

Sovereignty as a Flow: Capture and the Durability of European Technology

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Abstract. European sovereignty instruments assess a firm's nationality at a point in time: at qualification, at award, at labeling. Control, we argue, is a flow. A European technology firm's control leaves European hands through four mechanisms (acquisition, private-equity buyout, an infrastructure deal that routes its stack onto foreign clouds, or a US listing and redomicile), so a "European tech" label is a snapshot of a liquid cap table. We document this with a sourced registry of 33 capture cases (Nuxeo, DeepL, Aleph Alpha, Arm, SUSE, Software AG, and others) and then ask what resists it. On a defined universe of 125 prominent European technology firms (2005–2025), classified by ownership structure and outcome, a governance lock (a foundation, steward-ownership, founder super-voting, a golden share, or state control) is associated with survival as European in 89% of resolved cases against 55% without a lock (capture 11% against 45%; odds ratio 6.6, $\phi = 0.31$, Fisher exact $p = 0.002$). The mechanism is specific and the falsifiers sharpen it: not one of the 27 governance-locked firms was taken over against its will. A control lock defeats unwilling acquisition; it does not stop a founder choosing a US listing for capital, nor insolvency, and dispersed-ownership firms can also survive on scale (SAP, Adyen, Amadeus). The policy implication is a reframing. On this universe's record, subsidising a dispersed-ownership champion buys an asset with a 45% historical capture rate; durable European control is structural: a control lock, domestic capital deep enough that firms need not list abroad, and scale or a forkable commons for the rest.

JEL: F52, G34, O25, L26, F23. **Keywords:** digital sovereignty, mergers and acquisitions, ownership structure, steward-ownership, industrial policy, technological autonomy.

1. Introduction

Europe builds successful technology firms and loses control of them. Nuxeo, a French open-source content platform, was folded into the US firm Hyland in 2021. DeepL, Germany's best-known language-AI company, is migrating its infrastructure to Amazon Web Services. Aleph Alpha, Germany's would-be answer to OpenAI, agreed in 2026 to merge into the Canadian firm Cohere. Arm, the British designer whose instruction set sits under most of the world's phones, was taken by SoftBank in 2016. Each was, at some point, a European sovereignty hope. None is under European control today.

European sovereignty instruments assess ownership and control at a point in time: the EU Cloud Sovereignty Framework grades an offer, the SecNumCloud referential qualifies a provider, a procurement decision fixes a label. What none of them tests is durability: whether the answer still holds after the next funding round, buyout, or foreign listing. Control is a flow, and the label is a snapshot of a cap table and a listing venue, both of which are liquid.

This paper does three things. It sets out the capture dynamic: the four mechanisms through which a European firm's control leaves European hands (Section 2), documented in a sourced registry of 33 cases (Section 3). It then asks what resists capture, and tests the answer on a defined universe of 125 prominent European technology firms: a governance lock predicts survival, with a specific mechanism the falsifiers make precise (Section 4). And it draws the policy consequence: the firm-level reason that subsidising champions is a weak lever, and the structural alternative that is not (Sections 5–6).

The contribution is a reframing supported by two datasets. That Europe struggles to scale and retain technology firms is familiar from the competitiveness reports [Draghi 2024; Letta 2024], and the

digital-sovereignty debate has split into a demand-side, openness-first line (the EuroStack Initiative led by Caffarra: Buy European, Sell European, Fund European, with open source and open standards as policy) and a state-investment line [Bria, Timmers and Gernone 2025]. What is new here is the treatment of sovereignty as a time-varying property of a node in an ownership network, the systematic registry of how control actually leaves, and the finding that a governance lock is the structural correlate of durability, with domestic capital depth and scale as the complements. That result locates what durability responds to: structure, which a grant alone does not change.

2. The capture dynamic

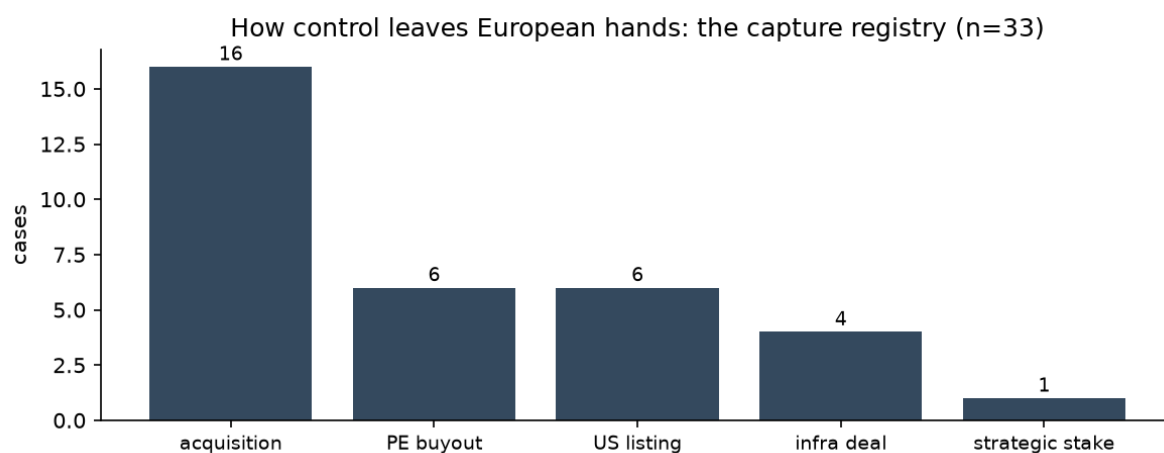
Weaponized interdependence [Farrell and Newman 2019] and the network of global corporate control [Vitali, Glattfelder and Battiston 2011] both read power off structure, and both take that structure as given at a point in time. The sovereignty question needs the structure to move. We treat a firm's bloc, its jurisdiction of ultimate control, as an attribute that can change, and we identify four mechanisms of change.

Acquisition transfers ownership and control to a foreign parent (Nuxeo to Hyland; Arm to SoftBank; Skype to Microsoft; DeepMind to Google). **Private-equity buyout** moves a firm to a fund that typically loads debt, restructures, and exits to a strategic buyer, often American (SUSE to EQT; Software AG to Silver Lake and thence to IBM). An **infrastructure or technology deal** leaves the firm nominally European while routing its stack, compute, or distribution onto foreign clouds (DeepL to AWS; the sovereign-wrapper joint ventures by construction). A **US listing and redomicile** moves the incorporation, governance, and tax base across the Atlantic, and the pull is strong: European scale-ups list on Nasdaq or the NYSE for depth of capital and liquidity (UiPath, Spotify, Wise, Klarna).

The four are not equivalent. An acquisition transfers control outright; an infrastructure deal leaves formal ownership in place and moves the dependency; a US listing keeps the founder in the chair and moves the flag. Keeping them distinct matters for what resists each, which is the subject of Section 4.

3. The registry: how control leaves

We assembled a registry of 33 documented cases in which a European technology actor's control flowed to foreign hands (data/edges/capture_cases.csv), each with a source and an adversarial verification of the recent and contested entries. By mechanism (Figure 1): 16 acquisitions, 6 private-equity buyouts, 6 US listings, 4 infrastructure deals, and 1 strategic stake. The destinations are overwhelmingly American, with a minority to other non-European acquirers (Arm and Graphcore to Japan's SoftBank, Supercell to China's Tencent, Sigfox to Singapore's UnaBiz).

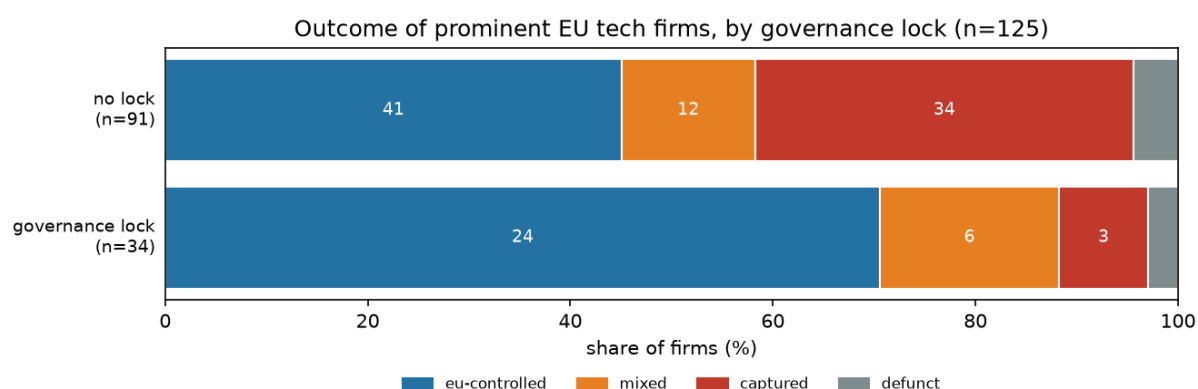


The registry spans every layer of the stack, from silicon design (Arm, Graphcore) through databases (MySQL, whose acquisition by Oracle triggered the MariaDB fork), enterprise software (Nuxeo, Software AG, Autonomy), security (Avast, Darktrace), consumer platforms and games (Skype, King, Mojang, Supercell, Wolt), payments (iZettle to PayPal), to the frontier-AI labs (DeepMind, Aleph Alpha, and DeepL's infrastructure). It is a sample of salient cases, and no census, so it establishes that capture is pervasive and cross-layer without licensing a rate. For a rate, and for what resists, we need a defined population.

4. What resists capture

We assembled a defined universe of 125 prominent European technology firms (2005–2025) across eight domains (cloud, AI, fintech, cybersecurity, enterprise software, deep-tech and semiconductors, consumer platforms and games, and developer tools), selected by a stated prominence rule (a unicorn valuation, clear segment leadership, or strategic significance), and including both captured and still-independent firms and every ownership type (data/capture_universe.csv). We classified each by ownership structure and by outcome, and we coded a single binary of interest: whether the firm carries a **governance lock**, a structure that lets an insider refuse an unwanted change of control (a foundation or steward-ownership, founder super-voting shares, a golden share, or state control).

The association is clear (Figure 2). Of the 102 firms with a resolved captured-or-eu-controlled outcome, those with a governance lock survived as European in 89% of cases (24 of 27), and those without in 55% (41 of 75). The capture rate is 11% with a lock against 45% without: a lock roughly quadruples the odds of survival (odds ratio 6.6, $\phi = 0.31$, Fisher exact $p = 0.002$).



The falsifiers make the claim precise and stronger. The three governance-locked firms coded as captured were not taken over against their will. UiPath and GitLab left through a *voluntary* US redomicile and listing: the lock did its job, the founders kept control, and the jurisdiction moved anyway. Farfetch was captured through *insolvency*, its equity wiped in a distressed sale. Across the whole universe, **not one governance-locked firm was acquired against its will**. A control lock is therefore close to sufficient against unwilling acquisition, and useless against the two exits it is not designed to stop: a founder choosing foreign capital, and running out of money.

Two corollaries follow from the counter-evidence, and both matter for policy. Dispersed-ownership firms with no lock survived for decades on scale and strategic weight: SAP, Adyen, Amadeus, Sage, and Infineon are European today with ordinary one-share-one-vote governance, so a lock is sufficient but not necessary and scale is an alternative moat. And a lock protects against foreign control while doing nothing against commercial death: the most tightly locked firm in the set, a state joint venture, resisted capture and went bankrupt, so survival as European and survival are distinct.

The mechanism behind the two escapes is the same one that governs lock-in at the technology layer. A proprietary firm is a discrete asset that can be bought; an open, forkable commons is not. When Oracle captured MySQL, the code forked to MariaDB and the asset survived the change of control. Forkability and a governance lock are the two forms of capture resistance, and they are the durable ones.

5. What subsidy alone does not change

The subsidise-a-champion strategy runs into this dynamic at the firm level. A subsidy directed at a dispersed-ownership European firm buys an asset that, on these numbers, carries a 45% historical capture rate, and the grant leaves the correlates of that rate, ownership structure and capital-market depth, untouched. Public money can build a champion and then watch it be acquired, taken private, or relisted in New York.

This is the firm-level counterpart to a result in a companion mechanism-design project of the programme (the game-theory arm), where a commodity subsidy saturates and the differentiated layer runs on network effects that funding a challenger does not dissolve. Here the weakness is structural in a second sense: even a subsidy that succeeds in producing a valuable firm produces a capture *target*. The lever that changes the outcome is the one that changes the structure.

6. Policy: build durable structures

The data point to a combination of instruments, and they say which parts do what.

A **control lock** defeats unwilling acquisition, which is the most common capture mechanism (16 of 33 cases). Public policy can favour it directly: procurement and sovereignty labels can reward steward-ownership, foundation ownership, and dual-class structures with a domestic anchor, and public co-investment can be conditioned on a golden share or a lock. Germany's steward-owned providers and the foundation-owned encrypted-services firms show the model is viable at scale.

Domestic capital depth closes the escape a lock cannot. The US listing and redomicile route exists because European growth and late-stage capital and public-market liquidity are shallow, so the ambitious firm goes where the money and the exit are. This is the Capital Markets Union gap, and it is a sovereignty instrument: on the mechanism documented here, capital deep enough that a European firm need not cross the Atlantic to scale would close the one exit that founder control does not block; its delivery is an implementation question outside this paper's data.

Scale or a forkable commons covers the firms that will not carry a lock. Where an open, forkable substrate exists, sovereignty can rest on the commons, independent of any firm's cap table, and it survives capture by construction. Where it does not, the alternative moat is scale, which is why the competitiveness agenda and the sovereignty agenda meet.

These instruments give the firm-level term of the flagship paper's layer-sorted policy reading: at layers where options exist, funding without structure buys assets that can be lost, while a lock and a commons build control that stays; capacity investment at the layers where no actor has options answers a different problem and is untouched by this paper's evidence. The through-line is that durable European control is a property of the structure. The ownership label at a moment in time does not capture it. Build commons that cannot be bought and firms that cannot be taken against their will, and give them capital deep enough that they need not leave.

7. Related work and limitations

The paper sits between three literatures. It borrows the network-of-control framing from Vitali, Glattfelder and Battiston [2011] and makes it dynamic; it borrows the jurisdiction-as-power framing from Farrell and Newman [2019] and applies it to firm-level control transfer; and it speaks to the

national-champions and new-industrial-policy debate [Juhász, Lane and Rodrik 2023] and the European competitiveness reports [Draghi 2024; Letta 2024], to which it adds the capture mechanism and the structural correlates of durability. It differs from the measured-cloud-power work [Lehdonvirta, Wú and Hawkins 2025], which studies country-level infrastructure geography, by studying firm-level control and its transfer. And it owes an explicit debt, to be paid in the next revision, to the corporate-governance literature that has debated for three decades whether antitakeover structures protect or entrench [Gompers, Ishii and Metrick 2003; Bebchuk, Cohen and Ferrell 2009]: the structures are the same objects, the outcome variable here is the jurisdiction of control instead of firm value, and that literature supplies both the priors and the identification templates (indices, event studies, staggered adoptions) a serious causal pass would need.

The limitations are real and stated plainly. The universe is a defined and transparent prominence sample, so salient survivors and salient captures are both over-represented and quietly-captured small firms are under-counted; the association is a lower bound on how much structure matters if anything, since the most invisible captures are of the least-locked firms. The governance-lock coding and the partial-capture (“mixed”) coding are judgment calls that a robustness pass should re-code blind. And the finding is an association with a documented mechanism; identification is open: a lock may cause survival, or profitable firms may both adopt locks and have no need to sell, and the design here does not separate the two. What the falsifier analysis does establish is the mechanism: zero unwilling acquisitions of locked firms is a fact about the sample; it is not a coefficient.

8. Conclusion

A European technology firm’s nationality is a fact about its ownership structure and its access to capital, and both can change. Control flows out through acquisition, private equity, an infrastructure deal, or a US listing, and on a defined universe of 125 prominent firms a governance lock roughly quadruples the odds of staying European, by defeating the acquisition route that a lock is built to defeat. On this universe’s record, funding champions buys assets that can be lost; building locks, deep domestic capital, and forkable commons builds control that stays.

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Data. The capture registry (`data/edges/capture_cases.csv`, 33 cases) and the firm universe (`data/capture_universe.csv`, 125 firms), with per-case sources and confidence flags; the predictor recomputation in `findings/03-capture-predictor.md`.