

RESEARCH ARTICLE

The corporation from the Middle Ages to intellectual monopoly capitalism

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(Received 12 December 2024; revised 6 March 2026; accepted 7 March 2026)

Abstract

The modern business corporation emerged from the medieval and chartered corporations. The medieval tradition of legal pluralism was replaced by two ‘pure’ disciplines – Law and Economics – that left no conceptual space to understand its hybrid nature, decentralizing law-making and centralizing market transactions, or to frame its person-thing duality. Under intellectual monopoly capitalism, this hybrid nature has degenerated: corporations have monopolized knowledge, outsourced production to dependent peripheral firms, and become deeply intertwined with financial markets and geopolitical rivalries – lending substance to notions of techno-feudalism, while marking a profound break with the medieval tradition of open science that first made competitive markets possible.

Keywords: corporations; intellectual monopoly; techno-feudalism; financialisation; law and economics; varieties of capitalism; democracy and capitalism; globalization crisis

Introduction

The modern business corporation cannot be understood without tracing its origins to mediaeval and chartered corporations from which it emerged – and to which, under intellectual monopoly capitalism, it is, in certain respects, returning. Corporations, which originated as institutional forms in the Middle Ages, were later adapted by nation-states for a wide range of purposes. Over time, they evolved into formally autonomous enterprises oriented toward profit maximisation and typically understood as actors operating within competitive markets. Yet rising economic concentration and monopolisation have fundamentally undermined this view. Some economists now speak of a new form of techno-feudalism, in which hierarchical relations akin to those between feudal lords and vassals re-emerge.

The following section *The legal pluralism of the feudal society* examines the mediaeval system of legal pluralism, in which multiple corporate bodies exercised lawmaking authority. In the late Middle Ages, this autonomy was extended to universities and other institutions devoted to learning and research, laying the foundations for open science and competitive markets. At the same time, many mediaeval corporations were embedded in rigid hierarchies resembling feudal relations between lords, vassals, and serfs.

Section *Central State Law and Decentralised Market Economics* analyses how the rise of the modern nation-state challenged legal pluralism. State ideology was built on the centralisation of lawmaking and the organisation of economic life through decentralised markets. This separation was formalised in the two ‘pure’ disciplines of law and economics, which replaced mediaeval legal pluralism but also produced an implicit and fragile synthesis unable to account for the institutional diversity of capitalism.

Understanding the modern corporation therefore requires a framework that goes beyond both pure law and pure economics. Section *Exiting Nirvanas: explaining capitalist corporations* reviews the contributions of lawyers and economists who developed such a perspective. Their work reveals the business corporation as a hybrid institution that decentralises public authority while centralising market transactions. More than a vehicle for joint ownership, the corporation is an autonomous legal person with shared liabilities and centralised power, enabling it to govern its internal affairs in a quasi-judicial manner and reviving a form of legal pluralism.

Unlike mediaeval corporations, however, modern business corporations lack intrinsic missions. Their managers are expected to act solely in the interest of shareholders, and corporations themselves can be freely bought, sold, or dissolved. They are thus ‘semi-persons’: entities that can both own and be owned. This creates a distinctive motivation problem, examined in the section *The business corporation’s motivation problem*.

Nation-states have sought to embed corporations within competitive markets and democratic political systems. Section *Democracy and the dual nature of business corporations* compares the divergent strategies of the United States and Europe: the former aimed to disperse the power of capital and labour, while the latter sought to concentrate both. Both approaches were ultimately destabilised by the rise of intellectual monopoly capitalism.

Section *Intellectual Monopoly Capitalism: a feudal regression?* shows how the growing monopolisation of knowledge has transformed inter-firm relations. The open science and open markets that emerged in the late Middle Ages are increasingly giving way to closed science and closed markets. Core corporations now outsource production to dependent firms, which are often trapped in low-skill, low-innovation equilibria without intellectual property. These asymmetric relationships resemble feudal dependencies, in which subordinate firms and workers are exploited both by their immediate employers and by dominant corporations. Like the chartered companies of the colonial era, today’s intellectual monopolies do not merely dominate markets: they also exercise political power and privately structure the markets in which they operate.

The legal pluralism of the feudal society

In the European Middle Ages, several corporations co-existed. Legal pluralism prevailed, and the theories of that age tried to understand the limits of the power of each legal entity. The contributions of Middle Age scholars encompassed what later became distinct disciplines.¹ Their innovative approach² emerged from the unique circumstances of the Late Middle Ages, characterised by a multitude of legal entities. These entities fiercely guarded their jurisdictions and often engaged in battles to expand their realms. Yet, amid this struggle, they acknowledged the existence and legitimacy of other jurisdictions. Legal pluralism characterised a complex legal order where multiple legal systems coexisted and competed: church versus crown, crown versus town, town versus lord, and lord versus merchant. Resolving these conflicts required intricate compromises. Independent bodies were crucial in arbitrating disputes, determining jurisdiction, applying relevant laws, and reconciling differences among diverse legal systems. However, existing academies were constrained by singular ideological approaches, while intellectuals in feudal courts depended on their lords for support. Consequently, neither academies nor feudal courts could effectively settle intellectual disputes and offer reasonable compromises across competing jurisdictions. Universities – emerging institutions of the late Middle Ages – filled this critical intellectual and institutional gap.

¹In Aquinas’s (1920) *Summa Theologica*, law and economics were not distinct disciplines but part of a unified field that integrated ethical and religious theories.

²The legal theories developed in the late Middle Ages have often been seen as a simple rediscovery of the Roman legal tradition. However, in his book *Law and Revolution*, Berman (1985) convincingly argues these contributions weren’t merely about rediscovering Roman law but represented a profound social and scientific revolution, signalling the onset of modernity.

Like monastic orders, towns, and guilds, universities required corporate status to secure independence. These institutions expanded their activities to fields such as medicine and other disciplines.³ Legal pluralism did more than promote freedom and legal sophistication; it was instrumental in establishing universities and catalysing Western scientific inquiry. The Western institutions of Open Science trace their origins to this foundation. The 'why' questions posed by science allowed for the linkage, generalisation, and enhanced understanding of many of the 'how' questions raised by technological practitioners (Mokyr, 2002). Scientific enlightenment facilitated technological enlightenment and, over a few centuries, laid the knowledge foundation for the Industrial Revolution. This mediaeval legacy of open science, which favoured the blossoming of competitive markets, is precisely what intellectual monopoly capitalism, as argued in the conclusion, is progressively dismantling.

Despite its doctrinal rigidity, the Catholic Church – particularly through its monastic orders – played a significant role in the dissemination of knowledge. The Church maintained a selection system that, although not entirely immune to familial influence, placed substantial emphasis on an individual's knowledge and interpretation of sacred texts. Ecclesiastical authority was not primarily transmitted through hereditary means: the Pope appointed cardinals, who, in turn, elected the next pope – a procedure that remains in effect today. More broadly, feudal society was defined by rigid hierarchical structures in which social roles – such as those of feudal lords, vassals, serfs, and, to some extent, priests – were largely inherited. Both vertical and horizontal cultural diversity tended to constrain social mobility, while persistent social immobility, in turn, reinforced cultural heterogeneity (Gellner, 1983; Pagano, 2003).

Central state law and decentralised market economics

The decline of feudal society and the rise of centralised nation-states marked the end of the fragmented institutions of the Middle Ages. Emerging states consolidated power by centralising lawmaking and imposing uniform rules and cultures, paving the way for a mobile market society (Gellner, 1983). The rigid, inherited divisions between lords, vassals, and serfs were dismantled, and individuals were now expected to pursue opportunities and rewards within competitive markets. As legal pluralism gave way, two distinct disciplines emerged: law and economics. The former upheld the state's monopoly over lawmaking, while the latter emphasised the dynamics of the market's 'invisible hand'.

According to Austin,⁴ a leading advocate of the powers of the national state, laws were only commands of the authorities, and they had little to share with ethics. The role of the legal scholar was only to analyse the laws as they were *posited* by the state. After Austin, *legal positivism* underwent a long process of refinement and led to a clear separation between law and morality. Economics went through a similar process that made it autonomous from moral principles.

The separation of law and economics from ethics created a profound divide between the two disciplines. Legal theorist Hans Kelsen and economist Léon Walras played a crucial role in establishing this divide. They advocated for the 'purity' of their fields – that is, their independence from moral judgments and external influences. Yet, despite these walls of purity, both disciplines ultimately shared a common ideology: human societies would be organised by the state and the market, and no other institution was deemed necessary.

Similarly to Austin, Kelsen (1848: 390) also declared that '*... the Pure Theory of Law insists upon a clear separation of the concept of law from that of justice ...*'. However, according to Kelsen, the law is not simply a command, and legal studies have a well-defined purpose in establishing the validity of the different rules that must constitute a consistent whole to offer a guide for human behaviour. This activity of (in)validation of rules needs only some transcendental *grundnorm* (founding norm) according to which the consistency and the validity of the other rules can be judged. The validity of the rules, and not their real-life enforcement or their morality, is the content of pure law. Pure law is such

³Rikap (2017) highlights the continuity between Mediaeval and Enlightenment University models.

⁴A Law is a command which obliges a person or persons (Austin, 1832: 18).

because it has been purged of any moral (or real-life) impurity. Given a *grundnorm*, it is a self-contained complete system within which all questions can be answered.

From Smith onwards, political economy followed a similar path of separation from ethics. This separation was clearly expressed by the concept of *Pareto efficiency*, according to which economic evaluations could be made independently of moral judgments. Pareto's contribution was grounded in the work of Leon Walras, who was his predecessor at the University of Lausanne. Walras' theory is rather complex because he believed in separating economics from other disciplines, while simultaneously supporting the principles of natural law and their moral implications. Walras drew a sharp distinction between ethics and economics. Well before Kelsen's *Pure Theory of Law*, Walras' *Pure Economics* emphasised the purity of a field of research – that is, its independence from other subjects of inquiry. Pure economics had nothing to do with the moral principles required by distributive justice.⁵

The separation of both disciplines from ethics coincided with the emergence of *pure law* and *pure economics*. *Pure law* focused on the validity of laws and the internal consistency of legal systems, presumed to originate from a single authority or fundamental *grundnorm*. *Pure economics* concentrated on the internal consistency and 'efficiency' of decentralised decisions made by maximising individuals. Each discipline inhabited its own Nirvana, with practitioners valuing the internal consistency of their respective domains above all else. However, hidden relations reveal pure law and pure economics as fundamentally interdependent constructions. Pure economics inherently relies on well-defined and complete rights that are exchanged and enforced by a third party. Consequently, economic Nirvana necessitates a legal Nirvana. Conversely, pure law assumes that the legal order can be completed and rendered consistent through a single framework of basic norms, disregarding limitations arising from bounded rationality, cognitive incapacity, collective action failures, or resource scarcity. In essence, legal Nirvana requires an economic Nirvana.

An implicit ideological alliance emerges between pure law and pure economics, both endorsing the notion that society is structured through complete markets and a fully centralised legal order. These interdependent systems are presumed to function at zero opportunity costs, predicated on the assumption that no viable institutional alternatives exist. The completely centralised legal system is presumed to generate well-defined property rights at negligible costs, thereby facilitating the emergence of frictionless, comprehensive markets that ostensibly require no costly legal infrastructure.

Institutions such as corporations become incomprehensible within this world of *pure law* and *pure economics*.⁶ Analysing these entities requires abandoning the two interdependent Nirvanas that constrained legal and economic thought. In these idealised realms, the role of multiple corporations cannot be explained, as a state of costless perfection is assumed to be achievable through completely decentralised markets and a wholly centralised legal order. No conceptual space remains for alternative institutional forms. From this perspective, the abandonment of the scholastic tradition that examined overlapping institutions can hardly be regarded as an unequivocal scientific advancement in legal and economic theory. Capitalism did not eliminate corporations; on the contrary, many new and significant corporations emerged as key business entities. Their growing importance was difficult to reconcile with the purist frameworks of law and economics.

⁵However, the requirements of economic efficiency happen to coincide with those of commutative justice (Pagano, 1985; Walras, 1977). *Commutative justice* demands that nobody exploits the other in exchanges, requiring that individuals trade goods of equal value. It is compatible with all sorts of initial distribution, including very unjust ones. Walras's thesis is that in a situation of competitive equilibrium the conditions necessary for economic efficiency coincide with those required for *commutative justice*. That efficiency has a normative dimension is also clear in Coase (1960): the legal principle that whoever causes harm must pay proves ill-suited to resolving conflicts where multiple parties jointly determine the outcome. An efficiency criterion – understood as the institutional arrangement that maximises the welfare of all parties – is normatively preferable and sits comfortably within the concept of commutative justice familiar to legal practice.

⁶Alchian and Demsetz (1972) argue that power does not exist if parties can either costlessly appeal to a judge or costlessly exit the transaction and turn to market competitors. Legal nirvana eliminates enforcement costs; economic nirvana eliminates exit costs. When both are assumed away simultaneously, power relations become inconceivable – which is precisely why intermediate institutions such as corporations vanish from the theoretical picture.

Exiting nirvana: explaining capitalist corporations.

Like monasteries, guilds, feudal lords, universities, and other institutions, under capitalism, firms – and, in particular, business corporations – can own resources, make contracts in their own names, and engage in internal resource planning, replacing the market mechanism.

This observation contrasts with the idea that state lawmaking and market mechanisms could monopolise the organisation of the economy. Ronald Coase (1937) in economics and Lon Fuller in law each achieved a groundbreaking deconstruction of their respective ‘Nirvanas’,⁷ providing a framework for analysing entities like business corporations.

Pure economics envisioned a world in which market transactions, guided by a frictionless ‘invisible hand’, could efficiently coordinate all human activities. However, assuming zero transaction costs creates a fundamental dilemma: institutions that involve costs become unjustifiable, while costless alternatives make institutional choice irrelevant. Firms, regulatory bodies, and other forms of governance can only be understood within a framework that acknowledges that no institution – including the market – is without cost. Coase’s crucial insight was that all institutions incur transaction costs and that standard notions of market efficiency rely on ignoring these costs (Coase, 1960; Pagano and Vatiello, 2015).

Many costs within a market system are due to the costly use of legal institutions, such as defining property rights, enforcement, litigation, and adjudication. Fuller (1963, 1969, 1990) directly addressed centralised public order costs, advocating legal pluralism as a cost-reduction strategy. He rejected law as a static construct, defining it in the late mediaeval tradition as a dynamic endeavour to subject human behaviour to rules.⁸ Fuller illuminated law’s inherent trade-offs: balancing rule adaptability with stability and navigating the tension between specificity and generality. Complex societies could reduce lawmaking costs by decentralising rule-creation across institutions like unions, churches, universities, and firms. These entities could impose behavioural rules more efficiently than centralised systems lacking nuanced contextual understanding (Pistor and Xu, 2004).

Fuller’s descent from legal Nirvana parallels Coase’s from economic Nirvana. The corporation embodies both market transaction centralisation and public order decentralisation. Calabresi and Williamson extended Coase and Fuller’s insights.

According to Calabresi,⁹ property rules and contract law operate effectively in environments with low transaction costs. However, at higher transaction cost levels, there is a shift from property rules to liability rules. For example, in accident scenarios, the only way to reduce transaction costs is to redress damages after they occur. This situation undergoes a fundamental change. Before an accident, potential culprits and victims may interact competitively; afterward, they find themselves in a bilateral monopoly, able to bargain only with each other. As a result, deals can only be negotiated under court supervision, which enforces liability rules. Williamson (1985) focused on a related *fundamental transformation* (Pagano, 2010). He observed that specific investments – those with reduced returns outside a particular relationship – can alter market conditions from ex ante competition to bilateral monopoly. In such cases, it may be practical to internalise the transaction within a single firm and resolve disputes internally.

Both scholars explore fundamental transformations, revealing monopoly and competition as interconnected stages. Calabresi emphasises negotiations after ‘disinvestment’ in specific accidents, while Williamson examines changes resulting from asset-specific investments. Each highlights the

⁷While we will emphasise the contributions of these two authors as they provided a clear departure from Nirvana, it is crucial to acknowledge the foundational work of other scholars who paved the way for this transition, such as Hohfeld (1919) and Commons (1924).

⁸Fuller’s connection to the natural law tradition is not just evident in his masterpiece (1969) but also in his debate with H. Hart. Refer to Fuller (1990) and Hart (1990) for further insights.

⁹See Calabresi (1991) and Calabresi and Melamed (1972).

critical need for ex-post verifiability. Calabresi addresses this within public order, and Williamson highlights resolution through private organisational structures like corporations.

When co-specific (dis)investments occur frequently and ex ante contractual terms remain incomplete, dispute resolution shifts from public judges to private judges who invest in understanding specific relational dynamics. In sporadic interactions, independent agents and centralised public courts suffice. However, long-term cooperative projects with significant specific investments require a more nuanced approach: fostering cooperation, understanding complex human interactions, and enabling both ex-ante and ex-post dispute resolution by insiders. In this context, institutions like business corporations – once marginalised in Walrasian and Kelsenian frameworks – gain importance in economic and legal scholarship. The business corporation embodies a decentralisation of public order and a centralisation of market transactions. Its key characteristic extends beyond common ownership of non-human assets. Instead, the corporation is an autonomous legal entity with shared liabilities and centralised authority, enabling a quasi-judicial function. Far from being a mere veil obscuring economic relations, law is essential in defining the firm's boundaries (Gindis, 2020; Hodgson, 2015a) and understanding its nature (Deakin et al., 2017). Since a legal person cannot contract with or sue itself, the state must exercise forbearance toward the corporation's internal dispute resolution mechanisms, respecting its private ordering within defined limits (Iwai, 2014).¹⁰ Moreover, external courts traditionally refrain from second-guessing managerial decisions so long as they are made in good faith and within the boundaries of fiduciary duties. In practice, this grants corporate managers wide discretion and effectively shields their decisions from judicial review.

The canonical example of GM's takeover of Fisher Body illustrates how external corporate liabilities can be linked to the extent of its quasi-judicial powers. This contrasts with a significant portion of the literature, which attributes the existence and growth of firms to the common ownership of machinery and plants aimed at avoiding hold-up problems.¹¹ *Alfred Sloan's (1963) memoirs present this alternative perspective.* Sloan argues that the primary advantage of a corporation lies in its ability to internalise a judicial function to address inseparable external liabilities.

According to Sloan, this judicial function originated during General Motors' formative years – predating the widely studied Fisher Body acquisition – and was notably shaped by disputes surrounding Kettering's unsuccessful air-cooled engine innovation. These conflicts between the research and production departments highlighted the challenges of assigning responsibilities within the top management hierarchy. In response, Sloan implemented a company-wide reorganisation that distinguished top management from divisional oversight. This restructuring granted top management a distinct 'judicial' function, enabling it to resolve disputes among different divisions (Pagano, 2000; Williamson, 1991).¹²

Even after the air-cooled engine problems, Fisher Body had remained an independent company, having transitioned from the horse carriages to the car bodies industry. Unlike today's practice of a single manufacturer producing both the body and engine of cars, these businesses were separated similarly to the way carriage production was distinct from horse raising. Mergers in the automobile industry were driven by the 'fundamental transformations' identified by Calabresi and Williamson. The

¹⁰More recently, as outlined in the concluding section, the corporation's rule-setting and judicial roles have paved the way for replacing public markets – previously managed by state authorities, intermediaries, and merchant associations – with private markets operated by business corporations.

¹¹For instance, Hart (1995: 7) observes that 'for a long time Fisher Body and GM were separate firms linked by a long-term contract. However, in the 1920s GM's demand for car bodies increased substantially. After Fisher Body refused to revise the formula for determining price, GM bought Fisher out'.

¹²'... courts will refuse to hear disputes between one internal division and another over identical technical issues. Access to the courts being denied, the parties must resolve their differences internally. Accordingly, hierarchy is its own court of ultimate appeal'. (Williamson 1991: 274). This view is consistent with Blair and Stout (1999), who argue that the internal hierarchy of the firm serves as a substitute for external courts to resolve disputes between parties for whom resolution through explicit contracting is too costly – including internal disputes over transfer prices, work assignments, promotions, or the division of a bonus pool (Blair and Stout, 1999: 284–285). In this respect, the corporation is a real entity as much as the State and its courts (Gindis, 2009; 2016).

transition from open-body to closed-body cars, which increased vehicle weight and raised the centre of gravity, required a specifically designed engine to ensure stability. This co-specific design could not be clearly defined in advance through contracts, leading to potential issues and disputes that had to be resolved ex-post. Liabilities could not be distinctly divided between engine and body car builders, necessitating a shift from decentralised markets with a centralised judiciary to centralised transactions governed by the decentralised private judiciary of the corporation.

A unified, independent legal entity assumed responsibility for issues such as car stability, facilitating the resolution of disputes across an expanding number of departments. This shift was not required in the shipbuilding and airplane industries. Due to the ample spaces within ships and on airplane wings, engines did not need to be specifically designed. As a result, separate external liabilities and internal powers could be allocated to distinct legal entities.

The business corporation's motivation problem

Capitalism, like feudalism, relies on corporations as private legal orders, but unlike feudal bodies with religious missions, modern firms are assumed to be driven by individual incentives. Neoclassical theory therefore worries about agency problems when managers replace owners. Yet humans are strongly inclined to act for non-human entities – gods, nations, or organisations – often with extreme self-sacrifice. Evolutionary and cultural selection favour such group loyalties, sometimes producing violence and atrocities. Different civilisations institutionalised these tendencies: Confucian bureaucracy,¹³ Christian churches, and later nation-states created ideologically grounded, meritocratic systems that command loyalty beyond individual interests.

If the power of all individuals, including that of the present ruler, is constrained by the rule of law, then the national state must also be an independent person. It must transcend the particular person acting on its behalf. The State must be a corporation, an independent corpus, whose potential immortality guarantees the continuity of the laws, allowing individuals to interact under certain rules.

Initially, the authority vested in business corporations originated from national states, which sought to remain the sole source of legitimate legal personhood. Legal personhood could be extended to chartered corporations that met specific criteria and demonstrated a commitment to the nation. This arrangement established a clear separation between corporate assets and those of individual shareholders, whose liability for corporate debts was limited to their investments. Corporate officials acted on behalf of the corporation, rather than in a personal capacity.

Chartered corporations, such as the East India Company or the Hudson Bay Company, arose from the necessity to decentralise the directives of national states. In remote corners of the world, Corporations evolved into autonomous legal entities empowered not only to possess assets and enter contracts but also to maintain order and engage in warfare.¹⁴

The chartered corporations demonstrated the evident advantages that firms could derive from having an independent legal personality. The limited liability of the shareholders allowed unprecedented funding possibilities. The corporation, endowed with its assets and potential immortality, could make lasting contracts with other entities and handle litigation among individuals subject to its private

¹³Confucius' teachings, formulated five centuries before Christianity and translated into Latin more than two millennia later by the Jesuit Matteo Ricci, influenced the Western Enlightenment (Davis, 1983) by helping to shape a conception of state ethics independent of religion. They have also remained a central pillar of Chinese civilisation and continue to play a significant role in the recent economic and institutional development of societies shaped by Confucian culture.

¹⁴The first chartered companies held commercial monopolies over vast territories. These monopolies were later viewed as impediments to free markets. However, an agreement was reached between the Sovereign and the company: the company financed the institutional infrastructure necessary for market development and, in return, gained monopoly profits (Philips and Sharman, 2020; Stern 2023). Ciepley (2020) notes that the Dutch East India Company rapidly developed into a fully-fledged business corporation – a model later adopted by the British East India Company. Harris (2020) observes that only the former had a system of limited liability and that the convergence of corporations to a system of limited liability is a relatively recent phenomenon. An intriguing example of the emergence of the corporate form to finance public utilities is discussed by Rudden (1985).

order. Corporations became increasingly popular also in the United States as a means of delegating the management of public utilities to private agents. This trend culminated in the 1889 decision by the State of New Jersey to legalise holding companies – corporations that could own other corporations. By being the first state to permit such structures, New Jersey attracted large conglomerates that were illegal under the laws of other states, most notably Rockefeller's Standard Oil, which had been prohibited under Ohio law. This marked a turning point in US corporate law, accelerating the concentration of corporate power and the emergence of the large business corporation as the dominant vehicle for profit maximisation.

Before the emergence of the business corporation, institutions held distinct identities rooted in specific missions – whether defending territory, propagating faith, or advancing education. However, the evolution of the business corporation took a different path, presenting itself to some economists as a complex hybrid combining market mechanisms with elements of state bureaucracy.¹⁵ Many economists, including Demsetz and Lehn (1985), acknowledge the corporation's role in reducing market transaction costs. Simultaneously, they perceive the business corporation as a distorted outcome within the market. It's seen as losing the potent individual incentives of the market, with managers' motivations often misaligned with shareholders' objectives. Proposed solutions often centre around incentivising managers through measures like stock options, aiming to realign their interests with the corporation's 'owners'. However, these attempts at realignment can introduce new, sometimes more severe, issues. Shareholders' interests, due to limited liability, can clash with those of other stakeholders, such as the corporation's creditors and employees (Mayer, 2013).

Posner (2010) introduces an alternative viewpoint challenging the conventional stance of economists, who typically regard the individual firm within competitive markets as the primary benchmark. Instead, he advocates for considering public bodies, such as nation-states, as the standard against which the legal personhood of the business corporation should be assessed. In contrast to these public bodies, the business corporation boasts several advantages. The business corporation, while sharing a legal personhood akin to other public entities, stands out due to its dynamic nature, surpassing organisations constrained by territorial boundaries (such as national states and their institutions), specific missions (like universities), or reliance on particular beliefs (as seen in churches). Unlike these entities, the business corporation operates without territorial confines, isn't restricted to a singular mission, and doesn't require allegiance to specific beliefs. This flexibility grants it a broader spectrum of opportunities. However, Posner highlights that despite the advantages, the business corporation also harbours notable disadvantages compared to these other organisations. Territory, mission, and faith don't merely restrict personalities; they play a crucial role in defining identities. This aspect is particularly vital for non-human entities, enabling humans acting on their behalf to establish a sense of identification with them. While individuals might be willing to make sacrifices to defend territory, mission, or faith, they are less likely to make heroic sacrifices solely for the success of a business strategy.¹⁶

Democracy and the dual nature of business corporations

Participants in business corporations often lack both strong market incentives and intrinsic motivations. Unlike feudal institutions or nation-states, corporate hierarchies are grounded neither in shared missions nor in democratic legitimacy. Feudal bodies were typically guided by religious or ethical purposes, while modern states derive authority from democratic principles. Corporations, by

¹⁵The business corporation operates within the market with a form of inherent judicial or political authority (McMahon, 2013). This authority is subject to the rent-seeking activities of its members and the resultant influence costs (Milgrom and Roberts, 1990).

¹⁶Posner (2010) points out that when these identification mechanisms are robust, economic incentives might operate unexpectedly. For instance, in institutions like national armies, individuals might enlist due to patriotism or monetary rewards. Lower financial compensation might attract a high share of patriotic individuals, enhancing the quality of the army.

contrast, are organised to maximise shareholder value. Yet shareholders bear limited responsibility for corporate actions, delegate control to managers, and grant employees little voice within the firm.

This creates a distinctive incentive problem rooted in the corporation's dual nature. A corporation is an autonomous legal person that can own and transact assets, yet – unlike other legal persons and more like an object – it can itself be owned and traded (Iwai, 1999).

This person–thing duality gives rise to two distinct perspectives. As a legal person, the corporation is an artificial entity that centralises decision-making, bears independent liability, and shields investors from personal obligations. It operates as a unified authority, with its own internal system for allocating rewards and sanctions. As a market object, by contrast, the corporation appears as a nexus of contracts through which individuals pool resources to manage assets more efficiently, giving the impression of a spontaneously formed economic entity.

The creation of a corporation establishes two separate legal relationships. The first concerns the corporation's ownership and control of its assets; the second concerns shareholders' rights vis-à-vis the corporation.

In the first relationship, the corporation holds full property rights over its non-human assets, including the surplus generated by their joint use. No one – not even shareholders – may appropriate these assets without corporate authorisation.

In the second, shareholders own only their shares. This does not make them owners or members of the corporation itself. Unlike mediaeval corporations, which were associations of persons (*universitas personarum*), the modern corporation is an association of assets (*universitas rerum*).¹⁷ Limiting shareholders' liability necessarily requires limiting the powers normally associated with private ownership. These constraints prevent shareholders from exercising control disproportionate to their exposure to risk, thereby protecting other corporate stakeholders (Stout, 2005). Maintaining this balance between restricted liability and constrained power is essential to fairness and stability in the corporate system.¹⁸

Over time, two significant institutional frameworks have emerged to mitigate the risk of corporations being reduced to mere objects subject solely to shareholder whims, thereby making them more compatible with democratic principles. One framework was developed in the United States, while the other took shape in Europe (Belloc and Pagano, 2013; Landini and Pagano, 2020; Millhaupt and Pistor, 2008; Pagano, 2012). These distinct historical trajectories reflect the political conflicts that have shaped American and European corporate governance.

Before the Second Industrial Revolution, the United States had confronted the old European aristocracy and Southern slave-owning farmers through two significant conflicts. The expansion of large firms unfolded within a strong democratic framework. Early antitrust authorities scrutinised substantial block holdings with suspicion, resulting in the enactment of the 1890 Sherman Act and the 1914 Clayton Act. Later, F.D. Roosevelt further addressed blockholders' dominance by dismantling corporate pyramids through strategic fiscal policies.

¹⁷See Ciepley (2020), who also points out that shareholders 'do not elect a government over themselves as individuals, but a government over the employees of the firm, from whom value is extracted. This is no republic. For one group to appoint a government over another group is an imperial relationship. A business corporation is, in technical terms, a charter- and statute-limited *representative imperial oligarchy* – or *oligarchic empire* (Ciepley, p. 632). It therefore constitutes a form of *private government*, in that employees are governed by corporate decisions in which they have no formal participatory rights (Anderson, 2017). The application of the code of capital to new assets, such as land and knowledge, always entails significant redistribution (Pistor, 2019). Because legal expertise is more readily accessible to wealthy individuals, lawyers tend to be disproportionately employed by them, further biasing this redistribution in their favour (Pistor, 2025).

¹⁸Any reduction in shareholders' liabilities necessarily weakens the legal positions – the rights and privileges – of other parties (Hohfeld, 1919; Pagano, 2007; Vatiero, 2021). This asymmetry is especially evident when corporate activity causes harm, whether to consumers through defective products or to workers through injury or mistreatment. In such cases, shareholders are shielded from liabilities normally attached to private property. Corporate responsibility therefore reflects a redistribution of legal positions, but it also generates contractual incompleteness. Courts may try to fill these gaps by implying terms, yet this reduces certainty by introducing discretion into enforcement. Gibbs-Kneller et al. (2022) describe this tension as the Paradox of Implied Terms. It implies that stable corporate governance cannot rest on contracts alone but requires non-contractual mechanisms, notably fiduciary duties.

This ‘exceptional’ early dispersion of capitalist interests diminished the necessity for strong unions and social democratic parties, fostering a dispersed equilibrium. This equilibrium promoted investment in managerial skills while offering minimal incentives for owners – who diversified their investments – to focus on enhancing their firm’s control capabilities. The lack of family control and extensive managerial hierarchies further facilitated corporate growth. Ownership dispersion and management independence enabled corporations to make commitments beyond shareholder interests, transforming them from mere assets to entities capable of considering broader stakeholder perspectives.

With Switzerland’s possible exception (Belloc and Pagano 2013; Vatiero, 2017), European countries followed a different path during the Second Industrial Revolution. Aristocratic privileges persisted, and no democratic authority could limit capitalist dynasties’ power. A social-democratic reaction emerged, leading to a *concentrated equilibrium*. This model provided strong incentives for owners and heirs to invest in firm management,¹⁹ while employment protection created conditions for firm-specific worker investments. Unions gained significant corporate influence. In Europe, the business corporation’s ‘personality’ was preserved through family dynasty identification and union countervailing powers. The German codetermination system exemplifies this approach.

Alternative ‘anti-degenerative medicine’ included state and regional share ownership. In Italy, China, Singapore, and other countries, major corporations are state-controlled. Constrained by market competition and embedded in national institutions, the business corporation offered a framework making capitalism more inclusive. During the three decades after World War II – the ‘golden age of capitalism’ – corporations functioned often as legal entities with shared internal rules and corporate culture, allowing some workers to identify with them.

In their influential book *The Modern Corporation and Private Property*, Berle and Means (1933) argued that managerial hierarchies operated largely independently of shareholder control. Corporations were governed by sophisticated rules that centralised private market transactions while internalising functions once handled by the state, such as rule-making and dispute resolution. Although corporations were both legal persons and market objects, the emphasis was on their legal personhood, with many serving as repositories of human capabilities and unique corporate cultures.

Until the 1990s, capitalism featured diverse corporate models that shared a key inclusive characteristic: corporations employed large workforces within hierarchical structures marked by pay inequality and union conflicts, yet many employees were able to share in organisational productivity gains – a feature that changed dramatically in subsequent decades.

Intellectual monopoly capitalism: a feudal regression?

This moderately inclusive model dramatically transformed with the emergence of intellectual monopoly capitalism. Rooted in institutional changes during the 1980s and 1990s – originating in the United States before spreading globally – this new paradigm enabled production decentralisation to satellite firms, systematically excluding workers from productivity benefits.

A profound asset transformation accompanied this shift. The proportion of tangible assets among the top 500 non-financial corporations plummeted from over three-quarters to less than a quarter. Legislative milestones such as the 1980 Bayh-Dole Act and the 1994 TRIPs Agreement – negotiated under pressure from multinational corporations (Rodrik 2018; Sell 2003) – facilitated unprecedented intellectual property privatisation.²⁰ Corporations were still an association of assets (*universitas rerum*). However, the nature of these assets had profoundly changed. This legal framework enabled

¹⁹‘Because the family is an organisation in which socialisation begins at birth and continues (at least nominally) until death, it has the potential to exhibit an intense unity that far outstrips that arising from *ad hoc* employment positions or membership stakes in a stock corporation’. (Donald, 2016: 20).

²⁰Knowledge commons exhibit characteristics that are fundamentally distinct from those of physical commons. Physical commons tend to deteriorate under intensive use, leading Hardin (1968) to argue for their privatisation. Ostrom (1990) challenged this conclusion by demonstrating the viability of numerous alternative institutional arrangements that can also avoid the deterioration of physical commons. However, unlike the latter, knowledge, owing to its non-rival nature, can be

corporations to generate financial claims across an expanding range of intangible assets, fundamentally restructuring corporate value creation and distribution mechanisms.²¹

Intellectual monopoly capitalism deepens socio-economic divides (Pagano, 2014). Some firms enter a virtuous circle of intellectual property and capabilities, while others remain trapped in a vicious cycle: lacking property rights limits technological development, and weak technological capabilities prevent rights acquisition. Beyond these initial mechanisms, established intellectual monopolies with extensive property networks can exploit innovations from smaller firms, rendering them profitable only within controlled knowledge domains. These large entities not only outsource production to low-wage providers but also delegate innovation segments to external actors (Rikap, 2021).²²

Intellectual monopoly capital differs from the standard forms of market monopolisation analysed by Baran and Sweezy (1966).²³ Instead, it is more closely connected to the monopolisation of working knowledge and the labour-capital relations explored by Braverman (1974). Harry Braverman argued that, following the scientific management approach introduced by Frederick Taylor (1911), managers appropriated knowledge of the labour process and reorganised it into narrow, repetitive tasks, thereby deskilling workers' jobs. This allowed management to monopolise knowledge, increasing their control over and exploitation of labour. Intellectual monopolisation advanced this process further. Knowledge itself became a legal monopoly, and all knowledge produced by workers within the corporation was claimed as corporate property. Intellectual monopoly – later reframed as intellectual property – emerged as the most important asset of large corporations. Intellectual monopolisation transformed firms' internal hierarchies into asymmetric market relations. Leading corporations evolved into financially driven intellectual monopolies with reduced workforces, displacing employees to peripheral suppliers and intensifying wage disparities between core firms and their subsidiaries.²⁴

The financialisation of the economy has evolved alongside the rise of intellectual monopolisation. This process has not only led to the creation of vast amounts of fictitious yet highly lucrative capital assets that are indirectly tradable on financial markets but has also supported the development of a distinct financial system. On one hand, intellectual property rights (IPRs) and other intangible assets make for poor collateral, thereby limiting traditional bank lending (Pagano, 2019b) in favour of equity-based financing. On the other hand, the monopolistic rents derived from these assets offer relatively stable investment returns – especially when investment vehicles are structured to dynamically adjust to fluctuations in corporate valuations.

This dynamic has been strategically exploited by a small number of major asset management firms – such as BlackRock, Vanguard, and State Street – that control the administration of enormous volumes of financial assets (Volpi, 2024). While the complementarity between knowledge monopolisation and financialisation is evident in established firms, the interconnection between financial valorisation (i.e., the value of a company's shares) and real valorisation (achieved by creating new intangible assets) also occurs at a very early stage. This is particularly true when venture capital funds a start-up and seeks

simultaneously accessed and utilised by an unlimited number of individuals. In the case of knowledge, privatisation risks constraining its growth and diffusion (Heller and Eisenberg, 1998).

²¹The concentration of financial management increases pressure to prioritise shareholder interests. At the same time, intellectual monopolies raise capital income, which is capitalised into higher and more tradable financial wealth (Stiglitz, 2015: 24). Financialisation thus arises both from the growing market power of finance and from the expanding stock of financial claims created by the monopolisation of knowledge (Coriat and Orsi 2002; Pagano, 2019b).

²²In some respects, this aligns with Schumpeter's (2010) view that entrepreneurial innovation would ultimately give way to the routinisation and bureaucratisation of innovative activities.

²³Building on the work of Berle and Means (1933), Baran and Sweezy argued that corporations, through the development of sophisticated internal governance mechanisms and the separation of ownership and control, were able to monopolise product markets and set profit-maximising prices. This led to the generation of large economic surpluses that the broader economy struggled to absorb, contributing to a structural tendency toward stagnation.

²⁴Song et al. (2019) demonstrate that rising inequality can be attributed to the widening gap among employees of various firms. Pagano (2018) compares this explanation of inequality to that proposed by Piketty (2014). On the inequality stemming from the monopoly existing in the global value chains, see also Durand and Milberg (2019).

to balance the expected value of the company's shares with the new intangible assets created through the monopolisation of knowledge (Kampmann, 2024).

The concentration of financial power has increased pressure on short-term profits and the market valuation of firms. Because passive finance automatically increases demand for shares when their value rises, this amplifies rewards for managers whose compensation is tied to shares and stock options. As a result, corporate structures have evolved to rely heavily on proprietary knowledge and to cut labour costs by outsourcing large parts of the value chain to peripheral firms.

Financialisation is not merely a byproduct of knowledge privatisation – it also reinforces it. As economies become increasingly finance-driven, firms are incentivised to commodify intellectual capital (Pagano, 2019b). Unlike public or individual knowledge, monopolised knowledge can be converted into financial assets, making it tradable on markets. The dominance of privately held knowledge enables cheaper financing, closely linking financialisation and knowledge commodification.

Financialisation, which has co-evolved with intellectual monopolisation, has altered the balance between financial and labour income. A certain group of individuals is now characterised by a similar ratio of labour and financial income – a circumstance that Berman and Milanovic (2024) have termed *Homoplutia*.²⁵ This results from two distinct effects of financialisation.

The first effect concerns the expansion of relatively safe assets,²⁶ made possible by the monopolisation of the economy. As a result, an increasing number of employees invest substantial amounts in financial assets.

The second effect stems from the increasing pressure to maximise profits, leading to managers being rewarded not only with high salaries but also with stocks or stock options. Consequently, they often accumulate wealth through a combination of labour income and equity ownership. In particular, the founders of successful new monopolies typically retain substantial minority stakes – often with dual- or multiple-voting rights – while simultaneously earning high executive salaries (Trento, 2026).

Intellectual monopolisation and financialisation caused a degeneration of corporate personality. In Anglo-American corporations, financial pressures drove managers to treat companies as mere assets, prioritising shareholder value over stakeholder commitments. European family dynasties faced similar challenges, tempted to sell assets to raiders. Weakened unions and declining social democratic parties further reduced resistance to these opportunistic strategies. State-owned enterprises, especially amid widespread privatisation, confronted analogous pressures.

The evolution from national to global monopolies, rebranded as intellectual property rights, has created a profound imbalance. Historically, intellectual monopolies granted by national states differed from tangible property rights. States sought to balance patent incentives for innovative investments against potential drawbacks: high prices, blocked innovative investments, and the threat of patent trolls designed to impede competitive innovation.

Global intellectual property rights enforcement, touted as essential for international trade, revealed a critical paradox. While national authorities could expropriate tangible property, such as houses, for public purposes, they lacked similar power over patents – even when these patents obstructed public health or hindered vital innovations.²⁷ Globalised monopolies were assimilated into standard property, and curbing their power faced great difficulty even in exceptional circumstances such as the recent pandemic.

²⁵In some respects, the Homoplutia Hypothesis challenges Marx's idea that the corporation represents 'the abolition of capital as private property within the framework of capitalist production itself' and 'the transformation of the actually functioning capitalist into a mere manager, administrator of other people's capital, and of the owner of capital into a mere owner, a mere money-capitalist'. (Marx 1867 Vol. III Part V Chapter 27).

²⁶By replicating market-capitalisation-weighted indices, passive funds mechanically allocate more capital to firms with higher valuations, which are often those with greater market power. This creates a self-reinforcing feedback loop in which price increases trigger further inflows, amplifying concentration and fragility. Even when valuations reflect fundamentals, this mechanism can heighten systemic risk by making asset prices increasingly sensitive to collective flows rather than to underlying information.

²⁷Notably, the fate of expropriated property differs dramatically: a house's destruction contrasts sharply with shared knowledge's inherent tendency to proliferate widely. As Hodgson (2015b) has aptly pointed out, capitalism can only be

Corporate monopolistic power concentration drives global economic stagnation. Reinforcing monopolies produces two contrasting effects: immediate innovative investment incentives triggered by anticipated future monopoly profits, and subsequent negative consequences from increased risks of future innovations being constrained by established monopoly rights. Investment trends over three decades validate this forecast: an initial surge followed by crisis after the 1994 TRIPs agreement. A marked global investment increase occurred for roughly five years, subsequently giving way to continuous decline. This downward trajectory persisted through the early 2000s, ultimately converging with the 2008 financial crisis and global economic downturn (Pagano and Rossi, 2009).

Intellectual Property Rights (IPRs) create restricted investment opportunities and heightened inequality, which is particularly devastating for less developed countries. Collaboration between corporations and governments has transformed IPRs into global mechanisms resembling tariffs – but with broader reach. While traditional tariffs limit goods imports, IPRs now restrict production across firms and nations, reshaping the international division of labour by preventing countries from specialising in domains where they lack IPR ownership (Belloc and Pagano, 2012). Nations and corporations that control extensive intellectual property portfolios gain powerful economic advantages, giving rise to a new form of colonisation. Unlike earlier empires, which owned physical infrastructure, today's monopolies control the infrastructures of knowledge.

The relationship between core nations and intellectual monopolies is complex. Their decentralised, monopolistic operations have fuelled populist backlash, yet national security concerns mandate a special relationship. These firms often become exclusive providers of quasi-secret patents recognised for priority but concealed until deemed strategically necessary (Pagano, 2023). The convergence of military and commercial rivalries intensifies the risks inherent in intellectual monopoly capitalism. An increasingly perilous landscape emerges where military and commercial competition become deeply interconnected. Artificial intelligence (AI) represents the most powerful dual-use technology to date, epitomising these risks and demanding a more sophisticated approach to disarmament (Kissinger et al., 2022).

While automation in earlier eras often resulted in the elimination of jobs, the machines themselves did not develop in skill or intelligence; they simply replaced human labour with mechanical efficiency. These technologies displaced workers but did not actively learn from them. In the Digital Era, however, the relationship between humans and machines has shifted in a profound way with the rise of AI. What distinguishes this moment is the capacity of AI systems to learn and improve continuously. Small, seemingly insignificant human interactions accumulate into vast datasets that enable AI to outperform humans in an increasing number of specialised domains. Central to this transformation is the emergence of self-modifying AI algorithms: systems capable of processing data from countless sources and autonomously adjusting their own rules. Unlike earlier technologies, which remained static until manually reprogrammed, AI-driven algorithms evolve continuously, fine-tuning themselves in ways that push the boundaries of human oversight (Mulligan and Godsiff, 2023: 10).

The rapid expansion of machine learning and artificial intelligence reinforces Braverman's analysis of worker de-skilling and the monopolisation of knowledge, while giving newly troubling meaning to Marx's statement that 'Capital is dead labour, that, vampire-like, only lives by sucking living labour, and lives the more, the more labour it sucks' (Marx, 1894, Vol. I, Chapter 10, Section Introduction). Under intellectual monopoly capitalism, AI does not merely replace human labour but actively extracts knowledge, expertise, and even patterns of thought. These human capacities are transformed into proprietary resources that fuel capitalist accumulation, deepening asymmetries of power while raising urgent questions about control, autonomy, and the future of work.²⁸

understood if we accept that, unlike possession, property is a social construct and a relation among individuals. Unlike possession, property does not require a material thing to which it should be applied. Property rights can create fictitious commodities from intangible assets characterising the relationships among persons.

²⁸On the conflictual process of shaping human-machine interaction in intellectual monopoly capitalism, see Cirillo et al. (2025).

Much AI development concentrates within a few privately owned cloud platforms, creating hierarchical relationships between algorithm developers and platform-dependent firms (Rikap, 2025). AI-driven corporations can advance shareholders' goals through non-human management systems that align perfectly with profit motives. These self-improving algorithms pose unprecedented risks, potentially harming stakeholders in ways previously unimaginable.²⁹ In the AI era, robust ex-ante and ex-post monitoring of corporate systems becomes crucial to protect broader societal interests.

Conclusion

Much like in the Middle Ages, we live in a world where non-state corporate bodies wield immense power. The idealised vision of capitalism – characterised by centralised state lawmaking and decentralised markets, as envisioned by classical legal and economic theory – has never accurately reflected reality. Rather, it has served as a kind of (dis)utopian ideal. The gap between this theoretical model and actual economic practice has only widened over time, particularly with the growing autonomy and scale of business corporations. Modern corporations engage in internal rule-making and consolidate many market transactions, increasingly taking on the role of coordinating and directing human activities. While Coase demonstrated that firms could internalise market transactions and Fuller argued that they could substitute for the rule-making functions traditionally exercised by the state, contemporary business corporations have advanced further by structuring markets under their own quasi-judicial authority. Digital platforms, in particular, have played a pivotal role in facilitating the monopolisation of information flows pertaining to both suppliers and consumers. Simultaneously, feedback mechanisms have been strategically leveraged to intensify reputational incentives among suppliers, thereby reinforcing platform control. Within this framework, the notion of monopolisation assumes a qualitatively distinct dimension: it no longer pertains solely to market dominance in terms of share or scale but rather to the monopolisation of the very organisational infrastructure of the market. This structural capture aligns digital platforms less with conventional monopolies and more with the historical logic of early chartered colonial corporations – entities that did not merely participate in markets but actively constituted and governed their institutional architectures. The regulatory and adjudicative capacities of nation-states have proven comparatively limited when juxtaposed with the expansive transnational reach of large corporate entities, and a new form of legal pluralism characterises the global economy.

However, unlike states – where citizens can vote – or free markets – where individuals can ‘vote with their feet’ – corporations lack comparable sources of democratic legitimacy. They do not benefit from the identification mechanisms of states or non-profits, nor are they driven by the same incentive structures.

Legal measures such as antitrust regulations and efforts to democratise corporate governance have sought to address this legitimacy deficit in different ways. By either dispersing power between owners and workers or balancing their concentrated influence, these efforts aim not only to enhance democratic accountability within corporations but also to ensure that corporate power remains compatible with political democracy. Without such a balance, the disproportionate influence of major corporate shareholders threatens to destabilise democratic institutions. The last three decades have witnessed the disruption of these arrangements.

Contemporary business corporations, frequently reinforced by their associated philanthropic foundations, exert considerable economic and political influence. The hierarchical dynamics between monopolistic entities and their subordinate counterparts increasingly resemble those of feudal overlords, vassals, and serfs, thereby lending theoretical support to concepts such as ‘information feudalism’

²⁹Facebook illustrates these dangers: algorithms tasked with maximising engagement determined that promoting hate speech was most effective – a strategy with devastating consequences, particularly in Myanmar (Harari, 2024). Not only is AI research progressing with limited oversight, but research into computer-brain interfaces – which could fundamentally alter human nature – is also being conducted with little transparency, often in secretive private or military laboratories (Pacchioni, 2025).

(Drahoš, 2002), parallels with ‘agrarian societies’ (Pagano, 2007), and the emerging notion of ‘techno-feudalism’ (Durand, 2020; Varoufakis, 2023). However, critical distinctions exist. While mediaeval corporations were cohesive bodies guided by shared ideological missions, modern corporations display a dual nature: they are both legal persons and tradable financial assets. Contemporary business corporations increasingly operate as financial instruments based on intellectual monopolies and weakly connected to their own workforce, which they often exploit indirectly through dependent satellite firms.

By turning knowledge into private property, corporations have profoundly altered the balance between monopolised and publicly accessible knowledge, thereby reshaping market dynamics. Open markets depend on widely shared knowledge. In late feudalism, universities – organised as autonomous corporations – helped establish open science and expand the knowledge commons, supporting competitive markets. Intellectual monopoly capitalism represents both a return to quasi-feudal hierarchies and a break with this mediaeval tradition of open science.

As corporations have monopolised knowledge and outsourced production, they have become wealthier, more exclusive, and more politically powerful. The 2011 US Supreme Court ruling granting corporations expansive political speech rights greatly amplified their influence over elections and legislation, treating them as ordinary associations while ignoring limited shareholder control and limited liability. This decision overturned a long American democratic tradition, articulated by Theodore Roosevelt³⁰ and codified in the 1907 Tillman Act, which prohibited corporate campaign contributions to protect political equality. As Justice Stevens (2010, 43) wrote in his minority dissenting report to the Supreme Court 2011 decision, ‘The Act was primarily driven by two pressing concerns: first, the enormous power corporations had come to wield in federal elections, with the accompanying threat of both actual corruption and a public perception of corruption; and second, a respect for the interest of shareholders and members in preventing the use of their money to support candidates they opposed’. The right of corporations to speak out exacerbates both problems. Both democracy and corporate efficiency have suffered. Democracy has turned out to be the best tool for rich and powerful individuals, through control of corporations, to gain political power and further increase their wealth. While many corporations have benefited from rent-seeking activities, the corporate system as a whole has become less efficient. Political power, influenced and corrupted by corporations, has failed to implement fair industrial policies, enforce antitrust laws, and promote competition.³¹

The growth of business corporations has become increasingly tied to military procurement, as many modern technologies are inherently dual-use, serving both civilian and military purposes. This dynamic also generates conflicts between distinct capitalist superstructures: whereas corporate political influence once tended to reinforce a single national institutional order, intellectual monopolies today actively intervene across borders – shaping foreign regulatory frameworks, political processes, and technological infrastructures in ways that pit rival configurations of corporate power and state authority against one another. The rise of intellectual monopolies has reinforced adversarial relations among nation-states, operating like a global system of high tariffs that protects domestic industries while restricting rivals’ technological and military capacities. Military secrecy is therefore not a side effect but a structural feature of intellectual monopoly capitalism. It operates as a central mechanism that sustains both the growth and stability of this system.³²

³⁰All contributions by corporations to any political committee or for any political purpose should be forbidden by law; directors should not be permitted to use stockholders’ money for such purposes; and, moreover, a prohibition of this kind would be, as far as it went, an effective method of stopping the evils aimed at in corrupt practices acts’. (Roosevelt quoted in Stevens, 2010: 42). Indeed, the result of relaxing these constraints ‘is simultaneously to loosen the government’s grip on the corporation, and tighten the corporation’s grip on the government’. (Ciepley, 2020: 626).

³¹The Vatican-style regime led by the Chinese Communist Party, in implicit continuity with Confucian traditions, is less permeable to the rent-seeking activities of corporations and, in some respects, provides a more effective regulatory framework for them. In the United States the relationship between politics and corporations has developed in a way opposite to that predicted by Jensen and Meckling (1978), who argued that corporations would be exploited by politicians.

³²For instance, the enactment of the Bayh-Dole Act in 1980 authorised federal agencies in the United States to confer exclusive licenses on federally owned inventions, effectively transferring monopolistic control over publicly funded

Intellectual monopoly capitalism is increasingly intertwined with economic protectionism and militarisation. The historical model of open science and competitive markets that emerged in the late mediaeval period is being progressively displaced by entrenched alliances between corporate actors and state institutions. This transformation has fostered neo-feudal tendencies that weaken international cooperation and erode democratic governance.

Contemporary business corporations – especially large technology firms – have moved even further by structuring markets under forms of quasi-judicial authority of their own. Their role in monopolisation now extends beyond dominance in market share or scale to the control of the very organisational and institutional infrastructure of markets. In this respect, they resemble less the classic monopolies of industrial capitalism than the early chartered colonial corporations, which did not merely operate within markets but actively constituted and governed their rules and structures.

Addressing these developments requires a fundamental rebalancing of political and economic power, as well as much tighter international cooperation to promote open science and open markets and to curb the growing concentration of control over knowledge caused by intellectual monopoly capitalism.

Acknowledgements. I thank Cecilia Rikap, Katharina Pistor and nine anonymous referees of JOIE for useful comments.

References

- Alchian A.A. and Demsetz H. (1972) Production, information costs, and economic organization. *American Economic Review* 62(5), 777–795.
- Anderson B. (1991) *Imagined Communities*. London: Verso.
- Anderson E. (2017) *Private Government*. Princeton: Princeton University Press.
- Aquinas T. (1920) *The Summa Theologica of St. Thomas Aquinas*. London: Burns Oates and Washburne.
- Austin J. (1832) *The Province of Jurisprudence Determined*. London: John Murray.
- Baran P.A. and Sweezy P.M. (1966) *Monopoly Capital: An Essay on the American Economic and Social Order*. New York: Modern Reader Paperbacks.
- Belloc F. and Pagano U. (2012) Knowledge enclosures, forced specialization and investment crisis. *European Journal of Comparative Economics* 9(3): 445–483.
- Belloc M. and Pagano U. (2013) Politics-business co-evolution paths: Workers' organization and capitalist concentration. *International Review of Law and Economics* 33: 23–66.
- Berle A.R. and Means G.C. (1933) *The Modern Corporation and Private Property*. London and New York: MacMillan.
- Berman H.J. (1985) *Law and Revolution*. Cambridge, MA: Harvard University Press.
- Berman Y. and Milanovic B. (2024) Homoploutia: Top labor and capital incomes in the United States 1950–2020. *Review of Income and Wealth* 70(3): 766–784.
- Blair M.M. and Stout L.A. (1999) A team production theory of corporate law. *Virginia Law Review* 85(2): 247–328.
- Braverman H. (1974) *Labor and Monopoly Capital: The Degradation of Work in the Twentieth Century*. New York: Monthly Review Press.
- Calabresi G. (1991) The pointlessness of Pareto: Carrying Coase further. *Yale Law Journal* 100(5): 1211–1273.
- Calabresi G. and Melamed A.D. (1972) Property rules, liability rules, and inalienability: One view of the cathedral. *Harvard Law Review* 85(6): 1089–1128.
- Ciepley D. (2020) The Anglo-American misconception of stockholders as 'owners' and 'members': Its origins and consequences. *Journal of Institutional Economics* 16(5), 623–642.
- Cirillo V., Durand C., Guarascio D., Rikap C. and Rabinovich J. (2025) Power, knowledge and technology in a finite world. *Review of Political Economy* 37(4): 1467–1478.
- Coase R.H. (1937) The nature of the firm. *Economica* 4(16): 386–405. Reprinted in R. H. Coase (1988) *The Firm, the Market and the Law*. Chicago: University of Chicago Press, pp. 33–57.

innovations to private corporations, universities, and other research institutions. Conversely, the establishment of the Invention Secrecy Act of 1951 – and its subsequent extension to allied states – introduced a system of secret patents, whereby certain inventions and technological advancements, as determined by designated federal agencies, were excluded from public disclosure on the grounds of 'national security'. While such patent applications were denied formal recognition, they were retained on file and subjected to periodic reassessment to determine whether the underlying security concerns remained applicable. Comparable mechanisms have been instituted in other jurisdictions, most notably in the People's Republic of China, reflecting a broader international trend towards the securitisation of intellectual property regimes (Pagano, 2023).

- Coase R.H. (1960) The problem of social cost. *Journal of Law and Economics* 3: 1–44.
- Commons J.R. (1924) *Legal Foundations of Capitalism*. Clifton: Augustus M. Kelley [reprinted 1974].
- Coriat B. and Orsi F. (2002) Establishing a new intellectual property rights regime in the United States: Origins, content and problems. *Research Policy* 31(8–9): 1491–1507.
- Davis W.W. (1983) China, the Confucian ideal, and the European age of enlightenment, *Journal of the History of Ideas* 44(4): 523–548.
- Deakin S., Hodgson G.H., Huang K. and Pistor K. (2017) Legal institutionalism: Capitalism and the constitutive role of law. *Journal of Comparative Economics* 45: 188–200.
- Demsetz H. and Lehn K. (1985) The structure of corporate ownership: Causes and consequences, *Journal of Political Economy* 93: 1155–1177.
- Donald D.C. (2016) Conceiving corporate governance for an Asian environment, *Forthcoming in University of Pennsylvania East Asia Review*, 12: 88–138. Draft, August 2016.
- Draho P. (with Braithwaite, J.) (2002) *Information Feudalism*. New York: Routledge.
- Durand C. (2020) *Techno-féodalisme: Critique de l'économie numérique*. Paris: La Découverte.
- Durand C. and Milberg W. (2019) Intellectual monopoly in global value chains. *Review of International Political Economy* 27(2): 404–429.
- Fuller L.L. (1963) Collective bargaining and the arbitrator. *Wisconsin Law Review* 1963: 3–46.
- Fuller L.L. (1969) *The Morality of Law*, revised edn. New Haven and London: Yale University Press.
- Fuller L.L. (1990) Positivism and fidelity to law: a reply to Professor Hart, In Feinberg J. and Gross H. (eds), *Philosophy of Law*. Belmont, CA: Wadsworth Publishing Company, pp. 82–103.
- Fuller L.L. (2001) Economics: the theory of good order and workable social arrangements, In Winston K.J. (ed.) *The Principles of Social Order: Selected Essays of Lon L. Fuller*. Oxford: Hart Publishing.
- Gellner E. (1983) *Nations and Nationalism*. Oxford: Blackwell.
- Gibbs-Kneller D., Gindis D. and Whayman D. (2022) Not by contract alone: The contractarian theory of the corporation and the paradox of implied terms. *European Business Organisation Law Review* 23: 573–601.
- Gindis D. (2009) From fictions and aggregates to real entities in the theory of the firm. *Journal of Institutional Economics* 5(1): 35–46.
- Gindis D. (2016) Legal personhood and the firm: Avoiding anthropomorphism and equivocation. *Journal of Institutional Economics* 12(3): 499–513.
- Gindis D. (2020) Conceptualizing the business corporation: Insights from history. *Journal of Institutional Economics* 16(5): 569–577.
- Harari Y.N. (2024) *Nexus: A Brief History of Information Networks from the Stone Age to AI*. New York: Penguin.
- Hardin G. (1968) The tragedy of the commons. *Science* 162(3859): 1243–1248.
- Harris, F. (2020) A new understanding of the history of limited liability: An invitation for theoretical reframing. *Journal of Institutional Economics* 16(5): 643–664.
- Hart H.L.A. (1961) *The Concept of Law*. Oxford: Clarendon Press.
- Hart H.L.A. (1990) Positivism and the separation of law and morals, In Feinberg J and Gross H (eds), *Philosophy of Law*. Belmont, CA: Wadsworth Publishing Company, pp. 63–81.
- Hart O. (1995) *Firms, Contracts and Financial Structure*. Oxford: Oxford University Press.
- Heller M.A. and Eisenberg R. (1998) Can patents deter innovation? The anticommons in biomedical research. *Science* 280: 698–701.
- Hodgson G.M. (2015a) Much of the 'economics of property rights' devalues property and legal rights. *Journal of Institutional Economics* 11(4), 683–709.
- Hodgson G.M. (2015b) *Conceptualizing Capitalism: Institutions, Evolution, Future*. Chicago: University of Chicago Press.
- Hohfeld W.N. (1919) *Fundamental Legal Conceptions*. New Haven: Yale University Press.
- Iwai K. (1999) Persons, things and corporations: The corporate personality controversy and comparative corporate governance. *American Journal of Comparative Law* 47(4), 583–632.
- Iwai K. (2014) The foundation for a unified theory of fiduciary relationships: one may not make a contract with oneself. SSRN Working Paper.
- Jensen M. and Meckling W. (1978) Can the corporation survive? *Financial Analysts Journal* 34(1): 31–37.
- Kampmann D. (2024) Venture capital, the fetish of artificial intelligence, and the contradictions of making intangible assets. *Economy and Society* 53(1): 39–66.
- Kelsen H. (1948) Law, state and justice in the pure theory of law. *Yale Law Journal* 57(3): 377–390.
- Kissinger H., Schmidt E. and Huttenlocher D. (2022) *The Age of AI: And Our Human Future*. New York: Little, Brown and Company.
- Lambsdorff J.G. (2024) The advantages of the corporate form: An impossibility theorem on persons and things. *Cambridge Journal of Economics* 48(3): 471–488.
- Landini F. and Pagano U. (2020) Stakeholder conflicts and corporate assets: An institutional meta-complementarities approach. *Socio-Economic Review* 18(1), 53–80.

- Marx K. (1867) Capital, Vol. I, Chapter 10, Section 1. Available at <https://www.marxists.org/archive/marx/works/1867-c1/ch10.htm>
- Marx K. (1894) Capital, Vol. III, Part V, Chapter 27. Available at <https://www.marxists.org/archive/marx/works/1894-c3/ch27.htm>
- Mayer C. (2013) *Firm Commitment: Why the Corporation is Failing Us and How to Restore Trust in It*. Oxford: Oxford University Press.
- McMahon C. (2013) *Public Capitalism: The Political Authority of Corporate Executives*. Philadelphia: University of Pennsylvania Press.
- Milgrom P. and Roberts J. (1990) Bargaining costs, influence activities, and the organization of economic activity. In Alt J. and Shepsle K. (eds), *Perspectives on Political Economy*. Cambridge: Cambridge University Press, pp. 57–89.
- Milhaupt C.J. and Pistor K. (2008) *Law and Capitalism*. Chicago and London: University of Chicago Press.
- Mokyr J. (2002) *The Gifts of Athena: Historical Origins of the Knowledge Economy*. Princeton and Oxford: Princeton University Press.
- Mulligan C.E.A. and Godsiff P. (2023) Data and Data Monopolies in the Era of AI: A Research Agenda. <https://doi.org/10.48550/arXiv.2307.08049>. Mimeo.
- Ostrom E. (1990) *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge: Cambridge University Press.
- Pacchioni G. (2025) *Scienza Oscura, Scienza Chiara*. Bologna: Il Mulino.
- Pagano U. (1985) *Work and Welfare in Economic Theory*. Oxford: Basil Blackwell.
- Pagano U. (2000) Public markets, private orderings and corporate governance. *International Review of Law and Economics* 20(4): 453–477.
- Pagano U. (2003) Nationalism, development and integration: The political economy of Ernest Gellner. *Cambridge Journal of Economics* 27(5): 623–646.
- Pagano U. (2007) Legal positions and institutional complementarities. In Cafaggi F, Nicita A. and Pagano U (eds), *Legal Orderings and Economic Institutions*. London and New York: Routledge, pp. 54–83.
- Pagano U. (2010) Marrying in the cathedral: a framework for the analysis of corporate governance. In Paces A.M. (eds), *The Law and Economics of Corporate Governance*. Cheltenham: Edward Elgar, pp. 264–289.
- Pagano U. (2012) The evolution of the American corporation and global organizational biodiversity. *Seattle University Law Review* 35: 1271–1298.
- Pagano U. (2014) The crisis of intellectual monopoly capitalism. *Cambridge Journal of Economics* 38: 1409–1429.
- Pagano, U. (2018) Knowledge as a global common and the crisis of the learning economy. In Guzman M (eds), *Towards a Just Society*. New York: Columbia University Press, pp. 353–356.
- Pagano U. (2019a) Property, possession and knowledge. In Gagliardi F. and Gindis D. (eds), *Institutions and Evolution of Capitalism*. Cheltenham: Edward Elgar, pp. 157–177.
- Pagano U. (2019b) Finance, intangibles and the privatization of knowledge. In Avgouleas E. and Donald D.C. (eds), *The Political Economy of Financial Regulation*. Cambridge: Cambridge University Press, pp. 63–101.
- Pagano U. (2023) Military secrets and the World Trade Organization. *Social Europe*, 1 February. <https://www.socialeurope.eu/military-secrets-and-the-world-trade-organization>
- Pagano U. and Rossi M.A. (2009) The crash of the knowledge economy. *Cambridge Journal of Economics* 33(4): 665–683.
- Pagano U. and Vatiro M. (2015) Costly institutions as substitutes: Novelty and limits of the Coasian approach. *Journal of Institutional Economics* 11(2): 265–281.
- Phillips A. and Sharman J.C. (2020) *Outsourcing Empire: How Company-States Made the Modern World*. Princeton: Princeton University Press.
- Piketty T. (2014) *Capital in the Twenty-First Century*. Cambridge, MA: Harvard University Press.
- Pistor K. (2019) *The Code of Capital*. Princeton: Princeton University Press.
- Pistor K. (2025) *The Law of Capitalism and How to Transform It*. New Haven: Yale University Press.
- Pistor K. and Xu C. (2004) Incomplete law. *Journal of International Law and Politics* 35: 931–1013.
- Posner R. (2010) From the new institutional economics to organization economics: With applications to corporate governance, government agencies, and legal institutions. *Journal of Institutional Economics* 6(1): 1–37.
- Rikap C. (2017) The meanings of university in western history as a clue to understand the consequences of universities' differentiated adoption of enterprise features. *Journal for Critical Education Policy Studies* 15(3): 266–304.
- Rikap C. (2021) *Capitalism, Power and Innovation: Intellectual Monopoly Capitalism Uncovered*. Abingdon: Routledge.
- Rikap C. (2025) *The Rulers*. London: Verso. Forthcoming.
- Rodrik D. (2018) What do trade agreements really do? *Journal of Economic Perspectives* 32(2): 73–90.
- Rudden B. (1985) *The New River: A Legal History*. Oxford: Clarendon Press.
- Schumpeter J. A. (2010) *Capitalism, Socialism and Democracy*. Abingdon: Taylor & Francis.
- Sell S. K. (2003) *Private Power, Public law: The Globalization of Intellectual Property Rights*. Cambridge University Press.
- Sloan A. P. (1963) *My Years with General Motors*. London: Pan Books.

- Song J., Price D.J., Guvenen F., Bloom N. and Von Wachter T. (2019) Firming up inequality. *Quarterly Journal of Economics* **134**(1): 1–50.
- Stern P.J. (2023) *Empire, Incorporated*. Cambridge, MA: Harvard University Press.
- Stevens J. (2010) Dissenting opinion in *Citizens United v. Federal Election Commission*, 558 U.S. 310. Supreme Court of the United States.
- Stiglitz J.E. (2015) New theoretical perspectives on the distribution of income and wealth among individuals. NBER Working Paper No. 21189.
- Stout L. (2005) On the nature of corporations. *University of Illinois Law Review* **1**: 253–267.
- Taylor F.W. (1911) *The Principles of Scientific Management*. New York: Harper and Brothers.
- Trento S. (2026) *Capitalismo carismatico: Il potere dei fondatori e le sfide per la democrazia*. Milano: Bocconi University Press.
- Varoufakis Y. (2023) *Technofeudalism: What Killed Capitalism*. New York: Vintage.
- Vatiero M. (2017) Learning from the Swiss corporate governance exception. *Kyklos* **70**, 330–343.
- Vatiero M. (2021) *The Theory of Transaction in Institutional Economics*. London: Routledge.
- Volpi A. (2024) *Nelle Mani dei Fondi*. Milano: Altra Economia.
- Walras L. (1977) *Elements of Pure Economics, or The Theory of Social Wealth*, trans. W. Jaffé. Fairfield, CT: Augustus M. Kelley.
- Williamson O.E. (1985) *The Economic Institutions of Capitalism*. New York: The Free Press.
- Williamson O.E. (1991) Comparative economic organization: The analysis of discrete structural alternatives. *Administrative Science Quarterly* **36**: 269–296.