

Corporate Income Tax and Green Investment in Vietnam: Do Tax Incentives Really Generate Additionality?

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Abstract

This study examines the relationship between corporate income tax, green investment, and ESG in Vietnam during the 2020–2025 period, drawing on a synthesis of domestic policy frameworks and international empirical evidence. The study focuses on whether tax incentives genuinely generate additional green investment or primarily reduce the tax liabilities associated with investments that firms would have undertaken anyway. The findings indicate that tax incentives can stimulate green investment by lowering after-tax costs and easing financial constraints; however, their effects are heterogeneous. Tax incentives may also give rise to non-additional investment, inefficient benefit allocation, and the risk of greenwashing. Against the backdrop of Vietnam's ongoing efforts to refine its corporate income tax framework and green taxonomy, the study proposes a shift from incentives based predominantly on sectors or projects toward conditional, outcome-based incentives linked to additionality, measurable environmental outcomes, ESG transparency, and robust monitoring and clawback mechanisms. Accordingly, policy effectiveness should be assessed not merely by the amount of tax revenue forgone, but by the volume of additional green investment and the actual environmental outcomes generated per unit of foregone public revenue.

Keywords: *corporate income tax; green investment; ESG; tax incentives; additionality; green growth; Vietnam.*

1. INTRODUCTION

Climate change, environmental degradation, and the imperative to transform growth models are fundamentally reshaping the way governments approach fiscal policy. Taxation is no longer viewed merely as an instrument for generating public revenue; it is increasingly being used to influence corporate behavior and allocate resources in pursuit of long-term development objectives.

For Vietnam, this imperative has become particularly pronounced following the Government's adoption of the National Green Growth Strategy for 2021–2030, with a vision to 2050. Decision No. 1658/QĐ-TTg, issued by the Prime Minister on October 1, 2021, approving the National Green Growth Strategy for 2021–2030 with a vision to 2050, sets a target of reducing greenhouse gas emissions intensity per unit of GDP by at least 15% by 2030 and at least 30% by 2050 relative to 2014, while simultaneously promoting the greening of economic sectors and moving toward a carbon-neutral economy.

Achieving these objectives requires more than public budgetary resources. A substantial share of the investment needed for energy transition, clean technologies, energy efficiency, waste treatment, green production, and technological innovation must be mobilized from the private sector. Corporate income tax policy therefore becomes one of the instruments capable of directly influencing firms' investment decisions through its effects on the cost of capital and after-tax returns.

Yet this is precisely where an issue that is often overlooked in policy discussions arises: tax incentives do not necessarily translate into additional green investment.

A firm may invest in solar power, energy-efficient production lines, or waste-treatment systems even in the absence of tax incentives because such projects may generate returns, reduce operating costs, or satisfy regulatory requirements. If the government nevertheless provides a tax reduction for such investments, the foregone tax revenue may simply

constitute a transfer to the firm rather than a genuine incentive that changes its investment behavior. This is fundamentally a question of policy additionality.

Suppose a firm invests VND 100 billion in green technology, but VND 90 billion of that investment would have been undertaken even without a tax incentive. In that case, only approximately VND 10 billion could be regarded as additional green investment generated by the policy. Assessing policy effectiveness on the basis of the entire VND 100 billion would therefore substantially overstate the impact of the tax incentive.

Accordingly, the central question of green tax policy should not be: Does the firm invest in green activities?

Rather, it should be: How much additional investment does the firm undertake because of the tax incentive?

An even more important question follows: For every unit of public revenue forgone, how much additional green investment is generated, and what verifiable environmental outcomes are achieved?

This is the starting point of the present study.

2. THEORETICAL FOUNDATIONS, LITERATURE REVIEW, AND RESEARCH GAP

2.1. Mechanisms through which Corporate Income Tax Affects Green Investment

From a theoretical perspective, corporate income tax affects green investment through at least four channels.

First, the after-tax cost channel. When firms receive tax relief, their after-tax profits increase and the effective cost of green projects declines. Projects with relatively low marginal returns but substantial environmental benefits may consequently become economically viable.

Second, the internal cash-flow channel. For firms facing credit constraints, particularly small and medium-sized enterprises, a reduction in tax liability can become an internal source of funding for investment. This mechanism is especially important because green investments often require substantial upfront capital while involving relatively long payback periods.

Recent empirical evidence from Xin, Yi, and Shen (2025) indicates that corporate income tax reform in China increased green investment among private firms, with the reduction of financial constraints representing one of the key transmission mechanisms.

Third, the technological innovation channel. By reducing the cost of investment, tax incentives may enhance firms' capacity to experiment with new technologies, conduct research and development on green products, or improve production processes.

Fourth, the signaling and corporate governance channel. Green tax policies may alter the expectations of investors, banks, and other stakeholders, thereby encouraging firms to place greater emphasis on environmental, social, and governance (ESG) criteria.

Nevertheless, all four mechanisms can operate effectively only when tax incentives genuinely alter firms' investment decisions.

2.2. International Evidence: Positive but Heterogeneous Effects

Recent international empirical studies suggest that the relationship between tax policy and green investment is far from straightforward.

Wang and Ye (2024), examining Chinese listed firms over the 2013–2020 period, find that environmental protection taxes have a positive effect on ESG investment, with stronger effects among private firms and firms that are more sensitive to costs.

Li and Liu (2025) likewise find that tax policy can promote firms' environmental protection investment, with financial constraints serving as an important mediating mechanism.

Yin et al. (2025) further demonstrate that fiscal and tax policies can promote green innovation by enhancing firms' ESG responsibility.

These findings reinforce the argument that tax incentives can generate positive effects. However, stopping at this point would lead to an overly optimistic assessment.

Another strand of research indicates that the magnitude of the effect depends heavily on policy design. Tchorzewska, García-Quevedo, and Martínez-Ros (2022) find that low environmental tax rates may be insufficient to induce firms to adopt green technologies; the effects become more pronounced

when tax rates increase or when tax policy is combined with public financial support.

This suggests an important policy consideration: the mere existence of tax incentives does not guarantee that firms will undertake green investment. Policy incentives must be sufficiently substantial to alter firms' economic calculations, while at the same time being sufficiently targeted to prevent resource leakage and inefficient allocation.

2.3. The Downside of Policy: When Environmental Pressure Is Not Matched by Resources

One of the most noteworthy findings in recent research is that environmental tax policies can even generate unintended consequences.

Jiang et al. (2024), examining Chinese listed firms, find that environmental protection taxes increase firms' greenwashing behavior by approximately 13.16%. The underlying mechanism is attributed to the fact that the policy creates managerial and compliance pressures without simultaneously providing additional resources, thereby giving firms incentives to improve their environmental image rather than undertake substantive investment.

This finding is particularly relevant to ESG policy. If firms can simply disclose more favorable environmental information, produce more polished ESG reports, or label activities as "environmentally friendly" in order to gain access to incentives, while making no substantial improvements in energy consumption, emissions, waste generation, or resource efficiency, tax policy may produce an image effect rather than an environmental effect.

Conversely, He et al. (2024) find that stronger tax enforcement in China can reduce firms' environmental investment by approximately 36%, particularly among financially constrained firms. The principal mechanism is that a higher tax burden reduces the resources available for environmental investment.

Taken together, these two strands of evidence point to an important conclusion: green tax policy cannot be evaluated simply on the premise that "higher taxes mean greater environmental performance" or that "lower taxes mean more investment."

Its effectiveness depends on the balance among environmental pressure, financial resources, economic incentives, managerial capacity, and the ability to verify outcomes.

Table 1. *Summary of Empirical Evidence on the Effects of Tax Policy on Green Investment, Environmental Investment, and ESG*

Study	Country/Data	Policy Examined	Method	Key Findings	Implications for the Present Study
Tchorzewski et al. (2022)	Firms/green technologies	Environmental taxes	Empirical analysis	The effects depend on tax intensity; low tax rates may be insufficient to provide strong incentives for green technology adoption.	Policy effectiveness depends on policy design and intensity.
Wang & Ye (2024)	Chinese firms	Environmental protection tax	Empirical analysis	Environmental taxes promote ESG investment; the effect is associated with tax payment costs and non-compliance costs.	Taxes can provide incentives for ESG performance, but the underlying mechanisms require careful consideration.
Wang & Zhang (2024)	Chinese firms	Environmental protection tax	Empirical analysis	Environmental taxes improve ESG performance, with environmental outcomes representing a	ESG performance needs to be distinguished from actual

				particularly prominent component.	environmental outcomes.
He et al. (2024)	3,372 observations of Chinese firms	Strengthened tax enforcement	DID	Environmental investment declined by approximately 36% among firms more strongly affected by tax enforcement.	Taxation/tax administration can have adverse effects when it increases financial pressure.
Jiang et al. (2024)	Chinese listed firms, 2015–2021	Environmental protection tax	DID	Greenwashing increased by approximately 13.16% .	Policy pressure, when not accompanied by adequate resources and monitoring, may increase greenwashing.
Li & Liu (2025)	Chinese listed firms, 2012–2022	Tax policy	Empirical analysis	Tax policy promotes environmental investment, with financial constraints serving as an important mediating mechanism.	Supports the hypothesis that taxation affects investment through the financial channel.
Xin, Yi & Shen (2025)	Chinese private firms	Corporate income tax incentives	DID/quasi-natural experiment	The coefficient on Treat × Post is approximately 0.0159–0.0202 , depending on the specification; the effect is stronger among financially constrained firms.	Provides direct evidence of the role of tax incentives in promoting green investment.
Yin et al. (2025)	Chinese firms	Fiscal and tax incentives	Empirical analysis	Fiscal and tax incentives promote green innovation; ESG responsibility fulfillment is one of the underlying mechanisms.	Establishes a link between fiscal policy, ESG, and green innovation.

Source: Compiled from Tchorzewska et al. (2022); Wang & Ye (2024); Wang & Zhang (2024); He et al. (2024); Jiang et al. (2024); Li & Liu (2025); Xin et al. (2025); and Yin et al. (2025). The quantitative findings reported by He et al. (2024), Jiang et al. (2024), and Xin et al. (2025) were cross-checked directly against the original studies.

3. RESEARCH METHODS AND DATA

This study employs a policy analysis approach combined with a systematic review of international empirical evidence to examine the relationship between corporate income tax, green investment, and ESG in Vietnam over the 2020–2025 period. The analysis focuses on three groups of data.

First, Vietnamese policy documents concerning green growth, corporate income tax, green project classification, and green finance.

Second, international empirical studies employing quantitative research designs, particularly those based on firm-level data and empirical methods such as difference-in-differences, propensity score matching, and natural experiments.

Third, indicators of the development of green finance in Vietnam, which are used to assess the financial environment within which corporate income tax incentives operate.

Because no Vietnamese firm-level dataset currently provides sufficiently long and sufficiently detailed observations to directly estimate the causal effects of individual corporate income tax incentives on green investment over the entire 2020–2025 period, this study does not claim to have identified a causal-effect coefficient for Vietnam. This limitation warrants emphasis to avoid overinterpreting the international evidence.

Instead, the study uses international evidence as a basis for developing a policy assessment framework suited to Vietnam's institutional and economic conditions.

The analytical framework can be expressed as follows:

Corporate income tax incentives → lower after-tax costs → improved cash flow → reduced financial constraints → greater capacity for green investment → improved environmental and ESG outcomes.

However, an adverse pathway may also arise:

Tax incentives → firms that would have invested anyway → no additional investment → reduced tax revenue but limited environmental gains.

Another potential risk pathway is:

Loose green criteria → firms optimize documentation and corporate image → greenwashing → tax incentives without commensurate environmental outcomes.

Accordingly, the central variable in the analytical framework is not merely the scale of green investment, but the additional green investment generated by the policy.

4. POLICY CONTEXT AND ANALYTICAL FINDINGS FOR VIETNAM

4.1. Vietnam Has Established a Relatively Clear Policy Foundation for Green Growth

The 2020–2025 period marked an important transition in Vietnam's green growth policy framework. In particular:

Decision No. 1658/QĐ-TTg of 2021 established the national orientation for green growth, the greening of economic sectors, and reductions in greenhouse gas emissions intensity.

By 2025, Decision No. 21/2025/QĐ-TTg further strengthened the legal framework by

establishing environmental criteria and procedures for certifying investment projects falling within the green taxonomy, effective from August 22, 2025.

This represents a significant step forward because one of the major shortcomings of earlier green policies was the absence of a unified standard for determining what qualifies as “green.”

Without clear standards, tax incentives can easily be expanded through administrative classification: a project operating in a designated green sector may qualify for incentives even though its actual environmental performance may vary considerably from one project to another.

4.2. The 2025 Corporate Income Tax Law Has Expanded the Policy Space for Green Development

The Corporate Income Tax Law No. 67/2025/QH15 was enacted on June 14, 2025, and took effect on October 1, 2025. Notably, the law identifies sectors such as renewable energy production, clean energy, energy generated through waste destruction, and environmental protection as sectors eligible for corporate income tax incentives.

This indicates that the State increasingly recognizes corporate income tax as an instrument for promoting structural economic transformation toward a greener development model.

Yet this is precisely where a critical question must be raised: Does operating in a green sector automatically generate green outcomes?

Clearly, not always. A renewable energy project may generate positive environmental effects, but the magnitude of those effects depends on the technology employed, equipment life cycle, land use, material inputs, waste management, and numerous other factors.

Similarly, a business formally classified as an “environmental protection” enterprise may not necessarily achieve substantial reductions in emissions. Thus, identifying green sectors addresses only one question: Who may be eligible for consideration for tax incentives?

It does not fully answer the more fundamental question: What outcomes must firms deliver to justify receiving those incentives?

4.3. Green Finance Is Expanding but Cannot Yet Substitute for Tax Incentives

Table 2. *Green Credit in Vietnam as of the End of 2024*

Indicator	Value
Green credit outstanding	Approximately VND 680 trillion
Share of total credit outstanding in the economy	More than 4.3%
Time point	End of 2024
Main areas of concentration	Renewable energy; clean energy; green agriculture
Role in green investment	Provides additional financing for projects characterized by high capital requirements, long payback periods, and the need for technological transformation

Source: *State Bank of Vietnam, Connecting Green Finance with the Carbon Market: A “Green” Pathway for the Economy (April 22, 2025).*

A key indicator of the development of Vietnam’s green finance ecosystem is that, by the end of 2024, outstanding green credit had reached approximately VND 680 trillion, accounting for more than 4.3% of total credit outstanding in the economy and being concentrated substantially in renewable energy, clean energy, and green agriculture. This indicates that green enterprises in Vietnam are gaining increasingly greater access to specialized sources of finance.

However, green credit and tax incentives are not complete substitutes for one another.

Green credit primarily addresses the availability of financing.

Tax incentives primarily address after-tax costs and rates of return.

Accordingly, their effectiveness may be enhanced when the two policy instruments are coordinated.

International evidence also supports this approach. Tchorzewska et al. (2022) find that even relatively low environmental tax rates can generate effects when combined with public finance.

This is particularly relevant to Vietnam, where many small and medium-sized enterprises may face a situation in which green projects are economically viable over the long term but lack sufficient initial cash flow for implementation.

Table 3. *Evolution of the Policy Framework for Green Growth, Green Taxonomy, and Corporate Income Tax in Vietnam*

Date/Period	Legal Instrument/Policy	Key Content	Implications for Green Investment and Corporate Income Tax
1 October 2021	Decision No. 1658/QD-TTg	Approval of the National Green Growth Strategy for 2021–2030, with a vision to 2050	Establishes the national strategic framework for transforming the growth model toward a greener trajectory
2021–2025	Implementation of green growth programmes	Promotion of efficient resource use, clean energy, emissions reduction, and the development of green sectors	Generates demand for financial and tax instruments to support green investment
14 June 2025	Decision No. 21/2025/QD-TTg	Establishment of environmental criteria and procedures for certifying investment projects within the green taxonomy	Provides a legal basis for determining what constitutes a green project, thereby creating a foundation for conditional incentives
14 June 2025	Corporate Income Tax Law No. 67/2025/QH15	Enactment of the new Corporate Income Tax Law	Establishes a new legal framework for corporate income tax policy, including an orientation toward supporting

			activities consistent with green development objectives
22 August 2025	Decision No. 21/2025/QD-TTg enters into force	Formal application of environmental criteria and certification of projects within the green taxonomy	Enhances the potential to shift from incentives based on categorical “lists” toward incentives based on verifiable environmental criteria
1 October 2025	Corporate Income Tax Law No. 67/2025/QH15 enters into force	Formal implementation of the new Corporate Income Tax Law	Creates an opportunity to reassess the design of tax incentives so that they are linked more closely to green outcomes and additionality

Source: Prime Minister of Vietnam (2021), Decision No. 1658/QD-TTg; Prime Minister of Vietnam (2025), Decision No. 21/2025/QD-TTg; National Assembly of Vietnam (2025), Corporate Income Tax Law No. 67/2025/QH15. The dates of issuance and entry into force were cross-checked against government sources and the Official Gazette of the Government.

5. CRITICAL DISCUSSION: DO TAX INCENTIVES REALLY GENERATE ADDITIONAL GREEN INVESTMENT?

5.1. The Central Problem Is the “Deadweight Loss” from Incentives That Do Not Generate Additional Investment

Suppose a firm plans to invest VND 500 billion to replace its production line because the existing technology has become obsolete. After receiving a tax incentive, the firm still invests exactly VND 500 billion.

In this case, the policy may have supported the firm, but it cannot necessarily be said to have generated additional investment.

If the firm would have invested VND 500 billion even without the incentive, the tax revenue forgone by the government primarily becomes a transfer of benefits to the firm. This is precisely the risk of deadweight loss associated with tax incentives.

The problem becomes more pronounced when incentives are concentrated among large, highly profitable firms with substantial investment capacity. Such firms are often capable of self-financing green projects. Their investment decisions may therefore be relatively insensitive to tax incentives.

By contrast, small and medium-sized enterprises may genuinely need tax incentives but lack sufficient taxable profits to fully utilize them.

A paradox may therefore arise: the firms most capable of undertaking green investment may receive

the largest incentives, while those most in need of support may be unable to make full use of them.

This is why policy design needs to consider the capacity to absorb incentives, rather than focusing solely on the legal eligibility conditions for receiving them.

5.2. Sector-Based Incentives Risk “Greening the Portfolio” Rather Than Greening Outcomes

A sector-based approach has the advantages of simplicity, administrative manageability, and lower compliance costs. However, it has a fundamental weakness: it equates a green sector with a green project.

In practice, projects within the same sector may have substantially different environmental performance.

If tax incentives are based solely on sectoral classification, firms may have an incentive to optimize project structures to satisfy eligibility requirements rather than maximize environmental outcomes.

The policy objective may then shift from “making the economy greener” to “making the firm’s documentation green enough to qualify for incentives.” This is precisely where greenwashing becomes a policy risk.

International evidence indicates that this is not merely a theoretical concern. Jiang et al. (2024) find that pressure arising from environmental taxation can increase corporate greenwashing when compliance

pressures are not accompanied by substantive resources.

5.3. ESG Cannot Be Used as a “Green Label” in Place of Environmental Outcomes

ESG has increasingly become an important standard for accessing capital, attracting investors, and building corporate reputation. However, particular caution is warranted if ESG performance is used as a condition for receiving tax incentives. A firm may have a strong ESG score while still generating substantial emissions.

A firm may publish an impressive sustainability report while its energy consumption per unit of output remains unchanged.

A firm may have sound governance systems without necessarily achieving commensurate reductions in emissions.

Accordingly, in green tax policy, ESG should serve as a tool for verification and governance, rather than as a substitute for actual environmental outcomes.

Within the three dimensions of ESG, the environmental dimension should be quantified through verifiable indicators; the social dimension should ensure that the green transition does not generate disproportionate social costs; and the governance dimension should safeguard transparency, accountability, and verifiability.

6. POLICY IMPLICATIONS: FROM “INCENTIVES FOR GREEN PROJECTS” TO “INCENTIVES FOR GREEN OUTCOMES”

Based on the foregoing analysis, this study proposes that Vietnam gradually shift from a tax incentive model based predominantly on sectors and projects toward a conditional, outcome-based incentive model. Such a model could comprise four tiers:

Tier 1: Green Eligibility

The project must either fall within the categories specified in the national green taxonomy or satisfy the relevant environmental criteria. This constitutes the entry condition. Decision No. 21/2025/QD-TTg could provide an important foundation for this tier.

Tier 2: Additionality

Firms should demonstrate that the tax incentive plays a role in making the project economically viable or increasing the scale of investment. Firms could be required to provide:

- an investment scenario with the tax incentive;
- an investment scenario without the tax incentive;
- the additional amount of investment generated;
- the payback period;
- access to financing;
- the extent to which the project depends on the incentive.

It is not necessary to require firms to demonstrate conclusively that “the investment would not have occurred without the incentive,” since such a counterfactual is extremely difficult to observe directly. Instead, quantitative criteria could be developed to assess the probability of additional investment.

Tier 3: Environmental Outcomes

The level of the incentive should be linked to measurable outcomes, such as:

- reductions in greenhouse gas emissions;
- reductions in energy consumption;
- the share of renewable energy;
- water savings;
- the proportion of waste recycled;
- reductions in waste generation;
- reductions in material use per unit of output;
- the number of green technology patents or technological solutions;
- reductions in emissions intensity relative to revenue or output.

The critical point is to shift the policy focus from “What does the firm invest in?”

to: “What outcomes does the firm achieve?”

Tier 4: Monitoring and Clawback of Incentives

Tax incentives should not be treated as benefits that are entirely irreversible. If a firm commits to reducing emissions but fails to meet the specified targets, the corresponding incentive may be adjusted or clawed back.

This mechanism introduces an important change in corporate behavior: satisfying the initial

eligibility requirements is not sufficient; firms must sustain the required outcomes over time.

Table 4. From “Input-Based Incentives” to “Green Outcome-Based Incentives”

Criterion	Traditional Approach	Proposed Approach
Beneficiaries	Eligible sectors/projects	Projects + green outcomes
Initial conditions	Compliance with designated categories	Compliance with the taxonomy + additionality
Basis for determining incentives	Scale/type of project	Additional investment and environmental outcomes
ESG	Primarily disclosure/reference	Transparency and verification instrument
Environmental dimension	Input condition	Measurable output/outcome
Monitoring	Eligibility checks	Periodic outcome monitoring
Failure to meet targets	Limited linkage to adjustment	Adjustment/clawback of incentives
Evaluation standard	Amount of tax exempted/reduced	Additional green outcomes generated per unit of foregone public revenue

Source: Author’s synthesis and proposal based on the theoretical framework and empirical evidence presented in this study.

7. A MODEL FOR ASSESSING THE EFFECTIVENESS OF GREEN TAX INCENTIVES IN VIETNAM

To assess the substantive effectiveness of corporate income tax incentives for green investment, the analytical focus needs to shift from the scale of tax benefits to the additional outcomes generated by the policy. Receiving a tax incentive does not, in itself, imply that the incentive has generated new investment, since a firm may have undertaken the project even in the absence of the incentive. The key issue, therefore, is to identify the incremental investment, environmental outcomes, and financial resources generated by the policy.

First, additional investment effectiveness can be measured using:

$$H1 = \Delta I / T$$

where H1 denotes additional green investment effectiveness; ΔI represents the additional green investment generated by the policy; and T denotes the amount of corporate income tax receiving preferential treatment. The H1 indicator shows how many units of additional green investment are generated by each unit of corporate income tax incentive. This is a critical

measure for distinguishing between incentives that genuinely stimulate investment and those that merely reduce the tax liabilities associated with investments that firms had already planned to undertake.

Second, environmental effectiveness can be expressed as:

$$H2 = \Delta E / T$$

where H2 denotes environmental effectiveness; ΔE represents the incremental improvement in environmental outcomes attributable to the policy; and T denotes the amount of corporate income tax receiving preferential treatment. ΔE may be measured by reductions in greenhouse gas emissions, energy savings, reductions in water or raw-material consumption, the proportion of waste recycled, or other environmental indicators appropriate to the type of project. Where the scale of production changes substantially, absolute measures should be combined with intensity measures, such as emissions per unit of output or per unit of revenue, in order to provide a more accurate assessment of environmental performance.

Third, fiscal–social effectiveness should also be considered. Because tax incentives reduce government revenue in the short term, it is necessary to assess the

social benefits generated by the public resources forgone. This can be expressed as:

$$H_3 = B / T$$

where H_3 denotes fiscal–social effectiveness; B represents the total quantifiable economic, environmental, and social benefits generated; and T

denotes the amount of corporate income tax receiving preferential treatment. This indicator shifts the evaluation question from “How much tax relief does the firm receive?” to “How much value does society receive in return for the public revenue forgone?”

Table 5. Framework of Indicators for Assessing the Effectiveness of Corporate Income Tax Incentives for Green Investment

Effectiveness Dimension	Indicator	Formula	Variables	Policy Significance
Additional green investment effectiveness	H_1	$H_1 = \Delta I / T$	ΔI : additional green investment; T : amount of tax receiving preferential treatment	Measures how much additional green investment is generated by each unit of foregone public revenue
Environmental effectiveness	H_2	$H_2 = \Delta E / T$	ΔE : incremental environmental improvement	Measures the environmental outcomes generated per unit of tax incentive
Fiscal–social effectiveness	H_3	$H_3 = B / T$	B : total quantifiable economic, environmental, and social benefits	Compares social benefits with the fiscal cost
Green capital mobilization effectiveness	H_4	$H_4 = K / T$	K : additional green capital mobilized from credit, investors, and other sources	Measures the extent to which tax incentives can “activate” private capital
Additionality	A	—	I_0 : investment in the absence of the incentive	Identifies the share of investment genuinely generated by the policy
Additional environmental outcomes	AE	—	Emissions/energy/resources	Prevents “green projects” from being equated with “green outcomes”

Source: Author’s proposal based on a synthesis of empirical evidence on taxation, environmental investment, green investment, and ESG from Li & Liu (2025), Xin et al. (2025), He et al. (2024), Jiang et al. (2024), and related studies.

Fourth, additional green capital mobilization effectiveness. Tax incentives are often insufficient, by themselves, to enable firms to implement large-scale green projects. It is therefore necessary to assess their capacity to mobilize additional financing from green credit and other private sources: $H_4 = K / T$.

Here, H_4 denotes green capital mobilization effectiveness; K is the amount of additional green capital mobilized from green credit, private investors, or other financial sources; and T is the amount of corporate income tax receiving preferential treatment. This indicator shows how much additional capital for

green investment can be mobilized for each unit of tax incentive.

The four indicators above are grounded in a common principle: policy effectiveness should be assessed in terms of the additional outcomes generated per unit of foregone State budget revenue resulting from tax incentives. This approach makes it possible to evaluate policy simultaneously from the perspectives of investment, environmental outcomes, fiscal–social effectiveness, and resource mobilization.

However, the most difficult issue is determining which portion of the observed outcomes

actually arises because of the policy. Additional investment (ΔI) and incremental environmental outcomes (ΔE) cannot be directly observed in the counterfactual situation in which a firm does not receive the incentive. Therefore, where sufficiently rich firm- or project-level data are available, impact identification should rely on control groups and appropriate methods such as difference-in-differences, event studies, or other impact evaluation techniques. This helps mitigate bias arising from the fact that firms with an inherently stronger propensity to undertake green investment may also be better positioned to access tax incentives.

Beyond tax incentives, the effectiveness of green investment also depends on access to green credit and the transparency of ESG information. These three instruments should be viewed as complementary components of a single policy ecosystem. Tax incentives reduce after-tax costs and improve cash flow; green credit provides medium- and long-term financing; while ESG provides information for assessing, monitoring, and verifying environmental, social, and governance outcomes.

The mechanism can be summarized as a chain: tax incentives $\rightarrow$ improved cash flow $\rightarrow$ greater access to green credit $\rightarrow$ expanded green investment $\rightarrow$ environmental outcomes $\rightarrow$ enhanced ESG quality $\rightarrow$ reduced risk and cost of capital $\rightarrow$ further expansion of green investment. If these instruments are designed in isolation, tax incentives may fail to generate additional investment because firms lack sufficient capital; green credit may be difficult to allocate to the appropriate recipients because of inadequate reliable environmental information; and ESG may become a communications tool rather than a reflection of substantive outcomes.

Accordingly, ESG should not be used as a substitute measure for environmental outcomes. Its more appropriate role is to serve as a mechanism for transparency, verification, and accountability, while verifiable environmental indicators should remain at the center of policy evaluation.

From a policy design perspective, the analysis suggests that Vietnam should gradually shift from incentives based predominantly on sectors or projects toward conditional, outcome-based incentives. Firms

should not only satisfy the eligibility conditions for receiving incentives but also demonstrate additional investment, environmental outcomes, and information transparency against predefined criteria. Where commitments are not fulfilled, mechanisms for clawback or adjustment of incentives should be established to limit situations in which the State budget bears the cost without receiving commensurate green outcomes.

Thus, the ultimate benchmark for evaluating green tax policy should not be how much tax a firm receives in relief, but rather how much additional green investment, how many verifiable environmental outcomes, and how much additional private capital are generated for each unit of foregone State budget revenue. This provides a basis for shifting the evaluation of corporate income tax policy from an approach centered on the “degree of preferential treatment” toward one based on policy effectiveness and additionality.

8. POLICY IMPLICATIONS FOR VIETNAM

Based on the analytical findings, the study proposes six policy directions.

First, tax incentives for green sectors should be maintained, while reliance on sectoral criteria should be gradually reduced. Providing incentives for renewable energy, clean energy, and environmental protection remains necessary. Over the longer term, however, eligibility criteria should progressively shift toward measurable outcomes.

Second, a mechanism for assessing the additionality of tax incentives should be established. This is the most important issue. Regulatory authorities need to be able to answer the question: *if the incentive had not been provided, would the firm still have undertaken the investment?*

Third, an integrated database linking tax, investment, environmental, and credit information should be developed. Without connecting tax data with investment and environmental data, it is extremely difficult to assess the actual effectiveness of the policy.

Fourth, incentives should be calibrated according to the magnitude of outcomes achieved. Green projects should not be treated as homogeneous.

Projects that generate greater environmental outcomes should receive greater incentives.

Fifth, independent auditing and verification of environmental indicators should be strengthened. This is particularly important for limiting greenwashing.

Sixth, the fiscal cost of incentive policies should be made transparent. Each green tax incentive program should be periodically evaluated in terms of:

- the amount of tax incentives granted;
- the number of beneficiary firms;
- actual green investment;
- additional green investment;
- emissions reductions;
- the number of green jobs created;
- energy savings;
- effects on productivity;
- effects on the State budget.

Without such an evaluation, it is extremely difficult for the State to determine whether the policy is generating genuine social value or merely redistributing benefits between the public budget and firms.

9. CONTRIBUTIONS OF THE STUDY

This study makes three principal contributions.

First, it shifts the analytical focus from the scale of tax incentives to the additionality of green investment. This represents an important change in the way policy effectiveness is assessed.

Second, the study brings together three strands of research that are often examined relatively independently: corporate income tax, green investment, and ESG. In this framework, ESG is not viewed merely as an outcome of corporate reporting, but as a component of the policy governance and verification mechanism.

Third, the study develops a policy evaluation framework applicable to Vietnam, in which the effectiveness of tax incentives is assessed through the relationship among fiscal cost, additional investment, and environmental outcomes.

The most important novel insight can be summarized as follows: a green tax policy is genuinely effective only when the environmental benefits and additional investment it generates substantially exceed the fiscal cost borne by the State.

10. CONCLUSION

The 2020–2025 period shows that Vietnam has gradually established a relatively clear policy foundation for green growth, from the National Green Growth Strategy adopted in 2021 to the green taxonomy framework and the new corporate income tax incentive provisions introduced in 2025. Against this backdrop, corporate income tax incentives have the potential to become an important instrument for promoting green investment. International evidence indicates that tax policy can increase environmental investment, alleviate financial constraints, and foster green innovation.

However, the study also demonstrates that tax incentives cannot be equated with environmental effectiveness.

If firms would undertake the investment even in the absence of incentives, the policy may generate fiscal costs while producing little additional investment.

If green eligibility criteria are overly broad, the policy may encourage firms to optimize documentation rather than environmental outcomes.

If compliance pressures increase without sufficient financial resources, firms may reduce environmental investment or resort to forms of defensive compliance.

If ESG is used as a certification label rather than as a verification system, the risk of greenwashing may increase.

Accordingly, the ultimate benchmark for green tax policy should not be: “How much has the State provided in tax incentives?” but rather: “How much additional green investment and how many verifiable environmental outcomes have been generated for each unit of foregone public revenue?” This also represents the most important direction of reform for Vietnam in the period ahead.

Green corporate income tax policy needs to move from category-based incentives toward outcome-based incentives; from input conditions toward output accountability; and from unconditional support toward support that is verifiable and subject to clawback.

If this transition can be achieved, corporate income tax will not merely function as a mechanism for

reducing the tax liabilities of green firms, but may become an instrument for allocating resources to support the economy's green transition.

11. LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH

The most significant limitation of this study is the lack of sufficiently comprehensive Vietnamese firm-level microdata to directly identify the causal effects of individual corporate income tax incentives on green investment.

Accordingly, the conclusions regarding the mechanisms at work in Vietnam should be understood as evidence-based policy inferences derived from international evidence rather than as direct causal evidence for Vietnam. Future research should therefore construct a panel dataset at the firm level by integrating:

- financial statements;
- corporate income tax finalization data;
- tax incentive data;
- fixed-asset investment expenditures;
- environmental investment expenditures;
- electricity, fuel, and water consumption;
- emissions data;
- ESG data;
- green credit data.

On this basis, difference-in-differences, event-study approaches, or other experimental and quasi-experimental designs could be employed to directly address the question:

and, more importantly:

A particularly valuable avenue for future research would be to develop a “green tax incentive effectiveness coefficient” for each sector, measuring the amount of additional green investment and the reduction in emissions generated per unit of incentivized public revenue. If successfully developed, such a coefficient would provide an important quantitative basis for enabling Vietnam to move from administratively oriented incentive policies toward evidence-based green taxation grounded in social effectiveness.

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