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A Decade of Capital Structure Research in Emerging-Market Exporters: A Hybrid Bibliometric and Topic Modeling Review

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Abstract: This review synthesises a decade of research on the capital structure of firms in emerging markets and natural resource exporting economies, focusing on a policy relevant gap, namely how foreign exchange and export proceeds regulation shapes corporate financing decisions. The study draws on 779 records retrieved from Scopus and refined through a PRISMA 2020 protocol into 83 indexed articles and reviews published between 2016 and 2026, supplemented by four regional journal studies. It applies a hybrid design that combines bibliometric performance analysis and science mapping with a structural topic model and a Theory, Context, Characteristics and Methodology synthesis framework. The findings show a young but accelerating field, with annual output rising sharply after 2020 and peaking in 2025, concentrated in China, the United States, India and Indonesia, and dominated by quantitative panel and econometric methods. Thematic mapping reveals four research streams, in which firm level determinants of capital structure dominate, while streams most relevant to resource exporters, such as export intensity, trade finance, foreign exchange and currency retention dynamics, and state ownership, remain thinly populated. These results consolidate a fragmented literature and identify the regulation of export proceeds, exemplified by Indonesia's export proceeds retention policy, as an underresearched determinant of leverage.

Keyword: Capital Structure, Foreign Exchange Retention, Emerging Market Exporters, Bibliometric Analysis, Structural Topic Modeling.

INTRODUCTION

The financing decisions of firms in emerging markets have long occupied a central place in corporate-finance research, yet they acquire a distinctive complexity for exporters of natural resources. Such firms operate at the intersection of volatile global commodity prices, capital-intensive production and a heavy dependence on foreign-currency cash flows, all of which bear directly on the optimal mix of debt and equity. The relevance of this setting is acute in resource-rich emerging economies: in Indonesia, natural-resource commodities accounted for 62.7 percent of national exports in 2024, generating export proceeds (Devisa Hasil Ekspor, DHE) of approximately US$166 billion. Because trade openness and export intensity are widely regarded as engines of growth in developing economies through technology transfer and capital accumulation (Hussain et al., 2021), the financing resilience of the firms that drive those exports is a question of both corporate and macroeconomic significance.

Theoretically, the financing of resource exporters sits at the tension between the trade-off and pecking-order traditions. Government-led downstreaming (*hilirisasi*) mandates push firms toward large investments in fixed, capital-intensive assets, which, under trade-off logic, should raise debt capacity because tangible assets serve as collateral (Li & Chen, 2022). At the same time, the abrupt restriction of foreign-currency liquidity created by export-proceeds retention requirements can disturb the internal financing hierarchy emphasised by pecking-order theory, forcing firms toward costlier external funds and altering the free-cash-flow dynamics central to agency-cost reasoning (Agyei et al., 2023). Indonesia's policy trajectory, from a 30 percent retention requirement for three months under Government Regulation 36/2023 to a 100 percent requirement for twelve months under Government Regulation 8/2025, provides an unusually sharp instance of this liquidity-versus-leverage trade-off.

Despite the policy salience of these dynamics, the academic literature on capital structure has overwhelmingly examined standard firm-level determinants (profitability, tangibility, size, growth) and conventional macroeconomic factors, while the role of export-proceeds regulation and foreign-exchange retention as a financing determinant remains almost untouched. Studies of the financial institutions and trade-finance instruments that mediate exporters' access to foreign-currency funding (Caballero et al., 2018; Alqahtani et al., 2024; Miao et al., 2023) sit largely apart from the mainstream capital-structure literature, and evidence from natural-resource exporters in emerging markets is sparse relative to the dominance of advanced-economy and aggregate-sample studies. The field therefore lacks a consolidated account of what is known, what is contested, and where the most consequential gaps lie. In framing this gap, the review adopts an analytical rather than an advocacy standpoint: export-proceeds regulation is treated as a research question to be examined against the evidence, not as a policy position to be defended, and any claims about its importance are reserved for the synthesis.

This review addresses that need. Rather than a narrative survey, it adopts a hybrid, reproducible design that pairs bibliometric analysis, which maps the intellectual structure, productivity and methodological orientation of the field, with a structural topic model that surfaces latent themes from article abstracts, and organises the synthesis through the Theory, Context, Characteristics and Methodology (TCCM) framework. Combining quantitative science mapping with probabilistic topic modelling allows the descriptive structure of the literature to be triangulated against its semantic content, strengthening the validity of the thematic conclusions. Accordingly, the review is guided by four research questions:

1. How has research on the capital structure of emerging-market and natural-resource export firms evolved over the past decade in terms of publication output, geography, outlets and methods?
2. What are the dominant and emerging thematic streams, and which firm-, industry- and country-level determinants recur across this body of work?
3. To what extent has the regulation of export proceeds and foreign-exchange retention been examined as a determinant of corporate financing?
4. What research agenda follows from these findings, and how does the Indonesian export-proceeds retention setting serve as a natural experiment for advancing it?

The review makes four contributions. First, to the best of our knowledge, this study offers one of the first consolidated bibliometric maps of the intersection between capital structure, export intensity, and foreign-exchange policy in resource-exporting contexts. Second, its hybrid bibliometric and topic-modelling design offers a transparent and replicable alternative to narrative review. Third, it identifies the regulation-of-export-proceeds channel as a distinct and under-researched determinant of leverage.

Fourth, it draws implications for regulators, exporting firms and financial institutions navigating the balance between monetary-stability objectives and corporate financing flexibility. The remainder of the paper is organised as follows: the Conceptual Background outlines the umbrella theories that frame the review; the Method details the review protocol; and the Results and Discussion reports the bibliometric findings, topic structure, thematic synthesis and research agenda, before the Conclusion.

METHOD

Review Protocol

The review follows the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 statement, which ensures transparent and reproducible reporting of how studies are identified, screened and included (Page et al., 2021). The broader workflow is organised according to the Scientific Procedures and Rationales for Systematic Literature Reviews (SPAR-4-SLR) protocol, which structures the process into the assembling, arranging and assessing of the literature (Paul et al., 2021). The resulting PRISMA flow diagram is shown in Figure 1.

Data Source and Search Strategy

Scopus was adopted as the single source database. The reliance on one database is methodologically deliberate: bibliometric analysis depends on internally consistent metadata such as author affiliations, keywords, citation counts and source titles, and merging databases with divergent indexing conventions introduces duplication and field-mismatch errors that degrade science mapping (Donthu et al., 2021). Among the major indices, Scopus offers the broadest peer-reviewed coverage of business, finance and economics journals, making it well suited to this purpose. To offset the principal limitation of a single-database design, namely the incomplete coverage of regionally important outlets, the search was complemented by backward snowballing and a targeted scan of indexed Indonesian journals, which serve as supplementary context rather than as part of the bibliometric corpus.

The reliance on a single database is a further source of sensitivity. Because the bibliometric corpus is restricted to Scopus, it necessarily excludes records indexed only in Web of Science or Dimensions, which may reduce coverage of some highly cited finance journals. Two features limit the resulting bias. First, the backward snowballing and targeted regional-journal scan described above recover high-impact items that a Scopus-only frame would miss. Second, the thematic conclusions are triangulated across two independent methods co-word mapping and structural topic modelling so that no finding depends on any single record. The single-database design is nonetheless acknowledged as a limitation in the Conclusion.

Coverage evidence further supports this choice. Scientometric comparisons indicate that the design is unlikely to omit a material share of the relevant indexed literature: Scopus indexes a substantially larger set of active peer-reviewed journals than Web of Science and largely subsumes the WoS-indexed titles in business, economics and finance (Mongeon & Paul-Hus, 2016), while Scopus and Dimensions together offer comparably broad coverage that exceeds that of Web of Science (Singh et al., 2021). Because most WoS-indexed finance and energy journals are also indexed in Scopus, a Scopus-anchored search captures the bulk of the field. The few records unique to Web of Science or Dimensions are then handled pragmatically through backward snowballing, rather than by merging databases with incompatible metadata, which would degrade the science mapping.

The query combined three conceptual blocks (capital structure; export and natural-resource activity; and foreign-exchange or policy shocks) applied to titles, abstracts and keywords, and restricted to the 2016–2026 window. The verbatim query was:

TITLE-ABS-KEY (("capital structure" OR leverage OR "debt-to-equity" OR "debt ratio" OR "financing decision*" OR "financial leverage" OR "speed of adjustment")) AND TITLE-ABS-KEY (export* OR internationalisation OR internationalization OR "natural resource*" OR commodit* OR extractive OR mining OR plantation) AND TITLE-ABS-KEY ("capital control*" OR "foreign exchange" OR "exchange rate" OR shock OR regulat* OR "export proceeds" OR repatriation OR "capital flow*") AND TITLE-ABS-KEY (PUBYEAR > 2015 AND PUBYEAR < 2027)

The three-block design also calls for justification. The conjunction of three conceptual blocks (capital structure AND export/resource activity AND foreign-exchange or policy terms) is intentionally precise: the review targets the specific intersection of corporate financing and export/foreign-exchange dynamics, not capital structure in general, for which comprehensive reviews already exist. We recognize that this design may exclude capital-structure studies of exporters that do not surface foreign-exchange or policy terms in their title, abstract or keywords, creating a risk of selection bias toward policy-salient work.

Three safeguards address this: each block was expanded with broad synonyms and truncation to maximize recall within scope; the foreign-exchange/policy block deliberately includes generic terms (shock, regulat*, capital flow*) so that relevant studies need not name a specific instrument; and backward snowballing was used to recover in-scope studies missed by the query. The strategy therefore favours precision at the recognized cost of some recall, a trade-off appropriate to a focused, policy-oriented review. The search was executed on 14 June 2026. Reporting the precise retrieval date is essential for reproducibility because Scopus is continuously updated; the date fixes the query to a single, replicable snapshot of the database. No language restriction was imposed at the query stage.

Eligibility Criteria

Records were retained or excluded according to the criteria summarised in **Table 1**.

Table 1. Inclusion and exclusion criteria

Criterion	Inclusion	Exclusion
Topic relevance	Studies on the capital structure, leverage or financing decisions of firms with an export, international-trade, natural-resource or foreign-exchange dimension	Studies unrelated to corporate capital structure or to exporting / resource firms
Document type	Peer-reviewed journal articles and review articles	Conference papers, book chapters, editorials, notes, errata and other non-refereed material
Time span	Published 2016–2026	Published outside the search window
Database	Indexed in Scopus	Not indexed in Scopus (local journals used only as supplementary context)
Metadata	Retrievable title, abstract and keywords for bibliometric and topic analysis	Records without retrievable abstract or core metadata
Unit of analysis	Firm-level financing or leverage outcomes	Purely macro-level studies with no firm-financing focus

Screening and Selection

The query returned 779 records from Scopus. After removing 42 duplicates, 737 records were screened against the eligibility criteria. A total of 654 records were excluded: 163 on document-type grounds (for example, conference papers, book chapters, editorials and errata) and 491 because their title, abstract or keywords were not topically relevant to the capital structure of exporting or resource firms. Screening yielded 83 eligible Scopus articles. A further four studies were identified from regional Indonesian journals indexed in SINTA/Garuda, giving 87 studies included in the review (Figure 1). The 83 Scopus articles constitute the bibliometric corpus because such mapping requires internally consistent metadata; the four regional studies serve as supplementary context in the qualitative synthesis.

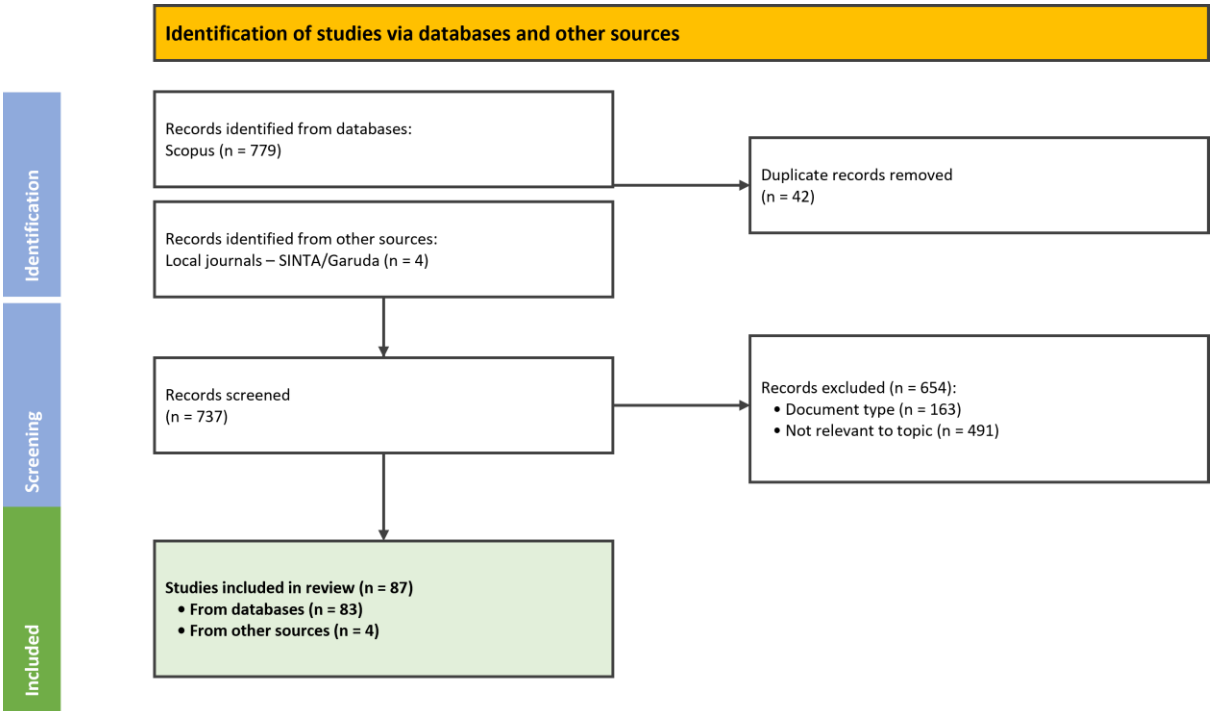

Figure 1. PRISMA 2020 flow diagram of study identification and selection

Quality Appraisal

Quality control was applied at two levels. At the document level, inclusion was restricted to peer-reviewed journal articles and review articles, excluding non-refereed material. At the source level, the standing of the publishing outlets was appraised using SCImago Journal Rank (SJR) quartiles, complemented where available by the Australian Business Deans Council (ABDC) journal ranking, in order to characterise the quality distribution of the corpus.

Analytical Approach

The analysis proceeds in three stages. First, a bibliometric analysis combines performance analysis (annual publication output and productivity by country, affiliation and source) with science mapping, including keyword co-occurrence (co-word) analysis and, where citation data permit, co-citation and bibliographic-coupling networks; these were conducted using the bibliometrix R package (Aria & Cuccurullo, 2017) and VOSviewer (van Eck & Waltman, 2010), following established guidelines (Donthu et al., 2021). Second, a structural topic model (STM) is estimated on the preprocessed abstracts to surface latent themes; the number of topics is selected with reference to semantic-coherence and exclusivity diagnostics, with publication year specified as a covariate so that topic prevalence can be traced over time, and the resulting topics are labelled and validated against the bibliometric clusters (Roberts et al., 2019). Third, the findings are synthesised through the Theory, Context, Characteristics and Methodology (TCCM) framework (Paul & Rosado-Serrano, 2019). The sections that follow report the bibliometric findings first, then the topic-structure results, and finally the integrated synthesis.

RESULT AND DISCUSSION

This section reports the descriptive bibliometric structure of the 83-article corpus. The findings are presented descriptively, with their interpretation reserved for the thematic synthesis. The distributions discussed below are also visualised in the accompanying figures (publication trend, country, method, source and thematic distributions).

Publication Trends

Annual output, shown in Figure 2, indicates a young but rapidly expanding field. Fewer than ten articles appeared in any single year before 2021, but output accelerated markedly thereafter, rising to 12 articles in 2024 and peaking at 20 in 2025; the 10 records already indexed for 2026 confirm continued momentum, although that year was incomplete at the time of retrieval. More than two-thirds of the corpus was published from 2021 onward, signalling that scholarly attention to the financing of exporting and resource firms is a recent and intensifying phenomenon.

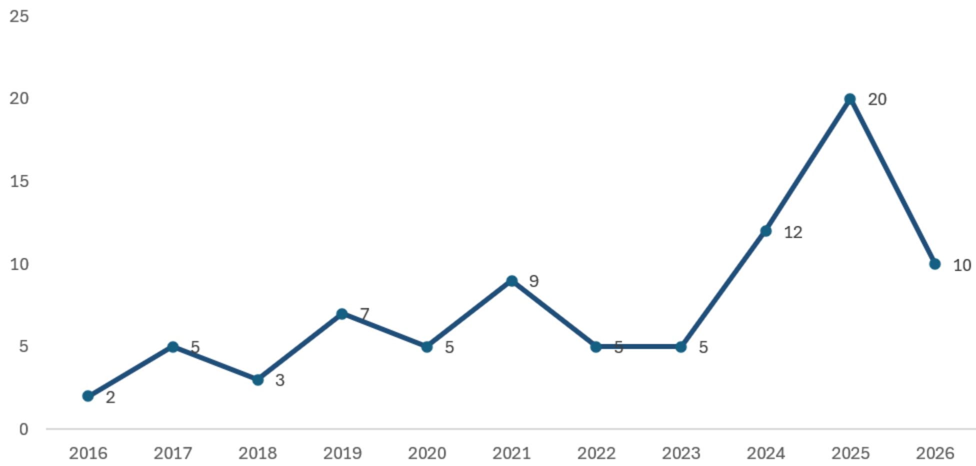

Figure 2. Annual publication output, 2016–2026.

Geographic Distribution

Productivity by author affiliation, shown in Figure 3, is concentrated in a small number of countries. China (15 articles) and the United States (13) together account for roughly one-third of the corpus, followed by India and Indonesia (7 each). Indonesia's relatively strong representation is notable given its prominence as a natural-resource exporter and reinforces the local relevance of the review. Beyond these leaders, output is distributed across South Korea (5), Pakistan (4) and a long tail of countries contributing three or fewer articles, indicating a geographically dispersed but distinctly emerging-market–oriented field.

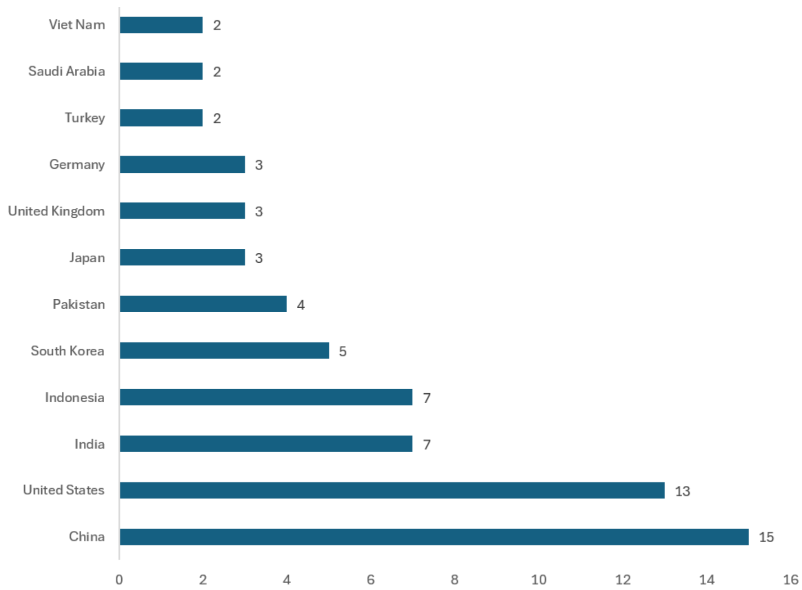

Figure 3. Most productive countries by author affiliation.

Most Productive Sources

The corpus is spread across a wide range of outlets with no single dominant venue (Figure 4). The most frequent source is the International Journal of Energy Economics and Policy (6 articles), consistent with the energy- and resource-oriented character of the field; the remaining articles are scattered across finance, economics and management journals, each contributing only one or two records. This dispersion is characteristic of an emerging research area that has not yet consolidated around a core set of specialist journals.

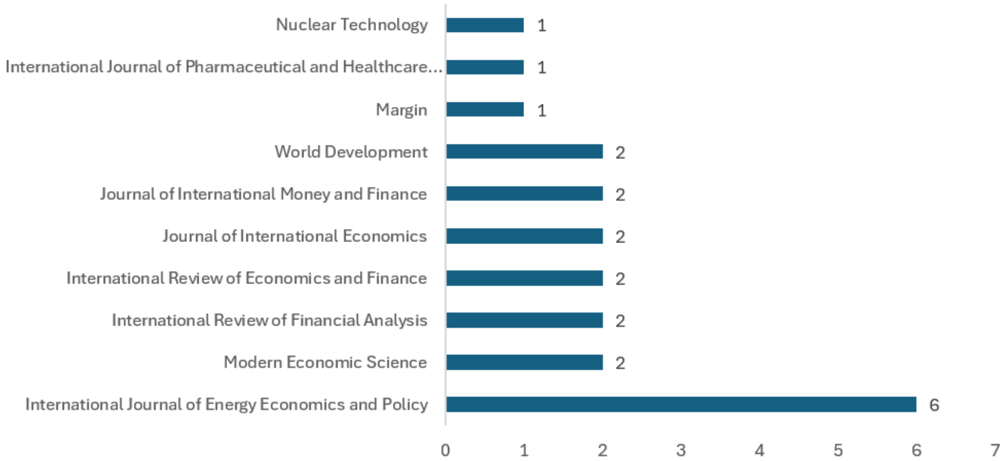

Figure 4. Most productive publication sources (top 10)

Methodological Orientation

As Figure 5 shows, the field is overwhelmingly empirical and quantitative. Panel and econometric designs (25 articles) together with other empirical and regression-based studies (32 and 4 respectively) account for 61 of the 83 articles, roughly three-quarters of the corpus. Modelling and simulation studies (12) form a secondary cluster, while survey, qualitative and review approaches remain marginal. The prevalence of panel and dynamic econometric methods is consistent with the centrality of the trade-off and speed-of-adjustment traditions in firm-level leverage research.

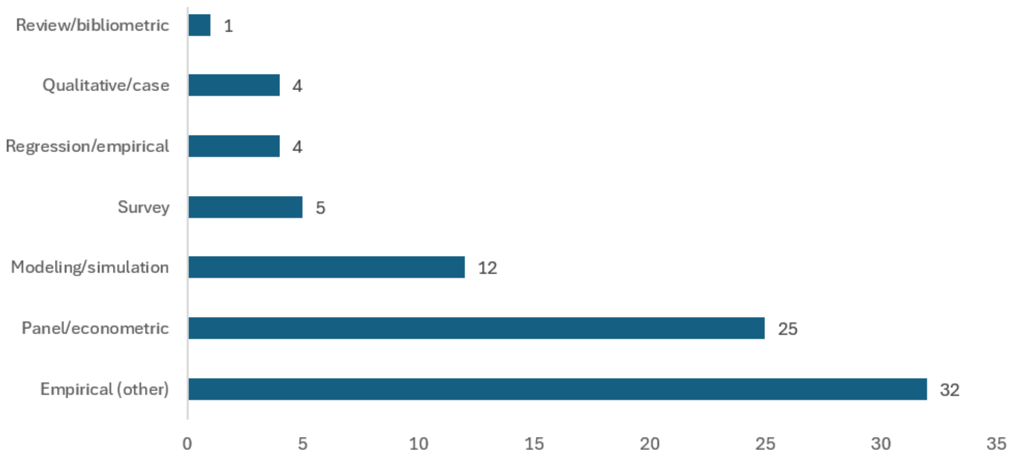

Figure 5. Methodological orientation of the corpus

Citation Analysis and Influential Works

To complement the productivity analysis, a citation analysis characterizes the impact structure of the corpus, computed from the Scopus 'cited by' metadata of the 83 indexed articles. The corpus has accumulated roughly 878 citations in total, a mean of about 11 per article, but impact is highly concentrated: a small number of articles account for a large share of citations, while the post-2021 majority remain too recent to have accrued substantial counts. The most-cited works (Table 2) are led by a study of environmental provisions in trade agreements, followed by studies of financial distress, treasury management, green-innovation readiness and economic-policy uncertainty, indicating that the corpus's visibility derives more from the trade, distress and policy-uncertainty literatures than from core capital-structure theory.

Table 2. Most-cited articles in the Scopus corpus (citation counts as recorded in the Scopus metadata at the time of extraction).

Rank	Study	Year	Source title	Cited by
1	Brandi, Schwab & Berger	2020	World Development	201
2	Baghai et al.	2021	Journal of Finance	72
3	Polak, Nelischer & Guo	2020	AI & Society	71
4	Ullah et al.	2024	Journal of Asia Business Studies	61
5	Duan, Fan & Wang	2022	Pacific-Basin Finance Journal	43
6	Kalyanpur & Newman	2019	International Organization	33
7	Chen & Matousek	2020	International Review of Financial Analysis	29
8	Fernandez de Guevara & Maudos	2021	Journal of International Money and Finance	27
9	Ma, Anderson & Marshall	2016	Managerial Finance	23
10	Maghyereh, Abdoh & Al-Shboul	2022	Economic Systems	22

Authorship is dispersed: only a handful of authors contribute two studies (e.g., Colak; Wang; Endri; Ji; Lin), and no author dominates, which is consistent with a young, multi-disciplinary field that has not yet formed a stable core of specialist contributors. A full co-citation and bibliographic-coupling analysis is constrained by the dispersion of references across this heterogeneous corpus and is identified as a direction for dedicated bibliometric work. Collaboration structure (Figure 6) reinforces this picture.

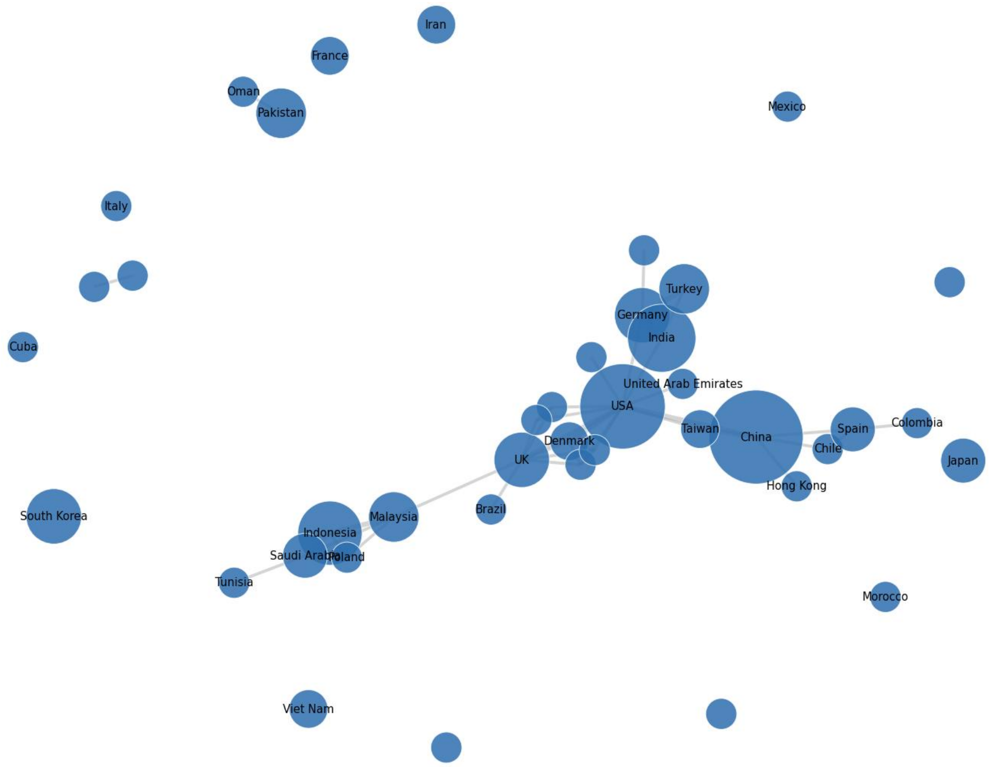

Figure 6. Country co-authorship collaboration network of the Scopus corpus (node size = number of studies; edges = co-authored studies between countries).

The country co-authorship network is organized around a central cluster linking China, the United States, India, Germany, Turkey and the United Kingdom, while a long tail of countries, including several resource exporters, appear as isolates with little cross-border co-authorship. Institutional collaboration is correspondingly sparse: most institutions contribute a single study and few are linked by co-authored work within the corpus, so no dense inter-institutional structure emerges. Co-citation and bibliographic-coupling networks are not reported because the Scopus export underlying this review does not contain the cited-references field they require; constructing them from a reference-enabled export is flagged as future bibliometric work.

Thematic Streams

Keyword co-occurrence analysis resolves the corpus into four thematic streams, shown in Figure 7. The literature is dominated by firm level determinants of capital structure (52 articles), mainly profitability, tangibility, firm size, and growth opportunities. The second stream focuses on export intensity and trade finance (19 articles), linking export activity and financing access to capital structure choices. Two thinner streams address foreign exchange and currency retention dynamics (8 articles), which are closest to the export proceeds retention issue, and ownership and state enterprise governance (4 articles). The explicit link between capital structure and firm value, which does not emerge as a distinct cluster in the corpus. The sparseness of the foreign-exchange/retention and ownership streams, set against the dominance of generic determinant studies, is the most consequential structural feature of the field and is examined further in the synthesis.

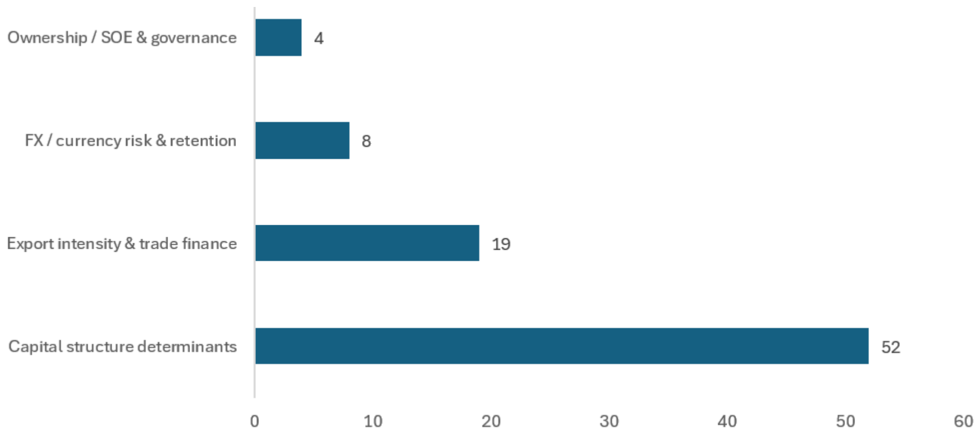

Figure 7. Thematic streams identified in the corpus

Topic Structure (STM)

1. Topic-Model Specification and Selection

The 83 Scopus abstracts were preprocessed through tokenisation, lower-casing, removal of stopwords and very rare terms, and stemming, and were then modelled with a structural topic model in which publication year entered as a prevalence covariate (Roberts et al., 2019). The number of topics was chosen with reference to the standard diagnostics reported in Figure 8. Across candidate solutions from four to ten topics, a six-topic solution offered the most favourable balance between semantic coherence and exclusivity while retaining a competitive held-out likelihood, and was therefore adopted. Each topic is summarised below by its highest-probability terms and by its FREX terms, which weight words that are both frequent in, and exclusive to, the topic.

To support reproducibility, the full STM specification is reported. Abstracts were preprocessed in the stm R package (Roberts, Stewart & Tingley, 2019) with lower-casing, removal of punctuation and numbers, removal of standard English stopwords augmented by a custom list of generic academic terms (e.g., study, paper, result, approach), Porter stemming, and retention of tokens of three or more characters; terms occurring in fewer than two documents were dropped (lower.thresh = 2).

The model used Spectral initialization with a fixed random seed (42) for determinism, a maximum of 120 EM iterations, and publication year together with a topic-priority indicator as prevalence covariates. The number of topics was selected data-drivenly with searchK over K = 4 to 10: exclusivity rises monotonically with K while semantic coherence and held-out likelihood favour smaller K, and K = 6 was chosen at a local semantic-coherence peak that retained a competitive held-out likelihood while keeping topics interpretable and avoiding very thin topics (Figure 8).

The topics were then labelled and validated: labels were assigned from each topic's highest-probability and FREX terms and cross-checked against the most representative documents for each topic. Because labelling was performed by the author, it carries an unavoidable element of judgement; rather than claim formal inter-coder reliability, which a single-analyst design cannot support, we validate the topics externally by their convergence with the independently derived keyword co-occurrence clusters (the Thematic streams section), reported below. Labels should be read as interpretive summaries of the term distributions, not as definitive category names.

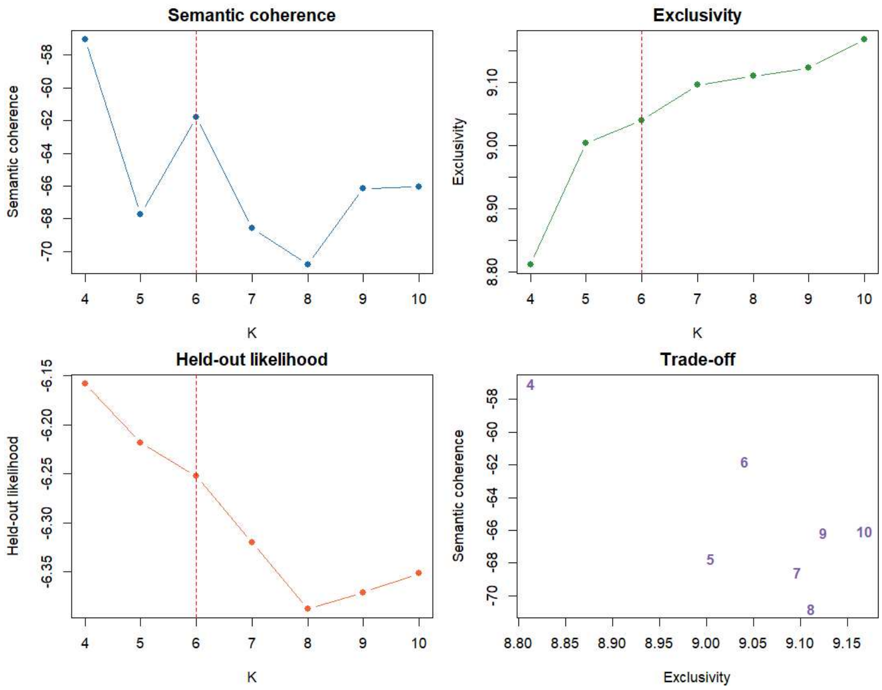

Figure 8. Structural-topic-model diagnostics across candidate numbers of topics (K)

2. Identified Topics

The six topics and their characteristic terms are listed in Table 3. Topic 6 (firm-level finance) is the analytical core of the corpus, combining capital-structure terms with financial distress, enterprise ownership and credit, and corresponds closely to the dominant bibliometric stream of firm-level determinants. Topic 1 (returns and exchange rate) groups studies of stock returns, exchange-rate exposure, profitability and asset ratios, frequently for mining and resource firms.

Topic 4 (banking and currency) concerns the role of banks, currency risk, liquidity and diversification under crisis and uncertainty conditions. Topic 3 (crude oil and trade) gathers commodity-trade, import-demand and policy studies, often using country-level time-series designs such as ARDL. Topic 2 (green technology and carbon) reflects the more recent turn toward export-led sustainability, environmental innovation and industrial transformation, while Topic 5 (resilience and supply chain) captures post-shock resilience, supply chains and sectoral studies such as textiles.

Table 3. The six structural topics and their characteristic terms.

Topic	Label	Highest-probability terms	Distinctive (FREX) terms
1	Returns & exchange rate	Stock, return, rate, ratio, exchange, asset, profit, firm, oil, growth	Stock, return, exchange, ratio, asset, profit, mining, intensity, exposure, roa
2	Green technology & carbon	Export, trade, technology, sustainability, economic, global, carbon, performance, market	Carbon, technology, environment, cooperation, barrier, sustainability, innovation, green, standard
3	Crude oil & trade	Oil, import, market, export, policy, price, product, trade, India, region	Crude, oil, India, border, import, plant, equilibrium, ARDL, demand, openness
4	Banking & currency	Financial, bank, risk, leverage, global, liquidity, currency, market, diversification	Bank, currency, diversification, liquidity, crisis, uncertainty, risk, smes, channel
5	Resilience & supply chain	Industry, resilience, chain, global, textile, China, system, region, enhance	Resilience, chain, textile, industry, platform, public, enhance, integration

Topic	Label	Highest-probability terms	Distinctive (FREX) terms
6	Firm-level finance	Firm, export, financial, finance, capital, industry, enterprise, leverage, structure	Firm, finance, firm-level, distress, enterprise, capital, heterogeneity, credit, fdi

Figure 9 reports the expected topic proportions across the corpus. Topic 6 is the most prevalent theme, followed by Topics 1 and 2, while Topics 4 and 5 are the least prevalent. Currency- and resilience-related questions thus occupy a smaller share of the literature than firm-level financing.

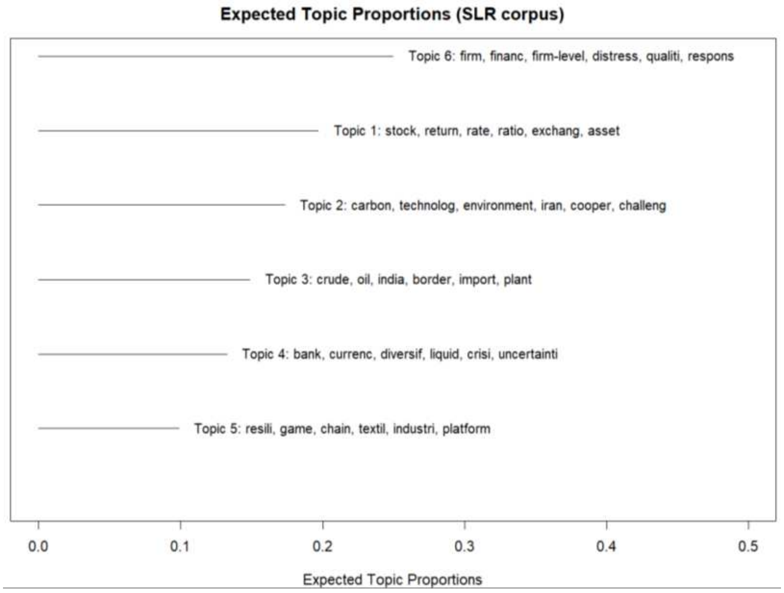

Figure 9. Expected topic proportions across the SLR corpus

3. Temporal Dynamics

The covariate model traces how topic prevalence has shifted over the review window (Figure 10).

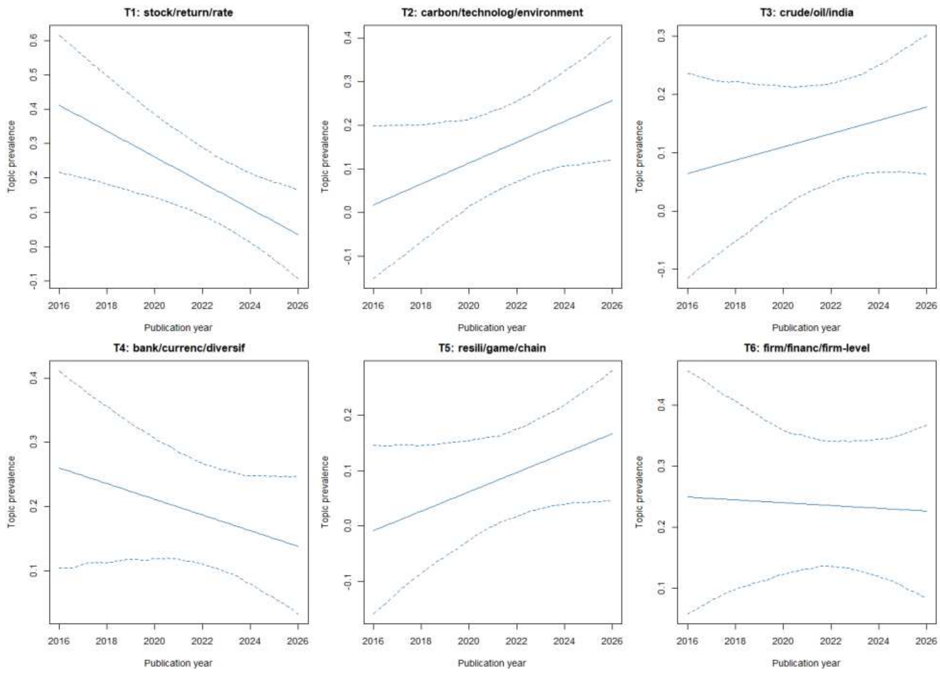

Figure 10. Estimated topic prevalence over publication year, 2016–2026.

The share of Topic 2 (green technology and carbon), Topic 3 (crude oil and trade) and Topic 5 (resilience and supply chain) rises across 2016–2026, mirroring the post-2020 surge in output and the field's turn toward sustainability and supply-chain resilience. Topic 1 (returns and exchange rate) and Topic 4 (banking and currency) decline over the same period, whereas Topic 6 (firm-level finance) remains broadly stable and consistently the most prevalent. The downward trend of Topic 4 is notable, because the very theme that speaks most directly to currency risk and liquidity, the channel through which export-proceeds retention would operate, is receiving a shrinking share of scholarly attention.

4. Topic Prevalence by Journal Tier

Estimating prevalence against journal tier (Figure 11) reveals only modest differences between higher-tier and general outlets.

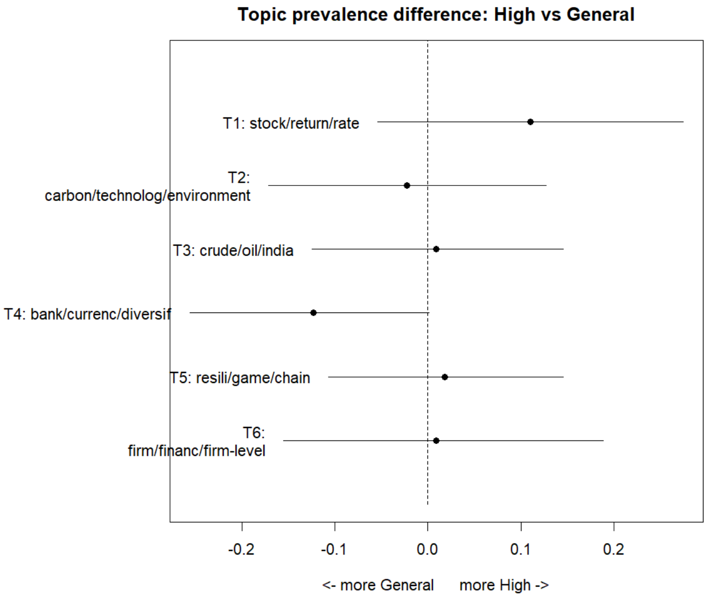

Figure 11. Difference in topic prevalence between higher-tier and general outlets

Topic 1 is somewhat more prevalent in higher-tier journals and Topic 4 somewhat more prevalent in general outlets, but for most topics the confidence intervals straddle zero. The thematic structure of the field is therefore not strongly stratified by outlet quality.

5. Convergence with the Bibliometric Streams

The topic structure converges with the co-word streams reported in the Thematic streams section, which strengthens confidence in both. Topic 6 corresponds to the dominant stream of capital-structure determinants; Topics 1 and 4 map onto the foreign-exchange and currency-retention stream; Topic 3 aligns with export and commodity trade; and Topics 2 and 5 represent the emerging industrial-transformation and resilience themes. Crucially, neither the bibliometric mapping nor the topic model surfaces a theme specific to the regulation of export proceeds or foreign-exchange retention. The policy channel at the centre of this review is therefore absent from the literature as an organising theme, a finding that frames the synthesis and agenda that follow.

Absence, importance and policy relevance are not equivalent, and we are careful not to infer importance from absence. That export-proceeds retention does not surface as a co-word stream or a structural topic establishes only that it is under-represented in the indexed corpus, an observation about research attention, which may itself reflect limited keyword representation or the recency of the relevant policies rather than analytical unimportance. Its theoretical importance is argued separately, on pecking-order grounds, because a retention requirement is a direct shock to internal foreign-currency liquidity; and its policy relevance rests on the scale of the regulated flows. The review's claim is therefore the conjunction of these three: a theoretically and practically consequential channel that the literature has so far left under-examined, not a claim that scarcity of studies by itself demonstrates significance.

Thematic Synthesis

The bibliometric and topic-model results are synthesised here through the Theory, Context, Characteristics and Methodology (TCCM) framework (Paul & Rosado-Serrano, 2019), which organises the field along four dimensions and clarifies where knowledge is settled and where it remains contested.

1. *Theory*

The corpus is anchored in the trade-off and pecking-order traditions, which dominate the firm-level financing theme (Topic 6) and the capital-structure-determinants stream. Agency and ownership considerations appear, but thinly, while signalling and market-timing perspectives are rare. The methodological prevalence of dynamic panel estimation signals a gradual shift from the static trade-off toward dynamic specifications in which firms adjust toward a target leverage ratio at an estimable speed (Flannery & Rangan, 2006; Öztekin, 2021). This shift matters for the present setting, because a policy-induced liquidity shock is best understood as a force that pushes firms off-target, making the dynamics of re-adjustment the natural object of study.

2. Context

Geographically, output is led by China and the United States, with India and Indonesia forming a growing emerging-market cluster (Figure 3). Resource- and commodity-oriented contexts are well represented in the topic structure, through crude-oil trade (Topic 3), mining-firm returns (Topic 1) and supply-chain resilience (Topic 5), which confirms the relevance of the resource-export setting. Even so, the specific context of an emerging-market natural-resource exporter subject to a binding export-proceeds-retention regime is not addressed. Indonesia, the fourth most productive country in the corpus and a major resource exporter, is therefore an apt and under-used context for the questions this review raises.

3. Characteristics

Across the determinant studies, several relationships recur with enough consistency to be treated as settled: profitability is negatively associated with leverage, consistent with pecking-order behaviour; asset tangibility is positively associated with leverage, consistent with the collateral logic of the trade-off theory (Li & Chen, 2022); and firm size is generally a positive correlate of debt. Other determinants remain contested. The effect of export intensity on capital structure is theoretically ambiguous and empirically mixed, and the influence of state ownership is similarly unsettled, with some evidence that an implicit sovereign guarantee lowers the cost of debt for state-owned firms (Muttakin et al., 2020) and other evidence pointing the other way. These contested determinants, export intensity and ownership, are precisely the variables most relevant to resource exporters, so their lack of resolution is an opportunity rather than a closed question.

4. Methodology

Methodologically, the field is dominated by panel and other empirical designs (Figure 5), with a clear and growing presence of dynamic econometric estimation. Natural-experiment and quasi-experimental designs that exploit discrete policy changes are largely absent, as are studies that combine firm-level financing data with the perspective of the financial institutions that intermediate foreign-currency funding. This profile leaves room for designs that treat a regulatory change as an identifying shock and that integrate the lender side of the financing relationship.

Read together, these four dimensions point to a consistent conclusion. The literature has mapped the standard determinants of capital structure in considerable depth but has left the policy-and-currency channel, the intersection of export-proceeds regulation, foreign-exchange liquidity and corporate leverage, largely unexamined. The mixed findings on export intensity and ownership, combined with the absence of a retention-policy theme, define the space that the research agenda must fill.

Read critically, the four dimensions separate consensus from genuine dispute, clarifying what is settled, what is contested, and why. Settled: the core determinant signs (profitability negative, tangibility positive, size positive) replicate the foundational evidence of Titman and Wessels (1988), Rajan and Zingales (1995) and Frank and Goyal (2009) across the corpus. Contested: the effects of export intensity and state ownership, which point in different directions across studies.

The disagreements are not random; they trace to identifiable factors, namely differences in institutional setting (the implicit guarantees of state ownership vary by country), in estimation strategy (static versus dynamic, speed-of-adjustment specifications), and in sample composition (pooled global panels versus single-country resource exporters). Because these moderators are rarely modelled explicitly, the literature reports conflicting coefficients without resolving why they differ, precisely the methodological gap that a policy-shock identification strategy in a single resource-exporting economy is designed to close.

Future Research Agenda

The synthesis exposes a clear and policy-relevant gap. The agenda below is organised along the four TCCM dimensions and culminates in the export-proceeds-retention channel, for which Indonesia offers a natural experiment.

1. Theory. Future work should integrate the trade-off and pecking-order traditions within a single dynamic frame capable of accommodating policy-induced liquidity shocks. Treating an export-proceeds-retention requirement as a constraint on internal foreign-currency funds yields testable predictions about movement along the financing hierarchy and about the speed of adjustment back toward target leverage after the shock.
2. Context. The emerging-market resource-export setting deserves dedicated study rather than absorption into pooled global samples. Indonesia is a particularly informative case, and comparative work across resource exporters with differing retention regimes would help to separate policy effects from country fixed effects. Within a single country, the contrast between state-owned and privately owned exporters offers a natural test of how ownership conditions the policy response.
3. Characteristics. Export intensity, the asset tangibility created by downstreaming (hilirisasi) investment, foreign-exchange exposure and export-proceeds retention should be modelled explicitly as determinants of leverage rather than proxied or omitted. Resolving the contested effects of export intensity and state ownership is a priority, ideally through interaction terms that allow these effects to differ by ownership type and by policy regime.
4. Methodology. The discrete, datable move from Government Regulation 36/2023 to Government Regulation 8/2025 lends itself to quasi-experimental identification, for example difference-in-differences around the policy change and dynamic-panel (system GMM) estimation of adjustment speeds. Complementing firm-level analysis with the perspective of financial institutions, for instance through structured expert elicitation, would capture the lender side of foreign-currency financing that the current literature neglects. Table 4 maps the topics identified in this review onto the variables of a

prospective research model, showing how the established themes supply the model's core and moderating variables while the policy variables sit outside the existing thematic structure.

Table 4. Mapping of review topics to prospective research-model variables.

STM topic	Dominant keywords	Links to research-model variables	Role in the study
Topic 6: Firm-level finance	firm, finance, capital, distress, leverage, enterprise, FDI, tax, ownership	DER, DER_{t-1}, PROF, TANG, DERI; moderation DOWN×PROF / TANG / AKT	Core: capital-structure determinants, financial distress and ownership effects
Topic 4: Banking & currency	bank, currency, diversification, liquidity, crisis, uncertainty	FINE, INST, BANK, IRV, RISK	Strategic role of financial institutions; exchange-rate and liquidity risk
Topic 1: Returns & exchange rate	stock, return, exchange rate, ratio, ROA, exposure	FXV, PROF (market-timing / signalling cues)	Exchange-rate volatility and profitability as determinants
Topic 3: Crude oil & trade	oil, crude, import, demand, India, ARDL	EXP, MKTE, DIST, RISK	Resource-commodity exporters and destination-country factors
Topic 2: Green tech & carbon	carbon, technology, environment, innovation, barrier	PHIL (downstreaming → value added), CAPEX → TANG	Industrial transformation / downstreaming
Topic 5: Resilience & supply chain	resilience, supply chain, textile, industry	COV (shock), EXP, TANG	Post-shock (pandemic) resilience

Note: variable codes refer to the prospective empirical model (e.g., DER = debt-to-equity; PROF = profitability; TANG = asset tangibility; FXV = exchange-rate volatility; EXP = export intensity; PHIL = downstreaming policy; COV = pandemic shock; FINE / INST / BANK = financial-institution factors).

Table 5 makes the resulting novelty explicit. On the scope of the novelty claim, the methodological pairing of bibliometric analysis with structural topic modelling is not itself novel; several recent systematic reviews already combine science mapping with topic models. The contribution claimed here is therefore one of application rather than of method: the novelty lies in directing this hybrid design at the specific, under-examined intersection of capital structure, export intensity and foreign-exchange retention in an emerging-market resource exporter, and in identifying the export-proceeds-retention channel as a distinct determinant for future testing.

Table 5. Provisions absent from the literature and the study's resulting novelty.

Research variable	Status in the literature	Implication
Export-proceeds retention (DHE)	Does not appear as a theme	Principal gap and novelty; no study links it to capital structure
Downstreaming / ore-export ban (hilirisasi)	Only implicit (Topic 2)	Not yet specific to exporter capital structure; a novelty
State ownership × export (moderation)	Weakly represented	Consistent with the contested ownership findings in the literature

CONCLUSION

This review set out to consolidate a decade of research on the capital structure of emerging-market and natural-resource–export firms and to locate the place, if any, of export-proceeds regulation within it. Four conclusions follow from the four research questions. First, the field is young but expanding rapidly. Output is concentrated after 2020 and peaks in 2025, is led by China and the United States with a growing emerging-market presence that includes Indonesia, is dispersed across many outlets, and is dominated by quantitative panel and econometric methods.

Second, its intellectual structure is organised around firm-level determinants of capital structure, the dominant theme in both the bibliometric and topic-model results, alongside emerging themes of green-industrial transformation and supply-chain resilience. Profitability (negative), asset tangibility (positive) and firm size (positive) recur as the most consistent determinants, while export intensity and state ownership remain contested.

Third, the regulation of export proceeds and foreign-exchange retention is effectively absent as an object of study. It emerges neither as a co-word stream nor as a structural topic, and the currency-and-liquidity theme most adjacent to it is, if anything, declining in prevalence.

Fourth, this absence defines the agenda. The discrete tightening of Indonesia's export-proceeds-retention policy, from Government Regulation 36/2023 to Government Regulation 8/2025, provides a natural experiment for examining how a foreign-exchange-liquidity shock reshapes corporate leverage, and the contrast between state-owned and privately owned exporters offers a built-in test of how ownership conditions that response.

These findings carry practical implications. For regulators, they highlight the tension between the monetary-stability goals of retention policy and the financing flexibility of the exporters that generate foreign-currency earnings. For exporting firms, they underline the need to manage internal liquidity and adjustment toward target leverage when retention requirements bind. For financial institutions, they point to an expanded role in intermediating foreign-currency funding and trade finance under tighter retention regimes.

Several limitations qualify these conclusions. The bibliometric corpus rests on a single database, Scopus, chosen for metadata consistency but necessarily incomplete in its coverage of regional outlets. The topic model was estimated on abstracts, which are short texts, and the choice of a six-topic solution, although guided by diagnostics, involves judgement. Relevance screening was partly semi-automated, and the corpus is limited to English-language records. These constraints warrant caution in interpretation and reinforce the value of the primary, firm-level investigation that this review motivates.

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