

IS PUBLIC OWNERSHIP OR PRIVATISATION BETTER? LAW, ECONOMIC THEORIES, AND HOW DATA HELPS

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Is public ownership or privatisation better? Law, economic theories, and how data helps

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Abstract

Is public ownership or privatisation better, and when? The 20th century was like a pendulum, swinging between narratives that we must abolish private ownership in the means of production, to saying there ‘are virtually no limits on what can be privatized’, and hovering as if ready to swing again. By contrast, this paper shows that outcomes improve and costs decrease when enterprises are publicly owned, if property is ‘non-accessible’. Otherwise private ownership is better. Property is ‘non-accessible’ if an enterprise is a skill-based, natural, or network monopoly. Property is ‘accessible’ if people can buy land or capital, source materials or vehicles, or get skills or knowledge to start up a business. Then, competition channels private greed into the public good. This paper contends that data lets us move beyond ideological clash, and gives answers that practically assist policy, to fill the gaps in human rights and market failure frameworks. For example, water is 90% publicly owned in wealthy countries, with lower bills and better outcomes. For rail, fares are lower with greater electrification if tracks and operators are public. For electricity, bills are lower with more renewables if grids and a retail option are public. For telecom networks, public ownership tends to reduce bills and raise internet speed. Most wealthy countries hold non-accessible property in public hands, and do better for it.

Three further principles are crucial if circumstances change. First, technology can change what is accessible property, such as renewables making electricity generation competitive, or big tech data creating new monopolies. So, law must respond to tech. Second, there may be good non-economic reasons, such as protecting democracy and the environment, to change the public/private balance. Third, good governance is distinct from wise ownership choices, and generally supports voice for workers, as well as investors, and service-users where competition fails. Together, good governance and wise ownership socialise the nature of all property, and internally transform the public-private divide. Policymakers should base decisions on the evidence of what works, and this theory helps make those decisions.

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1. Introduction

There ‘are virtually no limits on what can be privatized’, wrote a World Bank chief in 1992,² with as much confidence as Vladimir Lenin, who in 1920 said that ‘as long as private property in the means of production exists’ there would be monopolist-driven, imperialist wars.³ The 20th century was much like a pendulum, swinging to more nationalisation and socialism, then to more privatisation and capitalism, and then hovering as if ready to swing again. This political conflict reflected a lack of any theoretical

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² MM Shirley, ‘The what, why and how of privatization: a World Bank perspective’ (1992) [60\(6\) Fordham LR S23](#), S24

³ VI Lenin, New Preface (1920) to ‘Imperialism, The Highest Stage of Capitalism’ (1917).

consensus. Lawyers have not had much of a theory at all. Universal human rights include education, health, food, water, housing, clothing, natural resources, transport, communication, media, culture, and the benefits of science.⁴ But human rights are a destination, not a map of how to get there.⁵ Economists have theories of ‘market failure’, chiefly natural monopolies, public goods, externalities, information asymmetry, macro-economic failures,⁶ unequal bargaining power,⁷ and irrationality.⁸ But ‘market failures’ indicate that we should divert from the general laws of contract, property, and corporations. They do not tell us which legal vehicles we should use to reach the destination. Yet in the 21st century, we have more data to find a steady state, and better theory, based on evidence.

This paper’s theory is that if property for production is accessible on a broadly, equal basis, private enterprise produces better outcomes at lower cost. If not, the enterprise performs better in public hands. Property is ‘accessible’ if people can buy land and capital, buy vehicles and materials, get a loan and raise equity, or learn skills and knowledge, to run enterprises. Then, competition channels private self-interest into the public good. As Adam Smith wrote, ‘the butcher, the baker or the brewer’ will produce goods and services the public want, without overcharging customers, even if they only do so out of ‘self-love’.⁹ The limits are that if productive property falls under a skill-based, natural or network monopoly – if bargaining power is structurally unequal – it is non-accessible.¹⁰ Competition will fail to channel private greed toward the public good. Other things being equal, the enterprise will perform better in public ownership.

This theory contends that there are, contrary to the World Bank, ‘limits on what can be privatized’, or nationalised, because the socio-economic costs are too high if unwise choices are made. This theory also rejects the ‘residual control’ and ‘incomplete contracting’ thesis that private contractors invariably reduce costs and innovate more than public employees, propounded by Oliver Hart and others, if government can set the terms in regulation.¹¹ These were evidence-free assertions and they misrepresent legal reality. Contrary to Lenin, this theory distinguishes the ‘means of production’ from access to those means. There is no problem with private ownership of productive property, if access is broadly equal. In contrast to market failure theories that say ‘public goods’ are ‘non-rivalrous’ and ‘non-

⁴ Universal Declaration of Human Rights 1948 [arts 25-27](#), codified in the International Covenant on Economic, Social and Cultural Rights 1966 [arts 11-15](#), a treaty ratified by nearly every country.

⁵ Contrast I Galnoor, ‘Privatisation Policy: The Burden of Proof’ in A Paz-Fuchs, *The Privatisation of Israel* (2018) ch 2

⁶ J Stiglitz and J Rosengard, *Economics of the Public Sector* (4th edn 2015) ch 4, 83-94

⁷ T Piketty, *Capital in the Twenty-First Century* (2011) ch 9, ‘employers have more bargaining power than workers and the conditions of “pure and perfect” competition that one finds in the simplest economic models fail to be satisfied...’

⁸ D Kahneman, *Thinking, Fast and Slow* (2011). For how these factors reduce productive efficiency, E McGaughey, ‘Behavioural Economics and Labour Law’ (2014) [LSE Law, Society and Economy WP 20/2014](#)

⁹ A Smith, *The Wealth of Nations* (1776) [Book I, ch 2](#)

¹⁰ Part 2(2) explains the original definitions of these terms.

¹¹ O Hart, A Shleifer and R Vishny, ‘The proper scope of government: theory and application to prisons’ (1997) [112\(4\) Quarterly Journal of Economics 1127](#), 1131, fn 4, equating outsourcing in an ‘incomplete contract’ to regulation. A Shleifer, ‘State versus Private Ownership’ (1998) [12\(4\) Journal of Economic Perspectives 133](#).

excludable', this theory contends the real issue is whether property is 'non-accessible'. If so, it is a public service that should be publicly owned. 'Public good' status is conceptually interesting, but largely irrelevant in reality. In constitutional terms, the government always has a duty to fulfil economic and social rights.¹² The theory of 'non-accessible' property helps policymakers decide what sectors should be publicly owned, private, or a mix, to do it.

Part 2 sets out three modes of theory on public or private ownership. A first mode, from Adam Smith on, was to list sectors that should be publicly owned, but give thin reasons for why.¹³ The Italian Constitution 1947 article 43, the UK Labour Party's policy in 1948, and James Buchanan's *The Public Finances* worked in a similar mode. The problem is that lists with thin reasons leave little basis for lasting consensus. Second, from John Stuart Mill it was argued that *laissez faire* should be the general rule, with five exceptions.¹⁴ Today economics textbooks widely assert that markets work, but in exceptional cases markets 'fail' (with natural monopolies, public goods, externalities, unequal bargaining power, irrationality, etc) and this justifies government 'intervention'. The conceptual problem is that law builds markets, so there is no state of government non-intervention. There is no such thing as 'the' market, which 'fails', but there are laws and institutions, of infinite variety, which may achieve justice, or not. The practical problem is 'market failure' theories give us little positive guidance on what the law should be, and it is pointless to imagine what a fictitious market might do, instead of pursuing the public good.

So, the third mode of theory analysed the functions of property, to decide how different types should be regulated to fulfil public goals, including human rights. Adam Smith distinguished property for consumption from property for production (i.e. capital). The founder of modern corporate law, A.A. Berle, then distinguished passive property (i.e. shares or securities) from property that is actively managed. Passive property's function had become to distribute wealth and so, wrote Berle, should be regulated for more equal distribution. Managed property, held by directors, separated from investors, needs different regulation to motivate productive work.¹⁵ It is a short step to see that if productive, managed property is also *accessible* this motivates more competitive private enterprise. This leads to the hypothesis that if there are skill-based, natural or network monopolies, property is non-accessible, and public ownership will perform better, under standard principles of good governance.¹⁶

¹² See G Westerveen, 'Towards a system for supervising states' compliance with the right to food' in P Alston and K Tomaševski (eds), *The Right to Food* (1984) [121](#), adding a duty to 'promote'.

¹³ Smith (1776) [Book V, ch 1](#)

¹⁴ JS Mill, *Principles of Political Economy* (1848) [Book V, ch XI, §11](#)

¹⁵ AA Berle, 'Property, Production and Revolution' (1965) [65\(1\) Columbia LR 1](#).

¹⁶ These are found in any good text on constitutional or administrative law, namely pursuit of the public good, no private conflicts of interest, transparency, democratic accountability and the rule of law (including human rights): e.g. T Bingham, *The Rule of Law* (2011), AW Bradley, KD Ewing and CJS Knight, *Constitutional and Administrative Law* (2022). Government failure occurs where these lack, for instance in the UK Water Industry Act 1991 [s 2\(2A\)\(c\)](#), which required Ofwat to secure 'reasonable returns on their capital' for private investors, instead of clean water in the public interest.

Part 3 measures this hypothesis with data in OECD countries, focusing on four enterprise sectors: water, electricity, rail, and telecoms. It maps ownership onto prices and outcomes. We observe that wealthier democracies have an overlapping consensus on what is publicly owned. Deviations are random. Public water is cleaner for lower prices. Public electric grids increase the share of clean energy for lower prices. Public railways have more electrification for lower prices. Public telecoms have higher internet speeds for lower prices. The list goes on, so for instance, public ownership of health care raises life expectancy for lower costs. These patterns fit this paper's theory. While intense political debate remains, most wealthy democracies hold non-accessible property in public hands, and do better for it.

Part 4 formulates three principles of enterprise ownership for changing times, and points to future research. The principles are that (1) technology changes access to property for production, potentially enabling more competition, or more monopolies, (2) there can be good non-economic reasons to change the public/private balance, such as to halt the concentration of wealth and protect democracy, or rescue the environment and stop climate damage, and (3) the good governance of enterprise is a separate issue to ownership, and is based on a symmetry between contribution and voice for three key stakeholder groups: investors, workers and service-users. Together, good governance and wise ownership socialise all property, transforming the public and private divide, because everywhere property will be used to serve goals of social justice. These principles, like the paper's theory, are testable through developing a better functional grammar of enterprise laws, mapping them over time, and around the world, and matching data on laws with data on outcomes. Part 5 concludes.

2. Three modes of theory on public or private ownership

Before looking at data ownership and outcomes, it is useful to see how modern theory emerged. Long ago, in ancient Athens, Plato had argued that property should be owned by the 'community'. Though farmers 'must not farm in common', they should regard land 'as a common possession of the entire state'.¹⁷ His pupil, Aristotle, cautioned that 'Property should be in a certain sense common', but we should reject 'excessive unification of the state'. If 'everyone has a distinct interest,' said Aristotle, 'men will not complain of one another and they will make more progress, because every one will be attending to his own business.'¹⁸ These behavioural theories still hold truth, yet gave no answer about when 'unification in the state' became 'excessive'. They could not foresee today's state and corporate production on a mass scale.¹⁹ That began in the industrial revolution, as did three new modes of theory.

¹⁷ Plato, *The Laws* (350 BC) 207–8

¹⁸ Aristotle, *Politics* (c. 340 BC) Book II, V.

¹⁹ E McGaughey, *Principles of Enterprise Law* (2022) ch 1 for history in ancient, medieval and mercantile ages.

(1) Adam Smith, and lists

With new coal pits and steam engines built around his Glasgow law lecture halls, Adam Smith wrote the first modern theories on public and private enterprise. In *The Wealth of Nations* chapter, ‘Of the Expences of the Sovereign or Commonwealth’, Smith tackled the growth of corporations, chartered by the state with monopolies on trade, many of which also performed public functions. He argued that directors of joint stock companies, especially the South Sea, Royal Africa, or East India Company, were prone to ‘negligence and profusion’ because they were in charge of ‘other people’s money’, and so would not exercise ‘the same anxious vigilance’ as they would with their own money.²⁰ State and corporate production were synonymous for Smith, but there were exceptions where either could work. First, where public works are ‘necessary for facilitating Commerce in general’, Smith said the project could often be better run by public officials, including high roads, harbours, and the post,²¹ on top of the machinery of defence and justice.²² Second joint stock corporations were sometimes successful, wrote Smith, if ‘all the operations are capable of being reduced to what is called a routine, or to such a uniformity of method as admits of little or no variation’. He listed banking, insurance, making canals, and bringing water to a city.²³ Thus public ownership and control was legitimate in transport, ports, communication, banking, insurance, and water - much of the economy when modern education, health, and housing did not exist, and electric power, rail or telecoms were not yet invented.

However, Smith’s reasoning was thin on *why* this list of enterprises was suited to public ownership or control. So too was the reasoning behind *why*, as Smith famously wrote, ‘the butcher, the baker, and the brewer’ were suited to private ownership and competition – save the obvious that these tended to be small partnerships, not mass joint stock corporations. What sort of publicly owned bodies would be best at ‘facilitating’ commerce? What could be seen as ‘routine’? Why did either matter? Food facilitates commerce, and farming was routine. Yet Smith made no argument for farming being better held in public ownership or control. Some sectors might be remote from commerce, some might be more ‘routine’ than innovative. Yet sectors remote from facilitating commerce (such as orphan care) are usually public, and most cutting-edge innovation is found in publicly funded universities, not merely in private companies.²⁴ With thin reasons, one might agree with what was on Smith’s list, or not.

The Italian Constitution 1947 article 43 used a similar mode of theory, saying the public sector

²⁰ Smith (1776) [Book V, ch 1, Part III](#)

²¹ Smith (1776) Book V, ch 1, Part III, §90. Smith went into detail on which types of roads could function with tolls or turnpikes or not, and compared both France and China.

²² Smith (1776) Book V, ch 1, Parts I and II

²³ Smith (1776) Book V, ch 1, [Part III, §121](#)

²⁴ e.g. L Hooker and D Palumbo, ‘Covid Vaccines: Will Drug Companies Make Bumper Profits?’ (18 December 2020) [BBC News](#) and S Cross et al, ‘Who funded the research behind the Oxford–AstraZeneca COVID-19 vaccine?’ (2021) [6\(12\) BMJ Global Health](#)

may own ‘specific enterprises or categories of enterprises which relate to essential public services or sources of energy or monopolistic situations and which have the nature of primary general interest.’²⁵ But what made an enterprise ‘specific’? Which public services are ‘essential’? What counts as ‘monopolistic’? And which interests are ‘primary’? Today renewable ‘sources of energy’ are rapidly innovating, and generation is impossible to monopolise, so private competition works well, unlike coal or gas. The UK Labour Party, *Public Ownership: The Next Step* (1948) listed five situations that justified public ownership, if enterprises were (1) basic to other industries, for human life, health or defence, (2) monopolised, (3) inefficient without capital development, (4) large enough to affect overall employment, or (5) suffering from poor industrial relations. But again, what was ‘basic’, ‘monopolised’, ‘inefficient’, affected ‘employment’ or poor work relations? Clothing is basic, but we do not make it public. Monopolies are bad, but a government might break them up, not take ownership. Many sectors are inefficient, may affect employment, or may have poor industrial relations, but the government may solve these problems with employment rights, fiscal policy, monetary policy, or all three.

In the same mode, but opposite politics, James M. Buchanan, *The Public Finances* argued ‘collective goods’ have a feature of ‘indivisibility of the services rendered’ so many people ‘can benefit’ whether built by one person ‘or whether all join in’ funding.²⁶ He included defence, ‘law and order’ (courts), ‘monetary stability’ (a central bank), and ‘regulatory measures’ (such as food and traffic laws).²⁷ Only these should be fully public. Then there were ‘quasi-collective goods and services’, some of which are ‘indivisible, but they assume also characteristics of private goods and services in that a portion of the benefits are divisible’. These included education, parks, ‘slum clearance’ and medical care.²⁸ Finally there were ‘private services publicly provided’ where ‘benefits are largely divisible among users’, namely postal services, highways, rail and telephones. Buchanan thought public ownership here was ‘historical accident’.²⁹ Buchanan did say ‘the dividing lines... should not be overly emphasised’, yet the problem is that there is no dividing line at all. To dispel two of Buchanan’s examples, ‘law and order’ is not just collective, because courts ‘divisibly’ benefit parties to a case, and may never benefit anyone else.³⁰ Highways are not simply private, as they benefit people that do not use them, yet rely on transport of goods and services. In a society, and a modern interdependent economy, all goods and services are at once individual and collective, ‘intertwined in reality as an indissoluble unity and are distinct only in our

²⁵ Italian Constitution 1947 [art 43](#)

²⁶ JM Buchanan, *The Public Finances: A Textbook* (1960) ch 3, 17-18

²⁷ Buchanan (1960) ch 3, 19-21

²⁸ Buchanan (1960) ch 3, 23, note this assertion: ‘The British people have apparently decided that the indivisible benefits to the community at large from having a healthy population outweigh the disadvantages that arise out of public operation.’ Life expectancy was 1.36 years lower in the US than the UK in 1960, and by 2022 it was 4.63 years lower in the US.

²⁹ Buchanan (1960) ch 3, 24

³⁰ For a better discussion, *R (UNISON) v Lord Chancellor* [2017] [UKSC 51](#), [66]-[72] per Lord Reed

imaginations.³¹ All Buchanan did was transpose his favoured lists onto thin reasons. Without more, lists and thin reasoning did not move the debate on from 20th century ideological clash.

(2) From *laissez faire*'s exceptions to market failures

A second mode of theory was to argue that markets were the best starting point, but give exceptions. John Stuart Mill in *Principles of Political Economy* first contended that *laissez faire* 'should be the general practice: every departure from it, unless required by some great good, is a certain evil.'³² Oft forgotten, Mill then gave five (large) exceptions. The first exception was that in education 'the intervention of government is justifiable', and so too where people cannot easily judge their interests: the 'consumer' in a market can do so only with 'numerous abatements and exceptions'. Second, there was an exception to *laissez faire* in any long-term contract, where people decide what they will be bound to 'at some future and distant time', such as in marriage. Both of these exceptions warranted different rules in contract law, such as consumer rights, yet said less about public or private ownership.

The third exception, crucially, was that if 'individuals can only manage [a] concern by delegated agency'. Companies were the major case. According to Mill, whatever 'can only be done by joint-stock associations, will often be as well, and sometimes better done, as far as the actual work is concerned, by the state' because shareholders had such 'difficulty of exercising' a power of removal over directors to establish accountability, and because government may achieve 'greater publicity and more active discussion and comment'.³³ Companies may not have a legal monopoly, yet in some cases 'a practical monopoly, with all the power it confers of taxing the community, cannot be prevented from existing', including in 'gas and water companies', 'paving and cleansing of the streets' and 'a road, a canal, or a railway'.³⁴ This concept of 'practical monopoly' was distinct from another crucial concept from Mill, 'a natural monopoly in favour of skilled labourers against the unskilled', which might enable those with higher skills to charge unfairly high prices.³⁵

Fourth, there was an exception where people cannot easily 'give effect' to their own interest, even by acting in 'concert', such as workers in a union. Here pressures on 'every individual would lie in violating' attempts to maintain solidarity, for instance to demand fair working time. For Mill, this justified labour rights in law. Fifth, government intervention was justified for social security, at that time in managing the 'poor law', as a group of acts organised 'for the interest of other people'. Mill summed

³¹ O Gierke, 'The social role of private law', translated by E McGaughey (2018) [19\(4\) German LJ 1017](#), 1034

³² JS Mill, *Principles of Political Economy* (Appleton & Co 1896) [Book V, ch XI, §7, 569](#). Again at [572](#) 'as a general rule, the business of life is better performed when those who have an immediate interest in it are left to take their own course, uncontrolled either by the mandate of the law or by the meddling of any public functionary.'

³³ Mill (1896) [Book V, ch XI, §11, 582](#)

³⁴ Mill (1896) [Book V, ch XI, §11, 584](#)

³⁵ Mill (1899) [Book II, ch XIV, §2, 479](#)

up these exceptions in *On Liberty* when he wrote that regulation of all trade was justified to prevent harm, because ‘trade is a social act’, not a private one. Unlike many who nail free-market colours to Mill’s mast, Mill did not apply his non-intervention principle to trade at all.³⁶

Mill’s thinking, even if misremembered,³⁷ set the mode and content of market failure theory. Mill’s first two exceptions are now conceptualised as information asymmetries, bounded rationality, or irrationality in behavioural economics.³⁸ Mill’s third (and wide-ranging) exception of ‘delegated agency’ became the ‘separation of ownership and control’ and then ‘agency costs’ that are central to corporate governance and management literature.³⁹ This augments the unequal power between those who control property, and those who invest their capital, labour or custom. Mill’s ‘practical monopoly’ is today’s ‘natural monopoly’. Mill’s ‘natural monopoly’ is now seen as unequal bargaining power, in the same category of what Adam Smith called the ability to ‘hold out’ longer because of inequality of property,⁴⁰ with which we can include rare skills. Mill’s fourth exception became known as ‘collective action problems’.⁴¹ Most labour economists understand this as a component of unequal bargaining power, along with information asymmetry, and inequality of property, between workers and employers. Mill’s fifth exception is harder to slot into today’s theory, yet social security is commonly rationalised as existing for the same reasons as labour rights do in general: the systematic unequal bargaining power workers or the unemployed have in getting a job, disability protection, or an old age pension.⁴²

Market failure literature is fiercely contested, yet Joseph Stiglitz and Jay Rosengard give a good starting point with a five-fold list of market failures (which do not produce the highest output for the lowest cost: ‘Pareto efficiency’). Like Mill’s ground, but with notable additions or omissions, they are:⁴³

- (1) failures of competition, which include cartels, monopolies and natural monopolies (where it costs less for one firm to provide services or goods), all of which restrict supply and raise prices;
- (2) public goods, where consumption is non-rivalrous and non-excludable, likely leading to

³⁶ JS Mill, *On Liberty* (1859) [ch V, ‘Applications’](#), ‘Again, trade is a social act.’

³⁷ e.g. J Stiglitz and J Rosengard, *Economics of the Public Sector* (2015) ch 1, 6, state that Mill believed ‘government should leave the private sector alone; it should not attempt to regulate or control private enterprise. Unfettered competition would serve the best interests of society.’ This suggests the authors did not read Mill’s exceptions to *laissez faire*.

³⁸ e.g. H Simon, ‘A Behavioral Model of Rational Choice’ (1955) 69 *Quarterly Journal of Economics* 99. D Kahneman, JL Knetsch and RH Thaler, ‘Anomalies: The Endowment Effect, Loss Aversion, and Status Quo Bias’ (1991) 5(1) *Journal of Economic Perspectives* 193. Kahneman (2011). D Ariely, *The Upside of Irrationality* (2011)

³⁹ AA Berle and GC Means, *The Modern Corporation and Private Property* (1932) 114, ‘If we are to assume that the desire for personal profit is the prime force motivating control, we must conclude that the interests of control are different from and often radically opposed to those of ownership...’ M Jensen and W Meckling, ‘Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure’ (1976) 3(4) *Journal of Financial Economics* 305. McGaughey (2014) [LSE Law, Society and Economy WP 20/2014](#), 15-16

⁴⁰ Smith (1776) Book I, ch 8, ‘the masters can hold out much longer.’

⁴¹ cf M Olson, *The Logic of Collective Action: Public Goods and the Theory of Groups* (1965) though far more narrow than Mill.

⁴² cf M Kalecki, ‘Political aspects of full employment’ (1943) [14\(4\) Political Quarterly](#) 322

⁴³ J Stiglitz and J Rosengard, *Economics of the Public Sector* (2015) ch 4. cf FM Bator, ‘The Anatomy of Market Failure’ (1958) [72\(3\) Quarterly Journal of Economics](#) 351 with a narrower list: failures in competition, externalities and public goods.

underproduction when left to private markets because revenue cannot be easily captured, so private companies will not start;

- (3) negative externalities, such as pollution that is not halted, which lowers prices at which the polluter sells, and therefore leads to overproduction of an undesirable service or good;
- (4) information failures (including incomplete markets) where differences in information lead to a misallocation of a joint product and may price some out of services or goods altogether;
- (5) macro-failures, such as unemployment, inflation or general disequilibrium – a category which describes symptoms, without necessarily identifying their (much debated) causes.⁴⁴

The additions to Mill are negative externalities, macroeconomic failures and ‘public goods’. Externalities were a concept developed by Cecil Pigou from 1920.⁴⁵ Macroeconomics was established as a field with John Maynard Keynes from 1936.⁴⁶ ‘Public goods’ were a concept from Paul Samuelson, narrowly and counter-intuitively defined as such, in 1954.⁴⁷ Stiglitz and Rosengard also omit two concepts in their market failure list, which are well-established in law and economics:

- (6) unequal bargaining power, which starts with inequality of property or skills, collective organisation, and information, and leads to maldistribution of a contract’s surplus, in turn damaging motivation to produce;⁴⁸ the separation of ownership and control augments unequal power over property within a firm.⁴⁹ All monopolies are sub-species of unequal bargaining power;
- (7) irrational behaviour (going beyond asymmetrical information), which leads most human beings, using quick ‘system 1’ thinking, to make unwise choices as habits of daily life,⁵⁰ a misallocation of resources, and overproduction of undesirable goods.

We may draw a table for comparison as follows, and we may add the standard legal responses.

Figure 1: Exceptions to laissez faire, market failure, and standard legal responses

	Mill’s exceptions to <i>laissez faire</i>	Market failure types	Standard legal responses
1	People can not easily judge own interests	Information failure (or bounded rationality, irrationality)	Rights replace terms of contract, e.g. in consumer, family, labour, tenancy law

⁴⁴ On the limits of this category, and discussion of the causes of unemployment and inflation, E McGaughey, *Principles of Enterprise Law* (2022) ch 2(2)(e), 73-74, ch 5(4)(a) and ch 10

⁴⁵ C Pigou, *The Economics of Welfare* (1952) Part II, ch 2. Also A Marshall, *Principles of Economics* (1890) Book II, ch 2.

⁴⁶ JM Keynes, *The General Theory of Employment, Interest and Money* (1936)

⁴⁷ PA Samuelson, ‘The Pure Theory of Public Expenditure’ (1954) 36(4) *Review of Economics and Statistics* 387–89

⁴⁸ Smith (1776) Book I, ch 8, §12. A Marshall, *Principles of Economics* (3rd edn 1895) Book VI, ch 4, 649. T Piketty, *Capital in the Twenty-First Century* (2011) ch 9. McGaughey (2014) [LSE Law, Society and Economy WP 20/2014](#), 12-13

⁴⁹ Berle and Means (1932) 114. Also 5 and 64, on analogy of investors and workers’ losing control over what they owned.

⁵⁰ Kahneman (2011) ch 1, 22-23 and chs 27, 31, etc

2	Obligations binding for a long period of time	Information failure (or bounded rationality, irrationality)	Rights replace terms of contract, e.g. in consumer, family, labour, tenancy law
3	Delegated agency needed to run an enterprise	Separation of ownership and control (augments unequal bargaining power)	Rights in company constitutions, e.g. to info, to meet, to vote, to remove directors
3a	Practical monopoly	Natural monopoly (leads to unequal bargaining power)	Public ownership, e.g. of central bank, energy grid, water, rail, roads, comm's
3b	Natural monopoly	Special skills (leads to unequal bargaining power)	Public ownership, e.g. of schools, health care, access to justice or legal aid
4	Cannot give effect to interests except by acting in concert	Collective action problems (leads to unequal bargaining power)	Rights replace terms of contract, e.g. in labour law, consumer law, tenancy law
5	Acts in interests of others, e.g. poor law/social security	Unequal bargaining power	Public pension, unemployment insurance, or disability benefits
6	-	Externalities (negative)	Tort, criminal, or tax law to ban harm
7	-	Unemployment, inflation and disequilibrium	Fiscal policy from government, and monetary policy from central bank
8	-	Public goods	Public ownership, e.g. street lights

These categories of market failure illuminate what the law should do, but do not in themselves explain what should happen next.⁵¹ On one side, Stiglitz and Rosengard say that ‘failure of competition’ is the leading reason for public ownership but, for example, do not separate how different kinds of competition, or information failure may point to different kinds of norm.⁵² On another side, Robert Poole Jr at the Heritage Foundation argued that nothing should be in public ownership except ‘public goods’, and most things that are publicly owned do not fit this narrow definition.⁵³ This would be a licence to privatise nearly everything, but is so extreme that it fits with almost no country anywhere, and illustrates how futile and redundant Samuelson’s ‘public goods’ theory is in practice.

More recently, Tālis Putniņš argued that public ownership of enterprise is legitimate, but as a last resort. Before the public takes ownership five questions (apparently) should be answered:⁵⁴

- (1) is there a market failure (defined only as natural monopoly, public goods and externalities)?
- (2) if there is a market failure, can it be resolved with regulation or subsidies?
- (3) if not, can quality and quantity of services or goods be mandated in law for private provision?
- (4) if not, are the goals simple, largely finance-based, and is there a need to be innovative?
- (5) if so, ensure the welfare loss of government failure does not outweigh losses of market failure.

⁵¹ e.g. Stiglitz and Rosengard (2015) ch 4, 86-87 suggest a rationale for ‘government intervention of some kind’, not what.

⁵² Stiglitz and Rosengard (2015) 201, ‘The most important market failure that has led to public production of private goods arises when markets are not competitive. This provides at least part of the explanation for government production in postal services, telecommunications, water, harbors, and electricity.’ They then point to natural monopoly.

⁵³ Robert Poole Jr, ‘Municipal services: the privatisation option’ (11 January 1983) Heritage Foundation, ‘Most local services have few attributes of true public goods. Most of them - garbage collection, park and recreation services, libraries, airports, transit, and aspects of police and fire protection - have specific and identifiable users, who are the services’ beneficiaries.’

⁵⁴ T Putniņš, ‘Economics of state-owned enterprises’ (2015) [38\(11\) International Journal of Public Administration 815](#)

This model's flow is alluring and elegant but there are three main problems. First, it does not justify its starting presumption that markets fail less than government.⁵⁵ Government sets the rules for contracts, property and corporations. If government will fail to run a public enterprise, why assume it would succeed in building markets?⁵⁶ Second, Putniņš defines market failures narrowly as monopolies, public goods or externalities, and excludes unequal power, irrationality, information asymmetry, and macro-economic failure, because he argues that other things are often 'implicitly based on addressing [one of his] underlying market failure[s]'.⁵⁷ But this is not the case. For instance, the special skills that create unequal power of doctors in relation to patients do not derive from a natural monopoly (in the modern sense), public good or externality. An entire market for health (if left to private ownership) will distort without any form of collusion among doctors or third-party cost, because all doctors have rare skills and thus unequal bargaining power to extract ever more money from patients. If organised into corporations, for instance at hospitals or insurers, the separation of ownership and control will further augment the ability of those in power to extract more from everyone else. Third, at each step, Putniņš' frame requires a hypothetical cost-benefit analysis, for instance whether subsidies or legal mandates might do the trick. This offers little practical guidance based on the evidence we have already.

Another theory advanced by Oliver Hart, Andrei Shleifer and Robert Vishny is that the 'proper scope of government' only includes services where the risk of poor quality provision is extreme,⁵⁸ such as in running Air Force One.⁵⁹ On this view, government failure is almost always worse than market failure. 'Private contractors' may be assumed to innovate, improve quality and reduce costs more than 'government employees'.⁶⁰ Because private firms (ostensibly) have residual control and take residual returns they will always seek to reduce costs for a certain quality, whereas 'government employees' do not have such an incentive since they (ostensibly) need approval to implement improvements.⁶¹ Even privatisation of schools, health care and prisons may work, according to Shleifer.⁶²

This argument was not new, but similar to Milton Friedman's view that 'private monopoly may

⁵⁵ cf Mill (1896) [Book V, ch 1, §2, 389](#), explains markets are built by government, notably deciding what to enforce.

⁵⁶ Note that the answer of FA Hayek, *Law, Legislation and Liberty* (1970) was that in common law systems judges are inherently better than the legislature. This is naïve, and ignored – as in the US – judicial capture by political parties.

⁵⁷ Putniņš (2015) [38\(11\) IJPA 815](#), argues (mistakenly) the public sector operating 'hospitals... to guarantee a minimum level of healthcare' is found in places 'more inclined to socialist ideologies', yet this can be reduced to a 'public good' of 'social stability, cohesion and general wellbeing'.

⁵⁸ Hart et al (1997) [112\(4\) QJE 1127](#), 1130 'the bigger the adverse consequences of (non-contractible) cost cutting on (non-contractible) quality, the stronger is the case for inhouse provision.'

⁵⁹ Shleifer (1998) [12\(4\) JEP 133](#), 140-1

⁶⁰ Hart et al (1997) [112\(4\) QJE 1127](#), 1129

⁶¹ Shleifer (1998) [12\(4\) JEP 133](#), 138, 'weak incentives of government employees with respect to both cost reduction and quality innovation underlie the basic case for the superiority of private ownership, a case that has been confirmed by the variety of empirical studies and general observation.'

⁶² Shleifer (1998) [12\(4\) JEP 133](#), 138-9 and 147, 'even in most of the situations where cost reduction has adverse consequences for non-contractible quality, private ownership is still superior.' Shleifer opposed private prisons in Russia.

be the least of evils' compared to 'public monopoly, or public regulation', and even schools should be private and parents given vouchers,⁶³ or Friedrich von Hayek's argument that once tax is raised 'it will often be the more effective method to leave the organization and management of [public] services to competitive enterprise'.⁶⁴ There are almost no market failures, even without a market.

At least four difficulties with Hart's theory and its variants are that (1) private contractors also have employees, who by default have no different incentive to innovate or reduce costs than public employees, (2) as a matter of legal fact, public employees can be given the same authority, incentives and security by contract as private contractors, (3) when asset managers are shareholders of contractors it is mistaken that they get a residual 'return' (ostensibly unlike public employees),⁶⁵ because they simply control voting power over other people's money: the residual belongs to beneficiaries who lack power,⁶⁶ and (4) governments who are responsive to voters have more of an incentive to improve quality and reduce costs for the public good than private contractors who face no competition.⁶⁷ While this line of theory rationalises policies to 'privatise everything', it is not based on evidence, legal reality, or credible logic. In particular, it is false that regulation of a private monopoly can replicate the efficiency of public ownership, because profit taken by private investors is a deadweight loss. Regulation may only sets outer limits (in maximum prices, or lowest acceptable standards) but cannot alter the fact that private monopoly profit subtracts resources that would otherwise be used for public investment.

Market or government failure literature has the inherent problem that there is no such thing as 'the market', with which government interferes. There are laws that shape institutions, and a market is one of these institutions. It is not 'the' market which fails, because markets come in infinite variety, depending on the infinite variety of laws. It makes no sense to place the default of a theory on a discrete class of legal arrangements that is not in fact a default. It is only the law that 'fails' in its task to uphold the public good. So, there must also be a positive account of what law functionally does, founded on evidence, not assumptions, to understand what enterprises should be public or private.

(3) Access to property for production

The third mode of theory around public or private ownership began by unravelling the concept of 'property', to understand its human functions.⁶⁸ The first step, taken by Adam Smith himself in part,

⁶³ M Friedman, *Capitalism and Freedom* (1962) ch II, 29

⁶⁴ F von Hayek, *Law, Legislation and Liberty* (1979) vol III, ch 14, 46

⁶⁵ Hart et al (1997) [112\(4\) QJE 1127](#), 1129, 'the employee receives only a fraction of the returns to either the quality improvement or the cost reduction.' The authors conflate 'residual control' and residual 'returns' in this sentence.

⁶⁶ See E McGaughey, *Participation in Corporate Governance* (2015) ch 2, on the new separations with institutional investment.

⁶⁷ Hart et al (1997) [112\(4\) QJE 1127](#), 1129, the authors 'believe that the identification of privatization with competition is misleading', which is correct, but do not explain how privatisation works in the public interest, without competition.

⁶⁸ FS Cohen, 'Transcendental nonsense and the functional approach' (1935) 35(6) *Columbia LR* 809, on human meaning.

was to contrast property used to produce ‘revenue’ (that is, capital), from property used for ‘immediate consumption’.⁶⁹ By its function, capital was also known as ‘productive property’, and was in A. A. Berle’s words ‘devoted to production, manufacture, service or commerce, and designed to offer, for a price, goods or services to the public from which a holder expects to derive a return.’⁷⁰ Put simply, productive property invites more rules because its use involves power over many more people.⁷¹

Though Smith distinguished property for production from consumption, two mystic veils of legal form shrouded understanding its economic significance until the turn of the 20th century. On the one hand it was vital to see that property ‘is not a single absolute right, but a bundle of rights’ as John Commons put it,⁷² and this is most true in corporations. Property can be held over a single thing, or many things under a trust or corporation. In turn, trusts and corporations can be held by many people through ownership of equity, by beneficiaries or shareholders. Equitable ownership is separated from control over legal title to assets, by trustees or directors. Depending on a corporation’s constitution, different rights and ranks can be created to cash flow, to vote, to direct the business, and so on. This concept of a bundle of rights was not merely a ‘slogan’,⁷³ but key to thinking clearly about how the functions of property (including each of the rights within a corporation, such as the right to vote,⁷⁴ to direct, to call dividends, to receive the residual in insolvency, and so on) could be regulated according to whatever the legal imagination may choose.⁷⁵

On the other hand, it was also vital to see that property is a right that creates duties on other people – or that each right carries a correlative duty, as Wesley Hohfeld explored⁷⁶ – and that property is not superior to other personal or human rights. In 19th century theory, ‘property’ was meant to be separate from ‘obligations’ (such as contracts, torts and unjust enrichment) and ‘persons’ (such as individuals, families and corporations) on the basis that it expressed a relationship between a person and a thing, good against the world (not just individuals or groups).⁷⁷ These fields of ‘private’ law were

⁶⁹ Smith (1776) [Book II, ch 1](#), explaining the distinction as a division of functions like division of labour.

⁷⁰ AA Berle, ‘Property, Production and Revolution’ (1965) 65 CLR 1, 4

⁷¹ FL Neumann, *Behemoth: The Structure and Practice of National Socialism* (1942) [Part Two, III, 210](#). O Kahn-Freund, ‘Hugo Sinzheimer 1875–1945’ in *Labour law and politics in the Weimar Republic* (1981) 102

⁷² JR Commons, *The Distribution of Wealth* (1893) 92. Also AM Honoré, ‘Ownership’, in AG Guest (ed), *Oxford Essays in Jurisprudence* (1961) 107, 112–24

⁷³ JE Penner, ‘The Bundle of Rights Picture of Property’ (1996) 43 UCLA Law Review 711, 714

⁷⁴ n.b. *Pender v Lushington* (1877) 6 Ch D 70 per Lord Jessel MR on the right to vote as a right of property.

⁷⁵ Foremost in this Berle and Means (1932) Book II, ch I, 129–131

⁷⁶ W Hohfeld, ‘Some Fundamental Legal Conceptions as Applied in Judicial Reasoning’ (1913) 23 Yale LJ 16. Similarly K Marx, *Grundrisse* (1858, published 1939) arguing that property was a social relation since ‘an isolated individual could no more have property in land and soil than he could speak.’ A Corbin, ‘Taxation of Seats on the Stock Exchange’ (1922) 31 Yale LJ 429, ‘Property has ceased to describe any *res*, or object of sense, at all and has become merely a bundle of legal relations – rights, powers, relations privileges, immunities’. M Cohen, ‘Property and sovereignty’ (1927) [13\(1\) Cornell LR 8](#), property is ‘dominion over things is also imperium over our fellow human beings’.

⁷⁷ FC Savigny, *System des heutigen Römischen Rechts* (1840) §56. J Austin, *Lectures on Jurisprudence* (1885) [383](#), ‘*jus in rem*... avails against the world at large, in contradistinction to *jus in personam*, which avails only against certain or determinate individuals....’

meant to be separate from ‘public’ law, which concerned the state (such as constitutional, administrative and criminal law).⁷⁸ Yet as democracy spread, property rights were often put below contractual rights for social purposes (such as tenants’ right to remain in their home even if a freehold is sold).⁷⁹ Property rights frequently ranked behind parties with contractual rights to get repaid if a debtor was insolvent (such as priority for workers’ wages over banks with floating charges).⁸⁰ Property was not better – and in fact was not distinct at all – from other private rights. Nor was it better than other public rights.⁸¹ It is a ‘social relation’.⁸² In the Universal Declaration, property is a human right, but one among many.⁸³ Property often ranks below other rights, just as economic interests rank behind the public good.⁸⁴

With these veils lifted, a second step to understand property functionally, made by Berle, was to distinguish productive property that is ‘passive’ (i.e. shares or securities) and productive property that is ‘managed’ (e.g. machinery, vehicles or buildings). Managed property had become ‘subject to the political process’ where ‘social development’ was ‘intense and likely to continue’.⁸⁵ Passive property’s main purpose, said Berle, had become not just accumulation of wealth but being ‘a vehicle for rationalized wealth distribution’, so ‘re-distribution of wealth-holding can take place without interruption in the productive process’.⁸⁶ Thus, the law of securities, pensions, insurance, finance and tax protected the interests of passive investors, often saving for retirement, for a just distribution of wealth. Through passive property many people (e.g. buying shares) could benefit from managed property that is monopolised, but this did not change the nature of the managed property. Instead, the law of corporate governance, sector regulation, and public ownership was emerging in the ‘political process’ to ensure such property was managed in the public interest.

The third, short step (after distinguishing consumptive, passive property) is that productive, managed property is apt for private ownership if it is accessible on a broadly, equal basis. If not, it should be publicly held. Adam Smith’s conditions for competition to channel private greed to the public good do not exist. In Berle’s terms, this is *how* the ‘political process’ should become involved in

⁷⁸ *Institutes* 1.1.4, and *Digest* 1.1.2.

⁷⁹ BGB 1900 §566 (which does not see a lease as proprietary, but still allows it to bind a landlord and successors). cf Land Registration Act 2002 Sch 3, para 2 (elevating the lesser ‘proprietary’ lease to bind freeholders). Also *Bruton v London and Quadrant Housing Trust* [1999] [UKHL 26](#), per Lord Hoffmann.

⁸⁰ Insolvency Act 1986 ss 176ZA, 175 and 176A, after Preferential Payments in Bankruptcy Act 1897 followed *Salomon v A Salomon & Co Ltd* [1896] [UKHL 1](#). Supposedly personal obligations may also bind everyone: *Lumley v Gye* [1853] EWHC QB J73. Further S Worthington, ‘The Disappearing Divide between Property and Obligation’ (2007) 42 *Texas International LJ* 917, 919

⁸¹ K Gray, ‘Property in Thin Air’ (1991) [50\(2\) Cambridge LJ](#) 252, ‘Property is not theft - it is fraud.’

⁸² P Ireland, *Property in Contemporary Capitalism* (Bristol UP 2024) ch 2, exploring the shifts in concepts.

⁸³ UDHR art 17.

⁸⁴ *PJ v Agenzia delle dogane e dei monopoli* (2022) [C-452/20](#), [50] ‘the objective of the protection of health takes precedence over economic considerations, the importance of that objective being such as to justify even substantial negative economic consequences’.

⁸⁵ Berle (1965) 65 CLR 1, 5

⁸⁶ Berle (1965) 65 CLR 1, 17-18

productive, managed property.

What types of productive, managed property are accessible or non-accessible? For Mill, the answer was shaped through the lens of ‘monopoly’, because ‘wherever competition is not, monopoly is’.⁸⁷ However, Mill’s concept of monopoly was much broader than some of the meanings of monopoly used today, from John Hicks or Richard Posner: that monopoly solely exists if there are diminishing marginal returns with increasing scale from a supposed inability to perfectly price discriminate.⁸⁸ Mill’s meanings of monopoly were much closer to the actual law of monopolies: that it depends on power, broadly and purposively defined.⁸⁹ First, Mill’s term ‘natural monopoly’ embraced cases where power lay ‘in favour of skilled labourers against the unskilled, which makes the difference of reward exceed, sometimes in manifold proportion, what is sufficient to merely equalize their advantages.’ This rarity of skill exists where ‘employments require a much longer time to learn, and require a much more expensive course of instruction than others’.⁹⁰ Doctors, professors, and barristers are examples.⁹¹ Today we would call these acute cases of unequal bargaining power.

Second, Mill pointed to ‘practical monopoly’ where it is cheaper for one firm to provide the service than many, as he said was true for ‘gas and water companies’ or ‘a road, a canal, or a railway’.⁹² Oddly, we now call this natural monopoly. Today we also understand that natural monopolies invariably have strong network effects, where the value of networks grow with new users and providers: this is the main reason it is cheaper for one firm, or hub, to produce a service.⁹³

Third, we may add to Mill that as capital costs for start-ups rise, productive property becomes less accessible.⁹⁴ If services connecting to a network are vital for the network’s utility, public options are widely used – such as in retail banks, social housing, energy generation, and public media – because of

⁸⁷ Mill (1848) Book IV, ch 7, §7, ‘monopoly, in all its forms, is the taxation of the industrious for the support of indolence, if not of plunder’.

⁸⁸ Attempting to reduce the meaning of monopoly to zero, JR Hicks, ‘Annual Survey of Economic Theory: The Theory of Monopoly’ (1935) 3(1) *Econometrica* 1, 17. RA Posner, ‘Natural Monopoly and Its Regulation’ (1969) 21(3) *Stanford L Rev* 548, 557–8; RA Posner, *Economic Analysis of Law* (2011) ch 9, 351 fn. 1. Judge Richard Posner (2017) YouTube at 5:04: ‘antitrust is dead, isn’t it? That was my impression... Amazon, Microsoft and Google [are] the three best companies in the world, so who’s concerned whether they have monopolies, right? ... I don’t have any problem with prices, quality of the products... and neither does my cat who is an avid consumer of extremely expensive cat food, right? So we’re happy.’

⁸⁹ e.g. *Hoffmann-La Roche & Co AG v Commission* (1979) [Case 85/76](#), [41] ‘very large shares are in themselves, and save in exceptional circumstances, evidence of the existence of a dominant position.’ This creates a duty to not abuse that position. Declining marginal revenue, etc, are irrelevant.

⁹⁰ Mill (1899) [Book II, ch XIV, §2-3, 478](#)

⁹¹ We may add that nurses, teachers, and lawyers in general are in greater supply today, but largely because of the enormous expansion of public education – without which the same problem Mill identified would exist.

⁹² Mill (1896) [Book V, ch XI, §11, 584](#)

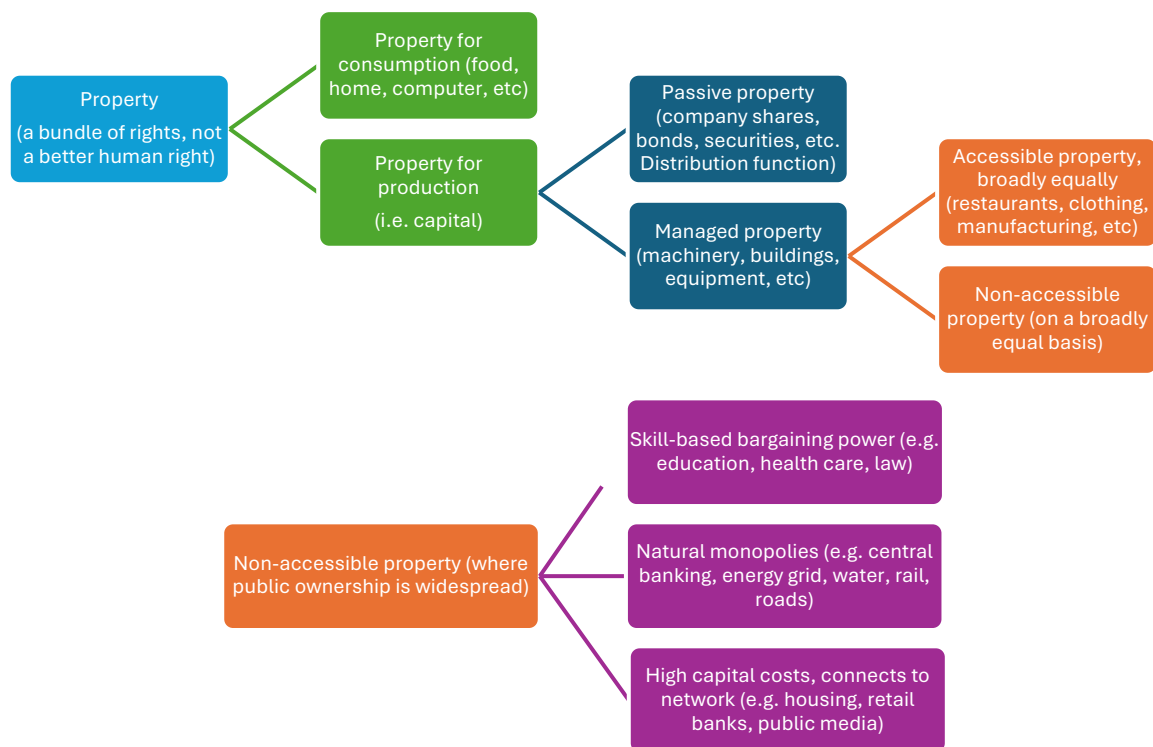
⁹³ e.g. J Rohlfs, ‘A Theory of Interdependent Demand for a Telecommunications Service’ (1974) 5(1) *Bell J Economics* 16. Networks are present for (1) the credit system, as more depositors to a bank enable more lending, (2) the electricity grid, (3) telecoms, (4) the internet, (5) most online platforms.

⁹⁴ *United Brands Co. v Commission* (1978) *Case 27/76*, [122]–[123] noting need for ‘exceptionally large capital investments. Also JS Bain, *Barriers to New Competition: Their Character and Consequences in Manufacturing Industries* (1956)

the risks of limitation of supply. Banking, housing, windfarms or media channels will keep being produced, but will charge higher fees, with lower quality, or without universal service, compared to situations with a public competitor. This means the capacity of the network (the credit system, community planning, energy grid, or communications network) risks being under-utilised, a cost externalised onto the public, not borne by private enterprise. A fourth group of cases involve monopolies being created through competition ‘on the merits’.⁹⁵ Here, behavioural remedies will usually suffice to control abuse, if there is no structural feature of natural, practical or network monopoly.

The types of property, and reasons some property is non-accessible, can be depicted as follows:

Figure 2: Property’s functional subcategories, and reasons for non-accessible property



To recap, there is no need for public ownership of property for consumption, or passive property, or managed property that is broadly accessible, unless as a means to another end. This said, there is nothing wrong with government owning pens and computers, or creating a public wealth fund, or investing like an entrepreneur,⁹⁶ or running a canteen,⁹⁷ or grocery stores, or making boots. It is legitimate for a democracy, and ‘the public has the ability to decide’ something is a public good, and to produce what it wants.⁹⁸ Yet these functions are equally well suited to private ownership since competition works. Any competent government, which is democratically accountable in a functioning

⁹⁵ *Intel v Commission* (2017) C-413/14 P, [133]–[134]

⁹⁶ cf M Mazzucato, *The Entrepreneurial State: Debunking Public vs Private Sector Myths* (2013)

⁹⁷ e.g. J Portes, H Reed, A Percy, ‘Social prosperity for the future: A proposal for universal basic services’ (2017)

⁹⁸ D Cohen and A Mikaelian, *The Privatization of Everything* (2021) ch 1, 6-7

political process, should be able to compete, but there will be no structural cost to the sector if it does not.

3. Data on ownership outcomes across countries and sectors

So far, this paper's hypothesis is that property for production (not consumption), that is managed (not passive), and that is non-accessible (not accessible) is most suited for public ownership. Where there is a skill-based, natural or network monopoly there should be a well-funded public option. If property is for consumption, passive, or accessible, it is suitable for private ownership.

To test this hypothesis, we must map changes in law onto metrics such as price and quality of services ('leximetrics'). We would expect to find that wealthier democracies have more public ownership in non-accessible sectors, and that service outcomes are better. This requires a new legal database. The OECD's 'Product Market Regulation' has a 'network sectors' category with electricity, gas, air travel, rail, road, water transport, broadband and mobile, next to 'professional services' and 'retail distribution'.⁹⁹ However, the OECD database does not have legal sources, and its survey method to country contacts contains errors. For instance, it says under question 1.1.2 (E3) that Australia has no public ownership of electricity transmission, when it is publicly owned in Queensland, Western Australia, Tasmania and the Northern Territory.¹⁰⁰ Moreover, the OECD's frame is ideologically loaded, characterising public ownership as one of several 'Distortions Induced by State Involvement'.¹⁰¹ Given the lack of usable legal data, or unbiased framing, we need to start again.

The following table summarises public ownership in OECD members, OECD applicants, BRICS, plus Singapore and Hong Kong, ranked by the Inequality-Adjusted Human Development Index. A '1' or '0.75' and green indicates there is mostly public ownership in water, electricity, rail, broadcast media, retail banks, mail, and internet. For electricity, this refers to a public grid, and a public option generator and retailer. For rail this refers to public tracks, and train operators. For media this refers to a well-funded public option, and it runs ads. For banks, this refers to a public option retail and business bank. For mail, this refers to both post offices and a public option delivery service. For internet, this refers to public networks, and a public option retailer. A '0.5' to '0.1' score and yellow or orange indicates limited public ownership or poor funding. A '0' and red indicates no significant public ownership.¹⁰²

⁹⁹ C Vitale, C Moiso and I Wanner, *Product Market Regulation: A detailed explanation of the Methodology used to build the OECD PMR Indicators* (2020) Figures 2 and 3. The latter are accountants, architects, civil engineers, estate agents, lawyers, notaries, retail, and medicine sales.

¹⁰⁰ On labour law errors, E McGaughey, 'OECD Employment Protection Legislation Indicators and Reform' (2019) [SSRN](#)

¹⁰¹ C Vitale et al, 'The 2018 edition of the OECD PMR indicators and database: Methodological improvements and policy insights' (2 April 2020) OECD Economics Department Working Papers No. 1604, 22, Figure 11

¹⁰² The coding is available on request from the author, part of a larger leximetric project. Corrections are very welcome.

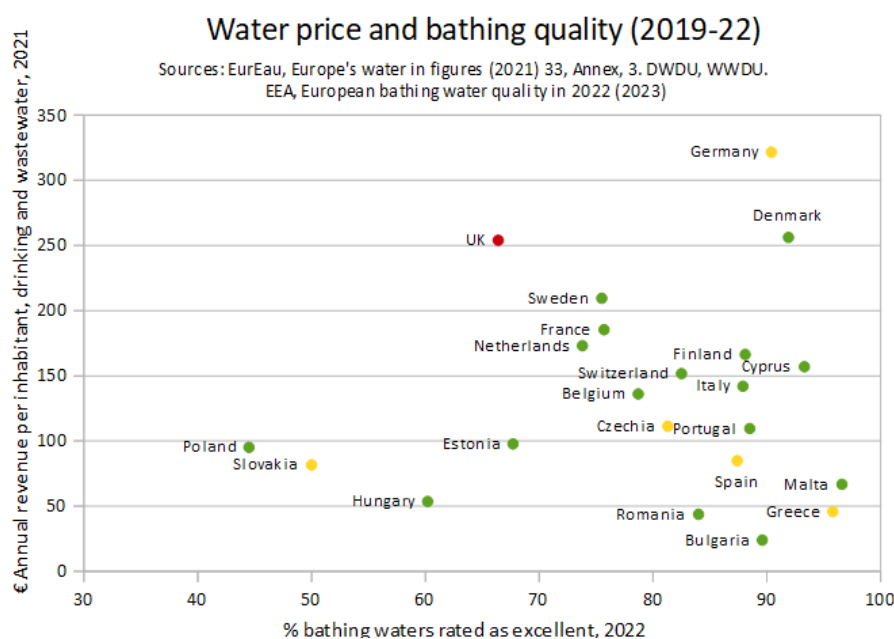
Figure 3: Public ownership in OECD members, applicants, and BRICS

IHDI '23	Country	Water	Electricity	Rail	Media	Banks	Mail	Internet
0.923	Iceland	1	1	0	0.75	1	1	0
0.909	Denmark	1	1	1	1	0.25	1	0
0.909	Norway	1	1	1	1	1	1	1
0.894	Switzerland	1	1	1	0.75	1	1	1
0.892	Netherlands	1	1	1	0.75	1	0	0
0.891	Belgium	1	0.5	1	0.75	1	1	1
0.891	Finland	1	1	1	1	0.25	1	0
0.89	Germany	0.8	0.5	1	0.75	1	0.25	0.25
0.886	Ireland	1	1	1	0.75	1	1	0
0.886	Sweden	1	1	1	1	0	1	0.5
0.885	Slovenia	1	1	1	0.75	0.25	1	1
0.873	Australia	1	0.5	0.75	1	0	1	0.5
0.869	UK	0.1	0.1	1	1	0	0.5	0
0.867	Canada	1	0.75	0	0.75	0.5	1	0.1
0.867	Czechia	0.5	1	1	0.75	0.5	1	0
0.861	Austria	1	1	1	0.75	0.5	1	0.25
0.857	Korea	0.75	1	1	0.75	1	1	0.25
0.853	New Zealand	1	1	1	0.75	0.5	1	0
0.845	Japan	1	0.5	0.5	1	0.75	0.5	0.5
0.843	Malta	1	1	0	0.75	1	1	0
0.841	Cyprus	1	1	0	0.75	0	1	1
0.841	Estonia	1	1	1	1	0	1	0
0.839	Hong Kong	1	0	1	1	0	1	0.25
0.838	Luxembourg	1	0.5	1	0.75	1	1	1
0.836	France	0.75	1	1	0.75	1	1	0.25
0.833	Slovakia	1	1	1	1	0.5	1	0
0.832	US	0.5	0	0.25	0.5	0	1	0
0.828	Croatia	1	1	1	0.75	1	1	0
0.825	Greece	1	1	0	1	0.25	1	0.25
0.823	Singapore	1	1	1	0.75	0.5	0.25	1
0.819	Hungary	1	0.75	1	0.75	0.5	1	0
0.819	Spain	0.75	0.25	1	1	0.5	1	0.25
0.817	Italy	0.75	0.75	1	0.75	1	1	0.25
0.817	Poland	1	1	1	0.75	0.5	1	0
0.813	Israel	1	1	1	1	0	1	0
0.812	Latvia	1	1	1	1	0.5	1	1
0.812	Lithuania	1	1	1	1	0.25	1	0
0.795	Portugal	1	0.5	1	1	1	0	0
0.761	Argentina	1	0	0.75	0.75	1	1	0
0.758	Romania	1	1	0	0.75	0.5	1	0
0.758	Russia	0.75	1	1	0.75	1	1	1
0.748	Bulgaria	1	0.75	1	0.75	0	1	0
0.723	Chile	0	0	1	0.75	1	1	0
0.715	Ukraine	1	0.75	1	0.75	1	1	0
0.708	Turkey	1	1	1	0.75	1	1	1
0.678	Costa Rica	1	1	1	0.75	1	1	1
0.677	Thailand	1	1	1	0.75	1	1	1
0.67	China	0.75	1	1	0.75	1	1	1
0.646	Mexico	0.75	1	0.5	0.75	0.5	1	0
0.633	Peru	1	1	0.5	0.75	1	1	0
0.608	Indonesia	1	1	1	0.75	1	1	1
0.594	Brazil	0.5	0.5	0.25	0.75	1	1	0.25
0.593	Colombia	0.75	0.5	0	0.75	1	1	0.5
0.476	South Africa	1	1	1	0.75	0.85	1	0.5
0.475	India	1	1	1	0.75	1	1	1

From this bird's eye perspective, we see that public ownership is common in wealthier, more equal countries. Deviations to private ownership are random. Privatised internet and retail banking are more common, yet public ownership is also common, and those private sectors rely on heavy state subsidies.

When we look more closely at four sectors, we see significant patterns. First, water and sewers are a textbook natural monopoly. Figure 4 uses EurEau price data, and matches to European Environment Agency bathing water quality data, a proxy for sewage infrastructure quality. A system with over 60% public ownership is green, less than this is yellow, and predominantly privatised is red.

Figure 4: Water price and bathing quality



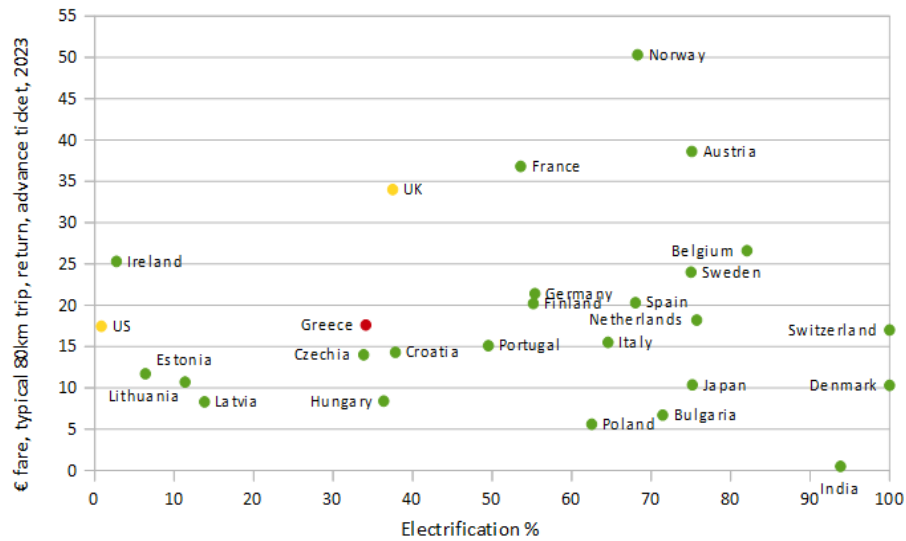
On these metrics the UK (privatised, except Scotland and Northern Ireland) pays more for water than nearly all countries for worse outcomes. Only worse are those in eastern Europe, with a legacy of under-investment. This snapshot also oversimplifies: Germany's water is mostly public now, but was privatised in many regions, and therefore underfunded before, as was water in France.

Second there are railways, with publicly owned systems in green, part-public in yellow, and privatised in red. Prices are typical 80 km trips. Outcomes are electrified track, a good proxy for investment, as it is quieter, faster, cheaper, and with zero emissions.

Figure 5: Rail fares and electrification

Rail fares and electrification (2023)

Sources: S Yanatma (9 January 2023) Euronews.



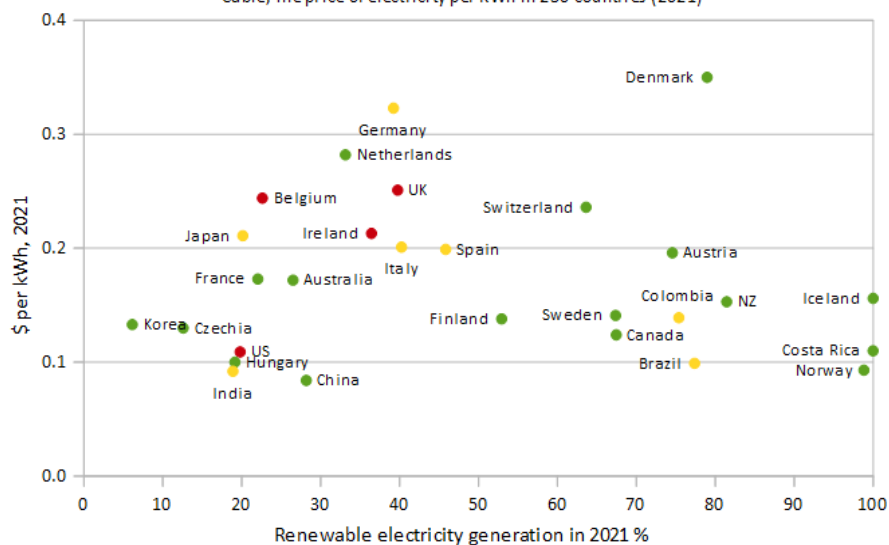
As fares rise, electrification increases, yet there are outliers. In the UK, tracks are public but train operators were private, with higher fares yet lower investment. The US, where rail is privately owned yet subcontracted to a public Amtrak, has high fares and nearly zero investment (also low coverage). High costs in Ireland and Norway may be explained by large territories serving a sparser population.

Third there is electricity. Figure 6 shows price per kilowatt hour, against the percentage of renewable generation, a good proxy for investment, since renewable costs fall logarithmically. Each time capacity doubles, costs have been decreasing by around 15% to 25%. Ownership here refers to the grid.

Figure 6: Renewable electricity and price

Renewable electricity % and price (2021)

IRENA, Renewable energy share of electricity generation (2021).
Cable, The price of electricity per KWh in 230 countries (2021)

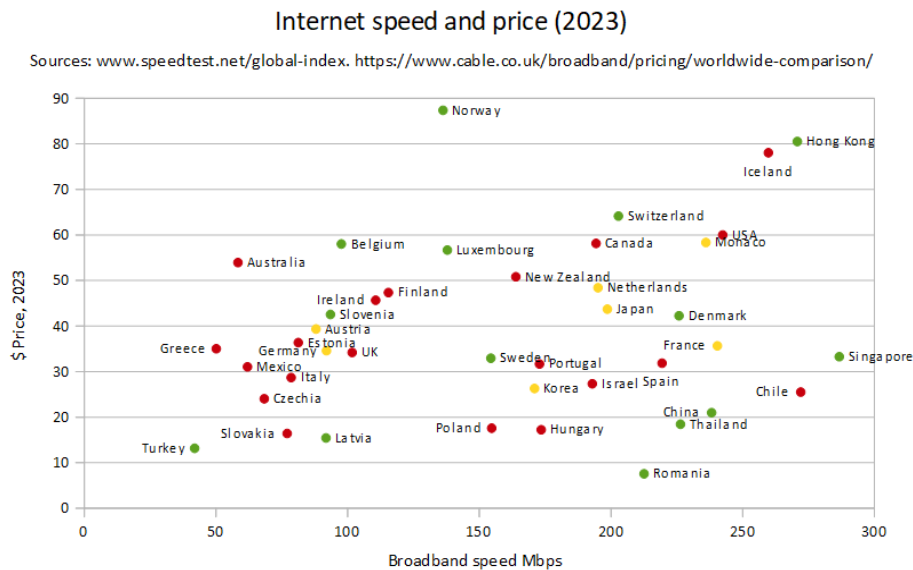


The countries with the greatest shares of renewables, and lower costs, have more hydro-electricity,

while otherwise prices rise, but then tend to fall once more renewable electricity capacity is installed.

Fourth there is internet. Figure 7 shows much publicly owned internet infrastructure, contrary to the normal narrative of telecom privatisation as a leading success story. The data does not capture vast state aid to private network owners, such as \$65 billion in 2021 from US government, mainly for Verizon and AT&T,¹⁰³ or £5 billion for broadband and £510 million for 4G mobile in the UK 2020 budget, mainly for BT's Openreach.

Figure 7: Internet speed and price



The picture for water, rail, electricity and telecoms is clear that public ownership is very common, and usually outcomes are better, consistent with the theory of non-accessible property. It is also clear we can discard evidence-free theories, such as those from Buchanan, Friedman, Hayek, Hart, Shleifer, Vishny or Putniņš, that private ownership should be presumed to outperform public ownership, or that public ownership is properly a last resort. Next, we need more than static snapshots. A future leximetric database, like those available for labour, company and insolvency law,¹⁰⁴ should track ownership over time, plus indicators such as structural separation, licensing, stakeholder governance, universal service, or specific duties to service users. Better legal data, with evidence, will improve theory.

4. Principles of enterprise ownership

A theory of accessible property, to predict better quality at lower cost, cannot explain good policy for all times, places, and purposes. We must heed three principles. First, what will be accessible can change

¹⁰³ Infrastructure Investment and Jobs Act of 2021, \$65bn including \$42.5bn for Broadband Equity, Access, and Deployment, \$14.2 bn for the Affordable Connectivity Program, and \$2.75bn for Digital Equity Grants. Also American Recovery and Reinvestment Act of 2009 (\$4.7bn commerce + \$2.5bn agriculture). American Rescue Plan Act of 2021 (\$3.2bn).

¹⁰⁴ S Deakin, J Armour and M Siems, *CBR Leximetric Datasets* (2023)

depending on the state of technology. Second, as an economic theory, there may be other urgent reasons, such as goals to protect democracy or the environment (not merely maximising production) to change the public/private balance. Third, the ownership of an enterprise is a specific type of finance function, separate from governance. Optimal governance is created not by simply choosing private or public ownership,¹⁰⁵ but through a symmetry of contribution and voice for all stakeholders.

(1) Technology changes accessible property

A first principle is that as technology changes, so does which property is accessible, and so should the balance of ownership. One example is that the shift from ‘coal, oil and gas’ to ‘solar, wind and storage’ made property in energy easily accessible. Solar panels are small, portable, and made with abundant materials,¹⁰⁶ enabling a power station in every building. Similarly, wind turbines and battery storage have logarithmically declining costs. By contrast, coal mines, oil and gas wells, or power plants, start with territorial monopolies, and require mass capital investment.¹⁰⁷ Fossil fuels tie closely to state power,¹⁰⁸ cursing many resource-rich countries with dictators.¹⁰⁹ A second example is that with the ‘green revolution’, and modern vertical construction, food and housing are more accessible. Whereas land was widely seen as ‘by far the greatest of monopolies’,¹¹⁰ this is less true today with modern farming eliminating famine, and skyscrapers soaring. (By contrast, there is a fixed supply of pristine nature, which must be public and preserved.) As the tech has changed, so did accessible property.

Technology can also lead to productive, managed property becoming non-accessible, creating new monopolies, if the law does not keep up. One example is genetically modified food, where if the law enables patents over food products, or even crops, then it can exclude competitors entirely. Fortunately, the law has restricted crop patenting.¹¹¹ A second example is online platforms, and big tech media. Facebook, Instagram, Google Search, YouTube, and X benefit from acute network effects, and taking other people’s personal data.¹¹² They rapidly monopolised global ad markets. Within each market, each big tech platform followed a pattern, identified by Brian Arthur, of being in an initial competitive phase, becoming a market leader, and then dominant, so that users become ‘locked in’ and high switch

¹⁰⁵ cf H Hansmann, *The Ownership of Enterprise* (1996)

¹⁰⁶ Solar panels need (1) silica sand, (2) aluminium, (3) oil, (4) copper, and in smaller quantities (5) tin, (6) silver, (7) gold, etc.

¹⁰⁷ T Mitchell, *Carbon Democracy: Political Power in the Age of Oil* (2013) ch 1, shift from coal weakened labour as oil is more easily transported than coal, and incapable of being blocked by strikes, encouraging collective bargaining.

¹⁰⁸ J Loftus, ‘Petroleum in International Relations’ (5 August 1945) vol. XIII US Department of State Bulletin 173–5.

¹⁰⁹ E McGaughey, *Principles of Enterprise Law* (2022) ch 11(1) for background

¹¹⁰ WS Churchill, ‘Speech Delivered at King’s Theatre in Edinburgh’ (17 July 1909) saying land ‘differs from all other forms of property’ because it ‘is a necessity of human existence... strictly limited in extent’ and ‘fixed in geographical position’, making it ‘by far the greatest of monopolies’.

¹¹¹ T Aplin and J Davis, *Intellectual Property Law: Text, Cases, and Materials* (3rd edn 2016) ch 11

¹¹² S Zuboff, *The Age of Surveillance Capitalism* (2019) chs 3-5

costs suppress competition.¹¹³ Thus, tech can be as destructive as it is beneficial, if law lags behind.

(2) Democracy and the climate matter

A second principle is that, while economics often informs what is fair and just, there may be good reasons in a democracy, or for the environment, to choose public ownership of a sector regardless.

First, even if there is no structural economic reason, democracy's survival may rest on subjecting assets to public control to stop a few corporations or oligarchs dominating. For instance, on top of good economic reasons to regulate railways and oil, a primary motive for the US Sherman Antitrust Act of 1890 was to protect democracy, because if 'we will not endure a king as a political power... we should not endure a king over the production, transportation, and sale of any of the necessities of life.'¹¹⁴ Another example, albeit tragic, is that Jacobo Árbenz's government attempted to bring into public ownership land held by the enormous United Fruit Corporation in Guatemala. It was toppled by the US Central Intelligence Agency, creating the first 'banana republic'. Today the US is perching on the cusp of authoritarian rule, backed by corporate elites. The same rationale exists to take public control of key parts of big tech, and to disperse the base of fascist power.¹¹⁵

Second, a living environment is the ecological foundation of the economy, and it has higher value. There is a human right to a clean environment, and to halt climate damage,¹¹⁶ just as there is a universal right to 'scientific advancement and its benefits'.¹¹⁷ This became law after the New Dealers built the energy grid in rural America, and distributed the polio vaccine.¹¹⁸ It was seen that private enterprise is slow to roll out technology to everyone. Technology does not distribute itself. It requires positive state action. The same is true today for renewable energy, electric vehicles, electric arc steel furnaces, or heat pumps. The tech is there, but markets do not share. Since big oil, gas, coal and banks refuse to themselves transition away from climate damaging business, it is justified to assume public control of their functions, to act where they will not. In Denmark, a leading success story of transition was from Dong Energy to Ørsted, switching their production from 10% to 90% renewable energy in 12 years, a feat possible largely because the Danish government still held a majority stake.

¹¹³ B Arthur, *Increasing Returns and Path Dependence in the Economy* (1994) ch 9. Also ME Stucke and AP Grunes, *Big data and competition policy* (2016). T Wu, *The Master Switch: the rise and fall of information empires* (2010).

¹¹⁴ Senator John Sherman, 21 Cong. Rec. 2457 (1890). Note how the US Supreme Court perverted the Act, *In re Debs*, 158 US 564 (1895) while Eugene Debs campaigned for reform: 'Government ownership of the railroads is decidedly better for the people than railroad ownership of the Government.' US Strike Commission, *Report of the Chicago Strike of June-July 1894* (GPO Washington 1895) 163.

¹¹⁵ E McGaughey, 'Fascism-Lite in America (or the Social Ideal of Donald Trump)' (2018) [7\(2\) British Journal of American Legal Studies 291](#)

¹¹⁶ *Verein Klimaseniorinnen v Switzerland* [2024] ECHR 304

¹¹⁷ UDHR 1948 [art 27\(1\)](#)

¹¹⁸ L Shaver, 'The Right to Science and Culture' [2010] *Wisconsin LR* 121, 143 and 138–9

(3) Symmetrical governance is best

A third principle is that, while no model automatically follows from a sector being publicly or privately owned, there should be a symmetry of people's contributions to enterprise and voice in governance.¹¹⁹ This prevents those in control ignoring social stakeholders. The three main stakeholders in any enterprise are workers, capital investors, and service-users.¹²⁰ Labour is always necessary, and should always be guaranteed a voice. Capital is usually necessary, it may be publicly or privately owned, and where investors make contributions they should also have voice. Service-users have voice by 'voting with their feet', if competition works. But if competition fails, in skill-based, natural, or network monopolies, service-users are locked into financing the enterprise. They often, and should, have votes for directors on the board as if they were also investors, because otherwise those in control can ignore their legitimate interests. Karl Kautsky also contended, wisely, that ownership and governance should be as close to the relevant service-users as possible, so (if an enterprise is public) we should favour local over regional, and regional over national ownership where possible.¹²¹

This leads to an equation to express the basics of enterprise, and stakeholders who make it:

$$Enterprise = Labour \times (Capital + Custom)$$

... or ...

$$E = L(K+C)$$

On this view, the default should be that, because a private sector firm combines labour and capital, enterprise laws should reserve half of a board's seats for workers (or a majority, as in a worker coop, where workers contribute capital) with the rest for investors of capital.¹²² The trend so far in wealthier democracies is that at least one-third of large company boards are reserved for worker directors.¹²³ If an enterprise is in the public sector, the same worker representation is always justified, but the investor's interest should include representatives of service-users. This is found in laws on schools,¹²⁴ universities,¹²⁵ hospitals and health authorities,¹²⁶ energy companies,¹²⁷ water companies,¹²⁸

¹¹⁹ E McGaughey, *Participation in Corporate Governance* (2015) [ch 1](#).

¹²⁰ S Webb and B Webb, *Industrial Democracy* (1897) part III, ch 2

¹²¹ K Kautsky, *The Labour Revolution* (1924) ch 3, part VIII(e)

¹²² T Piketty, *Capital and Ideology* (2019) ch 11

¹²³ Z Adams, B Billa, L Bishop, S Deakin, T Shroff, *CBR Labour Regulation Index: (Dataset of 117 Countries, 1970-2022)* (2023) indicator 30, 'Codetermination: board membership'

¹²⁴ e.g. Education Act 2002 s 19, parents on school governing bodies.

¹²⁵ e.g. University of Toronto Act 1971 [s 2](#), staff, alumni/students and public officials.

¹²⁶ e.g. National Health Service Act 2006 Sch 7, paras 3 and 9, staff and patients.

¹²⁷ e.g. Gemeindeordnung Nordrhein-Westfalen 1994 §§107–1, staff and public representatives.

¹²⁸ e.g. Eau de Paris, Board of Directors (2025) appointed by local councillors, employees, and environmental groups.

rail,¹²⁹ Wikimedia (the world's 5th largest web platform),¹³⁰ and more. Together, good governance and wise ownership socialise all property, transforming the public and private divide, because everywhere property will be used to serve goals of social justice. This results from the symmetry between social stakeholders' contribution and their voice.

5. Conclusions

Is public or private ownership better? This paper's answer is that if productive property is 'accessible', outcomes are better if privately owned, and if 'non-accessible' it should be publicly owned. If people can access the assets, finance and materials to start up production, there can be competition. Competition will channel private greed into the public good. But if a sector involves skill-based, natural, or network monopolies, well-financed publicly owned options are likely to produce higher quality services or goods at lower prices. Government failure is not inherently more likely than market failure, since governments write the rules for markets. Functioning, democratic institutions are needed in politics and the economy alike, and may succeed or fail based on principles of public law: not least representation, and the rule of law, including human rights. This theory insists that principles should similarly guide our decisions on property ownership. A true public service, which should be publicly owned, is one where its managed property for production is 'non-accessible'. The success of this theory is evident in data on which enterprises wealthy democracies actually do publicly own.

More broadly, what should be publicly owned can be answered with these three questions:

1. Is the property for consumption or savings (rather than 'for production' and 'actively managed')?

If yes, then private ownership is appropriate. If no, then →

2. Is productive, managed property non-accessible, due to skill-based, natural, or network monopoly?

If yes, then there should be public ownership. If no, then →

3. Are there non-economic reasons, for democracy or the environment, to take public ownership?

If yes, then there should be public ownership. If no, then private ownership is appropriate.

This gives us a clear guide, applicable to any economic sector.

It could be argued that ownership is too complex for a single theory, or that technology changes too much to say anything stable. Yet this indeterminacy ignores our centuries of experience, from the industrial revolution, to political revolutions, world wars, democracy's spread, and the fall of the iron

¹²⁹ e.g. Verkehrsverbund Berlin-Brandenburg GmbH has a board appointed by workers and local council representatives.

¹³⁰ Wikimedia Bylaws (2019) art IV, §§1-3

curtain. The idea that we have no rational guide ignores that governments made choices in real life for decades. Our challenge is to move beyond ideological clash, evidence-free economic theory, and theory-free political power, to social consensus, better laws, and a new chapter of human prosperity.