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CORPORATE POWER AND THE GLOBAL CLIMATE REGIME

A comparative study of industry influence over the climate governance of aviation and shipping

Dissertation submitted by

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Abstract

This thesis investigates corporate influence over global climate governance at the UN agencies for aviation, the International Civil Aviation Organization (ICAO), and shipping, the International Maritime Organization (IMO). It examines whether high levels of corporate influence at ICAO led to a weaker climate regime for aviation compared to shipping. Using a neo-pluralist approach to business power, the thesis employs a structured-focused comparison design alongside a unique delegate dataset and semi-structured interviews with UN delegates. It discovers that corporate influence is significantly higher over climate aviation governance compared to shipping, leading to weaker climate outcomes.

This variation is primarily explained by the aviation industry's dominant structural power over states. The global aviation sector is closely bound to states, with domestic producers and airlines profoundly shaping state climate positions. Without technical solutions to decarbonize, the aviation industry has unified its positioning to effectively lobby states to weaken climate action and maintain growth, strengthened by ICAO's institutional secrecy. In contrast, the shipping industry has lower lobbying unity and is less structurally entwined with states, reducing its influence over climate outcomes. Furthermore, higher influence from environmental NGOs and greater policymaking transparency counterbalances shipping's business power to improve climate outcomes for the sector.

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1. Introduction

Since the Kyoto Protocol, the UN International Maritime Organization (IMO) and UN International Civil Aviation Organization (ICAO) have regulated global climate governance for shipping and aviation. Until the Paris Agreement, both agencies failed to introduce climate regimes for their respective sectors, with aviation and shipping later excluded from the accord. Yet without regulation, rising aviation and shipping emissions are forecast to collectively represent nearly 40% of global greenhouse gas (GHG) emissions by 2050 (Hayer 2016:8), threatening to blow the world's carbon budget.

Post-Paris the two agencies have since introduced global climate strategies, with both rated "critically insufficient" with the Paris Agreement's 2°C global warming goal (CAT 2020). However, a closer analysis finds the IMO's climate strategy for shipping represents far greater ambition than ICAO's plan. While shipping's climate strategy enforces a 50% emissions reduction target by 2050, aviation's offsetting CORSIA plan is forecast to let aviation's absolute GHG emissions grow by up to 700% by 2050. This thesis explains this variation in stringency, arguing that increased industry influence over ICAO's climate governance was crucial in weakening climate outcomes for aviation compared to shipping.

The failure to introduce Paris-aligned climate strategies for shipping and aviation is linked directly to industry obstruction in both agencies. Scholars argue that the aviation industry is "very close to" and "in effect the driver of" ICAO's climate process (Lyle 2018:122) while corporations have "captured" IMO policymaking to weaken climate legislation (InfluenceMap 2017). Both agencies are recognized as being similar "in the extent to which they face

regulatory capture by industry", yet this issue "has not been extensively examined" (Smith & Ahmad 2018:100).

This thesis addresses this puzzle, conducting the first study of corporate power at both institutions, filling in a major research gap. It analyzes why corporations have more influence in some international organizations (IOs) and industry's role in weakening global climate governance. It explores the mechanisms through which corporate power translates into influence, answering the research question is: *Does corporate influence explain the variation in climate strategy outcome stringency for aviation and shipping?*

The thesis structure is as follows. Firstly, the literature review examines global climate policy for aviation and shipping, evolving corporate-UN relationships, and business power in global governance. Secondly, the theoretical framework outlines the key mechanisms of business power and the hypotheses. Next, the methodology is explained. This includes employing a structured, focused comparison method incorporating data collected from semi-structured expert interviews with UN delegates alongside a unique environmental meeting dataset.

This thesis then tests six hypotheses regarding varying levels of business influence at both agencies. Firstly, it compares institutional regulations over climate governance, assessing rules on lobbying, transparency, and the media. Secondly, it analyzes corporate access and relationships with state delegations. Thirdly, it examines domestic and international markets, industry-state economic relationships, and climate lobbying unity. Hypothesis four then examines varying discourses and norms at both institutions over climate governance. The fifth hypothesis then tests the relative influence of environmental non-governmental organizations

at both institutions in counter-balancing corporate influence. Lastly, it traces direct industry influence over climate strategy outcomes for aviation and shipping.

This thesis discovers that obstructive industry influence led to weaker outcomes for aviation's global climate governance compared to shipping. The stronger structural power of the aviation industry, closer industry-state relationships with great power states and higher lobbying unity empowered industry to significantly weaken aviation's climate strategy. As the first scholarly work comparing industry influence over climate policy in both institutions, this thesis provides significant insight into business power in global environmental governance and its key role in weakening global climate action.

2. Literature review

2.1. Global climate governance

Global climate governance is a *regime complex;* a collection of loosely connected, overlapping non-hierarchical institutions wherein states can forum-shop to select institutions providing the largest gains (Raustiala & Victor 2004). Global aviation and shipping emissions are governed within a wider polycentric climate regime complex with numerous sources of power and authority and no united, comprehensive regime. States favor such regimes to delink divisive issues into multiple, loose, fragmented organizations to promote cooperation (Keohane & Victor 2011:13–16).

Unlike the bottom-up UNFCCC Paris regime, aviation and shipping embrace a top-down model based on global, universal regulations rather than individual state contributions. This is partly because emissions from both sectors occur in international airspace and waters and across multiple state jurisdictions, requiring global regulation to effectively manage. While the UNFCCC is mandated to reduce greenhouse gases, the primary objectives of both ICAO and the IMO are to foster growth in international transport, directly conflicting with their climate goals (Romera 2016:222).

2.2. Global climate strategies for aviation and shipping

2.2.1. Aviation

Aviation contributes 2.5% of yearly global GHG emissions (Larsson et al. 2019:1). In 2016 ICAO agreed its primary climate policy, CORSIA, a market-based mechanism ensuring "carbon neutral" growth in international aviation emissions originally from a 2019/20 baseline,

since changed to 2019 only (ICAO 2020). Larsson et al (2019) in a review of international aviation policies, found that ICAO's CORSIA strategy "will not deliver any major emissions reductions" or reduce emissions at source and ignores aviation's significant non-CO2 GHG emissions (Larsson et al. 2019:10). Similarly, Lyle (2018) argues that CORSIA is a "lowest-common-denominator scheme" that is "designed to counter additional ambition" from states or regions (Lyle 2018:113).

Through CORSIA, airlines purchase offsets or deploy lower-carbon fuels to compensate for aviation's increasing gross GHG emissions. It remains a voluntary policy for member states until 2027, with the scheme currently operating until 2035 (Timperley 2019). Yet without a global reduction goal, airlines can purchase unlimited credits to compensate for growing emissions, meaning other sectors require deeper emissions cuts to reach Paris-compliant targets (Becken & Mackey 2017:79). Under CORSIA, aviation is forecast to exceed its proportional share of a 2°C carbon budget before 2035 (ICSA 2018:4). Without an absolute reduction target, aviation's climate strategy allows long-term absolute GHG emissions to grow up to 700% by 2050 (Wilkes 2019).

In 2016 ICAO also finalized a binding CO2 emissions standard requiring an average 4% reduction in new aircraft's fuel consumption in 2028 from a 2015 baseline (ICCT 2017:1). Yet this fails to mandate efficiency improvements beyond currently implemented technologies (Rutherford 2018). Moreover, the "resulting per-unit reductions will be significantly exceeded by growth in traffic" (Lyle 2018:107).

2.2.2. Shipping

Shipping contributes to 3.1% of annual global GHG emissions (IMO 2015:1). Without climate regulation, shipping's emissions will increase by 20-120% from 2012 to 2050 (CE Delft 2017:4). In 2018, the IMO adopted a climate strategy target to reduce shipping's total GHG emissions by 50% by 2050 and to pursue efforts to phase them out (IMO 2018). Analyzing this strategy, Doelle and Chircop (2019) criticized its lack of binding and collective long-term temperature goals like in the Paris Agreement alongside the "insufficient" pace of decarbonization (Doelle & Chircop 2019:273). Furthermore, they argued the strategy lacks concrete measures to meet its 2030 and 2050 targets, yet its long-term goal is still "significant and ambitious, leaving more room for optimism" (Doelle & Chircop 2019:275). Similarly, Psaraftis and Zachariadis (2019) argue that significant accompanying policies are necessary for shipping's decarbonization, especially a market-based-mechanism, yet a 50% reduction remains a "substantial and ambitious target" (Psaraftis & Zachariadis 2019:447–450).

Shipping's climate strategy includes accompanying future binding short, mid and long-term policy measures to be announced later and carbon intensity reductions of at least 40% by 2030 and 70% by 2050, compared to 2008 (IMO 2018). While the IMO has more ambitious measures than ICAO, shipping requires 70-100% GHG emissions reductions by 2050 to contribute its fair share to the Paris Agreement's 2°C global warming target (CSC 2018).

Additionally, as a non-binding political declaration rather than an international treaty, the strategy's success relies on accompanying implementation policies rather than its aspirational targets (Doelle & Chircop 2019:271). Yet, while the IMO has been slow to introduce stringent measures, including market-based-mechanisms (Psaraftis & Zachariadis 2019:448), its strategy directly recognizes and incorporates their future inclusion to ratchet up future ambition.

In 2011 the IMO also passed the Energy Efficiency Design Index (EEDI). This mandated average efficiency reductions of new-build ships of 10% by 2015, 20% by 2020, and 30% by

2025 from a 2000-2010 baseline (IMO 2020). However, previous EEDI targets are forecast to only reduce GHG emissions by 3% by 2050 compared to business-as-usual scenarios (Smith et al. 2016:38–40). The IMO later strengthened EEDI standards in 2019, bringing forward standards for five ship types (Comer & Rutherford 2019).

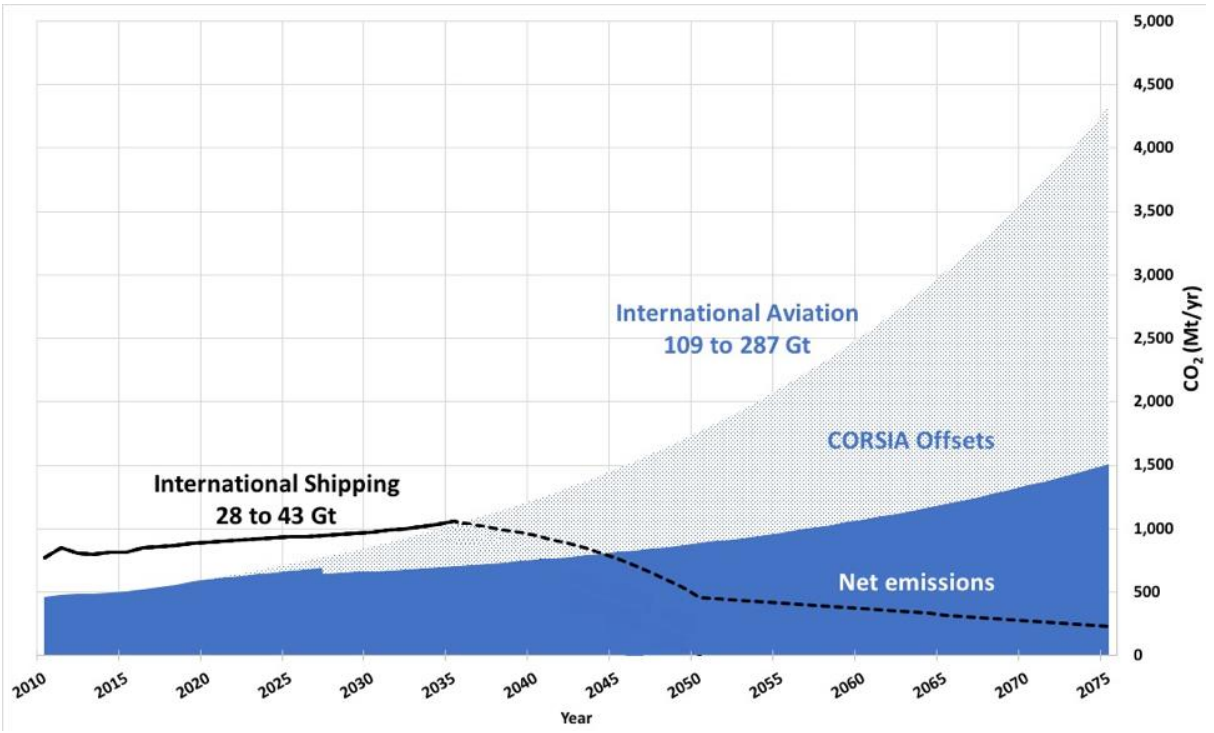

***Figure 1**: GHG emissions strategies of ICAO and the IMO (Rutherford 2018)*

Both ICAO and the IMO's climate strategies are rated as "critically insufficient" with the Paris Agreement's 2°C global warming goal (CAT 2020). Yet direct comparison (a table summary is available in Annex 1) highlights significant variance in their climate stringencies. The IMO's strategy, unlike aviation, contains a long-term GHG emissions reduction target and mandates absolute emissions reductions. It also includes further accompanying decarbonization measures in regular review processes to ratchet up ambition over time. In contrast, the aviation climate strategy allows for long-term absolute GHG emissions to rapidly increase and includes no long-term reduction target (see Figure 1). Its core focus remains offsetting, without clear provisions

to include future ambitious policies. Consequently, the global climate strategy for shipping is significantly more ambitious than for aviation.

Furthermore, to better understand state-industry interactions in global climate governance, the wider literature on corporate-UN relations and corporate power in global governance is now examined.

2.3. Corporate-UN relations

Since the 1990s, the UN has sought a more inclusive, multi-actor approach beyond traditional state-centric institutions that integrates corporations into global governance through new governance arrangements like the Global Compact (Rasche et al. 2013). This re-constructs the UN-corporate relationship from being reactive and confrontational towards a more collaborative, proactive, partnership stance (Deva 2006:12). An extensive literature has examined the risks and benefits this brings (Zammit 2003; Martens 2007; Rasche et al. 2013; Deva 2006). Such risks include fragmenting global governance and corporations creating regulatory advantages from close government relationships (Martens 2007:4), leading to corporate capture (Zammit 2003). The benefits include greater expertise in developing technical standards, forging politically "neutral" governance solutions, financing activities, providing stakeholder input, and enhancing governing legitimacy and transparency (Durkee 2018:1750, 1772).

While this literature provides crucial insights, two key weaknesses remain. Firstly, closer industry-UN relationships are incorrectly characterized as a modern phenomenon. This ahistorical approach ignores corporations' strong historical influence over UN institutions,

like the shipping industry's central role in the IMO's creation and governance since 1948 (Johnston 2008:45–46). Secondly, current scholarship understates the significant real-world variations in UN-corporate relations depending on the firms and institutions involved. Industry lobbying varies across UN agencies, with no consistent regulatory response to private-public relations across IOs (Durkee 2018:1750). Furthermore, industry is not a single unified actor in global governance and instead plays divergent overlapping roles. This includes supporting regimes, weakening expansion into others, and providing private governance (Bartley 2018). This diversity emphasizes the need to study the context-specific rules and practices between industry, states, and secretariats in IOs when analyzing corporate power in global governance.

2.4. Corporate power and global governance

To understand business influence at ICAO and the IMO, this thesis conducts a literature review identifying the three dimensions of corporate power in global governance and its limitations.

Instrumental power is when actors achieve political outcomes by influencing decision-makers through political processes, lobbying, financing (Fuchs & Lederer 2007:3–4), and financial and knowledge asymmetries with states (Ruggie 2018:321–322). Corporations often have unrivaled financial, organizational, and institutional resources compared to other groups, with powerful capacities to unite industries under umbrella organizations and use domestic policy networks for privileged access to international decision-makers (Falkner 2008:27–29).

Structural power approaches emphasize the input side of policy and the predetermination of political decision-making by analyzing broader decision-making contexts (Fuchs & Lederer

2007:5). Structural corporate power allows firms to determine the 'acceptable' range of debated policies and to set agendas, highlighting underlying structures privileging corporations and constraining other actor's capabilities (Falkner 2008:19–20). Corporations play a central role in the global economy as the main source of economic growth and innovation. Moreover, key technologies and technical knowledge privately controlled by corporations are key to climate action, placing them in a privileged, and highly political, position to shape regulatory policy (Falkner 2008:29–30). Moreover, studying the character of public-private relationships underlying regulatory policymaking can highlight actors' operational contexts and the structural power corporations exert over organizations (Young 2012:669).

Lastly, discursive power approaches studies how discourse, communications, and cultural values frame policy discussions and shape outcomes. Corporations employ discursive power to promote ideas and set norms through persuasion, emulation, and socialization (Ruggie 2018:325); setting agendas, framing discussing, and shaping outcomes. Firms, from their central global economic position, define and debate the parameters of relevant, acceptable policy, technological and economic solutions (Falkner 2008:32). Discursive analysis emphasizes that power pursues interests and creates them, framing, and de/legitimizing policies, norms, and ideas to shape agendas (Fuchs & Lederer 2007:9–10).

While some scholars prioritize single dimensions of business power (e.g. structural), this thesis takes a neo-pluralist approach that considers all three and weighs the relative importance of each. Neo-pluralists like Falkner (2008) emphasize the multidimensional, multifaceted role of business power. It acknowledges industry's powerful, privileged structural position in global environmental governance, with interest group competition often conducted in arenas favoring business. Yet strong countervailing forces like civil society and intra-business conflicts

constrain corporate influence so it is not structurally pre-determined (Falkner 2008:17–25). Incorporating these neo-pluralist insights, this thesis studies the intersecting instrumental, structural, and discursive dimensions of business power to influence global climate governance.

Business power is also constrained by other factors. Drezner (2008) argues that great power states, defined as those managing large internal markets (the EU and the US), are dominant actors in international regulatory regimes, developing and managing global rules through coercive and market power (Drezner 2008:32–36). For effective transnational governance, great power co-operation is a necessary and sufficient condition, and while non-state actors like business affect processes, they "do not affect the final outcome" (Drezner 2008:204). For example, traditional state diplomacy and co-operation between great power states were crucial factors in negotiating the Paris Agreement (Dimitrov 2016), with business sidelined.

Yet, while state power *is* predominant in global governance, Drezner overlooks industry's profound influence over state preferences and institutions at a domestic *and* international level in some arenas, changing processes, and outcomes. For example, chemical companies crucially influenced the design and timing of the CFC phase-out schedule for the global Ozone regime (Falkner 2008:80–92). Thus, while business operates under conditions of predominant state power, the extent of business power varies depending on the context.

3. Theory and hypotheses

Building on this literature, the key theories and causal mechanisms through which business influences global climate governance are explained, developing six hypotheses to guide the thesis. Influence is defined as "the capacity of one actor to modify the behavior of another". It occurs when one actor intentionally communicates to another to alter the latter's behavior from what would have occurred otherwise (Betsill & Corell 2007:24).

3.1. Institutional regulations on corporate lobbying

The first variable studied is *institutional regulations and practices on corporate lobbying, transparency, and media access*. Limited regulations allow industry to influence and weaken climate governance processes unchecked. Moreover, the formal, institutional rules from which IOs are created often have little bearing on how they function in practice (Lall 2017:276). Therefore, practices, alongside regulations, must also be studied.

Weak transparency regulations or practices increase negative industry influence over climate strategies as lobbying occurs unrestricted behind closed doors. Corporate capture thrives in opaque policymaking arenas without clear accountability measures for interest groups (OECD 2017:17, 40). In climate governance, transparency enhances accountability and public participation in policymaking, promoting expert-driven technical science-based decision-making (Gupta & Mason 2016:83).

Similarly, media coverage limits corporate influence by alerting the public to excessive industry control of policymaking processes and outcomes (Carpenter & Moss 2014:464). If IOs restrict

media access, this should increase secrecy, reducing the public scrutiny of climate governance, promoting industry influence. This leads to the first hypothesis.

H1: *Weaker institutional rules and practices on corporate lobbying, transparency, and the media led to weaker climate outcomes at ICAO compared to the IMO*

3.2. Corporate access and influence with state delegations

The second variable is *corporate access to environment meetings and relationships with state delegations*. Corporate delegates in environmental meetings submit legislative proposals, contribute to discussions, and lobby states to influence climate governance. Larger industry delegations possess clear influencing advantages. For example, they can attend plenary meetings and various working groups that occur simultaneously and project greater influence if delegation sizes are perceived to correlate with their available resources (Psaraftis & Kontovas 2020:157). An analysis of 400 NGOs (including business associations) in five IOs discovered that the most important indicator for high influence was policymaking access (Tallberg et al. 2018:233–234). Yet access does not always directly equal influence. Large delegations are a good but imperfect proxy for influence, as they may be inactive, with smaller delegations very active.

Moreover, through lobbying and influencing, corporations build close relationships with states and secretariats. Through close social relationships and regulated-regulator interactions in the same 'intellectual bubble', common ideas diffuse in transnational policy networks (Young 2012:668), wherein corporations build on existing personal ties to policymakers (OECD 2017:37). Industry also utilizes their instrumental power with states by leveraging information

asymmetries with regulators by controlling and providing high-quality strategic technical information and expertise (Young 2012:668–669). Firms possess private information regarding climate policy that governments or secretariats cannot impartially assess or generate internally, with firms strategically exploiting such asymmetries (Tallberg et al. 2018:215–216). For example, corporations may push overstated 'doomsday' economic forecasts that exaggerate environmental legislation compliance costs to persuade states against pursuing climate action (Bernhagen 2008:85–86).

Access and proximity to decision-makers is, therefore, a "valuable asset" for corporate influence (OECD 2017:14). Consequently, active industry observer organizations and the inclusion of industry in state delegations allows business to influence and weaken state climate positions. This leads to the second hypothesis.

H2: *Corporations have greater access to, and closer relationships with, state delegations at ICAO compared to the IMO, weakening climate outcomes*

3.3. Markets, decarbonization solutions, industry-state relationships and lobbying unity

The third variable is *markets, decarbonization solutions, industry-state relationships, and lobbying unity.* Studying domestic actors and institutions explains the origins of state's domestic preferences, which are taken as a given in international contexts (Drezner 2008:5–6). The structural economic conditions of key domestic companies and their global market positions shape state climate preferences (Falkner 2008:35–36). By analyzing the domestic markets for key states in both climate regimes, it uncovers how industry shapes great power state positioning. High market concentration should also lead to greater business unity as with

fewer actor's co-ordination is less costly. Also, with increased market concentration firms have higher market and coercive power to influence the state, and states may seek regulation that strengthens their powerful domestic industries (Porter 1993:36).

Industry support for climate action also depends on available technological and operational decarbonization solutions. If a sector's climate mitigation potential is low, with solutions unavailable or high cost, then industries are less likely to support climate action.

Two other factors also affect corporate climate position unity. Firstly, conflict can arise between inter-industry leaders and laggards, with climate regulation imposing differential effects due to firms' varied compliance abilities (Falkner 2008:33–34). Secondly, business conflict arises between producers and consumers due to the differential effects of environmental legislation between customer-facing consumers and cost-paying producers, leading to division and competition. Thus, consumer firms may support higher climate regulations in response to consumer or reputational demands yet producing firms may end up paying higher production costs without gaining such benefits (Falkner 2008:34).

Thus, analyzing these variables explains both the degree of domestic influence industry has over "great power" states and corporate unity levels in climate influencing. If corporate unity is high internationally amongst powerful actors positioned against climate action in aviation, this should lead to increased influence for weaker policy outcomes. Contrastingly, low corporate unity in shipping should reduce industry influence. This leads to the third hypothesis.

H3: *Higher levels of climate lobbying unity in aviation among key industry actors compared*

to shipping leads to weaker aviation climate outcomes

3.4. Corporate discourses and norms

Fourthly, through *shaping discourses and norms* corporations influence the wider ideational context of international environmental politics, changing perceptions of problems and influencing actors' interests. Thus, analyzing corporate discourse explains the industry's discursive power to shape climate outcomes, what "appropriate" actions are for delegates in given contexts, and industry attempts to shape norms.

Corporations influence climate policymaking through strategic communications, including speeches, media pieces, press conferences, and consultation documents. They employ specific discourses to colonize regulators conceptions of the public interest to align with industry through "cultural capture" (Kwak 2013:79–80). Businesses also seek legitimacy by framing themselves as climate solution-providers, pushing for market and growth-friendly development (Falkner 2008:10). H4 assesses these collective factors.

H4: *Corporate discourse and norms at ICAO support weaker climate outcomes compared to the IMO*

3.5. ENGO influence

Fifthly, *environmental non-governmental organization (ENGO) influence* is analyzed. Effective ENGO participation in IO's supplies states with expanded policy options, advice, helps them monitor delegations during negotiations, and facilitates signaling between

governments and constituents (Raustiala 1997:720). ENGOs (alongside corporations) also play a role as "fire alarms", alerting states to delegation agents that move too far from their principal government's environmental preferences (Raustiala 1997:729), potentially due to industry influence. Civil society participation through ENGOs also improves political responsiveness, transparency, and accountability and the legitimacy of climate negotiations (Böhmelt et al. 2014:23). Thus, stronger ENGO influence in climate policymaking should provide a counterbalance to dominant corporate influence.

Furthermore, corporate influence through information provision decreases when countered by environmental lobbyists providing competing information in global governance (Bernhagen 2008:103). Increased ENGO access and activity in environmental negotiations are also positively correlated with stronger environmental agreements (Böhmelt & Betzold 2013:143). ENGOs should, therefore, provide a strong bulwark against undue corporate influence at ICAO and the IMO, with a stronger ENGO presence weakening industry influence and improving climate outcomes. To measure this, this thesis will analyze ENGO delegations alongside the strategies and relative influence of ENGOs between both institutions over climate governance.

H5: *More influential ENGOs at the IMO weakened industry influence to strengthen climate outcomes for shipping*

3.6. Corporate influence over climate legislation

Lastly, *corporate influence over climate legislation* is measured by studying goal attainment. This compares corporate goals with observed effects; and whether corporations through communications with other actors directly alter the behavior of such actors (Betsill & Corell

2007:27). Goal attainment methodically traces how business power changes processes and outcomes in key process steps.

If industry has high influence, agreed climate strategy outcomes should directly reflect corporate goals. Evidence should also demonstrate key states changing positions after corporate lobbying, with industry's influence process traceable. If business only changes limited aspects of climate policymaking outcomes, they have medium influence and with no change over outcomes, they have low influence. This influence is demonstrated in finally agreed texts and outcomes, in shaping agendas, issue framing, and in the positions of key states (Betsill & Corell 2007:33–37). This leads to the final hypothesis.

H6: *High industry influence at ICAO led to significantly weaker climate outcomes for aviation compared to shipping*

4. Methodology

4.1. Structured focused comparison

This thesis employs a structured, focused comparison design, using most-similar case studies to identify differences among similar cases (the dependent variable) which accounts for the varied observed outcomes. This will generate semi-standardized data to facilitate systematic cross-case comparison (George & Bennett 2005:67). Specific comparable variables are determined to analyze corporate influence and operationalized through standardized questions guiding the interview design and research (See Annex 2).

The most similar cases studied are the UN agencies ICAO and the IMO. They oversee climate governance for the only two sectors excluded from the Paris Agreement. They both have near-exclusive jurisdiction in their climate remits, operate within the same climate regime complex, and are criticized for high corporate influence over their climate governance. However, one key difference exists between the organizations; the IMO's shipping climate strategy is more ambitious than ICAO's.

4.2. Causal mechanisms

Causal mechanisms of corporate influence are often imprecisely outlined in academia. Studies often assume corporate influence in global governance arenas without empirical scrutiny or adequate questioning, wrongly presuming that access always equals influence (Young 2012:666–667). However, analyzing the wider literature, this thesis identifies key casual mechanisms linking corporate power to influence global climate legislation. This thesis

incorporates these causal mechanisms into six hypotheses, testing them to the cases of ICAO and the IMO and displaying them in a conclusive results table.

4.3. Data collection

To provide insight into policymaking processes with limited scholarly evidence, this thesis conducted expert interviews with three current ICAO and five IMO delegates in May-June 2020 by telephone. These interviews incorporated a structured, focused comparison design around 18 questions regarding ENGO and corporate influence (available in Annex 2). These standardized, semi-structured interview questions incorporated operationalized casual mechanisms, testing hypothesized relationships that guided the thesis. Non-standardized clarifying questions were also asked delving deeper into interest areas.

These delegates represent states, IOs, and ENGOs, including multiple delegates with over twenty years' experience. To provide confidentiality, delegate interviewees are anonymously referenced, with only the UN agency they work within reported (see Annex 3). All other identifiable characteristics were removed to prevent their identification via triangulation. Lastly, the degree of consensus amongst interviewees is disclosed through a numbering system.

This thesis has additionally gathered data from ICAO and IMO environmental meeting delegate lists to analyze industry participation and delegate composition in climate policymaking with data collected from their respective UN websites.

4.4. Research limitations

Ideally, research on corporate power would compare quantitative data. However, unlike the IMO, ICAO does not publicly provide consultation documents and extensive delegate lists, publishing only limited impartial records. Consequently, this thesis is restricted to compiling descriptive statistics as there is no available data for sophisticated quantitative analysis.

The selected sample of interviewed delegates is also not wholly representative of environmental committees, with over-weighted representation from ENGOs compared to states and industry. This occurred as predominantly ENGO delegates responded to interview requests. To overcome this bias, this thesis provides competing evidence from alternative viewpoints where available.

Lastly, this thesis recognizes that other excluded variables affected climate strategy outcomes at both institutions. Yet space constraints mean other competing causes cannot be comprehensively examined. Instead, other contributing factors are referenced throughout the thesis, providing vital context to negotiations. They include the inherent difficulties of intergovernmental policymaking, varied state positions, and the conflicting climate principles of non-discrimination and common but differentiated responsibilities.

5. Testing H1: Institutional regulations and practices on corporate lobbying

At ICAO, the Committee on Aviation Environmental Protection (CAEP) develops global aviation climate policies. CAEP meetings occur once every three years, consisting of 24 member states and 15 observer organizations (Hayer 2016:27). ICAO does not formally regulate corporate lobbying in CAEP, enforce codes of conduct for delegates or impose rules on the composition of delegations. Industry representatives attend environmental meetings through both industry groups and state delegations.

ICAO is criticized for its "almost complete lack of transparency" in governance (Timperley 2019) and its opaque, secretive practices that restrict crucial information from public view and weakens ENGO participation (Lyle 2018:126). CAEP environmental meetings at ICAO are closed and governed by undisclosed rules, with meeting documents, including submitted legislative proposals, official negotiating documents, and CORSIA's rules not publicly disclosed (ICSA 2019a:3). These "extremely limiting" restrictions prevent delegates from sharing working papers with outside audiences and engaging with wider public audiences, with ICAO "very controlling in a non-transparent way" (Interview-ICAO-2)[1].

ICAO also requires all CAEP participants to sign strict non-disclosure agreements (Interview-ICAO-4), threatening them with unlimited financial liability for disseminating information or documents from environmental meetings (ICSA 2019b). This practice is not followed at the IMO or UNFCCC (Farand 2019). ICAO also imposes strict reporting restrictions; banning the

[1] Interviews are numbered 1-7. " "ICAO" and "IMO" designate the UN agency delegates attend.

media from ICAO committee meetings, including CAEP (Hayer 2016:36), and denying journalists basic information like meeting agendas (ICSA 2019b). Moreover, ICAO has blocked journalists and climate scientists on social media for "fake news" over aviation's climate impacts (Darby 2019) and has refused press passes to critical journalists (Interview-ICAO-2).

This secrecy creates favorable conditions for industry capture and may also be a result of it. Corporations support lower transparency levels and fewer delegates "to keep tight control on the media coverage" and limit public scrutiny (Interview-ICAO-3). For example, IATA, ICAO's biggest trade association, recently stated that "more public information could be beneficial, but at the same time we understand that the discussions in the council would be more politicized if everything was publicized. The challenge is finding the right balance" (Farand 2019). ICAO's overall climate transparency levels are therefore rated low.

The IMO's key environmental body is the Marine Environment Protection Committee (MEPC), which creates global climate regulation for shipping. It meets three times every two years and consists of 174 IMO member states and over a hundred observer organizations (Hayer 2016:13). Like ICAO, the IMO does not formally regulate corporate lobbying, imposing no rules on codes of conduct or delegation composition. States can consequently appoint anyone, from any industry organization or nationality as their delegates and do not require delegates to disclose all their current employees (Psaraftis & Kontovas 2020:170).

However, the IMO has contrastingly more transparent climate policymaking regulations and practices, with Transparency International rating the IMO's transparency governance as "medium-strong" (Transparency International 2018:12–16). Unlike ICAO, environmental meeting documents, including policy proposals and delegate lists, are publicly disclosed online.

The IMO, however, prohibits media access to working groups (Interview-IMO-1, IMO-6). This "major black hole of information" (Interview-IMO-6) encourages states to take extreme working group positions with impunity, weakening climate outcomes (Interview-IMO-1, IMO-6). Like at ICAO, low transparency levels lower climate ambitions, prevent open media coverage, and has industry support (Interview-IMO-1, Interview-IMO-5).

However, unlike ICAO, the IMO enforces increasingly less restrictive media reporting regulations. The media can access environmental meetings and since 2019 reforms, journalists can quote delegations without prior approval (Psaraftis & Kontovas 2020:166). Multiple delegates criticized previous restrictive quotation rules for reducing transparency and preventing media coverage that could positively shape climate negotiations (Interview-IMO-1, IMO-5, IMO-6). Overall, the IMO's transparency levels are thus assessed as medium-high.

These collective findings partly confirm H1, that weaker institutional rules, and practices on transparency and the media, but not lobbying, led to weaker climate outcomes at ICAO compared to the IMO. Rules regarding lobbying and financing remain near-identical between both institutions, with neither imposing any formal institutional rules governing corporate lobbying and influence. However, there is a significant variation in transparency and media access in both rules and practices between the institutions. ICAO's deep institutional secrecy and low transparency characterize the entire policymaking process, limiting effective ENGO and media participation. This risks its institutional legitimacy and promotes anti-climate industry influence by creating the idealized operating conditions under which corporate capture thrives, potentially by design. In comparison, at the IMO low media access and transparency occurs only in working groups, with climate governance displaying medium-high transparency levels.

6. Testing H2: corporate access and influence with state delegations

This thesis uses a unique dataset including all 5,974 ICAO and IMO delegates attending environmental meetings since the Paris Agreement. The two-step analysis first examines delegates' represented organizations and then studies industry within state delegations.

6.1. Represented organizations

This thesis finds that industry represents a significantly larger proportion of delegates at ICAO compared to the IMO. At post-Paris ICAO environmental meetings 33.6% of all non-secretariat delegates directly represented industry observer organizations, compared to 14.4% at the IMO. This result initially supports H2, however further analysis is required.

ICAO has less organizational diversity, with 4 industry and 1 ENGO organizations compared to the IMO's 31 industry and 10 ENGO groups and 9 observer organizations compared to the IMO's 80. This difference is primarily due to larger delegates numbers at IMO meetings and ICAO limiting access to lone observer organizations representing entire sectors.

Analyzing the largest observer organizations (See Annex 4), the shipping industry is represented at the IMO by numerous organizations, with no numerically dominant association. Some represent sectoral shipping industries (e.g. INTERTANKO for tankers) while others represent the entire industry (e.g. ICS). In contrast at ICAO, the ICCAIA, representing aerospace industry associations, has more representatives than every other observer organization combined, and a delegation larger than any state, representing 23% of all

environmental meeting delegates. This suggests producers have a strong influence at ICAO.

Table 1: Organizations represented by number of delegates

Type of organization represented	**ICAO**	**No. of organizations**	**IMO**	**No. of organizations**
States	55.7%	24	72.1%	126*
Industry	33.6%	5	14.4%	31
Environmental NGOs	3.8%	1	5.6%	10
Intergovernmental	5.5%	2	2.5%	13
UN-affiliated	0.8%	1	0.4%	7
Labor	0.54%	1	4.0%	11
Other (e.g. religious)	0%	0	1.1%	8
Total observer organizations		9		80
Mean no. of delegates (no. of meetings in brackets)		174 (2)		935 (6)
Total delegates (N)		348		5608

Notes: Delegates exclude secretariat staff. *'States' includes three 'Associate Member States'.

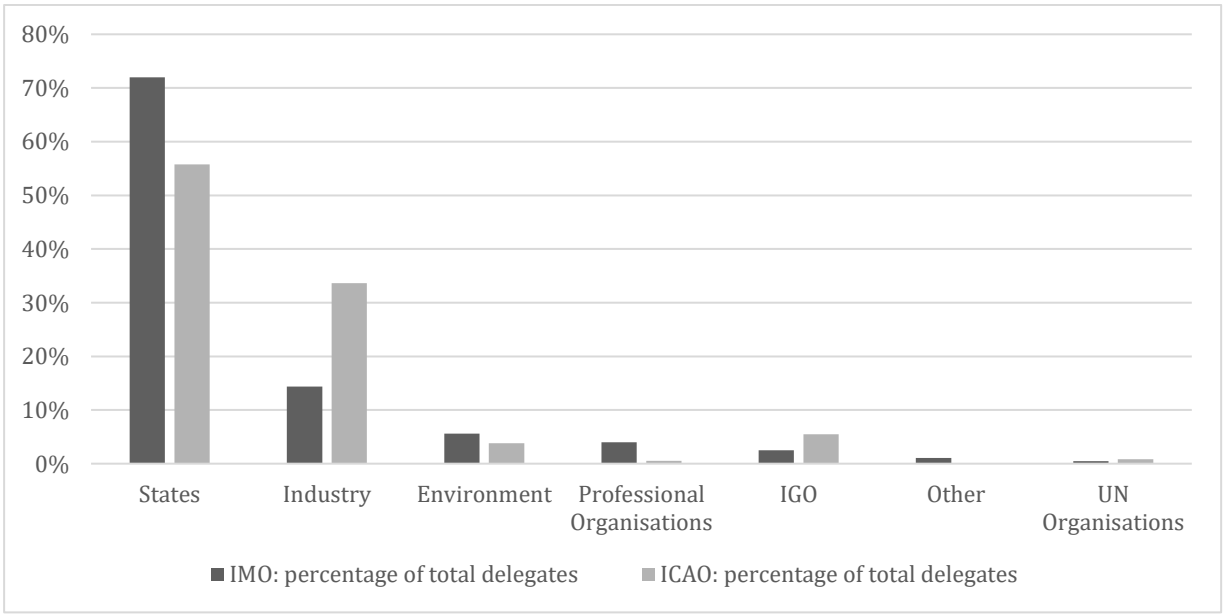

***Figure 2**: Delegate affiliations at post-Paris environmental meetings*

6.2. State delegations

A significant avenue of influence for industry is also through state delegations. State-decision making in IO's is profoundly shaped by states' represented delegates. Studying who represents states provides information on state preferences, effectiveness, and delegate interactions with their governments (Yi-chong & Weller 2018:21–23). At both institutions, states are directly represented by industry. This thesis has analyzed the listed job title of every state delegate at post-Paris environmental meetings. Combining industry delegates in trade associations *and* state delegations provides a comprehensive picture of total industry attendance.

Overall, 23.8% of IMO state delegates are industry representatives. Of these, 685 delegates represent firms or trade associations, 76 represent private open shipping registries, and 198 represent private shipping classification societies. In total, out of 129 states, 52 (40%) included industry representatives in their delegations. In contrast, at ICAO only 2.4% of state delegates represent industry from 3 (13%) out of 24 states. However, this figure is likely an underestimate. ICAO did not disclose the full names and jobs of all CAEP/10 delegates and left many job titles for CAEP/11 delegates blank, making it difficult to identify every industry representative.

Table 2: Total industry delegate representation

	ICAO	**IMO**
% of industry observer organization delegates	33.6%	14.4%
% of state delegates representing industry	2.4%*	23.8%
% of total delegates representing industry	36.0%	38.2%

Notes: *Figure likely to be underestimated due to limited data provision

Combining delegates in industry organizations and state delegations, business represents around a third of ICAO (36%) and IMO (38.2%) delegates, the biggest delegate grouping at

both institutions except states, revealing similarly high industry access to climate meetings.

6.3. Corporations and state delegations

Corporate representation on state delegations and close industry-delegate relationships directly translates into influence at both institutions. Multiple delegates emphasized significant financial, informational, and relational symmetries at both institutions favoring industry (Interview-IMO-1, ICAO-2, ICAO-3, ICAO-4, IMO-5, IMO-6).

At ICAO firms sit in government delegations (e.g. Air France with the French delegation) (Interview-ICAO-2). Regarding access, one delegate stated industry has "better access to ICAO than NGOs" (Interview-ICAO-3), while another conversely viewed access opportunities between ENGOs and industry as similar, but with industry using them more effectively (Interview-ICAO-2). At ICAO, industry has financial and informational dominance over ENGOs and states (Interview-ICAO-2, ICAO-3, ICAO-4). Industry ownership of key data was also identified as a powerful influencing tool (Interview-ICAO-2, ICAO-3), with industry "historically so dominant at ICAO as traditionally it has held all the data" (Interview-ICAO-2). At ICAO, corporate influence primarily occurs at a domestic level and internationally through trade associations rather than from within state delegations (Interview-ICAO-2, Interview-ICAO-3, Interview-ICAO-4).

Every ICAO delegate stated there was strong domestic industry lobbying (Interview-ICAO-2, ICAO-3, ICAO-4), with influence starting nationally (Interview-ICAO-2). For example, Airbus "will always make it clear to France, Germany, and the UK what they think is a good outcome for Airbus" (Interview-ICAO-2). Domestically, business lobbies prime ministers, presidents,

foreign ministries, and transport departments on issues like trade, exports, and jobs and to stress regulatory cost concerns (Interview-ICAO-2, ICAO-3). Industry's low composition in state delegations may, therefore, reflect that the main influence arena for the aviation industry is domestic, not international.

At the IMO, state-corporate relationships are close and institutionalized in states with large shipping interests (Interview-IMO-1, IMO-5, IMO-6, IMO-8). Industry "formally and informally" lobbies state delegations, at domestic and international levels (Interview-IMO-6). For states with high industry representation, it is "difficult to try and untangle the industry's influence just because they are so incorporated into member state delegations" (Interview-IMO-6). Furthermore, trade association positions are "parroted by Panama or other countries" and industry submits policy papers through states (Interview-IMO-6). Similarly, IMO delegates argued that "industry work tirelessly to restrict" information flows required by regulators to understand industry operations to create effective climate regulation (Interview-IMO-1). For example, the industry-designed IMO data collection system excludes cargo carried data which explains real-world shipping efficiency levels (Interview-IMO-1, IMO-6).

Uniquely to the IMO, private flag registries also lead some IMO delegations, weakening their state's climate preferences and directly representing industry interests (Interview-IMO-1, IMO-5). At least 17 countries have assigned their representation and voting rights to private flag registries (Transparency International 2018:14), yet such practices are less prominent post-Paris (Interview-IMO-1).

Moreover, at both agencies transport ministers typically represent governments in delegations rather than environmental or climate ministers (Interview-IMO-1, IMO-5, IMO-6, ICAO-2,

ICAO-3). Transport ministries have close industry ties as their ministerial roles typically involve promoting domestic industries (Interview-IMO-1, ICAO-2). Furthermore, transport ministries typically prioritize economic over environmental interests (Interview-ICAO-2, IMO-6), contributing to weaker climate outcomes (Interview-IMO-1, ICAO-3, IMO-5, IMO-6). Therefore, state delegates at *both* institutions have pro-industry and anti-climate preferences.

Overall this evidence demonstrates that industry has similarly high access and opportunities to influence state delegations at both institutions, providing key information and expertise. This rejects H2; that industry has closer relationships with state delegations at ICAO compared to the IMO. At ICAO, industry primarily influences states domestically or through trade associations. At the IMO, industry influences mostly through state delegations. These differing strategies do not signify varying degrees of influence as corporate access and opportunities to influence states is equally strong in both institutions. Therefore, with this constant, other factors should better explain the aviation industry's greater influence in weakening climate governance for their sector.

7. Testing H3: Markets, industry-state relationships, and lobbying unity

7.1. Markets structures and industry-state relationships

Aviation is a highly concentrated market. The Airbus-Boeing production duopoly accounts for 99% of large jet orders and 90% of global aircraft market value (Sprague 2019). Both companies also have such close relations with the states they produce aircraft in, that it is "difficult if not impossible, to isolate the manufacture of large civil aircraft from the role of the state" (Francis & Pevzner 2006:634). The US government is deeply involved in Boeing's development, while the French, German, Spanish and British governments are closely tied to Airbus. Such states provide extensive research and development funding, purchases, subsidies, and financing to support historic and current business models (Francis & Pevzner 2006:633–640). Furthermore, regional airline markets in these "great power" states are oligopolies or increasingly concentrated. In 2018, in the US, four carriers represented over 80% of flight capacity, while four airlines controlled 40% of EU markets (Frost 2019). The concentration of technical expertise within Boeing and Airbus at ICAO and the complexity of aircraft technology also limits the diffusion of technical knowledge amongst states, granting industry leverage to exploit data asymmetries and influence outcomes (Interview-IMO-7).

Global aviation is characterized by long-standing national-economic protectionism, with three factors closely tying airlines to states. Firstly, states own and operate national airlines, who closely align with state interests (Smith & Ahmad 2018:99). Secondly, global ownership and control restrictions limit foreign airline ownership. These require EU airlines to be >50% owned by member states or nationals and US airlines to be >25% owned by US nationals. Thirdly, air service agreements require domestic airlines that service foreign markets to be nationally owned

and controlled (Trimarchi 2017). Consequently, airlines *and* producers have close relationships with their operating states, increasing industry influence over them.

This close relationship is reflected in ICAO's climate policymaking. In 2016, Airbus amended the EU's negotiating position on aircraft efficiency standards, writing its own environmental rules to apply to its aircraft. Before a CAEP meeting, the EU Transport directorate sent Airbus a draft paper on its CO2 standard position. This was followed by multiple meetings, emails, and exchanges between the Commission and Airbus to determine an acceptable position for Airbus. Before submission, Airbus made final suggestions to change the EU's positioning, lastly responding "Yes, we can live with this" to the EU's final proposal (Murphy 2018). The Airbus-supported standards took a weaker climate position to the US (Cames et al. 2016:8), with the agreed standard failing to promote additional fuel efficiency improvements beyond currently existing technologies (Rutherford 2018). This lobbying highlights the significant power of aviation manufacturers over "great power" states, leading to weaker aviation climate outcomes. Overall, state-aviation domestic relationships are thus highly close.

In contrast, the shipping industry is highly fragmented and heterogeneous (Johnston 2008:43). In 2017 firms from three states (Japan, Korea, and China) controlled 86% of global shipbuilding, yet inter-segment competition meant the overall market was "low to moderately concentrated" (Christian et al. 2018:17–20). Regarding shipowners, growing container sector consolidation means 10 companies now control 90% of some major routes (UNCTAD 2019:46). However, containers represent only 12% of global ships, with large other global segments including dry cargo, passenger, and tankers (InfluenceMap 2017:22). This sharply contrasts with aviation, wherein jetliners alone make 90% of global markets (Sprague 2019).

Moreover, unlike aviation, shipping ownership and registration is not closely tied to states or single countries. In 2019, Greece (10.2%), Japan (10.1%) and the US (9.7%) were the largest global shipowners, while Panama (16.9%), Marshall Islands (12.4%) and Liberia (12.3%) had the most ships registered to their flag (UNCTAD 2020). Ownership, segments, and ship types are also highly diverse (Interview-IMO-6). Only around 300 airline companies operate globally (IATA 2020a) compared to thousands of ship-owners ranging from global container firms to domestic ferry operators to one-owner vessels (Johnston 2008:43). Moreover, unlike aviation's modern, similar global fleet, maritime assets are diverse with varied efficiency levels and technologies (Johnston 2008:43). The less complicated technical nature of shipping technology and greater market fragmentation also ensures knowledge and technical expertise is more diffusely spread amongst states and the secretariat compared to at ICAO (Interview-IMO-7).

Maritime assets are also "incredibly mobile", shifting between markets through the flexible global flag registry system wherein asset locations are quickly moved from registration to registration (Interview-IMO-7). Contrastingly, aviation assets are higher cost, less mobile, and tied to states, with the market more sensitive to changing regulatory costs (Interview-IMO-7). Overall, state-shipping domestic relationships are of medium closeness.

7.2. Decarbonization solutions

Global aviation and shipping markets also have starkly different decarbonization solutions. Shipping is one of the world's most carbon-efficient transport forms per kilometer traveled, with aviation one of the least. Bows-Larkin (2015) found a huge divide in climate mitigation potential between both sectors. Shipping has numerous technological and operational options to cut emissions in the short, medium, and long-term. However, aviation offers limited

technological short and medium-term decarbonization solutions, with GHG emissions unlikely to reduce or stabilize without significant demand reduction (Bows-Larkin 2015:691–697).

Aviation is forecast to be "predominantly fossil-fuel-dependent for the foreseeable future" (Lyle 2018:107). Zero-emissions or low-carbon flight remains impossible without commercial large electric planes. However, this remains technologically and economically infeasible for many decades, with commercial low-carbon planes currently nonexistent (CCC 2019:169–170). Additionally, significant issues remain surrounding biofuels, including their land-use impacts, and commercial availability, making them unlikely to contribute to decarbonization in-scale before 2040 (Lyle 2018:108). Forecasted fuel efficiency improvements and technical and operational measures to reduce emissions also remain limited compared to maritime transport (Romera 2016:216). Overall, aviation's decarbonization solutions are thus rated low.

Shipping, in contrast, has zero-carbon fuel sources available for short to medium-term use such as ammonia and numerous technological and operational solutions including slow-steaming and efficiency measures (European Environment Agency 2017:39–41). Electrified and low-carbon ships also operate in leading states, with Norway's entire ferry fleet expected to be all-electric or hybrid by 2023 (Hockenos 2018), with many other available near-term solutions for rapid emission reductions. Shipping's decarbonization solutions are therefore high.

Decarbonizing aviation involves far greater technical challenges and costs compared to shipping. Therefore, as the aviation industry will bear higher compliance costs compared to shipping and has few viable near-term decarbonization solutions beyond growth-impacting demand reduction measures, they will be structurally less willing to support climate action.

7.3. Business unity on climate change

At ICAO, corporations have unified climate positions, reconciling their views through "lowest-common-denominator" decision-making (Interview-ICAO-2, ICAO-3). While trade associations represent different segments (e.g. airports and manufacturers), the "big four" are strongly aligned, closely coordinating their positions (Interview-ICAO-2). Inter-sector aviation economic dependencies, client relationships, and contractual clauses promote this unity.

Airlines and airports have mutually dependent client relationships that promote close regulatory alignment (Interview-ICAO-2). British public-facing airports previously supported higher climate policy. However, airlines, who bear direct regulatory costs, warned airports that climate policy would lower demand, leading airports to align with their anti-climate positioning as they economically depend on airlines for their operations (Interview-ICAO-2).

Moreover, airlines impose contract clauses with manufacturers that stop them from campaigning for climate policies that curtail aircraft's operational lives (Interview-ICAO-2). These clauses prevent manufacturers from forcing airlines to "retire planes early" and buy new, efficient models through stricter regulatory standards (Interview-ICAO-2). Thus, airlines and airports, manufacturers, *and* airline positions are united. Manufacturers are contractually locked-in by airlines to not lobby for ambitious climate outcomes while strong economic linkages incentivize airports to take anti-climate positions alongside airlines. This original model is illustrated in Figure 3 below.

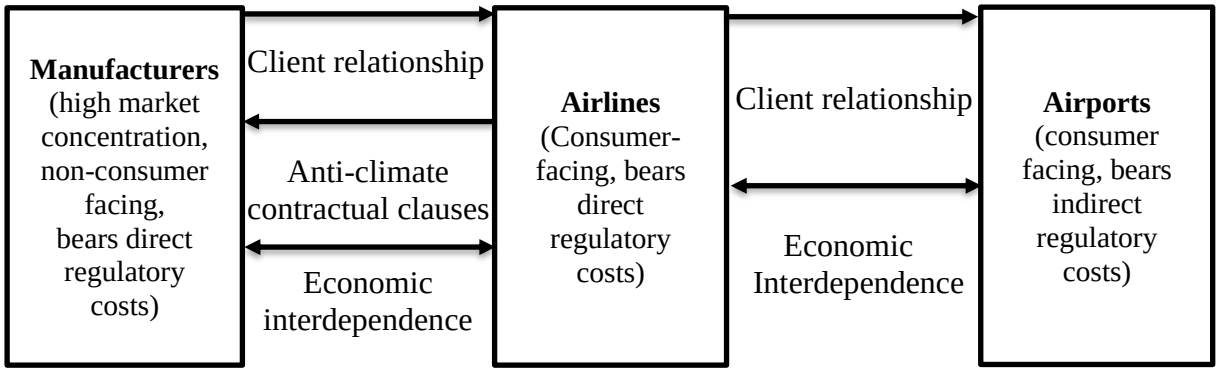

Figure 3*: Explaining aviation's high inter-sector anti-climate position alignment*

Consequently, a duopoly in global aviation production, high market concentration in "great power" airline markets, close manufacturer and airline relationships with states, and strong economic and contractual inter-sector dependencies create high unity *against* climate action from the aviation industry.

In contrast, for shipping, there are no evidenced contractual clauses between producers and manufacturers preventing actors from lobbying for climate action. Market power throughout the sector is also more dispersed than in aviation and not tied to great power states. Consequently, industry is less unified in their climate positions and lobbying and has fewer close ties to states compared to ICAO. Competitive markets are less conducive to unified lobbying campaigns compared to oligopolies in which firms have greater political influence.

At the IMO, corporations are mostly united yet with notable variations in positions (Interview-IMO-1, IMO-5, IMO-6, IMO-8). Industry interests and positions are shaped by their operating segment, with variance in between shipping segments (Interview-IMO-5, IMO-6, IMO-8). This is because some segments, like containers, present greater immediate decarbonization opportunities than others, like bulk carriers (Interview-IMO-6). Limited economic interdependencies between ship types (e.g. containers and cruise liners) and the differential

effects of climate regulation on varied operating ships promote conflict both *between sectors*, between different ship types, and *within sectors*, between leaders and laggards.

Industry sectors represent a spectrum of progressive to regressive climate actors depending on the issue (Interview-IMO-5). Additionally, while major trade associations "rarely contradict each other" (Interview-IMO-1), many industry actors have recently broken ranks to lobby for more ambitious climate policies through their state delegations (Interview-IMO-1, IMO-5), something with no evidence found in ICAO.

Varied domestic shipping industry preferences also shape state policymaking positions (Interview IMO-1, IMO-5, IMO-8). For example, at post-Paris MEPC meetings, Greece brought an average of 14 delegates, with 47% from industry. Greece is the largest global shipowner (UNCTAD 2019:29), operating old fleets primarily engaged in the tramp trade (Interview-IMO-5). Consequently, the Greek delegation, influenced by industry, supported slow-steaming speed-restriction climate measures that would not negatively affect their fleet, and may instead lower their operating costs (Interview-IMO-1, IMO-5).

Denmark, in contrast, brought an average of 26 delegates to MEPC meetings, with 55% representing industry. This includes 11% representing Maersk, Denmark's largest domestic company, and the world's largest container shipping firm (Milne 2019), operating a modern, efficient container fleet. Maersk's close ties with the Danish delegation led Denmark to oppose slow-steaming speed-restriction measures in recent negotiations, which could lower Maersk's competitive advantage (Interview-IMO-5). Instead, Denmark supported a goal-based measure that Maersk would need to do "almost nothing" to meet (Interview-IMO-1). Thus, due to

divergent corporate interests, IMO corporate unity is best characterized as medium, and against climate action.

These collective findings strongly confirm H3; that higher corporate unity at ICAO led to greater influence over climate policy. It demonstrates the immense structural power of the aviation industry over states on climate change. Globally, the aviation industry is bound closely with states, with privileged access to governments and airlines owned primarily by state-nationals or by states themselves. Additionally, the global production duopoly of Boeing and Airbus maintain significant influence over the great power states they operate in, with Airbus directly shaping EU's aviation climate policy. As aviation globally has limited technological options to decarbonize in the short and medium-term, the regulatory costs of decarbonization will be relatively high, and likely impact economic growth. Therefore, aviation has leveraged its significant structural power over states to weaken global climate governance outcomes, often without needing to exercise instrumental power.

8. Testing H4: Industry discourses and norms

8.1 Industry discourses

At ICAO, businesses construct three "basic red lines" in climate policymaking (Interview-ICAO-2). Firstly, industry supports a "level-playing field" requiring equal global climate legislation in every state and rejecting national and regional climate responses (Interview-ICAO-2, ICAO-4). Secondly, during negotiations industry emphasizes technological feasibility, rejecting standards beyond currently existing technology (Interview-ICAO-2). Yet in external communications, they contradictorily perpetuate technological discourse "myths". These promote unviable and soon-abandoned "low-carbon" aviation technologies to legitimate aviation's growing emissions including using algae and animal fats as aviation fuel (Peeters et al. 2016). Lastly, industry stresses that cost increases will reduce demand and harm global economies (Interview-ICAO-2).

Similarly, IMO industry discourse opposes all national and regional shipping regulations (InfluenceMap 2017:26–31) and generally supports maintaining the status quo on climate regulation (Interview-IMO-1, IMO-6). Business messaging argues that regulations will increase shipping costs, reducing global trade for states, and weaken their economies (Interview-IMO-1, IMO-6). They also reject technical standards beyond available technologies (Interview-IMO) and push low-ambition, market-driven measures in their discourses. For example, to counter EU threats of unilateral regulation, shipping industry groups in 2019 collectively proposed introducing a $2/ton bunker fuel tax to finance decarbonization. Yet this measure would generate low revenues, not reduce GHG emissions, and may stall more ambitious progress (Psaraftis & Kontovas 2020:167–168).

8.2. Norms and "technical" policymaking

Industry at both institutions also strategically construct climate policymaking as a "technical" issue in their discourse to gain influence. Both institutions were historically designed as technical standard-setting agencies, with institutional structures ill-equipped for climate governance (Interview-IMO-1, IMO-5, ICAO-3, ICAO-4). By constructing climate policymaking as a technical question, like in other standard-setting arenas, it legitimizes industry participation and restricts acceptable debate parameters to only include currently available technology (Interview-ICAO-2). For example, ICAO trade association ATAG recently stated regarding climate policymaking that "One could argue that these discussions are able to proceed more quickly, as they can be more technical in nature, rather than a political show" (Farand 2019).

In the IMO this technical construction is particularly powerful. The IMO's historic identity as a technical standard-setting agency entrenches industry as "natural participants" in policymaking alongside industry delegates within an IMO "family" (Hendriksen 2020:231, 252–253). During policymaking, industry participation is institutionalized and governed by informal rules, norms, and beliefs collectively held by delegates. These norms stipulate that IMO deliberations should produce technically correct and "non-political" practical regulation. This includes a normative expectation that industry can *only* legitimately contribute constructively to "technical", not "political" discussions (Hendriksen 2020:247–251).

These norms and rules broke down during key 2018 IMO climate strategy discussions, which "severely limited" industry influence (Hendriksen 2020:212–222). Many states incorporated

former UNFCCC negotiators into their delegations who represented different negotiating norms to the IMO, politicizing discussions (Interview-IMO-7). This brought a "political" edge to climate negotiations, which "ripped apart some of the foundations of industry influence" (Hendriksen 2020:213–216) as industry was not recognized as "legitimate" participants. This delegitimized and weakening industry's role by rejecting norms that promoted industry participation only in "technical" discussions". Thus, evolving IMO norms weakened industry influence over "political" climate policymaking at a crucial moment.

Collectively this evidence does not confirm H5. Industry climate discourses and norms promoting industry participation in "technical policymaking" at both institutions appear similar. However, during key 2018 IMO climate strategy discussions, newly introduced norms "politicized" negotiations, excluding industry as "legitimate" participants, weakening their influence. Yet this does not decisively demonstrate that new norms significantly reduced business influence, leading to a stronger climate strategy. During previous less "politicized" climate negotiations with full, "legitimate" industry participation, little evidence suggests industry had high influence. As such, evolving norms remain only a small contributing factor.

9. Testing H5: ENGO influence

In post-Paris environment IMO meetings, ENGOs represent 5.6% of all attending delegates (averaging 935 attendees) and include 10 organizations compared to 3.8% of ICAO delegates (averaging 183 attendees) represented by a single organization (see Table 1 and Annex 4). The higher percentage, numbers, and diversity of organizational representation suggests ENGOs have greater influence in IMO climate governance. At both institutions, ENGO delegates are also outnumbered by industry, creating an imbalanced arena privileging business interests.

ENGOs at both institutions use similar influencing strategies. They provide information and expertise to the secretariat and states to support ambitious climate policy to counter-balance industry efforts to promote weaker policy (Interview-IMO-1, ICAO-2, ICAO-3, ICAO-4, IMO-5, IMO-6, IMO-8) and provide information on climate science and science-based policymaking (Interview-ICAO-2, IMO-5, IMO-6). Additionally, ENGOs publish research and counter-analysis to criticize industry proposals (Interview-IMO-1, ICAO-2). ENGOs also inform the public about climate negotiations (Interview-ICAO-3, IMO-5) and generate public pressure to increase climate action through media campaigns and generate public pressure to increase climate ambitions through media campaigns (Interview-IMO-1, ICAO-2, ICAO-3, IMO-5, IMO-6). Lastly, ENGOs use their independence from states to criticize unambitious state climate proposals during negotiations, a role states cannot play due to political etiquette and fears of retribution (Interview-IMO-6, ICAO-2).

Yet, while ENGOs at both institutions use similar strategies, ENGO influence at the IMO is higher. At the IMO, states included ENGO slow-steaming proposals in state consultation submissions (Interview-IMO-1) and as a potential measure in climate strategy negotiations (Psaraftis & Zachariadis 2019:363–364). ENGOs were also crucial in getting small island developing flag states to switch positions from opposition to support for climate action. ENGOs brought Pacific Island states, especially the Marshall Islands with the world's second-largest shipping registry, into climate debates (Interview-IMO-1, IMO-5, IMO-6). They also acted as "fire alarms" by alerting Pacific Island governments to their private registry representatives obstructing climate negotiations in counter to national government's preferences for high climate ambition (Interview-IMO-6). Pacific Island states then self-organized into the High Ambition Coalition, a crucial bloc during negotiations, bringing government delegates, rather than registry representatives, into negotiations (Interview-IMO-1). However, ENGOs were

unsuccessful in attempts to promote a shipping climate strategy in line with Paris Agreement targets (Interview-IMO-1, IMO-5).

Contrastingly, at ICAO there is limited evidence for ENGO influence over the climate strategy (Interview-ICAO-2, ICAO-3, ICAO-4). ENGOs successfully pushed to remove the lowest efficiency stringency standards from consideration during emissions standards negotiations (Interview-ICAO-2). Yet overall, "there are no big winners yet" (Interview-ICAO-2). ENGO influence is severely weakened by non-disclosure agreements (Interview-ICAO-4), secretariat hostility to ENGO participation (Interview-ICAO-4), and a "big anti-NGO feeling" among developing countries (Interview-ICAO-4). ENGOs are also excluded from key ICAO Council meetings, unlike industry (Interview-ICAO-3).

Overall, this evidence confirms H5. ENGO's medium influence over climate governance at the IMO strengthened climate outcomes, counter-balancing business power. In contrast, low aviation ENGO influence did not limit corporate power or strengthen ICAO's climate plan. Yet limited ENGO influence did not decisively contribute to ICAO's weaker strategy. The inclusion of influential ENGO interests at ICAO is unlikely to counterbalance the substantial structural and instrumental power the aviation industry bears over states.

10. Testing H6: Corporate influence over climate outcomes

To test industry influence over climate policymaking outcomes this thesis traces the influence of key trade associations, IATA at ICAO and ICS at the IMO, over sector climate strategies. They are both widely recognized as the primary, transnational trade associations at their respective UN agencies and positioned by the UN as industry's main business voices, appearing alongside senior secretariat figures at climate events.

10.1. IATA and ICAO

The International Air Transport Association (IATA) is aviation's primary trade association, representing 83% of total air traffic. Headquartered next to ICAO in Montreal and traditionally its main stakeholder, ICAO relies on IATA's input to craft legislation (Hayer 2016:34). IATA has consistently opposed regional and state-based climate measures, consisting opposing aviation's inclusion in the EU emissions trading scheme (Ahmad 2016:192–193) and supporting a single top-down regime only (Lyle 2018:126).

IATA is "more than a trade association", with "semi-official" standing and influence far beyond lobbying during negotiations (Interview-ICAO-2). IATA has direct contract through their airlines with ICAO Council ministers and CAEP member-states (Interview-ICAO-2), with states routinely providing secret Council papers to IATA for input (Interview-ICAO-4).

IATA has a strong agenda-setting influence, driving "the whole program in ICAO on climate change" (Interview-ICAO-4). In 2008, IATA was the first to announce support for "carbon-neutral" aviation growth targets from 2020. Within two years, ICAO mirrored this carbon-neutral goal, adopting it as its own (Interview-ICAO-2), directly following industry

recommendations. Additionally, IATA supported developing a global CORSIA-like market-based-mechanism before ICAO decided to follow such proposals (Cames et al. 2016:8). “It took the industry to set a goal before ICAO was able to” (Interview-ICAO-2).

Tracing IATA’s recent influence over the CORSIA baseline date demonstrates their power. During the COVID-19 crisis, IATA first proposed changing the CORSIA baseline year, from the average emissions of 2019-20, to solely 2019, in a March 2020 position paper, after a sharp pandemic-driven decline in air travel. IATA argued that low 2020 aviation emissions put an “inappropriate economic burden” on the sector by increasing offsetting requirements (IATA 2020b). IATA also spoke to a senior secretariat official in April 2020 to lobby for the baseline change (GreenAir Online 2020).

Yet a higher 2019-only baseline significantly reduces industry’s regulatory compliance costs. Lower post-COVID-19 aviation emissions growth means that offsetting is not required until emissions increased above previous 2019 records. Consequently, this baseline change would de-facto delay CORSIA’s introduction. Passenger demand is not expected to reach 2019 levels for 3-5 more years, leaving 50-200 million tons of emissions no longer required to be offset under CORSIA (Timperly 2020).

IATA was the primary lobbyist pushing to weaken the CORSIA baseline (Interview-ICAO-3, ICAO-4) while “the recovery taskforce is based on an IATA paper” (Interview-ICAO-4). Finally, in July 2020, after the US and EU changed their position to align with IATA, ICAO’s Council agreed to support IATA’s proposal. This postpones the CORSIA scheme’s implementation date, saving airlines an estimated $15 billion in carbon offsetting costs (Farand 2020). ICAO’s press office praised the decision as “great news for the environment” (Farand

2020) and justified the delay using IATA's exact phrasing to "avoid inappropriate economic burden" for the industry (ICAO 2020). Ultimately, IATA first proposed the measure, successfully lobbied for its introduction and the final rule was near-identical to IATA's proposals. This demonstrates high industry influence over ICAO's climate strategy.

10.2. ICS and the IMO

The IMO's largest trade association is the International Chamber of Shipping (ICS), representing over 80% of the global merchant fleet. ICS is the industry's main stakeholder, appearing alongside the secretariat at major climate events. It opposes regional and national climate policies and brought more delegates to recent MEPC meetings than 85% of states (InfluenceMap 2017:3). In post-Paris policy submissions, ICS has opposed introducing GHG emissions regulations until 2023, supporting only a non-binding GHG emissions reduction target (InfluenceMap 2017:14).

For ICS, like IATA, agreeing on a common climate position amongst member associations leads to "lowest-common-denominator" policymaking (Interview-IMO-1). Led by ICS (InfluenceMap 2017:14), industry "lobbied hard" for a 2008 baseline (the historical global peak of shipping GHG emissions) during climate negotiations, which was "given to industry" to generate consensus to agree on an absolute emission reduction target (Interview-IMO-6).

Yet during key climate negotiations, ICS and industry played no role in debates over applying the principle of common but differentiated responsibilities (CBDR) to global shipping, which proved the "single major obstacle" to increased climate action (Psaraftis & Zachariadis 2019:448). IMO negotiations were hard, protracted, and divisive, with an agreement bridging

wide differences between major maritime states, developing and small island states (Doelle & Chircop 2019:271).

The IMO's weakened final strategy resulted from intergovernmental state negotiations creating lowest-common-denominator decision-making, with compromises included to achieve consensus, not because of corporate capture (Psaraftis & Kontovas 2020:166–167). Moreover, no major compromises found in the IMO's climate strategy weakening its outcome can be directly attributed to ICS or industry (Psaraftis & Kontovas 2020:165–166). Instead, ICS influence was "severely limited" during key 2018 climate negotiations as states excluded industry from "politicized" discussions, delegitimizing their role (Hendriksen 2020:212–222). Thus, industry influence at the IMO is medium.

In conclusion, this analysis confirms H6, that business had more influence over climate outcomes at ICAO than the IMO. At the IMO, tracing the influence if ICS in weakening the IMO's climate strategy is not possible, unlike IATA's successful attempts to weaken CORSIA's baseline for aviation.

11. Conclusion

This thesis is the first scholarly work to investigate corporate power over the global climate governance of aviation and shipping. The results (summarized below) find that industry played a crucial role in weakening aviation's climate strategy compared to shipping, partly explaining their variation in stringency.

These findings suggest that the aviation industry's structural power is the key contributing factor for the high negative influence of business over ICAO's climate governance. Globally, states and the aviation industry are bound closely together. "National" airlines remain state-owned or tied to state-nationals, granting them privileged access to policymakers, and the Boeing-Airbus production duopoly maintains high influence over the great power states they operate in (the US and the EU). Through this dominant structural position, industry also employs significant instrumental power over states, with evidence Airbus shaped the EU's climate position at ICAO, weakening global regulations for its own production lines.

Furthermore, aviation is highly unified in its anti-climate positions. This stems from economically dependent client relationships between aviation segments and airline-imposed contractual clauses that prevent manufacturers from campaigning for ambitious climate policies. Moreover, the inexistence of viable near-term technologies to decarbonize aviation incentivizes industry to oppose climate action, with aviation growth models incompatible with Paris-compliant GHG emission reductions. Lastly, ICAO's extreme institutional secrecy, by design, creates perfect conditions for corporate capture as industry lobbies states unchecked.

Table 3: Results Summary

Hypothesis	**Causal mechanism**	**ICAO**	**IMO**
H1	Regulations on corporate lobbying	No regulations	No regulations
H1	Climate governance transparency	Low	Medium-high
H2	% of environmental meeting delegates representing industry	36%	38.2%
H2	Industry access	High	High
H3	Market concentration	Medium-high	Low-medium
H3	Decarbonization opportunities	Low	High
H3	Closeness of states to economic sectors	High	Medium
H3	Corporate unity levels	High	Medium
H4	Corporate discourses	Opposing regional-national policies, technical policymaking, economic/cost concerns, technological feasibility, level-playing field	Opposing regional-national policies, technical policymaking economic/cost concerns, technological feasibility, maintaining the status quo
H5	ENGO influence	Low	Medium
H6	Corporate influence over climate outcomes	High	Medium

In comparison, IMO's industry has less influence over its climate governance, and less structural power. Shipping is a globally fragmented, heterogeneous, and less concentrated sector with more distant relationships with states. Moreover, the shipping industry has numerous viable, near-term, and relatively low-cost decarbonization solutions that are compatible with shipping growth models. This incentivizes some shipping segments to

support limited climate policies in which the differential effects of legislation benefit their operations which reduces lobbying unity and sector-wide influence over climate outcomes. Moreover, greater ENGO influence and higher transparency levels weakens shipping industry power. Lastly, newly established norms during key IMO climate negotiations against industry participation further reduced business influence in climate governance.

This thesis also finds that neither institution regulates corporate lobbying and that industry similarly represents around a third of all delegates during environmental meetings at ICAO (38.2%) and the IMO (36%). This similar access translates into high influence at ICAO due to industry's structural and instrumental power. Industry at ICAO successfully lobbied in change CORSIA's baseline date, weakening aviation's primary climate policy. This de-facto delays CORSIA's introduction by two to three years, saving the industry billions in offsetting payments. In comparison, during key 2018 IMO climate negotiations the shipping industry was sidelined, with no evidence that its influence weakened shipping's key climate outcomes.

11.1 Theoretical and broader implications

This thesis contributes to a broad literature analyzing NGO influence in global environmental politics (Betsill & Corell 2007; Falkner 2008) and underlines the importance of analyzing the highly political role of business in global governance (Fuchs & Lederer 2007; Young 2012; Ruggie 2018). Theoretically, this study provides a systematic, comprehensive framework to study business power in global governance. Applied to two original case studies, it illuminates broader concerns around business power weakening global environmental governance outcomes and the limited regulations managing industry-state relations at IOs. It shows that while state power is preponderant in global governance, business remains a pivotal, highly

influential actor. Yet corporate influence over outcomes is not structurally pre-determined, with influence dependent on decision-making contexts, partly explaining the variance in global climate strategies for aviation and shipping.

This thesis also provides original theoretical insights into conditions that promote industry influence in global governance. It adds empirical weight to claims that ENGOs are a significant counter-balance to industry interests (Bernhagen 2008; Falkner 2008). ENGO's at the IMO were crucial in removing the private registry officials previously leading Pacific Island state delegations, weakening industry's influence over climate governance. It also re-emphasizes the importance of transparency in reducing undue corporate influence (Transparency International 2018), with ICAO's institutional secrecy appearing to increase industry power. A future research agenda could build on this work, mapping the conditions for business influence in global governance and outlining policies to fairly manage corporate engagement in IOs.

Finally, this thesis emphasizes the severe challenges facing the global climate governance for aviation. ICAO's conflicting mandate to both promote aviation growth and GHG emissions reductions appears irreconcilable, with aviation fossil-fuel dependent for decades to come. The aviation industry's extraordinary structural power and the high regulatory costs likely incurred reduce sector-wide emissions means business will likely remain vehemently opposed to Paris-compliant climate policy. Yet spiraling aviation emissions under the current regime threatens to blow the world's carbon budget.

Looking back to Paris Agreement negotiations, the world did not listen to coal companies to dictate what was possible. Perhaps now is the time to look beyond the aviation industry to decide the future of flight, or else risk flying a dangerous course towards climate breakdown.

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Appendix

Annex 1: Climate strategies

Table 4: ICAO and IMO climate strategies

	ICAO	**IMO**
Percentage contribution to global GHG emissions of the sector	2.5% (Larsson et al. 2019:1)	3.1% (IMO 2015:1)
Governance levels and approach	Global, top-down	Global, top-down
GHG emission reduction target	None. Post-2020 growth in international flight emissions will be "carbon neutral" through offsetting measures.	50% reduction in GHG emissions by 2050. A minimum 40% reduction in carbon intensity by 2030 and pursuing efforts towards a 70% reduction by 2050 from 2008
Energy Efficiency Targets	A 4% reduction in fuel consumption for new aircraft from 2028 compared to a 2015 baseline (ICCT 2017:1)	A 20% reduction in carbon intensity by 2020 (Comer & Rutherford 2018:4), and a 15-50% reduction in carbon intensity by 2022/2025 (Comer & Rutherford 2019)
Are climate measures aligned with a 2°C target as set out in the Paris Agreement?	No. Aviation is projected to exceed its proportional share of a 2°C budget before 2035 (ICSA 2018:4)	No. Alignment with a 2°C target requires GHG emission reductions of 70-100% by 2050 (CSC 2018)
Assessment of overall ambition	Low	Medium

Annex 2: Interview questions

Introductory question

- What factors best explain the outcomes of the ICAO's/IMO's currently agreed climate strategy?

ENGOs

- How have ICAO/IMO regulations on access, financing, lobbying, and transparency affected environmental NGO influence during climate change negotiations?
- What strategies or tactics do environmental NGOs use to influence climate policy outcomes at the ICAO/IMO? To what extent have they been influential?
- How would you characterize the relationship between environmental NGOs and state delegations? Are they close or distant relationships?
- Do environmental NGOs provide information and expertise that states readily use?
- Are there specific examples of environmental NGO influence over the ICAO/IMO's climate strategy?
- Are environmental NGO interests united at the ICAO/IMO? Do they take the same position or is there variation?
- What other key roles do environmental NGOs play at the ICAO/IMO?

Corporations

- How have ICAO/IMO regulations on access, financing, lobbying, and transparency affected corporate influence during climate change negotiations?
- What strategies or tactics do corporations use to influence climate policy outcomes at the ICAO/IMO? To what extent have they been influential?

- Do corporations influence state delegations at a national or international level or both?
- How would you characterize the relationship between corporations and state delegations? Are they close or distant relationships and to what extent?
- Do corporations provide information and expertise that states readily use?
- Are there any specific examples of industry influence over the ICAO/IMO's climate strategy?
- Are corporate interests united at the ICAO/IMO? Do they take the same position or is there variation?
- What other key roles do corporations play at the IMO?

Final questions

- How have IMO regulations regarding the media affected the outcomes of climate negotiations?
- How do environmental NGOs at the IMO influence the corporate influence over climate outcomes? Is there a relationship between the two?
- Do you have any extra information or insights you would like to talk about regarding corporate or NGO influence at the IMO?

Annex 3: Interview list

Table 5: Interviewed delegates

Number	**Delegate organization**	**Coding reference**	**Date of Interview**
1	IMO	IMO-1	21/05/2020
2	ICAO	ICAO-2	01/06/2020
3	ICAO	ICAO-3	03/06/2020
4	ICAO	ICAO-4	03/06/2020
5	IMO	IMO-5	05/06/2020
6	IMO	IMO-6	08/06/2020
7	IMO	IMO-7	10/06/2020
8	IMO	IMO-8	17/06/2020

Annex 4: Largest observer delegations

Table 6: Largest average observer delegations

Top ten observer organizations at ICAO	**Average no. of delegates**	**Top ten observer organizations at the IMO**	**Average no. of delegates**
International Coordinating Council of Aerospace Industries Associations (ICCAIA) *(Industry)*	42	Clean Shipping Coalition *(Environment)*	26
European Union *(IGO)*	9	International Association of Classification Societies *(Industry)*	19
International Coalition for Sustainable Aviation *(Environment)*	7	International Chamber of Shipping (ICS) *(Industry)*	18
International Business Aviation Council *(Industry)*	7	European Commission *(IGO)*	12
International Air Transport Association (*Industry)*	7	Cruise Lines International Association (CLIA) *(Industry)*	11
Airports Council International *(Industry)*	6	The Institute of Marine Engineering, Science and Technology *(Professional)*	9
United Nations Framework Convention on Climate Change *(IGO)*	2	Oil Companies International Marine Forum *(Industry)*	8
Arab Civil Aviation Organization *(IGO)*	1	International Association of Independent Tanker Owners (INTERTANKO) *(Industry)*	8
International Federation of Airline Pilots' Associations *(Professional)*	1	Pacific Environment *(Environment)*	8

None	N/A	International Transport Workers' Federation (ITF) *(Professional)*	7
Total average ICAO observation organizations delegates	81	*Total average IMO observation organizations delegates*	262

Note: The observer organization's represented grouping is in brackets

Thesis Report

Central European University

Corporate Capture of the UN: A comparative study of corporate lobbying on international aviation and shipping climate change policy

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Contents

Executive Abstract

This report investigates corporate influence on international climate policy for aviation and shipping. Despite collectively being responsible for over 5% of world GHG emissions, both aviation and shipping have eluded effective climate change legislation in line with the goals of the 2015 Paris

Agreement. This paper analyses global climate legislation for aviation and shipping, placing them within the context of the global governance of climate change, and corporate influence within wider UN and global governance arenas. Utilizing corporate capture theories, this paper presents a structured comparison research design contrasting corporate influence at the UN agencies for shipping and aviation. It suggests that corporate representation in state delegations, the inexistence of rules governing corporate influence and limited transparency measures provide the key structural gateways for corporations to capture global climate legislation.

Introduction

Since the 1997 Kyoto Protocol, the UN International Maritime Organization (IMO) and International Civil Aviation Organization (ICAO) have been mandated with authoritative roles to regulate climate change measures for the global shipping and aviation industries (Bows-Larkin 2015:689–90). Shipping, alongside aviation, was excluded from the Paris Agreement (UNFCCC 2015), claiming the accord would cut across the ICAO's and IMO's remit (Vogler 2018:17). Consequently, global climate governance for their respective sectors post-Paris is centred around the ICAO and IMO, entrusted with the power to enforce global climate action for shipping and aviation.

Aviation is the most climate-intensive form of transport, responsible for around 2.5% of global GHG emissions (Larsson et al. 2019:1), with emissions estimated to increase by as much as 700% by 2050 (Wilkes 2019), primarily due to aviation industry expansion rapidly outpacing technological innovation to reduce emissions (Ahmad 2016:16). In 2018 passenger demand grew 6.1% while efficiency gains increased by only 1.5% (IATA 2018). Combined with its non-CO2 impacts, aviation is responsible for 4.9% of man-made global warming (Lee et al. 2009:3520). Aviation's greenhouse gas emissions are swiftly expanding, primarily due to aviation industry expansion rapidly outpacing technological innovation to reduce emissions.

Between 2007-2012 shipping was responsible for 3.1% of annual global greenhouse gas (GHG) emissions (IMO 2015:1). Shipping's emissions are estimated to increase by 20-120% between 2012 and 2050 without climate regulation (CE Delft 2017:4), increasing an average of 1.2% per year from 2013 to 2015 (Olmer et al. 2017:iv). Unlike aviation, numerous technological solutions including improving efficiency, slow steaming and the use of alternative fuels suggest stronger near-term opportunities for ambitious decarbonization (European Environment Agency 2017:39–41).

Collectively, without substantive climate regulation, aviation and shipping could represent nearly 40% of global GHG emissions by 2050 (Hayer 2016:8). As the emissions of aviation and shipping are truly global, occurring in domestic and international airspace/waters across or in-between multiple state jurisdictions (Ahmad 2016:5) (InfluenceMap 2017a:8) both sectors require global regulation to effectively enforce emissions reduction measures. However, both the ICAO and IMO have failed to introduce effective global climate legislation in line with Paris Agreement goals, potentially threatening its overall success.

Furthermore, unlike the Paris Agreement, both the ICAO CORISA agreement and the IMO climate strategy do not contain legally binding elements, suggesting weak enforcement mechanisms and a greater likelihood of failure. In 2016 the CORSIA agreement was finalized for aviation, requiring that aircraft operators offset, but not reduce, any growth in aviation emissions beyond 2020 levels, with the agreement remaining voluntary until 2027 (Timperley 2019). In 2018, the IMO reached a shipping climate deal, agreeing to emissions reductions targets of at least 50% by 2050 compared to 2008 levels (Saul & Chestney 2018). Neither climate strategy comes close to proportionally contributing a fair share of emissions reduction in line with Paris Agreement goals, with the ICAO's response proving particularly inadequate.

The failure of both bodies to introduce effective global climate action has been linked to the corporate capture of both agencies by industry. Other academic studies have previously analyzed corporate

lobbying and capture at the UN and other international organizations, including the UNFCCC. This study will expand this agenda, applying such theories in the first comparative analysis of how and why corporate lobbying at the ICAO and IMO has influenced global climate legislation for shipping and aviation.

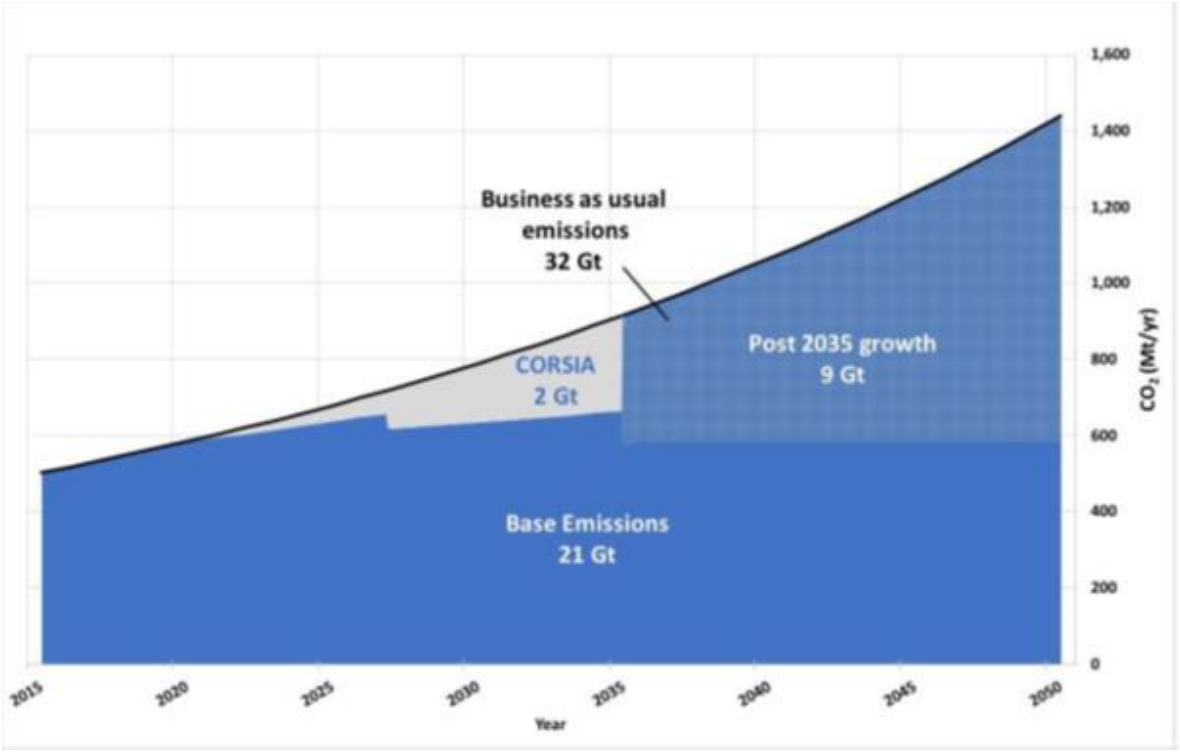
The Climate Strategy of the ICAO and IMO

In 2016 the ICAO agreed its primary climate change policy, the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA), a market-based mechanism seeking to make growth in international flight emissions post-2020 "carbon neutral" (ICAO 2019). Airlines can purchase offsets to compensate for emissions increases or use lower-carbon fuels to comply with the regulation (Timperley 2019). CORSIA remains voluntary until 2027, is currently operating until 2035 and does not require absolute GHG emissions reductions (Timperley 2019).

Within CORSIA aviation's GHG emissions can increase in the short, medium and long-term, with CORSIA projected to cover only 6% of CO2 emissions accumulated to 2050 (see Figure 1) (Hemmings 2018). Analysts suggest that CORSIA "will not deliver any major emissions reductions" (Larsson et al. 2019:10) and that aviation will exceed its proportional share of a 2°C carbon budget before 2035 (ICSA 2018:4).

CORSIA does not provide strong economic incentives to reduce aviation emissions (Vandenbergh & Metzger 2018:91), with low carbon prices and limited global coverage unlikely to change airline behaviour until the mid-2030s (King 2016). Furthermore, multiple challenges remain for lower-carbon aviation fuels, which play a key role in CORSIA, including high costs and low production rates (Ahmad 2016:155–156). By 2050, only an estimated 2.5% of the total aviation fuel used will likely derive from alternative sources (AEF 2017), suggesting limited emissions reduction potential.

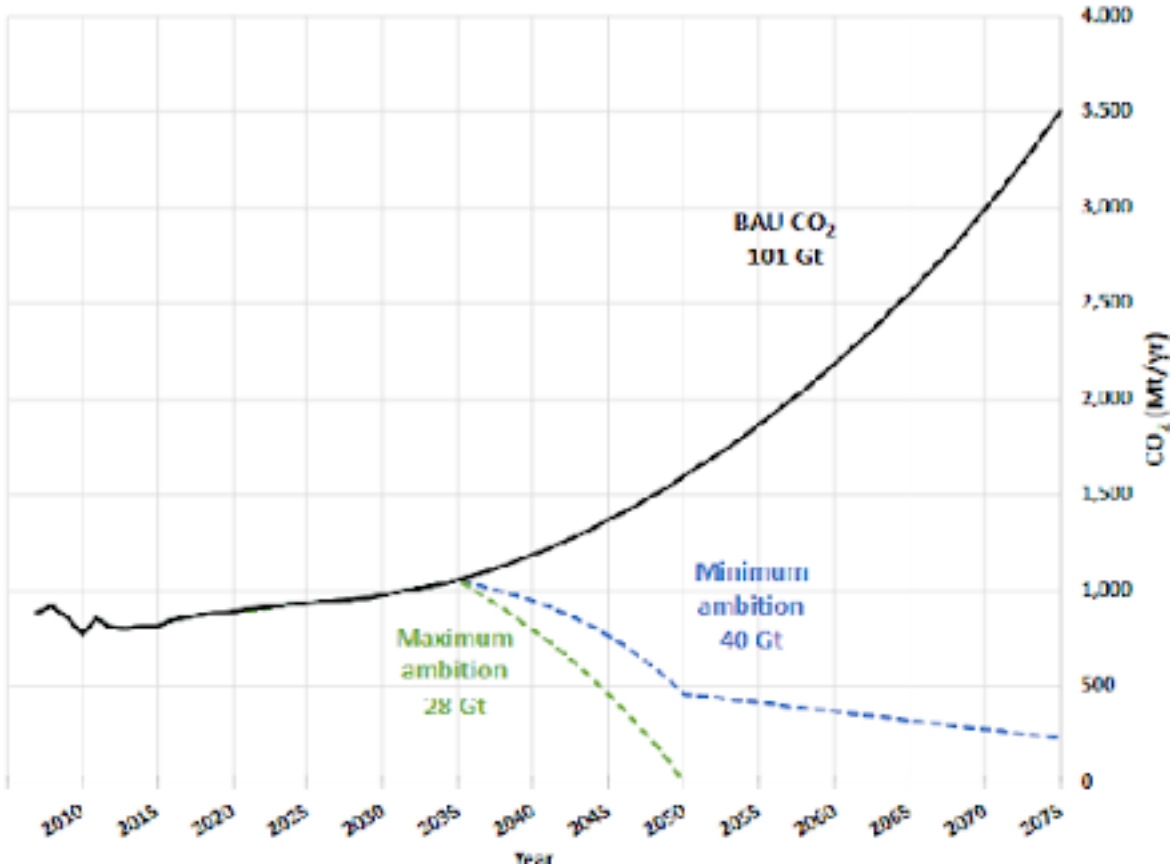
Figure 1: Cumulative CO2 emissions from international aviation and emissions covered by CORSIA until 2050 (ICSA 2018)



In 2018 the IMO adopted an initial shipping climate change strategy to reduce total GHG emissions from international shipping by 50% by 2050 and to pursue efforts to phase them out entirely (IMO 2018). The non-binding deal will be accompanied by future binding short, mid and long-term policy measures (Rutherford & Comer 2018:3–4) and includes ambitions to reduce the carbon intensity of shipping by at least 40% by 2030 and 70% by 2050, compared to a 2008 baseline (IMO 2018).

As a non-binding political declaration, rather than a binding international law instrument, the strategy's impact depends on policy measures taken to implement the strategy rather than its aspirational targets (Doelle & Chircop 2018:11–12). During negotiations, the IMO agreed to make the targets both non-binding and low in ambition compared to a fair share contribution to a 2°C global warming target for shipping (11-12), which would proportionally require 70-100% emissions reductions by 2050 (Clean Shipping Coalition 2018). This is despite studies stating that shipping can technically fully decarbonize by 2035 (International Transport Forum 2018). Consequently, while the IMO's reduction measures are more ambitious than the ICAO's, a 50% GHG emissions reduction target is unaligned with Paris Agreement goals of keeping global warming to well below 2°C and to limit the increase to 1.5°C (Green 2018), Furthermore, the strategy currently lacks concrete policies to meet future emissions targets.

Figure 2: Cumulative CO2 emissions from international shipping under IMO's GHG strategy (minimum (blue) and maximum (green) ambition vs business as usual (black)) (Rutherford & Comer 2018:3)



In 2016 the ICAO also finalized a CO2 efficiency standard for new aircraft, the world's first global design certification standard governing CO2 emissions for any sector (ICAO 2017). However, the standard fails to mandate additional fuel efficiency improvements beyond already implemented technologies (Rutherford 2018). Consequently, new efficiency standards will be too weak to significantly impact aviation's future emissions (Hemmings 2016).

In 2011 the IMO passed the Energy Efficiency Design Index (EEDI), the first-ever mandatory global energy efficiency measure for an entire industrial sector (Rutherford 2014). The multi-stage EEDI mandated efficiency average reductions of new-build ships originally of 10% by 2015, 20% by 2020 and 30% by 2025 compared to ships built between a 2000-2010 baseline (IMO 2019). Multiple studies have however criticized the effectiveness of the EEDI, suggesting that current EEDI targets have only a limited effect on long-term GHG emission reductions (Smith et al. 2016:38–40) and improving shipping's energy efficiency (Faber & Hoen 2017:3). In 2019, the IMO also strengthened EEDI standards, bringing forward 2025 standards to 2022 for five ship types, while changing the reduction required for container ships to a sliding scale dependent on ship size from 15-50% carbon intensity reductions (Rutherford & Comer 2019).

A comparative summary of the ICAO and IMO climate measures are listed in the table below.

Table 1: Comparison of the primary IMO and ICAO climate measures

	International Civil Aviation Authority	**International Maritime Organization**
GHG emission reduction target	None. CORSIA aims to make post-2020 growth in international flight emissions "carbon neutral" through offsetting measures (ICAO 2019)	50% reduction in overall GHG emissions by 2050. At least a 40% reduction in carbon intensity by 2030 and pursuing efforts towards a 70% reduction by 2050 compared to 2008 levels (Rutherford & Comer 2018:2)
Are the GHG measures binding?	No. The measure is voluntary for all states until 2027 (Timperley 2019)	No. The strategy is not binding but future policy measures would be (Rutherford & Comer 2018:3–4)
Energy Efficiency Targets	The CO2 standard on average requires a 4% reduction in cruise fuel consumption. It applies to new aircraft designs from 2020 and aircraft in production from 2023 (ICAO 2017).	The Energy Efficiency Design Index (EEDI) has multiple mandated efficiency reduction phases for new-build ships. A 20% reduction in carbon intensity by 2020 (Rutherford & Comer 2018:4), and a 15-50% reduction in carbon intensity by 2022/2025 (dependent on ship type) (Rutherford & Comer 2019).
Are the energy efficiency measures binding?	Yes (ICAO 2017)	Yes (Comer & Rutherford 2018:1)
Are climate measures aligned with a 2°C target as set out in the Paris Agreement?	No. Aviation is projected to exceed its proportional share of a 2°C budget before 2035 under current policies (ICSA 2018:4)	No. Alignment with a 2°C target requires GHG emission reductions of 70-100% by 2050 (Clean Shipping Coalition 2018)

Literature review

To situate this study in wider academic and non-academic literature, an extensive research review has been conducted. Firstly, the literature on the UN Global Compact and Multi-Stakeholder Partnerships has been analyzed, highlighting the evolving role of corporate-UN relations, and the risks a closer relationship may bring. Secondly, wider literature on corporate lobbying and influence at international organizations and in global governance has been highlighted. This includes theories of international lobbying, corporate power in global governance and a specialized focus on corporate influence on global climate policymaking. Thirdly, an analysis of corporate capture theories has been conducted, highlighting competing definitions and their application and utility in analyzing climate governance. Lastly, the wider literature on corporate lobbying at the ICAO and IMO has been investigated, contrasting the key avenues of business influence at both UN agencies and its effect on climate legislation.

Corporations, the Global Compact and Multi-Stakeholder Partnerships

Increasingly, the literature on international organizations has expanded its traditional focus on state-actors to recognize the growing importance of private corporations in global governance. Much of this analysis focuses on private sector participation in UN-endorsed multi-stakeholder partnerships, including the UN Global Compact.

The Global Compact, a "public-private" multi-stakeholder partnership between the UN, corporations, governments, labour and NGO's, is the world's largest corporate citizenship initiative. The Compact consists of ten principles of good business practices, aiming to promote responsible corporate citizenship (Deva 2006:115–116). It reflects UN attempts to expand its global reach beyond states to non-state actors (109), filling the void between regulatory regimes and voluntary codes of industry conduct (115-116). It moves the UN's focus from interstate negotiations towards a more inclusive, multi-actor approach incorporating businesses alongside state-actors (Rasche et al. 2013:12). This has shifted UN-business relations from a confrontational/reactive relationship, attempting to regulate business conduct, towards a collaborative/proactive one emphasizing partnerships and firm's positive contributions (Deva 2006:12).

Deva criticizes the Compact for being vague, failing to engage all participants and lacking effective enforcement mechanisms and regulatory instruments (Deva 2006:150). Other critics suggest it may weaken the prospects of effective global regulations, sustain corporate impunity and encourage "blue-washing", a process wherein corporations use UN collaborations to align themselves publicly with Global Compact principlescre while failing to follow them in reality (Ruggie 2018:317). Ruggie also argues that growing voluntary global corporate responsibility measures are an insufficient response to increasing negative environmental externalities generated by corporations in the face of limited global legally binding rules (317).

The Global Compact has also been criticized as a "protective umbrella" for lofty corporate pronouncements without evidencing real impacts (Sethi & Schepers 2014:194). Limited transparency and accountability, inadequate funding and a failure to require companies to provide accurate and meaningful information on their activities, meant the Compact's aspirational proclamations failed to translate into meaningful actions (198-199). However, other studies have found Compact led to improved corporate environmental policies for participants (Bernhagen & Mitchell 2010:1185), suggesting some impact.

Martens (Martens 2007) argues that since the 1990s private companies have been actively integrated into the UN process, partly through multi-stakeholder partnerships (4). Multi-stakeholder partnerships provide benefits for corporations including new market opportunities, positive public relations and closer links to governments while creating risks of growing corporate influence in political discourse and policymaking, and reputational risks when partners contravene UN norms (4). Additionally, they

risk fragmenting global governance and distorting competition as corporations gain public relations and regulatory advantages by being closer to governments (5-6). To ensure future partnerships represent the public interest, Martens recommends introducing a new UN-wide institutional framework for private-sector relations including minimum standards for interaction, basic principles and systematic impact evaluations (57-62).

Zammit (Zammit 2003) argues that close relations with business risks subverting the UN's public purpose. As corporations are provided with mechanisms to promote their policy interests directly in the UN (the rule-setter), it adopts corporate agendas without debate or democratic processes (8). Limited rules regarding partnerships and the absence or weakness of structures, staff skills and experience regarding UN-private sector relations risks corporate capture as the "regulated" and "regulator" become too close (227). This risks the UN's place at the heart of a multilateral system, embodying embryonic global governance structures and guarding global public goods (8).

Corporate Lobbying, International Organizations and Global Governance

Durkee (Durkee 2018) argues that laws governing international lobbying, unlike domestic arenas, are a patchwork of idiosyncratic "consultation" rules, varying by the institution, with frameworks driven by historical accident rather than principled design (1746-1747). Corporate involvement as "consultants" or "observers" is a norm across UN institutions, wherein corporations and trade associations are granted access to UN bodies to lobby officials. Existing legal regimes both "under- and overregulate international lobbying activities" and unnecessarily expose officials and lawmakers to capture (1747).

Businesses provide invaluable input to UN activities. This includes providing expertise when developing technical standards, facilitating politically neutral solutions, funding projects, acting as vital stakeholders (1750) and enhancing the transparency and credibility of regimes by disseminating information to their members (1772). However, fears of undue corporate influence, capture and subverting regulatory processes are justified when profit-seeking motives conflict with public regulatory agendas (1750). Yet no consistent regulatory response to corporate lobbying currently exists across international institutions, inside or outside the UN (1750).

Durkee argues businesses use UN access rules to influence international organizations both overtly and covertly. Overtly, if business groups operate collectively as non-profits, have reported aims consistent with the UN agency they are in consultation with they are typically granted accreditation as "consultant" groups without extensive screening (1767-1768). Covertly, businesses use "astroturf activism", obscuring lobbying behind front groups to access international lawmakers and sponsor or form close relationships with public-interest groups, suggesting influence or capture of such organizations (1769-1770). However, Durkee also suggests that consultative rights sometimes provide minimal lawmaking influence, only granting corporations three formal rights; a right to information, to make written and oral comments and to lobby informally in UN facilities (1771). Yet, such formal rights do not sufficiently allow organizations to participate in international governance, with limited lawmaker interaction, and the rights to access being the main benefit granted. Instead, influence takes place primarily at a domestic or transnational level before negotiations (1772).

Ruggie (Ruggie 2018) argues that corporations in global governance exert power through three means (321). Firstly, businesses use instrumental power through political campaign contributions, lobbying and litigation (321). Corporations possess both vast financial and knowledge asymmetries with states and other groups, leading to state reliance on corporations when crafting regulations (322). Secondly, businesses employ structural power, creating favourable outcomes without exercising instrumental power (323). Intrinsic sources of structural power for corporations include that while states are territorially fixed entities competing for investment, businesses have mobility (323). Additionally, the rise of tax havens and the growth of intra-firm trading taking placing solely within multinational corporations allow multinationals to augment their structural power (324-325). Lastly, corporations

influence outcomes through discursive power; promoting ideas, setting social norms, expectations and shaping identities through the subtle exercise of persuasion and emulation (325). This is evidenced through the rise of the neoliberalism narrative, displacing prevailing ideas, norms and identities by normatively privileging markets, market actors, deregulation, privatization and outsourcing and funded by the vast growth of US-based conservative, free-market think-tanks (325).

Bartley (Bartley 2018) argues that corporations play three divergent roles in global governance; as a supporter, inhibitor and provider (146). Corporations actively support some international regimes (e.g. the World Trade Organization) yet inhibit global governance's expansion in other arenas (e.g. lobbying to weaken the Minamata Convention on heavy metals regulation) and provide global governance in others (e.g. rating agencies in global finance) (151-157). Bartley suggests there is no unified transnational capitalist ideology, with corporations instead operating along a spectrum encompassing or rejecting these three roles, often simultaneously (e.g. by providing global governance while working to inhibit stringent inter-governmental standards) (146-147). While corporations are important, privileged players in global governance, they lack full control, both succeeding and failing to shape organizations, and accepting significant compromises (159).

Regarding climate change, Bartley argues US corporations in the 1990s mobilized to inhibit a strong inter-governmental response, fragmenting climate regimes by successfully lobbying against U.S. Kyoto Protocol participation (153). However, from the late 1990s, corporate positions diverged, with some major firms supporting carbon markets while others actively opposed any climate regulation (153-154). Corporate mobilization affects both the viability and approaches of global governance. Yet, sectoral and national divisions split the corporate community, leading to a mixture of opposition, strategic support and acquiescence to climate governance's expansion (154).

Generally, corporate lobbying has been a key obstructive force in delaying or limiting effective climate change legislation worldwide. Since the Paris Agreement, the five largest oil and gas companies alone are estimated to have spent $200 million lobbying to "control, delay or block" climate legislation globally (InfluenceMap 2019a:2). For example, the U.S. Clean Power Plan was aggressively opposed by many corporate actors through lobbying and lawsuits to delay and reject the legislation (Berardo & Holm 2018:1154). InfluenceMap also argues that corporate lobbying and influence on climate policy and discourse can have a greater global impact than a business's physical greenhouse gas emissions (InfluenceMap 2017c). By obstructing or facilitating climate policy, the 'carbon policy footprint' of corporations can determine the emissions reduction trajectory for all business, not just their own (6-7).

Defining Corporate Capture

The major role both the aviation and shipping industry plays in crafting, monitoring and implementing climate regulations suggests capture in both agencies. This paper will use Mitnick's definition of capture for its research while utilizing the implicit theories behind other competing definitions in its wider analysis. It will focus upon *climate policymaking capture* from *regulated corporate groups* over *international organizations.*

Mitnick, summarizing the literature, generates a definition of capture as when a "regulated industry is able to control decisions made about their industry by regulators and/or performances by regulators related to industry" (Mitnick 2015:3). Three defining elements of "capture "are identified; essentiality and/or generality of the benefit, stability or persistence of benefit provision and the public provision of defensive measures or actions that entrench the benefits against actual or potential challenges (4). Capture requires a relationship "beyond political influence to form a stable relationship with industry that consistently shapes agency decisions" (25-26). The relative succinctness and its focus on the regulator/regulated relationship of Mitnick's definition makes it most applicable to this study.

Multiple other similar but competing definitions of capture exist. Stigler first defined capture as "the potential use of public resources and powers to improve the economic status of economic groups"

(Stigler 1971:3). However, this definition ignores the regulator/regulated relationship crucial to capture. Wedel (Wedel 2014) describes capture as the "illicit and non-transparent manipulation of state power to benefit private interests". However, the term "illicit" suggests illegality, crucially overlooking the legal, but potentially illegitimate, relationships that typically characterize capture (OECD 2017:19).

Hellman et al. (Hellman et al. 2000) define state capture as "the extent to which firms make illicit and non-transparent private payments to public officials… to influence the formation of laws, rules, regulations or decrees by state institutions". This definition too narrowly focuses upon private-public payment transfers to define capture while ignoring other key processes. The OECD defines capture as when "public decisions over laws, regulations or policies are consistently or repeatedly directed away from the public interest" towards narrow interest groups deliberately (OECD 2017:19). This correctly emphasizes information manipulation and close ties between groups as creating capture. Finally, FOE Europe define capture as when "special interest groups… gain privileged access to policy-making processes, which gives them disproportionate influence, behind closed doors" (FOEEurope 2019). The focus on "privileged access" and "disproportionate influence" accurately distills capture theory's essence. However, while "behind closed doors" correctly highlights the importance of opaqueness in encouraging capture, limited transparency isn't necessarily a required condition for capture.

Corporate Capture Processes

Originating in economics, Stigler first developed capture theory, defining it as "the potential use of public resources and powers to improve the economic status of economic groups" (Stigler 1971:3). Stigler argued regulation is a product like any other market services and does not always serve public interests. Regulation can be "purchased" from the governmental marketplace by firms, who capture regulatory processes to serve their private interests by generating political advantages (3-5). However, critics argued Stigler exaggerated the strong control of business over regulation, failing to acknowledge corporations strong opposition to regulation, did not effectively distinguish between legislators and bureaucrats, providing limited empirical evidence and oversimplified the relationship (Carrigan & Coglianese 2016:292–294).

The OECD finds that proximity to decision-makers is valuable for corporate capture (OECD 2017:14) and that policy-making transparency negatively correlates with the level of perceived undue influence (17). Capture occurs in the "grey area" between due and undue influence in policy-making, involving illegitimate, but not necessarily illegal, actions in long-term stable relationships (19). To define when legitimate advocacy becomes capture, three primary criteria should be studied: the role of *illegitimate (undue) influence* involving *not transparent actions* in *exclusive political systems and institutions* (19-21).

OECD divides corporate capture processes into direct and indirect influence. Through direct influence, capture occurs through three means; creating a sense of reciprocity (e.g. illegal payments, favours, providing research and threatening decision-makers), building on existing personal ties (e.g. family, networks, politicians as board members, revolving doors) and building on strategic communication (e.g. meetings and conferences). Indirect processes of influence include building on strategic communications (press releases, media comments, press conferences, public consultations) and expertise (publishing analytical reports and research, participating in advisory groups, using think-tanks, providing manipulated information and expertise) (37-38).

The OECD highlights several risk factors faciltating policy capture (39-40). Firstly, unchecked discretion for small numbers of autonomous public officials to decide policymaking provides easier access for undue influence. Secondly, more technical complex legislation typically relies on external help and has limited public interest and control. Thirdly, capture thrives on opaque decision-making where secrecy and limited accountability allows special interest groups to influence policymaking.

For organizational capacity to exert undue influence, the OECD stresses five factors (40-41). Firstly, for elites to mobilize financial resources to influence policymaking. Secondly, recurrent benefits require a stable influence network to generate long-term gains for actors. Thirdly, concentrated rents and inequality makes capture easier to organise. Fourthly, stable policy networks allow for long-term repeated interactions, establish reciprocity networks and encourage information manipulation in public decision-making processes. Lastly, the expectation that favours are expected encourages capture as officials feel pressure to grant reciprocal favours.

ALTER-NET identifies ten key conditions for corporate capture. These include regulatory outcomes in favour of industry, privileged industry access to decision-making and regulation in the long-term, formal and informal communication channels between industry and policy-makers, conflicts of interest (including revolving door cases) and policy issues not being in the public eye (technically complex with low public awareness/salience). Further conditions are limited transparency between contacts, framing the policy debate through industry interests, a strong industry lobby, the undermining of public trust in democratic decision-makers. industry power over decision-makers (ALTER-EU 2018:12–14).

Corporate Accountability International (CAI 2017) argues that corporations exercise "undue influence" at the UNFCCC, leveraging their economic power to secure seats at negotiations and obstruct climate action (3-4). Trade associations granted UNFCCC observer status spend hundreds of millions of dollars to obstruct climate policy, primarily at a national and regional level (7-8) and sit on UNFCCC advisory boards (10-11). Furthermore, former trade association heads and current board members are state negotiators (17) and businesses sponsor UNFCCC events (20) and hold side-events during negotiations (30). CAI argues that the fundamental conflict of interest between the profit motive of polluting industries and the UNFCCC's emissions reduction objectives should be addressed through regulation. However, CAI fails to elucidate a detailed theoretical mechanism explaining the corporate capture process and instead selectively highlights potential means of corporate influence without systematically mapping strategies.

Corporate Influence at the ICAO and IMO

Industry influence on the ICAO and IMO climate legislation has been vocally criticized, with many accusing the ICAO of being captured by their respective sectors. Additionally, neither ICAO or the IMO currently has rules governing conflict of interest, subjects corporate representatives to codes of conduct and states can appoint industry actors to directly represent them as delegates (The Economist 2018). Consequently, state delegations are often crowded with industry representations, providing the industry with a key, unregulated avenue of influence on global climate legislation.

At the ICAO, industry views often act as a bottom line, with regulators requesting private sector feedback to shape legislation due to their major role in implementing climate regulations (Hayer 2016:33–34). IATA (representing 83% of total air traffic), the main industry trade association and traditionally ICAO's main stakeholder, is headquartered directly next to ICAO, with the ICAO heavily reliant on IATA's input to craft climate legislation (Hayer 2016:34). IATA itself appears to oppose all regional aviation climate regulation, opposes an aviation carbon tax and strongly supports CORSIA as aviation's primary emissions policy (InfluenceMap 2019b).

Corporate representatives at the ICAO also attend climate negotiations as official members of state delegations. For example, at a February 2019 CAEP environmental committee meeting, 32% of attendees were aviation industry officials, while only 2% came from environmental NGOs (McIntosh 2019). In practice, the ICAO does not even invite NGO's representing wide-scale civil society, with virtually all NGOs attending representing the aviation industry (Ahmad 2016:266). Furthermore, environmental organizations have been vocally critical of the "almost complete lack of transparency in ICAO" on climate change, with all ICAO documents remaining secret (Timperley 2019).

Limited transparency at the ICAO may also influence the extent of regulatory influence. While in principle the ICAO's general rules promote public participation, they have not been applied to meetings or documents relating to aviation's climate impact, including CORSIA (Carbon Market Watch 2017:2). Additionally, ICAO's environmental meetings documents are kept a secret, with the ICAO requiring all attendees of environmental sub-committees to sign non-disclosure agreements (Carbon Market Watch 2017:2). Experts are also banned from widely discussing climate-issues involved with colleagues or to generate outside interest (Hayer 2016:36) and post-meeting summaries are not publicly available and are instead sold for hundreds of dollars (McIntosh 2019).

Such actions make policymaking opaque, shielding discussions from public scrutiny, punishing those who release information and creating a cost to accessing information (Hemmings 2018). In contrast, at the UNFCCC any NGO can acquire approval to attend meetings, with all meeting information and submitted documents publicly available through a website and NGO's only excluded from negotiations at the end of meeting sessions (Hayer 2016:36). However, at the ICAO exclusion occurs much earlier, providing environmental NGOs with less opportunity to influence the process (Hayer 2016:36).

Transparency is a fundamental principle of good governance, yet the ICAO remains one of the UN's most opaque international agencies. Neither submitted consultation documents or meeting summaries are publicly available, and attendees of certain environmental committee meetings are required to sign non-disclosure agreements (Carbon Market Watch 2017:2). Additionally, the media is currently excluded from ICAO committee meetings and are thus unable to accurately report on climate negotiations. This is in stark contrast to the UN IMO, wherein consultation documents are publicly released and the media and NGO's can attend all environmental meetings (Transparency International 2018a:19).

Critics have similarly argued that IMO policymaking is dominated by corporate interests, including through industry representation in state delegations, who aggressively lobby against ambitious climate legislation (InfluenceMap 2017b:3). Key strategies engaged by industry and NGOs to influence policy include submitting official consultation documents, speaking during discussions, lobbying states during breaks and participating in committees, working groups and drafting groups (Hayer 2016:19).

InfluenceMap (2017) argues that the shipping industry has captured the IMO's climate policymaking structures through two primary strategies. Firstly, trade associations have collectively lobbied to delay GHG emission reduction measures and reject binding emissions targets for the shipping industry (3). The International Chamber of Shipping (ICS) has a particularly pervasive influence, appearing next to the IMO at official UNFCCC events, bringing more delegates to recent IMO environmental meetings than 85% of states and "leading efforts" to oppose climate action (3). Secondly, corporations have prominent direct representation in state delegations, with 31% of countries participating in the most recent IMO environmental committee meeting represented in part by businesses (12). This provides a crucial avenue of influence for corporations to shape state positions during climate negotiations.

Transparency International argues that the shipping industry has a "pervasive" influence over the IMO' policymaking process, and can access and submit documents, observe and speak at meetings at every IMO decision-making level (Transparency International 2018b:3). While other interest groups are granted equal privileges, industry representatives outnumbered civil society organization representatives by almost five to one at recent meetings (3). Transparency International also argues a small group of member states at the IMO exert undue influence thanks to structural financing and policymaking weaknesses favouring states with the most ships registered under their flags (Transparency International 2018b:14–15).

In a brief summary, Smith and Ahmad (Smith & Ahmad 2018) argue that the ICAO and IMO are similar "in the extent to which they face regulatory capture by industry actors" (99). While states maintain exclusive decision-making responsibility, industry, and increasing NGOs, have a strong

influence (99). While airlines are not individually represented in ICAO, IATA's participation ensures that more than 260-member airlines are vocally represented. Furthermore, states are mindful of aviation flag carrier interests, with many global airlines state-owned (99). The aviation industry also strongly advocated for carbon-offsetting measures over other market-based measures (99). Similarly, at the IMO the shipping industry until the Paris Agreement had prevailed in delaying climate policies on market-based measures or carbon taxes (100).

Overall, industry actors in both agencies have been consistently "reluctant" to accept structural energy cost changes accounting for the external costs of their pollution (101). The short, descriptive analysis however fails to critically detail complex capture processes, corporate motivations behind capture or highlight institutional measures that encourage capture. Significantly, they also note that the "extent of regulatory capture and its effect on the success of regulation has not been extensively examined" (100). Acknowledging this knowledge gap, this thesis will move this agenda forward, examining in detail the extent and influence of regulatory capture on climate legislation at both UN agencies.

Research Design

Research Question

The thesis will analyze the role of corporations at international organizations in obstructing effective global climate action and suggest why corporations may be relatively more influential in some international organizations. This research question will also study whether the institutional design of ICAO and the IMO affects the relative influence of corporate lobbyists compared to other international organizations, and what the consequences of such influence are. The guiding research question is therefore: *How and why has the corporate capture of the UN agencies for aviation and shipping weakened international climate legislation?*

Research Hypotheses

Utilizing the above theories and analysis of current literature, four primary hypotheses have been created to be used as the foundation for a structured comparison. These hypotheses will structurally guide the thesis,

Hypothesis 1: Corporate actors have actively obstructed ambitious climate legislation at both the ICAO and IMO.

Hypothesis 2: Corporate actors at both the ICAO and IMO have primarily influenced climate legislation through state delegations, consultative processes and environmental meetings.

Hypothesis 3: Corporate lobbyists use similar tactics to obstruct climate legislation at both the ICAO and IMO. This includes opposing all non-global regulation, lobbying for both aviation and shipping to remain outside the Paris Agreement and UNFCCC's jurisdiction, lobbying against ambitious climate measures and opposing measures to limit growth including global taxes.

Hypothesis 4: The relative lack of rules governing corporate influence in the UN has allowed corporations to capture policymaking procedures and have undue influence over climate legislation.

Case Study Selection

Case study selection for small sample sizes should select studies non-randomly and locate cases within a wider population of possible cases, identifying their likely representativeness (Gerring 2008:645–646). To ensure that cases are placed in a wider context, I will contrast corporate lobbying regulations and conflict of interest policies at the ICAO and IMO with other UN bodies (the UNFCCC, WHO and FAO) and compare the global climate legislative regime of the UNFCCC with aviation and shipping. Both agencies have been deliberated selected for comparison due to several distinct similarities.

Firstly, they govern the two primary global sectors excluded from the Paris Agreement. Secondly, they effectively govern all major climate regulation over two truly global transport sectors (with regional or national-level regulation mostly limited or non-existent), having been granted near-exclusive jurisdiction in their remits. In practice, both organizations view themselves the appropriate body to deal with global environmental protection in their industries and have continued their roles as regulators since the Paris Agreement (Smith & Ahmad 2018:76). Thirdly, they have both failed to enact climate legislation in line with Paris Agreement goals. Fourthly, they are both UN agencies with strong regulatory power to govern their global transport sectors, a power which is inexistent on climate change for other global industrial sectors. Lastly, both have been criticized regarding the level of corporate influence over climate legislation.

Research methodology

Utilizing this literature, a capture process guiding the thesis has been articulated below, developed from the capture methodology provided by Oxfam (Oxfam 2018). This guiding outline methodology will structure the final thesis, logically tying theoretical frameworks together.

Guiding Questions	Methodology
What is being captured and when?	International climate policymaking at ICAO and the IMO since the Paris Agreement.
Is the case study valid?	Yes. Evidence strongly suggests both agencies face problems of transparency, poor governance and numerous reports have suggested both face corporate capture. Additionally, data and information are publicly available from both agencies to study.
Who benefits? Who loses? Why capture?	The aviation and shipping industry benefits from lower taxes, fewer regulations and no industry growth restrictions. Global climate action loses as emissions from both industries continue increasing.
Why does the capture take place in this context?	Limited transparency, highly technical policymaking, low public salience and knowledge, poor governance, historical ties between industry and policymakers, oligopoly in aircraft production (aviation), no rules governing conflict of interest etc.
How does capture take place?	Lobbying, revolving doors, corporate representatives in state delegations, information asymmetries, agenda-setting, industry consultation papers.
What are the effects of the capture?	Weakening, delay and obstruction of international climate legislation.
What lessons have been learnt?	Limited transparency, poor governance and no rules governing private-sector engagement in the UN encourage corporate capture.

Research Design Limitations

However, such a study will encounter some limitations. Firstly, business is not a single unified lobbying force on climate change. Corporate climate change lobbying instead typically occurs across a spectrum, with actors positioning ranging from opposition to support. International corporate mobilization on climate global governance is split by sectoral and national divisions, leading to positions ranging from opposition to acquiescence (Bartley 2018:154). Moreover, this spectrum is often imbalanced financially to favour fossil-fuel interests. For example, in the US from 2000–2016, fossil-fuel dependent industries spent ten times as much on lobbying as environmental organizations and the renewable energy industry combined (Brulle 2018:289).

To overcome this issue, this study will focus on two primary aviation and shipping trade associations. Both are large global trade associations representing over 80% of their global industry, are the primary corporate influencers in their respective UN agencies with the greatest representation and are positioned by the UN as industry's main business voices. At the ICAO, the International Air Transport Association (IATA) is the world's largest aviation trade association, representing 82% of total air traffic (IATA 2019). At the IMO, the International Chamber of Shipping represents companies that operate over 80% of the world's merchant tonnage (ICS 2019). Both IATA and ICS often appear directly alongside their respective UN agencies at climate change events, indicating both a close relationship between organizations and the dominance of a single unified global trade association. To analyze their positioning, I will study their public communications (including press releases, CEO statements, website content, consultation documents) and analyze the number of representatives they bring to major environmental meetings.

Ideally, a comparative study would utilize extensive quantitative data sources. However, while the IMO comprehensively releases public consultation documents and environmental meeting delegate

lists, the ICAO fails to provide such information. This deliberate opaqueness, keeping private both delegate lists for most environmental meetings or any consultation documents (including information on actor's submissions) makes a complex direct quantitative comparison difficult to achieve. However, both the ICAO and IMO release public delegates lists to their primary environmental meetings. Through analyzing such lists, breaking down the percentage of corporate attendees in state delegations and trade associations, hard evidence demonstrating their potential influence can be deduced. Power and network maps can also be created highlighting their complex potential avenues of influence.

Tangible insight can also be found into corporate influence on climate legislation by focusing on observable lobbying strategies. This data is derived from the wider literature, by analyzing corporate communications, activities and the formal (and informal) rules governing corporate-UN relations at each body can be found into how corporate actors attempt to influence climate legislation. Such analysis primarily measures potential, not actual influence, wherein corporations are highly likely to have influenced policy. Measuring actual influence however involves demonstrating complex cause-and-effect relationships that may prove impossible to substantiate, but measuring potential influence still provides tangible evidence of corporate capture.

Structured, Focused Comparison

A structured, focused comparison case study design will be utilized to examine corporate influence at the ICAO and IMO. A systematic analysis of several directly comparable factors between the lobbying tactics of corporations within both organizations will be conducted. This will generate semi-standardized data to facilitate systematic cross-case comparison (George & Bennett 2005:67), framing the comparison within generalizable theories (Slater & Ziblatt 2013:1304). Using this information, specific comparable variables could be determined to analyze corporate lobbying strategies and operationalized through standardized questions to guide the study (Kachuyevski 2014:4).

Operationalizing the hypotheses for this study, a set of primary comparable variables have been created in the table below for a direct comparison.

Comparable variable	**Hypothesis linked to**	**Definition**
Ambition on climate legislation	1, 3	What level of ambition does business seek on climate legislation for aviation/shipping? Is this aligned with a 2°C target as set out in the Paris Agreement?
Legally binding/ voluntary rules	1, 3	Do corporations lobby for mandatory or voluntary climate regulations?
Relationship with state delegations	2, 4	How are corporations represented in state delegations?
Methods of corporate influence	2, 4	How do corporations influence climate legislation?
Corporate influence regulations	4	Are there regulations, including a conflict of interest policy, governing how corporate actors can influence climate legislation?
Climate policymaking transparency	1, 2, 3, 4	Is climate policy made in a transparent way?
Position on regional/national regulation	1, 3	What positioning does business take on climate legislation for aviation/shipping taken at a regional/national level?
Position on an industry carbon tax	1, 3	Does business support a global carbon tax for aviation/shipping? What position do they take on other taxes for their industry?

and other climate taxes		
Position on inclusion in Paris Agreement	3	Does business support the inclusion of aviation/shipping in the Paris Agreement?

By focusing on these variables in a structured comparison, corporate lobbying strategies can by systematically contrasted. Furthermore, shortened, clear descriptions in a comparison table outlining my conclusions will be provided, to concisely display results, with possible examples outlined below.

	Corporations at the ICAO	**Corporations at the IMO**
Ambition on climate legislation	Very low. Does not support action in line with a 2°C global warming target. Supports the CORSIA scheme.	Low. Does not support action in line with a 2°C warming target. Supports a non-binding 50% 2050 GHG emissions reduction target.
Legally binding/voluntary rules	IATA lobbied in support of making CORSIA a voluntary measure until 2027. Industry supported binding energy efficiency design targets.	Industry lobbied in support of a voluntary 2050 GHG emissions reduction target. Industry supported binding energy efficiency design targets.
Relationship with state delegations	Included in (%) of state delegations. No rules governing their inclusion.	Included in (%) of state delegations. No rules governing their inclusion.
Methods of corporate influence	State delegations, consultation submissions, closed environmental meetings on CORSIA.	State delegations, consultation submissions, flag states.
Corporate influence regulations	No conflict of interest policy or rules governing corporate influence.	No conflict of interest policy or rules governing corporate influence.
Climate policymaking transparency	No. Environmental meetings are often closed, with only limited delegate lists provided, consultation documents are private and strong media restrictions are enforced.	Partially. Consultation documents and delegate lists are publicly provided. Partial media restrictions are enforced.
Position on regional/national regulation	Opposed to all regional and national climate regulations.	Opposed to all regional and national climate regulations.
Position on an industry carbon tax and other climate taxes	Opposed to a global carbon tax on aviation, all fuel taxes and passenger duty taxes.	Generally unsupportive of a global carbon tax. Evidence suggests positions may be evolving.
Position on inclusion in Paris Agreement	Opposed to including aviation in the Paris Agreement.	Opposed to including shipping in the Paris Agreement.

Work Plan

Table 3: Work plan and timetable for thesis

Deadline	**Work to be completed**
August 2nd 2019	First draft of thesis report completed
August 10-25th 2019	Finish writing thesis report. Collect data on delegates from post-Paris Agreement ICAO and IMO consultation meetings.
August 25th 2019	Submission of thesis report
October 1st 2019 – December 20th 2020	Investigate wider literature on IO's, global governance and the private sector. Study an elective course at IBEI on Data Analysis for

	International Relations. Collect data on corporate participation in delegations at ICAO and IMO for quantitative analysis (note, some data has already been partially collected). Write draft comparative tables between the IMO, ICAO and collect information on conflict of interest policies and private-sector engagement at other UN agencies.
December 20th – January 1st 2020	Have conversations/interviews with former colleagues and staff members at London Climate Hub about aviation, shipping and lobbying. Either talking off-record and taking notes or conducting formal interviews if enough interviewees are willing to participate.
January 1st 2020 – March 30th 2020	Write thesis draft, organizing the structure and detailing general conclusions with aims to write a chapter every two to three weeks. Take an elective course at IBEI on International Climate Change Policy. Analyze delegation data and finalize tables comparing private-sector influence.
March 30th – May 30th 2020	Submit thesis draft to supervisor and edit thesis based on feedback. Complete a final draft to discuss with supervisor
May 30th – June 20th 2020	Complete and submit final master's thesis
September 2020	Oral defense of Master thesis

Conclusion

The thesis will advance insights into corporate influence in global governance and international climate legislation. It will highlight both the risks posed by corporate capture in UN agencies and the pernicious global influence of industry in holding back ambitious international climate action. Through systematically mapping the processes through which corporate power influences global governance, this thesis may help guide future research on international climate governance. Furthermore, it may act as a strong foundation for studies or policy recommendations to redesign international organization to better incorporate corporate actors without encouraging undue influence.

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