ESCP BUSINESS SCHOOL

IT ALL STARTS HERE

BERLIN I LONDON I MADRID I PARIS I TURIN I WARSAW

© Wisdom Graphics / AdobeStock

LIGHTS - Geopolitics

The weaponization of critical infrastructures: Corporate discretion in contexts of geopolitical rivalry

ESCP Impact Paper No.2026-27-ENG

Ziqiao WANG & Marc OBERHAUSER
ESCP Business School

ESCP RESEARCH INSTITUTE OF MANAGEMENT (ERIM)

ESCP Impact Paper No.2026-27-ENG

The weaponization of critical infrastructures: Corporate discretion in contexts of geopolitical rivalry

Ziqiao Wang*
Marc Oberhauser**

ESCP Business School

Abstract

This impact paper examines how critical infrastructures become instruments of geopolitical pressure under techno-nationalist rivalry. Focusing on export controls, semiconductor restrictions, cloud access, software updates and other firm-controlled systems, it argues that legal compliance does not eliminate managerial discretion. Instead, it relocates discretion to the implementation layer, namely how compliance is timed, scoped, sequenced, communicated, and locally adapted. Multinational corporations (MNCs) may not be able to reject home-state directives, but they often retain choices over timing, scope, sequencing, communication and local adaptation. We show that this discretion is structured by three forms of embeddedness: home-state embeddedness, host-state dependence and internal MNC embeddedness. We translate these tensions into a three-step executive framework: auditing strategic exposure, pacing implementation under host-state dependence, and establishing internal escalation channels. The paper concludes that a major challenge is therefore to govern the discretion that remains when geopolitical pressure is exerted through corporate infrastructures.

Keywords: managerial discretion, techno-nationalism, critical Infrastructures, weaponized interdependence, multinational corporations

*Doctoral Researcher, ESCP Business School
**Professor, ESCP Business School

The weaponization of critical infrastructures: Corporate discretion in contexts of geopolitical rivalry

In October 2022, the United States imposed sweeping export controls restricting China's access to advanced semiconductors and chipmaking equipment (Luo & van Assche, 2023). While the legal directive was clear, the managerial problem was not. Firms such as Nvidia, ASML, and TSMC had to decide how to implement these restrictions in practice: which customers to cut off immediately, how broadly to interpret licensing rules, how to handle existing contracts, and how to manage clients who could not quickly replace their technology. These decisions were not executed by governments alone. They were applied by multinational corporations (MNCs) that control critical infrastructures of the global economy.

Such dilemmas are becoming more frequent as geopolitical rivalry intensifies (Luo, 2024) and states increasingly work through private firms. Export controls, licensing restrictions, cloud access rules, software updates, semiconductor equipment limits and satellite connectivity are no longer only instruments of statecraft at the border. They are increasingly exercised through firms that control critical infrastructures. As a result, MNCs are not merely affected by geopolitical conflict. They are often the operational channels through which pressure is exerted (Farrell & Newman, 2019).

This paper argues that when critical infrastructures are weaponized under techno-nationalist conditions, legal compliance does not eliminate managerial discretion, but relocates it to the way pressure is implemented. Even when a company cannot reject a home-state directive, it often retains discretion over timing, sequencing, communication, scope, fallback arrangements and local adaptation. That discretion matters because it determines whether compliance results in controlled implementation or avoidable breakdown.

This weaponization of MNC-controlled infrastructures by states creates managerial tensions within MNCs. Home-states activate pressure through legal instruments of statecraft. Host-states must address dependence on systems they cannot quickly replace. MNCs sit in the middle, where law, infrastructure, and operational judgment collide.

This discussion builds on our broader research showing that some critical infrastructures become strategically decisive when they cannot be substituted within a compressed political time (Wang & Oberhauser, 2025). The paper asks two focused questions: How does weaponization work once states rely on MNC-controlled infrastructures? And how much managerial discretion remains once pressure has to be implemented inside the MNC?

Weaponization under techno-nationalism

Weaponization means turning dependence into pressure. Under techno-nationalism, states increasingly treat critical technologies as instruments of security competition rather than as neutral market goods (Luo, 2022; Luo, 2024). In the setting examined here, weaponization usually happens in four steps. First, states raise certain technologies and infrastructures to strategic status. Second, MNC capabilities become concentrated in chokepoints that others cannot quickly replace within political time (Wang & Oberhauser, 2025). Third, home states activate those chokepoints through policy instruments such as export controls, licensing restrictions, subsidy conditions, security directives and alliance coordination. Fourth, that pressure only becomes real when it passes through MNC-controlled systems such as access permissions, production allocation, service continuity decisions, and update cycles (Farrell & Newman, 2019; Luo & Van Assche, 2023).

This makes weaponization a state-MNC process. States provide the political intent, legal authority and coercive authorization, while MNCs provide operational control. Recent work on semiconductors makes this especially clear. Weaponization does not sit in one single node. It can move across design, raw materials, manufacturing equipment, and assembled chips (Beaumier & Cartwright, 2024). Infrastructures are therefore not neutral pipes, but sites of geopolitical contestation in their own right (de Goede & Westermeier, 2022).

Crucially, this co-production of power is rarely an accident of the free market. This is clearest where MNC capabilities were built in close relation with the home-state strategy. TSMC, for example, did not achieve its frontier foundry position through market forces alone. It was explicitly established as a joint venture involving the Taiwanese government, the Industrial Technology Research Institute (ITRI), and private investors like Philips to intentionally build strategic capabilities and the so-called silicon shield (Miller, 2022). This history matters, when semiconductors can later become the infrastructure through which export controls and strategic denial are operationalized. The point is not that MNCs simply follow the home-state. It is that state strategy becomes effective only when it is channeled through the infrastructures and routines that MNCs control. In sum, weaponization is a co-produced process: states provide the legal and geopolitical mandates, but MNCs provide the crucial operational infrastructure. Recognizing this dynamic helps managers understand exactly where their decision-making power lies: in the implementation layer.

How embeddedness structures managerial discretion

Managerial discretion under weaponization does not emerge in a vacuum. It is structured by the way in which MNCs are embedded in multiple systems at once. MNCs are tied to home-state directives, host-state dependence, and internal organizational structures. These forms of embeddedness shape both the constraints MNCs face and the discretion they retain in implementing pressure. In this paper, managerial discretion refers to the latitude executives retain to make choices under constraint, even when broader political and legal conditions limit their freedom of action (Wangrow et al., 2015). In weaponized infrastructures, this discretion is not only about strategic choice, it also concerns how geopolitical pressure is interpreted, sequenced, implemented, and absorbed through the MNC.

Home-country embeddedness defines how MNCs become available for state strategy. MNCs in commercial technology, platform, infrastructure, or manufacturing sectors can become strategically relevant once geopolitical rivalry intensifies. Public funding, procurement, export protection, research support, industrial policy, and privileged access to domestic markets can strengthen these firms, but they can also make their infrastructures politically available to the home state.

Host-country embeddedness determines the real-world consequences of implementation. MNCs do not operate above host-states from a distance. They build plants, train engineers, sign hospitals and manufacturers onto their systems, accept public incentives, and become woven into local institutional life. A hospital dependent on a foreign cloud stack, or a manufacturer dependent on restricted chips, is not just one stakeholder among many. It is an institution whose continuity can be abruptly altered by MNCs' implementation choices.

Internal embeddedness shapes how implementation decisions are informed. Headquarters may receive the legal directive, but subsidiaries and operational teams often understand the local consequences. They know which customers cannot transition, which systems will fail, and which regulators will treat disruption as hostile foreign pressure. Subsidiaries are not only implementers. They are information nodes that connect global directives to local realities.

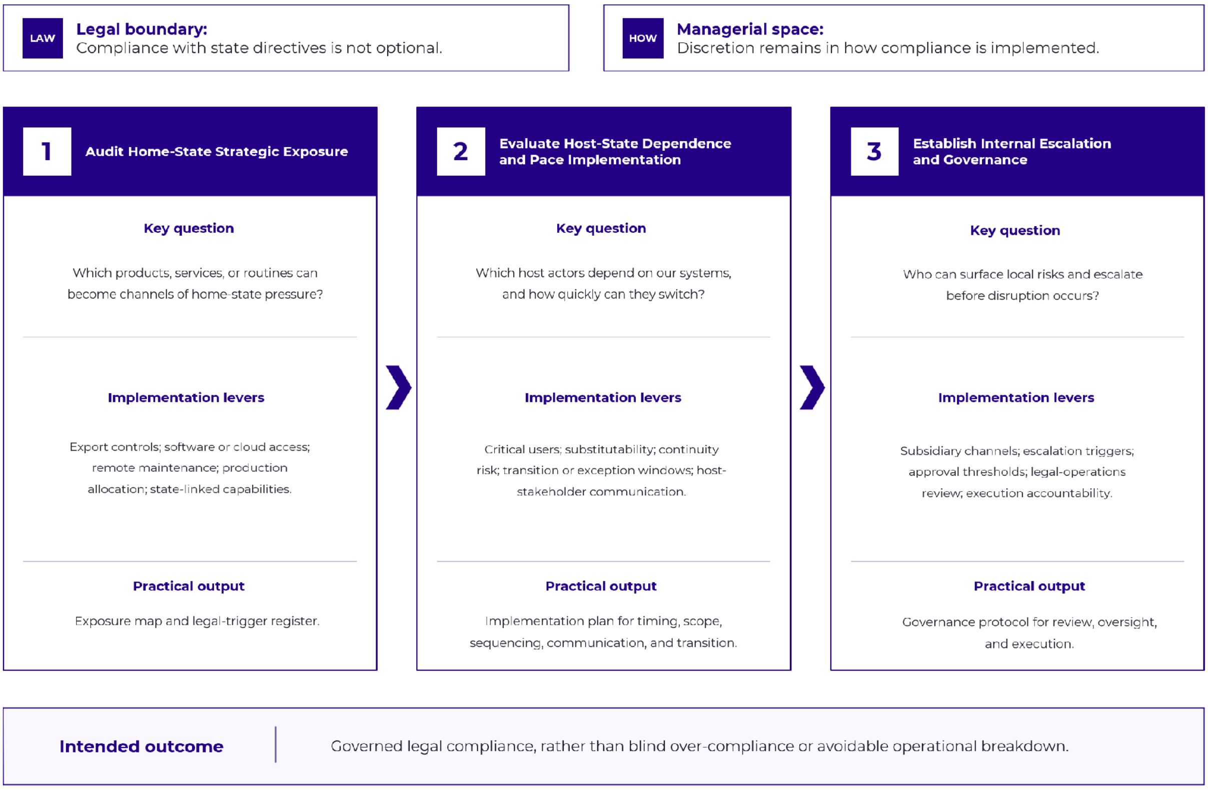
Legal compliance does not fully determine implementation. MNCs often retain discretion over timing, scope, sequencing, communication, and transition arrangements. These decisions are not marginal. They shape whether pressure is applied abruptly or gradually, broadly or selectively, visibly or quietly. In practice, this is where political directives are translated into operational outcomes.

Our interviews point to the same pattern. Long investment cycles often clash with erratic policy shifts. The result is hesitation, paralysis, or over-compliance. In that setting, "we simply followed the law" is not a full managerial answer. Executives still decide how fast to move, how broadly to apply restrictions, and how much transition to allow. Those choices determine how severe the disruption becomes. Ultimately, these three forms of embeddedness define the operational boundaries within which executives must design and execute their implementation strategies.

From tensions to an executive framework: managing weaponized infrastructures

Once weaponization begins, MNC executives face practical tensions arising from their multiple forms of embeddedness. To help executives navigate the legal obligation of state directives while managing operational risks, we translate these tensions into a three-step practical framework for executives to govern implementation discretion. Each form of embeddedness generates a specific managerial tension, which directly corresponds to an actionable executive step. Building on this conceptual alignment, Figure 1 translates this framework into a visual executive playbook. It maps the strict legal boundaries against the available managerial space, detailing the key questions, implementation levers, and practical outputs required at each stage.

Figure 1. Executive Playbook for Governing Implementation Discretion



The following sections break down how executives can operationalize each step of this framework.

Step one: audit home-state strategic exposure

The first step addresses home-country embeddedness. Corporate leaders need to know which components of their MNC can be activated by home-state strategy. This is not the same as knowing which assets are profitable. It means knowing which products, components, services, or routines can be turned into pressure against a host-state.

Boards should focus on a small number of pressure points. These include export-controlled components, software access, remote maintenance, production allocation, and technical parameters that others cannot quickly replicate. These points should be identified before crisis. In normal times, they may look like ordinary operating assets. Under pressure, they become channels of state strategy.

This creates a trade-off. The capabilities that make an MNC valuable or competitive may also make it politically exposed. The closer the MNC is to the home-state's strategic toolkit, the more carefully it must understand where legal obligation ends and operational discretion begins.

Step two: evaluate host-state dependence and pace implementation

The second step addresses host-country embeddedness. Once pressure is activated, the key question is not only whether the MNC must comply. It is how fast, how broadly, and with what local consequences the restriction is carried out. Some MNCs will be directly constrained by home-state law. Others may align voluntarily with state priorities or over-comply to reduce risk. In each case, discretion does not disappear. It moves into interpretation, timing, scope, transition, and communication.

Immediate and maximal compliance may protect the MNC at home, but it can disrupt hospitals, factories, universities, public agencies, or industrial customers that cannot switch systems quickly. Slower or narrower implementation may reduce harm, but it may increase legal or political risk. The managerial task is to understand these trade-offs before the crisis, not after pressure is activated. In some cases, host-state authorities may still seek clarity from the MNC about how pressure will be implemented, especially when critical public functions depend on its systems. Such informal implementation understandings rarely reverse geopolitical pressure, but they may shape how host states experience timing, scope, exceptions, and continuity arrangements (Bhaumik et al., 2024).

Implementation decisions are therefore operationally consequential. MNCs should decide in advance how restrictions will be paced. They should define when staged degradation, narrower restriction, or temporary continuity is legally possible. They should also identify which host-state functions would face disproportionate harm if access were removed overnight.

Step three: establish internal escalation and governance

The final step addresses internal embeddedness. Headquarters teams often see legal exposure and compliance deadlines. Local subsidiaries see what form disruption will take on the ground. This gap can become dangerous. A decision that looks clean from headquarters may look reckless to the subsidiary that must face regulators, customers, staff, and public institutions.

MNCs therefore need structured escalation. Local leaders should be able to flag catastrophic implementation risks, request delay, narrow the scope of execution, or trigger higher review. This is not informal resistance. It is a governance channel for preventing blind compliance from translating into local breakdown. Subsidiaries are especially important because they hold local knowledge. They understand which systems are dependent, which relationships are fragile, and which actions will be interpreted as hostile. If headquarters treats subsidiaries as simple transmission belts, it loses the very intelligence it needs to implement pressure effectively.

In some cases, key operators or subsidiary leaders may also face legal or political exposure because they sit close to strategic chokepoints. This is another reason why early escalation matters. The managerial task is therefore not to avoid discretion, but to govern it. Pressure may come from the state, but implementation still passes through MNC structures.

Conclusion

The wider shift is from multilateral coordination toward techno-nationalist rivalry and global disorder (Luo, 2024). In this environment, critical infrastructures become instruments of state strategy. MNCs are not simply autonomous geopolitical actors. They are often the channels through which home states project pressure outward.

For managers in MNCs, the practical question is how to govern the discretion that remains once state pressure passes through the MNC. Some decisions will be legally constrained. Others will still involve leeway in timing, scope, communication, local escalation, and transition. These choices matter because they determine whether compliance becomes controlled implementation or results in avoidable breakdown.

Managerial discretion under weaponization is therefore not peripheral. It is the practical space where geopolitical pressure becomes operational reality. Once critical infrastructures are weaponized, the central challenge for MNCs is to govern how pressure is carried, paced, and absorbed across home-state directives, host-state dependence, and internal implementation.

Reference

Beaumier, G., & Cartwright, M. (2024). Cross-network weaponization in the semiconductor supply chain. *International Studies Quarterly*, *68*(1), sqae003.

Bhaumik, S. K., Estrin, S., & Narula, R. (2024). Integrating host-country political heterogeneity into MNE–state bargaining: insights from international political economy. *Journal of International Business Studies*, *55*(2), 157-171.

de Goede, M., & Westermeier, C. (2022). Infrastructural geopolitics. *International studies quarterly*, *66*(3), sqac033.

Farrell, H., & Newman, A. L. (2019). Weaponized interdependence: How global economic networks shape state coercion. *International Security, 44*(1), 42–79.

Luo, Y. (2022). Illusions of techno-nationalism. *Journal of international business studies*, *53*(3), 550-567.

Luo, Y. (2024). Paradigm shift and theoretical implications for the era of global disorder. *Journal of International Business Studies, 55*(2), 127–135.

Luo, Y., & Van Assche, A. (2023). The rise of techno-geopolitical uncertainty: Implications of the United States CHIPS and Science Act. *Journal of International Business Studies, 54*(8), 1423–1440.

Miller, C. (2022). "Chip war: The fight for the world's most critical technology". Simon and Schuster.

Wang, Z., & Oberhauser, M. (2025). From corporate diplomacy to quasi-sovereign corporate power: Geopolitical competition and the reshaping of the global order. In *Impacts of geoeconomics and geopolitics on international business* (pp. 1–41). IGI Global Scientific Publishing.

Wangrow, D. B., Schepker, D. J., & Barker III, V. L. (2015). Managerial discretion: An empirical review and focus on future research directions. *Journal of Management*, *41*(1), 99-135.