily to classify individual reform models according to their relationship with the reconstructed principles, the present section consolidates those qualitative findings into a comparative framework designed to assess their relative performance against a common benchmark. Building on the evaluative criteria developed in Section 11.1, the principal reform models examined in this dissertation can be compared within a common evaluative matrix. The matrix operationalises the reconstructed principles of international taxation by assessing each reform model against eight criteria: principle fidelity, reciprocity preservation, neutrality integrity, ability-to-pay proportionality, administrability and verifiability, systemic coherence, single taxation compatibility, and stability under technological change. While the preceding analysis examined these criteria in relation to individual principles and reform proposals, their integration into a single matrix allows the relative doctrinal and operational performance of the competing models to be assessed systematically.

The assessment covers five existing approaches - the traditional PE/ALP architecture, unilateral DSTs, OECD Pillar One, UN Article 12B, and SDP/Digital PE - together with the bifurcated allocation architecture developed in this dissertation as a synthetic response to the limitations identified in those approaches. Each model is assessed on a ten-point scale under each criterion, with higher values indicating stronger consistency with the reconstructed normative core or stronger operational performance. The scores reflect the qualitative doctrinal, economic and administrative analysis conducted throughout this dissertation and therefore represent structured comparative assessments rather than independently measured quantitative values. The numerical values serve as ordinal comparative indicators rather than quantitative measurements: they translate the qualitative findings of the preceding doctrinal analysis into a common scale in order to make relative strengths and weaknesses visible across models. No claim is made that the numerical distance between individual scores represents an objectively measurable interval. For comparative transparency, the eight criteria are weighted equally in the aggregate score. The resulting total is therefore used only as a heuristic indicator and does not substitute for the criterion-specific qualitative assessment.

Model	Fidelity	Reciprocity	Neutrality	Ability-to-pay prop.	Administrability	Systemic Coherence	Single Taxation Comp.	Stability	Total
Traditional PE/ALP Architecture	10	6	8	9	4	10	10	2	59
Unilateral DSTs	2	1	2	1	9	2	2	5	24
Pillar One	5	5	6	7	7	5	8	6	49
UN Article 12B	8	7	8	5	9	8	9	6	60
SDP / Digital PE	9	8	7	8	4	8	9	7	60
Bifurcated Architecture	9	9	8	9	6	9	10	8	68

Table 1. Comparative Evaluative Matrix of Reform Models

The aggregate scores provide an indication of the relative performance of the reform models across the eight criteria, but they do not constitute a mechanical determination of doctrinal superiority. Individual criteria remain relevant because similar aggregate results may conceal materially different doctrinal and operational trade-offs. The matrix therefore provides a consolidated basis for identifying the relative strengths and weaknesses of each model and for determining which reform architecture most successfully reconciles doctrinal continuity with the structural requirements of digitalised value creation.

The comparative results therefore require further examination beyond the aggregate scores. The following section considers the relative strengths and weaknesses of each reform model across the individual criteria and identifies the principal doctrinal and operational trade-offs revealed by the matrix.

14.3 Comparative Assessment of Reform Models

The comparative assessment reveals substantial differences in the manner in which the examined reform models reconcile doctrinal continuity with the operational requirements created by digitalisation. The aggregate scores provide an initial indication of their relative performance, but the principal significance of the matrix lies in the different combinations of strengths and weaknesses underlying those results.

The traditional PE/ALP architecture remains doctrinally strong, particularly in terms of principle fidelity, systemic coherence, compatibility with single taxation, and ability-to-pay proportionality. These strengths reflect the degree to which the existing architecture remains embedded in established treaty structures and preserves the causal and distributive logic underlying traditional profit allocation. Its principal weaknesses arise in administrability and, most significantly, stability under technological change.

Where profits are attributable to routine functions and reliable comparables remain available, the traditional architecture continues to provide a coherent allocation framework. Its performance deteriorates, however, where unique digital intangibles, highly integrated functions and synergy rents make conventional functional attribution increasingly artificial. The matrix therefore reinforces the conclusion reached under Hypothesis 1: the ALP retains substantial doctrinal value for routine profits but reaches structural limits in the allocation of digital residual profits.

Unilateral DSTs occupy the opposite end of the evaluative spectrum and receive the lowest aggregate score. Their principal advantage lies in administrability, since gross revenue and market-based thresholds provide relatively direct proxies for establishing and calculating tax liability. This operational simplicity is achieved, however, at substantial doctrinal cost. DSTs perform particularly weakly in terms of principle fidelity, reciprocity, neutrality, ability-to-pay proportionality, systemic coherence, and compatibility with single taxation. By imposing taxation outside the established treaty framework and without corresponding multilateral relief mechanisms, they create structural risks of overlapping taxing claims and detach tax entitlement from the reciprocal benefit relationships underlying traditional source taxation. Their comparatively weak performance therefore supports the conclusion reached under Hypothesis 4 that unilateral digital taxation cannot constitute a coherent long-term solution unless embedded within coordinated mechanisms capable of restoring neutrality and mutual relief.

OECD Pillar One occupies an intermediate position. Its principal strengths lie in its attempt to establish a coordinated multilateral response, its compatibility with single taxation mechanisms, and its comparatively greater administrability than more conceptually demanding nexus-based alternatives. At the same time, its reliance on destination-linked allocation weakens the traditional causal relationship between jurisdictionally provided benefits and profit attribution. The resulting architecture therefore represents a hybrid compromise: it addresses some of the coordination failures generated by digitalisation but does so through a partial departure from the reciprocity and principle-fidelity requirements reconstructed in this dissertation. This explains its moderate performance across most criteria and supports its classification as a partially coherent transformation rather than a straightforward adaptation of the existing architecture.

UN Article 12B performs more strongly overall than Pillar One. Its principal advantage lies in retaining the reform of digital taxation within a treaty-based framework, thereby preserving a stronger connection with reciprocity, systemic coherence, and mechanisms designed to prevent overlapping taxation. It also performs strongly in terms of administrability and compatibility with single taxation. Its principal weakness concerns ability-to-pay proportionality. To the extent that taxation operates on a gross basis, tax liability may arise without sufficiently reflecting the taxpayer's underlying profitability or costs, weakening the relationship between taxable capacity and the resulting liability. Article 12B therefore demonstrates that treaty-based reform can preserve a greater degree of doctrinal continuity than destination-oriented reallocation, but that administrative simplicity may itself generate material normative trade-offs.

The SDP/Digital PE approach performs particularly strongly in terms of principle fidelity, reciprocity, systemic coherence, and compatibility with single taxation. Unlike approaches that rely predominantly on market destination or gross revenue, an economically reconstructed nexus can preserve the normative core of taxable presence by linking jurisdictional entitlement to demonstrable economic participation and locally provided enabling conditions. This finding corresponds to the conclusion reached under Hypothesis 2 that the traditional nexus concept retains sufficient doctrinal elasticity to accommodate significant economic presence without abandoning its underlying reciprocity logic. The principal weakness of this approach is operational rather than conceptual. Establishing and verifying qualitative nexus factors, coordinating thresholds across jurisdictions, and integrating the resulting nexus with corresponding profit-attribution rules create substantial administrative and multilateral coordination difficulties. Its relatively strong doctrinal performance must therefore be balanced against comparatively weak administrability.

Taken together, the assessment of the existing reform models reveals a common structural limitation. None of the established approaches succeeds in simultaneously preserving the principal doctrinal strengths of the international tax architecture and addressing the allocation problems associated with digital residual profits. The traditional PE/ALP framework preserves doctrinal continuity but reaches its limits where comparability and physical nexus assumptions break down. Unilateral DSTs provide administrative simplicity at the expense of reciprocity and systemic coherence. Pillar One improves multilateral coordination but introduces significant departures from benefit-

linked allocation, while Article 12B preserves treaty-based coherence at the cost of weaker ability-to-pay proportionality. SDP/Digital PE offers a conceptually stronger reconstruction of nexus but remains difficult to coordinate and administer multilaterally.

These limitations indicate that the central difficulty may not be resolved by selecting one existing allocation model and applying it universally. Rather, the preceding analysis suggests that different categories of profit may require different allocation mechanisms depending on whether the normative and functional assumptions of the traditional architecture remain valid. This creates the basis for a bifurcated allocation architecture: an approach designed to preserve the existing allocation framework where it remains doctrinally and operationally workable, while introducing coordinated structural transformation where its underlying assumptions have been exhausted. This conclusion develops the differentiated allocation logic identified in Section 12.3, where preservation of the ALP in circumstances of reliable comparability was combined with supplementary allocation mechanisms for situations in which intangible-intensive value creation exceeds the functional limits of conventional attribution.

The resulting bifurcated allocation architecture distinguishes between routine and residual profits and subjects them to different allocation mechanisms. Routine profits remain governed by the traditional ALP framework, preserving functional analysis and transactional comparability where these mechanisms continue to provide a reliable basis for profit attribution. Digital residual profits, by contrast, are allocated through coordinated formula-based allocation keys specifically limited to the residual profit component and reflecting the economic factors that cannot adequately be captured through conventional comparability analysis. This differentiated structure seeks to overcome the principal trade-offs identified in the existing reform proposals. Unlike unilateral DSTs, it remains integrated within a coordinated income-tax architecture and preserves mechanisms compatible with single taxation; unlike Pillar One, it does not extend destination-based allocation beyond those categories of profit for which traditional attribution has reached its structural limits; unlike Article 12B, it avoids relying primarily on gross-basis taxation and thereby preserves a closer relationship with ability-to-pay; and unlike SDP/Digital PE, it does not require the reconstruction of nexus alone to resolve the separate problem of residual profit attribution. The architecture therefore does not replace the traditional international tax framework, but limits structural transformation to

those categories of profit for which the underlying assumptions of the existing allocation system no longer provide a sufficiently coherent basis for attribution.

The bifurcated allocation architecture achieves the highest aggregate score in the matrix. It performs particularly strongly in principle fidelity, reciprocity, ability-to-pay proportionality, systemic coherence, compatibility with single taxation, and stability under technological change, while its comparatively lower score in administrability reflects the additional complexity inherent in distinguishing routine from residual profits and applying different allocation mechanisms to each category. Its comparative performance derives from combining two allocation logics rather than requiring either the universal preservation or universal abandonment of the existing architecture. The matrix therefore indicates that the principal trade-off associated with the bifurcated architecture is increased administrative complexity in exchange for stronger overall doctrinal and systemic coherence.

Taken together, the comparative results demonstrate that no reform model performs uniformly across all eight criteria. The principal differences concern the manner in which each model balances doctrinal fidelity against administrability, coordination, and technological stability. Traditional PE/ALP rules preserve doctrinal continuity but exhibit structural instability in relation to digital residual profits; unilateral DSTs prioritise administrability at substantial systemic cost; Pillar One represents a coordinated but doctrinally hybrid compromise; Article 12B preserves stronger treaty-based coherence while weakening ability-to-pay proportionality; and SDP/Digital PE preserves benefit-linked nexus logic while creating significant implementation difficulties. Against these alternatives, the bifurcated architecture exhibits the strongest overall comparative performance, although its implications as a preferred systemic approach require a separate normative assessment.

14.4 Preferred Systemic Approach

The comparative assessment supports the coordinated bifurcated allocation architecture as the preferred systemic response to the challenges posed by digitalisation. This conclusion does not follow merely from its highest aggregate score in the evaluative matrix, but from the manner in which the model reconciles the competing requirements identified throughout this dissertation. The preceding analysis demonstrates that neither the unmodified preservation of the traditional international tax architecture nor its

wholesale replacement provides a sufficiently coherent solution. The preferable approach is therefore one of selective structural transformation, preserving established allocation principles where their normative and functional assumptions remain valid while departing from them where their doctrinal elasticity has been exhausted.

The principal advantage of the bifurcated architecture is that it differentiates between categories of profit according to whether the existing allocation framework remains capable of producing a coherent attribution. For routine profits, the ALP continues to provide a conceptually defensible basis for allocation because functional analysis, transactional comparability and entity-based attribution remain operationally meaningful. Replacing this framework for such profits would sacrifice established doctrinal coherence without a corresponding normative justification. Digital residual profits present a fundamentally different problem. Where unique intangibles, integrated digital functions and synergy rents prevent reliable comparability and make conventional attribution increasingly artificial, continued reliance on the ALP would preserve formal continuity at the expense of substantive coherence. In these circumstances, coordinated formula-based allocation constitutes a justified structural transformation rather than an abandonment of principle.

This differentiated treatment also provides a more coherent response to the trade-offs identified in the existing reform proposals. It avoids the systemic fragmentation and double-taxation risks associated with unilateral DSTs, while preserving a closer relationship between taxation and net economic capacity than gross-basis approaches. At the same time, it avoids treating destination-based allocation as a general substitute for benefit-linked profit attribution and does not assume that reconstruction of nexus alone can resolve the distinct problem of allocating digital residual profits. The bifurcated architecture instead confines non-ALP allocation to the category of profits for which the traditional attribution framework has demonstrated structural limitations. Its departure from the existing system is therefore targeted rather than comprehensive.

The model nevertheless involves a material trade-off. Distinguishing routine from residual profits and coordinating formula-based allocation across jurisdictions creates additional administrative and institutional complexity. This weakness should not be understated. However, the evaluative matrix demonstrates that administrative simplicity cannot serve as the sole criterion for systemic reform where it is achieved at the expense

of reciprocity, neutrality, ability-to-pay, or compatibility with single taxation. The relevant question is therefore not which model minimises complexity in isolation, but which model achieves the most coherent balance between administrability and the normative requirements governing the allocation of taxing rights. On this basis, the additional complexity of the bifurcated architecture is outweighed by its stronger overall doctrinal and systemic performance.

Accordingly, the central normative conclusion of this dissertation is that digitalisation does not justify the wholesale replacement of the traditional international tax system. Nor can the challenges of digitalised value creation be addressed through incremental adaptation alone. The more coherent path lies between these alternatives: **the existing architecture should be preserved where its underlying principles remain operationally and normatively sustainable, while coordinated structural transformation should be introduced where those principles can no longer accommodate the economic characteristics of digital residual profits. The coordinated bifurcated allocation architecture gives institutional form to this selective transformation and therefore represents the preferred systemic approach identified by this research.**

15 SCIENTIFIC CONTRIBUTION BEYOND EXISTING SCHOLARSHIP

The originality of this dissertation does not lie in reiterating the well-documented challenges that the digitalisation of the economy poses to international tax law. Rather, its novel contribution consists in constructing and operationalising a reconstructed, interdependent matrix of foundational principles through which competing reform proposals can be systematically classified as adaptation or structural transformation. Whereas much of the existing literature has focused on distributive consequences, economic efficiency, political feasibility, or technical administrability, this research advances the debate by embedding those dimensions within a unified framework of doctrinal fidelity, reciprocity, neutrality, single taxation, and verifiability. In doing so, it moves beyond descriptive or policy-driven analysis and establishes a replicable evaluative architecture grounded in reconstructed normative cores.

Operationalising the adaptation–transformation distinction

A central innovation of this dissertation is the transformation of the adaptation versus transformation dichotomy from a rhetorical device into an analytically testable classification. Prior scholarship frequently characterises reforms as either evolutionary or revolutionary without specifying the criteria by which such distinctions are drawn. This research, by contrast, defines adaptation as reform that preserves the doctrinal nucleus of a principle while adjusting its evidentiary proxies or operational modalities, and transformation as reform that displaces or rewrites the causal and reciprocity anchors constitutive of that principle.

Through systematic stress-testing of reconstructed principles against empirical constellations of digitalised value creation, the dissertation demonstrates that this boundary can be identified through structured indicators: erosion of benefit-based causation, asymmetrical redistribution of taxing rights without compensatory adjustments, severance from treaty-based interpretative margins, or incompatibility with single taxation safeguards. The resulting framework provides a determinate grammar for scholarly and policy debate, directly addressing the adaptability limits hypothesised in H1, H2, and H5.

Hybrid nexus design: integrating qualitative and quantitative thresholds

Existing analyses of significant economic presence standards typically emphasise quantitative thresholds such as turnover or user counts. The novel contribution of this research lies in specifying a hybrid nexus architecture in which quantitative metrics operate only after qualitative indicators establish the presence of jurisdictionally conferred benefits functionally analogous to traditional permanent establishment supports.

Under this model, user-based or revenue-based triggers are normatively legitimate only where evidence demonstrates that the jurisdiction provides enabling conditions, such as regulatory frameworks, enforceable legal protections, or infrastructure essential to sustained digital interaction. By structuring nexus as a sequential evidentiary test rather than a purely numerical threshold, the dissertation shows how reconceptualisation can preserve reciprocity logic while modernising its proxies for dematerialised environments. This finding substantiates H2 by demonstrating that nexus concepts can be reconceptualised without collapsing their doctrinal integrity.

Systemic evaluation of unilateral digital services taxes

While unilateral DSTs have been widely examined in political and economic terms, this dissertation introduces a multi-principle stress-test that evaluates such measures simultaneously against benefit theory causation, inter-nation equity, neutrality comparability, and single taxation compatibility. It demonstrates that, absent coordinated multilateral relief mechanisms, unilateral DSTs tend to redefine “benefit” into presumed market presence untethered from verifiable jurisdictional contribution. In doing so, they displace reciprocity’s causation requirement and shift the regime toward politically contingent fragmentation.

The contribution here lies not merely in criticising unilateralism, but in demonstrating through reconstructed principle application that classification as adaptation or transformation depends on embedded mutuality safeguards. This analysis directly substantiates H4 and contributes to the broader confirmation of H5 by demonstrating how irreconcilable value-creation claims can undermine systemic coherence and necessitate structural transformation.

Normative conditions for formula-based reallocation

Debate surrounding the OECD’s Pillar One architecture has largely centred on feasibility and distributive bargaining. This dissertation advances the literature by articulating principled conditions for formula-based reallocations. It demonstrates that destination-linked allocation keys constitute adaptation only where they correlate evidentially with substantive market contributions and preserve distributive symmetry between production and market jurisdictions.

Absent such conditioning, formulaic reallocations risk subordinating benefit provision in producer states and elevating consumption market size as the primary entitlement determinant; an outcome conceptually closer to consumption taxation than to source-based business profit taxation. By linking formula design to reciprocity preservation, the research provides a concrete evaluative pathway for assessing compliance with H3.

Intangible integration and refined DEMPE analysis

The dissertation further contributes by demonstrating that intangible-intensive business models do not necessitate the wholesale abandonment of the arm’s length

principle. Where reliable comparables and functionally attributable returns remain available, refinement of DEMPE analysis and incorporation of territorially attributable user engagement may preserve the ALP's relevance. The analysis nevertheless identifies a structural limit to such supplementation. Where unique intangibles, integrated functions and synergy rents generate digital residual profits for which reliable comparability no longer exists, supplementary adjustments within the ALP are insufficient to produce coherent attribution.

This finding therefore does not confirm H1 in its original form. Rather, it demonstrates that the ALP remains sustainable for routine and otherwise reliably attributable profits, while allocation of digital residual profits requires partial structural transformation through a distinct, coordinated allocation mechanism. The contribution lies in identifying the boundary at which functional refinement ceases to constitute adaptation and becomes insufficient without structural modification.

Bifurcated allocation architecture as a synthetic contribution

Building on the identified limits of both universal ALP application and comprehensive formula-based replacement, the dissertation develops a bifurcated allocation architecture as a further substantive contribution. The model distinguishes between categories of profit according to whether the functional and normative assumptions of traditional attribution remain workable. Routine profits remain subject to the ALP where functional analysis and reliable comparability continue to support coherent attribution, while digital residual profits are subject to coordinated formula-based allocation specifically limited to the residual profit component.

The originality of this architecture lies in treating adaptation and transformation not as mutually exclusive system-wide alternatives, but as differentiated responses capable of operating within a single allocation structure. It thereby gives institutional expression to the dissertation's central finding that digitalisation requires selective structural transformation rather than either universal preservation or wholesale replacement of the existing international tax architecture. Its comparative advantage, as demonstrated by the evaluative matrix, lies in stronger overall doctrinal and systemic coherence, although this is achieved at the cost of increased administrative complexity.

Integrated evaluative matrix as a scientific advancement

The most significant methodological contribution lies in formalising an integrated evaluative matrix comprising principle fidelity, reciprocity preservation, neutrality integrity, ability-to-pay proportionality, administrability and verifiability, systemic coherence, single taxation compatibility, and stability under technological change. Each reform proposal is subjected to cumulative stress-testing across these interdependent benchmarks.

This structured approach ensures that classification outcomes do not rest on ex post policy preference rationalisation but follow from systematic comparative assessment against defined criteria. For comparative transparency, the criteria are weighted equally in the aggregate evaluative matrix, while criterion-specific qualitative analysis preserves the capacity to identify differences in their doctrinal significance for particular reforms. The numerical scores therefore operate as ordinal and heuristic indicators rather than independently measured quantitative values, producing a transparent basis for comparative evaluation without substituting numerical aggregation for doctrinal judgment.

Governance-level innovation

Finally, the dissertation extends principle-based reconstruction into the domain of global tax governance. It demonstrates that reliance on existing mutual agreement procedures is insufficient where contested levies fall outside treaty scope, and that legitimacy requires explicit signalling when reforms reach axiomatic levels of doctrinal change. It proposes institutional mechanisms, such as periodic review cycles embedded in conventional instruments, delegated commentary update authority within textual limits, and contingency clauses for emergent value drivers, that align procedural design with reconstructed normative cores.

By integrating doctrinal, economic, and administrative analysis into a mutually corroborative evaluative process, the dissertation guards against both policy drift and disciplinary capture. Its interdisciplinarity is purposive: each analytical tool is incorporated because it performs a specific diagnostic function within the consistency-test framework.

In sum, the novel contribution of this dissertation lies in transforming principle-based reconstruction from an abstract interpretative posture into an operational scientific

methodology capable of generating determinate classifications, predictive institutional insights, and normatively anchored reform pathways. It thereby advances international tax scholarship beyond descriptive critique toward a structured theory of principled adaptation and selective structural transformation under conditions of technological change.

16 CONCLUSION

This research establishes a comprehensive framework for assessing the adaptability and transformation of foundational international tax principles in response to the structural shifts induced by digitalisation and intangible-intensive economic activities. By systematically reconstructing core doctrines such as the benefit principle, residence and source principles, the arm's length principle, permanent establishment concepts, and the value creation principle, the analysis reveals which elements retain conceptual integrity and which require reinterpretation or structural modification. The findings demonstrate that principles such as neutrality, single taxation, inter-nation equity, and a carefully reconstructed benefit theory can remain viable under digital economy conditions where their application is supported by calibrated evidentiary standards capable of recognising non-physical enabling conditions, including digital infrastructure, regulatory protection and other jurisdictionally attributable contributions. Similarly, the ability-to-pay principle remains viable where tax liability continues to reflect net economic capacity and jurisdictional allocations remain proportionate to economically attributable contributions.

The findings nevertheless identify clear limits to adaptation. The arm's length principle cannot be sustainably extended through structured supplementation alone to digital residual profits dominated by unique intangibles, integrated functions and synergy rents for which reliable comparability has disappeared. Hypothesis 1 is therefore not confirmed: while the ALP remains doctrinally sustainable for routine and otherwise reliably attributable profits, allocation of digital residual profits requires partial structural transformation. Nexus rules exhibit a different form of elasticity. Although the physicality-bound formulation of the traditional permanent establishment rule reaches the limits of interpretation under conditions of "scale without mass", Hypothesis 2 is

substantially confirmed because the underlying nexus concept can be reconceptualised through significant economic presence where non-physical participation remains linked to demonstrable jurisdictional benefits and enabling conditions. Digitalisation therefore does not impose a uniform adaptation or transformation requirement across all principles.

The remaining hypothesis results reinforce this differentiated conclusion. Hypothesis 3 is confirmed in conditional form: formula-based reallocations constitute adaptation only where substantive market contribution and distributive symmetry between market and production jurisdictions are preserved; where such symmetry is weakened, the allocation becomes transformative. Hypothesis 4 is confirmed insofar as unilateral digital services taxes can remain compatible with neutrality only when embedded in coordinated multilateral relief frameworks, conditions that are not structurally secured in their prevailing unilateral forms. Hypothesis 5 is also confirmed: where competing definitions of value creation remain irreconcilably plural across jurisdictions, transformation of core allocation principles becomes necessary. Taken together, the hypotheses reject both unrestricted preservation of the existing architecture and wholesale replacement as universal responses to digitalisation.

The comparative assessment of reform models further demonstrates that these trade-offs are distributed unevenly across existing approaches. The traditional PE/ALP architecture retains substantial doctrinal coherence but becomes unstable where physical nexus assumptions and reliable comparability cease to provide an adequate basis for allocation. Unilateral DSTs offer administrative simplicity at significant cost to reciprocity, neutrality, ability-to-pay proportionality, systemic coherence, and compatibility with single taxation. OECD Pillar One represents a coordinated but doctrinally hybrid compromise: it strengthens multilateral coordination and provides an administrable reallocation mechanism, but weakens the traditional causal relationship between jurisdictionally provided benefits and profit attribution through its reliance on destination-linked allocation. UN Article 12B preserves stronger treaty-based coherence, administrability and compatibility with single taxation, but weakens ability-to-pay proportionality where taxation operates on a gross basis. SDP/Digital PE provides the most conceptually robust reconstruction of benefit-linked nexus among the existing alternatives, although its multilateral coordination, evidentiary requirements and administration remain difficult. None of these existing approaches, considered in isolation, resolves all dimensions of the digital allocation problem.

Against these alternatives, the coordinated bifurcated allocation architecture developed in this dissertation emerges as the preferred systemic approach. It preserves the ALP for routine profits and other categories for which functional analysis and reliable comparability remain workable, while applying coordinated formula-based allocation specifically to digital residual profits for which those assumptions have reached their structural limits. The architecture therefore does not abandon the traditional international tax framework, but confines structural transformation to those categories of profit for which conventional attribution no longer produces a sufficiently coherent result. This differentiated treatment preserves doctrinal continuity where it remains defensible while allowing targeted transformation where unique intangibles, integrated digital functions and synergy rents render conventional comparability increasingly artificial.

The bifurcated architecture does not eliminate the trade-offs inherent in international tax reform. Its principal weakness lies in the additional administrative and institutional complexity required to distinguish routine from residual profits and to coordinate different allocation mechanisms across jurisdictions. This limitation should not be understated. Nevertheless, administrative simplicity cannot serve as the sole criterion for systemic reform where it is achieved at the expense of reciprocity, neutrality, ability-to-pay proportionality or compatibility with single taxation. The comparative evaluative matrix indicates that the additional complexity of the bifurcated architecture is outweighed by its stronger overall performance in principle fidelity, reciprocity preservation, ability-to-pay proportionality, systemic coherence, compatibility with single taxation, and stability under technological change. Its principal advantage therefore lies not in eliminating normative trade-offs, but in reconciling them more coherently than the alternative approaches examined in this dissertation.

The integration of digital economy characteristics such as scale without mass, network effects, and data as a value driver into international tax principles consequently requires selective incorporation grounded in demonstrable causal linkages between jurisdictional benefits and economic value generation. Proxies for user participation, sales or market engagement cannot themselves establish a principled entitlement to tax unless they are connected to verifiable enabling conditions or substantive economic contributions. Likewise, expansion of nexus cannot operate independently from profit attribution: recognising new forms of taxable presence without corresponding allocation rules risks creating systemic incoherence between entitlement and attribution. Sustainable

reform therefore requires coordinated calibration of nexus, profit allocation, relief mechanisms and distributive safeguards so that adaptation of one component does not undermine the normative logic of another.

Methodologically, the principle-driven approach adopted in this dissertation offers a transparent, replicable and interdisciplinary pathway for evaluating international tax reforms by integrating legal doctrine, economic theory, comparative law and accounting analysis within a common consistency-testing framework. The methodology makes it possible to distinguish operational adjustments from deeper doctrinal rupture by testing reforms simultaneously against principle fidelity, reciprocity, neutrality, ability-to-pay proportionality, administrability and verifiability, systemic coherence, compatibility with single taxation, and stability under technological change. At the same time, the research recognises the limits of such classifications. Political compromises embedded in source materials, restricted access to granular empirical data, jurisdictional heterogeneity, administrative capacity differences and technological volatility necessarily constrain the predictive precision of any principle-driven assessment. The classifications developed in this dissertation should therefore be understood as structured doctrinal and comparative judgments rather than mechanically determined outcomes.

Ultimately, this dissertation concludes that the appropriate response to digitalisation lies neither in preserving the traditional international tax architecture unchanged nor in replacing it wholesale. The more coherent approach is one of selective structural transformation: existing principles should be retained and adapted where their normative and functional assumptions remain sustainable, while coordinated structural change should be introduced where those assumptions can no longer accommodate the allocation of digital residual profits. The bifurcated allocation architecture developed in this research gives institutional expression to that conclusion. In doing so, the dissertation provides both a methodological framework for distinguishing adaptation from transformation and a substantive model for reconciling doctrinal continuity with the structural demands of digitalised value creation.

REFERENCES

- Abashidze, G. (2024) 'Unveiling the Digital Economy: How Digitization Transforms Economic Structures', *Innovative Economics and Management*, 11(1), pp. 17–26. <https://doi.org/10.46361/2449-2604.11.1.2024.17-26>.
- Allison, C. (2017) 'BEPS and the Power to Tax', in *Tax Sovereignty in the BEPS Era*. Kluwer Law International, pp. 3–28 https://law-store.wolterskluwer.com/s/product/tax-sovereignty-in-the-beps-era/01t0f00000J3aXgAAJ?srltid=AfmBOoqjpjXUQ_a315d4cL3jVU19MWKXZULDx6qDQpverA9rRKseNinj
- Andersson, K. (2018) 'Should We Use Value Creation or Destination as a Basis for Taxing Digital Businesses? – Krister Andersson's Comments on the 2018 Klaus Vogel Lecture Given by Professor Michael Devereux', *Bulletin for International Taxation*, 72, pp. 1–2. <https://doi.org/10.59403/2h0dq3k>
- Arnold, B. J. (2019) *International Tax Primer*. 4th edn. Alphen aan den Rijn: Wolters Kluwer
- Ash, E. and Omri, Y. M. (2019) 'The Making of International Tax Law: Empirical Evidence from Tax Treaties Text', *Florida Tax Review*, 24. UC Irvine School of Law Research Paper No. 2019-02. <https://ssrn.com/abstract=3314310>
- Aslam, A. & Shah, A. (2020) *Tec(h)tonic shifts: taxing the "digital economy"*, IMF Working Paper. Washington, DC: International Monetary Fund. <https://doi.org/10.5089/9781513545974.001>
- Auerbach, A.J., Devereux, M.P., Keen, M. & Vella, J. (2017) 'Destination-based cash flow taxation', Oxford University Centre for Business Taxation Working Paper 17/01. <https://oxfordtax.sbs.ox.ac.uk/files/wp17-01pdf>
- Ault, H. J. (2013) 'Some Reflections on the OECD and the Sources of International Tax Principles', *Tax Notes International*, p. 1195. <https://taxdialog.gr/wp-content/uploads/2024/09/reflections.pdf> Accessed: 8/3/2026

- Autio, E., Mudambi, R. and Yoo, Y. (2021) 'Digitalization and Globalization in a Turbulent World: Centrifugal and Centripetal Forces', *Global Strategy Journal*, 11, pp. 3–16. <https://doi.org/10.1002/gsj.1396>
- Avery Jones, J. F. (2012) 'Avoiding Double Taxation: Credit versus Exemption - The Origins', *Bulletin for International Taxation*, 66, pp. 11–13. <https://doi.org/10.59403/vwsm4t>
- Avi-Yonah, R.S. (1996) 'The structure of international taxation: a proposal for simplification', *SSRN Journal*, 74, pp. 1301–1359. <https://doi.org/10.2139/ssrn.3920264>
- Avi-Yonah, R.S. (1997) 'International taxation of electronic commerce', *Texas Law Review*, 52, pp. 507–555. <https://doi.org/10.2139/ssrn.3920270>
- Avi-Yonah, R. S. (2000) 'Commentary (Response to article by H. David Rosenbloom)', *Tax Law Review*, 53, pp. 167–175. <https://repository.law.umich.edu/articles/51/>
- Avi-Yonah, R.S. (2004) *International tax as international law*, SSRN Journal. <https://doi.org/10.2139/ssrn.516382>
- Avi-Yonah, R. S. (2005) 'All of a Piece Throughout: The Four Ages of U.S. International Taxation.' *Virginia Tax Rev.* 25, no. 2: 313-38. <https://repository.law.umich.edu/facarticles/43/>
- Avi-Yonah, R. S. (2007) *Tax Competition, Tax Arbitrage, and the International Tax Regime*. SSRN Journal, 61, pp. 130–138. <https://doi.org/10.2139/ssrn.955921>
- Avi-Yonah, R.S., Clausing, K.A. & Durst, M.C. (2009) 'Allocating business profits for tax purposes: a proposal to adopt a formulary profit split', *Florida Tax Review*, 9(5), pp. 497–553. <https://repository.law.umich.edu/facarticles/774/>
- Avi-Yonah, R. S. (2013) 'Who Invented the Single Tax Principle? An Essay on the History of US Treaty Policy', SSRN Journal. <https://doi.org/10.2139/ssrn.2226309>
- Avi-Yonah, R. S. (2019) 'Does customary international tax law exist?', *Law & Economics Working Papers*, p. 2. https://repository.law.umich.edu/law_econ_current/161/
- Avi-Yonah, R. S. and Lempert, E. (2023) 'The Historical Origins and Current Prospects of the Multilateral Tax Convention', *World Tax Journal*, 15. <https://doi.org/10.59403/1v56w0k>

- Avi-Yonah, R. (2023a) 'Tax In History: The 1923 Report and the International Tax Revolution', *Intertax*, 51, pp. 427–431. <https://doi.org/10.54648/TAXI2023039>
- Avi-Yonah, R. (2023b) 'Guest Editorial: Nothing New Under the Sun? The Historical Origins of the Benefits Principle', *Intertax*, 51, pp. 547–551, sec. 2. Available at: <https://doi.org/10.54648/TAXI2023050>
- Avi-Yonah, R. S. (2024) 'Should Digital Services Taxes Be Creditable?', *Tax Notes International* <https://www.taxnotes.com/featured-analysis/should-digital-services-taxes-be-creditable/2024/03/08/7j7s0>
- Baker, P. (2020) 'Some Thoughts on Jurisdiction and Nexus', in Maisto, G. (ed.) *Current Tax Treaty Issues: 50th Anniversary of the International Tax Group*. Amsterdam: IBFD, <https://doi.org/10.59403/3gfx4ac>
- Bauer, G., Fritz, J., Schanz, D. and Sixt, M. (2019). Corporate income tax challenges arising from digitalised business models. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3348544>
- Bal, A. (2018) '(Mis)guided by the value creation principle – can new concepts solve old problems?', *Bulletin for International Taxation*, 72. <https://doi.org/10.59403/1kvnj3x>
- Bammens, N. and De Broe, L. (2010) 'Treaty Shopping and Avoidance of Abuse', in Lang, M. (ed.) *Tax Treaties: Building Bridges between Law and Economics*. Amsterdam: IBFD [10.59403/34p3q6q001](https://doi.org/10.59403/34p3q6q001)
- Bianco, J. F. and Tomazela Santos, R. (2016) 'A Change of Paradigm in International Tax Law: Article 7 of Tax Treaties and the Need to Resolve the Source versus Residence Dichotomy', *Bulletin for International Taxation*, 70. Available at: <https://doi.org/10.59403/1g95w25>
- Blessing, P. (2020) 'Limitations on Treaty Access by or through Commercial Entities', in Maisto, G. (ed.) *Current Tax Treaty Issues: 50th Anniversary of the International Tax Group*. Amsterdam: IBFD, <https://doi.org/10.59403/3gfx4ac>
- Braumann, C. (2020) 'Taxes and Custom: Tax Treaties as Evidence for Customary International Law', *Journal of International Economic Law*, 23, pp. 747–769. <https://doi.org/10.1093/jiel/jgaa019>
- Becker, J. & Englisch, J. (2019) 'Taxing where value is created: what's user involvement got to do with it?', *Intertax*, 47, pp. 161–171. <https://doi.org/10.54648/TAXI2019015>

- Becker, J., Englisch, J. & Schanz, D. (2019) 'Re-allocation of taxing rights for big data business models', SSRN Journal. <https://doi.org/10.2139/ssrn.3433715>
- Bentil, J. (2018) 'Situating the International Tax System Within Public International Law', *Georgetown Journal of International Law*, 49, pp. 1219–1270. <https://ssrn.com/abstract=3786024>
- Blum, D.W. (2015) 'Permanent establishments and action 1 on the digital economy of the OECD base erosion and profit shifting initiative – the nexus criterion redefined?', *Bulletin for International Taxation*, 69. Available at: <https://doi.org/10.59403/2dbvjz3>
- Brauner, Y. (2016) *Treaties in the Aftermath of BEPS*. SSRN Journal, 41, pp. 974–1041. <https://doi.org/10.2139/ssrn.2744712>
- Brauner, Y. & Báez Moreno, A. (2015) 'Withholding taxes in the service of BEPS Action 1: address the tax challenges of the digital economy', *SSRN Journal*. <https://doi.org/10.2139/ssrn.2586202>
- Brauner, Y. (2003) 'An International Tax Regime in Crystallization', *Tax Law Review*, 56, pp. 259–328. <https://scholarship.law.ufl.edu/facultypub/9/>
- Brown, F. B. (2011) 'An Equity-Based, Multilateral Approach for Sourcing Income Among Nations', *Florida Tax Review*, 11(7). <https://ssrn.com/abstract=1805065>
- Buriak, S. (2024) International taxation of global value networks. IBFD Doctoral Series. Amsterdam: IBFD. <https://doi.org/10.59403/2seanhf>
- Burns, L. and Krever, R. (1998) 'Taxation of Income from Business and Investment', in Thuronyi, V. (ed.) *Tax Law Design and Drafting, Volume 2*. Washington, D.C.: International Monetary Fund. <https://doi.org/10.5089/9781557756336.071>
- Calijuri, V. (2022) 'Is big data that simple? An analysis of the transfer pricing aspects of value creation of data in the digitalized economy', *International Tax Studies*, 5. <https://doi.org/10.59403/1wcn33p>
- Chand, V. (2019) 'Allocation of taxing rights in the digitalized economy: assessment of potential policy solutions and recommendation for a simplified residual profit split method', *Intertax*, 47, pp. 1023–1041. <https://doi.org/10.54648/TAXI2019106>
- Chen, Y. (2020) 'Improving market performance in the digital economy', *China Economic Review*, 62, 101482. <https://doi.org/10.1016/j.chieco.2020.101482>

- Christians, A. (2018). Taxing according to value creation. <https://doi.org/10.13140/RG.2.2.36331.59682>
- Christians, A. (2016) 'BEPS and the New International Tax Order', *Brigham Young University Law Review*, 2016, pp. 1604–1647. <https://digitalcommons.law.byu.edu/lawreview/vol2016/iss6/4/>
- Christians, A. and van Apeldoorn, L. (2018) 'Taxing Income Where Value Is Created', *Florida Tax Review*, 22(1), pp. 1-35. Available at: <https://ssrn.com/abstract=3132538>
- Coca-Cola Co. v. Commissioner*, 155 T.C. No. 10 (2020).
- Cockfield, A. J. (2014) 'BEPS and Global Digital Taxation', *Tax Notes International*, 75(11), p. 934. <https://www.taxnotes.com/tax-notes-international/base-erosion-and-profit-shifting-beps/beps-and-global-digital-taxation/2014/09/15/slf7>
- Collier, R. (2023). The evolution of thinking on tax and the digitalization of business 1996–2018. *World Tax Journal*, 15, pp. 145–204. <https://doi.org/10.59403/2hy4gec>
- Cugusi, I. (2020). Prospects for taxation of the digital economy between “tax law and new economy” and “tax law of the new economy”. *World Tax Journal*, 12, pp. 763–797. <https://doi.org/10.59403/3jq87rb>
- Cui, W. (2019) 'The digital services tax: a conceptual defense', *Tax Law Review*, 73(1), pp. 69–111. <https://heinonline.org/HOL/Page?handle=hein.journals/taxlr73&id=75&collection=journals&index=>
- Cui, W. (2021) *New Puzzles in International Tax Agreements*. SSRN Journal, 75, pp. 201–269, p. 28. <https://doi.org/10.2139/ssrn.3877854>
- Dagan, T. (2018) *International Tax Policy: Between Competition and Cooperation*. Cambridge: Cambridge University Press, Cambridge. <https://doi.org/10.1017/9781316282496>
- Das, R.R. (2020) 'The concept of value creation: is it relevant for the allocation of taxing rights?', *Bulletin for International Taxation*, 74. <https://doi.org/10.59403/1g3p4gm>
- De Lillo, F. (2018) 'In Search of Single Taxation', in Wheeler, J. (ed.) *Single Taxation?* Amsterdam: IBFD, sec. 1.2.2.2. <https://doi.org/10.59403/cq3zwc>

- Dean, S. (2021) *A Constitutional Moment in Cross-Border Taxation*. *Journal on Financing for Development*, Brooklyn Law School Legal Studies 1. https://scholarship.law.bu.edu/faculty_scholarship/3398
- Devereux, M. P. & de la Feria, R. (2014) 'Designing and Implementing a Destination-Based Corporate Tax', *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3481360>
- Devereux, M. P. & Vella, J. (2018). Value creation as the fundamental principle of the international corporate tax system. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3275759>
- Dietsch, P. and Rixen, T. (2014) 'Tax Competition and Global Background Justice', *Journal of Political Philosophy*, 22, pp. 150–177. <https://doi.org/10.1111/j.1467-9760.2012.00419.x>
- Douvier, P.-J. and Ankri-Avy, C. (2023) 'Digital Services Taxes: French Law Approach and OECD's Commitments', *International Transfer Pricing Journal*, 30. <https://doi.org/10.59403/2jk3dyt>
- Durst, M. C. (2014) 'The Tax Policy Outlook for Developing Countries: Reflections on International Formulary Apportionment', *ICTD Working Paper* 32 <https://hdl.handle.net/20.500.12413/11181>
- Eden, L. (2020) 'Insight: David and the three Goliaths – defending the arm's-length principle'. Available at: <https://voxprof.com/eden/Publications/EDEN-DAVID-3-GOLIATHS.pdf>
- Eggert, W., Itaya, J. and Winner, H. (2010) 'Tax Competition and International Tax Agreements: Lessons from Economic Theory', in Lang, M. (ed.) *Tax Treaties: Building Bridges between Law and Economics*. Amsterdam: IBFD [10.59403/34p3q6q001](https://doi.org/10.59403/34p3q6q001)
- Elliffe, C. (2020) 'International tax frameworks: assessing the 2020s compromise from the perspective of taxing the digital economy in the Great Lockdown', *Bulletin for International Taxation*, 74. <https://doi.org/10.59403/3qpc7ms>
- Emanuele, V. (2025) 'The Value Creation Principle: Delving into the Past to Understand Its Future Role in the International Tax Reform', *Intertax*, 53, pp. 267–283. <https://doi.org/10.54648/TAXI2025018>
- Escribano, E. (2019) *Jurisdiction to tax corporate income pursuant to the presumptive benefit principle: a critical analysis of structural paradigms underlying corporate income*

taxation and proposals for reform. Series on International Taxation. Alphen aan den Rijn: Kluwer Law International. <https://law-store.wolterskluwer.com/s/product/jurisdiction-tax-corp-inc-under-presumptive-benefit-princ-critical-analysis/01t0f00000NXyFsAAL?srltid=AfmBOooq4mIJ4zDjTZS1wuY8a7cxMZrWMiDhWvvc-5T3d-9zgMMmF92X>

European Commission (2018) *Proposal for a Council Directive laying down rules relating to the corporate taxation of a significant digital presence*, COM(2018) 147 final,

Fjord Kjærsgaard, L. and Koerver Schmidt, P. (2018) 'Allocation of the Right to Tax Income from Digital Intermediary Platforms – Challenges and Possibilities for Taxation in the Jurisdiction of the User', *Nordic Journal of Commercial Law*, 27, pp. 1–27. <https://doi.org/10.5278/OJS.NJCL.V0I1.2488>

Gadžo, S. (2018a) *Nexus requirements for taxation of non-residents' business income: a normative evaluation in the context of the global economy*. IBFD Doctoral Series. Amsterdam: IBFD. <https://doi.org/10.59403/emv4w5>

Gadžo, S. (2018b) 'The Principle of Nexus or Genuine Link as a Keystone of International Income Tax Law: A Reappraisal', *Intertax*, 46, pp. 194–209. <https://doi.org/10.54648/TAXI2018022>

Gadžo, S. (2022) 'The Market as a Tax Nexus: The Old, the New and the Unknown', in Traversa, E. (ed.) *Tax Nexus and Jurisdiction in International and EU Law*. Amsterdam: IBFD. <https://doi.org/10.59403/3r1d3ah>

Garbarino, C. (2009) 'An Evolutionary Approach to Comparative Taxation: Methods and Agenda for Research', *The American Journal of Comparative Law*, 57(3), pp. 677–709. Available at: <https://www.jstor.org/stable/25652660>

Gawer, A. (2022) 'Digital platforms and ecosystems: remarks on the dominant organizational forms of the digital age', *Innovation*, 24, pp. 110–124. <https://doi.org/10.1080/14479338.2021.1965888>

Genschel, P. & Rixen, T. (2015) 'Settling and Unsettling the Transnational Legal Order of International Taxation', in Halliday, T. C. & Shaffer, G. (eds.) *Transnational Legal Orders*. Cambridge: Cambridge University Press, pp. 154–184. <https://doi.org/10.1017/CBO9781107707092.006>

- Gil García, E. (2019) *The Single Tax Principle: Fiction or Reality in a Non-Comprehensive International Tax Regime?* *World Tax Journal*, 11, pp. 305–346. <https://doi.org/10.59403/38n9675>
- Goradia, S. (2020) ‘Taxation of Services’, in Maisto, G. (ed.) *Current Tax Treaty Issues: 50th Anniversary of the International Tax Group*. Amsterdam: IBFD. Available at: <https://doi.org/10.59403/3gfx4ac>
- Gosseries, A. (2005) ‘The Myth of Ownership: Taxes and Justice’, *Disputatio*, 1, pp. 271–277. <https://doi.org/10.2478/disp-2005-0013>
- Graetz, M. J. and O’Hear, M. M. (1997) ‘The “Original Intent” of U.S. International Taxation’, *Duke Law Journal*, 46, pp. 1021–1109. <https://doi.org/10.2307/1372916>.
- Graetz, M.J. (2001a) ‘Taxing international income: inadequate principles, outdated concepts, and unsatisfactory policies’, *Brooklyn Journal of International Law*, 26, p. 1357. https://scholarship.law.columbia.edu/faculty_scholarship/3481
- Graetz, M. J. (2001b) ‘The David R. Tillinghast Lecture: Taxing International Income: Inadequate Principles, Outdated Concepts, and Unsatisfactory Policies’, *Tax Law Review*, 54, pp. 261–. https://scholarship.law.columbia.edu/faculty_scholarship/391.
- Greil, S. (2019) ‘The arm’s length principle in the 21st century – alive and kicking?’, SSRN Journal. Available at: <https://doi.org/10.2139/ssrn.3379092>
- Grinberg, I. (2018a) ‘User participation in value creation’, *Georgetown Law Faculty Publications and Other Works*, 2102. <https://scholarship.law.georgetown.edu/facpub/2102>
- Grinberg, I. (2018b) ‘International Taxation in an Era of Digital Disruption: Analyzing the Current Debate’, *SSRN Journal*. <http://dx.doi.org/10.2139/ssrn.3275737>
- Harpaz, A. (2021). Taxation of the digital economy: adapting a twentieth-century tax system to a twenty-first-century economy. *Yale Journal of International Law*, 46, pp. 58–101. <https://openyls.law.yale.edu/entities/publication/181d5e96-d76d-461a-9292-9102a734d933>
- Hattingh, J. (2013) ‘On the Origins of Model Tax Conventions: 19th-Century German Tax Treaties and Laws Concerned with the Avoidance of Double Taxation’, in *Studies in the History of Tax Law*, Volume 6. Hart Publishing

<https://www.bloomsbury.com/us/studies-in-the-history-of-tax-law-volume-6-9781849464802/>

Hendriyetty, N., Evans, C., Kim, C.J., Taghizadeh-Hesary, F. (eds.) (2023) *Taxation in the digital economy: new models in Asia and the Pacific*. Routledge Studies in Development Economics. Taylor & Francis. <https://www.routledge.com/Taxation-in-the-Digital-Economy-New-Models-in-Asia-and-the-Pacific/Hendriyetty-Evans-Kim-Taghizadeh-Hesary/p/book/9781032051048>

Hey, J. (2018). “Taxation where value is created” and the OECD/G20 base erosion and profit shifting initiative. *Bulletin for International Taxation*, 72. <https://doi.org/10.59403/12nc9gz>

Holmes, S. (2000) *The Cost of Rights: Why Liberty Depends on Taxes*, 1st edn. New York: W. W. Norton & Company. <https://doi.org/10.5860/choice.37-2228>

Hongler, P. & Pistone, P. (2015) ‘Blueprints for a new PE nexus to tax business income in the era of the digital economy’, *SSRN Journal*. <https://doi.org/10.2139/ssrn.2591829>

Hongler, P. (2019) *Justice in international tax law: a normative review of the international tax regime*. Amsterdam: IBFD. <https://doi.org/10.59403/1ss7gq>

Horner, F. M. (2001) ‘Do We Need an International Tax Organization?’, *Tax Notes International*, 24(2), pp. 179–187.

IMF (2019) *Corporate taxation in the global economy*. Washington, DC: International Monetary Fund. <https://www.imf.org/-/media/files/publications/pp/2019/ppea2019007.pdf>

Jogarajan, S. (2013) ‘Stamp, Seligman and the Drafting of the 1923 Experts’ Report on Double Taxation’, *World Tax Journal*, 5, pp. 368–392. <https://doi.org/10.59403/szqg31>

Jogarajan, S. (2018) *Double Taxation and the League of Nations*, 1st ed. Cambridge: Cambridge University Press. <https://doi.org/10.1017/9781108368865>

Jogarajan, S. (2025) ‘The “Great Powers” and the Development of the 1928 Model Tax Treaties’, *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.5147128>

Jong, S.D., Neuvel, W. and Uceda, Á. (2018) ‘Dealing with Data in a Digital Economy’, *International Transfer Pricing Journal*, 25, pp. 55–61. <https://doi.org/10.59403/16j5f6n>

- Kahin, B. (2016) *Digitization and the Digital Economy*. SSRN Journal. Available at: <https://doi.org/10.2139/ssrn.2782906>
- Kaufman, N. (1998) 'Fairness and the taxation of international income', *Law and Policy in International Business*, 29, pp. 145–185. <https://www.semanticscholar.org/paper/Fairness-and-the-Taxation-of-International-Income-Kaufman/8e512508f4ef891d698ce2686600fcc2b3b45244>
- Kemmeren, E. C. C. M. (2010) 'Legal and Economic Principles Support an Origin and Import Neutrality-Based over a Residence and Export Neutrality-Based Tax Treaty Policy', in Lang, M. (ed.) *Tax Treaties: Building Bridges between Law and Economics*. Amsterdam: IBFD [10.59403/34p3q6q001](https://doi.org/10.59403/34p3q6q001)
- Kobetsky, M. (2011). *International Taxation of Permanent Establishments: Principles and Policy*. Cambridge: Cambridge University Press. <https://doi.org/10.1017/CBO9780511977855>
- Koerver, P. S. and Louise, B. F. (2018) 'Allocation of the Right to Tax Income from Digital Intermediary Platforms – Challenges and Possibilities for Taxation in the Jurisdiction of the User', *CBS LAW Research Paper* No. 19-03, pp. 146–172 <https://doi.org/10.5278/ojs.njcl.v0i1.2488>
- Kofler, G., Mayr, G. and Schlager, C. (2017) 'Taxation of the Digital Economy: “Quick Fixes” or Long-Term Solution?', *European Taxation*, 57. <https://doi.org/10.59403/tyn0ed>
- Kokott, J. (2022) 'Public International Law and Taxation: Nexus and Territoriality', in Traversa, E. (ed.) *Tax Nexus and Jurisdiction in International and EU Law*. Amsterdam: IBFD, <https://doi.org/10.59403/3r1d3ah>
- Kysar, R.M. (2020) 'Value creation: a dimming lodestar for international taxation?', *Bulletin for International Taxation*, 74. <https://doi.org/10.59403/3093ffe>
- Lang, M. (2010) 'The Relationship between Double Taxation Treaties and Foreign Direct Investment', in Lang, M. (ed.) *Tax Treaties: Building Bridges between Law and Economics*. Amsterdam: IBFD [10.59403/34p3q6q001](https://doi.org/10.59403/34p3q6q001)
- League of Nations (1923) *Report on Double Taxation submitted to the Financial Committee, Economic and Financial Commission Report by the Experts on Double Taxation, Document E.F.S. 73 F. 19.*

League of Nations (1927) *Report Presented by the Committee of Technical Experts on Double Taxation and Tax Evasion*, Doc. C.216.M.85 II

League of Nations Economic and Financial Commission (1928) *Report on Double Taxation and Tax Evasion*, Document C.562.M.178.1928.II

League of Nations Fiscal Committee (1946) *London and Mexico Model Tax Conventions, Commentary and Text*, C.88.M.88.1946.II.A

Lennard, M. (2009) 'The UN Model Tax Convention as Compared with the OECD Model Tax Convention – Current Points of Difference and Recent Developments', *Asia-Pacific Tax Bulletin*, 15. <https://doi.org/10.59403/2ds8pmt>

Li, J., Bao, N. J. and Li, H. C. (2019) 'Value Creation: A Constant Principle in a Changing World of International Taxation', *CTJ*, 67, pp. 1107–1134. <https://doi.org/10.32721/ctj.2019.67.4.sym.li>

Lindsay, K. I. (2019) 'Benefits Theories of Tax Fairness', in Harris, P. & De Cogan, D. (eds.) *Studies in the History of Tax Law*. Hart Publishing, pp. 93–122. <https://doi.org/10.5040/9781509924967>

Magalhães, T.D. (2018) 'What is really wrong with global tax governance and how to properly fix it', *World Tax Journal*, 10. <https://doi.org/10.59403/d1ykhw>

Mason, R. (2016) 'Citizenship Taxation', *Southern California Law Review*, 89(1) https://southerncalifornialawreview.com/wp-content/uploads/2018/01/89_169.pdf

Mariy, O. & Van de Vijver, A. (2022) Fundamental tax principles and the role of market states in the digitalized economy: pillar one proposal. In: E. Traversa (ed.) *Tax nexus and jurisdiction in international and EU law*. Amsterdam: IBFD, GREIT Series. <https://doi.org/10.59403/3r1d3ah>

Martín Jiménez, A.J. (2020) 'Value creation: a guiding light for the interpretation of tax treaties?', *Bulletin for International Taxation*, 74. <https://doi.org/10.59403/30z1tcy>

Mason, R. (2020) 'The Transformation of International Tax', *American Journal of International Law*, 114, pp. 353–402. Available at: <https://doi.org/10.1017/ajil.2020.33>

Mehta, A. (Amar) (2016) "'Equalization Levy" Proposal in Indian Finance Bill 2016: Is It Legitimate Tax Policy or an Attempt of Treaty Dodging?', *Asia-Pacific Tax Bulletin*, 22. <https://doi.org/10.59403/2dz6sry>

- Merkouris, P., Kammerhofer, J. and Arajärvi, N. (eds) (2022) *The Theory, Practice, and Interpretation of Customary International Law*, 1st ed. Cambridge: Cambridge University Press. <https://doi.org/10.1017/9781009025416>
- Michaels, R. (2006) 'The Functional Method of Comparative Law', in Reimann, M. & Zimmermann, R. (eds.) *The Oxford Handbook of Comparative Law*. Oxford: Oxford University Press, pp. 339–382. Available at: https://scholarship.law.duke.edu/faculty_scholarship/1249
- Michel, B. (2025) 'The 2025 Update of the UN Model Tax Convention', *SSRN Journal*, pp. 14–17. <https://doi.org/10.2139/ssrn.5368050>.
- Miller, A. (2015) *Taxing Cross-Border Services: Current Worldwide Practices and the Need for Change*. Amsterdam: IBFD <https://shop.ibfd.org/book/taxing-cross-border-services-current-worldwide-practices-and-need-change>
- Mlčúchová, M. (2022) 'A Review of Platform Business Models', *Scientific Papers of the University of Pardubice, Series D*, 30, [online] Available at: <https://doi.org/10.46585/sp30011454>
- Monsenego, J. (2012) *Taxation of Foreign Business Income within the European Internal Market*. Amsterdam: IBFD, sec 2.3.2. <https://doi.org/10.59403/388b6g8>
- Monsenego, J. (2022) 'Nexus for Transfer Pricing Purposes Before and After BEPS 2.0: From Form to Substance, and Back to Form?', in Traversa, E. (ed.) *Tax Nexus and Jurisdiction in International and EU Law*. Amsterdam: IBFD <https://doi.org/10.59403/3r1d3ah>
- Morse, S.C. (2018) 'Value creation: a standard in search of a process', *Bulletin for International Taxation*, 72. <https://doi.org/10.59403/3dxa2wh>
- Musgrave, R.A. & Musgrave, P.B. (1972) 'Inter-nation equity', in Bird, R. & Head, J. (eds.) *Modern fiscal issues*. Toronto: University of Toronto Press, pp. 63–85. <https://doi.org/10.3138/9781442631984-006>
- Musgrave, R. A., Musgrave, P. B. (1989) *Public Finance in Theory and Practice*. 5th edn. New York, NY: McGraw-Hill, McGraw-Hill International Editions, Finance Series. https://discovery.hw.ac.uk/primo-explore/fulldisplay/44hwa_alma2129584920003206/44HWA_V1

- Muster, A. (2023) 'The First Step to the International Tax Regime in 1923 – Edwin R. A. Seligman, New York, and the League of Nations : Ramblings in New York City and Lake Placid, Streifzüge in Heidelberg, Flâneries à Genève et à Paris', *Zurich Open Repository*, 51, pp. 547–551. <https://doi.org/10.5167/UZH-251635>
- Nikolakakis, A. (2020) 'A rose by any other name would smell as sweet; or would it?', in Maisto, G. (ed.) *Current Tax Treaty Issues: 50th Anniversary of the International Tax Group*. Amsterdam: IBFD, <https://doi.org/10.59403/3gfx4ac>
- Norr, M. (1962) 'Jurisdiction to Tax and International Income', *NYU Tax Law Review*, 4, pp. 431–462. <https://doi.org/10.1002/tie.5060040412>
- Obuoforibo, B.R. (2019) 'A Critical Examination of the Proposed UK Digital Services Tax', *European Taxation*, 59. <https://doi.org/10.59403/362wz29>
- OECD (1963) *Draft Double Taxation Convention on Income and Capital 1963*. Paris: OECD Publishing. <https://doi.org/10.1787/9789264073241-en>
- OECD (1977) *Model Tax Convention on Income and on Capital*. Paris: OECD Publishing.
- OECD (1998) *Harmful Tax Competition: An Emerging Global Issue*. Paris: OECD Publishing. <https://doi.org/10.1787/9789264162945-en>
- OECD (2003) *Are the Current Treaty Rules for Taxing Business Profits Appropriate for E-Commerce?* Paris: OECD Publishing. <https://web-archive-storage.oecd.org/aemint-web-archive-prod/web-archive/3e/3ea28b96b77c39fc7847ebfd6fb64fe9e113cc8a1da8144ec337d02078004c1e.pdf>
- OECD (2010) *Report on the Attribution of Profits to Permanent Establishments*. Paris: OECD Publishing <https://www.financnisprava.cz/assets/cs/prilohy/ms-prime-dane/45689524.pdf>
- OECD (2013a) *Addressing Base Erosion and Profit Shifting*. Paris: OECD Publishing. Available at: <https://doi.org/10.1787/9789264192744-en>
- OECD (2013b) *Action Plan on Base Erosion and Profit Shifting*. Paris: Organisation for Economic Co-operation and Development https://www.oecd.org/content/dam/oecd/en/publications/reports/2013/07/action-plan-on-base-erosion-and-profit-shifting_g1g30e67/9789264202719-en.pdf

OECD (2015a) *Addressing the tax challenges of the digital economy, Action 1 – 2015 final report*. OECD/G20 Base Erosion and Profit Shifting Project. Paris: OECD Publishing. <https://doi.org/10.1787/9789264241046-en>

OECD (2015b) *Preventing the Artificial Avoidance of Permanent Establishment Status, Action 7 – 2015 Final Report*, OECD/G20 Base Erosion and Profit Shifting Project. Paris: OECD Publishing. <https://doi.org/10.1787/9789264241220-en>

OECD (2015c) *Aligning Transfer Pricing Outcomes with Value Creation, Actions 8–10 – 2015 Final Reports*. OECD/G20 Base Erosion and Profit Shifting Project. Paris: OECD Publishing. <https://doi.org/10.1787/9789264241244-en>.

OECD (2015d) *Developing a Multilateral Instrument to Modify Bilateral Tax Treaties, Action 15 - 2015 Final Report*, OECD/G20 Base Erosion and Profit Shifting Project. Paris: OECD. <https://doi.org/10.1787/9789264241688-en>

OECD (2015e) *Preventing the Granting of Treaty Benefits in Inappropriate Circumstances, Action 6 - 2015 Final Report*, OECD/G20 Base Erosion and Profit Shifting Project. OECD. <https://doi.org/10.1787/9789264241695-en>

OECD (2016) *BEPS Project Explanatory Statement: 2015 Final Reports*. Paris: Organisation for Economic Co-operation and Development, para. 11. https://www.oecd-ilibrary.org/taxation/beps-project-explanatory-statement_9789264263437-en.

OECD (2017) *Model Tax Convention on Income and on Capital: Condensed Version 2017*. Paris: OECD. https://doi.org/10.1787/mtc_cond-2017-en

OECD (2018). *Tax Challenges Arising from Digitalisation – Interim Report 2018: Inclusive Framework on BEPS*. Paris: OECD Publishing. https://www.oecd.org/en/publications/tax-challenges-arising-from-digitalisation-interim-report_9789264293083-en.html

OECD (2019a) Public consultation document: Secretariat proposal for a “Unified Approach” under Pillar One. Paris: OECD Publishing. <https://assets.kpmg.com/content/dam/kpmg/il/Publications/PDF/PILAR1.pdf>

OECD (2019b) *Programme of work to develop a consensus solution to the tax challenges arising from the digitalisation of the economy: inclusive framework on BEPS*. Paris: OECD Publishing. <https://doi.org/10.1787/87061b68-en>

OECD (2019c) *Addressing the tax challenges of the digitalisation of the economy – public consultation document*. Paris: OECD.

OECD (2020a) Statement by the OECD/G20 Inclusive Framework on BEPS on the two-pillar approach to address the tax challenges arising from the digitalisation of the economy. Paris: OECD Publishing.
<https://www.oecd.org/content/dam/oecd/en/topics/policy-issues/beps/statement-by-the-oecd-g20-inclusive-framework-on-beps-january-2020.pdf>

OECD (2020b) Tax challenges arising from digitalisation – Report on Pillar One Blueprint: Inclusive framework on BEPS. Paris: OECD Publishing.
https://www.oecd.org/content/dam/oecd/en/publications/reports/2020/10/tax-challenges-arising-from-digitalisation-report-on-pillar-one-blueprint_6034ca99/beba0634-en.pdf

OECD (2020c) *Tax challenges arising from digitalisation – economic impact assessment: inclusive framework on BEPS*. OECD/G20 Base Erosion and Profit Shifting Project. Paris: OECD Publishing. <https://doi.org/10.1787/0e3cc2d4-en>

OECD (2020d) *Tax challenges arising from digitalisation – report on Pillar Two blueprint: inclusive framework on BEPS*. OECD/G20 Base Erosion and Profit Shifting Project. Paris: OECD Publishing. <https://doi.org/10.1787/abb4c3d1-en>

OECD (2021) *Tax challenges arising from digitalisation of the economy – global anti-base erosion model rules (Pillar Two): inclusive framework on BEPS*. OECD/G20 Base Erosion and Profit Shifting Project. Paris: OECD Publishing.
<https://doi.org/10.1787/782bac33-en>

OECD (2022a) *OECD transfer pricing guidelines for multinational enterprises and tax administrations* 2022. Paris: OECD Publishing.
https://www.oecd.org/content/dam/oecd/en/publications/reports/2022/01/oecd-transfer-pricing-guidelines-for-multinational-enterprises-and-tax-administrations-2022_57104b3a/0e655865-en.pdf

OECD (2022b) *Progress Report on Amount A of Pillar One, OECD/G20 Base Erosion and Profit Shifting Project*. Paris: OECD Publishing
https://www.oecd.org/content/dam/oecd/en/publications/reports/2022/07/progress-report-on-amount-a-of-pillar-one_bb3f2953/0afb5c80-en.pdf

OECD (2023a). *The Multilateral Convention to Implement Amount A of Pillar One – Two-Pillar Solution to Address the Tax Challenges Arising from the Digitalization of the Economy*. Paris: OECD Publishing.

<https://www.oecd.org/content/dam/oecd/en/topics/policy-issues/cross-border-and-international-tax/multilateral-convention-to-implement-amount-a-of-pillar-one.pdf>

OECD (2023b) *Tax Challenges Arising from the Digitalisation of the Economy – GloBE Information Return (Pillar Two)*, OECD/G20 Base Erosion and Profit Shifting Project. Paris: OECD.

https://www.oecd.org/content/dam/oecd/en/publications/reports/2023/07/tax-challenges-arising-from-the-digitalisation-of-the-economy-globe-information-return-pillar-two_10977da1/91a49ec3-en.pdf

OECD (2024) *Pillar One – Amount B: Inclusive Framework on BEPS*. OECD/G20 Base Erosion and Profit Shifting Project. Paris: OECD Publishing. <https://doi.org/10.1787/21ea168b-en>

Oguttu, A.W. (2022) ‘The parallel rise of multinational enterprises and the historical development of international tax rules – introspection for the new rules to tax the digital economy’, *Bulletin for International Taxation*, 76. <https://doi.org/10.59403/2sa32z9>

Olbert, M. & Spengel, C. (2017) ‘International taxation in the digital economy: challenge accepted?’, *World Tax Journal*, 9, pp. 3–46. Available at: <https://doi.org/10.59403/2y70g6v>

Örücü, A. E. (2012) ‘Methodology of Comparative Law’, in Smits, J. M. (ed.) *Elgar Encyclopedia of Comparative Law*. 2nd edn. Cheltenham: Edward Elgar Publishing. <https://doi.org/10.4337/9781781006108.00051>

Parada, L. (2021) ‘Full Taxation: The Single Tax Emperor’s New Clothes’, *Florida Tax Review*, 24(2). <https://scholarship.law.ufl.edu/ftrev/vol24/iss2/8>

Pascucci, F. (2022) ‘The (re)allocation of taxing rights following the 2021 consensus on Pillar Two blueprint: an examination of its causes and effects’, in Traversa, E. (ed.) *Tax nexus and jurisdiction in international and EU law*. Amsterdam: IBFD <https://doi.org/10.59403/3r1d3ah>

- Petruzzi, R. & Buriak, S. (2018) 'Addressing the tax challenges of the digitalization of the economy – a possible answer in the proper application of the transfer pricing rules?', *Bulletin for International Taxation*, 72. Available at: <https://doi.org/10.59403/1gh0kxn>
- Pinto, D. (2006) *The need to reconceptualize the permanent establishment threshold*, *Bulletin for International Taxation*, 60(7), pp. 266–279. <https://perma.cc/WR9F-LUEP>
- Pistone, P. (2010) 'Tax Treaties with Developing Countries: A Plea for New Allocation Rules and a Combined Legal and Economic Approach', in Lang, M. (ed.) *Tax Treaties: Building Bridges between Law and Economics*. Amsterdam: IBFD [10.59403/34p3q6q001](https://doi.org/10.59403/34p3q6q001)
- Rawls, J. (2022) *A Theory of Justice: Revised Edition*. Cambridge, MA: Harvard University Press.
- Riccardi, A. (2021) 'Implementing a (global?) minimum corporate income tax: An assessment from the perspective of developing countries', *Nordic Journal of Law and Social Research*, 4. <https://doi.org/10.36368/njolas.v4i01.188>
- Richter, W. (2021) 'Aligning profit taxation with value creation', *World Tax Journal*, 13. <https://doi.org/10.59403/hnpp38>
- Ring, D. M. (2007) 'International Tax Relations: Theory and Implications', *Tax Law Review*, 60-154. <https://lira.bc.edu/works/publication-article/7vwa1-2x119>
- Ring, D. M. (2010) 'Who is Making International Tax Policy? International Organizations as Power Players in a High Stakes World', *Fordham International Law Journal*, 33, pp. 101–168. <https://ssrn.com/abstract=1542646>
- Rizzo, M. J., Epstein, R. A. and Schmidt, D. (2022) 'Justifying Taxation', *Social Philosophy and Policy*, 39, pp. 1–10. <https://doi.org/10.1017/S0265052523000080>
- Rosenbloom, H. D. (1999) 'The David R. Tillinghast Lecture: International Tax Arbitrage and the International Tax System', *Tax Law Review*, 53, pp. 137–. Available at: https://heinonline.org/hol-cgi-bin/get_pdf.cgi?handle=hein.journals/taxlr53§ion=13
- Ruiz Colmenares, M. (2023) *The Importance of Principles in an International Tax Setting*. *Bulletin for International Taxation*, 77. <https://doi.org/10.59403/35fswfy>
- Santos, R.T. and Rocha, S.A. (2017). Tax sovereignty and digital economy in post-BEPS times. In: Santos, R.T. and Christians, A. (eds.) *Tax Sovereignty in the BEPS Era*. Alphen

aan den Rijn: Kluwer Law International, pp. 29–46. https://law-store.wolterskluwer.com/s/product/tax-sovereignty-in-the-beps-era/01t0f00000J3aXgAAJ?srsltid=AfmBOoqjpjXUQ_a315d4cL3jVU19MWKXZULDx6qDQpverA9rRKseNinj

Savitskiy, A. (2021) ‘The First Tax Treaties: In Search of Origins’, *Intertax*, 49, pp. 569–585, pp. 574–577. <https://doi.org/10.54648/TAXI2021058>

Schaffner, J. (2013) *How fixed is a permanent establishment?* Alphen aan den Rijn: Kluwer Law International <https://law-store.wolterskluwer.com/s/product/how-fixed-is-a-permanent-establishment/01t0f00000J3aRvAAJ?srsltid=AfmBOoopMC52N8bzZJGRkQRtoiuRSQtLUjnJdUbrXoIZelg4frm2whxP>

Schreiber, U. & Fell, L.M. (2017) ‘International profit allocation, intangibles and sales-based transactional profit split’, *World Tax Journal*, 9. <https://doi.org/10.59403/30gfd4y>

Schreiber, U., Simons, D., Greil, S. & Lagarden, M. (2020) ‘Why the arm’s length principle should be maintained’, *International Transfer Pricing Journal*, 27, <https://doi.org/10.59403/23b0ct>

Schoueri, L. E. and Galendi Júnior, R. A. (2017) ‘Justification and Implementation of the International Allocation of Taxing Rights: Can We Take One Thing at a Time?’, in *Tax Sovereignty in the BEPS Era*. Alphen aan den Rijn: Kluwer Law International https://law-store.wolterskluwer.com/s/product/tax-sovereignty-in-the-beps-era/01t0f00000J3aXgAAJ?srsltid=AfmBOoqjpjXUQ_a315d4cL3jVU19MWKXZULDx6qDQpverA9rRKseNinj

Schön, W. (2009) ‘International tax coordination for a second-best world (Part I)’, *World Tax Journal*, 1, pp. 67–114. <https://doi.org/10.59403/hzk01m>

Schön, W. (2018) ‘Ten questions about why and how to tax the digitalized economy’, *Bulletin for International Taxation*, 72. <https://doi.org/10.59403/9gs0cs>

Schön, W. (2021) *Is there Finally an International Tax System?* SSRN Journal. <https://doi.org/10.2139/ssrn.3922687>

Schwarz, J. (2018) ‘Value Creation: Old Wine in New Bottles or New Wine in Old Bottles?’, *Kluwer International Tax Blog*.

<https://legalblogs.wolterskluwer.com/international-tax-law-blog/value-creation-old-wine-in-new-bottles-or-new-wine-in-old-bottles/>

Screpante, M.S. (2021) ‘Pillar One and Pillar Two: a confirmation of the formulaic apportionment and anti-avoidance approaches of the value creation functional DEMPE formula standard?’, *International Transfer Pricing Journal*, 29. <https://doi.org/10.59403/nyqh87>

Screpante, M. (2024) *The OECD Transfer Pricing Guidelines and Value Creation*. Amsterdam: IBFD, IBFD Doctoral Series. <https://doi.org/10.59403/2y89y8z>

Senyk, M. (2022) ‘Tax Nexus and Jurisdiction in International and EU Law: Some Insights into EU Value Added Tax’, in Traversa, E. (ed.) *Tax Nexus and Jurisdiction in International and EU Law*. Amsterdam: IBFD. <https://doi.org/10.59403/3r1d3ah>

Shaviro, D. (2019) ‘Digital Service Taxes and the Broader Shift From Determining the Source of Income to Taxing Location-Specific Rents’, *SSRN Journal*. Available at: <https://doi.org/10.2139/ssrn.3448070>

Shay, S. E., Fleming, J. C. and Peroni, R. J. (2002) ‘The David R. Tillinghast Lecture: “What’s Source Got to Do With It?” Source Rules and U.S. International Taxation’, *Tax Law Review*, 56(1) <https://dash.harvard.edu/entities/publication/73120379-1113-6bd4-e053-0100007fdf3b>

Skaar, A. (2020) *Permanent Establishment: Erosion of a Tax Treaty Principle*, 2nd ed. Alphen aan den Rijn: Wolters Kluwer Law International. https://law-store.wolterskluwer.com/s/product/series-on-international-taxation-perm-establishment-erosion-2e/01t4R00000NqPc0QAF?srsId=AfmBOooCOUtM56D3_IVPBdCWfPIgC148EM3qz-BIHtHCRoIN9Dhp1G4p

Smith, A. (1776) *An Inquiry into the Nature and Causes of the Wealth of Nations*.

Smits, J. M. (2012) *The Mind and Method of the Legal Academic*. Cheltenham, UK & Northampton, MA, USA: Edward Elgar. <https://www.e-elgar.com/shop/gbp/the-mind-and-method-of-the-legal-academic-9780857936547.html?srsId=AfmBOoqD70UyQmAjpoJfw0zh7QnxqPLY2o8NPMDLSPARL03uKIdq3dfX>

Statute of the International Court of Justice (1945) *International Court of Justice*, <https://www.icj-cij.org/statute>

Szudoczky, R. (2023) ‘Principles Justifying the Reallocation of Taxing Rights to Market Jurisdictions: Do We Need Them?’, *Intertax*, 51, pp. 822–839. <https://doi.org/10.54648/TAXI202>

Tanzi, V. (1999) ‘Is There a Need for a World Tax Organization?’, in Razin, A. and Sadka, E. (eds.) *The Economics of Globalization*. Cambridge: Cambridge University Press, pp. 173–186. <https://doi.org/10.1017/CBO9780511619946.010>

Tavares, R. J. S. (2016) ‘Multinational Firm Theory and International Tax Law: Seeking Coherence’, *World Tax Journal*, 8. <https://doi.org/10.59403/3sq367r>

Tillinghast, D. R. (1996) ‘The Impact of the Internet on the Taxation of International Transactions’, *Bulletin for International Fiscal Documentation*, 50(11/12), p. 524. <https://www.econbiz.de/Record/internet-the-impact-of-the-internet-on-the-taxation-of-international-transactions-tillinghast-david/10006210069>

The Income-Tax Act, 1961, Act No. 43 of 1961, India.

Thuronyi, V. (1998) ‘Introduction’, in *Tax Law Design and Drafting, Volume 2*. Washington, D.C.: International Monetary Fund, pp. xxiv–xxv. <https://doi.org/10.5089/9781557756336.071>

Toder, E. & Viard, A.D. (2016) ‘Replacing corporate tax revenues with a mark-to-market tax on shareholder income’, *National Tax Journal*, 69(3). <https://www.journals.uchicago.edu/doi/abs/10.17310/ntj.2016.3.08>

Turina, A. (2018) ‘Which source taxation for the digital economy?’, *Intertax*, 46, pp. 495–519. <https://doi.org/10.54648/TAXI2018053>

United Nations (1980) *United Nations Model Double Taxation Convention between Developed and Developing Countries*. New York: United Nations. <https://digitallibrary.un.org/record/13957?v=pdf>

United Nations (2021) *UN Model Double Taxation Convention between Developed and Developing Countries 2021*. New York: United Nations. <https://financing.desa.un.org/document/un-model-double-taxation-convention-between-developed-and-developing-countries-2021>

United Nations (2025a) *United Nations Model Tax Convention*. E/C.18/2025/CRP.22. Committee of Experts on International Cooperation in Tax Matters. Available at: https://financing.desa.un.org/sites/default/files/2025-10/CRP.22_UN%20Model_2025-10-07.pdf

United Nations (2025b) *Subcommittee on Taxation of the Digitalized and Globalized Economy*. Financing for Sustainable Development Office. Available at: <https://financing.desa.un.org/subcommittee-taxation-digitalized-and-globalized-economy>

U.S. Department of the Treasury, Office of Tax Policy (1996) *Selected Tax Policy Implications of Global Electronic Commerce* <https://home.treasury.gov/system/files/131/Report-Global-Electronic-Commerce-1996.pdf>

US GAO (1992) *International Taxation: Problems Persist in Determining Tax Effects of Intercompany Prices*. Washington, DC: United States General Accounting Office, <https://www.gao.gov/products/ggd-92-89>

Usman, I. M. and Saha, T. R. (2022) 'An Overview of Tax Challenges of Digital Economy', *Asia Pacific Journal of Management and Technology*, 3, pp. 56–63. <https://doi.org/10.46977/apjmt.2022v03i02.005>

Valente, P. (2018) 'Digital Revolution. Tax Revolution?', *Bulletin for International Taxation*, 72. Available at: <https://doi.org/10.59403/19jcb9q>

Vann, R. J. (1998) 'International Aspects of Income Tax', in Thuronyi, V. (ed.) *Tax Law Design and Drafting, Volume 2*. Washington, D.C.: International Monetary Fund. <https://doi.org/10.5089/9781557756336.071>

Vann, R. (2020) 'International Tax Policy and International Tax Institutions: Never the Twain?', in Maisto, G. (ed.) *Current Tax Treaty Issues: 50th Anniversary of the International Tax Group*. Amsterdam: IBFD, <https://doi.org/10.59403/3gfx4ac>

Vogel, K. (1997) *Klaus Vogel on Double Taxation Conventions: A Commentary to the OECD-, UN- and US-Model Conventions for the Avoidance of Double Taxation of Income and Capital; with Particular Reference to German Treaty Practice*. 3rd edn. London: Kluwer Law International <https://archive.org/details/klausvogelondoub0000voge/page/n7/mode/2up>

Waerzeggers, C. J., Hillier, C. and Aw, I. (2021) 'The Evolution of Tax Law Design within an Increasingly Destabilized International Tax Law Framework', in *Corporate Income Taxes under Pressure*. Washington, DC: International Monetary Fund, pp. 341–357.

<https://www.elibrary.imf.org/downloadpdf/display/book/9781513511771/ch016.pdf>

Wagh, S. (2016) 'The Taxation of Digital Transactions in India: The New Equalization Levy', *Bulletin for International Taxation*, 70. <https://doi.org/10.59403/1tg2kb5>

Wilkie, J.S. (2020) 'Things Go Better with Coca-Cola? Well, Maybe Not Always', *Tax at Osgoode Hall Law School*. <https://tax.osgoode.yorku.ca/2020/11/things-go-better-with-coca-cola-well-maybe-not-always/>

Wouters, J. & Meuwissen, K. (2011) *Global tax governance: work in progress?*, SSRN Journal. <https://doi.org/10.2139/ssrn.1766436>

PUBLICATIONS AND CONFERENCE PRESENTATIONS BY THE AUTHOR

Kácser, O. (2025) ‘Decoupling Source Taxation from Physical Presence: Historical Precedents and Lessons for the Digital Economy’, *Bulletin for International Taxation*, 80(1). MTMT ID: 36481945. <https://doi.org/10.59403/38se85s>

Erdős, G., Kácser, O. and Lukács, J. (2024) ‘A kriptoeszközök számviteli és adózási kérdései’, *Adó: A Pénzügyi Kormányzat Lapja*, 37(1–2), pp. 86–91. MTMT ID: 34765541.

Kácser, O. (2023) ‘Miért más a digitális világ?: az új nexus: felhasználó’, in Szabó, V. T. (ed.) *Válságban a világ. Pénzügyi és számviteli kihívások*. Budapest: Budapesti Corvinus Egyetem, pp. 26–35. MTMT ID: 34197672.

Kácser, O. (2022) ‘Az új lízingstandard kihívásai’, *Számvitel Adó Könyvvizsgálat: Szakma*, 64(5), pp. 33–35. MTMT ID: 33540053.

Kácser, O. (2022) ‘Miért más a digitális világ – az új nexus: felhasználó’, conference presentation at *A Magyar Tudomány Ünnepe 2022 – Tudomány: út a világ megismeréséhez*, Budapest, 2 December 2022. MTMT ID: 33541139.