Green Transparency Policy Gaps and Hidden Regulatory Arbitrage in Global Banking

Junwei Chen[a], Laetitia Lepetit[a], Frank Strobel[b], Ruth Tacneng[a]

[a] *Université de Limoges, LAPE, 5 rue Félix Eboué, 87031 Limoges Cedex, France*

[b] *University of Birmingham, Department of Economics, Birmingham, UK*

This version: January 2026

Abstract

We examine whether divergence in green transparency policies (GTP) induces cross-border regulatory arbitrage by global banks and undermines the effectiveness of transparency-based climate regulation. Using a new country-year index of GTP stringency and a bank–host panel of 693 banks across 118 host countries from 2010 to 2023, we show that tighter home-country GTPs push banks to increase foreign brown exposure in less stringent jurisdictions through both majority- and minority-owned affiliates. The minority-stake channel is strongest for banks with high environmental scores, consistent with hidden arbitrage. Finally, a stronger institutional environment does not eliminate this arbitrage response under tighter GTP rules.

Keywords: Global banking, green transparency policies, regulatory arbitrage

1. Introduction

The 2015 Paris Agreement saw 195 countries commit to limiting global warming to well below 2°C. Achieving this goal requires substantial investment to support the transition to a low-carbon economy. Because financial systems play a central role in allocating capital, a core objective of the Agreement is to redirect financial flows toward climate action. In response, regulators have introduced a range of policies to steer finance toward low-carbon and climate-resilient activities.

Among these, Green Transparency Policies (GTP), i.e., rules defining climate-aligned and environmentally harmful activities, as well as regulations requiring firms (including banks) to disclose the environmental impact of their activities and their exposure to climate-related risks, have become central. By reducing environmental information asymmetry and increasing accountability, GTP are instrumental in encouraging capital reallocation, particularly bank financing, away from carbon-intensive firms and toward greener investments. However, GTP adoption and stringency varies widely across countries, creating opportunities for regulatory arbitrage with potential implications for capital and investment flows and uneven impacts on sustainability outcomes across countries. This heterogeneity raises an important question we aim to address in this paper: how do global banks, operating through international networks of majority- and minority-owned affiliates, respond to cross-border differences in GTP? Specifically, do they structure their affiliate networks to exploit regulatory gaps, and, if so, do they conceal such behavior to avoid potential reputational risks associated with financing carbon-intensive activities? Whether global banks act as conduits for implementing GTP or circumvent them remains an open question for assessing the effectiveness of these policies, with significant implications for the potential limitations of national policies in the absence of global policy harmonization.

Global banks possess flexibility in reallocating equity investment across countries, providing considerable scope for regulatory arbitrage amid divergent regulatory frameworks. A bank subject to stringent GTP in its home country may face higher

compliance and reputational costs when increasing equity investments in carbon-intensive firms (hereafter, brown firms) domestically. It can, however, maintain such exposures by increasing equity stakes in brown affiliates located in countries with weaker transparency rules. In this way, cross-country variation in GTP allows banks to continue financing brown firms in less regulated environments, potentially undermining the effectiveness of stricter GTP at home. This behavior could be encouraged when carbon externalities are underpriced, because weaker transparency and climate-policy regimes often lower near-term transition risk by limiting compliance burdens and slowing the pace of decarbonization, which can bolster cash flows and valuations. These incentives may be even stronger in less developed economies with fast-growing demand for power, transport, and industrial inputs and, often, limited competitive pressure from renewables.

At the same time, more stringent GTP, such as mandatory disclosure policies structured around green or sustainable taxonomies, increase the visibility of a bank's environmental footprint, not only domestically, but also through the consolidated activities of its foreign affiliates. Majority-owned affiliates (i.e., subsidiaries) are tightly linked to the parent and typically consolidated in group reporting, making their environmental footprint clearly attributable to the parent bank. For large global banks, reputational considerations are key (Ongena et al., 2013; Choi and Park, 2014; Bu and Wagner, 2016). Strong GTP therefore raise the perceived cost of maintaining large equity stakes in brown majority-owned affiliates, both at home and abroad. Consistent with this view, Demirgüç-Kunt et al. (2024) show that global banks with strong environmental performance expand lending through foreign subsidiaries in countries where local authorities strengthen climate-related policies.

By contrast, minority-owned affiliate holdings of global banks are more opaque: they are less visible in group-level disclosures, and, hence, make the bank's involvement harder to trace. Surroca et al. (2013) show that multinational enterprises often shift socially irresponsible practices to minority-owned affiliates when facing stakeholder pressure. Consequently, under strong GTP, a global bank may channel its

carbon-intensive and environmentally harmful activities through minority-owned affiliates abroad, whose emissions are not fully consolidated in group disclosures. This mechanism represents a "hidden" form of regulatory arbitrage that remains largely overlooked and may undermine the effectiveness of stringent local policies.

Our study examines whether and how global banks use their international organizational structure, particularly the ownership composition of their foreign affiliate networks, to respond to cross-country differences in GTP. We pursue two main objectives. First, we examine whether global banks headquartered in jurisdictions with stricter GTP reallocate equity investments away from domestic brown affiliates and toward brown affiliates in countries with weaker GTP. We pay particular attention to whether banks rely more heavily on minority stakes, rather than majority ownership, in these affiliates as a way to potentially conceal such arbitrage and mitigate reputational risk. Our core question is thus whether global banks strategically favor minority, rather than majority, ownership in foreign affiliates to circumvent stringent home-country GTP.

Second, we explore whether global banks' organizational or affiliate network structures are shaped not only by GTP differences but also by institutional conditions in both home and host countries, as well as by banks' own internal characteristics. Strong home-country legal enforcement and active civil-society pressure, for example, from environmental NGOs, may increase the perceived costs of observable brown firm exposure and thereby influence the choice between majority and minority ownership abroad. Similarly, banks' own environmental commitments or signals through self-reported internal policies may either curb arbitrage or redirect it toward more opaque structures.

To address these questions, we assemble a novel database covering 693 global banks from 90 countries with equity investments in 34,363 majority-owned and 32,626 minority-owned affiliates, 6,052 and 7,595 of which, respectively, are foreign and located in 118 host countries between 2010 and 2023. We classify affiliates as brown

or non-brown[1] using the UNEP FI taxonomy, which identifies sectors with positive and negative impact on climate stability and biodiversity. We capture annual cross-country variation in green transparency policies using the Green Transparency Policy Index (Distinguin et al., 2025), which measures the intensity and stringency of national environmental criteria and disclosure requirements.

Our results show that when home-country GTP tightens relative to host countries, global banks raise the foreign share of brown affiliates in less stringent jurisdictions, through both majority- and minority-owned entities. Banks with stronger environmental performance do not avoid these shifts and are more likely to expand brown exposure via minority-owned affiliates, consistent with hidden arbitrage. Stronger home-country rule of law only partly attenuates majority-owned arbitrage, while greater environmental NGO presence curbs hidden arbitrage via minority-owned affiliates.

Our paper contributes to an emerging literature examining how climate policies shape bank behavior. Reghezza et al. (2022) show that banks reduce lending to polluting firms after the Paris Agreement, and Miguel et al. (2022) find similar retrenchment toward climate-exposed firms following new capital requirements in Brazil. Benincasa et al. (2021) and Laeven and Popov (2022) document a regulatory-arbitrage channel in syndicated lending, whereby banks from countries with stricter environmental rules expand cross-border lending in weaker jurisdictions. In contrast, Demirgüç-Kunt et al. (2024) show that global banks do not engage in such arbitrage through their networks of majority-owned subsidiaries; instead, they expand both their presence and lending in countries with more stringent climate policies.

A common feature of these studies is that they do not consider green transparency policies among the climate-related measures examined, even though GTP may have a direct impact on the allocation of financial flows. Instead, they focus on carbon taxes or rely on the Climate Change Performance Index (CCPI), which does not incorporate

[1] Non-brown firms include both firms whose activities align with environmental standards (green firms) and firms whose activities are neither clearly beneficial nor clearly harmful to climate stability and biodiversity (gray firms).

GTP, likely reflecting limited data availability (see Distinguin et al., 2025). Unlike carbon taxes, which work indirectly by raising the cost of polluting activities, GTP can shift financial flows more directly by reducing information frictions, standardizing the definition of "green", and making banks' exposures publicly comparable, thereby activating market discipline, supervisory pressure, and reputational incentives to rebalance portfolios toward non-brown firms. In settings where carbon taxes are low, uneven, or slow to transmit into borrower fundamentals, this information-and-accountability channel can induce faster and broader reallocation of credit than price-based instruments alone.

Our work is complementary in that we analyze whether and how global banks use their international organizational structure to continue investing in brown firms despite stringent green transparency policies at home. We show that these banks reduce their domestic exposures while increasing equity stakes in both brown majority- and minority-owned affiliates located in countries with less stringent GTP regimes. We further document a form of hidden regulatory arbitrage, particularly among global banks with strong environmental pillar performance: these banks strategically channel high-carbon investments through minority-owned affiliates, thereby employing a more opaque vehicle to continue investing in carbon-intensive activities while masking exposures and mitigating reputational risk. By identifying this previously overlooked channel, our study highlights the need for more harmonized and comprehensive green transparency standards to limit banks' strategic responses to uneven climate regulations.

The remainder of the paper is organized as follows. Section 2 presents the hypotheses tested. Section 3 describes the data and defines the variables. Section 4 outlines the empirical methodology and discusses the main results. Section 5 provides additional analyses. Section 6 reports robustness checks, and Section 7 concludes.

2. Hypotheses development

2.1. Cross-country green transparency policy heterogeneity and global bank responses

Green transparency policies comprise regulatory requirements and soft-law initiatives that improve the availability, reliability, and clarity of financial and non-financial firms' environmental disclosures. They aim to reduce information asymmetries about firms' environmental risks and strategies, enhance environmental accountability, and ultimately facilitate the reallocation of capital toward greener activities. GTP typically combine two types of instruments: (i) disclosure requirements on emissions, climate-related risks, governance, and environmental targets, ranging from "comply-or-explain" regimes to mandatory reporting, and varying in scope across firm types and sectors; and (ii) adoption of green criteria and reporting standards, including green taxonomies and international frameworks such as the Global Reporting Initiative (GRI), the Task Force on Climate-Related Financial Disclosures (TCFD), and the International Sustainability Standards Board (ISSB) (see Distinguin et al., 2025, for more details).

GTPs are designed and implemented at the national or supranational level, but there is currently no harmonized global framework. As a result, countries differ substantially in the stringency and breadth of their green transparency regimes. For example, the European Union has developed a comprehensive, integrated framework for sustainability and climate disclosures. The 2022 Corporate Sustainability Reporting Directive (CSRD, Directive (EU) 2022/2464) mandates detailed reporting by large listed and unlisted firms on a wide range of environmental, social, and governance issues, applies a double-materiality approach (financial and impact), and aligns disclosures with common standards and the EU green taxonomy.[2] The 2019 Sustainable Finance Disclosure Regulation (SFDR, Regulation (EU) 2019/2088) further requires financial institutions to disclose how they integrate sustainability risks and principal

[2] It is important to note that the Stop-the-Clock Directive, adopted in April 2025, postpones CSRD sustainability reporting obligations for certain firms (e.g., non-large companies and listed SMEs).

adverse impacts, and classify and report the sustainability features or objectives of their products. By contrast, U.S. rules are narrower and more fragmented, with a primary focus on financial materiality. The 2022 SEC climate-disclosure rule and emerging state-level legislation emphasize climate-related financial risks and greenhouse gas (GHG) emissions, but lack a comprehensive sustainability regime or unified product-labeling framework comparable to the SFDR.

The broader literature on environmental regulation underscores two opposing predictions about how firms respond to cross-country differences in standards. The "race to the bottom" view posits that firms seek out locations with weaker rules to minimize compliance costs, shift production or investment to countries with lower standards, and pressure host governments to deregulate by threatening to relocate (e.g., Ben-David et al., 2021; Bartram et al., 2022). The "race to the top" hypothesis predicts the opposite: firms may actively seek out stricter regulatory environments when strong standards provide advantages such as reduced uncertainty, reputational benefits, access to high-value markets, or alignment with global supply chain and investor expectations. Rather than fleeing regulation, firms voluntarily adopt higher standards or relocate to jurisdictions with robust rules, producing upward competitive pressure among firms (e.g., Choi and Park, 2014).

In banking, extensive evidence shows that cross-country differences in capital requirements and supervisory regimes affect the international allocation of activities, with strong support for regulatory arbitrage (e.g. Houston et al., 2012; Ongena et al., 2013; Aiyar et al., 2014; Karolyi and Taboada, 2015; Temesvary, 2018; Frame et al., 2020; Gao and Jang, 2021; Demirgüç-Kunt et al., 2023). Evidence on banks' responses to climate-related policies is more recent but points to similar patterns of "race to the bottom" behavior in cross-border lending when environmental policies tighten (Benincasa et al., 2021; Laeven and Popov, 2022). Demirgüç-Kunt et al. (2024), in contrast, report findings interpreted as more in line with a "race to the top" mechanism, showing that global banks increase lending through foreign subsidiaries located in countries with more stringent climate-related policies.

Importantly, existing studies generally omit GTP from their measures of climate policy stringency, likely because a global GTP database was unavailable prior to Distinguin et al. (2025) and because these policies have only recently emerged and expanded. More stringent GTP can steer capital toward non-brown firms by improving the availability and consistency of environmental information, clarifying the criteria that qualify activities as "green," and increasing the visibility and comparability of banks' climate-related exposures. This enhanced transparency strengthens market discipline and supervisory scrutiny, heightening reputational incentives for banks to reduce their involvement in brown assets. Banks' adjustments to the structure of their international affiliate networks in response to GTP may therefore be shaped primarily by these external-pressure and reputation channels.

Since reputational identity scales with ownership, banks face greater reputational risk exposure to companies in which they hold larger stakes. Thus, because majority-owned brown affiliates are fully consolidated under accounting and sustainability reporting standards, their environmental performance and impacts are closely identified with the parent banks' environmental footprint and reputation. Expanding majority stakes in highly polluting units abroad, especially under laxer GTP, risks attracting public scrutiny and damaging the parent's reputation (Choi and Park, 2014). A bank headquartered in a country with stringent GTP may therefore be reluctant to hold large majority stakes in brown foreign subsidiaries, while expanding its involvement in non-brown affiliates, both domestically and in host countries with weaker GTP regimes. Accordingly, we posit

Hypothesis 1: *An increase in home-country vs. host-country GTP stringency reduces (increases) banks' equity investments in majority-owned brown (non-brown) affiliates in both the host and the home country.*

By contrast, minority-owned affiliates are less clearly associated with a global bank in the eyes of regulators, investors, and civil society, and their environmental impacts are less likely to be fully integrated into the bank's consolidated disclosures. Global

banks subject to stricter GTP may therefore have incentives to reduce equity investment in brown firms at home while increasing minority equity position in polluting industries located in less GTP stringent countries, thereby maintaining an arm's-length distance in public perception. This mechanism aligns with the classic pollution haven hypothesis, which posits that firms relocate dirty activities to jurisdictions with weaker oversight (e.g., Dam and Scholtens, 2008; Naughton, 2014), but with an important nuance: the form of involvement matters. Minority ownership can substantially reduce the visibility and perceived responsibility of the global bank. In parallel, these banks may increase minority stakes in domestic non-brown affiliates while scaling back equity positions in foreign entities. This leads to the following hypothesis

Hypothesis 2: *An increase in home-country vs. host-country GTP stringency increases banks' equity investments in minority-owned brown affiliates in the host relative to the home country, while increasing investments in minority-owned non-brown affiliates in the home relative to the host country.*

2.2. Institutional environment as a moderator or amplifier of regulatory arbitrage

Domestic institutional conditions, shaped by both the legal framework and the pressure of civil society, can influence the extent and form of regulatory arbitrage by influencing the incentives for banks to shift carbon-intensive activities abroad. First, strong legal enforcement in the home country imposes coercive pressure on global banks to comply with regulations and legal expectations (Daubanes and Rochet, 2019). Second, civil society can act as an informal regulator of banks' environmental behavior (King, 2008; Hiatt et al., 2016). In particular, environmental NGOs amplify public pressure and often support enforcement of environmental norms (Hoffman, 1999), spotlighting banks perceived as evading domestic standards.

In countries with stronger domestic institutions, lack of full disclosure of global banks' brown investments, particularly their majority-owned affiliates abroad, is more likely to trigger legal challenges or civil society scrutiny, thereby increasing accountability for activities conducted through affiliates where the global banks hold

significant ownership. Consequently, after the introduction of stricter GTP, banks headquartered in strong-institution environments have stronger incentives to curb brown exposures routed through majority-owned affiliates and to reorient equity investment toward non-brown entities, both at home and in host countries with weaker policy regimes. This leads to

Hypothesis 3: *Relatively stronger institutional environment at home amplifies the decline (increase) in investment in brown (non-brown) majority-owned affiliates, both domestically and in host countries, following more stringent home- vs. host-country GTP.*

Any remaining involvement in high-carbon projects is thus more likely to be channeled through a less conspicuous ownership structure. In particular, banks headquartered in jurisdictions with strong institutional environments may adopt subtler arbitrage strategies by shifting equity away from domestic brown affiliates and toward minority stakes in brown affiliates located in weaker-GTP host countries. At the same time, they may scale back minority positions in non-brown foreign affiliates, where the opacity benefit is smaller, and reallocate toward more domestic entities. Accordingly, we posit

Hypothesis 4: *Relatively stronger institutional environment at home reinforces the increase in investment in brown minority-owned affiliates in host- vs. home-country and in non-brown minority-owned affiliates in the home- vs. host- country following more stringent home- vs. host-country GTP.*

2.3. Global bank environmental commitment and hidden regulatory arbitrage

Finally, a global bank's own environmental commitment, captured, for instance, by its environmental E-score, is likely to constrain opportunistic behavior while also shaping the preferred mode of engagement in brown and non-brown activities. For banks with strong environmental credentials, expanding equity ownership in brown majority-owned affiliates abroad would directly increase their consolidated carbon

footprint and undermine their ESG reputation. Such banks may therefore tighten internal standards by expanding exposure to non-brown majority-owned affiliates and avoiding overt arbitrage through majority-owned affiliates, keeping core operations more closely aligned with public commitments. Formally we conjecture

Hypothesis 5: *The decrease (increase) in investment in brown (non-brown) majority-owned affiliates, both domestically and in host countries, following more stringent home- vs. host-country GTP is more pronounced in more environmentally-committed global banks.*

By contrast, equity positions in brown minority-owned affiliates are typically less visible because minority stakes are not fully consolidated in the parent's financial and sustainability reports. As a result, their environmental footprint is less likely to affect the parent's E-score, particularly when stakeholders place greater weight on majority-owned entities when evaluating a bank's environmental performance. This relative opacity can lower the perceived reputational and regulatory costs of sustaining exposure to high-carbon activities via minority stakes in weak-GTP jurisdictions. Accordingly, even more environmentally committed banks may preserve some foreign brown exposure through minority positions as a less visible channel, potentially reallocating capital away from non-brown affiliates in parallel, thus

Hypothesis 6: *The increase in investment in brown minority-owned affiliates in host- vs. home-country and in non-brown minority-owned affiliates in the home- vs. host-country following more stringent home- vs. host-country GTP is more pronounced in more environmentally-committed global banks.*

3. Data and Variables

3.1. Home & host country pair data construction for global banks

To examine how global banks respond to cross-border differences in GTP, we identify their majority and minority equity holdings, both domestically and internationally. We structure the data into global bank (home country)–host country

pairs (or short, bank-host country pairs), where the home country corresponds to the global bank's headquarters and the host country is the location of its foreign equity investments. Our sample covers the period 2010–2023. We set 2010 as the starting year because green transparency policies were not yet widely adopted before that date (Distinguin et al., 2025). We construct our dataset by combining data from BankFocus and Orbis Historical, both sourced from Moody's Analytics.

The data assembly proceeds in two steps. First, from BankFocus, we extract all commercial banks, cooperative banks, savings banks, and bank holding companies from the 186 countries for which the Green Transparency Policy index of Distinguin et al. (2025) is available. This procedure yields an initial sample of 13,691 banks across 152 countries, each with a Moody's Analytics identifier and home-country assignment.

Second, we collect data on firms' ownership structures using Orbis Historical. For each year, it reports firms' shareholders, each with a unique Moody's Analytics identifier, and provides their equity shares.[3] To identify global banks' domestic and foreign majority- and minority-owned affiliates from 2010 to 2023, we merge shareholders' ownership data information from Orbis Historical with the sample of global banks identified in Step 1. Third, we obtain data on affiliate-level characteristics, such as its headquarters country, sector, and specialization. These steps allow us to identify 1,315 global banks headquartered in 133 home countries, with 92,532 affiliates, 22,189 of which are foreign and located in 191 host countries over 2010–2023.

We then apply two sample restrictions. First, to ensure the reliability of our panel estimations and identify time trends within panel units, we restrict the sample to bank–host country pairs with observations spanning at least three years. Second, we exclude host countries classified as Offshore Financial Centers (OFC) in the Bank of International Settlements list, given their atypical regulatory environments, which are often shaped by tax and wealth-management activities (Pogliani and Wooldridge,

[3] Orbis Historical reports both direct and indirect equity holdings, but information on indirect stakes is limited. We therefore focus on direct holdings. Including indirect holdings would likely strengthen any regulatory-arbitrage effects, but doing so would require mapping full control chains, which Orbis Historical does not provide.

2022).[4] The final sample comprises 693 global banks headquartered in 90 home countries, with equity investments in 64,489 affiliates. See Table A1 in the Appendix for the list of global banks' home countries, and the number of distinct host countries where they have affiliates, and Figure 1 for a map of their global distribution.

[Insert Fig. 1]

We classify affiliates as majority-owned (strictly >50% direct ownership by a global bank) or minority-owned (≤50% direct ownership by a global bank). Our final sample includes 34,363 majority-owned affiliates (i.e., subsidiaries), of which 28,562 are domestic, and 6,052 are foreign. Minority-owned affiliates total 32,626, including 27,000 domestic and 7,595 foreign. These foreign affiliates are located in 118 host countries. We note that some entities switched from being majority-owned to minority-owned (or vice-versa) between 2010 and 2023. Consequently, the reported numbers of majority- and minority-owned affiliates are not mutually exclusive. Table A3 in the Appendix shows that, on average, global banks own about 88% of their majority-owned affiliates, with slightly higher equity stakes in domestic than in foreign entities (95% vs. 87.5%, on average). For minority-owned affiliates, their average equity stake is about 10%, following the same pattern of higher ownership in domestic compared to foreign entities.

We construct an unbalanced panel dataset comprising 41,886 observations at the bank-host country-year level. These correspond to 4,647 distinct bank-host country pairs (or dyads) from 2010 to 2023, which enables our analysis of cross-border regulatory arbitrage.

3.2 Classifying affiliates as brown vs non-brown

Examining global banks' regulatory arbitrage behavior through changes in the composition of their affiliate networks requires distinguishing affiliates by their environmental impact. We do this by using the United Nations Environment Programme Finance Initiative (UNEP FI) classification, which links firms' economic

[4] OFC excluded from the sample are: Anguilla; Antigua and Barbuda; Aruba; Bahamas; Bahrain; Barbados; Bermuda; Cayman Islands; Curaçao; Gibraltar; Guernsey; Hong Kong SAR; Isle of Man; Jersey; Lebanon; Macao SAR; Mauritius; Montserrat; Panama; Saint Kitts and Nevis; Samoa; Singapore; Sint Maarten; and Vanuatu.

activities (based on industry ISIC codes) to environmental impact categories and flags sectors considered "high-impact". We prefer this activity-based taxonomy to firms' Environmental (E) scores because "brownness" is fundamentally about what firms do (sector exposure), and because E-scores are unavailable for many firms, especially private and smaller affiliates, raising coverage and sample-selection concerns.

For each affiliate, Orbis provides the primary activity NACE code and, when unavailable, the corresponding NAICS classification. We use the UNEP FI Sector Impact Mapping correspondence tables to convert these codes into ISIC Rev. 4 categories and assign each affiliate to the UNEP FI environmental impact classification.[5] We then classify affiliates as brown if they operate in environmentally harmful sectors (e.g., high-emissions activities), green if their activities are environmentally aligned, and gray otherwise (i.e., neutral or mixed impacts on climate stability and biodiversity). In our analysis, we group green and gray affiliates into a single non-brown category. Gray sectors are not part of the core polluting industries and are typically associated with intermediate, rather than extreme, regulatory exposure; classifying them as brown would mechanically expand the "brown" group, dilute policy sensitivity, and reduce our ability to detect regulatory arbitrage concentrated in truly high environmental-risk activities. In our sample of 64,489 bank affiliates, 14,076 are classified as brown and 50,403 as non-brown (see Table A3 in the Appendix). We observe from Table A3 that there are more brown minority-owned affiliates, domestic and foreign, than brown majority-owned affiliates (in total 30.11% vs. 15.2%).

3.3. Measuring affiliate network allocation

We construct relative measures of global banks' domestic and foreign affiliate equity holdings in brown and non-brown sectors. By focusing on relative allocations, rather than levels influenced by bank size or portfolio scale, these measures capture how banks reconfigure the domestic–foreign composition of their equity investments in response to cross-country differences in environmental regulation stringency

[5] Available at https://www.unepfi.org/impact/impact-radar-mappings/impactmappings/sectors-mapping/

between home and host countries. More specifically, in year *t* and for each global bank-host country pair, we calculate the difference between the total number of brown (non-brown) affiliates a global bank *i* holds in host country *j* and the total number of its domestic brown (non-brown) affiliates in home country *h*. We normalize this difference by bank *i*'s total number of affiliates (brown and non-brown) in year *t* to obtain comparable measures across banks and years by removing scale effects:

$$BrownXForeignDomesticGap_{i,h,j,t} = \frac{Brown\ Foreign\ Affiliates_{i,h,j,t} - Brown\ Domestic\ Affiliates_{i,h,t}}{Total\ Number\ Affiliates_{i,h,j,t}} \quad (1)$$

$$NonBrownXForeignDomesticGap_{i,h,j,t} = \frac{NonBrown\ Foreign\ Affiliates_{i,h,j,t} - NonBrown\ Domestic\ Affiliates_{i,h,t}}{Total\ Number\ Affiliates_{i,h,j,t}} \quad (2)$$

We compute both measures separately for majority- and minority-owned affiliates. We use $X \in \{MAJ, MIN\}$ to denote the ownership type: $BrownMAJForeignDomesticGap_{i,h,j,t}$ and $NonBrownMAJForeignDomesticGap_{i,h,j,t}$ for majority-owned affiliates, and $BrownMINForeignDomesticGap_{i,h,j,t}$ and $NonBrownMINForeignDomesticGap_{i,h,j,t}$ for minority-owned affiliates. Because these measures are normalized differences, they can take negative values when a bank has fewer affiliates in host country *j* than domestically in home country *h* within the brown or non-brown category. Table A4 in the Appendix reports detailed variable definitions and descriptive statistics. The mean values of all four measures are negative, indicating that, on average, global banks hold more domestic than foreign affiliates for both majority- and minority-owned stakes. Table A3 further confirms that global banks have, on average, more domestic affiliates than foreign ones, regardless of ownership structure.

3.4. Cross-country variation in green transparency policies

The Green Transparency Policy (GTP) Index of Distinguin et al. (2025) measures the coverage and stringency of green transparency policies across countries and over time on a 0–1 scale. It combines two dimensions. First, disclosure requirements capture the scope of application, by firm size (large vs. small), incorporation (domestic vs. foreign), and listing status (listed vs. unlisted), and account for regulatory stringency (mandatory vs. comply-or-explain) and enforcement (public vs. private). Second, green

criteria capture the adoption of international standards (e.g., GRI, TCFD, ISSB) and national frameworks (environmental guidelines and green taxonomies). Higher GTP values indicate stricter green transparency requirements.

We measure the home–host GTP gap[6] as the difference in index values between the global bank's home country and the affiliate's host country for each home–host pair:

$$GTPHomeHostGap_{h,j,t} = GTP_{h,t} - GTP_{j,t} \qquad (3)$$

Where *h* denotes the global bank's home country, *j* the affiliate's host country, and *t* the year. Descriptive statistics in Table A4 show that, on average, the GTP index is higher in global banks' home countries than in their affiliates' host countries, resulting in a positive average value of $GTPHomeHostGAP_{h,j,t}$.

4. Home–host green transparency policy gaps and affiliate allocation

4.1. Econometric specification

To examine whether global banks leverage their international affiliate network to engage in regulatory arbitrage when GTP becomes more stringent in their home country, we estimate the following two-way fixed effects panel regression at the global bank–affiliate host country level:

$$Y_{i,j,h,t} = \beta_1 GTPHomeHostGAP_{h,j,t} + \sum_m \theta_m HomeHostGapControl_{h,j,t} + \sum_p \delta_p HostControl_{j,t} + \sum_n \gamma_n BankControl_{i,h,t} + \alpha_{i,j,h} + \mu_t + \varepsilon_{i,j,h,t} \qquad (4)$$

Where *i* denotes the global bank, *h* its home country, *j* the affiliate's host country, and *t* the year. The dependent variable, $Y_{i,j,h,t}$ represents relative measures of global banks' foreign versus domestic majority- and minority-owned holdings in brown and non-

[6] We further assess robustness of our results by using an alternative measure for the home–host country GTP gap using categorical measures. Specifically, we construct two indicator variables: (i) an indicator equal to 1 when home-country GTP exceeds host-country GTP (and 0 otherwise), and (ii) an indicator equal to 1 when home- and host-country GTP are equal (and 0 otherwise). The reference category is when home-country GTP stringency is less than the host-country GTP. A specification using these variables are robust to possible non-linear and asymmetric effects and allow us to focus on the effect of the presence of regulatory disparity between home- and host-country GTP. Our main conclusions remain unchanged; results are available upon request.

brown sectors, specifically $BrownMAJForeignDomesticGap_{i,h,j,t}$, $NonBrownMAJForeignDomesticGap_{i,h,j,t,}$ $BrownMINForeignDomesticGap_{i,h,j,t}$ and $NonBrownMINForeignDomesticGap_{i,h,j,t}$. The variable $GTPHomeHostGAP_{h,j,t}$ captures the difference in the green transparency policy stringency between the global bank's home country and the affiliate's host country. We include home-host country pair controls ($HomeHostGapControl_{h,j,t}$), host country controls ($HostControl_{j,t}$), and bank-level controls ($BankControl_{i,h,t}$). $\alpha_{i,j,h}$ and μ_t denote the bank-host country pair fixed effects and time fixed effects, respectively. They absorb time-invariant unobserved heterogeneity at the bank-host country level and common time shocks affecting all banks.[7]

For the home–host country pair controls, we capture cross-country differences in carbon-pricing policies, such as carbon taxes and emissions trading systems (ETS), between the bank's home country and the affiliate's host country.[8] Prior evidence indicates that introducing a carbon tax can reduce brown activity at home while shifting it toward jurisdictions without such taxes (e.g., Laeven and Popov, 2023). Using the World Bank's Carbon Pricing Dashboard, we collect information on the adoption of compliance carbon-pricing instruments worldwide (carbon taxes and ETS). For each country, we construct a dummy variable, which is equal to one from the year a carbon tax or an ETS is introduced onward, and zero before implementation or for those with no compliance carbon-pricing instruments. We then compute the home–host country carbon-pricing instrument adoption differential per year, denoted $CarbonTaxHomeHostGAP_{h,j,t}$.

We also capture the cross-country gap in bank capital requirements between the global bank's home country and the affiliate's host country. Prior evidence shows that such differences influence where banks locate their activities internationally, consistent

[7] Alternatively, we also consider country-year fixed effects and obtain similar results. The results are available upon request from the authors.

[8] Alternatively, we use the Climate Change Performance Index (CCPI), an annual composite index that benchmarks countries' climate-mitigation performance using indicators spanning GHG emissions, renewable energy, energy use, and climate policy. Because CCPI coverage is limited (roughly 60–70 countries), we employ it only as a robustness check (see Section 6.3).

with incentives for regulatory-arbitrage (e.g., Frame et al, 2020; Demirgüç-Kunt et al., 2023). We measure capital regulatory stringency using the Global Banking Regulation and Supervision Database (Barth et al., 2013), based on five World Bank–sponsored surveys published in 2001 (I), 2003 (II), 2007 (III), 2011 (IV), and 2019 (V). Because the survey measures are not available annually, we follow a standard interpolation approach: we assign Survey III values to 2010, Survey IV values to 2011–2018, and Survey V values to 2019–2022. Drawing on these surveys, and following Barth et al. (2013), we construct a capital regulation index that captures how closely supervisory authorities monitor capital at risk and the sources of banks' initial capitalization. We then define $BankRegulationHomeHostGAP_{h,j,t}$ as the home–host country gap in capital regulation stringency, computed as the global bank's home country index minus the affiliate host country index for each home–host country pair and year.

We additionally control for home–host country differences in legal institutions that may shape global banks' allocation decisions across their affiliate networks. Specifically, we account for gaps in the rule of law and creditor rights. We measure a country's rule of law using the index from Kaufmann et al. (2009), which captures the quality of contract enforcement, protection of property rights, the effectiveness of police and courts, and the incidence of crime and violence. We then define $RuleofLawHomeHostGAP_{h,j,t}$ as the global bank's home-country rule of law score minus the affiliate host country score. To capture differences in creditor protection, we use the World Bank creditor rights index, which reflects the extent of legal safeguards for creditors in cases of debtor reorganization or liquidation. We compute the corresponding home–host country differential as $CreditorRightHomeHostGAP_{h,j,t}$.

As a final home–host country pair control, we account for the intensity of bilateral trade, which can also shape cross-border banking activity (e.g., Frame et al., 2020). Using data from the IMF Data Portal, we construct $BilateralTrade_{h,j,t}$ as a measure of trade linkages between the global bank's home country and the affiliate's host country. Specifically, we take the maximum of (i) the share of the home country's total imports sourced from the host country and (ii) the share of the home country's total exports

shipped to the host country, each expressed relative to the home country's total imports/exports with the rest of the world. This variable captures the strength of the home countries' trade partnership in year *t*.

We next include a set of host country characteristics that prior work has shown to influence where banks conduct their foreign operations. To capture host country economic conditions and productivity, we use real GDP growth from the World Bank for the affiliate's host country, denoted $GDP\_Host_{j,t}$. We also control for local financial market development using the growth rate of the credit-to-GDP ratio ($CreditGrowthHost_{j,t}$). Finally, we account for the degree of banking sector concentration with $BankConcentrationHost_{j,t}$, defined as the share of the host country's total banking assets held by its five largest banks (ranked by total assets) in a given year.

Finally, we control for global bank size and capitalization, which may shape how banks organize their international affiliate networks. Specifically, we include the natural logarithm of total assets ($Total\ Assets_{i,h,t}$) and the equity-to-total-assets ratio ($EquityToAssets_{i,h,t}$).

All control variables are defined in Table A5, which also reports descriptive statistics. Table A6 presents pairwise correlations and flags potential multicollinearity, which we address by orthogonalizing the relevant variables (see Table A5). As an additional check, Table A6 reports variance inflation factors (VIFs) from an OLS specification with all covariates and year fixed effects. All VIFs are well below the conventional threshold of 10, with an average VIF of only 1.65, suggesting multicollinearity is unlikely to affect our estimates.

4.2. Core Results

In Table 1, we report estimates of Eq. (4) using a two-way fixed effects panel-data estimator, with Huber-White heteroskedasticity-robust standard errors. We alternatively use each of the four affiliate network allocation measures as the dependent variable.

[Insert Table 1]

Results in columns (1) and (2) show that the coefficient associated with

$GTPHomeHostGAP_{h,j,t}$ is positive and statistically significant at the 1% level for both $BrownMAJForeignDomesticGap_{i,h,j,t}$ and $NonBrownMAJForeignDomesticGap_{i,h,j,t,}$. This implies that when GTP becomes more stringent in a bank's home country than in the host country of its affiliate, global banks increase the proportion of their foreign majority-owned affiliates in the host country, both brown and non-brown, relative to domestic majority-owned affiliates. These results do not support Hypothesis 1; instead, they are consistent with regulatory arbitrage through the majority-owned affiliate network. As home country GTP tighten, global banks appear to scale back equity investments in domestic brown majority-owned affiliates while expanding their equity investments in brown entities located in jurisdictions with less stringent GTP. Perhaps surprisingly, we observe a similar reallocation for non-brown majority-owned affiliates, with banks shifting involvement away from domestic entities toward foreign ones.

We also find evidence of regulatory arbitrage through minority-owned affiliates. Column (3) shows that the coefficient on $GTPHomeHostGAP_{h,j,t}$ is positive and statistically significant at the 5% level for $BrownMINForeignDomesticGap_{i,h,j,t}$. Consistent with Hypothesis 2, this implies that stricter home country GTP are associated with banks holding equity positions in a larger number of foreign minority-owned brown affiliates in less GTP stringent jurisdictions, relative to domestic minority-owned affiliates. By contrast, column (4) indicates the opposite pattern for non-brown minority-owned affiliates: under stricter home-country GTP, banks increase the proportion of their domestic non-brown minority-owned affiliates relative to their foreign non-brown minority owned affiliates in less stringent host countries. Taken together, these results suggest that tighter GTP induce global banks to reallocate activities across borders, increasing brown activity exposure via minority-owned affiliates in laxer jurisdictions, while increasing equity positions in cleaner entities at home.

Our results suggest that under stricter GTP, global banks engage in regulatory arbitrage and continue investing in carbon-intensive activities. They do so not only through minority-owned affiliates, which may help maintain an arm's-length distance

in public perception, but also through their more visible network of majority-owned affiliates. Taken together, these findings indicate that, as implemented to date, GTP may be an insufficient deterrent to curb regulatory arbitrage, at least through foreign majority-owned affiliates.

By comparison, columns (1) and (2) show that the coefficients on $CarbonTaxHomeHostGAP_{h,j,t}$ are statistically insignificant. This suggests that the introduction of a carbon tax policy in the home country does not affect the allocation of equity holdings between domestic and foreign majority-owned affiliates, whether brown or non-brown. In contrast, $CarbonTaxHomeHostGAP_{h,j,t}$ is positive and significant for $BrownMINForeignDomesticGap_{i,h,j,t}$ but negative and significant for $NonBrownMINForeignDomesticGap_{i,h,j,t}$. These findings indicate that when a carbon pricing instrument is in place at home, global banks increase the proportion of their brown minority-owned affiliates in jurisdictions without carbon taxes or ETS relative to their domestic brown affiliates, while relatively increasing their non-brown minority holdings at home.

Overall, the evidence suggests that both GTP and compliance carbon pricing instruments are insufficient to prevent a "hidden" form of regulatory arbitrage through minority-owned affiliates. However, carbon taxes and ETS appear to be more effective than GTP at deterring banks from using majority-owned affiliates to increase their brown firm exposure, both domestically and in jurisdictions with laxer policies. One explanation is that, unlike carbon taxes and ETS, which directly raise the cost of carbon-intensive activities, GTP typically do not prohibit or penalize brown activities. Instead, they operate more indirectly through disclosure and incentives, leaving the decision to invest in carbon-intensive activities to a trade-off between reputational and compliance costs on the one hand, and potential profits on the other. Moreover, current transparency-based regimes have not yet reached maximum stringency in any country (see Distinguin et al., 2025). Taken together, our results point to the need to further strengthen GTP if they are to meaningfully curb regulatory arbitrage through banks' international affiliate networks.

4.3. Push and pull effects

To disentangle whether the observed effect of green transparency policy stringency differences is driven by home or host country factors, we adopt a robust approach based on the push-pull framework. Specifically, we account for both home and host country green transparency regulatory stringency in the regressions, denoted $GTPhome_{i,h,t}$ and $GTPhost_{i,j,t}$, respectively. This enables us to distinguish the "push effect" of the home country from the "pull effect" of the host country's GTP stringency on the composition of the global bank's affiliate network.

The results shown in Table 2 indicate a significant "push effect", especially on brown equity investments. Particularly, we find that an increase in GTP stringency at home raises the relative proportion of brown affiliates abroad, regardless of whether they are majority- or minority-owned. However, we do not find evidence of a "pull effect". Laxer GTP in host countries does not appear to drive the relative share of brown equity investments of global banks abroad compared to brown investments at home. Overall, these findings provide evidence of regulatory arbitrage, as stricter environmental disclosure requirements at home are associated with a greater share of global banks' brown affiliates abroad, both majority- and minority-owned.

Regarding global banks' non-brown equity exposures, the results show clear differences by ownership structure. An increase in GTP stringency in the home country is associated with an increase in the proportion of non-brown majority-owned affiliates located abroad, rather than at home. Conversely, increased stringency in green transparency policies in a host country decreases the global banks' share of non-brown majority-owned affiliates located in that country relative to the home market. The pattern reverses for non-brown minority-owned affiliates. Stricter green disclosure requirements and criteria in the host country increase the proportion of non-brown minority-owned affiliates located in that country relative to the home country. Taken together, these results suggest that more stringent GTP rules tend to shift global banks' non-brown minority-owned affiliate investments toward the jurisdiction imposing

stricter standards.

[Insert Table 2]

4.4. Non-brown affiliates: financial vs. non-financial entities

We further investigate the observed pattern regarding the effect of home- vs. host-country GTP difference on the location of the global bank's non-brown affiliates. As noted in section 4.3, when home-country GTP becomes relatively more stringent than the host-country's, global banks increase the share of foreign non-brown majority-owned affiliates in less stringent host countries relative to the home market. Of the 50,403 non-brown affiliates and 29,389 non-brown majority-owned affiliates in our sample, 30,628 (61%) and 22,897 (78%) are financial institutions, respectively. We assess whether our findings may be primarily driven by the strong presence of financial entities within the non-brown category. To this end, we re-estimate Equation (4) by disaggregating non-brown majority-owned affiliates into financial and non-financial entities.

Results reported in Table 3 indicate that greater home-country GTP stringency is associated with an increased share of financial majority-owned affiliates located abroad relative to at home, while no significant effect is found on the domestic-foreign location decision for global banks' non-financial majority-owned entities. A plausible interpretation is that as GTP tightens at home, global banks appear to grow the relative share of foreign financial institutions in less regulated jurisdictions in their network structure to mitigate rising regulatory risk at home and to expand lending activity in those markets. Distinguin et al. (2025) find that green transparency regulations are correlated with other green financial policies. Directly testing this mechanism, however, is beyond the scope of this paper, as it would require affiliate-level lending data. We further find that, as home-country GTP becomes more stringent, banks increase the share of domestic financial minority-owned affiliates relative to foreign financial minority-owned affiliates in less stringent host countries, while exhibiting no statistically significant impact on the composition of its non-financial minority-owned

affiliates.

[See Table 3]

5. Mechanisms and drivers of green arbitrage

5.1. Institutional environment

We extend our analysis by testing Hypotheses 3 and 4. Hypothesis 3 posits that a stronger domestic institutional environment amplifies the expected enforcement of GTP policies and intensifies the reputational costs of increased brown equity investments at home and in majority-owned affiliates abroad when domestic GTP tighten. Hypothesis 4, by contrast, conjectures that tighter home-country GTP combined with a strong institutional environment strengthens incentives for more "hidden" regulatory arbitrage, with global banks possibly increasing brown exposure abroad through minority-owned affiliates while keeping or expanding green or non-brown investments at home to preserve legitimacy, minimize scrutiny and portray home bias in environmental responsibility. To test these hypotheses, we augment Equation (1) by interacting the home-host GTP gap variable ($GTPHomeHostGAP_{h,j,t}$) with the difference in institutional strength between the home– and host- country ($InstEnvirHomeHostGAP_{h,j,t}$), as follows:

$$\begin{aligned} Y_{i,j,h,t} = {} & \beta_1 GTPHomeHostGAP_{h,j,t} + \beta_2 GTPHomeHostGAP_{h,j,t} \\ & \times InstEnvirHomeHostGAP_{h,j,t} + \beta_3 InstEnvirHomeHostGAP_{h,j,t} \\ & + \sum_m \theta_m HomeHostGapControl_{h,j,t} + \sum_p \delta_p HostControl_{j,t} \\ & + \sum_n \gamma_n BankControl_{i,h,t} + \alpha_{i,j,h} + \mu_t + \varepsilon_{i,j,h,t} \end{aligned} \quad (5)$$

The estimation results for Equation (5) use the same estimation methodology as for Equation (1). We consider two dimensions of the institutional environment ($RuleOfLawHomeHostGAP_{h,j,t}$ and $NGOHomeHostGAP_{h,j,t}$) that may shape global banks' incentives to adjust the composition of their affiliate networks in response to stricter GTP.

First, stronger legal enforcement increases the effective stringency of GTP. Better monitoring capacity, auditability, and more credible sanctions increase the likelihood

that non-compliance or circumvention is detected and penalized, while consolidated supervision and legal accountability heighten group-level scrutiny, especially for majority-owned affiliates. We proxy legal enforcement using the Rule of Law indicator from the World Bank's Worldwide Governance Indicators (WGI), which captures perceptions of confidence in and compliance with societal rules, particularly the quality of contract enforcement, property rights, policing, and the courts. The index ranges from −2.5 to 2.5, with higher values indicating stronger legal enforcement. To capture relative institutional strength differences between home and host countries, we construct $RuleOfLawHomeHostGAP_{h,j,t}$, a dummy variable equal to one if the home-country Rule of Law score exceeds the host-country score, and zero otherwise.

Table 4 reports the results. Increased home-country relative GTP stringency is associated with an increased proportion of brown majority-owned affiliates in less GTP stringent host countries, relative to the home country, regardless of the institutional quality difference between the home and host countries. However, the calculated average marginal effects show that the increase in the relative proportion of brown majority-owned affiliates in less strict GTP countries, following a tighter home-country GTP, is significantly weaker when the home country has a relatively stronger Rule of Law than the host country. In contrast, the tightening of green transparency requirements in the home country increases the relative share of brown minority-owned affiliates in less GTP stringent host countries but only when the home country's institutional quality is not stronger than the host country. Taken together, these results imply that a stronger rule of law in the home country tends to weaken banks' tendencies to exhibit a home bias in environmental responsibility. We further find that an increase in relative home country GTP stringency tends to increase global banks' non-brown majority-owned affiliates and decrease their non-brown minority-owned affiliates in less GTP stringent host countries. The effect, however, is less in cases where the rule of law is stronger in the home country than in the host country.

Second, we examine whether civil-society pressure, proxied by the presence of environmental NGOs, amplifies the effective impact of GTP by increasing reputational

costs linked to brown equity exposure. Active NGOs increase the likelihood that banks' brown exposures are identified, publicized, and clearly attributed to the parent bank, thereby raising the reputational cost of maintaining such positions. Environmental NGOs can also monitor banks' activities, expose inconsistencies in their climate actions, and make weak compliance socially costly. Moreover, they tend to reduce environmental information asymmetries thereby improving market discipline, and increasing banks' accountability. We compile a country–year count of environmental NGOs based on organizations accredited by the United Nations Environment Assembly (UNEA).[9] Because data are not available for all countries in our sample, the sample is reduced to 35,113 bank–host country–year observations for 571 global banks headquartered in 68 countries, with affiliates located in 81 countries. We construct a binary indicator $NGOHomeHostGAP_{h,j,t}$ to capture relative civil-society pressure between a bank's home country and its affiliate's host country. The indicator is equal to 1 if the number of environmental NGOs are greater in the home country than in the host country, and zero otherwise.[10]

Table 5 reports the results. The results show that an increase in relative domestic GTP stringency is associated with global banks increasing their relative equity positions in foreign majority-owned brown affiliates, relative to domestic affiliates. The marginal effect is, however, smaller where the global bank's home country has stronger environmental NGO presence than the host country. Moreover, we find that a stronger relative presence of environmental NGOs in the bank's home country vis-à-vis the host country helps limit the bank's increasing the share of its minority-owned foreign

[9] There is no universally accepted definition of what constitutes an environmental NGO across countries. We therefore draw on the accreditation by the United Nations Environment Programme (UNEP), the UN's leading environmental authority, to identify environmental NGOs in a consistent way. UNEA-accredited organizations are formally recognized participants in international environmental governance, must comply with UN rules, and are required to periodically document their activities to maintain their status. This accreditation therefore provides a credible and comparable measure of environmental NGOs across countries. The data are available at https://www.unep.org/civil-society-engagement/accreditation/list-accredited-organizations.

[10] The number of environmental NGOs in a country naturally varies with country size, population, economic scale, and the breadth of the legal system. We therefore focus on home–host gap indicators that measure public pressure in the home country relative to the host country, rather than using absolute environmental NGO counts. This reduces size-related bias and helps ensure the measures capture differences in institutional and societal pressure rather than differences in country scale.

affiliates in brown sectors, relative to its domestic affiliates, particularly when the home country adopts more stringent green disclosure rules and criteria. We further find that as home-country GTP becomes relatively more stringent, global banks increase the relative share of foreign non-brown majority-owned affiliates while reducing the relative share of foreign non-brown minority-owned affiliates, relative to their positions at home. These effects are amplified when the home country has a stronger presence of environmental NGOs than the host country.

Overall, our results suggest that neither stronger legal enforcement nor a stronger presence of environmental NGOs in the home country deters global banks from engaging in regulatory arbitrage under more stringent GTP rules in the home country. These findings indicate that although stronger home-country rule of law attenuate arbitrage through majority-owned affiliates, it does not completely curb banks' arbitrage incentives. Instead, global banks continue to increase the share of their foreign brown majority-owned affiliates relative to domestic affiliates. However, a stronger presence of environmental NGOs in the bank's home country exerts a dampening effect on "hidden" regulatory arbitrage conducted through minority-owned affiliates, particularly in response to increased home-country GTP stringency relative to host countries.

[Insert Tables 4 and 5]

5.2. Global bank environmental commitment

We also investigate whether banks' environmental commitment shapes how they adjust their international affiliate network when home-country GTP become relatively more stringent. Specifically, we first test whether global banks with stronger environmental commitment avoid relatively visible forms of arbitrage or those that are more likely to attract regulatory or reputational scrutiny, namely increasing the relative share of their brown affiliates in less GTP stringent jurisdictions (Hypothesis 5). The intuition is that majority ownership implies more direct attribution of environmental exposure at the consolidated-group level, making such adjustment more damaging to

their ESG credibility. In parallel, we examine whether these same banks change the composition of their affiliate network in favor of less observable channels through brown minority-owned affiliates (Hypothesis 6). Minority ownership stakes constitute a 'hidden' mechanism through which banks can continually invest in brown activities while complying with stricter home-country green financial policies and minimizing reputational scrutiny.

Empirically, we test these mechanisms by augmenting Equation (1) with an interaction term between the home-host country GTP gap ($GTPHomeHostGAP_{h,j,t}$) and the global bank's environmental commitment ($EscoreBank_{i,h,t-1}$). We use the global bank's environmental score (E-Score) as a proxy for environmental commitment. E-Scores are obtained from Refinitiv/LSEG ESG (formerly Thomson Reuters ASSET4) and are available only for a subsample of 144 global banks over 2010–2023, yielding 18,154 global bank-host-country-year observations. The E-score ranges from 0 to 1, with higher values indicating stronger environmental commitment.

Table 6 reports the results, with marginal effects of $GTPHomeHostGAP_{h,j,t}$ evaluated at different E-Score values. The results show that a relative increase in home country GTP stringency is associated with an increased share of brown majority-owned affiliates relative to domestic affiliates, regardless of the bank's environmental commitment level, albeit a smaller effect is reported for banks with higher E-scores. In contrast, a tightening of home country GTP stringency relative to the host country is associated with an increase in the proportion of foreign brown minority-owned affiliates relative to domestic affiliates, but only for banks with E-Scores above 0.75 (a B+ grade or better).

Overall, our findings suggest that tighter green transparency policies prompt global banks to engage in regulatory arbitrage through their networks of majority-owned affiliates, irrespective of their environmental commitments. At the same time, banks with stronger environmental commitments also appear to engage in "hidden" brown equity investments via minority stakes in affiliates located in countries with less stringent green transparency rules.

[Insert Table 6]

6. Robustness tests

We subject our results to a range of robustness checks. For brevity, we only report in the Appendix the results for the baseline specification in Equation (4).[11]

6.1 Endogeneity issues

To address potential endogeneity issues caused by omitted variable bias, we include home-host country pair controls, host country controls, and bank-level controls, and fixed that account for unobserved time and home-host country specific factors that might be correlated with global banks' affiliate allocation decisions. To identify the causal effect of the difference in green transparency policy stringency between the home country of the global banks and the host country of their affiliates, we assume that our variable of interest $GTPHomeHostGAP_{h,j,t}$ is exogenous and uncorrelated with the error term. However, this might not be the case.

To address potential endogeneity concerns, we estimate an instrumental variable (IV) model using two-stage least squares instrumental variable regression.[12] We identify a set of potential instruments based on natural disasters that are correlated with the adoption of green transparency policies (see Distinguin et al., 2025) while being plausibly exogenous to our banks' affiliate-network allocation measures. While affecting local economic conditions, public welfare and socioeconomic stability, natural disasters are unlikely to directly determine the financial sector's strategic decisions. More specifically, we consider home–host country gaps in five disaster-exposure measures: (i) the number of wildfires, (ii) the number of people affected by earthquakes, (iii) the share of urban extent located in coastal zones within five meters of sea level; (iv) the number of cyclones; and (v) the natural logarithm of distance from centroid to

[11] The robustness check results for the additional specifications estimated in Sections 4.2–5.3 are available upon request. Our conclusions remain unchanged.
[12] We also perform 2SLS for the potential endogeneity issues in Columns (1) – (4), and the second-stage results still hold. The results are available upon request from the authors.

nearest coast (hereafter *Home-Host Wildfire Gap*, *Home-Host People Affected by Earthquake Gap*, *Share of Urban Extent in Coastal Zone within 5 meters Gap, Home-Host Cyclones Gap* and *Distance from Centroid to Nearest Coast Gap*; see Table A4 for more detailed definitions).[13] Moreover, we also use the interaction between the measures following Furceri et al. (2023). We test and confirm the validity of our instruments using a variety of tests, including weak identification tests (using the Kleibergen-Paap Wald rk F statistic), and the Sargan-Hansen test of overidentifying restrictions to verify the exclusion restriction. The instruments used in each specification are reported in Panel A of Table A6 in the Appendix. We also report the Durbin–Wu–Hausman (DWH) test to assess whether endogeneity is a concern. The test is generally not significant at the 5% level, except in Column (2), suggesting limited evidence that the key explanatory variable is endogenous and implying that the baseline estimates are likely unbiased and consistent.

Results reported in Panel B of Table A6 confirm that our main findings are robust. As GTP becomes relatively more stringent in the home country, global banks engage in regulatory arbitrage by increasing their equity investments in carbon-intensive activities through both majority- and minority-owned affiliates.

6.2 Controlling for time-invariant bilateral country characteristics

We further assess robustness by adding time-invariant bilateral country characteristics that cannot be included alongside bank–country pair fixed effects in Eq. (4). Specifically, we capture geographic and cultural proximity between a bank's home and host countries using indicators for a common language (*CommonLanguage*), a common colonization history (*CommonColonization*), and their geographical distance (*Distance*) (see Table A4 in the Appendix for a detailed definition). We use pooled OLS regression with home country and year fixed effects to account for unobserved home country time-invariant characteristics, and time-specific factors, such as global

[13] The data on international disasters is available at: https://www.emdat.be/, and the distance from the capital to the nearest coast is collected from https://gist.github.com/ofou/df09a6834a8421b4f376c875194915c9.

economic shocks, respectively.

The findings, which are reported in Table A7 in the Appendix, are consistent with the results using the baseline specification, providing evidence of regulatory arbitrage. An increase in green transparency policy stringency of the global bank's home country relative to its affiliate's host country increases the share of the global bank's foreign brown affiliates, both majority- and minority-owned, relative to its domestic affiliates. Moreover, we also find more stringent GTP in the global bank's home country relative to the host country associated with an increase in the share of non-brown majority-owned affiliates and a decline in the share of non-brown minority-owned affiliates, relative to its domestic affiliates.

6.3. Controlling for climate change performance

To mitigate omitted variable bias, we also control for differences in the climate change performance of the global bank's home country and its affiliate's host country. Thus, we collect data on home and host countries' Climate Change Performance Index (CCPI) that assesses the climate mitigation performance of countries based on indicators covering a country's overall performance in climate action, renewable energy transition, and carbon emissions management.[14] As this index is only available for 60 to 70 countries depending on the year, we did not include it in the baseline specification. We measure the home–host country CCPI gap as the difference in index values between the global bank's home country and the affiliate's host country for each home–host pair ($CCPIHomeHostGAP_{h,j,t}$). We end up with a sample of 480 global banks, 3,055 distinct global bank-host-country pairs, yielding a total of 27,634 observations over the 2010-2023 period. We note that as the CCPI methodology was revised in 2017 to incorporate the climate policy landscape following the Paris Agreement, thus, limiting comparability between editions, we use the pooled OLS regression technique instead of the two-way fixed effects panel-data estimator.

Results reported in Table A8 (Appendix) confirm the robustness of our main

[14] Available at https://ccpi.org/

findings. Tighter GTP prompts global banks to reallocate equity investments across borders, increasing exposure to brown activities through both majority- and minority-owned affiliates, while shifting domestic equity investment toward cleaner entities primarily through minority-owned affiliates.

Our results further indicate that the home–host country CCPI gap does not significantly influence global banks' allocation of brown majority- or minority-owned affiliates. By contrast and consistent with increased GTP stringency, CCPI stringency is associated with shifts in non-brown allocations: banks increase the share of foreign non-brown majority-owned affiliates and reduce the share of foreign non-brown minority-owned affiliates, relative to their domestic counterparts.

7. Conclusion

This paper examines whether cross-country divergence in green transparency policies (GTP), covering both green criteria and environmental disclosure requirements, shapes global banks' foreign equity investment decisions through their international affiliate networks over 2010–2023. Using a novel, time-varying measure of GTP stringency and a large bank–host-country panel built from BankFocus and Orbis Historical, we study how banks adjust the foreign versus domestic composition of their equity holdings in brown and non-brown affiliates, distinguishing majority-owned subsidiaries from minority-owned affiliates. The results consistently indicate that heterogeneous GTP create scope for regulatory arbitrage in global banking, and that banks exploit this scope through both visible (majority-owned) and less visible (minority-owned) organizational forms.

Our baseline estimates show that when home-country GTP become more stringent relative to host-country GTP, global banks increase the foreign–domestic share of brown affiliates in less stringent jurisdictions. Importantly, this pattern holds not only for minority-owned affiliates, consistent with a "hidden" arbitrage margin, but also for majority-owned subsidiaries. This suggests that tighter home-country GTP is associated with a reallocation of brown exposures toward less stringent host jurisdictions, even via organizational forms that are typically consolidated and readily attributable to the

parent bank. We also document ownership-specific differences in non-brown reallocations. Minority-owned non-brown exposures generally reallocate toward the jurisdiction with stricter GTP relative to domestic entities. By contrast, the observed increase in foreign non-brown majority-owned affiliates is driven mainly by financial entities, consistent with banks expanding foreign financial platforms in relatively laxer regimes as home-country GTP tighten. A push–pull decomposition strengthens the interpretation that these reallocations are predominantly a "push" response to stricter home-country transparency requirements rather than a "pull" effect of laxer host-country GTP per se, underscoring that unilateral tightening can induce cross-border displacement of activities.

Further investigations show that a stronger institutional environment does not eliminate these arbitrage incentives. Stronger home-country rule of law only partially reduces arbitrage via majority-owned affiliates, and banks still shift toward foreign brown majority-owned affiliates. In contrast, a stronger environmental NGO presence curbs hidden arbitrage through minority-owned affiliates, especially when home-country GTP rules tighten relative to host countries. Finally, banks with stronger environmental performance do not avoid reallocation through majority-owned subsidiaries, and, crucially, are more likely to expand brown exposure through minority-owned affiliates when home-country GTP tighten, consistent with a strategic form of "hidden" regulatory arbitrage.

Overall, these findings point to a central tension in transparency-based sustainable finance regulation. As GTP tightens and domestic exposures become more salient and accountable, internationally active banks may respond by reallocating exposures across borders, thereby sustaining involvement in carbon-intensive activities.

These results have direct policy implications. First, they reinforce that nationally implemented green transparency regimes can have limited effectiveness in the presence of globally mobile banking organizations, unless minimum standards are coordinated across jurisdictions. Harmonization of disclosure requirements, taxonomy alignment, and comparability of sustainability reporting would reduce the scope for banks to

relocate brown exposure to “weaker” transparency environments. Second, the evidence of a persistent minority-owned “hidden” channel points to the need for reporting frameworks and supervisory expectations that better capture material exposures beyond fully consolidated majority-owned affiliates. In practice, this argues for more comprehensive, group-wide disclosure that includes meaningful look-through information on significant minority holdings and other non-consolidated relationships that sustain carbon-intensive exposure, thereby narrowing the opacity wedge that currently makes minority ownership an attractive vehicle for regulatory arbitrage. Third, the comparison with carbon-pricing measures suggests that transparency tools alone, particularly when still evolving and unevenly enforced, may be insufficient to deter reallocation through more visible structures, and even less so through less visible ones. A more effective policy mix is therefore likely to pair stronger and more standardized disclosure regimes with complementary instruments that affect underlying incentives (including carbon pricing), alongside enhanced cross-border supervisory cooperation to monitor, attribute, and discourage the shifting of high-carbon activities through multinational affiliate networks. In sum, improving the effectiveness of green transparency regulation requires not only increasing domestic stringency but also reducing cross-jurisdictional gaps and closing organizational loopholes that enable banks to re-route brown exposures in ways that undermine the intended reallocation of financial flows toward climate-aligned activities.

References

Akey, P., & Appel, I. (2021). The limits of limited liability: Evidence from industrial pollution. *The Journal of Finance*, *76*(1), 5-55.

Alogna, I., & Clifford, E. (2020). Climate Change Litigation: Comparative and International Perspectives. *British Institute of International and Comparative Law*, *9*, 1-21.

Alpanda, S., & Aysun, U. (2022). Regulatory arbitrage and economic stability. *Journal of International Money and Finance*, *129*, 102740.

Avdjiev, S., Aysun, U., & Tseng, M. C. (2022). Regulatory arbitrage behavior of internationally active banks and global financial market conditions. *Economic Modelling*, *112*, 105857.

Bank for International Settlements. (2024). *Core Principles for effective banking supervision*. Basel: BIS. https://www.bis.org/bcbs/publ/d573.htm

Beck, T., Silva-Buston, C., & Wagner, W. (2022). "Cooperation externalities": Supranational supervision and regulatory arbitrage. *CEPR DP*, *16978*.

Ben-David, I., Jang, Y., Kleimeier, S., & Viehs, M. (2021). Exporting pollution: where do multinational firms emit CO2?. *Economic Policy*, *36*(107), 377-437.

Bolton, P., & Kacperczyk, M. (2021). Do investors care about carbon risk?. *Journal of financial economics*, *142*(2), 517-549.

Bouwer, K. (2018). The Unsexy Future of Climate Change Litigation. *Journal of Environmental Law,* 2018, 0, 1-24.

Boyer, P. C., & Kempf, H. (2020). Regulatory arbitrage and the efficiency of banking regulation. *Journal of Financial Intermediation*, 41, 100765.

Boyson, N., Fahlenbrach, R., & Stulz, R. M. (2014). Why do banks practice regulatory arbitrage? Evidence from usage of trust preferred securities (No. w19984). *National Bureau of Economic Research*.

Bu, M., & Wagner, M. (2016). Racing to the bottom and racing to the top: The crucial role of firm characteristics in foreign direct investment choices. *Journal of International Business Studies*, *47*, 1032-1057.

Cerutti, E., Dell'Ariccia, G., & Peria, M. S. M. (2007). How banks go abroad: Branches or subsidiaries?. *Journal of Banking & Finance*, *31*(6), 1669-1692.

Claessens, S., & Van Horen, N. (2014). Foreign banks: Trends and impact. *Journal of Money, Credit and Banking*, *46*(s1), 295-326.

Daubanes, J., & Rochet, J. C. (2019). The rise of NGO activism. *American Economic Journal: Economic Policy*, *11*(4), 183-212.

Dechezleprêtre, A., & Sato, M. (2017). The impacts of environmental regulations on competitiveness. *Review of environmental economics and policy*.

Delis, M. D., Greiff, K. D., Iosifidi, M., & Ongena, S. (2024). Being stranded with fossil fuel reserves? Climate policy risk and the pricing of bank loans. *Financial markets, institutions & instruments*, *33*(3), 239-265.

Demirgüç-Kunt, A., Horváth, B. L., & Huizinga, H. (2023). Regulatory arbitrage and loan location decisions by multinational banks. *Journal of International Economics*, *145*, 103840.

Demirgüç-Kunt, A., Pedraza, A., Pulga, F., & Ruiz-Ortega, C. (2024). Global bank lending under climate policy. *IMF Economic Review*, *72*(2), 858-901.

Distinguin, I., Lepetit, L., Strobel, F., Tacneng, R. (2025). *Green Financial Policies: A*

Composite Index Approach for International Benchmarking and Analysis. Working Paper.
Ehlers, T., Elsenhuber, U., Jegarasasingam, K., & Jondeau, E. (2023). *Deconstructing ESG Scores: How to Invest with your own Criteria?*. International Monetary Fund.
Fleischer, V. (2010). Regulatory arbitrage. *Tex. L. Rev.*, *89*, 227.
Frame, W. S., Mihov, A., & Sanz, L. (2020). Foreign investment, regulatory arbitrage, and the risk of US banking organizations. *Journal of Financial and Quantitative Analysis*, *55*(3), 955-988.
Focarelli, D., & Pozzolo, A. F. (2008). Cross-border M&As in the financial sector: Is banking different from insurance?. *Journal of Banking & Finance*, *32*(1), 15-29.
Furceri, D., Ganslmeier, M., & Ostry, J. (2023). Are climate change policies politically costly?. *Energy Policy*, *178*, 113575.
He, J., & Yang, S. (2024). Does internationalization improve environmental disclosure willingness and quality? The moderating role of green investors. *PloS one*, *19*(9), e0307638.
Houston, J. F., Lin, C., & Ma, Y. (2012). Regulatory arbitrage and international bank flows. *The Journal of Finance*, *67*(5), 1845-1895.
Krueger, P., Sautner, Z., & Starks, L. T. (2020). The importance of climate risks for institutional investors. *The Review of financial studies*, *33*(3), 1067-1111.
Laeven, L., & Popov, A. (2023). Carbon taxes and the geography of fossil lending. *Journal of International Economics*, *144*, 103797.
Levinson, A., & Taylor, M. S. (2008). Unmasking the pollution haven effect. *International economic review*, *49*(1), 223-254.
Makarenko, I., & Steiner, B. E. (2025). Sustainability Transparency in the Banking Sector. In *Bridging Governance, Public Support, Innovation, and Transparency: A Combined Approach to Sustainable Development in Europe* (pp. 65-102). Cham: Springer Nature Switzerland.
McCormick, J. (2023). The role of environmental NGOs in international regimes. In *The global environment* (pp. 52-71). Routledge.
Manta, F., Boscia, V., Conca, L., Borgia, M., & Toma, P. (2025). The Impact of Bank Riskiness on the Quality of ESG Disclosure: Empirical Evidence From European Banks. *Business Strategy and the Environment*, *34*(4), 4206-4226.
Nisbett, N., Spaiser, V., Leston-Bandeira, C., Valdenegro, D. (2024). Climate action or delay: the dynamics of competing narratives in the UK political sphere and the influence of climate protest. *Climate Policy,* https://doi.org/10.1080/14693062.2024.2398169.
Ongena, S., Benincasa, E., & Kabas, G. (2021). *" There is No Planet B", but for Banks There are" Countries B to Z": Domestic Climate Policy and Cross-Border Bank Lending* (No. 16665). CEPR Discussion Papers.
Pogliani, P., & Wooldridge, P. (2022). *Cross-border financial centres* (No. 1035). Bank for International Settlements.
Prakash, A., & Potoski, M. (2016). Dysfunctional institutions? Toward a new agenda in governance studies. *Regulation & Governance*, *10*(2), 115-125.
Ramelli, S., Ossola, E., Rancan, M. (2021). Stock price effects of climate activism: Evidence from the first Global Climate Strike. *Journal of Corporate Finance,* 69, August 2021, 102018.
Setzer, J., & Vanhala, L. C. (2019). Climate change litigation: A review of research on courts and litigants in climate governance. *Wiley Interdisciplinary Reviews: Climate Change*, *10*(3),

e580.
Setzer, J., & Higham, C. (2025). Global trends in climate change litigation: 2025 snapshot.
Temesvary, J. (2018). THE ROLE OF REGULATORY ARBITRAGE IN US BANKS' INTERNATIONAL FLOWS: BANK-LEVEL EVIDENCE. *Economic Inquiry*, *56*(4), 2077-2098.
Thomas-Walters, L., Scheuch, E. G., Ong, A., & Goldberg, M. H. (2025). The impacts of climate activism. *Current Opinion in Behavioral Sciences*, 63, 101498. https://doi.org/10.1016/j.cobeha.2025.101498
Vu, H. T., Blomberg, M., Seo, H., Liu, Y., Shayesteh, F., & Do, H. V. (2021). Social media and environmental activism: Framing climate change on Facebook by global NGOs. *Science communication*, *43*(1), 91-115.

Figure 1: The distribution of global banks' home countries

Figure 1 maps the distribution of the 693 global banks in our sample across the 90 countries in which they are headquartered.

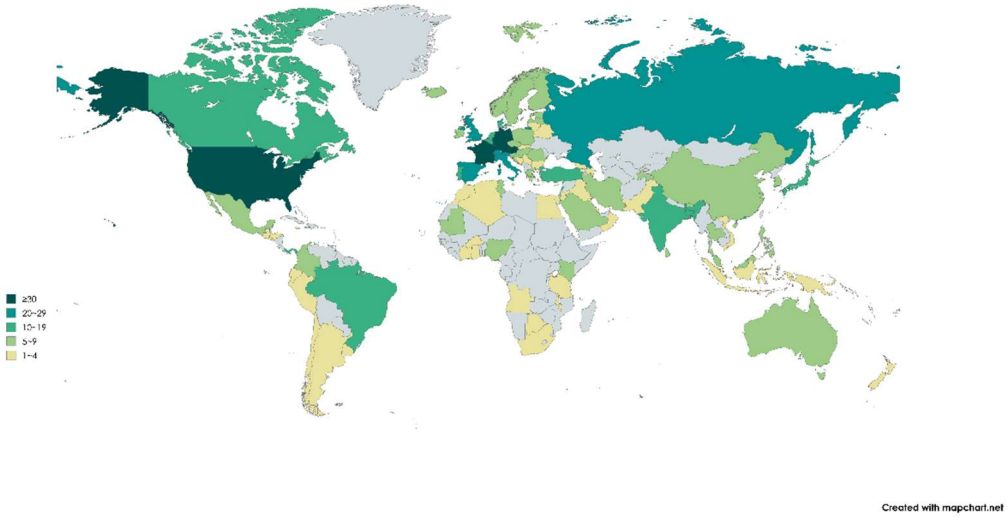

Table 1. Home-host green transparency policy gap and affiliate allocation

This table reports two-way fixed-effects panel regressions on how the home-host green transparency policy (GTP) gap affects global banks' relative foreign-versus-domestic affiliate shares, by ownership (majority/minority) and sector (brown/non-brown). Definition of variables are provided in Table A4 (Appendix). The sample is a panel of 41,886 global-bank-host-country-year observations during the period 2010-2023 of 693 banks from 90 home countries in 118 host countries. *BrownMAJForeignDomesticGap* is the difference in the share of the global bank's foreign brown majority-owned affiliates in host country *j* and its domestic brown majority-owned affiliates. *NonBrownMAJForeignDomesticGap* is the difference in the share of the global bank's foreign non-brown majority-owned affiliates in host country *j* and its domestic brown majority-owned affiliates. *BrownMINForeignDomesticGap* is the difference in the share of the global bank's foreign brown majority-owned affiliates in host country *j* and its domestic brown minority-owned affiliates. *NonBrownMINForeignDomesticGap* is the difference in the share of the global bank's foreign non-brown minority-owned affiliates in host country *j* and its domestic brown majority-owned affiliates. *GTPHomeHostGap* measures the difference in Green Transparency Policy index between the global banks' home country and host country. The robust standard errors are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)	(4)
	BrownMAJ ForeignDomesticGap	NonBrownMAJ ForeignDomesticGap	BrownMIN ForeignDomesticGap	NonBrownMIN ForeignDomesticGap
GTPHomeHostGap	0.0142***	0.0707***	0.00814**	-0.0666***
	(0.00235)	(0.00841)	(0.00318)	(0.00781)
CarbonTax HomeHostGAP	-0.000967	0.00243	0.00266***	-0.0117***
	(0.000726)	(0.00242)	(0.000939)	(0.00226)
BankRegulation HomeHostGAP	-0.000338**	0.00465***	0.000652***	-0.00123**
	(0.000170)	(0.000535)	(0.000239)	(0.000519)
RuleofLaw HomeHostGAP	-0.000105	0.0170**	0.0119***	-0.0466***
	(0.00227)	(0.00774)	(0.00332)	(0.00683)
CreditorRight HomeHostGAP	-0.000458	0.00371***	-0.000402	-0.00500***
	(0.000281)	(0.000881)	(0.000445)	(0.000938)
BilateralTrade	-0.000427	-0.000608	-0.000642	0.00143
	(0.000361)	(0.00123)	(0.000591)	(0.000912)
GDP_Host	0.00591	0.0178	0.0165	-0.0101
	(0.00799)	(0.0231)	(0.0111)	(0.0252)
CreditGrowthHost	0.00472	0.0414***	0.00508	-0.0383***
	(0.00315)	(0.0106)	(0.00472)	(0.0108)
BankConcentration Host	0.00287	-0.0241	0.0207**	0.0194
	(0.00461)	(0.0162)	(0.00873)	(0.0154)
Total Assets	0.00365***	-0.00523**	-0.00499***	0.00324*
	0.0142***	0.0707***	0.00814**	-0.0666***
EquityToAssets	0.0328***	0.120***	-0.000085	-0.160***
	(0.0115)	(0.0387)	(0.0233)	(0.0351)
Constant	-0.126***	-0.0847	0.0527*	-0.341***
	(0.0237)	(0.0610)	(0.0310)	(0.0501)
Bank-Country Pair FE	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes
Observations	41,886	41,886	41,886	41,886
Number of Panel id.	4,647	4,647	4,647	4,647
F-statistic	9.527***	16.91***	17.09***	27.96***

Table 2. Push & pull effects

This table reports two-way fixed-effects panel regressions on how home and host green transparency policy (GTP) affect global banks' relative foreign-versus-domestic affiliate shares, by ownership (majority/minority) and sector (brown/non-brown). Definition of variables are provided in Table A4 (Appendix). The sample is a panel of 41,886 global-bank-host-country-year observations during the period 2010-2023 of 693 banks from 90 home countries in 118 host countries. *BrownMAJForeignDomesticGap* is the difference in the share of the global bank's foreign brown majority-owned affiliates in host country *j* and its domestic brown majority-owned affiliates. *NonBrownMAJForeignDomesticGap* is the difference in the share of the global bank's foreign non-brown majority-owned affiliates in host country *j* and its domestic brown majority-owned affiliates. *BrownMINForeignDomesticGap* is the difference in the share of the global bank's foreign brown majority-owned affiliates in host country *j* and its domestic brown minority-owned affiliates. *NonBrownMINForeignDomesticGap* is the difference in the share of the global bank's foreign non-brown minority-owned affiliates in host country *j* and its domestic brown majority-owned affiliates. *GTP_home* and *GTP_host* measure the Green Transparency Policy index in the global bank's home country and host country, respectively. The robust standard errors are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	(1) *BrownMAJ ForeignDomesticGap*	(2) *NonBrownMAJ ForeignDomesticGap*	(3) *BrownMIN ForeignDomesticGap*	(4) *NonBrownMIN ForeignDomesticGap*
GTPhome	0.0322***	0.134***	0.0214***	-0.114***
	(0.00338)	(0.0125)	(0.00502)	(0.0114)
GTPhost	0.000843	-0.0173*	0.00302	0.0264***
	(0.00303)	(0.00990)	(0.00450)	(0.00980)
Constant	-0.131***	-0.104*	0.0487	-0.327***
	(0.0231)	(0.0599)	(0.0304)	(0.0492)
Controls	Yes	Yes	Yes	Yes
Bank–Country Pair FE	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes
Observations	41,886	41,886	41,886	41,886
Number of Panel id.	4,647	4,647	4,647	4,647
F-statistic	10.75***	17.31***	16.48***	26.34***

Table 3. Non-brown affiliates: financial vs. Non-financial entities

This table reports two-way fixed-effects panel regressions examining how the home–host green transparency policy (GTP) gap affects global banks' relative foreign-versus-domestic shares of non-brown affiliates, by ownership (majority/minority) and by entity type (financial vs. non-financial). Definition of variables are provided in Table A4 (Appendix). The sample is a panel of 41,886 global-bank-host-country-year observations during the period 2010-2023 of 693 banks from 90 home countries in 118 host countries. *NonBrownMAJForeignDomesticGapFinancial* is the difference in the share of the global bank's foreign financial majority-owned affiliates in host country *j* and its domestic brown majority-owned affiliates. *NonBrownMAJForeignDomesticGapNonFinancial* is the difference in the share of the global bank's foreign non-financial majority-owned affiliates in host country *j* and its domestic brown majority-owned affiliates. *NonBrownMINForeignDomesticGapFinancial* is the difference in the share of the global bank's foreign financial minority-owned affiliates in host country *j* and its domestic brown majority-owned affiliates. *NonBrownMINForeignDomesticGapNonFinancial* is the difference in the share of the global bank's foreign non-financial minority-owned affiliates in host country *j* and its domestic brown majority-owned affiliates. *GTPHomeHostGap* measures the difference in Green Transparency Policy index between the global banks' home country and host country. The robust standard errors are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	(1) *NonBrownMAJ ForeignDomesticGap Financial*	(2) *NonBrownMAJ ForeignDomesticGap NonFinancial*	(3) *NonBrownMIN ForeignDomesticGap Financial*	(4) *NonBrownMIN ForeignDomesticGap NonFinancial*
GTPHomeHostGap	0.0654***	0.00538	-0.0727***	0.00610
	(0.00760)	(0.00334)	(0.00746)	(0.00377)
Constant	-0.120**	0.0350*	-0.298***	-0.0438
	(0.0568)	(0.0203)	(0.0442)	(0.0312)
Controls	Yes	Yes	Yes	Yes
Bank–Country Pair FE	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes
Observations	41,886	41,886	41,886	41,886
Number of Panel id.	4,647	4,647	4,647	4,647
F-statistic	18.10***	6.947***	21.85***	16.93***

Table 4. Role of rule of law

This table reports two-way fixed-effects panel regressions examining how home-host rule of law gap shapes the effect of the home–host green transparency policy (GTP) gap on global banks' relative foreign-versus-domestic affiliate shares, by ownership (majority/minority) and sector (brown/non-brown). Definitions of variables are provided in Table A4 (Appendix). The sample is a panel of 41,886 global-bank-host-country-year observations during the period 2010-2023 of 693 banks from 90 home countries in 118 host countries. *BrownMAJForeignDomesticGap* is the difference in the share of the global bank's foreign brown majority-owned affiliates in host country *j* and its domestic brown majority-owned affiliates. *NonBrownMAJForeignDomesticGap* is the difference in the share of the global bank's foreign non-brown majority-owned affiliates in host country *j* and its domestic brown majority-owned affiliates. *BrownMINForeignDomesticGap* is the difference in the share of the global bank's foreign brown majority-owned affiliates in host country *j* and its domestic brown minority-owned affiliates. *NonBrownMINForeignDomesticGap* is the difference in the share of the global bank's foreign non-brown minority-owned affiliates in host country *j* and its domestic brown majority-owned affiliates. *GTPHomeHostGap* measures the difference in Green Transparency Policy index between the global banks' home country and host country. *RuleOfLawHomeHostGAP* is a dummy variable equal to 1 if the home-country rule-of-law measure exceeds the host-country measure, and 0 otherwise. The robust standard errors are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	(1) *BrownMAJ ForeignDomesticGap*	(2) *NonBrownMAJ ForeignDomesticGap*	(3) *BrownMIN ForeignDomesticGap*	(4) *NonBrownMIN ForeignDomesticGap*
GTPHomeHostGap	0.0219***	0.0931***	0.0138**	-0.0849***
	(0.00392)	(0.0143)	(0.00608)	(0.0157)
GTPHomeHostGap × RuleOfLawHomeHostGAP	-0.0110**	-0.0357**	-0.0108	0.0368**
	(0.00465)	(0.0178)	(0.00700)	(0.0176)
RuleOfLawHomeHostGAP	0.00213	-0.000012	0.00154	-0.0188***
	(0.00135)	(0.00459)	(0.00188)	(0.00443)
Constant	-0.127***	-0.0711	0.0603*	-0.361***
	(0.0239)	(0.0608)	(0.0309)	(0.0499)
Controls	Yes	Yes	Yes	Yes
Bank-Country Pair FE	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes
Observations	41,886	41,886	41,886	41,886
Number of Panel id.	4,647	4,647	4,647	4,647
F-statistic	9.17***	16.28***	16.31***	26.83***
Marginal Effects				
Home Rule of Law > Host Rule of Law	0.0110***	0.0574***	0.0030	-0.0481***
	(0.0027)	(0.0106)	(0.0038)	(0.0086)

Table 5. Role of the presence of environmental NGOs

This table reports two-way fixed-effects panel regressions examining how home-host green NGOs gap shapes the effect of the home–host green transparency policy (GTP) gap on global banks' relative foreign-versus-domestic affiliate shares, by ownership (majority/minority) and sector (brown/non-brown). Definitions of variables are provided in Table A4 (Appendix). The sample is a panel of 41,886 global-bank-host-country-year observations during the period 2010-2023 of 693 banks from 90 home countries in 118 host countries. BrownMAJForeignDomesticGap is the difference in the share of the global bank's foreign brown majority-owned affiliates in host country j and its domestic brown majority-owned affiliates. NonBrownMAJForeignDomesticGap is the difference in the share of the global bank's foreign non-brown majority-owned affiliates in host country j and its domestic brown majority-owned affiliates. BrownMINForeignDomesticGap is the difference in the share of the global bank's foreign brown majority-owned affiliates in host country j and its domestic brown minority-owned affiliates. NonBrownMINForeignDomesticGap is the difference in the share of the global bank's foreign non-brown minority-owned affiliates in host country j and its domestic brown majority-owned affiliates. GTPHomeHostGap measures the difference in Green Transparency Policy index between the global banks' home country and host country. *NGOHomeHostGAP* is a dummy variable equal to one if, in a given year, the number of environment NGOs in the bank's home country is strictly greater than that in the host country, and 0 otherwise. The robust standard errors are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	(1) *BrownMAJ ForeignDomesticGap*	(2) *NonBrownMAJ ForeignDomesticGap*	(3) *BrownMIN ForeignDomesticGap*	(4) *NonBrownMIN ForeignDomesticGap*
GTPHomeHostGap	0.0124***	0.0583***	0.0234***	-0.0452***
	(0.00351)	(0.0120)	(0.00634)	(0.0121)
GTPHomeHostGap ×	0.00310	0.0203	-0.0217***	-0.0264*
NGOHomeHostGAP	(0.00383)	(0.0164)	(0.00716)	(0.0147)
NGOHomeHostGAP	0.00298***	0.0181***	0.00542***	-0.0134***
	(0.000776)	(0.00298)	(0.00165)	(0.00279)
Constant	-0.0582**	-0.117	0.0930**	-0.359***
	(0.0258)	(0.0757)	(0.0413)	(0.0652)
Controls	Yes	Yes	Yes	Yes
Bank-Country Pair FE	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes
Observations	35,113	35,113	35,113	35,113
Number of Panel id.	3,860	3,860	3,860	3,860
F-statistic	9.329***	15.50***	13.95***	23.90***
Marginal Effects				
Home green NGOs >	0.0155***	0.0786***	0.0017	-0.0716***
Host green NGOs	(0.0021)	(0.0123)	(0.0039)	(0.0102)

Table 6. Role of global bank environmental commitment

This table reports two-way fixed-effects panel regressions examining how a global bank's E-score shapes the effect of the home–host green transparency policy (GTP) gap on its relative foreign-versus-domestic affiliate shares, by ownership (majority/minority) and sector (brown/non-brown). Definitions of variables are provided in Table A4 (Appendix). The sample is a panel of 41,886 global-bank-host-country-year observations during the period 2010-2023 of 693 banks from 90 home countries in 118 host countries. BrownMAJForeignDomesticGap is the difference in the share of the global bank's foreign brown majority-owned affiliates in host country j and its domestic brown majority-owned affiliates. NonBrownMAJForeignDomesticGap is the difference in the share of the global bank's foreign non-brown majority-owned affiliates in host country j and its domestic brown majority-owned affiliates. BrownMINForeignDomesticGap is the difference in the share of the global bank's foreign brown majority-owned affiliates in host country j and its domestic brown minority-owned affiliates. NonBrownMINForeignDomesticGap is the difference in the share of the global bank's foreign non-brown minority-owned affiliates in host country j and its domestic brown majority-owned affiliates. GTPHomeHostGap measures the difference in Green Transparency Policy index between the global banks' home country and host country. *EscoreBank* represents the global bank's environmental score. The robust standard errors are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	(1) *BrownMAJ ForeignDomesticGap*	(2) *NonBrownMAJ ForeignDomesticGap*	(3) *BrownMIN ForeignDomesticGap*	(4) *NonBrownMIN ForeignDomesticGap*
GTPHomeHostGap	0.0276**	-0.163*	-0.0331	-0.111*
	(0.0107)	(0.0853)	(0.0244)	(0.0639)
GTPHomeHostGap	-0.0189	0.380***	0.0756**	0.0132
× EscoreBank	0.00241	-0.0236	-0.00357	-0.130***
EscoreBank	(0.00369)	(0.0165)	(0.00715)	(0.0165)
	(0.0146)	(0.113)	(0.0326)	(0.0887)
Constant	-0.191***	-0.0974	0.0133	-0.241***
	(0.0226)	(0.0690)	(0.0241)	(0.0581)
Controls	Yes	Yes	Yes	Yes
Bank – Country Pair FE	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes
Observations	21,185	21,185	21,185	21,185
Number of Panel id.	2,247	2,247	2,247	2,247
F-statistic	13.80***	40.10***	22.32***	48.84***
Marginal Effects				
E-score = 0.25 (grade D+)	0.0229***	-0.0676	-0.0142	-0.1073**
	(0.0072)	(0.0572)	(0.0163)	(0.0421)
E-score = 0.50 (grade C+)	0.0181***	0.0273	0.0047	-0.1040***
	(0.0038)	(0.0296)	(0.0084)	(0.0213)
E-score = 0.75 (grade B+)	0.0134***	0.1222***	0.0236***	-0.1007***
	(0.0020)	(0.0094)	(0.0028)	(0.0107)
E-score = 0.83 (grade A)	0.0119***	0.1525***	0.0297***	-0.0996***
	(0.0025)	(0.0133)	(0.0040)	(0.0146)
E-score = 0.92 (grade A+)	0.0102***	0.1867***	0.0365***	-0.0984***
	(0.0035)	(0.0217)	(0.0064)	(0.0211)

Appendix

Table A1. Global banks' home countries and affiliate host-country coverage

This table lists the 90 home countries in which the global banks in our sample are headquartered and reports, for each home country, the number of distinct host countries in which these banks hold affiliates.

Global bank home countries	Number of host countries	Global bank home countries	Number of host countries
Angola	1	Jamaica	1
Argentina	3	Jordan	9
Austria	55	Japan	31
Australia	52	Kenya	4
Azerbaijan	2	Republic of Korea	19
Bosnia and Herzegovina	5	Kuwait	14
Bangladesh	9	Lebanon	17
Belgium	44	Sri Lanka	4
Bulgaria	4	Lithuania	3
Bahrain	7	Luxembourg	34
Brazil	19	Latvia	11
Botswana	1	Morocco	18
Belarus	2	Malta	2
Canada	67	Mauritius	5
Switzerland	47	Malawi	2
Côte d'Ivoire	5	Mexico	6
Chile	4	Malaysia	11
China	24	Nigeria	13
Colombia	7	Netherlands	57
Cyprus	7	Norway	22
Czechia	10	Oman	2
Germany	64	Panama	5
Denmark	57	Peru	3
Algeria	3	Philippines	8
Ecuador	3	Pakistan	15
Estonia	9	Poland	20
Egypt	2	Portugal	27
Spain	51	Qatar	13
Finland	47	Romania	1
France	74	Serbia	4
United Kingdom	54	Russian Federation	32
Georgia	7	Saudi Arabia	6
Ghana	3	Sweden	56
Greece	16	Singapore	20
Guatemala	3	Slovenia	22
Hong Kong	17	Slovakia	4
Honduras	1	Thailand	8
Croatia	5	Tunisia	6
Hungary	25	Turkey	20
Indonesia	3	Trinidad and Tobago	1
Ireland	3	Tanzania	1
Israel	8	United States	80
India	17	Uruguay	2
Iceland	8	Viet Nam	2
Italy	52	South Africa	8

Table A2. List of affiliate host countries

This table lists the 118 host countries in which affiliates of the global banks in our sample are located

Host Country	Host Country	Host Country
Albania	Ghana	Norway
Algeria	Greece	Oman
Angola	Guatemala	Pakistan
Argentina	Guyana	Paraguay
Armenia	Honduras	Peru
Australia	Hungary	Philippines
Austria	Iceland	Poland
Azerbaijan	India	Portugal
Bangladesh	Indonesia	Qatar
Belarus	Iraq	Romania
Belgium	Ireland	Russian Federation
Belize	Israel	Rwanda
Benin	Italy	Saudi Arabia
Bolivia	Jamaica	Senegal
Bosnia and Herzegovina	Japan	Serbia
Botswana	Jordan	Sierra Leone
Brazil	Kenya	Slovakia
Bulgaria	Korea (Republic of)	Slovenia
Burkina Faso	Kuwait	South Africa
Burundi	Kyrgyzstan	Spain
Chile	Latvia	Sri Lanka
China	Lithuania	Sweden
Colombia	Luxembourg	Switzerland
Costa Rica	Madagascar	Tajikistan
Côte d'Ivoire	Malawi	Tanzania
Croatia	Malaysia	Thailand
Cyprus	Mali	Togo
Czechia	Malta	Trinidad and Tobago
Denmark	Mexico	Tunisia
Dominican Republic	Moldova (Republic of)	Turkey
Ecuador	Montenegro	Uganda
Egypt	Morocco	Ukraine
El Salvador	Mozambique	United Kingdom
Estonia	Namibia	United States
Fiji	Nepal	Uruguay
Finland	Netherlands	Venezuela
France	New Zealand	Viet Nam
Gambia	Nicaragua	Zimbabwe
Georgia	Niger	
Germany	Nigeria	

Table A3. Summary statistics for global banks' affiliates

This table reports summary statistics for global banks' affiliates, including counts and ownership shares, disaggregated by foreign vs. domestic and by brown vs. non-brown sectors.

	Total number of affiliates	**Global bank equity stake (%)**			
		Mean	*St. Deviation*	*Max*	*Min*
Majority-Owned affiliates	*34,363*	87.964	17.129	100	50.01
Domestic	*28,562*	87.808	17.049	100	50.01
Domestic Brown	4,606 (13.40%)	95.179	10.297	100	50.01
Domestic Non-Brown	23,955 (69.71%)	86.594	17.835	100	50.01
Foreign	*6,052*	88.914	17.577	100	50.01
Foreign Brown	618 (1.80%)	94.998	12.912	100	50.01
Foreign Non-Brown	5,434 (15.81%)	88.473	17.905	100	50.01
Minority-Owned affiliates	*32,626*	9.775	8.857	50	0.01
Domestic	*27,000*	10.013	8.359	50	0.01
Domestic Brown	7,731 (23.70%)	10.937	11.184	50	0.01
Domestic Non-Brown	19,260 (5.90%)	9.743	8.320	50	0.01
Foreign	7,595	8.246	11.431	50	0.01
Foreign Brown	2,092 (6.41%)	5.109	8.907	50	0.01
Foreign Non-Brown	5,503 (16.87%)	9.442	12.310	50	0.01

Table A4. Definitions and summary statistics for variables

This table defines the variables and reports summary statistics for the full sample.

Variables	Definitions	Mean	Median	SD	Min	Max	N
Foreign-Domestic Affiliate Network Allocation							
BrownMAJForeignDomesticGap	Difference between the number of brown foreign and brown domestic majority-owned affiliates, normalized by the bank's total number of affiliates (brown and non-brown).	-0.035	-0.008	0.064	-0.962	0.583	41,886
NonBrownMAJForeignDomesticGap	Difference between the number of non-brown foreign and non-brown domestic majority-owned affiliates, normalized by the bank's total number of affiliates (brown and non-brown).	-0.254	-0.229	0.234	-1	1	41,886
BrownMINForeignDomesticGap	Difference between the number of brown foreign and brown domestic minority-owned affiliates, normalized by the bank's total number of affiliates (brown and non-brown).	-0.061	-0.027	0.098	-1	1	41,886
NonBrownMINForeignDomesticGap	Difference between the number of non-brown foreign and non-brown domestic minority-owned affiliates, normalized by the bank's total number of affiliates (brown and non-brown).	-0.222	-0.193	0.204	-1	1	41,886
GTP Characteristics							
GTPHomeHostGap	Difference in Green Transparency Policy index (Distinguin et al., 2025) between the global banks' home country and host country.	0.006	0	0.157	-0.694	0.694	41,886
GTPHome	Green Transparency Policy index in the global bank's home country.	0.171	0	0.215	0	0.694	41,886
GTPHost	Green Transparency Policy index in the affiliates host country.	0.165	0	0.213	0	0.694	41,886
Control Variables							
CarbonTaxHomeHostGAP	Dummy variable equal to one from the year a carbon tax or an ETS is introduced onward, and zero before implementation or for those with no compliance carbon-pricing instruments	0.006	0	0.55	-1	1	41,886
BankRegulationHomeHostGAP	Difference in capital regulation index (Barth et al., 2013)	-0.008	0	2.417	-7	7	41,886

	between the global banks' home country and host country, using the World Bank Global Banking Regulation and Supervision Database.						
RuleofLawHomeHostGAP	Difference in Rule of Law index (Kaufmann et al., 2009) between the global banks' home country and host country.	0.464	0.334	1.133	-3.106	3.612	41,886
CreditorRightHomeHostGAP	Difference in Creditor Right index (World Bank) between the global banks' home country and host country.	0.575	1.000	4.035	-11	12	41,886
BilateralTrade	The maximum of (i) the share of the home country's total imports sourced from the host country and (ii) the share of the home country's total exports shipped to the host country, each expressed relative to the home country's total imports/exports with the rest of the world.	4.134	1.463	7.565	0	82.662	41,886
GDP_Host	Annual percentage growth rate of GDP at market prices based on constant local currency. Aggregates are based on constant 2015 prices, expressed in U.S. dollars.	2.648	2.458	3.673	-28.75	63.335	41,886
CreditGrowthHost	The growth rate of private credit by deposit money banks to GDP. The financial resources are provided to the private sector by domestic money banks as a share of GDP. Domestic money banks comprise commercial banks and other financial institutions that accept transferable deposits, such as demand deposits.	-0.006	-0.002	0.072	-0.66	0.892	41,886
BankConcentrationHost	Assets of the five largest banks as a share of total commercial banking assets. Total assets include total earning assets, cash and due from banks, foreclosed real estate, fixed assets, goodwill, other intangibles, current tax assets, deferred tax, discontinued operations, and other assets.	75.735	77.291	16.298	25.086	100	41,886
Total Assets	The natural logarithm of total assets for global banks in their home countries.	25.522	26.306	2.664	12.032	28.579	41,886
EquityToAssets	Equity/Total assets for global banks in home countries (Orthogonalized)	-10.231	-12.533	13.412	-31.29	71.472	41,886
Additional Variables							
NonBrownMAJForeignDomesticGapFinancial	Difference between the number of foreign and domestic	-0.199	-0.156	0.216	-1	1	41,886

	financial majority-owned affiliates, normalized by the bank's total number of affiliates (brown and non-brown).						
NonBrownMAJForeignDomesticGapNonFinancial	Difference between the number of foreign and domestic non-financial majority-owned affiliates, normalized by the bank's total number of affiliates (brown and non-brown).	-0.055	-0.030	0.083	-0.714	1	41,886
NonBrownMINForeignDomesticGapFinancial	Difference between the number of foreign and domestic financial minority-owned affiliates, normalized by the bank's total number of affiliates (brown and non-brown).	-1.114	-0.081	0.147	-1	1	41,886
NonBrownMINForeignDomesticGapNonFinancial	Difference between the number of foreign and domestic non-financial minority-owned affiliates, normalized by the bank's total number of affiliates (brown and non-brown).	-0.108	-0.081	0.125	-1	1	41,886
RuleOfLawHomeHostGAP	Dummy variable, equal to 1 if the home-country rule-of-law index exceeds the host-country index, and 0 otherwise.	0.646	1	0.478	0	1	41,886
NGOHomeHostGAP	Dummy variable equal to 1 if the number of environment NGOs in the bank's home country is strictly greater than in the host country, and 0 otherwise.	0.536	1	0.499	0	1	35,113
EscoreBank	The environmental pillar score of ESG magnitude includes the measure of emission, innovation, and resource use, from LSEG ESG.	0.699	0.731	0.127	0	0.860	21,185
CommonLanguage	Dummy variable equal to 1 if the home and host countries share an official language, and 0 otherwise.	0.238	0	0.426	0	1	35,165
CommonColonization	Dummy variable equal to 1 if a colonial relationship existed between the home and host countries, and 0 otherwise.	0.024	0	0.154	0	1	35,165
Distance	Difference in the natural logarithm of the distance between the home and host countries.	7.929	0	1.227	0	1	35,165
Home-Host Wildfire Gap	Difference in the natural logarithm of the number of wildfires between the home and host countries.	0.046	0	0.907	-6	1.946	41,886
Home-Host People Affected by Earthquake Gap	Difference in the natural logarithm of the number of people affected by earthquakes between the home and host countries.	-0.312	0	4.312	-16.04	16.04	41,886
Share of Urban Extent in Coastal Zone within 5 meters Gap	Difference in the share of urban extent in the coastal zone below 5 meters between the home and host countries.	-0.006	0	0.157	-6.224	6.224	41,886
Home-Host Cyclones Gap	Difference in the natural logarithm of the number of cyclones between the home and host countries.	-1.299	0	2.704	-25	2.565	41,886
Distance from Centroid to Nearest Coast Gap	Defined as the difference in the natural logarithm of the distance from the centroid to the nearest coast.	0.159	0.129	2.608	-8.560	7.219	41,886

Table A5. Correlation and multicollinearity

This table shows the correlation matrix and the variance inflation factors (VIF). All variables are as defined in Table A4 in the Appendix. *, **, and *** denote significance at 10%, 5% and 1% levels, respectively.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	VIF	1/VIF
(1) GTPHomeHostGap	1.000											1.16	0.8585
(2) CarbonTax HomeHostGAP	0.200*	1.000										1.13	0.8856
	(0.000)												
(3) BankRegulation HomeHostGAP	-0.080*	-0.008	1.000									1.07	0.9313
	(0.000)	(0.095)											
(4) RuleofLaw HomeHostGAP	0.229*	0.163*	-0.204*	1.000								1.42	0.7025
	(0.000)	(0.000)	(0.000)										
(5) CreditorRight HomeHostGAP	-0.184*	-0.104*	-0.056*	0.260*	1.000							1.25	0.7970
	(0.000)	(0.000)	(0.000)	(0.000)									
(6) BilateralTrade	0.000	-0.016*	-0.026*	-0.104*	-0.105*	1.000						1.05	0.9558
	(0.978)	(0.001)	(0.000)	(0.000)	(0.000)								
(7) GDP_Host	0.012*	0.045*	-0.081*	0.127*	0.015*	0.000	1.000					1.64	0.6098
	(0.016)	(0.000)	(0.000)	(0.000)	(0.003)	(0.939)							
(8) CreditGrowthHost	0.011*	0.089*	-0.029*	0.115*	0.088*	0.029*	-0.301*	1.000				1.27	0.7902
	(0.020)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)						
(9) BankConcentrationHost	-0.076*	0.002	0.060*	-0.205*	0.061*	-0.105*	-0.089*	-0.133*	1.000			1.11	0.8974
	(0.000)	(0.737)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)					
(10) Total Assets	0.045*	0.203*	0.024*	0.242*	0.069*	-0.108*	-0.003	0.030*	0.014*	1.000		1.14	0.8805
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.559)	(0.000)	(0.005)				
(11) EquityToAssets	-0.067*	-0.035*	0.050*	0.117*	0.252*	-0.073*	0.015*	0.029*	0.017*	-0.074*	1.000	1.10	0.9096
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.002)	(0.000)	(0.000)	(0.000)			
												Mean VIF: 1.65	

Table A6. Robustness 1: Instrumental variable (IV) regressions

This table reports instrumental variable (IV) regressions on how the home-host green transparency policy (GTP) gap affects global banks' relative foreign-versus-domestic affiliate shares, by ownership (majority/minority) and sector (brown/non-brown). Definition of variables are provided in Table A4 (Appendix). The sample is a panel of 41,886 global-bank-host-country-year observations during the period 2010-2023 of 693 banks from 90 home countries in 118 host countries. *BrownMAJForeignDomesticGap* is the difference in the share of the global bank's foreign brown majority-owned affiliates in host country *j* and its domestic brown majority-owned affiliates. *NonBrownMAJForeignDomesticGap* is the difference in the share of the global bank's foreign non-brown majority-owned affiliates in host country *j* and its domestic brown majority-owned affiliates. *BrownMINForeignDomesticGap* is the difference in the share of the global bank's foreign brown majority-owned affiliates in host country *j* and its domestic brown minority-owned affiliates. *NonBrownMINForeignDomesticGap* is the difference in the share of the global bank's foreign non-brown minority-owned affiliates in host country *j* and its domestic brown majority-owned affiliates. *GTPHomeHostGap* measures the difference in Green Transparency Policy index between the global banks' home country and host country. Variable subset for instruments: A = *Home-Host Wildfire Gap*; B = *Home-Host People Affected by Earthquake Gap*; C = *Share of Urban Extent in Coastal Zone within 5 meters Gap*; D = *Home-Host Cyclones Gap*; E = *Distance from Centroid to Nearest Coast Gap*. The following tests are reported: Kleibergen-Paap Wald rk F statistic test (H0: model is weakly identified); Hansen J test (H0: instruments are valid); Durbin-Wu-Hausman test (H0: *GTPHomeHostGap* is exogenous). The robust standard errors are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)	(4)
	BrownMAJ ForeignDomesticGap	*NonBrownMAJ ForeignDomesticGap*	*BrownMIN ForeignDomesticGap*	*NonBrownMIN ForeignDomesticGap*
GTPHomeHostGap	0.0911*	1.2273***	0.0524**	-0.1469***
	(0.050)	(0.270)	(0.025)	(0.046)
CarbonTaxHomeHostGAP	-0.0039*	-0.0420***	0.0010	-0.0086***
	(0.002)	(0.011)	(0.001)	(0.002)
BankRegulationHomeHostGAP	-0.0004***	0.0038***	0.0006***	-0.0012***
	(0.000)	(0.001)	(0.000)	(0.000)
RuleofLawHomeHostGAP	0.0093	0.1576***	0.0172***	-0.0564***
	(0.006)	(0.033)	(0.004)	(0.007)
CreditorRightHomeHostGAP	0.00002	0.0109***	-0.0001	-0.0055***
	(0.000)	(0.002)	(0.000)	(0.001)
BilateralTrade	-0.0006**	-0.0038**	-0.0008**	0.0017***
	(0.000)	(0.002)	(0.000)	(0.001)
GDP_Host	0.0002*	0.0024***	0.0002**	-0.0003
	(0.000)	(0.001)	(0.000)	(0.000)
CreditGrowthHost	0.0195*	0.2634***	0.0136**	-0.0538***
	(0.010)	(0.054)	(0.006)	(0.012)
BankConcentrationHost	-0.00004	-0.0012***	0.0002***	0.0003***
	(0.000)	(0.000)	(0.000)	(0.000)
Total Assets	0.0042***	0.0034	-0.0047***	0.0026**
	(0.001)	(0.003)	(0.001)	(0.001)
EquityToAssets	0.0001	-0.0017**	-0.0001	-0.0014***
	(0.000)	(0.001)	(0.000)	(0.000)
Bank-Country Pair FE	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes
Observations	41,886	41,886	41,886	41,886
Number of Panel id.	4,647	4,647	4,647	4,647
F-statistic	14.55***	13.83***	30.45***	85.79***
Hansen J statistic	0.251	0.227	0.230	0.898
DWH test	0.074	0.000	0.076	0.077
Kleibergen-Paap rk F-stat st	12.926***	12.926***	133.369***	156.958***
Variable subset instruments	A BxC	A BxC	B DxE	B D

Table A7. Robustness 2: Controlling for time-invariant bilateral country characteristics

This table reports pooled OLS regressions examining how the home–host green transparency policy (GTP) gap affects global banks' relative foreign-versus-domestic affiliate shares, by ownership (majority/minority) and sector (brown/non-brown), while controlling for additional time-invariant bilateral country characteristics (common language common colonization history and geographical distance). Definition of variables are provided in Table A4 (Appendix). The sample is a panel of 41,886 global-bank-host-country-year observations during the period 2010-2023 of 693 banks from 90 home countries in 118 host countries. *BrownMAJForeignDomesticGap* is the difference in the share of the global bank's foreign brown majority-owned affiliates in host country *j* and its domestic brown majority-owned affiliates. *NonBrownMAJForeignDomesticGap* is the difference in the share of the global bank's foreign non-brown majority-owned affiliates in host country *j* and its domestic brown majority-owned affiliates. *BrownMINForeignDomesticGap* is the difference in the share of the global bank's foreign brown majority-owned affiliates in host country *j* and its domestic brown minority-owned affiliates. *NonBrownMINForeignDomesticGap* is the difference in the share of the global bank's foreign non-brown minority-owned affiliates in host country *j* and its domestic brown majority-owned affiliates. *GTPHomeHostGap* measures the difference in Green Transparency Policy index between the global banks' home country and host country. The robust standard errors are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	(1) *BrownMAJ ForeignDomesticGap*	(2) *NonBrownMAJ ForeignDomesticGap*	(3) *BrownMIN ForeignDomesticGap*	(4) *NonBrownMIN ForeignDomesticGap*
GTPHomeHostGap	0.0151***	0.0635***	0.0135***	-0.0399***
	(0.00197)	(0.00719)	(0.00271)	(0.00587)
CarbonTax	-0.000453	0.00807***	0.000460	-0.00956***
HomeHostGAP	(0.000585)	(0.00216)	(0.000856)	(0.00182)
BankRegulation	0.000174	0.00218***	0.000114	-0.00208***
HomeHostGAP	(0.000146)	(0.000499)	(0.000192)	(0.000443)
RuleofLaw	-0.000366	0.0101***	-0.000884*	0.00697***
HomeHostGAP	(0.000360)	(0.00119)	(0.000469)	(0.00101)
CreditorRight	0.000148	0.000881**	-0.000204	-0.00147***
HomeHostGAP	(0.000101)	(0.000346)	(0.000145)	(0.000300)
BilateralTrade	-0.000208***	0.00125***	0.000150**	0.000851***
	(0.000049)	(0.000199)	(0.0000635)	(0.000170)
GDP_Host	0.00664	0.0380	0.0220*	0.0686**
	(0.00947)	(0.0354)	(0.0122)	(0.0279)
CreditGrowthHost	0.0112***	0.0250*	-0.000591	-0.0137
	(0.00421)	(0.0140)	(0.00574)	(0.0126)
BankConcentration	0.00441**	0.000031	0.0121***	0.0341***
Host	(0.00188)	(0.00636)	(0.00270)	(0.00575)
Total Assets	-0.000765***	0.00645***	-0.00349***	-0.00943***
	(0.000235)	(0.000716)	(0.000306)	(0.000653)
EquityToAssets	0.0113***	0.397***	-0.0723***	0.0814***
	(0.00198)	(0.00930)	(0.00397)	(0.00914)
CommonLanguage	-0.00137**	-0.00901***	-0.00328***	-0.00491**
	(0.000686)	(0.00284)	(0.000922)	(0.00240)
CommonColonization	-0.00991**	-0.0312***	0.0237***	0.0360***
	(0.00417)	(0.00764)	(0.00395)	(0.00629)
Distance	0.00117***	-0.00273**	0.000332	0.00818***
	(0.000361)	(0.00112)	(0.000499)	(0.000981)
Constant	-0.0707	0.0518***	-0.108**	-0.125
	(0.0469)	(0.0199)	(0.0509)	(0.0839)
Home Country FE	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes
Observations	35,165	35,165	35,165	35,165
F-statistic	244.3***	614.4***	277.9***	650.8***

Table A8. Robustness 3: Controlling for climate change performance

This table reports pooled OLS regressions examining how the home–host green transparency policy (GTP) gap affects global banks' relative foreign-versus-domestic affiliate shares, by ownership (majority/minority) and sector (brown/non-brown), while controlling for the home–host climate change performance gap. Definition of variables are provided in Table A4 (Appendix). The sample is a panel of 41,886 global-bank-host-country-year observations during the period 2010-2023 of 693 banks from 90 home countries in 118 host countries. *BrownMAJForeignDomesticGap* is the difference in the share of the global bank's foreign brown majority-owned affiliates in host country *j* and its domestic brown majority-owned affiliates. *NonBrownMAJForeignDomesticGap* is the difference in the share of the global bank's foreign non-brown majority-owned affiliates in host country *j* and its domestic brown majority-owned affiliates. *BrownMINForeignDomesticGap* is the difference in the share of the global bank's foreign brown majority-owned affiliates in host country *j* and its domestic brown minority-owned affiliates. *NonBrownMINForeignDomesticGap* is the difference in the share of the global bank's foreign non-brown minority-owned affiliates in host country *j* and its domestic brown majority-owned affiliates. *GTPHomeHostGap* measures the difference in Green Transparency Policy index between the global banks' home country and host country. *CCPIHomeHostGAP* measures the difference in the climate change performance index (CCPI) between the global banks' home country and host country. The robust standard errors are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	(1) *BrownMAJ ForeignDomesticGap*	(2) *NonBrownMAJ ForeignDomesticGap*	(3) *BrownMIN ForeignDomesticGap*	(4) *NonBrownMIN ForeignDomesticGap*
GTPHomeHostGap	0.0182***	0.0640***	0.0176***	-0.0595***
	(0.00246)	(0.00913)	(0.00337)	(0.00734)
CCPIHomeHostGAP	-0.0000319	0.00115***	0.0000305	-0.000822***
	(0.0000294)	(0.000106)	(0.0000397)	(0.0000862)
Constant	0.00202	-0.586***	0.0472***	-0.0929***
	(0.00750)	(0.0498)	(0.00911)	(0.0290)
Other Controls	Yes	Yes	Yes	Yes
Home Country Pair FE	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes
Observations	27,634	27,634	27,634	27,634
F-statistic	258***	410.3***	285.1***	524.7***