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Layered tax governance of multinational debt: regulatory interaction under BEPS, ATAD and Pillar Two

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ABSTRACT

Cross-border intra-group debt is governed by several legal regimes that may apply concurrently to the same payment. Transfer-pricing rules, anti-hybrid provisions, earnings-stripping limits, treaty-abuse tests and the Pillar Two minimum tax were developed in different institutional settings and were not designed to operate as an integrated system. This article conceptualises their cumulative application as a form of layered tax governance. Combining doctrinal analysis with institutional complexity and organisational information-processing theory, it traces a single intra-group loan through each filter and compares its implementation in the UK, Germany and India. The layers prove individually coherent but only partially aligned in their definitions, evidential standards, documentation requirements and relief mechanisms. Overlap is most pronounced among treaty-abuse, beneficial-ownership and substance-based tests, while recent German reforms show that layering can also arise within a single domestic system. The tax burden and the compliance burden must be distinguished: two rules may substitute in fiscal effect while remaining cumulative in the evidence they require. The resulting burden depends not only on the number of rules but also on their non-interoperability, firms' internal tax-governance capabilities, and the administrative capacity of tax authorities. Six propositions are developed for empirical testing, with implications for boards, treasury and regulatory design.

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Finance; Economics; Business, Management and Accounting; Political Economy; Business & Company Law; International Political Economy

1. Introduction

The deductibility of interest on a cross-border intra-group loan is not governed by a single rule. A loan made by one constituent entity of a multinational group to another is now subject to the arm's length standard, the anti-hybrid rules of BEPS Action 2 and ATAD II (Council Directive (EU) 2017/952), the earnings-stripping cap of Action 4 and ATAD I (Council Directive (EU) 2016/1164), the principal-purpose test of Action 6 and the MLI, and the Pillar Two minimum tax. A sixth instrument, the proposed Unshell Directive, would have introduced a substance-based denial of treaty and directive benefits for low-substance EU entities; in June 2025, the Council recorded that work on the proposal should not continue, and the Commission subsequently listed it among the initiatives it intends to withdraw. The underlying concern remains.

Each instrument was developed in a different institutional setting, with its own definitions of 'interest' and 'associated enterprise', and its own consequences on failure. None was drafted with the cumulative position in mind, in which a single financing arrangement must satisfy all five filters at once. That configuration is the subject of this article.

Political-economy scholarship has long characterised the international tax regime as a settlement constructed through successive rounds of inter-state bargaining, in which each new normative layer reflects the relative bargaining positions of capital-exporting and capital-importing states at the time of its

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negotiation (Genschel & Rixen, 2015; Rixen, 2008). This article's contribution is to provide a system-level doctrinal account of how those layers operate together when applied to a single class of transaction, and to identify the consequences of the resulting architecture for corporate tax governance and the design of in-house compliance functions.

Three questions structure the analysis. First, how do the layers interact when applied to a common fact pattern? Where do they reinforce one another, where does one do the work of another, and where do they produce outcomes that do not align? Second, what does that interaction demand of the firm, and how is that demand likely to vary across sectors and across administrations with differing capacities? Third, what recalibration would preserve the anti-abuse function while reducing the friction on legitimate investment?

The paper makes a conceptual contribution before a doctrinal one. We use the term layered tax governance to refer to a specific phenomenon: the cumulative regulation of a single transaction by instruments that were each negotiated in isolation and never designed to operate together. The label reframes intra-group financing as a single governance problem and directs attention to the question that a one-rule-at-a-time analysis cannot ask: what happens to the firm when every rule binds at once. Section 2 develops the answer, drawing on institutional complexity and organisational information processing, and Section 2.7 sets out the resulting framework and six propositions.

2. Regulatory layering as an organisational problem

2.1. The arm's length principle in financial transactions

The arm's length principle (ALP) requires transactions to mirror those between unrelated parties (OECD, 2022). Applying it to intra-group loans is difficult because the lender and borrower share economic interests and suitable comparables are scarce without adjustment. The 2022 OECD guidance addresses this by focusing on credit ratings and implicit support, shifting the focus of comparability towards financial-economic tests. However, pricing alone cannot carry the policy objective, and earnings-based caps have become the primary instrument, with pricing serving as a supporting test (Burnett, 2019).

2.2. The earnings-stripping cap

After almost a decade of national implementation, three provisional patterns emerge from the available evidence. The first concerns design. National rules vary within the parameters Action 4 leaves open, but convergence has been substantially greater within the EU than outside it. This reflects that Article 4 of ATAD I imposes a minimum harmonisation requirement in EU law, whereas Action 4 itself is an OECD best practice rather than one of the four BEPS minimum standards (Gadwood & Morton, 2019). The second concerns behaviour. The response of multinational groups is statistically significant but smaller than first-generation estimates predicted, a conclusion supported by ex-post evidence on the German Zinsschranke (Knauer & Sommer, 2012) and by post-transposition evidence from a single transposing Member State (Pivoňková & Tepperová, 2021), though cross-country evidence on the ATAD regime as a whole remains thin. The third relates to calibration. The trade-off between a stand-alone rule and one keyed to a worldwide group ratio is empirically real. Stand-alone rules are simpler to administer but disallow more commercially driven interest, whereas group-ratio rules are more complex but better matched to genuine gearing (Burnett, 2014). The cap is therefore broadly effective at the extensive margin and imperfectly calibrated at the intensive margin.

2.3. Anti-hybrid, treaty-abuse and substance

Three further filters address abuse patterns the cap was never designed to catch; their mechanics are set out in Section 4. The Action 2 linking rules, carried into EU law by ATAD II, neutralise the outcome of a hybrid mismatch rather than the structure that produces it (OECD, 2015b). The treaty layer rests on the Principal Purpose Test, introduced into bilateral treaties through the Multilateral Instrument, whose breadth has attracted criticism for the discretion it confers on tax authorities (Lang, 2014). The substance layer was to have been the Unshell proposal (ATAD 3); work on it was discontinued in the Council in June 2025, and the Commission has listed it for withdrawal. The concern itself has since been carried into the proposed recast of the EU Directive on Administrative Cooperation of June 2026, though in a materially weaker form, as a reporting criterion rather than a denial of benefits (Section 4.5). Each of the three fills a gap left by the cap and the arm's length test, which precisely raises the question of whether, taken together, they fit.

2.4. Ethics, governance and distributive consequences

Two further bodies of literature bear on the argument. The first evaluates intra-group financing against ethical and distributive standards. Hansen et al. (1992) argued, in business ethics terms, that aggressive tax planning is morally distinct from neutral tax minimisation. Gribnau (2015) and Gribnau and Jallai (2017) treat good tax governance as a component of corporate social responsibility rather than as something separate from it. Hardeck and Hertl (2014) show that disclosure pressure shifts behaviour even where the tax outcome is technically compliant. From a tax-justice perspective, the distributive consequences of profit shifting for lower-income countries have been argued to be central to the regime's legitimacy (Garcia-Bernardo & Janský, 2024; Navarro, 2018). The asymmetric capacity of developing-country administrations to implement and enforce the BEPS measures is well documented, both in that literature and in work on participation in the Inclusive Framework (Garcia-Bernardo & Janský, 2024; Mosquera Valderrama, 2024).

The second is a larger body of work in corporate governance that treats tax planning as a governance problem within the firm rather than a question of legal compliance alone. It reads avoidance through the lens of agency theory. How aggressively a group plans reflects the incentives of its managers and the strength of the controls on them, so governance arrangements, and not the rules alone, shape the outcome, with board independence and financial sophistication mattering most at the extremes of the distribution (Armstrong et al., 2015; Desai & Dharmapala, 2006; Hanlon & Heitzman, 2010). This literature supplies the half of the picture omitted by the tax literature. It explains why the same architecture produces different behaviour across firms, and it locates the response to a layered regime in the design of the in-house tax function and in board-level oversight rather than in the statute book. It forms the basis of the firm-level moderator in the framework set out in Section 2.7.

2.5. The political economy of the international tax regime

International political economy treats the rules governing cross-border taxation as an institutional regime in its own right, rather than a technical adjunct to domestic tax law. Rixen (2008) traces successive normative settlements in international tax, reading each as a reflection of the bargaining positions of the leading capital-exporting and capital-importing states at the time. Genschel and Rixen (2015) bring the analysis up to the BEPS Project, treating the architecture as a transnational legal order unsettled by capital mobility and re-settled at each round of negotiation. The perspective explains two features the doctrinal literature struggles with on its own. It explains why the regime exists as a set of overlapping instruments rather than a unified rulebook, each layer being the product of a different bargaining round; and it explains why the architecture bears unevenly on states, since administrative capacity tends to mirror the distribution of power that produced the design. That unevenness is also why coordinated regional positions and the proposed UN Framework Convention are pressed as correctives (Hongler & Habich, 2025; Mosquera Valderrama, 2024). The point matters here because the unevenness these accounts describe at the level of negotiation reappears, in this article, at the level of the individual firm trying to comply.

2.6. The behavioural evidence

The empirical evidence on how multinationals respond to interest-limitation rules is mixed in detail but consistent in aggregate. Firm-level studies find substantial heterogeneity, with the largest groups adopting strategies that diverge materially from the median (Cooper & Nguyen, 2020), and internal debt restructuring remains a viable channel even where formal caps apply, which suggests that single-instrument restrictions have been only partially effective (Alfandia, 2024). A growing body of firm-level work points the same way. Panel studies of the determinants of avoidance among Indian multinationals show how firm-specific characteristics shape the use of these channels (Thayyib, 2025a), and parallel work on US groups in emerging markets documents how they adapt to weaker enforcement environments (Thayyib, 2025b). Reviews of the tax sensitivity of multinational debt reach the same conclusion: the response is real but more muted than first-generation theoretical models predicted (Schjelderup, 2016).

Layering therefore has a behavioural rationale, in that policymakers have not treated any single instrument as sufficient. But the marginal contribution of each additional layer has not been demonstrated independently, and Section 7 finds that it varies: some layers reinforce one another, one pair does substantially the same work, and one pair can substitute for another. That is the proportionality question this article pursues.

2.7. A Framework for analysing layered tax governance

These literatures describe the architecture but do not explain why it is costly for the firm, because each examines the terrain of a single instrument at a time. The doctrinal work treats the instruments separately; the empirical work is largely single-rule; the ethics literature speaks past the doctrinal detail; and the political-economy literature operates well above the level of firm compliance. None supplies an integrated reading of how the instruments work together within a single financing arrangement, or of what that does to the organisation obliged to satisfy all of them at once. Two organisational theories close the gap.

The first is institutional complexity. Organisations subject to multiple institutional demands, each coherent in isolation but only partially aligned when combined, cannot satisfy them by doing more of the same and must instead absorb the misalignment internally (Greenwood et al., 2011). That is the position here. The five filters are individually coherent, but they carry distinct drafting histories and non-aligned definitions, evidential standards and reporting requirements, and no rule coordinates them. The firm, not the rule-maker, is where the misalignment comes to rest.

The second is organisational information processing. This form of complexity increases the volume and variety of information an organisation must process to act, and a firm has two broad responses. It can increase its capacity to process information, or it can restructure the transaction so that less information is required (Galbraith, 1974). Layered tax governance therefore poses a choice between capability and adaptation. A group can invest in an integrated tax-data architecture and in the specialist human capital to run it, or it can restructure the transaction by substituting external for internal debt, lengthening the tenor, or relocating the financing entity to a jurisdiction where substance genuinely exists. This is a channel that the evidence in Section 2.6 shows groups already use (Alfandia, 2024). Section 7.5 develops both responses.

Two conditions shape how that choice plays out. Within the firm, board-level tax governance shapes the quality of the response, whether it takes the form of coordinated capability investment, commercially justified restructuring, or fragmented, primarily tax-driven adaptation. The agency literature suggests that weaker monitoring increases the risk of the latter (Armstrong et al., 2015; Desai & Dharmapala, 2006). Outside the firm, the administrative capacity of the implementing tax administration determines which layer is enforced and, consequently, where the documentation burden ultimately lands (Garcia-Bernardo & Janský, 2024; Mosquera Valderrama, 2024).

Figure 1 sets out the resulting framework, and the analysis that follows is organised around it. Six propositions are developed in the sections indicated and revisited in Section 9. P1 and P6 are grounded directly in the doctrinal mapping undertaken here; P2 to P5 translate that mapping into testable organisational expectations that require firm-level empirical examination.

P1. The information-processing burden of layering is shaped more strongly by the degree of non-interoperability among the applicable documentation regimes than by the sheer number of substantive tests that a financing arrangement must satisfy (Sections 4.7, 7.1).

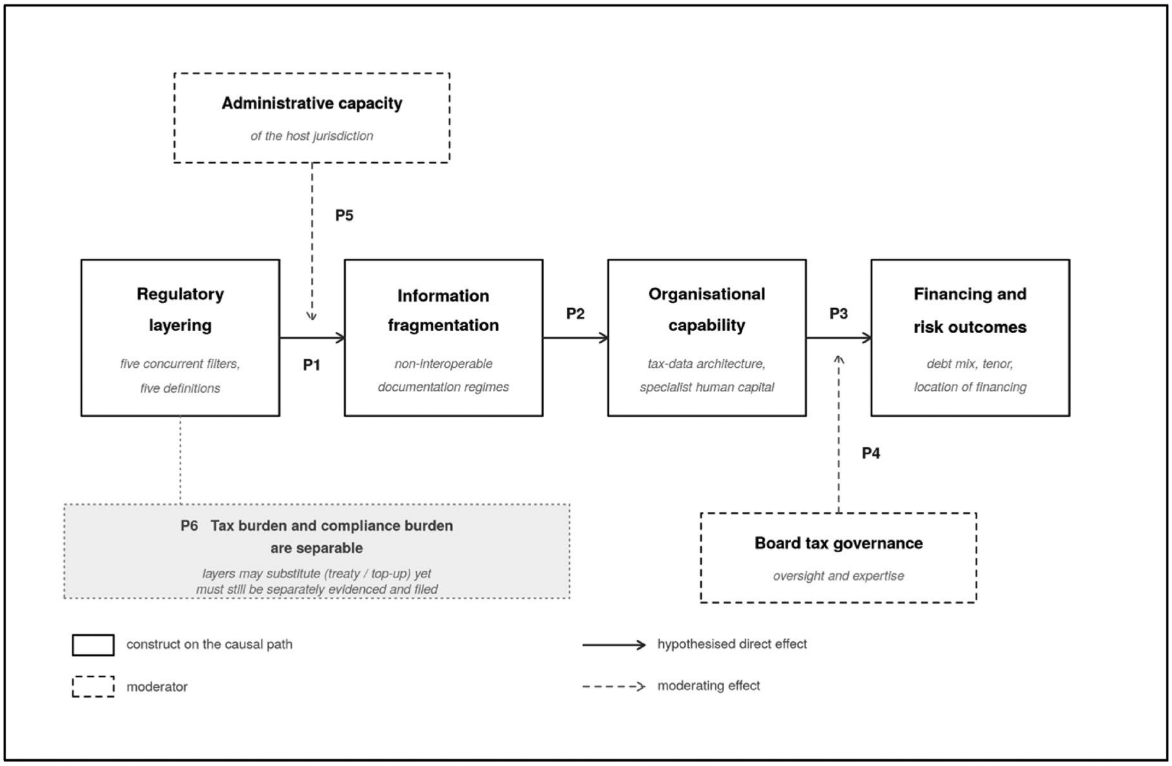

Figure 1. Layered tax governance: a conceptual framework.

P2. Because the layers cannot be fully addressed by a common evidential base, firms may respond by increasing information-processing capacity through an integrated tax-data architecture and specialist in-house capabilities (Section 7.5).

P3. Where additional capability is costly or unavailable, firms may instead reduce the information-processing requirement by simplifying, externalising, or relocating financing arrangements (Sections 7.2, 7.5).

P4. Board-level tax governance moderates the quality of the organisational response. Stronger governance is associated with coordinated investment in capabilities and with commercially justified restructuring, whereas weaker governance increases the risk of fragmented or primarily tax-driven responses (Section 7.5).

P5. The administrative capacity of the implementing tax administration moderates where the burden falls. Where capacity is scarce, enforcement shifts to the layers the administration can operate, shifting the burden onto transfer pricing and general anti-avoidance rather than the formal cap (Sections 5.3, 7.2).

P6. Tax burden and compliance burden are distinct. Layers may act as substitutes in their fiscal effect while remaining fully cumulative in their documentation requirements, so a reduction in tax payable does not imply a reduction in compliance cost (Sections 4.8, 7.1, 7.3).

3. Methodology

3.1. Doctrinal analysis and theory-building

This study combines doctrinal legal analysis with a structured, theory-building comparison of regulatory materials. The doctrinal component identifies the content, interactions and consequences of the legal tests. The theory-building component compares the layers by their definitions, evidential requirements, documentation processes, relief mechanisms and organisational implications. The resulting propositions are analytical and intended for future empirical testing; they are not tested hypotheses. Primary legal materials (OECD soft-law instruments, EU directives, domestic statutes and judicial decisions) are identified, organised and synthesised against the policy objectives articulated in those materials (Kharel, 2018).

Doctrinal analysis is the appropriate first method here because the question concerns legal coherence across several instruments rather than behavioural elasticity.

3.2. Selection of primary materials

Primary materials were selected against three criteria. The first is authoritative status: a binding law, an OECD-recommended best practice, or a final judicial decision. The second is direct relevance to the deductibility, pricing, or treaty treatment of intra-group interest. The third is currency, with priority given to the most recent consolidated version of each instrument. The resulting set comprises the 2015 BEPS Final Reports for Actions 2, 4 and 6; the the 2022 Transfer Pricing Guidelines (OECD, 2022); ATAD I, ATAD II and the EU Pillar Two Directive (Council Directive (EU) 2022/2523); the withdrawn Unshell proposal; the GloBE Model Rules and Administrative Guidance; and the domestic statutes of the three case-study jurisdictions. Secondary materials present scholarly positions rather than independent authority.

3.3. Selection of jurisdictions

Three jurisdictions are examined: the United Kingdom, Germany and India. The selection varies across three parameters: tax-system maturity (two mature OECD economies, one large emerging economy); EU status (Germany within the ATAD framework, the United Kingdom having transposed ATAD I before leaving the EU and retained it, India outside it altogether); and implementation pathway. Germany predated BEPS with the 2008 Zinsschranke; the United Kingdom designed its Corporate Interest Restriction (CIR) directly in response to Action 4 in 2017; and India implemented Action 4 through Section 94B of the Income-tax Act 1961, a narrower domestic provision directed at outbound related-party interest. The three jurisdictions are not presented as representative of the Inclusive Framework as a whole. They are selected to expose the design choices that the Action 4 best practice and Article 4 of ATAD I leave open. India, in particular, should be read as a single stress test rather than a stand-in for emerging economies as a class. Nothing in the design licenses a claim that other lower-capacity jurisdictions would respond in the same way; the case for wider testing is set out in Section 9. The approach follows the comparative tax law methodology developed by Arnold et al. (2019) and Barker (2005).

3.4. Case-law selection

Decisions of the Court of Justice of the EU were selected on three criteria: direct relevance to the deductibility of intra-group interest or to the EU-law treatment of national interest-limitation rules; doctrinal weight, meaning the decision is cited in later CJEU and Advocate-General opinions as authoritative on the point; and recency, with decisions handed down in the last decade preferred. Four lines of authority result, all discussed in Section 6: X BV (fiscal unity, Case C-398/16); the Danish beneficial-ownership cases (Joined Cases C-115/16, C-118/16, C-119/16 and C-299/16, and Joined Cases C-116/16 and C-117/16); Lexel AB (Case C-484/19); and X BV (Article 10a, Case C-585/22), in which the Court revisited Lexel. The two cases named X BV are unrelated and are distinguished throughout by the parenthetical. The selection is purposive rather than exhaustive.

3.5. Identifying overlap, redundancy and compliance burden

Two layers overlap when the same feature of a single arrangement falls within the operative test of more than one instrument, so that the arrangement can fail or be required to satisfy both on the same facts. Overlap shades into redundancy when the second test, on the same facts, adds no protection beyond what the first already provides, so the marginal anti-abuse yield of the additional layer is at or near zero. The two are distinguished by asking whether an arrangement caught by one but not the other is realistically conceivable: where it is, the layers overlap without being redundant. The compliance burden is then assessed qualitatively against three indicators drawn from the tax-compliance-cost literature: the number of independent legal tests an arrangement must satisfy, the documentation and reporting obligations attached to each test, and the procedural channels available for resolving disputes arising from each test. These indicators show the structure of the burden, not its monetary cost: where the analysis shows the burden has grown or falls unevenly, the claim rests on the number and incompatibility of the tests, not on survey or filing-cost data. No new empirical compliance-cost data are generated here, and the case for direct measurement is taken up in Section 9.

4. The layered regulatory architecture

Figure 2 schematically represents the layered architecture. A cross-border intra-group loan, depicted as a transfer of principal from a lender resident in a low-tax jurisdiction to a borrower resident in a high-tax jurisdiction, is subject to five operative legal filters. Substance appears as a sixth, conceptual layer, marked as withdrawn: it remains a residual concern that operates through treaty abuse, beneficial ownership, domestic substance rules and CJEU abuse doctrine rather than through Unshell as a standalone instrument.

4.1. Pricing: the ALP and Chapter 10

The first test asks whether the interest rate, loan amount, security and other commercial terms align with what unrelated parties would have agreed under comparable conditions. The 2022 OECD guidance on

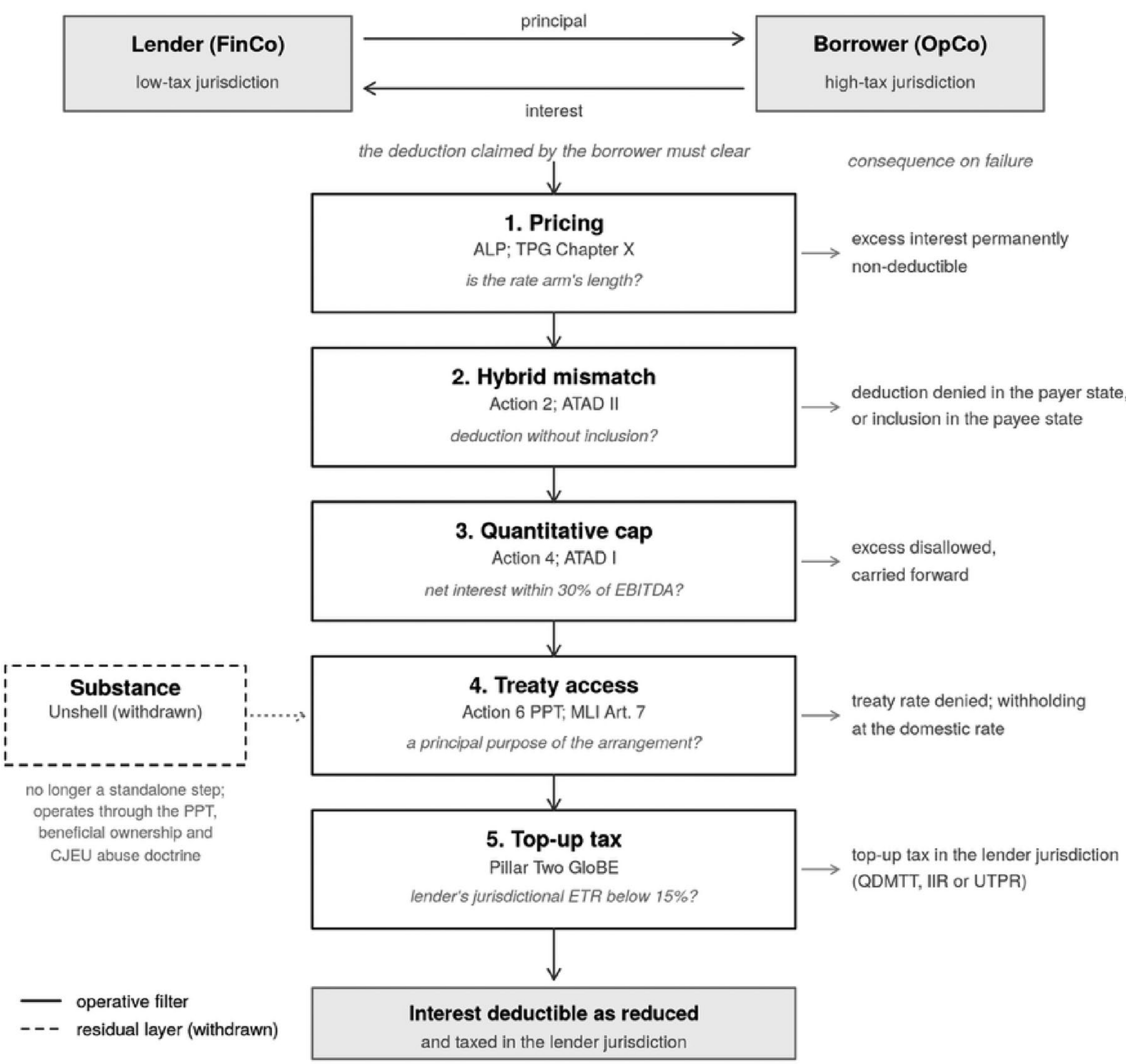

Figure 2. The layered filtering of intra-group interest deductions.

transfer pricing, consolidated as Chapter 10 of the Transfer Pricing Guidelines, prescribes a two-step analysis (OECD, 2022). The first step accurately delineates the transaction: is the arrangement in substance a loan, and could the borrower have serviced this level of debt on a stand-alone basis? Only then does the analysis turn to pricing, using a Comparable Uncontrolled Price, a cost-of-funds approach or another technique appropriate to the facts. Implicit support from the wider group is reflected in the borrower's notional credit rating rather than ignored (OECD, 2022, Ch. X); on the resulting tension between accurate delineation and non-recognition, see Petruzzi and Holzinger (2020). The Belgian decisions of June 2025 illustrate the test in operation, applying Chapter 10 reasoning to legacy structures and reading down rates that exceeded an arm's length range (KPMG, 2025a, 2025b).

4.2. Hybrids: BEPS Action 2 and ATAD II

A hybrid mismatch arises when two jurisdictions characterise the same instrument or entity differently, resulting in a deduction without a matching inclusion or a double deduction. The Action 2 Final Report sets out a system of linking rules: primary denial of deduction in the payer jurisdiction, with secondary inclusion in the payee jurisdiction if the primary rule does not apply (OECD, 2015b). ATAD II incorporated those recommendations into binding EU law and extended their scope to arrangements with third countries and to reverse hybrids. The instruments and entities covered by the rules overlap substantially with those addressed by Chapter 10 and the Action 4 cap. This is the first concrete instance of the concurrent application examined in Section 7. Whether it amounts to redundancy, as defined in Section 3.5, is a separate question addressed there.

4.3. Quantum: BEPS Action 4, ATAD I and national designs

Action 4 recommends a fixed-ratio rule that caps net interest deductions at a percentage of earnings before interest, taxes, depreciation and amortisation (EBITDA) in the range of 10 to 30%, supported by an optional group-ratio rule, a de minimis threshold and a carry-forward of disallowed amounts (OECD, 2015a, 2016). Article 4 of ATAD I made the upper end of the range binding from 1 January 2019, subject to an optional safe harbour of up to €3 million that Member States may, but need not, grant. Article 11(6) further allowed Member States with equally effective national targeted rules, notified to the Commission, to defer their application until 1 January 2024, so the rule did not, in fact, bind every Member State from 2019. National implementation has varied within those parameters, as shown by the comparison of the United Kingdom, Germany and India in Section 5.

4.4. Treaty access: BEPS Action 6 and the multilateral instrument

Action 6 established a minimum standard against treaty abuse, met by the PPT, a detailed Limitation-on-Benefits (LOB) clause, or a combination of both (OECD, 2015c). The MLI has been signed by 104 jurisdictions as at January 2025. Article 7 introduces the PPT into the bilateral conventions notified as Covered Tax Agreements, a network the OECD describes as covering more than 1,650 treaties (OECD, 2018). It denies treaty benefits where it is reasonable to conclude that obtaining them was one of the principal purposes of an arrangement; in intra-group financing, its principal application is to conduit structures seeking reduced withholding rates on interest. Operating in parallel, the CJEU's Danish beneficial-ownership cases establish a free-standing EU-law principle of abuse that applies even in the absence of a domestic implementing rule (CJEU, 2019); the decisions are analysed in Section 6.

4.5. Substance: the withdrawn Unshell proposal

The European Commission's December 2021 proposal for an Unshell Directive (commonly referred to as 'ATAD 3') would have screened EU entities against minimum substance indicators (own premises, an active bank account, and qualified resident directors) and denied treaty and directive benefits to entities classified as shells (European Commission, 2021). The ECOFIN report of 18 June 2025 recorded that the proposal's analysis should not proceed (Council of the European Union, 2025). The Commission's 2026 Work Programme, published on 21 October 2025, lists Unshell among the initiatives it intends to withdraw (European Commission, 2025a).

Withdrawal of the proposed directive does not remove substance from the regulatory landscape. The substance concern has since migrated into the Directive on Administrative Cooperation. The Commission's DAC evaluation report of November 2025 (European Commission, 2025b) indicated that it would carry principles from the Unshell proposal into the mandatory disclosure rules, and on 24 June 2026 the Commission published a proposal to recast the DAC (European Commission, 2026a). The recast remains a proposal and requires unanimity. It would consolidate DAC1 to DAC9 (Council Directive (EU) 2025/872) into a single instrument and, by implementing act, empower the Council to develop the substance criteria in DAC6 (Council Directive (EU) 2018/822), hallmark D2, which addresses ownership chains involving structures carrying on no substantive economic activity. Because DAC6 carries no adverse tax consequences of its own, any consequence of being identified as a low-substance entity would be confined to reporting (KPMG, 2025c; PwC, 2025). A parallel Tax Omnibus proposal of the same date would amend the Interest and Royalties Directive, requiring Member States either to levy withholding tax or to deny deductibility where interest would otherwise go untaxed (European Commission, 2026b), a further filter on the same payment, and one still to be agreed. Several Member States retain domestic substance and beneficial-ownership tests, and the Danish line of CJEU authority supplies an EU-law principle of abuse that operates independently of any directive. Figure 2 therefore retains the substance layer, marked as withdrawn: substance remains a real test, but its delivery mechanism has shifted.

If adopted, the recast would be the first instance, in the field mapped by this article, of a rule-maker removing a layer rather than adding one, and on precisely the ground advanced here. It would exclude Pillar Two groups from DAC6 reporting (subject to conditions) and extend the deadline from thirty to ninety days, on the stated ground that groups already subject to a minimum effective rate should not also bear duplicative disclosure obligations. The proposal therefore provides institutional support for the article's concern about duplicative reporting obligations.

4.6. Top-up tax: Pillar Two and the GloBE rules

The Pillar Two GloBE rules impose a 15% minimum jurisdictional effective tax rate on multinational groups with consolidated turnover above €750 million (OECD, 2021, 2023). If the jurisdictional ETR falls below 15%, top-up tax may first be collected through a Qualified Domestic Minimum Top-up Tax (QDMTT) in the jurisdiction where the low-taxed constituent entity is located, or through the Income Inclusion Rule (IIR) or the Undertaxed Profits Rule (UTPR) in another constituent entity's jurisdiction. Within the European Union, the GloBE rules were transposed by the EU Pillar Two Directive, which entered into force in December 2022, had to be transposed by 31 December 2023, and applies to fiscal years beginning on or after that date. The GloBE ETR, however, is not computed with reference to a borrower's interest expense; it divides adjusted covered taxes by GloBE income, which is primarily based on financial accounting income. The mechanism that matters here is different. Cross-border interest may shift GloBE income from a higher-tax borrower jurisdiction to a lower-tax lender jurisdiction. Pillar Two may therefore impose a top-up tax in the lender's jurisdiction where its jurisdictional ETR falls below 15%, even where the payment survives the arm's length and interest-limitation rules. The worked example in Section 4.8 turns on precisely that: the potential top-up arises in Country A, the lender jurisdiction. Pillar Two accordingly functions as a backstop layered on top of the older instruments, not as a replacement for them.

The Pillar Two layer, however, is not applied uniformly. Following the G7 understanding of June 2025, the Inclusive Framework approved a 'side-by-side' package in January 2026, under which the Income Inclusion Rule and the Undertaxed Profits Rule are switched off for groups headquartered in a jurisdiction with a qualified side-by-side regime, while qualified domestic minimum top-up taxes continue to apply. The United States is at present the only jurisdiction so recognised, with effect for fiscal years beginning on or after 1 January 2026 (OECD, 2026). The architecture is therefore not uniform even among groups nominally within its scope, and the exception extends to the jurisdiction with the greatest bargaining power, exactly as the political-economy account in Section 2.5 predicts.

4.7. Reading the layers together

Table 1 summarises the layers, the principal instrument for each, its status and the policy purpose it serves, together with the date on which the sources were last checked and the authority relied upon. These instruments do not all carry the same legal force: some are binding law, one has been withdrawn, and one is not yet implemented in India. The resulting framework is not a single composite test of permissibility but a sequence of independent legal tests, each with its own definitions, carve-outs and administrative requirements.

4.8. An illustrative intra-group loan

Putting figures to the architecture makes its effect concrete. FinCo, resident in Country A, lends €200 million to OpCo, an operating subsidiary resident in Country B, at a fixed rate of 7%, yielding annual interest of €14 million. Country B taxes corporate profit at roughly 30%, while Country A taxes FinCo's income at an effective rate of 9%. OpCo's tax-EBITDA for the year is €30 million, so the Action 4 cap is €9 million. On a stand-alone basis, and once implicit group support is accounted for, OpCo would carry a notional BBB credit rating. Comparable third-party borrowers in that band pay between 4.5 and 5.5%; an arm's-length rate of about 5.25% would therefore produce interest of roughly €10.5 million. The treaty between Country A and Country B reduces the withholding tax on interest from 15% to 5%. FinCo has a bank account and an intra-group service agreement, but no dedicated staff and no real authority over the financing decision. The group's consolidated turnover exceeds the €750 million Pillar Two threshold.

Table 1. The layers: principal instrument, status and relevance to intra-group interest, as at July 2026.

Instrument	Current status	Date checked	Source	Relevance to intra-group interest
Pricing: OECD TP Guidelines, Chapter 10 (ALP)	In force; applied through domestic transfer-pricing law	Jul 2026	OECD (2022)	Governs the rate and terms of the loan and whether it is a loan at all.
Hybrid mismatch: Action 2; ATAD II	In force in the EU	Jul 2026	OECD (2015b); Dir. 2017/952	Neutralises deduction without inclusion and double-deduction outcomes.
Quantitative cap: Action 4; ATAD I	In force; ATAD I binding since 2019	Jul 2026	OECD (2015a, 2016); Dir. 2016/1164	Caps net interest at up to 30% of EBITDA.
Treaty access: Action 6 PPT; MLI Art. 7	In force; MLI signed by 104 jurisdictions (Jan 2025), PPT applying in over 1,650 covered treaties	Jul 2026	OECD (2015c, 2018)	Denies reduced withholding to conduit financing structures.
Top-up tax: Pillar Two GloBE; Dir. 2022/2523	Applies in the EU to fiscal years beginning on or after 31 Dec 2023; IIR and UTPR switched off from 2026 for groups headquartered in a qualified side-by-side jurisdiction	Jul 2026	OECD (2021, 2023); Dir. 2022/2523	Top-up tax where the jurisdictional ETR falls below 15%.
Substance: Unshell / ATAD 3 (withdrawn)	Council discontinued work June 2025; listed for withdrawal in the Commission's 2026 Work Programme; substance carried into the DAC recast proposal of June 2026	Jul 2026	Council of the European Union (2025); European Commission (2025a, 2026a)	Would have denied benefits to low-substance shells; the DAC recast proposal would further develop the existing substance-related criterion in DAC6 hallmark D2, and the consequences would remain reporting-only.
Quantitative cap (India): s.94B	In force from AY 2018-19; the 1961 Act was repealed and replaced by the Income-tax Act 2025 with effect from 1 April 2026	Jul 2026	Finance Act 2017; Income-tax Act 2025	Caps interest to non-resident associated enterprises at 30% of EBITDA.
Top-up tax (India): Pillar Two	Not yet implemented as at July 2026	Jul 2026	PwC (2026)	Indian-parent groups remain exposed through jurisdictions that have adopted the GloBE rules.

Note: Status as at July 2026. Pillar Two is still phasing in, and the substance concern is migrating into the DAC framework, so the position is subject to change. CIR = Corporate Interest Restriction (United Kingdom). ETR = effective tax rate. GloBE = Global Anti-Base Erosion Rules. IIR = Income Inclusion Rule. QDMTT = Qualified Domestic Minimum Top-up Tax. UTPR = Undertaxed Profits Rule. s.94B = Section 94B, Income-tax Act 1961 (India), re-enacted as s.177, Income-tax Act 2025. Compiled by the authors from the instruments cited in column 2.

Country A credits source-state withholding tax against its own liability on the income, with the credit capped at that liability. FinCo has no payroll and no tangible assets, so its substance-based income exclusion is negligible. The numbers are illustrative and chosen so that each layer is exercised in turn; none of the argument depends on their precise values.

Running these facts through the surviving filters in sequence produces the pattern set out in Table 2.

The example also makes the point about double taxation easier to see than any general statement. A single stream of interest is reduced as a deduction in Country B under the pricing test, taxed in full as income in Country A, charged additional withholding at source once the treaty rate is denied, and would have been topped up under Pillar Two had treaty access survived. Three of the five filters bite, and they bite different slices: €3.5 million is denied permanently on pricing, €1.5 million is deferred under the cap, and €2.1 million of source tax is imposed once treaty access is denied. None of them unwinds the others. The pricing slice is relieved, if at all, through an oversubscribed mutual agreement procedure (Section 7.3); the cap slice is merely deferred. The withholding tax is creditable in Country A, but the credit is capped at Country A's own 9% liability, so €0.84 million of it is unusable. The example also shows that the layers interact quantitatively rather than merely accumulating. The €2.1 million of source tax is a covered tax of FinCo, which lifts Country A's jurisdictional ETR to exactly 15% and extinguishes the top-up: on these facts, filters 4 and 5 are substitutes, not cumulative layers. And the €0.84 million of wasted foreign tax credit is the very same €0.84 million that Pillar Two would have collected had the treaty rate applied, the same burden, differently routed and differently distributed between states. Firing one filter changes the output of another, which is why a one-rule-at-a-time analysis cannot see the whole position. This is the concrete shape of the unrelieved double taxation that Section 7.3 analyses in general terms.

5. Case studies in implementation

Section 4.3 showed that Article 4 of ATAD I sets the upper bound of the Action 4 cap at 30% of EBITDA and leaves several design parameters to national discretion. The comparison below illustrates how three jurisdictions have exercised that discretion and how the resulting variation has produced materially different compliance environments. The selection is set out in Section 3.3, and the features compared are summarised in Table 3.

5.1. The United Kingdom: the corporate interest restriction

The CIR was introduced by the Finance (No. 2) Act 2017 and codified in Part 10 of the Taxation (International and Other Provisions) Act 2010 (TIOPA 2010). It caps a worldwide group's deductible net interest in the United Kingdom at the lower of two figures: 30% of tax-EBITDA (the Basic Interest Allowance) and the Fixed Ratio Debt Cap. Groups can elect into a higher cap calculated on the worldwide group's net qualifying interest. A £2 million de minimis preserves the deductibility of modest financing costs, and a Public Infrastructure Exemption recognises that some regulated infrastructure companies are commercially driven to high gearing. The mechanics of the Interest Restriction Return, the reporting company election and the allocation of disallowances across the group are set out in HMRC's Corporate Finance Manual (HMRC, 2024). A tight headline cap with sectoral carve-outs has kept the CIR broadly compliant with Article 4 of ATAD I, which the United Kingdom transposed before leaving the EU and retained.

5.2. Germany: the Zinsschranke

Germany was an early mover. The Zinsschranke was introduced in 2008, almost a decade before BEPS Action 4 was finalised, and it anticipates much of the Action 4 design: a 30% EBITDA tax cap, a €3 million de minimis threshold, and an escape clause based on the consolidated worldwide group's equity ratio (the Eigenkapitalquote). Empirical work on the rule's introduction found a measurable reduction in the tax-driven debt bias in leveraged transactions (Knauer & Sommer, 2012). The constitutional position remains unresolved and runs the other way. By order of 14 October 2015 (I R 20/15), the Bundesfinanzhof held that the Zinsschranke offends the general principle of equality in Article 3(1) of the Basic Law,

Table 2. Outcome of each filter on the worked example.

Layer (filter)	Test applied	Outcome on these facts	Managerial / governance implication
1. Pricing (arm's length principle, Chapter 10)	Is the 7% rate within the arm's length range for OpCo's notional credit profile?	Fails in part. The rate is read down to about 5.25%, and roughly €3.5 million of the €14 million deduction is denied in Country B as non-arm's length.	Treasury must evidence the credit rating, implicit support and loan terms.
2. Hybridity (Action 2, ATAD II)	Does the instrument produce a deduction without inclusion, or a double deduction?	Passes. The loan is treated as debt in both states and the interest is included in Country A, so no mismatch arises on these facts.	Tax function must confirm the instrument's characterisation in both jurisdictions to avoid a mismatch.
3. Quantum (Action 4, ATAD I)	Is net interest within 30% of tax-EBITDA, here €9 million?	Fails in part. The repriced €10.5 million still exceeds the €9 million cap, so a further €1.5 million is disallowed and carried forward. The cap and the pricing test therefore deny different slices of the same interest: €3.5 million permanently, on pricing grounds, and €1.5 million on a deferred basis, on quantum grounds. They apply concurrently; they are not redundant.	Board and tax function must model the financing mix before approving intra-group debt.
4. Treaty access (Action 6 PPT, MLI)	Was obtaining the reduced withholding rate one of the principal purposes, given FinCo's lack of substance?	Assumed to fail for the purposes of the illustration. FinCo's lack of personnel, decision-making authority and commercial control supports the conclusion that obtaining the reduced withholding rate was one of the arrangement's principal purposes. On that assumption the reduced rate is denied and source withholding reverts to the 15% domestic rate; applied to the €14 million paid, that yields €2.1 million of source tax. Within the EU the Danish line of authority could support the same result under the Interest and Royalties Directive, where the additional indicators of abuse identified by the Court are present.	Group must evidence commercial rationale, substance and decision-making authority in FinCo.
5. Top-up tax (Pillar Two GloBE)	Is Country A's jurisdictional ETR at least 15%?	Does not fire, because filter 4 has already fired. FinCo's GloBE income is the €14 million of interest. The €2.1 million of source withholding tax is a covered tax of FinCo; it extinguishes Country A's own 9% charge through the credit, so adjusted covered taxes are €2.1 million and the jurisdictional ETR is exactly 15 %. No top-up arises. Had the treaty rate of 5% survived, covered taxes would have been €1.26 million, the ETR 9%, and a top-up of about €0.84 million would have been due.	Tax function must model the jurisdictional ETR and top-up tax before finalising the structure.

Note: Figures are illustrative, and the example is constructed so that each filter is exercised. An arrangement with different facts, for example a genuine lender with real substance, would trigger a different subset of the filters. The QDMTT computation may treat foreign withholding tax differently from the income inclusion rule, in which case a domestic top-up could arise in Country A even where none arises under the IIR; the point is flagged rather than resolved here.

cutting into the core of the objective net principle without being justifiable as an anti-abuse measure; it stayed the revision proceedings and referred the question to the Bundesverfassungsgericht under Article 100(1). That referral (2 BvL 1/16) remains pending, and affected assessments continue to be held open pending it (Bundesfinanzhof, 2015). The flagship national implementation of the earnings-stripping cap has therefore operated for more than a decade under an unresolved constitutional challenge, a fact that supports rather than undermines the argument advanced here. Nor has the rule stood still. With effect for fiscal years beginning after 14 December 2023, the Kreditzweitmarktförderungsgesetz of 22 December 2023 amended §4h EStG and §8a KStG to align them with ATAD: the definition of interest expense was broadened to capture economically equivalent payments; the stand-alone exception was narrowed so that it applies only where the taxpayer has no related person within §1(2) AStG and no permanent establishment outside its state of residence; the three exceptions are disapplied to the extent that interest expense is increased by an interest carry-forward; and, in §4h(6) EStG, Germany exercised the option in Article 4(4)(b) of ATAD I to exempt interest on loans financing long-term public infrastructure projects. The German exception is materially narrower than the option permits. It reaches only loans granted on general public-funding conditions from EU, federal, Land, municipal or other public-law budgets or

Table 3. Comparative features of action 4-style interest limitation rules.

Feature	United Kingdom (corporate interest restriction)	Germany (zinsschranke)	India (s.94B, income-tax act 1961; re-enacted in the income-tax act 2025 from 1 april 2026)
Legal basis	Taxation (International and Other Provisions) Act 2010, Part 10 (inserted by Finance (No. 2) Act 2017).	Section 4h Einkommensteuergesetz with Section 8a Körperschaftsteuergesetz; in force since 2008, substantially amended with effect from fiscal years beginning after 14 December 2023 (Kreditzweitmarktförderungsgesetz).	Section 94B of the Income-tax Act 1961, inserted by Finance Act 2017.
Fixed-ratio cap	30% of tax-EBITDA (Basic Interest Allowance).	30% of tax-EBITDA.	30% of EBITDA, applied only to interest paid to non-resident associated enterprises.
Group ratio rule	Yes, worldwide group net qualifying interest divided by group EBITDA.	Escape clause based on the group equity ratio (Eigenkapitalquote), retained but disapplied to the extent interest expense is increased by an interest carry-forward.	None.
De minimis	£2 million net interest per group per year.	€3 million net interest per business per year, operating as a cliff-edge threshold (Freigrenze) rather than an allowance.	Interest exceeding INR 1 crore (approximately €95,000).
Carry-forward	Disallowed interest carried forward indefinitely; unused allowance for up to five years.	Disallowed interest carried forward indefinitely (Zinsvortrag).	Eight assessment years.
Sectoral carve-outs	Public infrastructure exemption for qualifying infrastructure companies.	Infrastructure exception under §4h(6) EStG (from 2024): loans financing long-term public infrastructure projects, granted on general public-funding conditions from public-law budgets or specified tax-exempt institutions, with the assets, operator and project income located and taxed in the EU. Project income and expenses are both excluded from the EBITDA computation.	Banking and insurance excluded.

Note: Compiled by the authors from the primary legislation and the accompanying tax administration guidance cited in this section. Figures are stated for the position as at July 2026. The INR-to-euro conversion is indicative, at end-2025 exchange rates. 'Tax-EBITDA' refers to the rule-specific measure prescribed by each jurisdiction, which may diverge from accounting EBITDA. The German Eigenkapitalquote escape clause compares the equity ratio of the German entity with that of the consolidated worldwide group. The UK Public Infrastructure Exemption is conditional on the qualifying-company tests in Part 10 of TIOPA 2010.

specified tax-exempt institutions, and it requires the assets created to be situated in a Member State, the project operator to be resident in one, and the project income to be taxed in one. All income and expenses attributable to the project are then excluded from the EBITDA computation, so the relief is symmetrical rather than one-sided. Germany thus had to amend a rule that predated BEPS to accommodate a later layer, which is itself an instance of the phenomenon this article describes. Nor is §4h the only German rule now bearing on intra-group interest. The Wachstumschancengesetz of 27 March 2024 inserted §1(3d) and (3e) AStG, which apply from the 2024 assessment period and subject cross-border intra-group financing to a distinct set of transfer-pricing tests: the borrower must be able to service the debt over its term, the financing must be economically required and used for the business purpose, and the rate is benchmarked against the group rating unless the taxpayer shows another rating is appropriate. Financing-intermediation, pass-through and treasury functions are presumptively treated as low-function, low-risk services. Formally these are pricing rules rather than a second earnings-stripping cap, so they intensify the first filter rather than adding a sixth; but the practical effect is that a German borrower must now satisfy §4h, §8a KStG and §1(3d) AStG on the same loan, from documentation that none of the three was designed to share. Layering, in other words, is not only an international phenomenon: it reproduces itself inside a single national system. (The Zinshöhenschranke proposed as §4l EStG was not enacted and is not part of the law.) Two lessons follow. A fixed-ratio cap can serve as the primary domestic instrument for a decade before other layers are stacked on it; and the indefinite carry-forward (Zinsvortrag) partially offsets a fixed ratio's rigidity.

5.3. India: Section 94B

India implemented Action 4 through Section 94B of the Income-tax Act 1961, inserted by the Finance Act, 2017, with effect from the assessment year 2018-19. The 1961 Act has since been repealed: the

Income-tax Act 2025 came into force on 1 April 2026, re-enacting the substance of the interest-limitation rule in a renumbered code and replacing the assessment-year concept with a single 'tax year'. The discussion below is set out with reference to Section 94B, which governed the period under review; the successor provision is Section 177 of the 2025 Act, and the General Anti-Avoidance Rule, formerly in Chapter 10-A, now appears in Sections 178 to 184. The section caps deductible interest paid to a non-resident associated enterprise at 30% of EBITDA, with a de minimis threshold of INR 1 crore (approximately €95,000 at end-2025 exchange rates). Two design choices distinguish the Indian rule from its UK and German counterparts. First, the cap applies only to interest paid to non-resident associated enterprises, not to third-party or domestic interest. Second, banking and insurance are excluded, reflecting the prudential capital structures of those sectors. The narrower scope eases the burden on purely domestic groups but raises a distinctive litigation question: whether external financing is, in substance, backed by an associated enterprise, for instance through a back-to-back guarantee. That question sits at the intersection of Section 94B and the General Anti-Avoidance Rule in Chapter 10-A of the same Act (now Sections 177 and 178 to 184 of the Income-tax Act 2025). India is a member of the OECD/G20 Inclusive Framework, which agreed the GloBE framework, but it has not enacted an IIR, a UTPR, or a QDMTT as at July 2026 (PwC, 2026). Successive budgets have not introduced Pillar Two provisions, and practitioner commentary continues to record uncertainty about timing and scope (Business Today, 2025). The position matters in two directions. Indian-headed groups with operations in jurisdictions that have implemented Pillar Two are already subject to the GloBE rules through those jurisdictions, even where India itself has not transposed them. And the Indian administration simultaneously faces the operation of Section 94B, the transfer pricing regime in Sections 92 and following, the General Anti-Avoidance Rule, and the prospect of future Pillar Two compliance. The combination clearly illustrates the asymmetric capacity claim made in Section 7.2.

Capacity-sensitive implementation is clearest in administrative practice, where the burden actually falls. Section 94B does not operate in isolation. It sits alongside one of the world's most active transfer-pricing enforcement regimes, and intra-group interest disputes run through the same machinery, draft assessment, Dispute Resolution Panel, Income-tax Appellate Tribunal, and the courts above them, which already carries a substantial backlog. Adding a quantitative cap and a general anti-avoidance rule to the existing arm's length enquiry multiplies the points at which a financing arrangement can be contested, and the recurring question (whether external borrowing is in substance backed by an associated enterprise) turns on guarantees, comfort letters and the parties' conduct: a fact-heavy enquiry that is expensive to run at scale. India has relieved some of this pressure through capacity-building tools rather than softer rules: an Advance Pricing Agreement programme, safe-harbour margins, and wider use of the mutual agreement procedure. Where administrative capacity is scarce, the layered architecture does not shrink the enforcement task; it redistributes it to whichever layer the administration is best equipped to handle, which in India means transfer pricing and the general anti-avoidance rule rather than the cap itself (PwC, 2026).

5.4. Patterns across the three case studies

Three patterns recur across the three implementations. First, the Action 4 best practice and the minimum requirement in Article 4 of ATAD I have not produced uniform domestic rules: scope, carry-forward periods and sectoral carve-outs diverge in ways that materially affect compliance costs. Second, the regulatory pathway into the architecture matters: jurisdictions whose rules predated BEPS, Germany above all, absorbed their existing instruments into ATAD I but were obliged to amend them to fit, as the 2023 reform of the Zinsschranke and the 2024 financing rules in §1 AStG both show, whereas jurisdictions that designed their rules afresh produced more sophisticated, multi-layered domestic frameworks, of which the UK CIR is the clearest example. Third, administrative capacity shapes implementation independently of legal design, as Section 5.3 showed for India and as broader findings on BEPS implementation in developing countries confirm (Garcia-Bernardo & Janský, 2024; Mosquera Valderrama, 2024).

6. Judicial boundary conditions on managerial Action

The EU-law layer does not stop at the directives. Four lines of Court of Justice authority set the outer limits of what a Member State may do to an intra-group loan, and therefore of what a group's advisers can and cannot rely on. Table 4 records the decisions and their holdings; what follows is what they mean for managerial action.

The first boundary is that formal symmetry cannot be assumed. In X BV (fiscal unity, C-398/16) the Court applied a per-element approach: any element of a group-taxation regime that treats a cross-border configuration less favourably than a domestic one must be tested independently against the freedom of establishment (CJEU, 2018; Smit, 2018).

The second, and for financing decisions the most consequential, is that arm's length pricing is not a defence. Lexel (C-484/19) was widely read as holding that a loan priced at arm's length was immune from a domestic anti-abuse rule (CJEU, 2021). That reading no longer stands. In X BV (C-585/22) the Court held that a Member State may deny an interest deduction in full where the debt forms part of a wholly artificial arrangement, even where the loan is on arm's length terms and the interest does not exceed what independent undertakings would have agreed (CJEU, 2024), thereby limiting the broad reading of Lexel. The managerial consequence is direct. A transfer-pricing file, however robust, does not discharge the abuse enquiry: the two filters demand separate evidence, drawn from the same transaction but organised to different tests. That is overlap rather than redundancy – and it is a documentation cost before it is a tax cost.

The third is that the abuse enquiry does not depend on a domestic rule at all. In the Danish beneficial-ownership cases, the Court held that abuse of rights is a general principle of EU law, so that benefits under the Interest and Royalties Directive and the Parent-Subsidiary Directive may be denied to conduit arrangements even where the Member State has enacted no anti-abuse provision (CJEU, 2019). A group cannot plan around the absence of a domestic rule.

Taken together, what survives is a constraint on targeting rather than on pricing. A Member State may not disallow interest merely because the lender is lightly taxed or the counterparty is foreign; it may disallow interest that forms part of an artificial arrangement. The quantitative cap is unaffected, because it applies irrespective of the lender's residence. For the group, the implication is that structuring effort is better spent on substance, and on the evidence of it, than on the rate: a rate can be defended and the arrangement still fail. This is why the proposals in Section 8 are directed at harbours and definitions rather than at further discretionary tests, and why Section 7.5 locates the organisational response in board-level oversight rather than in the technical tax function.

Table 4. Selected CJEU decisions bearing on intra-group interest deduction.

Decision	Date	Holding relevant to intra-group interest
X BV (C-398/16) and X NV (C-399/16)	22 Feb. 2018	Per-element approach to the Dutch fiscal-unity regime. Denying an interest deduction to a cross-border affiliate while allowing it to a domestic one infringed the freedom of establishment.
T Danmark / Y Denmark (C-116/16, C-117/16) and N Luxembourg 1 / others (C-115/16, C-118/16, C-119/16, C-299/16)	26 Feb. 2019	Established a general EU-law principle of abuse of rights that bars reliance on the Interest and Royalties Directive and the Parent-Subsidiary Directive. Conduit companies lacking beneficial ownership can be denied directive benefits even without a domestic implementing rule.
Lexel AB (C-484/19)	20 Jan. 2021	A Swedish anti-abuse rule that denied interest deduction on intra-group debt to a low-taxed lender restricted freedom of establishment and could not be justified on anti-avoidance grounds where the loan reflected a genuine arm's length arrangement.
X BV (C-585/22)	4 Oct. 2024	Article 49 TFEU does not preclude a Member State from denying an interest deduction in full where the intra-group debt constitutes, or forms part of, a wholly artificial arrangement, even where the loan is on arm's length terms and the interest does not exceed what independent undertakings would have agreed. The Court limited the broad reading of Lexel on that point.

Note: CJEU = Court of Justice of the European Union. Cases are cited by their Court of Justice case (docket) number rather than by ECLI; the full ECLI identifier is given in the reference list where available. The selection is purposive rather than exhaustive; the criteria are set out in Section 3.4. Holdings are paraphrased by the authors for the specific question of intra-group interest deduction and should not be read as complete summaries of each judgment.

7. Business and governance consequences of Layering

7.1. Redundancy and overlap

The most immediate effect of layering is concurrent application. The six layers mapped in Table 1, five of which are now operative, were each designed for a distinct pattern of abuse, yet together they subject a single payment to concurrent and independent tests. Redundancy, in the sense defined in Section 3.5, is concentrated rather than pervasive. A loan priced at an arm's length rate but routed through a low-substance entity is exposed concurrently to the Danish line of CJEU authority (CJEU, 2019), the PPT, and the residual domestic substance and beneficial-ownership rules retained by several Member States. Its excessive scale is independently caught by the quantitative cap. Where the structure produces a jurisdictional ETR below 15%, the Pillar Two top-up may apply, subject to the applicable GloBE rules, safe harbours and side-by-side treatment. However, concurrent application does not always entail a cumulative burden. As the worked example shows, source withholding tax collected when treaty access is denied is a covered tax that raises the jurisdictional ETR and can extinguish the top-up altogether, so the treaty and top-up filters may operate as substitutes rather than as cumulative layers. Some of this overlap is deliberate, intended to provide overlapping protection against sophisticated avoidance arrangements, but it is likely to increase the compliance and administrative burden for taxpayers and tax administrations.

These interactions are shown together in Figure 3, which maps the six layers onto the single loan they share and distinguishes genuine overlap from the point at which overlap shades into redundancy.

7.2. The compliance burden falls unevenly

The compliance burden generated by the architecture is likely to fall unevenly across three dimensions. The first is sectoral. Capital-intensive industries (notably infrastructure, energy and real estate) operate at gearing levels driven substantially, though not exclusively, by commercial rather than fiscal considerations, and are accordingly likely to be more exposed to the quantitative cap. The United Kingdom and Germany both shield some infrastructure financing from the cap, through the Public Infrastructure Exemption and §4h(6) EStG respectively, but they do so on different terms, and Germany's exception is confined to qualifying publicly supported loans. In jurisdictions with no comparable carve-out, the cap may disallow interest that is genuinely commercial in character. The second is geographic: a group operating in three high-capacity OECD jurisdictions meets less administrative friction than one operating in twenty low- and middle-income jurisdictions, where transposition has been uneven, and guidance is still developing. The third dimension lies within emerging-economy administrations themselves, as illustrated by the Indian case examined in Section 5.3: a narrower domestic scope is a rational response to capacity constraints, but it shifts enforcement weight onto transfer pricing audits and the General Anti-Avoidance Rule, where administrative capacity is similarly limited. This unevenness is not merely administrative. On the political-economy reading set out in Section 2.5, it tracks the distribution of bargaining power that produced each layer: the capacity of a jurisdiction to absorb the architecture broadly mirrors its capacity to shape the rules in the first place, so the administrations least able to influence the design are among those the design burdens most. These are theoretically grounded implications of the architecture, not measured distributions of monetary compliance cost; Section 9 sets out the empirical work needed to test them.

7.3. The double-taxation problem

Layering also compounds the risk of unrelieved double taxation. The disallowance of interest in the borrower jurisdiction does not, under either domestic or international tax law, produce a corresponding reduction in the lender's taxable interest income. The OECD Transfer Pricing Guidelines provide for corresponding adjustments under Article 9(2) of the Model Tax Convention, but only for adjustments grounded in the ALP (OECD, 2022). Action 4, ATAD I and the GloBE Rules contain no equivalent mechanism, and the mutual agreement procedure under Article 25 of the Model Convention is, as a matter of administrative practice,

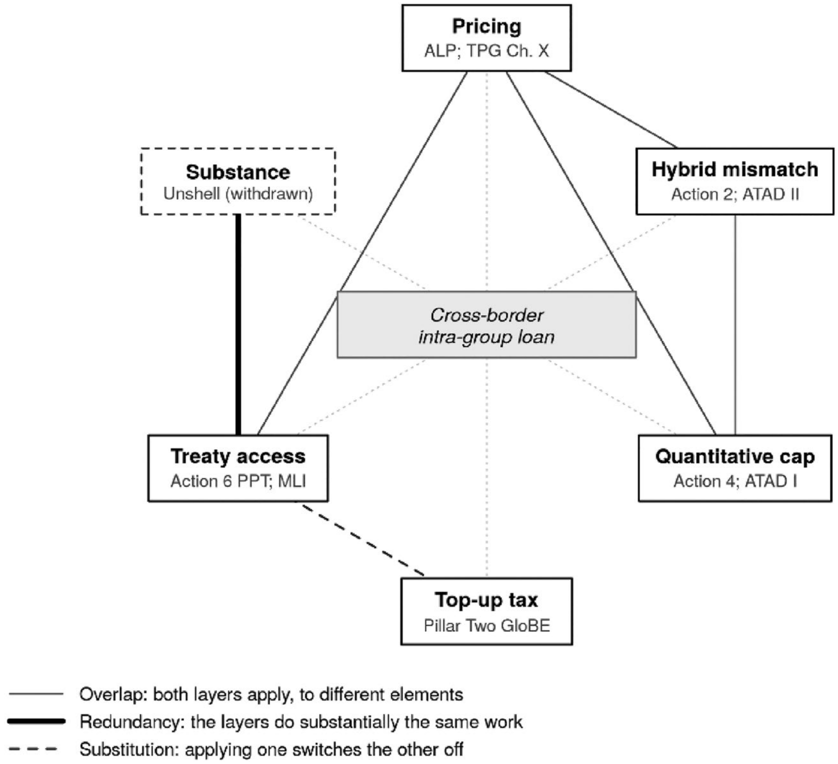

Figure 3. Interactions among the layers.
Note: Each node represents a regulatory layer associated with the same cross-border intra-group loan. Solid lines indicate selected instances of concurrent application in which the layers address different legal risks. The thick line identifies the principal redundancy hotspot between the treaty-access and residual-substance-or-abuse doctrines. The dashed line indicates potential substitution: in the worked example, additional withholding tax following denial of treaty access raises the lender jurisdiction's GloBE ETR and extinguishes the Pillar Two top-up. The relationships shown are illustrative rather than exhaustive.

oversubscribed. The point should be put precisely, and four outcomes distinguished. The first is a temporary disallowance, where the cap bites but the disallowed interest may be carried forward – indefinitely in the United Kingdom and Germany, for eight years in Indiay – which defers the charge rather than duplicating it, and hardens into a permanent cost only where the carry-forward expires, is lost on a change of ownership or restructuring, or is never absorbed. The second is a permanent denial of deduction where the pricing test bites, relieved, if at all, by a corresponding adjustment under Article 9(2). The third is withholding-tax exposure where treaty access is denied. The fourth is a Pillar Two top-up. Neither Action 4 nor the GloBE framework provides a dedicated corresponding-adjustment mechanism comparable to that available for transfer-pricing adjustments. Ordinary foreign-tax credit, treaty, or domestic relief may mitigate some of the resulting taxation, but such relief is not assured and may be incomplete: in the worked example, the credit for the €2.1 million of source withholding tax is capped at Country A's 9% liability, leaving €0.84 million unusable. To describe every one of these outcomes as 'double taxation' would be imprecise. What the architecture reliably produces is tax costs for which the existing instruments provide no dedicated relieving mechanism. Interactions among the layers can therefore generate unrelieved or incompletely relieved tax costs, although the direction and magnitude of those costs depend on which filters apply and how they interact.

7.4. Doctrinal coherence across the layers

The layers do not share a single conceptual foundation, and their key terms do not always mean the same thing. Action 4 defines interest functionally, including payments economically equivalent to interest; Pillar Two draws on financial-accounting concepts; the PPT is grounded in a subjective purpose enquiry; and the ALP is based on a counterfactual of independent dealing. A loan that fails the arm's length test may still satisfy the quantitative cap, and the reverse is equally true. Whether the proliferation of overlapping concepts is itself a source of complexity has begun to be asked of pending treaty work (Navarro, 2022). The case for consolidation is strongest where the layers apply to the same fact pattern, weakest where they address genuinely different abuse.

7.5. The organisational response: information processing and capability

The most significant implications of the layered architecture arise within the multinational group itself. The first concerns board-level oversight of tax risk. Tax risk has become a distinct element of enterprise risk management, with the GRI 207 standard on tax and the B Team Responsible Tax Principles shaping disclosure expectations (B Team, 2018; Global Reporting Initiative [GRI], 2019). Each layer widens the surface area boards must oversee: one financing decision can now give rise to risk under five operative filters and a residual substance concern, across every documentation regime and jurisdiction in which the group operates. Existing tax-governance frameworks were calibrated to a simpler environment, and they interact with reputational pressure, notably public country-by-country reporting. This is also where the architecture connects to the governance literature discussed in Section 2.4. If the level of tax planning a firm undertakes is shaped by managerial incentives and the strength of board oversight (Armstrong et al., 2015; Desai & Dharmapala, 2006), then adding layers does not simply raise compliance costs; it widens the space in which weak oversight can allow managerial preferences, rather than shareholder or public interests, to drive financing structure. The layered regime therefore makes the quality of a group's tax governance more consequential, not less.

The second implication relates to the in-house tax function itself. The documentation, modelling and reporting obligations for each layer are not interoperable. Transfer pricing local and master files address Chapter 10. CIR or Zinsschranke computations address Article 4 of ATAD I. Hybrid-mismatch analyses address Action 2 and ATAD II. Treaty-benefit substantiation files address the PPT. GloBE Information Returns address Pillar Two, and their exchange between Member States is governed by DAC9, which sits alongside country-by-country reporting under DAC4. The function must therefore run parallel processes for each layer, duplicating the same underlying transactional data. The managerial response is to invest in integrated tax-data architectures serving several layers from a common source, and to recruit the in-house capability to operate them, a cost that falls disproportionately on mid-cap groups and on emerging-market subsidiaries lacking mature in-house tax functions (Cooper & Nguyen, 2020). The DAC recast proposed in June 2026 answers precisely this complaint, offering a combined notification for country-by-country reporting and GloBE purposes and exempting Pillar Two groups from DAC6 reporting; it is, so far, the only instance of the architecture being simplified rather than extended.

The third implication concerns financing strategy, and closes the chain. Where a capital-intensive subsidiary faces a binding cap, the group has incentives to substitute external for internal debt, lengthen the tenor, or relocate the activity to a jurisdiction with a sectoral carve-out; where a financing entity operates as a conduit, the substance pressure from the Danish line of authority, residual domestic rules and any DAC reform pushes it towards jurisdictions where substance genuinely exists. Both adjustments are evident in the practitioner literature, and both bear on cross-border investment in ways the headline tax rate does not capture. These are managerial decisions, and the layered architecture is their proximate cause.

8. Recalibrating the architecture for firms and tax administrations

The analysis in Section 7 supports five recalibrations of the existing architecture. The objective in each case is to preserve the layered framework's anti-abuse function while reducing its compliance burden, double-taxation risk and uneven distributional incidence. Each addresses a specific defect identified above, and each is an incremental correction rather than a new regulatory layer.

8.1. A substance-anchored interest harbour

The OECD should develop, and the European Union should consider transposing, a substance-anchored interest harbour: a deemed-compliance threshold for moderate-sized intra-group loans, where the lender meets specified substance criteria, such as qualified personnel, real control over the risks and decisions associated with the financing activity, and adequate capital. The harbour would not displace the quantitative cap, nor would it deem the arm's length or treaty anti-abuse tests satisfied. Substance does not establish that a rate of 5, 7 or 10% is arm's length. The harbour would instead operate procedurally, creating a rebuttable low-risk designation for audit and documentation purposes, which an administration could displace on evidence. Scrutiny would then focus on arrangements with real abuse risk, and routine financing that meets the substance threshold would face less friction.

8.2. Coordinated sectoral carve-outs

Three instruments are commonly grouped together but do different work. The UK Public Infrastructure Exemption is a sectoral exemption turning on the character of the company and its activity. Germany's §4h(6) EStG is a financing-specific exclusion turning on the public source of the loan and the EU location of the project. The Eigenkapitalquote escape clause is neither: it is a general group-equity test available across all sectors, and it should not be treated as the German counterpart of the UK exemption. The United Kingdom and Germany therefore both protect infrastructure financing from earnings-stripping restrictions, but through markedly different eligibility mechanisms, and that divergence is precisely what invites arbitrage. Coordinated EU minimum carve-outs for regulated infrastructure and renewable energy, developed with sectoral regulators, would reduce both the disallowance of genuinely commercial interest and the arbitrage that divergent national exemptions invite. The objective is to align fiscal rules with the commercial logic of capital-intensive activity, including the financing needs of the energy transition.

8.3. A cross-layer dispute-coordination and relief mechanism

The double-taxation risk identified in Section 7.3 is structural: the existing mutual-agreement machinery is tied to adjustments grounded in the ALP, whereas the layered architecture now generates disallowances on grounds the ALP does not recognise. A single corresponding-adjustment mechanism spanning all of the layers would not work, because their functions differ. Four cases should be treated separately. A transfer-pricing adjustment already has a relieving mechanism in Article 9(2), and the problem there is capacity, not design. A temporary disallowance under an interest cap may justify coordination of timing and carry-forward treatment, particularly where the disallowance later becomes permanent; it should not automatically produce an exemption in the lender jurisdiction. A corresponding adjustment for an anti-hybrid denial would be perverse: it would recreate the very mismatch the rule exists to neutralise, so the appropriate response is co-ordination of characterisation between the two states, not relief. And a Pillar Two top-up operates jurisdictionally, on a blended ETR, and is not ordinarily attributable to any single loan, so it is not amenable to transaction-level relief at all; what is needed there is agreement on the allocation of covered taxes, of which the treatment of source withholding tax in the worked example is an illustration. What the OECD should develop, accordingly, is a competent-authority mechanism for co-ordinating disputes across the layers, modelled on Article 25 and operating in parallel with it, rather than a single corresponding adjustment. Within the European Union, the Dispute Resolution Directive (2017/1852) could be explicitly extended to cover ATAD I, ATAD II and GloBE-driven adjustments. The EU dispute-resolution machinery has been criticised for its coverage and uptake (Piotrowski et al., 2019); strengthening it is a corollary of the layered architecture.

8.4. A Differentiated implementation path

Implementation capacity is unevenly distributed across the Inclusive Framework. A differentiated transition path for emerging economiesy – longer phase-ins for Pillar Two, technical-assistance commitments, and simplified standard guidancey – would reduce the unevenness identified in Section 7.2. The QDMTT offers a model in miniature: it allows the jurisdiction in which the low-taxed constituent entity is located to collect the top-up before another jurisdiction applies the IIR or the UTPR (OECD, 2023). A similar local-collection logic could inform the design of the other layers.

8.5. A cross-layer definitions concordance

A technical concordance is the least ambitious of the proposals and, administratively, the most immediately useful. Three definitions are central: 'interest', defined functionally in Action 4, more narrowly in some domestic regimes, and by reference to financial-accounting concepts in Pillar Two; 'associated enterprise', whose scope varies across the layers and under treaty law; and 'substance', which means different things in Chapter 10, the PPT, the withdrawn Unshell proposal and the GloBE substance-based income exclusion. A concordance prepared by the OECD and supported by the European Union should map where these definitions converge and diverge, explain the reasons for the differences, and identify common data fields that can be reused across compliance processes. It should not attempt to harmonise concepts that serve genuinely different legal purposes.

8.6. The soft-law complement

Finally, the soft-law disciplines described in Section 7.5 should not be omitted from a reform package. Reform packages that combine reporting and governance components with doctrinal change have a stronger empirical record of changing behaviour than purely rule-based reforms (Gribnau & Jallai, 2017; Hardeck & Hertl, 2014).

8.7. Implications for practice

For boards, the implication is that tax risk arising from a single financing decision is no longer a technical matter that can be delegated in full to the tax function. The number of filters, and the fact that they do not share definitions, means that oversight has to be exercised over a process rather than over an outcome: the board's question is not whether the rate is arm's length but whether the group can evidence, from one set of records, that it has satisfied five tests that were never designed to be satisfied together.

For the in-house tax function, the practical priority is interoperability rather than headcount. The binding constraint identified in Section 7.5 is that the same transactional data must be re-expressed five times; investment in an integrated tax-data architecture attacks that constraint directly, whereas additional specialists merely absorb it.

For treasury, the implication is that the financing decision now carries a compliance cost that is largely independent of the tax saved. As the worked example shows, a structure can attract no top-up tax at all and still generate five separate evidential obligations. Financing options should therefore be appraised against both a tax charge and a documentation charge, and the second is not a rounding error.

9. Conclusion

The international tax regime governing intra-group debt is no longer defined by a single rule. It now operates through five independent filters, each developed in a different institutional setting and applied concurrently to a single class of transaction, with substance remaining a residual concern after the withdrawal of Unshell. Available evidence suggests that the architecture has made some aggressive forms of debt-based profit shifting more difficult than they were a decade ago, although the empirical magnitude of the multinational response remains smaller than the first generation of theoretical models predicted (Alfandia, 2024; Schjelderup, 2016). The architecture also imposes costs that policy design has not yet adequately addressed. Doctrinal overlap between the instruments is genuine; the compliance burden is unevenly distributed across industrial sectors and jurisdictions; interactions among the layers can generate unrelieved or incompletely relieved tax costs, though the direction and magnitude depend on which filters apply; and the administrative capacity of the implementing state materially shapes how the regime operates in different jurisdictions.

The three questions that opened the article can be answered directly. The first asked how the layers interact on a common loan. They do all three: the worked example in Section 4.8 shows the layers reinforcing one another against an aggressive structure, the pricing test and the quantitative cap denying different slices of the same interest, the treaty and top-up filters offsetting one another, and tests resting on incommensurable concepts producing results that do not line up. The second asked how the burden is distributed: unevenly, and most heavily on capital-intensive sectors and on groups operating across many lower-capacity jurisdictions. The third asked what recalibration would keep the anti-abuse function while easing the friction on legitimate investment. The five proposals in Section 8 are the answer.

The theoretical contribution follows from the same evidence. Read through institutional complexity and organisational information processing, layered tax governance is not merely a legal untidiness but a distinct organisational condition. The institutional demands are only partially aligned, the rule-makers did not reconcile them, and the firm must therefore absorb the misalignment, which converts a question of legal compliance into one of information-processing capacity and board-level oversight. The propositions in Section 2.7 can now be revisited. P1 and P6 are directly supported by the analysis above. The documentation regimes are non-interoperable (Sections 4.7 and 7.1), and the worked example shows tax burden and compliance burden coming apart, since a structure may attract no top-up at all and still generate five separate evidential obligations (Sections 4.8 and 7.3). P2 to P5 are not established here, and are not claimed to be. They are organisational expectations that follow from the mapping and require firm-level testing, since whether groups meet capability requirements by investment or by restructuring, and how board governance and administrative capacity condition that choice, cannot be settled from legal materials. P6 is the sharpest of the six, because it predicts that reforms which reduce tax liability, such as the side-by-side regime or a substance harbour, may leave the organisational burden untouched.

On the political-economy reading set out in Section 2.5, the architecture is a partially settled institutional regime, and the unevenness identified here is not incidental: it reflects the distribution of bargaining power that produced each layer. Future research will need to combine doctrinal precision with political-economy analysis as the next phase of consolidation unfolds, including the migration of the substance concern into DAC6 hallmark D2 under the recast proposed in June 2026, the maturation of Pillar Two and the divergence introduced by the side-by-side regime, and the prospects for a unified successor instrument capable, in time, of replacing several of the layers mapped in this article.

Three limitations qualify the analysis. The comparative study covers three jurisdictions, and a broader study encompassing implementations in Latin America, Africa and Southeast Asia would provide stronger support for the asymmetry claim advanced in Section 7.2. The analysis is doctrinal and qualitative; a firm-level empirical study would be needed to test whether the architecture produces the compliance asymmetries identified here. Country-by-country reporting data under Action 13 (OECD, 2015d), including public country-by-country reporting within the European Union under Directive (EU), 2021/2101, provides the necessary basis for such work (Garcia-Bernardo & Janský, 2024). Pillar Two remains in phased implementation, and its interaction with the older layers will become clearer over the next two or three filing cycles. A further agenda concerns the digital economy, which alters where a borrower's capacity to deduct interest should be assessed; future research should connect the architecture to digital business models, where profits, intangibles and financing capacity are harder for lower-capacity administrations to locate and verify (Chaisse, 2022; Elavarasi & Thayyib, 2026; Mann, 2023).

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Data availability statement

Data will be made available on reasonable request from the corresponding author.

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