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## Cross-Ownership Control to Promote Circular Economy: Perspectives from Sustainable Supply Chain Management

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### Abstract

This paper develops a comparative analytical framework to examine how cross-shareholding structures influence the implementation of circular economy models within modern supply chains. It contributes to the existing literature by integrating perspectives from competition law, sustainable supply chain governance, and environmental accountability into a unified analytical framework. Rather than treating cross-ownership merely as an issue of market control, the paper conceptualizes it as an institutional mechanism that can either foster long-term collaboration or obscure environmental responsibilities. The study proceeds in three parts. First, it constructs a theoretical framework linking ownership interdependence to resource circulation and value-chain transparency. Second, it undertakes a comparative analysis of international governance models that regulate cross-shareholding in relation to environmental, social, and governance (ESG) standards. Third, it proposes a policy intervention: a dual mechanism combining mandatory ESG-based disclosure with cross-ownership ratio limits calibrated to sectoral environmental and social risks. In conclusion, the paper argues that realizing a truly circular economy requires not only technological or managerial innovations but also transparent and accountable corporate ownership architectures. By reframing cross-shareholding control as part of sustainability governance, this research provides both a theoretical contribution and a set of actionable policy insights for regulators and enterprises seeking to align ownership structures with circular economy goals.

**Keywords:** *Cross-ownership, Circular economy, Sustainable supply chain, Accountability, Corporate transparency, ESG governance*

### 1. Introduction

Over the past decade, the circular economy has moved from a slogan concept to a strategic orientation in international policy frameworks such as the European Green Deal and the European Union Circular Economy Action Plan (European Commission, 2020). Not only limited to the environmental field, the circular economy is understood as a model for reorganizing the entire production-consumption process in the direction of “design for reuse”, in which materials and energy must be maintained in the cycle for as long as possible (Ellen MacArthur Foundation, 2015). This makes the supply chain a “highway” of transformation, as the flow of materials, information, and responsibilities no longer ends when the product is sold, but extends to the stages of recovery, recycling, and restoration.

However, at the same time, another phenomenon is taking place strongly in global supply chains: the rise of cross-shareholdings between enterprises in the same production or financial ecosystem. These network-like ownership structures – particularly common in banking (Claessens & Yurtoglu, 2013), energy (OECD, 2019), or the manufacturing industry in East Asia (Kang, 2016) – both facilitate strategic cooperation and raise concerns about the concentration of power, hiding risks, and distorting competition. Political economy studies have shown that cross-ownership can be a barrier to information transparency and accountability, if the owners are both partners and monitors of each other (Bennedsen & Wolfenzon, 2000). Conversely, some recent studies have suggested that ownership linkages can also facilitate the optimization of return flows, synchronization of green technology investments, and the promotion of circular initiatives across clusters of firms (Korhonen et al., 2018).

**Table 1** Comparison Matrix between Circular Economy and Cross-Ownership in Global Supply Chains

| Key Factors                                         | Circular Economy (CE)                                                               | Cross-ownership in the supply chain                                                                 | Compatibility / Potential Conflict                         |
|-----------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|------------------------------------------------------------|
| <b>Strategic Objectives</b>                         | Extending material lifecycles – reuse – reducing emissions (EU CEAP 2020; EMF 2015) | Optimizes control – reduces transaction costs – internal collaboration (Claessens & Yurtoglu, 2013) | Neutral / Institutional Design Dependent                   |
| <b>Impact on Transparency</b>                       | High requirements for material flow & emissions reporting                           | Risk of concealing benefits and systemic risks (Bennedsen & Wolfenzon, 2000)                        | Conflict if there is a lack of public ownership mechanisms |
| <b>Logistics Coordination &amp; Product Recalls</b> | Need for horizontal and vertical collaboration in the supply chain                  | Alliance facilitates more efficient coordination                                                    | Compatible if there is a clear accountability framework    |
| <b>Impact on Market Competition</b>                 | Encourage green innovation and new business models                                  | Can lead to concentration of power that hinders innovation (Aghion et al., 2005)                    | Ambiant – both promoting and inhibiting                    |
| <b>Current Legal Position</b>                       | Towards ESG goals – driven by public policy                                         | Mainly viewed as an antitrust issue                                                                 | Policy gaps need to integrate the two objectives           |

*Source: Author compiled from many sources*

The central policy question, therefore, is: Is cross-ownership a barrier that needs to be controlled to ensure the competitiveness and transparency of circular supply chains, or can it, on the contrary, be seen as a tool to promote green cooperation if properly managed? The current legal approach in many countries still views cross-ownership primarily as an antitrust issue, while few policies link ownership control to ESG goals or product lifecycle responsibility. This opens up an important legislative space: controlling ownership not only for “market fairness”, but also for “systemic sustainability”. This article approaches the issue from the perspective of sustainable supply chain management, to discuss when cross-ownership is a drag, when it is a boost, and how the law can guide it in a positive direction.

## 2. Objectives

The overarching objective of this study is to develop a comprehensive policy and governance framework for regulating cross-ownership structures in a way that enhances—rather than inhibits—the transition toward a circular economy within global and regional supply chains. Instead of treating cross-shareholding solely as a competition or corporate governance issue, this research seeks to reconceptualize ownership structures as a potential lever for environmental responsibility, lifecycle coordination, and systemic resilience. To achieve this goal, the study pursues the following specific objectives:

1. To conceptualize cross-ownership as a structural variable in sustainable supply chain governance, clarifying its dual nature as both a facilitator of strategic collaboration and a potential source of opacity, power concentration, and environmental externality concealment.
2. To identify the mechanisms through which cross-shareholding influences circular economy performance across key supply chain dimensions—such as reverse logistics, material recovery, investment in green innovation, and shared accountability for post-consumer waste.

3. To comparatively assess international legal and policy approaches to cross-ownership control (e.g., Japan's post-keiretsu reforms, Korea's chaebol restructuring, EU competition and ESG directives), with a focus on their relevance for aligning ownership regulation with environmental and social objectives.
4. To develop and operationalize measurable indicators—including Ownership Transparency Index, Circularity Compliance Score, and Risk-Weighted Ownership Limits—to evaluate when cross-ownership functions as an enabling network versus a barrier to systemic sustainability.
5. To propose a risk-based regulatory model that links ownership thresholds, disclosure requirements, and circular performance obligations, thereby moving from a competition-centric paradigm of control toward a sustainability-oriented governance framework.
6. To formulate policy recommendations for emerging economies, particularly Vietnam, on how to integrate cross-ownership monitoring into circular economy legislation, extended producer responsibility (EPR) schemes, and sustainable industrial policy.

### 3. Materials and Methods

#### 3.1. Materials

Cross-shareholding is a complex entity in the corporate ownership structure, manifesting in many different forms, cross-holding chains within the group (circular holdings), to ownership networks within the keiretsu-style alliance group (Gerlach, 1992). Regarding the motivation for formation, studies point to at least three main economic objectives: (i) strengthening strategic cooperation relationships and reducing partner risks (strategic alliance/insurance motive); (ii) protecting control rights against market pressure or takeover (defensive/entrenchment motive); and (iii) optimizing financial resources, including capital sharing and internalizing long-term investment benefits (La Porta et al., 1999; Bennedsen & Wolfenzon, 2000). These forms of ownership form a “network of relationships” that can both increase the interconnectedness of the value chain and increase the opacity of control relationships, a crucial factor when assessing accountability in the supply chain.

Meanwhile, the circular economy requires restructuring the production-consumption cycle so that materials, products and energy are kept in circulation for as long as possible; the focus is on designing products that are easy to repair, reuse, recycle and reduce emissions throughout their lifecycle (Ellen MacArthur Foundation, 2013/2015). One of the key policy tools to achieve this goal is Extended Producer Responsibility (EPR), as a legal mechanism that requires producers to take responsibility for end-of-life management of products, usually through financial obligations or the organization of take-back and disposal systems (Lindhqvist, 2000; OECD, 2001). EPR shifts some of the costs and responsibilities from the state and consumers to producers, while also encouraging design to reduce waste at source.

Sustainable supply chain management (SSCM) frameworks and governance standards such as ESG (Environmental, Social, Governance) provide a theoretical basis for linking corporate ownership to environmental performance and social responsibility. SSCM emphasizes the coordinated management of material, information, and financial flows across the chain, while balancing economic, environmental, and social objectives (Carter & Rogers, 2008; Seuring & Müller, 2008). The literature on the impact of sustainability commitment on organizational structure shows that firms with a clear sustainability strategy align their governance, reporting, and investment processes to support long-term objectives (Eccles, Ioannou, & Serafeim, 2014). However, the effectiveness of SSCM and EPR depends heavily on information transparency and incentive frameworks, factors that can be distorted by complex ownership structures such as cross-ownership.

From the perspective of the interaction between cross-ownership and material circularity, four theoretical scenarios can be developed (illustrated by empirical evidence and management theory):

1. **Coordination-Enhancing Scenario.** Here, cross-ownership reduces the cost of cooperation between companies in the same chain (e.g., producer—recycler—distributor), thereby making it easier to synchronize investments in recovery systems, recycling technologies, and product designs optimized for reuse. This linkage can facilitate the internalization of the long-term benefits of material circulation, reduce short-term risks, and promote investments in green infrastructure (Korhonen, Honkasalo, & Seppälä, 2018). Legally, this scenario should encourage transparency mechanisms rather than completely eliminate linkages; for example, the EPR mechanism is designed to allow business alliances to actively operate the common system but be accountable for publicly disclosing costs and efficiency.

2. **Opacity-and-Evasion Scenario.** Cross-ownership can undermine accountability when ownership relationships obscure the legal and financial responsibilities of individual entities. When cross-shareholdings

make the controlling party both a beneficiary and a monitor, the risk of “overlapping” responsibilities arises, leading to internalization of environmental costs rather than public payment (Bennedsen & Wolfenzon, 2000). In terms of policy, the lack of ownership transparency and joint venture reporting in the legal environment makes EPR and ESG reporting regulations less effective; this calls for amendments to disclosure and competition laws to take environmental impacts into account when assessing ownership structures.

3. Entrenchment-and-Stagnation Scenario. Cross-ownership structures can reduce competitive pressures, leading to reduced incentives to innovate in green technology and circular design, as internal firms may prioritize group interests over optimizing product life cycles (La Porta et al., 1999). In terms of competition law, this highlights a gap in the classic approach of antitrust authorities without integrating environmental criteria and sustainable innovation into the economic analysis of anticompetitive behavior.

4. Policy-Directed Scenario. In this scenario, legislators and regulators actively regulate: (i) forcing transparency of ownership relations in the chain; (ii) adapting EPR fees or support frameworks according to ownership structure (e.g., higher contributions for chains with poor transparency); and (iii) where appropriate, applying ownership limits to avoid excessive concentration in strategic chains (the EU circular economy package and the amendments to the Waste Framework Directive are examples of integrating environmental objectives into the legal framework for life-cycle planning). These adjustments can transform cross-ownership from a risk into a tool for reorganizing responsibilities in line with circular objectives (European Commission, 2020; OECD, 2001).

Legal and policy analysis shows that two main approaches exist. The first (traditional) approach views cross-ownership primarily through the lens of antitrust and shareholder rights: competition authorities assess risks in terms of market share, collusion and competition suppression; Corporate law focuses on minority shareholder protection and financial transparency (La Porta et al., 1999; Bennedsen & Wolfenzon, 2000). The second (new) stream proposes to broaden the scope of regulation: not only to address market structure and investor protection but also to incorporate environmental objectives—that is, to incorporate sustainability criteria into the analysis of ownership structures. For example, EPR policies could be designed to “modularize” the contribution level according to the transparency and accountability profile of the supply chain; cross-ownership disclosure, joint venture accountability, and mandatory ESG reporting would be key tools to ensure that inter-related interests do not lead to the avoidance of environmental responsibility (Eccles et al., 2014; European Commission, 2018/2020).

From an academic perspective, it is important to emphasize that the relationship between cross-ownership and the circular economy is not linear or unidirectional; It is a consequence of three interacting components: (i) the internal ownership structure; (ii) the regulatory legal and policy institutions (antitrust, corporate disclosure, EPR, reporting standards); and (iii) the internal incentive mechanisms of the firm (governance incentives, ESG integration). Future research should use micro-data on ownership networks and corporate environmental behavior (e.g., investment in recycling technology, recycled material ratios, EPR cost models), combined with comparative legal analysis to identify effective regulatory solutions, such as mandatory cross-ownership disclosure mechanisms in ESG reporting, adjusting EPR fees according to the level of transparency, or imposing ownership limits in highly networked supply chains (Korhonen et al., 2018; OECD, 2001). Only when legislation is designed to identify and correct ownership blind spots can cross-ownership move from a risk factor to a systemic advantage for the transition to a circular economy.

### 3.2. Methodological Framework

This study adopts a mixed qualitative–analytical research design that integrates comparative legal analysis, policy evaluation, and conceptual synthesis within the overarching framework of sustainable supply chain governance. The methodological approach is guided by the central research question: *how do cross-ownership structures influence, enable, or constrain the transition toward circular economy models across industries and jurisdictions?*

Methodologically, the paper proceeds in three stages. First, it employs a *conceptual-analytical approach* to reconstruct the notion of cross-ownership as a structural variable shaping coordination, accountability, and power distribution within supply chains. This stage draws upon corporate governance theory, competition law doctrines, and circular economy scholarship to build an analytical typology distinguishing between *cooperative* and *extractive* ownership networks. The reasoning combines doctrinal interpretation with insights from institutional economics and systems theory to capture both legal and functional dimensions.

Second, the research applies a *structured comparative analysis* across selected jurisdictions to trace the evolution of regulatory responses to cross-shareholding. Legal sources (including corporate governance codes, competition law provisions, ownership disclosure rules, and EPR legislation) are systematically reviewed and

coded alongside policy instruments such as ESG reporting requirements and green investment frameworks. The comparison follows a functional method, examining not only the textual design of laws but also their enforcement dynamics and alignment with industrial policy trajectories.

Third, to connect legal structures with real-world implications, the study conducts a multi-case industry analysis in sectors where cross-ownership and circular economy pressures intersect, specifically electronics, automotive, and energy. Qualitative data are extracted from corporate sustainability reports, competition authority rulings, alliance agreements, and EPR implementation records. Through cross-case pattern identification, the analysis reveals the mechanisms by which ownership interlinkages either facilitate or impede reverse logistics, collaborative R&D, and material recirculation.

By combining comparative legal reasoning with empirical policy observation, this methodological design provides a coherent analytical lens that bridges theory, law, and industrial practice. It enables the paper to move beyond descriptive legal comparison toward a deeper understanding of how governance architectures of ownership can be optimized for circular economy transitions.

## 4. Results and Discussion

### *4.1. Analyzing the benefits and risks of cross-ownership in implementing a circular economy*

Cross-ownership creates a set of governance dynamics that can either facilitate or undermine the transition to a circular economy. On the positive side, three main mechanisms explain the enabling role of cross-ownership in material circulation and emissions reduction. First, increased vertical and horizontal integration: when firms in a value chain hold equity in each other, transaction costs and collaboration risks are reduced, increasing the likelihood of consensus on design standards for recycling, end-of-life collection contracts, and internal EPR cost allocation (Carter & Rogers, 2008; Korhonen, Honkasalo, & Seppälä, 2018). In terms of policy, this suggests that the state could encourage circular alliances through legal mechanisms that allow joint ventures to operate joint collection-recycling systems, with requirements for public disclosure of performance and cost allocation to prevent opaque cost reallocation (OECD, 2001).

Second, encourage ecosystem-scale recycling-reuse strategies: cross-ownership helps internalize the long-term benefits of keeping materials in the economic cycle, so that affiliated corporations can invest in large-scale recycling infrastructure and create stable markets for recycled materials (Ellen MacArthur Foundation, 2015). Legally, this is compatible with the EPR mechanism if the law allows joint production organizations to fulfill collection and treatment obligations, with independent monitoring mechanisms to ensure that no vested interests undermine public efficiency.

Third, synchronization of investment in emission-reducing technologies: ownership networks allow for cross-chain investment coordination, reducing the risk of cost-sharing for green technologies that are costly but have large social benefits (Korhonen et al., 2018). In terms of policy, the state can design incentive frameworks (taxes, green credits, R&D support) for ownership-transparent business alliances that demonstrate their commitment to investing in circular technologies—however, these incentives need to be aligned with transparency and measurable results to avoid abuse.

However, cross-ownership also carries significant systemic risks that legislators and regulators cannot ignore. First, it weakens competition and hides environmental costs: when ownership relations reduce competitive pressures, firms may internalize environmental costs rather than reflect them publicly in prices or financial statements, leading to inefficient resource allocation and reduced environmental policy effectiveness (La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 1999; Bennedsen & Wolfenzon, 2000). From a legal perspective, this is a reason for competition authorities to extend their analysis to environmental and sustainability impacts when assessing ownership structures and merger transactions; that is, to assess entities not only by market share and price but also by their impact on public objectives of waste and emissions reduction.

Second, the risk of “false green” (greenwashing) increases if there is a lack of transparency in disclosure: complex ownership networks facilitate the display of ESG commitments at the group level while concealing the reality of environmental performance at the affiliated legal entities (Delmas & Burbano, 2011). Policy responses should include mandatory ESG reporting standards, ownership disclosure requirements, and independent audits of environmental data to detect and address greenwashing; and strong administrative and civil sanctions should be developed to deter false claims.

Third, it hinders innovation from independent firms: by reducing market competition, cross-ownership can reduce the incentives for unaffiliated firms to invest in innovation, especially small and medium-sized enterprises, which are the source of innovation in circular product design (Aghion, Bloom, Blundell, Griffith, & Howitt, 2005). In terms of industrial policy, this raises the need to strike a balance between encouraging joint ventures to achieve circular scale and maintaining competitive space for independent firms; tools could include antitrust regulation with additional “sustainability criteria”, financial support for independent innovators, and transparently governed technology pools. From a scholarly perspective, the relationship between cross-ownership and circular economy performance should be understood as a contingent relationship that depends on the surrounding institutional set (disclosure rules, antitrust frameworks, EPR design) and internal governance mechanisms (board independence, minority protection). Therefore, the policy recommendations are comprehensive:

- (i) mandate cross-ownership disclosure in ESG reports and in EPR filings;
- (ii) revise the competitive assessment framework to integrate environmental and innovation criteria;
- (iii) allow alliances to operate a common collection-recycling system but under mandatory transparency and independent audit conditions;
- (iv) design a flexible EPR mechanism according to the transparency profile and actual performance of the chain (e.g., fees adjusted according to transparency coefficients and recycling rates).

Regarding further research methods, micro-level data on ownership networks, R&D expenditures, EPR contributions, and product life cycle indicators are needed to test the above theoretical scenarios; at the same time, comparative legal analysis across regions (EU, Japan, Southeast Asia) will help identify feasible legal mechanisms for each country context.

Japan’s automotive sector offers a mature example of how cross-ownership can both enhance and constrain circular economy performance. Within the *Toyota keiretsu*, a dense network of equity linkages connects assemblers, component suppliers, and financial institutions. According to Toyota’s *Sustainability Data Book* (2023), the company achieved a 96% material recycling rate and cut per-vehicle CO<sub>2</sub> emissions by 33% relative to 2013. These results are largely attributable to long-term coordination across affiliated firms—facilitated by partial shareholding—that enabled collective investment in end-of-life vehicle recovery systems and closed-loop material cycles.

However, stock market data from the *Tokyo Stock Exchange* (2022) indicate that roughly 28–30% of intra-group shareholdings remain passive or non-productive, primarily serving defensive or relational purposes rather than innovation. This concentration reduces liquidity and may insulate firms from market discipline, weakening transparency in environmental cost accounting. Empirical assessments by Japan’s *Fair Trade Commission* (2021) also noted that such ownership networks can obscure the allocation of environmental responsibilities under the *Home Appliance Recycling Law*.

The Japanese case illustrates that cross-ownership can generate long-term stability and shared sustainability investment, but without strict ESG disclosure and antitrust oversight, it can also entrench opacity and dilute accountability. The balance between coordination benefits and governance risks depends on the transparency of ownership and the alignment of regulatory incentives with environmental performance metrics.

The European Union provides a contrasting governance model emphasizing transparency and disclosure-based control of cross-ownership. Under the *EU Taxonomy Regulation* (2020) and *Corporate Sustainability Reporting Directive* (CSRD, 2022), companies engaged in circular value chains must disclose both ownership linkages and resource-use data. Data from the *European Environment Agency* (EEA, 2024) show that electronics producers participating in ESG-compliant ownership consortia (e.g., the *Circular Electronics Partnership*) achieved an 18% higher material recirculation rate and 12% lower carbon intensity than comparable firms with opaque ownership structures.

A 2023 *OECD* review of circular business models in Europe further found that cross-owned consortia in the electronics and plastics sectors significantly reduced duplication in R&D investments and facilitated shared recycling infrastructure. However, risks persist: when a dominant shareholder exerts disproportionate influence across multiple firms in the same value chain, it may suppress competition for green technology innovation—what the OECD terms “cooperative overreach.”

The EU experience demonstrates that cross-ownership, when subjected to robust disclosure, third-party auditing, and competition monitoring, can operate as a *governance tool* that accelerates circular economy goals.

Conversely, in the absence of active enforcement, even transparent ownership ties can evolve into cartel-like coordination, limiting innovation diversity.

The empirical evidence suggests that cross-ownership is not inherently incompatible with circular economy goals. Its net impact depends on the regulatory and institutional context—specifically, whether governance mechanisms (e.g., ESG disclosure, EPR enforcement, and antitrust monitoring) are sufficiently strong to ensure that inter-firm cooperation remains *productive, transparent, and accountable*.

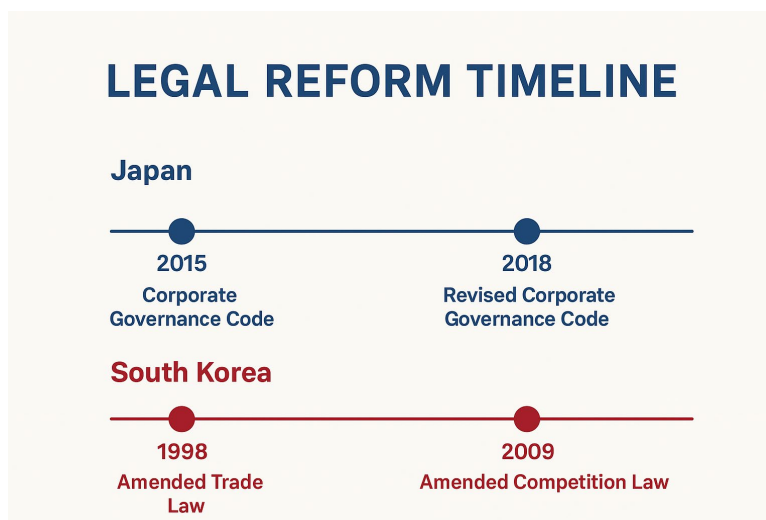
#### **4.2. International Experience in Cross-Ownership Control in Linkage to Sustainable Development Goals**

International experience shows that cross-ownership regulatory frameworks have been reshaped as the state combines competitive and environmental goals — especially in the context of the transition to a circular economy. In the European Union (EU), the Circular Economy Action Plan (2020) has placed the value chain at the center of public policy, calling for coordination between product policies, adapting competition law to sustainability goals, and increasing transparency in the supply chain (European Commission, 2020). On the competition enforcement side, the European Commission has made it clear that the assessment of mergers and monopolistic practices should also consider “non-price” effects on innovation, market access for small firms, and the environmental efficiency of the value chain, meaning that traditional competition assessments are gradually expanding to include criteria related to their ability to promote or hinder circular objectives (European Commission — Competition Policy). The EU thus demonstrates a multi-layered approach: not eliminating all forms of ownership linkages, but adjusting procedures (transparency, reporting) and competition analysis criteria to ensure that ownership linkages do not harm public resources and environmental objectives.

In Asia, Japan and South Korea are two typical cases that show that cross-ownership is not a static structure, but a phenomenon that can be “institutionally redesigned” to serve different policy objectives at different stages of development. During the period of rapid post-war industrialization, the Japanese keiretsu and South Korean chaebol models relied on complex cross-ownership networks to ensure financial stability, enhance vertical and horizontal linkages, and reduce transaction costs when capital and labor markets were still immature (Gerlach, 1992; Amsden, 1989). However, in the 1990s, along with the process of financial globalization and the need to integrate international governance standards, these intertwined ownership structures were increasingly questioned for the risk of abuse of control, lack of transparency, and concealment of risks.

Japan’s policy response shows a flexible but determined approach to reform. The Corporate Governance Code, issued in 2015 and revised in 2018, requires listed companies to disclose the reasons for maintaining cross-ownership, periodically explain the economic necessity of mutual investments, and strengthen the role of independent directors (Tokyo Stock Exchange, 2015). This approach does not prohibit cross-ownership outright, but puts pressure on long-standing capital linkages to be “re-legitimized” under standards of transparency and accountability, as a fundamental condition for moving from traditional relationship-based cooperation to governance-based cooperation for sustainability, especially in the materials, electronics, and automotive industries, where supply chain emission reduction requirements are increasingly stringent (OECD, 2021).

In contrast, South Korea opted for a more drastic reform model after the 1997 Asian financial crisis. Under pressure from the IMF and OECD, the Korean government amended the Trade Law and Competition Law to prohibit circular shareholding, cap cross-ownership within conglomerates, and establish a mandatory information disclosure system through the Fair Trade Commission (FTC) (Kim, 2008). From an industrial policy perspective, the gradual unbundling of entangled ownership relationships was not only to prevent monopolies, but also to pave the way for the “Green Growth” strategy launched in 2009, which emphasized the need to use resources efficiently, recycle waste, and develop clean technology. In other words, controlling cross-ownership in South Korea was not an end in itself, but an institutional premise for implementing a second-stage industrialization model – from growth based on mass production to growth based on green innovation.



**Figure 1** Comparing Japan (2015, 2018) and Korea (1998, 2009) according to cross-ownership reform law milestones

*Source: According to author's synthesis*

The experiences of both Japan and Korea show a consistent view: cross-ownership management policies only make sense when they are linked to broader governance objectives, such as transparency of corporate structures, increased board accountability, ESG disclosure mechanisms, or supply chain emissions accountability. Instead of focusing on the question of “should cross-ownership be banned or allowed?”, the focus should shift to the question of “under what legal conditions does cross-ownership become an enabler rather than a barrier to sustainable development?” This approach is particularly useful for Vietnam, where multi-owned conglomerates are emerging in the energy, materials, and finance sectors, but the legal framework for ESG disclosure, emissions auditing, or ownership limits based on environmental risks is still in its infancy. If Vietnam learns how to “reorient” cross-ownership like Japan and South Korea have done, it can completely turn this structure into a tool to reorganize the value chain in the direction of circularity instead of considering it as a burden that needs to be eliminated.

In contrast to the approach based on direct ownership limits in Europe or the corporate restructuring measures of Japan and South Korea, the United States has chosen a more flexible strategy: instead of controlling cross-ownership by setting legal ceilings, lawmakers have emphasized “exposure mechanisms” through mandatory disclosure regulations. A typical example is the turning point in the US Securities and Exchange Commission (SEC) policy with the Final Regulation on Climate Risk Disclosure, adopted in March 2024, to standardize how listed companies must report emissions data, environmental risk management plans and supply chain dependencies (SEC, 2024). Although the regulation has been challenged by a number of states and business associations, leading to its implementation being suspended at some point, it still represents a consistent legal philosophy: there is no need to prohibit cross-ownership structures, just to make them transparent enough to prevent abuse.

Under this logic, ESG reporting and emissions reporting become an indirect but more effective control tool than any anti-cross-ownership law. If a multi-owned corporation is required to disclose details about its network of subsidiaries, mutual ownership, resource consumption, and EPR (Extended Producer Responsibility), then even if there is no legal limit on how much they own, financial markets, institutional investors, sustainable funds, and even the public can “punish” polluting behavior or hide environmental costs by adjusting capital flows (Gillan et al., 2021). Recent studies have shown that invisible market penalties can sometimes be more effective as a deterrent than administrative sanctions (Flammer, 2021).

However, the US experience also shows that disclosure cannot completely replace the role of competition and environmental regulators. Forcing companies to “tell the truth” is only effective when there is a credible post-audit system in place, including independent climate auditing standards, penalties for false reporting, and the ability to share data between the SEC, the Environmental Protection Agency (EPA), and the Federal Trade Commission (FTC) to investigate greenwashing or collusion in the supply chain. In other words, the US

transparency-based approach is an important reminder for developing countries like Vietnam: effective cross-ownership control policies do not necessarily start with “who owns whom”, but rather with the question “who is accountable to whom, and how do we see that?”. When ownership rights are no longer accompanied by the ability to hide responsibility, cross-ownership automatically turns from a risk to an effective coordination tool in the process of circularizing the economy.

From a comparative law and public policy perspective, international experience allows to draw some fundamental principles in designing cross-ownership control frameworks linked to circular economy objectives. First of all, transparency must be considered a prerequisite, not a complementary measure. No EPR cost-sharing mechanism, whether organized by recycling alliances or industry funds, can operate effectively if the participants are not obliged to disclose their ownership structure, financial contribution ratios and emissions compliance levels. The experience of the European Union in requiring beneficial ownership disclosure under the AMLD5 Directive (2018) together with the proposed Corporate Sustainability Reporting Directive (CSRD, 2022) shows that ownership transparency and emissions transparency are gradually converging into a single obligation. Similarly, the SEC (2024) climate risk disclosure rule goes beyond emissions data to require firms to disclose financial linkages that could affect concentration risk.

Second, traditional competition analysis needs to be expanded to reflect sustainability objectives. The European Commission’s revised Guidelines on the Assessment of Non-Horizontal Mergers begin to incorporate criteria for innovation and green investment disincentives when assessing the impact of cross-ownership in strategic sectors such as energy and materials. This reflects an important shift in competition law thinking: controlling market power is not just about protecting consumers today, but also about protecting “future markets” for green technologies from ownership structures that are likely to stifle innovation.

Third, no country relies on a single instrument. Advanced systems use a mix of instruments, with ownership limits applied only to sensitive value chains while the rest of the sector is guided by ESG reporting obligations, voluntary mechanisms with monitoring, and tax incentives. This approach allows for the positive side of cross-ownership (the potential for long-term coordination) while still maintaining control when such structures distort competition or delay green transitions.

Finally, the ability to monitor and enforce is crucial to the effectiveness of any policy design. EPR or emissions reporting mechanisms will remain “administrative formalities” without independent audits, deterrent financial sanctions, and data sharing mechanisms between agencies such as environmental agencies, competition authorities, and capital market regulators. Some countries, such as Germany and France, have established EPR Supervisory Authorities with the power to investigate ownership structures to determine the ultimate financial responsible party. From this, it can be seen that developing countries need a three-tiered roadmap:

- (1) standardizing reporting systems and making ownership transparent in relation to environmental data;
- (2) updating competitive analysis tools to include green innovation and emissions risk criteria;
- (3) creating space for circular alliances to be formed legally but under strict supervision of disclosure and audit.

Only then can cross-ownership be transformed from a “problem to be controlled” into a “resource to be exploited” in the process of economic circulation.

#### ***4.3. Proposed cross-ownership policy framework to promote circular economy in Vietnam***

Designing an effective policy framework requires a combination of empirical understanding of ownership structures, existing legal frameworks, and incentive mechanisms to translate linkage benefits into circular-promoting behaviors. In Vietnam, the legal context is gradually improving towards greater transparency (e.g., regulations on information disclosure for public companies, environmental laws incorporating EPR into the framework, and amendments to the Enterprise Law requiring identification of real owners), all of which create both opportunities and challenges for integrating cross-ownership management with circular economy goals. (On EPR: the 2020 Environmental Protection Law has recognized the EPR principle; on reporting transparency: Circular 96/2020/TT-BTC of the Ministry of Finance; on real owners: recent amendments to the Enterprise Law/Decree guidance).

The first proposal is to implement a national cross-ownership mapping program focusing on key supply chains: energy, plastics-packaging, electronics, and finance (banking). This mapping should include both direct and indirect relationships (through intermediary shareholders), information on the ultimate owners (UBOs), management/steering contracts related to the value chain (e.g., long-term contracts, recycling infrastructure

sharing agreements), and relevant environmental performance indicators (recycling rates, associated emissions, EPR contributions). Collection techniques could combine public data (financial statements, ESG reports), corporate registration data (registration records, UBO data under new regulations), and case studies for hard-to-identify clusters (e.g., cross-shareholding banking groups). Mapping will help regulators identify “ownership bottlenecks” where cross-ownership is likely to create systemic risks for circularity, and point out nodes that can be exploited to organize collection, recycling and closed material cycles. Research practice shows that similar programs in countries often start with high-risk and high-volume material sectors (e.g., plastic packaging, electronic equipment) before expanding to other chains. Therefore, it is necessary to issue administrative regulations requiring enterprises in key sectors to submit supply chain ownership mapping modules with environmental reports (coordinated between the Ministry of Finance, Ministry of Industry and Trade, Ministry of Natural Resources and Environment). This should be linked to the requirement to update UBO under the amended Enterprise Law and guiding Decree, to ensure data integrity and feasibility of subsequent policy appraisal.

A groundbreaking but feasible policy is to apply risk-weighted ownership caps: that is, not a fixed threshold for all sectors, but stratified according to the systemic risk of the chain (for example, sectors with long product life cycles, high pollution potential or large systemic impacts such as energy, petrochemicals, electronics will have tighter thresholds). The goal is to reduce the risk of concentration of power in chains where cross-ownership can hide environmental costs or stifle competition, while not losing coordination benefits in lower-risk sectors. Ways to operate could include: defining a list of “strategic sectors” subject to special rules; applying percentage ownership limits to related business groups; and requiring competition authorities to consider environmental factors when authorizing transactions involving cross-ownership. Amending the competition law framework to allow the integration of “environmental and systemic risk criteria” into concentration analysis; At the same time, issue a decree guiding the ownership limit by sector (applicable level, exemption conditions, roadmap for reducing the ratio). It is necessary to establish a periodic assessment process (e.g. every 3–5 years) to adjust the threshold according to the green transition process and actual data collected from the ownership map.

Transparency is the strongest risk prevention tool against greenwashing and obscuring responsibilities. In Vietnam, the reporting framework has initially taken shape (Circular 96/2020/TT-BTC) and EPR policies are being guided in detail. This is the basis for moving towards mandatory ESG reporting with standardized criteria for listed enterprises and enterprises operating in key chains. Mandatory requirements should include: (i) emissions data and product life cycle information; (ii) EPR enforcement mechanism and collection/recycling data; (iii) ownership relationship map (direct & indirect ownership, UBO); and (iv) describe cross-chain collaborations and recycling cost-sharing contracts. Enforcement should be accompanied by independent auditing standards for environmental data and administrative-civil sanctions for false statements. The Ministry of Finance (SSC, MOF) coordinates with the Ministry of Natural Resources and Environment to draft mandatory ESG reporting standards according to the roadmap (e.g., phase 1 for listed enterprises and large-scale enterprises in key industries; phase 2 expansion). The disclosure of ownership relations in ESG reports should be compatible with UBO data of the business registration agency to avoid information conflicts. In addition, a recognized environmental audit unit (environmental assurance) should be established to appraise these reports.

The policy should not eliminate all forms of ownership linkages; Instead, there should be room for voluntary circular alliances between corporations to jointly invest in collection systems, recycling plants, or shared infrastructure, but operating within a transparent and controlled framework. This model takes advantage of scale to reduce collection/recycling costs and synchronize the material cycle, while reducing the pressure on public agencies to fully build public infrastructure. However, the conditions are: alliances must disclose ownership maps, cost allocation mechanisms, recycling performance results, and accept independent audits; if the alliance shows signs of stifling competition or concealing environmental costs, competition and environmental agencies have the right to intervene. Alliances that are certified as transparent can enjoy incentives (taxes, green credits, infrastructure incentives), but there needs to be a “fair traceability” mechanism to ensure that small/independent businesses are not excluded from the circular value chain. Therefore, a legal framework for “circular alliances” is needed, defining recognition criteria, disclosure obligations, conditions for preferential treatment, and mechanisms for withdrawing certification in case of violations. At the same time, competition authorities need to have clear guidance on how to assess these alliances to detect anti-competitive behavior. Accompanying measures include technology support programs for small businesses (grants, technology transfer) and mandatory sharing of environmental data in a public platform with reasonable security. The suggested implementation roadmap is as follows:

1. Phase 1 (0–18 months): promulgate regulations on supply chain ownership maps and UBO update requirements; publish a list of key chains; start applying standard ESG reporting for listed and large enterprises in the key chain.
2. Phase 2 (18–48 months): implement risk-adjusted ownership limits for high-impact sectors; Issue a detailed EPR guidance decree (if not yet finalised), establish an independent environmental audit mechanism.
3. Phase 3 (48–84 months): operationalise the certified circular alliance programme; integrate environmental criteria into competitive assessment, assess policy effectiveness and adjust ownership thresholds based on real-world data.

An effective policy framework is not to mechanically prohibit cross-ownership but to guide and regulate ownership behavior according to public objectives: transparency, product lifecycle responsibility and incentives for green investment. In Vietnam, recent progress on EPR, ESG reporting standards and UBO transparency create a favorable legal basis for implementing the above measures; the key is to combine legal instruments (enterprise law, competition law, environmental law), data management mechanisms (UBO registry, standard ESG reporting) and incentive policies (incentives for transparent alliances) to turn cross-ownership from a risk into an asset for the transition to a circular economy.

## 5. Conclusion

This paper advances a theoretical and policy-oriented framework for understanding the dual role of cross-ownership in the transition toward a circular economy. Cross-ownership should not be treated as an inherent obstacle, but as an institutional variable whose effects depend on the degree of transparency, accountability, and long-term governance embedded within ownership structures. In many value chains, shared ownership can generate efficiency gains by optimizing material circulation, coordinating investment in recycling technologies, and lowering transaction costs in implementing Extended Producer Responsibility (EPR). Yet, without effective oversight, the same structure may distort competition, obscure environmental costs, and sustain a façade of “green growth” without substantive compliance. Accordingly, the policy objective is not to eliminate cross-ownership but to reshape it as a mechanism that serves collective sustainability goals. From the integrated perspective of competition and environmental law, this study argues for a shift from a model of *absolute prohibition* to a *risk-based regulatory approach*. Current cross-ownership controls under the 2018 Competition Law remain confined to ownership thresholds, failing to capture the broader implications for product life cycles or corporate emissions. In contrast, a governance model that links cross-ownership limits with mandatory ESG disclosure, independent emissions audits, and enforceable accountability measures can transform ownership interdependence into a catalyst for circular value-chain reorganization. Therefore, the central contribution of this paper is to reconceptualize cross-ownership as a potential governance tool within the circular economy. By comparing international regulatory experiences and proposing a risk-based institutional design, the paper provides both a theoretical contribution and a policy roadmap. Only when ownership structures operate under transparent rules, measurable environmental and social objectives, and enforceable responsibility frameworks can cross-ownership evolve from a source of market distortion into an instrument of sustainable development. This reframing also offers a broader measure of state governance capacity: not merely to restrain market power, but to direct it toward the public good.

## 6. Conceptual model and future research directions

Building on the previous analysis, this paper proposes a conceptual model of cross-ownership governance in the transition to a circular economy. The model identifies the degree of ownership interdependence as an intermediate institutional variable, linking corporate structure, legal environment and sustainable supply chain performance. This approach reconciles perspectives from competition law, corporate governance and circular economy theory in a unified analytical framework.

The core elements of the model include: (i) ownership structure variables, which represent the degree and form of cross-ownership (horizontal, vertical or mixed), as well as the nature of ownership linkages (strategic alliances, financial investments or executive dominance); (ii) governance and legal mechanisms, including legal restrictions on competition, corporate information disclosure regimes, ESG transparency mechanisms, independent environmental audits, along with enforcement, monitoring and compliance incentive systems; (iii) operational dynamics in the supply chain, reflected in the coordination of reverse logistics, resource recovery, joint investments in green innovation and recycling technologies, and the alignment of ownership interests with

product lifecycle responsibility; and (iv) sustainability outcomes, such as reduced emissions, limited resource waste, increased traceability and recirculation in the production network, and strengthened institutional trust and long-term cooperation.

According to this model, cross-ownership is not necessarily negative, but its impact on sustainability depends on the interaction between ownership configuration, governance quality, and policy instruments. In this theoretical framework, transparency and accountability act as control variables that determine whether cross-ownership produces cooperative – mutually beneficial or exploitative – deviant outcomes.

To extend and deepen the current results, the study suggests several potential approaches for future work. First, quantitative testing of the conceptual model is necessary to measure and establish causal relationships between variables such as ownership linkage intensity, ESG disclosure compliance, and circular efficiency index. Models such as SEM or PLS-SEM can be applied across different industries or regions to assess the generalizability and reliability of the model. Next, comparative institutional research can be extended to emerging economies such as Vietnam, Indonesia, or Brazil, thereby clarifying how legal and institutional diversity affects the effectiveness of cross-ownership control mechanisms in promoting circular economy goals.

In addition, research on governance behavior and motivations should be conducted using qualitative methods such as in-depth interviews or firm-based fieldwork to explore the role of management incentives, informal norms, and venture trust in shaping ownership decisions and sustainability outcomes. In addition, policy simulations and impact assessments using models that combine legal economics and scenario simulations can help predict the systemic impact of policy instruments such as mandatory ESG disclosure regulations or ownership ratio limits on competitive balance and industrial circularity. Finally, the interdisciplinary integration of institutional economics, behavioral jurisprudence, and systems ecology is seen as a promising research direction, contributing to the development of hybrid regulatory models that can link corporate ownership incentives with the ecological limits of the planet.

## 7. Acknowledgements

The author hereby declares that there is no conflict of interest in the publication of the article. Author Tran Nguyen Phuoc Thong is responsible for the entire content of the article.

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