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# **An essay on the productive state**

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### Abstract

The literature concerned with the state's productive role in the economy is compromised by links to an economic orthodoxy that uses a free market, competitive outcome as a default setting in both predictive and normative terms, and to conceptions of capitalism as a species of spontaneous order, so that state intervention is invariably perceived as an exceptional event ('market failure') in the context of an otherwise autonomously functioning economy. Historically, the state has played a foundational role in economic activity through government exaction and confiscation of resources, the expanding and constricting of market extent, by responses to the pervasive externalities present in commercial activity and in the development of human capital, and has had to cope with the complementarities between educational development and the absence of material deprivation. Further contemporary issues of public policy are first, the recent emergence (or, indeed, re-emergence) of China as a great economic power and second, the invariant presence of state intervention in the transition from agriculture to industry. A last issue is the political economy of the state: how do alternative political arrangements shape the real economy and, contrarily, how do differing outcomes in the real economy shape political structures and decisions?

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## Introduction

This essay proceeds in the form of an evaluation of the nature and magnitude of state intervention in the economy, specifically with reference to business activity, with only limited focus on the efficacy or desirability of this intervention in its various manifestations.<sup>1</sup> The perspective is informed by aspects of the implicit theory of the interaction of state and economy embodied in the writings of a wide variety of economic historians who collectively distance themselves from fanciful Hayekian notions of the advent of a spontaneous order in the emergence of capitalism and take for granted the view of Karl Polanyi (1944) of the invariable presence of the state in the process of capitalist construction. As we move towards the present day, the key contrasting examples concerning the role of the state in successful economic development that most forcefully intrude here are those of the US in the context of the Second Industrial Revolution and in the post-Second World War period, and the contemporary People's Republic of China.

The argument in this essay is that, overwhelmingly, the bulk of the existing literature concerned with the scope of state intervention in the economy is compromised by links, implicit or explicit, to an orthodoxy found in mainstream economics and preserved in textbooks that uses a free market, competitive outcome as a default setting in both predictive and normative terms, and to a metaphysics emerging from conceptions of capitalism as a species of spontaneous order, so that state intervention is invariably perceived as an exceptional event in the context of an otherwise autonomously functioning economy. By contrast, the range of potential links between state and economy that will be discussed here, in many cases only briefly, is far more extensive than that found in orthodox expositions of this topic. In Hegel's pre-modern world, the conjoining of the state and civil society dictated the state's central role in the focusing of mass resources, as seen, for instance, in the global supremacy of China in industrial development in the pre-modern period (Pomeranz, 2001). In a western context, the state served, along with the church, as the school of bureaucracy for privately owned enterprises and, in a later period, key aspects of the development of mass production emerged from state military arsenal manufacturing practices (Friedel, 2007); reflexively, state and church bureaucracies were informed by the emerging nodes of command of the corporate sector.

Anti-state rhetoric reached an intensity in the last decades of the twentieth century unseen since the supremacy of the liberal order in the nineteenth century, with the Thatcher era deriving part of its intellectual ballast, as we shall see below, from a perceived antithesis between two sectors

of an economy – a marketed (private) sector which was productive, and an unproductive, largely government-based sector (Bacon and Eltis, 1976). Support for the latter position, i.e. the need for constriction of the public sector in order to promote economic growth, has widely persisted to the present day, even in the wake of a range of apparently successful state-run initiatives emerging from east Asia in past decades. Contrarily, many political movements in the west, both left and right, have felt the need to respond to indifferent economic performance in their countries with a range of government interventions (e.g. the tariff policies of the Trump administration), but these interventions have contained little sense of internal coherence or strategic direction.

The insufficiency of western state-driven economic policies in part reflects the inadequacy of what is available in present-day mainstream academic economics to address these issues of pressing public concern. The mainstream literature on the role of the productive state remains firmly linked to analytical conceptualisations from early in the twentieth century, being limited to an acceptance of the presence of specific instances of market failure and, belatedly, to the need for state intervention in the accumulation of human capital to support the productive economy. Though the discussion here will emphasise the difficulties of limiting analysis and policy to the sphere of commerce, the state activities to be considered will be largely those that interact with business activity. The important question of state intervention in the context of macroeconomic policy, with its own enormous literature, will be considered here only in passing, despite its critical importance.

As a matter of history, state activity has played a primary and foundational role in economic activity in the modern world, with the range and magnitude of interactions between state and economy invariably more extensive than that suggested by the existing economics literature concerned with these issues. A non-exhaustive list of state actions in the economic sphere, with an emphasis on those absent or marginalised in standard expositions, will be delineated in the following categories. First, a central aspect of state activity across all of economic history is exaction, including government confiscation and/or re-distribution of resources, perhaps most famously in episodes of primitive or original accumulation, but taking place in the present day in a range of subtle, and only partially visible forms. It is most emphatically in the context of exaction that the range of government activities under consideration must be coupled with an examination of the provenance of the resources used for these activities: what kind of transfer and redistribution has taken place? If the exaction proceeds from a domestic base, a relevant

question to ask is – what groups within the society are ‘paying’ for the resources made available for these governmental activities? And if the resources are made available from foreign sources, is the exaction a form of exploitation, as in a predatory colonialism? Second, governments play crucial roles in expanding and constricting market extent, but the implicit presumption emanating from orthodoxy is that, at least in the case of so-called developed economies, a complete set of market arrangements is pre-existent, so that the role of the state in the creation of markets is relegated to the special case of developing economies. As we shall see, however, the apparent intractability of the public policy issues associated with market extent (e.g. in the context of the European Community) suggest the need for detailed examination of this issue in order to avoid implicit acceptance of spontaneous order notions that markets will naturally emerge in all contexts.

Two further issues are linked to suppositions embodied in economic orthodoxy that limit the scope – or the necessity – for state action. One is the implicit presumption that externalities are not pervasive in the sphere of commercial activity, leading to the notion that the (usually privately-owned) firm is the natural locus of production from a societal perspective; the other is a treatment of human capital that sidelines the presence of external effects and deals in a parenthetical manner with the substantial complementarities between educational development and the absence of material deprivation in society. Further contemporary issues of public policy raised by these considerations are first, the recent emergence (or, indeed, re-emergence) of China as a great economic power and second, the invariant presence of state intervention in the transition from agriculture to industry that engulfs most economies at some point in their histories. A last issue that is unavoidable is the political economy of the state: how do alternative political arrangements shape the real economy and, contrarily, how do differing outcomes in the real economy shape political structures and decisions?

The modifications outlined above to conventional delineations between state and economy are important for consideration and re-examination of historical topics and also resonate across a broad range of contemporary issues. One element of re-examination is the dramatic contrast between the Second Industrial Revolution of 1880 to 1920 in the US, and the quite different trajectory of development that took place there in the post-Second World War period. The Second Industrial Revolution emerged as a torrent of production and innovation that transformed economic and material life more profoundly and universally than anything seen in the First Industrial Revolution, yielding the first decisive indications of the possibility of an

elevation of whole societies and economies from subsistence-level standards of living (Gordon, 2016), though the decisive role of state activity (e.g. sanitation) and of popular (including labour) agitation in the realisation of this emergence must not be overlooked. The predominant position of the capitalist firm in these unprecedented events reinforced the extant tendency in the literature of economics to use the privately-owned firm as the norm for capitalist development in all nations: substantial direction and material input from the state have continued to be seen as deviations from this norm.

Even in the US, however, this pattern did not persist except, perhaps, in the minds of theorists and polemicists. In the post Second World War period, the transformation of the world economic order brought about by the US in a range of knowledge-based sectors, most notably electronics, had a predominant input in both finance and direction from the US government, most especially in the form of the Department of Defense (DOD), as well as a range of other non-market links such as universities and governmental agencies. We thus see a dramatic shift in the provenance of innovation from the privately-owned firm in the Second Industrial Revolution to a state-private sector collaboration in the post Second World War period. The underlying economic basis for this shift, whatever the motivations of contemporaneous practitioners, was the presence of pervasive externalities in these knowledge-based sectors that generated the need for state intervention and direction, most especially in these sectors' immature phases. US economic success in these sectors compared with its rust belt failures in sectors such as steel and cars – those dominated by free enterprise – will lead to an unconventional conclusion: success in the US and in some Asian countries in these new sectors compared, for instance, with western Europe has a predominant explanation in the successful role of state intervention in the former countries. The failure of the nations of the European Community to become major participants in these knowledge-based sectors in their various manifestations has not been due to an inadequate knowledge base or of the presence of exceptional entrepreneurs in the successful countries, but more a question of the insufficient realisation within Europe of potential static and dynamic scale economies that could have been generated in the context of intra-Community coordination and development.

A second element for re-examination of conventional considerations surrounding the productive economy concerns the role of human capital – the presence of external effects in this sphere and of complementarities between educational development and the absence of material deprivation. These factors play a crucial role in dictating success or failure in contemporary economic development and are intimately linked to state intervention. If, indeed,

there are substantial positive externalities for the overall economy incumbent on increases in the stock of human capital (an admittedly awkward phrase), the economic impact of educational development, invariably a function undertaken by the state, may well be grossly understated, with an important component of this impact emerging only with a considerable lag. The pioneering role of the US in the expansion of state education in the Second Industrial Revolution period – with comparable developments linked, in many parts of the world (but not, of course, in the US), to explicitly socialist programmes – were likely to have an implicit motivation in the recognition of these human capital externalities. And if complementarities between educational development and the absence of material deprivation are seen to be important aspects of this human capital development, then issues surrounding income distribution are relevant not just to considerations of human welfare, but to the expansion of the material economy.

With the broad range of historical instances available, from Alexander Gerschenkron's late developing nations in the nineteenth and early twentieth centuries, to contemporaneous states in Asia, including China, where we observe the state as a fulcrum of economic development, might we be forced to consider the US Second Industrial Revolution as the real exception, rather than the economic histories of the great bulk of nations across the globe? Even in the case of the US, one can point to the pioneering and continued high level of state development of school and higher education, from the latter part of the nineteenth and through most of the twentieth century, as having played an important, if indirect role in the sustained success of the productive economy throughout the twentieth century.

### Exaction

'Growth [in England] was...promoted by Parliament's power to take people's property against their wishes'. Allen (2011), p.29.

Exaction by the state is difficult, if not impossible to locate as a category in mainstream economic analysis, its absence a reflection of ideological bias. In the form of primitive (original) accumulation, however, it appears in the literature of economic history as a foundational aspect of the emergence of capitalism, one that has proved to be a problem – an embarrassment – for notions of an identification of capitalism with laissez-faire, spontaneous order and liberal politics. In England, there had been a gigantic aggregation of resources by the state from the dissolution of the monasteries in the sixteenth century and a subsequent

accumulation through a world colonial empire which centred on the trade, enslavement and exploitation of human beings; in the US, primitive accumulation took place through long term appropriation from the aboriginal population and the mass of enslaved individuals, as well as resources confiscated from other nations through wars of aggression (e.g. the Mexican War of 1846). On occasion, the state has functioned as a direct conduit for the transfer of resources to selected groups within the private sector, such as the awarding by the federal government of ‘free’ land to railroad companies in the US in the nineteenth century that could be sold to finance construction, a redistribution which may be interpreted as either from the general citizenry of the US, or from the aboriginal population to railroad shareholders.

In more recent times, DOD contracts in the post-Second World War period, ‘cost plus’, with enormous padding and practically risk-free investment, functioned for the US quite openly as a state financed and directed investment programme, paid for by taxpayers to benefit privately-owned companies (Peck and Scherer, 1962). These latter expenditures, while having this extractive aspect, have also proved to be transformative for capitalism as a whole. As we shall see below, it is unlikely that the blazing speed of development of the electronics industry – from the creation of the transistor in 1947 to the microprocessor in 1971 – would have been realised solely through the activities of private capitalist firms: like much governmental activity in the productive sphere, we observe a conflation of extractive aspects of such activity combined with attempts to overcome market failure – inherent flaws in the operation of capitalism – posing obstacles for any attempts to evaluate these activities at a normative level.

Particularly relevant in a contemporary context, however, are forms of exaction by the state that are, if not invisible, then more or less opaque. (Overt exaction by the state in the contemporary world, however, should not be dismissed as a category.) These forms of exaction appear relatively neutral and technocratic in comparison with those discussed above, but still contain important distributional elements that are often overlooked. Thus, an export-led growth strategy can be seen as providing state support to export-oriented sectors at the expense of the public’s consumption of imported goods, even in the absence of overt subsidies, if this strategy is pursued along with a policy of holding down the international value of the currency. At times, as in the case of the British empire, the reverse condition can hold, so that an elevated value of the currency could be used to keep down the cost of a broad range of commodities, especially food, with imperial policy functioning as a form of negative exaction for the British public, paid for by colonial inhabitants.

A conflict that frequently emerges in modern economies is the legitimating role of the state and state regulation as a protector of the consumer through the execution of laws constraining monopoly power and practices: such a stance can easily come into conflict with the promotion of national champions, which involve the use of these very practices (including the protection of Intellectual Property Rights (IPRs)) both in the international economic arena and, inevitably, in a domestic context as well. We thus observe, as serious competition from Japan and western Europe began to emerge in the 1970s, the erosion in the US of the once rigorous (by international standards) enforcement of antitrust laws. Forms of state exaction may emerge from government monopolies or, more subtly, from state-granted or encouraged monopolies that have an origin in simple methods of state exaction for the sake of raising revenue (e.g. a state alcohol monopoly), but develop in more sophisticated ways as export-led national champions are financed by monopolistic domestic rents, with east Asian economies such as South Korea being prominent examples. These venerable Listian (from Friedrich List) strategies, with a range of subsidies, internal and external, as well as tariffs, are used with infant industry justifications by emerging economies (and those already mature). These rationales involve claims that free trade orthodoxy fails to represent how economies really work: subsidies and tariffs may be needed, it is suggested, because we cannot presume a pre-existent set of complete markets (e.g. developed domestic sources of the appropriate physical and labour inputs, and the infrastructure for foreign sales), so that it may be necessary for governments to use these subsidies and tariffs to ‘make a market’, domestic and foreign, for the commodities in question. In more sophisticated forms of intellectual reinforcement for strategies of state support, as we shall see below, encouragement of domestic displacement for foreign production is legitimated as an aspect of learning-by-doing strategies for enhancement of the skill level of the work force and the engendering of new economic growth technological spillovers. All of these policies ultimately take the form of exaction from one section of a nation’s population and a redistribution to another.

When seen to be successful *ex post*, such forms of state intervention may be applauded by all except the nation’s economic competitors. But autarkic strategies can prove to be highly costly, imposing burdens on both domestic producers using inputs from abroad and upon consumers forced to put up with higher prices and goods of inferior quality. And especially when autarkic policies were at least partially necessitated by the presence of Cold War restrictions upon centrally planned economies, we could observe not only the direct burdens of being limited to the higher costs and inferior quality of the domestic output, but a behavioural phenomenon: the

autarkic nation's isolation from the competitive space and technological environment of the leading economic actors greatly restricted that nation's capacity for development. The international isolation of the Soviet economy in the post-war world (an isolation both imposed by others and self-imposed) explains much of the failure of its civilian economy compared with that, for instance, of South Korea, whose Chaebol-dominated economy did not generate a domestically competitive environment, but was confronted with both opportunities for purchasing and selling goods in the international market and with constraints dictated by the necessity of matching international standards.

Perhaps the most subtle claims surrounding the links between the role of governmental policy and exaction emerge from the sphere of finance. (On occasion, such policies are not at all subtle, as in the case of the currency reform of the Stalin government in the late 1940s.) In a macroeconomic context, inflation is often perceived as a form of tax, most commonly voiced as a complaint in a political, rather than an academic context. In the opposite direction, the notion that deflationary policies can take the form of exaction is opaque in the context of mainstream economics. John Kenneth Galbraith, writing in 1963 and representing a form of crude policy-Keynesianism typical of the era, had opined that it was only the obtuseness of business leaders that caused them to fail to realise that Liberal (in the US sense of social democratic), expansionary Keynesian policies served them better than Republican (e.g. Eisenhower) macroeconomic austerity. The Marxist response had already emerged from Kalecki (1943), who had pointed to the squeeze on profitability that full employment entailed, thus giving a rational motivation for business leaders' support for austerity policies and underlining that even this most seemingly technocratic, objective function of government – macroeconomic regulation – has the potential to be associated with exaction and issues of income distribution.

The broad-based tendency in academic economics to treat macroeconomic regulation as a technocratic topic has imposed awkward constraints on the scope for analysis of the redistributive effects of governmental monetary policy. Thus, monetary theory traditionally preserves the fanciful notion that government credit emission takes the (apparently neutral) form of money being dropped out of helicopters, a simplification nominally introduced to make the effects of this emission more manageable analytically. A consequence of this simplification, however, is that the mechanisms used in practice, with their potential for redistributive effects, disappear from view: government credit emission involves links between government and a small number of high-wealth individuals and institutions who have

to be incentivised (i.e. receive sufficient remuneration) to ‘make a market’ for the government’s financial products. The extent to which such financial operations involve elements of exaction and likely transfer of wealth between classes becomes evident in the context of dramatic, discontinuous events: the manner in which the US government chose to resolve the financial crisis of 2008 by rewarding and protecting the financial institutions who were perpetrators, or in the world-wide looting of public resources in the waves of privatisations to be observed in recent decades. In broader terms, the bloated financial sector in the US (Philippon and Reshef, 2013) is underwritten by implicit guarantees from the government in case of over exuberance: a characteristic way in which resources are exacted from the general public with subtlety and invisibility. Whether an overblown financial sector is to be viewed as a cause or effect of a declining productive economy is to be left as an open question here. Overall, however, the financial sector remains the most obscure and opaque domain for exaction between government and the public, often facilitating redistribution between groups in society that are difficult to calculate and to trace.

#### Extending and constricting market extent

There are manifest benefits from trade through specialisation and through the realisation of economies of scale (Stigler, 1951; Buchanan, 1994) that can emerge when the geographical domains of markets are extended. These gains long precede the origins of capitalism, so that an augmentation of material conditions incumbent on an extended market likely accrued even in the vassal states of the predatory Roman empire by being part of its vast domain.

In addition to the well-known role of governments in their promotion of the geographical extension of markets through legal uniformity across the domain of state control (i.e. the nation, or the empire) and through activities to encourage, and even directly finance the development of physical infrastructure such as roads and canals, there are also qualitative aspects of market extension that can be of significance. Qualitative forms of market extension slowly emerged in Europe throughout the latter middle ages, with states imposing defined measurements of all kinds (Crosby, 1997), a process greatly accelerated by the French Revolution. Markets were thus deepened and extended by way of state facilitation of the lowering of information costs for consumers and producers through the provision of market information and the setting of quality standards and specifications. Note in these developments the contradictory role of guilds (Epstein and Prak, 2008) as quasi-state actors in both deepening and constricting market

extent and the complementary role of state schooling in the creation of national markets by providing literacy and numeracy in a common language.

The imposition of uniformity of specifications, such as the standardisation of interconnections (e.g. electrical plugs) received a great impetus from the exigencies of the throughput production characteristic of the Second Industrial Revolution. Surprisingly, the US played a key role in the state imposition of uniformity of specifications in industry, with an exceptional impetus in the 1920s through the activities of the Secretary of Commerce (later President) Herbert Hoover. By contrast, the persistence of idiosyncratic standards at the firm level in British industry in this period due to the absence of governmental intervention led to an inhibition of the realisation of scale economies and is often held to be a key source of decline of British industry (Elbaum and Lazonick, 1986). Even in the context of what was frequently superb engineering (e.g. the Rolls-Royce motor car) the lack of uniformity, state-imposed or otherwise, led to a failure to confront the exigencies of mass production in much of British industry; we see a similar obstacle to the realisation of economies of scale taking place in weapons manufacture in the German Second World War economy, where the Nazi regime's reliance on the spontaneous order of its productive system led to the output of relatively small numbers of high quality, idiosyncratic weapons of war (e.g. in tank production) in comparison with the state-directed uniformity – and massive output – emerging from the US and Soviet economies (Overy, 1995). Note, however, that overlord non-state dominant firms, especially in the US, have often played the role of imposing standards in a sector, leading to the important analytical point that low concentration in a sector may not be an indication of a high level of competition, but merely a fragmented, stagnant uncompetitive domain. Other forms of state imposition of qualitative standardisation, such as the pasteurisation of milk, promote commodification and the potential expansion of markets for the goods in question; state-imposed quality marks, e.g. *appellation contrôlée*, can restrict the domain of markets and competition, even while signalling useful information to consumers and others for the goods in question and thus serve as a device for expanding market domain, including internationally.

In a broader view of the international dimension, note that Lenin's obdurate refusal to accept any restriction on the state's monopoly of international trade was linked to how trade can compromise attempts to implement a strict national plan. It has long been postulated that wide-ranging international trade would inhibit war planning (alas never demonstrated), with the Cobdenite contrapositive that trade generates peace through the creation of interdependencies

and mutual reliance, a principle upheld most forcibly today, as we shall see below, by Jeffrey Sachs.

European history since the early modern period points unambiguously to the efficacy of state imposition or encouragement of market extension, with examples in the past two centuries emerging from the end of the Civil War in the US in 1865 and from German unification in 1871. More ambiguous have been the benefits of market extension accruing to the group of states emerging from the Treaty of Rome in 1957 and the subsequent participants in the European Union. Even if the first half century of the organisation's history is deemed to have been, overall, economically successful, one of its original aspirations, to create national, or pan-European entities that could realise the scale economies found in US industry, has not been realised: neither the static scale economies of the US car industry that were the focus in 1957, nor the trans-sectoral interconnections in, especially, hi-tech sectors of the contemporaneous Chinese economy (see below) have ever been realised in what has emerged as the European Union (EU). (Transnational cooperation in non-commercial spheres such as CERN seemed to have fared better within Europe.) If indeed the EU, in its various manifestations, has been unsuccessful in the creation of a state-imposed trans-national market, the very self-conscious and artificial nature of this endeavour (compared with 'naturally' emerging states and markets) raises important questions on the nature of this failure, if that is what it was – is it possible that seemingly residual aspects of state and market building – language, culture, and well-developed vested interests within countries – have proved to be binding constraints? A proper understanding of the obstacles faced by the EU in its attempts at extending the domain of the European market and enhancing intra-European collaboration might illuminate the problems that are faced by the nations of, for instance, west Africa in extending their market domains.

### Externalities

The limitations and failures of mainstream approaches to state intervention in the capitalist economy (with the latter phrase implicitly presupposing the presence of an underlying natural economy, upon which the state intervenes) are tied to the curious history of neoclassical theory itself. The neoclassical economics emerging in the latter part of the nineteenth century was soon dominated by British academics reflecting the needs and prejudices of empire, only ceding control of this discourse to the USA after the Second World War. What is so striking about this new theoretical paradigm is that, for all its formal discontinuity with classical

approaches emerging from David Ricardo, the public policy message remained unchanged: the efficacy of free markets and, substantially, laissez-faire. However, the immobile character of neoclassical economics in the domain of public policy belied the fact that the new theoretical approach embodied the biggest intellectual challenge to the primacy and desirability of a public policy centred on laissez-faire of any work of economics between Karl Marx and John Maynard Keynes.

The challenge to laissez-faire orthodoxy contained two aspects of the notion of externality. One was brought to maturity by A.C. Pigou (Alfred Marshall's disciple) in *The Economics of Welfare* (1920). He developed the mechanisms that we know today (with the inclusion of some later tidying up from Samuelson, 1954) for the public policy treatment, through taxes and subsidies, of instances of 'market failure'. Pigou's contribution was treated for decades as an outlier, dealing with exceptional events in the overall functioning of markets in a capitalist economy: the presumption, without any empirical validation, was that any external effects present were of a small order of magnitude. External effects gradually moved centre-stage in the domain of public policy with the first hints of a world-wide ecological crisis emerging in the 1960s. This concept of the external effect has indeed made inroads into the notion of the inviolability and optimality of an autonomously functioning market system and has had a major influence on public policy, most especially in the domain of issues such as pollution, climate change and urban affairs. In the latter case, even Friedrich Hayek (in Hayek, 1960) has had to concede the need for public intervention; occasional claims that spontaneous bargaining between entities in the style of Coase (1960) can invariably be used to replace public policy intervention and yield a free market solution to the presence of externalities have gone aground. External effects now play a prominent role in public policy, despite continued adherence, by way of textbooks and academic research, to the notion that external effects are to be considered aberrant exceptions to an otherwise optimally functioning market system.

By contrast, an earlier literature dealing with an alternative notion of external effects – in the context of business relations between firms – has not yielded an imprint upon public policy in the advanced capitalist world comparable to those externalities linked to issues such as pollution, climate change and urban affairs. As a result, many of the most significant debates surrounding these business-related external effects and the consequent need for state-directed industrial policy have taken place outside the literature of academic economics (e.g. Amsden, 1989; Wade, 1990). Thus, when entanglements between firms in different industries yield gains to the economy as a whole that are not reflected as benefits to the individual entities involved,

a straightforward justification for state facilitation or encouragement of these entanglements (or discouragement of disentanglement in the form, for instance, of outsourcing) might well be present. If claims for the efficacy of state-supervised integration and coordination in the contemporary Chinese electronics industry across what had been considered diverse sectors (e.g. semiconductor production and software) prove to be economically efficacious (and not merely the fulfilment of military-security considerations), the dominant western conceptualisation of the individual firm as the fulcrum of economic decision-making might be in need of re-evaluation, with questions concerning the extent of the firm no longer simply linked to the costs of ‘using the market’ (Coase, 1937) as an alternative. In general, the notion that industry boundaries are invariably well-defined is highly problematic, and in high technology sectors especially, these problems are likely to be exacerbated by the fact that the competitive activities of firms themselves can obliterate traditional industry boundaries (Auerbach, 1989). Note, however, that any generalised enthusiasm for putative Chinese success in this context should be tempered by the dangers of bloating and over-expansion that have been traditionally associated with state activities of this kind, resulting from a separation of the economic decision-maker (i.e. the state) from the likely bearers of the consequences of those decisions, the firm and its stakeholders. Western capitalism has its parallels in instances of feverous bouts of conglomeration between firms, usually with impetus from the financial sector, resulting in conglomerated units that have little to offer each other in the way of synergy, and with the benefits accruing largely to the financial matchmakers involved in consummating these combinations.

Mainstream economics has, however, mostly sidelined these issues, implicitly postulating the presence of a predominately self-regulating commercial economy that is in need of only occasional intervention by the state. In order to formulate a critique of this constricted perception of the role of the state as a productive actor in the economy, it is necessary to take a detailed look at the nature and inadequacies of the mainstream view of the self-regulatory nature of this commercial economy. The desiccated discussion by Marshall and Pigou of externalities in the context of commercial activity was concerned with how, for instance, an industry characterised by increasing returns is likely to affect conditions in other industries: their argument was not wrong, but the presentation seemed designed to keep such considerations on the periphery of discourse and from threatening the viability of laissez-faire policy in the realm of ordinary commercial activity, or ‘the ordinary business of life’, in Marshall’s phrase. Their discussion of how one firm’s activity might impinge on the cost

parameters of other firms largely sparked annoyance among economic practitioners and was seen as merely introducing an unnecessary fussiness into the standard theory – ‘empty economic boxes’ (Clapham 1922) – and its main influence on the economic literature was to promote, in the longer term, a rejection among theorists of the sufficiency of partial equilibrium approaches to price determination (Sraffa 1926). Of more influence on future considerations of industrial policy was Marshall’s discussion of industrial districts (Marshall, 1920), which hints at the presence of external effects within broadly defined industrial groupings. These conceptions, however, were not integrated into Marshall’s central theoretical approach to public policy, which remained one of laissez-faire: only later generations attributed to him a prophetic understanding of the need for state intervention to facilitate the creation of these groupings.

Marshall’s conception of the firm remained, in the various editions of the *Principles of Economics* from 1890 to 1920 (and in mainstream textbook expositions that dominate public policy to this day), a stylised version of the British textile mill: it was as if the monumental transformation of business activity of the Second Industrial Revolution had never taken place. In subsequent decades, successors in the Marshallian tradition introduced modifications to this approach, such as the possible presence of monopolistic competitive and oligopolistic structures (Chamberlin, 1933; Robinson, 1933) in the business economy. These approaches, which became key components of mainstream economic theory through much of the post-Second World War period, contained only feeble modifications of the Marshallian conception: the oblique implication present in models of monopolistic competition was that it would be sufficient to introduce the concept of product differentiation and, in the context of oligopoly, a rise in market power, in order to respond in theoretical terms to the major changes to business activity that had been introduced by the Second Industrial Revolution. The firm’s exogenously specified demand curve was now seen to be modified by advertising, marketing and product differentiation (although conceptualisation of the innovation of distinctly new products was left vague). What was left unquestioned in these approaches was the inheritance from neoclassical economics of the passive response of the firm to its exogenously specified supply parameters, which remained linked to an existing technological state of the art and to an ill-defined ‘best practice’ in management. The implicit presumption was that this state of the art was widely, if not freely available, so that the cost curves drawn by economists were not lower bounds, but operational and binding constraints (Hayek, 1949).

Even the modest modifications to standard theory made by models of monopolistic competition to account for firms' manipulation of demand parameters through advertising and marketing were widely considered bold (or even heretical) revisions of the theory, with Galbraith's (1967) extravagant claims concerning the ability of big firms to shape consumers' preferences remaining on the peripheries of the discourse of academic economics. (Note, however, that even with the growing academic popularity of general equilibrium approaches to microeconomics in the post-war world, markets containing monopolistically competitive structures could only function in a constricted manner – as exceptional events in what was otherwise a sea of perfectly competitive industries.) None of the developments above in mainstream theory seriously impinged on a fundamentally partial equilibrium approach to firm and industry activity in applied work: the individual capitalist firm's activities (e.g. the textile mill) and its net benefit to society typically took place in the industry in which it functioned. With the exception of basic physical and human infrastructure where, it was usually conceded, state provision may have played (and may have to play) a role, the inputs needed by the textile firm are provided by arm's-length markets, predominantly at parametric prices. We thus see an (implicit) declaration that external effects were of marginal concern in commercial affairs, so that the potential domain for state activity was seen to be limited.

These modifications were not responding to the limitations of mainstream theory revealed by the Second Industrial Revolution or, indeed, by the 1970s, to the challenges to US economic hegemony posed by, especially, the emerging industrial power of Japan. Key elements were missing in these post-Marshallian responses to the transformation of business activity that had taken place at the beginning of the twentieth century: the giant firms that had embodied these developments were not passive respondents to exogenously specified supply and demand parameters, but agents actively involved in altering these parameters and transforming their own internal structures to accommodate these changes. The activities of these giant firms were thus calling into question the presence of natural limits to a firm's sphere of activity in a well-defined commodity and market, making unclear what had heretofore been the common-sense notion of the boundaries of the firm as reflected in Marshall.

It does little credit that the economics profession that the first important reflection on the meaning of the developments surrounding the Second Industrial Revolution came from a business historian, Alfred Chandler, whose research from the 1950s culminated in the publication of the *Visible Hand* in 1977. The passivity of the Marshallian conceptualisation (and its post-Marshallian modifications) is replaced with the notion of the firm as a mechanism

to facilitate planning – to control and even *create* the environment in which it functions. The giant firms spread their domain of competence across an unprecedented variety of activities, many of which were not pre-existing, but the creations of either the research and development or the marketing divisions of the firm. But it is the increase in levels of vertical integration – the share of tasks that are done in-house – that emerged as the greatest challenge to the market-based view of the capitalist economy: the old-fashioned invisible hand of the marketplace had been replaced by the visible hand of administrative coordination.<sup>2</sup>

It is necessary to pause here and note how these events had been conceptualised before Chandler. What became the predominant perspective emerging from the mainstream Marshallian conceptualisations through much of the post-war world was absurd. This monumental transformation in material life came to be viewed in almost totally negative terms: the predominance by the 1920s of the great boyars of the car industry in the US, Ford and General Motors, and their displacement of the large collection of overgrown bicycle manufacturers that had made up the industry at the beginning of the twentieth century, was viewed as a movement from a competitive market (with a large number of sellers) to one of monopoly or oligopoly. The inadequacy of these orthodox conceptualisations is self-evident, with the implication present that nothing sufficiently remarkable had taken place in what we now call the Second Industrial Revolution to justify a general reconstruction of the analysis of business activity.

Two alternative characterisations of these events did, in fact, emerge from a contemporaneous critique of Anglo-Saxon approaches – the technocratic planning paradigm (TPP). The first aspect of this approach came from a technocratic perspective and viewed the emergent growth of productive forces as a triumph of engineering and engineers – a late descendent of the discourse promulgated by Saint-Simonian movement in nineteenth century France: this growth in productive forces was seen as taking place *in spite* of the presence of capitalist institutions – most especially those associated with finance – with these institutions executing a form of sabotage against genuine improvements in productivity (Veblen, 1904; Veblen, 1921). A reflection of this attitude in the present-day is the commonplace observation that the productive, successful economy of China is dominated by engineers, while the lagging western economies are ruled by lawyers and financiers; a related notion may be found in some branches of financialisation critique of contemporary capitalism, in which the financial sector is seen to play a purely predatory role. The second aspect of the TPP was crucial to the unfolding of events in the twentieth century: key players in the Second Industrial Revolution in the US,

Thomas A. Edison and Henry Ford, became unlikely heroes for Lenin and the Bolsheviks as the doyens of planning, showing the new path to an economy that could be run, in Lenin's crude Weberian conceptualisation, by a few accountants. Bolshevik failure to consider adequately the capitalist context in which planning by Edison and Ford had taken place was to prove highly costly in the long term to Soviet economic development.

Chandler's interpretation of the rise of large, vertically integrated firms during the Second Industrial Revolution in the US has affinities with the TPP from earlier in the century, with these firms seen as epicentres of planning and alternatives to the use of markets as devices for the allocation of resources in the economy. The supposedly binding constraints imposed upon firm behaviour, as seen from mainstream economics, were subject to transformation by way of the decisions and actions of these giant firms. Economic orthodoxy persisted in being unmoved by the events of the Second Industrial Revolution, with dominant economic thinking, even today, tending to dismiss this planning perspective on the rise of these vertically integrated giants in favour of one in which this development is simply an extension of static exchange and contractual relations. Thus, in an article of 1937, 'The Nature of the Firm', Ronald Coase answers the question 'Why do firms exist?' by suggesting that

The operation of a market costs something and by forming an organisation and allowing some authority (an 'entrepreneur') to direct the resources, certain marketing costs are saved. The entrepreneur has to carry out his function at less cost, taking into account the fact that he may get factors of production at a lower price than the market transactions which he superseded, because, *it is always possible to revert to the open market if he fails to do this*. Emphasis added Coase (1937).

Note the presupposition of the ubiquitous presence of 'the open market' as an alternative, so that firms internalise tasks when the cost of pursuing market exchange in, for instance, the purchase of inputs, is higher than the firm pursuing these tasks themselves. In the 1970s the economist Oliver Williamson clarified the nature of these costs: in marketised, arm's length relations between parties, the costs of writing a watertight contract may be prohibitive, and it may be preferable to indulge in a hierarchal, vertically integrated solution instead: '...product markets are subject to failure in various respects and...internal organization may be substituted against the market in these circumstances...The advantages of integration thus are not that technological (flow process) economies are unavailable to non-integrated firms, but that integration harmonizes interests (or reconciles differences, often by fiat) and permits an efficient adaptive, sequential decision process to be utilized' (Williamson, 1971).

The mainstream economics literature thus uses the prism of the conflict over the writing of contracts to perceive vertical integration and its historical development. The literature emerging from Coase and Williamson re-enforces the notion that the boundaries of the firm are well-defined, its juridical limits coincident with economic optimality in static (i.e. contractual) terms and likely consistent with a Hayekian ‘ground up’ (i.e. firm) perspective on the economic management of economic growth and development.

Yet this static approach does little to capture the revolutionary and tumultuous nature of the changes emanating from this period of economic history. Problems over transactions costs played a role in giant firm decisions in the direction of integration, but overwhelmingly the markets that Coase and Williamson posited as alternatives often simply did not exist:

...the initial move forward into distribution and marketing by entrepreneurs in the new industries of the Second Industrial Revolution was that often suppliers and distributors had neither sufficient knowledge of the novel and complex products nor the facilities required to handle them efficiently...In the most technologically complex of the new industries – particularly chemicals, electrical equipment and nonelectrical heavy machinery – industrial customers had little or no knowledge of how to install, maintain, and repair or even use the new machines or materials. Here the new companies relied on direct sales (Chandler, 1992, p.87).

Overall, the act of integration by Chandler’s giant firms was less a defensive one in response to market failure than a positive re-creation of the industrial landscape: ‘In the years following World War I, growth was driven much less by the desire to reduce transactions, agency and information costs and much more by a wish to utilize the competitive advantages created by the coordinated learned routines in production, distribution, marketing, and improving existing products and processes’ (Chandler, 1992, pp.92-3). In the robust terms of the economist William Lazonick, ‘what mainstream economists view as “market failures” I view as “organizational successes”’ (Lazonick, 1991, p.8). The implicit acceptance in the mainstream Anglo-Saxon academic literature of the Coasian notion that ‘it is always possible to revert to the open market’ has historically led to a neglect of the nature of inter-firm interstitial connections in contemporary textbook expositions of the theory of the firm (but see the discussion of these connections in Jacquemin and Rainelli, 1984 using the concept of *filières*), despite the revolutionary impact on firm management of Japanese just-in-time systems now dating back a half century. Analytical justifications for a role for state intervention in microeconomic management and development have been sparse before the recent period, with both Friedrich List and Alexander Gerschenkron (Gerschenkron, 1962) focusing on situations of economic backwardness in the nineteenth century as explanations (and justifications) for

state intervention in the absence of viable market alternatives. Broadly speaking, partial mainstream acceptance of the notions of List and Gerschenkron in the context of ‘backward’ economies was compatible with the retention of orthodox conceptions of the ‘normal’ case of the presence of complete sets of markets in developed economies, the case of state intervention to facilitate the appearance of these markets in developing economies being as case of *faute de mieux*.

From the perspective of mainstream economics, the saving grace of Chandler’s methodologically subversive approach to the Second Industrial Revolution was that events in this period unfolded under the aegis of free enterprise: the giant firms emerging evinced a form of planning, but it was planning overwhelmingly in the context of the privately-owned firm. The same could not be said for the dramatic events that unfolded in the US after the Second World War, where what eventually emerged as the industrial basis of American economic and military power in the postwar world were sectors in which the financing and co-ordinating role of government was crucial.<sup>3</sup> If earlier the list of sectors with a high level of government involvement included only agriculture, with supplementary attention to the financing of the railroads and tariff policy, this list embraced a whole new set of activities in the postwar world in which the state played a key role not only in the financing of these sectors, but in the planning and the development of new technologies; in the case of the internet, the US government was central to its creation; in electronics, ‘...Silicon Valley owes its present configuration to patterns of federal spending, corporate strategies, industry-university relationships, and technological innovation shaped by the assumptions and priorities of Cold War defense policy’ (Leslie, 2000, p.49), with the government playing a predominant role as well in the direction and financing of biotechnology, aircraft and satellite manufacture, as well as a range of other knowledge-based sectors.

The United States that thus emerges in the twenty-first century is one which had suffered precipitous decline in a range of traditional free enterprise industries, many of which, like textiles were an inevitable product of the increasing competition from lower wage countries. In other cases, however, such as the car, steel and consumer electronics industries, their rapid decline was linked to the failure of these free enterprise sectors to maintain their enormous historical advantages when faced with superior management, production techniques and products from others, most notably the Japanese. By contrast, much of the distinctive superiority that the US has retained is embodied in a series of high technology sectors that are the product of state financing, planning and coordination combined with intense competition

between enterprises and elements of entrepreneurial financial activity. All of these sectors were underwritten by several generations of state investment in public and university education, complementing a rich base of practical skills with the intellectual infrastructure to make these developments possible.

What accounts for the dramatic change in the role of government in key, innovation-centred industries in the post Second World War world and continuing on to the present – not only in conditions and nations characterised by ‘backwardness’, where a lack of depth in product and financial markets is likely to exist, but in precisely the most advanced sectors and nations of the world economy? In the USA at least, free enterprise with its accompanying rich array of capital market institutions had proved adequate in the Second Industrial Revolution in fulfilling the need for capital expansion in the context of the static scale economies associated with the car industry and electrification. Why, however, had large scale innovation in the post Second World War period invariably taken place under the aegis of the DOD or other government-related and financed institutions? One possible explanation is that the extremely lucrative nature of the defence contracts extracted from public funds obviated all considerations of cost and risk abatement, leading to the uncomfortable conclusion that the innovatory behaviour that engendered the post-war technological revolution was fuelled by the predatory behaviour of defence contractors with governmental organs such as the DOD.

In addition, however, to the role of overt predation from the military-industrial complex, there is a complementary explanation for the emergence of state direction and financing in the US of, especially, high technology sectors in the post-war world that is far more general, and is linked to fundamental tendencies in the evolution of contemporary technology. It explains the need for an enhanced governmental role in these sectors in a global context, and not merely from the perspective of the US and its DOD. This approach, now part of the mainstream of economics – new growth theory (e.g. Romer, 1990) – posits two kinds of potential externality, both of which are likely to undermine purely firm-based, laissez-faire approaches to innovation and to legitimate governmental intervention in this sphere. In the context, most especially, of a long term tendency for technology to be increasingly dominated by scientific (and hence replicable) knowledge (as opposed to craft-based *in situ* knowledge), when firms compete in markets by offering new products and improving their quality, higher levels of investment by private firms, complemented by enhanced human capital can generate greater knowledge and new technology, some of which spills over to other firms. This process can cause the overall growth rate in the economy to increase, but from the perspective of the individual firm, some

of its enhanced investment is wasted in the form of accruals in knowledge to other firms: this external benefit, advantageous at the societal, but not at the firm level, functions as a legitimisation for state intervention to secure these societal benefits.

A second aspect of external benefit and, hence, legitimisation for state intervention is the role of enhanced human capital in this investment-innovation process, which has two characteristics. The first concerns the positive externalities associated with formal education in general (see the section below), while the second emerges in the context of the accretion of learning by doing knowledge to a firm's workforce from a specific firm's enhanced investment: part of this knowledge cannot be captured by the individual firm because of the mobile nature of free labour, but is of overall benefit to the society and economy. In the context of contemporary events, a major obstacle to any attempt to reindustrialise atrophied sectors of the US or European economies involves not only the need to invest in physical capital in selected industries, but to compensate for accumulated deficits in *in situ* knowledge accretions on the part of the workforce within these industries – a process whose time horizon may well stretch beyond the limits of individual firms.

A role for state intervention in knowledge-based sectors is likely to be especially intense in their earlier, innovative phases. By contrast, when sectors mature, for the individual firm, and for the economy more generally, it may well be desirable to follow the example of Apple and to specialise in design and outsource production and related activities. Such a pursuit of specialisation would be congruent with venerable notions of economic rationality, permitting the avoidance of the diseconomies of scale associated with, especially, production of a variegated range of products and, for the economy as a whole, the inhibition of the creation of monopolistic structures (Stigler, 1951).

In the context, however, of contemporary high-tech sectors, the concept of a mature sector may be a nebulous one: business economists (Porter, 1985) often emphasise the need for state encouragement of the creation of industrial districts, which may simply serve the purpose of facilitating just-in-time linkages by rationalising access to inputs by firms. More fundamentally, however, when dealing with the dynamics of competition in high tech sectors, there is likely to be a fluidity between sectoral boundaries in the presence of continuous technological innovation. Thus, while a focus on design and the outsourcing of production may prove to be a rational strategy for Apple as an individual firm, given its firm-level time horizon for return on investment and for avoiding managerial diseconomies, such a practice may play

a dysfunctional role in the context of economy-wide national development. The state may wish to encourage linkages between firms with complementary technologies (or their internalisation within individual firms) and to engender learning-by-doing skills across firms using a longer-term time horizon and a broader competitive space than that used by Apple for its decision-making. If, in the contemporary world, such conditions are widely prevalent, state-driven economic development may not be an exceptional occurrence, one engendered by conditions of backwardness (Gerschenkron, 1962), but a norm of behaviour.

It is impossible here, however, to avoid consideration of the regrettable presence of military-security considerations in contemporary decisions by states concerning firm linkages and economic integration. In a world in which these security considerations were absent, Apple might wish to continue to indulge in its arm's-length engagement with foreign suppliers, with the US economy's net economic loss of enhanced learning by doing and production capacity to foreign suppliers compensated for by even greater capability in its domain of specialisation (e.g. design), obviating the economic imperative to do everything in-house (i.e. domestically). And obversely, if China did not perceive the presence of military-political threats to its security, would it be pursuing the costly practice of rapidly securing for itself economic self-sufficiency across the whole domain of economic activity? Any such possibilities for continued growth in international specialisation may well be overruled, or substantially mitigated in the present-day Hobbesian war against all, so that even if the forms of market failure described above were typically not present, the continuing presence in the world of overriding military-security considerations would still enjoin the existence of greater levels of autarkic economic activity than would exist purely on the basis of economic imperatives.

### Externalities and human capital

In the modern world, formal schooling has invariably been a project funded and directed by governments. The US emergence as a pioneer in public education during the Second Industrial Revolution sets a typical pattern for rapidly growing economies in the twentieth century and has, as we shall see, a well-defined motivation in the context of economic development. In considering of the influence of the growth of literacy and associated cognitive skills on economies, it is necessary to move beyond formal schooling and deal with a range of complementary actions by the state that impinge upon this economic development through the processes outlined above involving the widening of market extent. Thus, the imposition of

linguistic (i.e. European language) uniformity in, for instance, sub-Saharan Africa by colonial rulers has almost invariably been continued in the post-colonial period in the context of schooling, with in countries such as Indonesia and Israel this uniformity even taking the form of the imposition of fabricated languages. Historians and anthropologists even point to the invention of the very concept of ‘the nation’ and national identity in many contexts where it had been absent, with the behaviour engendering these outcomes almost invariably involving state action (Anderson, 1991). The motivation on the part of the state for the promotion of these changes in the behaviour of the population has often been multivarious, but in the modern world it is conjoined with the project, nominally pursued universally, of economic development. Formal schooling has played a central role in the project of nation building and the creation of national identity, with only a few examples available of nations, such as Eire, whose distinct identity has remained fully intact after having lost the battle over language.

In the twenty-first century, at least for the moment, the focus upon schooling universally is not upon language, national identity or even culture, but the role of education in the facilitation of economic growth. The pioneering and most astonishing example of this process was the transformation of Japan in the period following the Meiji Restoration of 1868, where its whole intellectual culture, most notably in the sciences and mathematics, switched overnight from an east Asian (i.e. ‘Confucian’) orientation to a western one, so that by the 1920s, the Japanese were sending representatives to European colloquia on quantum physics. It would be a distraction, however, to link Japanese economic development in this and subsequent periods to specific instances of mastery of western science and technology by prominent individuals: as of the mid-twentieth century, India could easily match Japan in the production of such exceptional people. Japan is rather an instance where its economic success in the century subsequent to the Meiji Restoration employed education as part of a development project involving the whole society. The dramatically effective regime of schooling in Japan had strong links to a state-sponsored programme of nation building that attempted to assimilate foreign influence in a controlled manner and to socialise the population in the direction of a national identity containing strong militarist elements until 1945. These efforts were congruent with an inculcation and imposition of factory discipline: the weight we give to the engendering of these behavioural factors in schools in the process of economic development compared with the transmission of knowledge and cognitive skills remains an issue of controversy.<sup>4</sup> Note, however, that the role of schools in the processes of behavioural and sociological modification for workforce integration is not one that merely applies to emerging economies: in the US and

other developed economies, it has been central to the building of national identity and the assimilation of disparate sections of the population, most especially in periods of mass immigration.

The cultivation of cognitive skills and economic development are strongly conjoined forces, but the empirical, statistical links between formal education and economic growth have often been less good than advocates of the economic efficacy of schooling would like to have us believe: much of what we call human cognitive development takes place, and must be analysed in a social and not an individual context. Thus, in contradistinction to ideologically driven claims of a trade-off between inequality and growth, the links between material deprivation and underachievement in cognitive development are easily confirmed within and across societies and are particularly acute in the context of very poor countries. In the post-war world, initial phases of the most successful examples of capitalist development, those in east Asia (Japan, Taiwan and South Korea) were characterised by strenuous efforts at land reform and redistribution, resulting in low levels of income and wealth inequality; Vietnam and China had very low levels of inequality in their pre-market phases.

The reasons for such linkages are not to be found in the kind of simple, mechanical relationship that we are encouraged to observe when the problem is formulated in the context of statistical regression, or as analogy with the effect on productivity of a new input added to an element of physical capital. Rather we may postulate a range of effects on the ensemble of phenomena we call human cognition. In a purely arithmetic sense, low levels of economic inequality may have been associated with less societal waste from expenditure on goods that are, relatively speaking, luxuries, with the primary effect of freeing resources for education itself and playing the secondary role of providing the means for the alleviation of the forms of material deprivation that would inhibit educational development. More subtly, however, reductions in material levels of inequality may deter the retention or formation of the kinds of quasi-caste hierarchies within the educational system as a whole and inside the classroom that impede cognitive development, aspirational improvement and lack of knowledge of available opportunities at the lower end of the income distribution: reductions in inequality are thus conducive to broad-spectrum cognitive development, which itself promotes social mobility and is likely to reduce inequality.

The US during the Second Industrial Revolution would appear to violate many of these generalisations concerning economic development, and makes it here, as in other instances, an

exception rather than a norm to the emerging pattern. The US possessed during the period of the Second Industrial Revolution such an exceptional lead over other countries in per capita income as to obviate, or to make less apparent, the notion that inequality would inhibit the availability of resources for education and for the alleviation of material deprivation. In addition, its republican culture (outside the former Confederacy) likely dampened the functioning of the kind of quasi-caste hierarchies still present in contemporaneous Europe, east and west.

In broader terms, the presence of external effects in the demand for human capital development and the effects upon society of increases in its supply point to the irrelevance of the individualistic formulations to this issue found in mainstream expositions centred round the writings of Gary Becker (Auerbach and Green, 2025). Demand for human capital development is ill-described by an individualistic utilitarian calculation devoid of the kind of class and cohort considerations described above. And when external effects in supply are brought into consideration, it is evident that an augmentation in the stock of human capital at an individual level will grossly undervalue the overall, and long-term impact of such increases (e.g. in formal education) to society as a whole. Education-economic growth regressions become a fairly pointless procedure for considering the impact of augmentations in human capital in the context of economic development when a central part of these increases – those linked to external effects – are only visible with a long lag. Thus, the transformative impact of educational programmes in both the US and, most dramatically, Japan at the beginning of the twentieth century was manifest not only contemporaneously, but in the economies that emerged after the Second World War.

We may then be tempted to give a primary and not just auxiliary role to educational and, broadly speaking, human development. In the present militaristic political moment, there appears to be deceleration in the decline of national advantages associated with the possession of natural resources. But a continuation in this decline is likely inexorable, with reductions in transport costs only the most prominent of a range of reasons for this decline. We then see, obversely, the remarkable disappearance of ‘poor but literate’ societies in the post-war world, many of which, like Japan, South Korea and Finland are distinctly bereft of natural resource advantages. Under such conditions (especially if we put to one side the new Cold War *deus ex machina* of ‘institutions’ (Acemoglu and Robinson, 2012)), it is certainly worth considering – does anything else really matter for the process of a nation’s economic development besides the advancement of its human resources, epitomised by the status of its educational

programmes? (Easterlin, 1981) As suggested above, such a focus on formal schooling is likely to be overly narrow, but if widened to include a broader range of parameters usually linked to the absence of social inequality, it is possible that such an audacious claim (i.e. that a focus on human aspects, even at the expense of the accumulation of physical capital, is a successful strategy for long-term economic development) may prove to be vindicated. Such a conclusion is only reinforced if we depart from GDP and GDP per capita as our measures of economic development and use a broader range of human-oriented measures, including economic inequality and, most strikingly and objectively, human longevity. Such calculations could easily reconfigure rankings of who is thought to be developed and who not, with present-day notions that, in material terms, the USA is substantially better off than Japan easily reversing itself.

A corollary of the conclusions emerging from the discussion above is that there is a range of human-oriented activities, including (but not exclusively) education, that play a central role in economic development. These activities, furthermore, are invariably, and with good reason, supported and directed by the state. Under such conditions, consideration of the domain of the productive state cannot merely treat (state-supported) education and associated activities as mere superstructural aspects of economic development, but fundamental to its productive trajectory.

#### Agriculture, modernisation and the social costs of transition

Questions surrounding modernisation and the social costs of the transition of labour from agriculture to industry may appear as overly specific in the context of an essay concerning the productive role of the state in economic activity. These issues are, however, central to a consideration of the state's influence in the regulation of the productive economy. In attempting to mitigate the inherent damage to human beings resulting from the tendency of markets to treat labour as a commodity, the state is confronting a fundamental market failure in these contexts of transition, though not typically appearing as grounds for state action in the Pigou-Samuelson framework discussed above. But if it is not the state's responsibility to consider this issue, then whose is it? Whether we are looking at the movement of labour from the agricultural sector to industry and a subsequent urbanisation, or of mass immigration, or labour displacements incumbent on free trade, there are costs imposed on those compelled to move,

as well as upon those whose living and working conditions deteriorate when the new residents are imposed upon their living space.

Perhaps the most prominent and self-congratulatory example of the efficacy of free market allocation are the supposed gains from the introduction of a regime of free trade which, while conceding losses to the owners of the facilities used for Portuguese cloth and English wine production, postulate the presence of net gains to society as a whole from this development. In traditional expositions, the costs to workers of reallocation and relocation from the losing sectors are not embodied in typical calculations of the net social benefits and costs of the new regime, which is typically measured by changes in net national income. The absence of consideration of the changes – the writing down of these workers' human capital stock (including a conceptualisation of the loss of collective, or social capital) – points to the inadequate nature of this calculation in the context of free trade.

We can contrast this flawed measure of national income with how income is typically calculated by a firm. Notions of firm income embody both net cash flow and changes in the value of the firm's physical capital stock. To neglect the latter can leave the firm in a fool's paradise when increasing cash flow has been neutralised by a deterioration in the value of the firm's capital: a measure of income that neglected the depreciation of the firm's capital stock would be a deceptive indication of its success or failure. In standard accounting calculations, however, the appreciation or depreciation of the value of the firm's *human* capital stock plays no part in the calculation of firm income, because it is free labour and not owned by the firm. But for a whole economy – considering only its productive, and not any welfare aspect – are not changes in the value of its stock of human capital central to any calculation of its development?

It is possible to find a broad range of historical instances of economic transformation in which we observe accompanying episodes of extreme hardship visited upon sections of the population – the enclosure movement in England and Soviet collectivisation, as well as the rapid depopulation of many agricultural areas and the unprecedented levels of European emigration during the Second Industrial Revolution in the US. In the first two cases, that of the First Industrial Revolution and Soviet collectivisation, the egregious brutality and mortal effects of these events on sections of the population have been well documented, with explicit recognition of the consequences of these events for human welfare and, at least implicitly, consideration of their dysfunctional roles in long term economic development.

When dealing, however, with the Second Industrial Revolution in the US, one of the triumphs of development in the modern world, voluntary migrations and their associated hardships for migrants and the inhabitants of the locations upon which they descend are generally considered a price worth paying for the superlative levels of economic growth that accompanied this migration in the US.<sup>5</sup> And it may well be that the east European migrants working the notorious 69-hour work week in US steel mills found themselves to be better off than they had been at home, as did the African Americans who, over decades, made the long trek from the poverty-stricken and apartheid-infested conditions of the southern states to the north. But even if we put to one side the effects on human welfare in the US of leaving these migrants to fend for themselves in these transitions, and the social dislocation that this migration imposed upon the existing inhabitants of these new locations, we still have a range of considerations concerning the *economic* costs to society of the writing down of human capital stock (both in its individual and social capital forms) incumbent upon this industrial development – the rapid migration and the social dislocation that this migration imposed upon the inhabitants of urban locations, as well as the gratuitous exploitation of labour emerging from these mass migrations.

These considerations are not merely academic, abstract or historical. To this day, sermons in economics textbooks against economic inefficiency imposed by government fiat use as a set piece example the New Deal subsidies designed to alleviate deprivation and to slow down the reallocation of labour away from agriculture and the rural economy (Samuelson, 1964, chapter 20, for a classic example, very familiar to the author). But is more growth always better than less? Is it possible, for instance, that the present-day well-regarded state of well-being in Denmark and Austria had been facilitated by the relatively slow gradient of decline of its agriculture sector and movement of population to urban centres? In many countries, there have been a range of actions by the state that are commonly railed against, such as the aforementioned agricultural subsidies, because they inhibit ‘progress’, as measured by economic growth. There are other state actions, such as the accommodation of migrants with an expansion of social housing, health facilities and schools that are frequently criticised as encumbering a growth strategy with unproductive state activities. A little knowledge, however, is a dangerous thing, and perhaps the decision-makers and planners ought to be informed that GDP per capita (GDP in absolute terms as a measure of growth is, of course, even worse), by ignoring changes in the value of the human capital stock, is a flawed metric for considering an economy’s growth in income properly considered, and is even more inadequate if we choose

to add explicitly a range of other parameters concerned with human and environmental well-being.

Debates on immigration illuminate some of the issues discussed above. Popular anti-immigration rhetoric is predominately, though not exclusively, focused on cultural issues, often from a xenophobic and right-wing perspective. This is a curious development, considering the circumstance that state-sanctioned periods of mass immigration are invariably concerned with attempts to dampen down wage increases. In France in the 1930s, we see the welcoming of Italian immigrants linked to France's long term, and unique demographic stagnation, accompanied by widespread anti-immigration violence. In the US, we see mass immigration from the late nineteenth century until the early 1920s, coincident with the Second Industrial Revolution. The rhetoric that supported this immigration in the US, as in France in the later period, was all about the US (or France) being uniquely a land of liberty that welcomes the stranger. The similarity of the two countries' legitimating bombast perhaps explains why they dislike each other so much. Sentimental support for these policies from useful idiots such as Emma Lazarus, using nominally left-wing rhetoric, cannot disguise the role of mass immigration in promoting inequality, a role it played in the US after 1980, including under the tenure of Ronald Regan, with spectacular success, as we have seen above.

Critiques of even high volumes of immigration are rare in the mainstream moderate left consensus, so that the recent intervention by an establishment figure (Deaton,2024) was a noteworthy event. Why has it been so rare? The presumptive and convenient answer is a revulsion against the xenophobic and right-wing nature of anti-immigrant sentiment. But on the right, Reagan and his followers were not averse to using the race card, and despite the fact that elements of his constituency (e.g. the followers of Patrick Buchanan) pursued an anti-immigration line, his administration and those that followed were content to permit immigration (legal and illegal) at a high level. The wage dampening effect of immigration, which, as noted, generally disappears from discourse, has long been a constituent of US economic strategy. A primary reason is that, as noted above, there was such spectacular and undercalculated economic growth in both real and per capita terms during the Second Industrial Revolution (Gordon, 2016) so as to make the concomitant immigration more an aspect of the mythology of the US in the early twentieth century than an economic mechanism that limited wage increases. The self-congratulatory Goldilocks economy of high GDP growth and low inflation of the US, especially in the 1990s, was a much weaker replication of the success of the earlier period, but even in the face of the immigration that accompanied it, was successful

enough for a part of this period so as to engender a mild reversal of some of the damage that had been done previously to incomes at the low and median end of the spectrum.

Calculation of this economic success by journalists, and of the efficacy of enhanced immigration, usually takes place in terms of absolute, as opposed to per capita growth, even while much of the rhetoric surrounding these discussions is concerned with well-being. Why might this be so? At one level, it seems to harken back to the origins of political economy in the early modern period – a subject far more consumed with whispering into the ear of the monarch about maintaining the power of the kingdom than looking after the welfare of the king's constituents. Thus, even today, economic performance in late nineteenth century France is seen to have been a failure, despite a per capita growth rate growth much more rapid than that of Great Britain: France's flat-line population growth dictated that, in geo-political terms, its *absolute* growth rate was not adequately preparing it for the up-coming war. In the present day, we have been observing increasing discussion in many countries of the need for autarkic self-sufficiency as a desirable national pursuit, not with any economic rationale, but because of a deteriorating international political environment that is causing military-security considerations to become central to national economic strategic calculations.

Even putting military-security considerations to one side, we are regularly confronted with authorities rebuking the public for the damage being done to the nation's growth rate by declining fertility and increased longevity, including such outstanding villains such as Japan. (The US has helped contribute a solution to this problem by having a rate of longevity four years less than several rich countries.) But do we have it backwards? Shouldn't we be engineering an economy to serve 'our' (per capita?) preferences, which seem to include lower fertility and, we presume, longevity? Is it not a feeble form of economics that demands that how people choose to live should be subject to the imperatives of economic growth? And is economic growth a useful standard of economic well-being, when the metric used (GDP per capita) ridiculously generates the conclusion that the US is 30% better off materially than Japan? In the contemporary world, the pressing need for economic development in the poorest countries of the world continues to be linked to the flawed GDP metric of progress, a measure that continues to be foisted upon us, and even intensified in the context of the contemporary AI and militarist frenzy. Explicit and imaginative forms of state action will be necessary to help create an economic strategy that fulfils human needs and to countervail against market-driven and war-oriented notions of our economic future.

These questions return us to the question of the productive state – productive of what? And productive for whom? The ruling groups running a state, even if not corrupt, may perceive their task in grandiose terms – as preserving and expanding the power of the nation, rather than promoting the well-being of individuals within the nation. Immigration may be highly desirable for cultural reasons and even for, under some conditions, economic growth, both absolute and per capita. But immigration – the accommodation of new residents to a society – is bound to be financially costly if done properly, as is the humane exclusion of those not permitted to enter legally. Immigration undertaken by the state is not a mere perfunctory procedure involving the importation of a commodity – labour – to an economy; it is a rebalancing of the mix of citizens in society who will all be equally endowed with civil rights and freedoms. The neglect of the initial costs of assimilating new inhabitants into a society will likely result in a far higher burden in the future.

### China

Consideration of China in the context of the productive state is appropriate because of that country's central place in the world economy, but as well as a means to inquire, more broadly, how the continued presence of central planning and state ownership in China impinges itself, for good or ill, upon the activities and desires of individual enterprises, and upon economic outcomes in the economy as a whole. The indubitable economic success of China in recent decades has contingent and historic aspects, with some voices linking this success in a non-refutable way to ancient Confucian tradition, which somehow survived in the fabric of the culture throughout the tragic events of the last several centuries, including the Maoist period, but which was, until the last two decades of the twentieth century, unable to manifest its beneficent effects on either political governance or economic management. More proximate explanations relate to the efficacy of socialist planning and, obversely, its rejection in favour of a turn to the market. The latter considerations are of intense interest for the poorest countries in the world in their endeavour to conceptualise China as an exemplar of economic development and for evaluating the issue under consideration here, the role of the state in the productive economy.

China and India both have a ground zero for economic development in the late 1940s. Advantages would seem to have accrued to India in this period, with its English-speaking elite having had major achievements in mathematics and physics and a range of other fields, and

with India possessing access and connections to western markets and contemporary technologies. By contrast, war-torn China was soon to be plunged into a new war in Korea, with links only to the economies associated with Stalin's Soviet Union. Culturally, China was isolated and was still focusing on such basic concerns as whether to reform or to eliminate its traditional orthography and with implementing one of the forms of collectivised agricultural production that had proved so dysfunctional across the socialist camp. By 1980, there appears little to choose between China and India using a GDP per capita measure though, in the interim, the Maoist regime had descended into, or had promulgated, mass famine on at least one occasion (1958-1963 – the Great Leap Forward) and perhaps others, a happenstance not emerging in post-colonial India.<sup>6</sup> Using other measurements, however, substantial differences appear to have emerged between the two economies by 1980 in a range of indicators linked to human development, with China's astonishingly low measures (e.g. Gini coefficient) of income inequality perhaps driving its substantial lead in life expectancy and in basic education and literacy over India, though India retained superiority in education at the elite level and in access to western technologies.

China's human development trajectory and its subsequent success at attracting multinational investment projected a path established earlier by a range of nominally capitalist countries in Asia – Taiwan, South Korea and other Asian Tigers. In all these countries, foreign-owned investment played an important role in the development process (perhaps less so in Japan), but served as well as a mechanism for schooling these economies in how to set up indigenous industries. In retrospect, the impetus for indigenous ownership was even stronger for China than for these other nations, given the ever-present possibilities for geo-political tension and even military confrontation with the rich countries of the West, especially the US.

It is impossible to completely disassociate China from its label as a socialist economy and thus, in contemporary discourse, with central planning. Its first conscious deviations in the late 1970s from the classic Soviet model were initiated in the domain of the latter's greatest failure, the agricultural sector. Like, however, the inflow of foreign-owned investment largely directed to markets abroad, these deviations did not fundamentally disrupt or challenge the centrally planned model. In what ways, then, has 'socialism with Chinese characteristics' distinguished itself in its use of the state as an active agent in the economy? First, in contrast to classic central planning, the exigencies and motivations of the Chinese economic planners have, since the 1990s, been mediated by the international market, a fact which brings with it a series of constraints and opportunities. The constraining aspect is that central planners will be limited in

their ability to regulate those domestic firms, both private and state-owned, that operate in the international arena; more positively, however, the Chinese state is freed from the need to create a full regime of incentives and constraints for these firms because, as in South Korea, with its monopolistic Chaebol-dominated environment, much of this task is relegated to the international arena. For Lenin, crossing this Rubicon was no small matter, so that for him, handing over significant governance to the international arena signalled the end of the planned economy.

A second way in which, in the last 20 years especially, China planners have had to consider the consequences of deviation from classic central planning has been the presence of domestic producers, both publicly and privately owned, competing fiercely with each other while raising and expending investment capital outside the bounds of any central government planning procedure, but often reflecting the needs and exigencies of localised state administrations desiring to expand control over resources. (We see comparable activities among US states, most commonly in the form of competition in the form of tax incentives to firms.) The presence of intense domestic competition among at least a subclass of Chinese firms, alongside significant planned direction from the centre, appears to resemble what was purported to exist in capitalist Japan in the 1960s to 1980s. Note, however, that the Soviet imposition of state planning for all sectors of the economy including, for instance, restaurants, had often been considered, even by enthusiasts for Soviet-style planning, as non-viable, its presence more an accident of history than functional possibility, so that Chinese abandonment of Soviet-style full-fledged planning is less heretical than first appears.

Can we however, single out any distinctive aspects of the centrally planned system that have proved efficacious in the development of the productive economy, beyond those associated with the well-developed literature on the ability of the centre to amass and focus resources in the context of the developmental state or, as in the Soviet case, of running a war economy? One aspect, as discussed above, comes from the perspective of new growth theory: a firm's enhanced investment may generate accruals in knowledge that could potentially spill over to other firms, so that some of this investment is wasteful from the perspective of individual capitalist firms. Under such conditions, there may be reasons to question the much-lauded efficacy of impermeable property rights as the fount of innovation and efficiency, with the constraints it imposes on the growth of societal productivity. In the context of contemporary China, government diktats to firms in the electronics and other industries appear to have overridden the 'natural' tendencies of these firms to outsource key inputs from abroad, forcing

them to use and cultivate relationships with domestic sources. The government's motivation for such policies may have a security-military origin, but it remains an open question whether such moves in the direction of autarky prove to be efficacious in purely economic terms, in the presence of spillover effects and complementarities between firms' outputs and the skill development trajectories of their workforces. Recent claims of exceptional Chinese success in the use of the visible hand of vertical integration as a mechanism for coordination and innovation in the industrial sphere<sup>7</sup> resemble those of Alfred Chandler for an earlier era: if validated over a broad base of industrial activities, textbooks concerned with the theory of the firm, and indeed those dealing with central planning, will have to be re-written.

A further development in the Chinese context has been the encouragement and creation of industrial clusters in specific geographical locations, a phenomenon that governments have been pursuing world-wide, sometimes merely to encourage just-in-time inventory procedures, but in other contexts to promote coordinated innovation between firms. The exceptional developments in these directions within the economy of China are likely facilitated by the ability of the socialist state to override the desires and perspectives of individual firms and industries and to compel forms of collaboration and coordination that would be difficult to implement in many capitalist economies. One cannot judge at this stage in China's economic development whether any of these state-planned and directed procedures will prove to be reckless or overambitious: what can be said with confidence is that the scale and ambition of many of these procedures appears to be beyond the scope of economies dominated by firms with full autonomy and absolute property rights. Chinese governmental direction in the creation of industrial clusters and linkages (*filières*) by the state is significant in its own terms, as well as forming a test of the Hayekian proposition, one still invariantly predominant in the capitalist world, of the central role of the firm and its entrepreneurial leadership as the locus of decision-making for economic development.

An important aspect of the inviolability of property rights is concerned with IPRs, increasingly used not just by individual firms to generate rents but, in the case of rich countries, especially the US, encouraged by governments as a central aspect of a strategy of national economic advantage. Serious doubts have been cast at the academic level on the efficacy of IPRs in a social context, it being suggested that, at very least in the modern era, any positive incentive effects are more than neutralised by the barriers to entry and the lack of diffusion created by the presence of IPRs (Boldrin and Levine, 2013). There are some intriguing indications that the ability to curb the inviolability of the intellectual property rights of firms, along with the

creation of industrial linkages by the Chinese state and the latter's ability to encourage and even impel the sharing of new developments and procedures between firms, has been an important aspect of recent Chinese success in AI and other fields. Only time will tell if this is indeed the case, but if it proves to be true, it will pose not only a political and economic challenge to the US and other rich countries, but a further confrontation with a central tenet of the modern defence of capitalism, the Schumpeter-Hayek-Baumol presumption that the firm (sometimes characterised as 'the entrepreneur') exists as the fulcrum and incentive point for innovation and development in the economic sphere<sup>8</sup>.

A consideration of supposed Soviet failure and Chinese success helps focus a consideration of the productive role of the state in a broad range of contexts, and a disassembling of the contingent and structural aspects of the respective histories. Contingently, Soviet society was burdened from its inception with high levels of military expenditure, motivated by a desire to neutralise perceived capitalist antagonism and encirclement; China, after the end of the Korean War and even before the explicit reform period beginning in the late 1970s, found itself able to indulge in experiments in economic openness (Li, et al., 2026). China, with its accession to the WTO in 2001, had relatively broad access to western markets and technologies compared to the Soviet Union in the post WWII period, with the Soviet Union having also faced limits in any attempt to pursue an export-led strategy after 1929 due to the Great Depression.<sup>9</sup>

An advantage accruing to the Soviet state, in comparison to post-revolutionary China, was the surprising fact that revolutionary technological change in the west in the post-1920 period, even in the golden years of economic growth after the Second World War, was of a relatively limited nature. The Soviet state was largely faced with replicating changes in technology rooted in activities such as steel fabrication, electrification and the exploitation of the internal combustion engine that were already well-developed during the Second Industrial Revolution. It is only in the 1970s, with the emergence of the microprocessor, that fundamental discontinuities in technologies emerged that the Soviet Union and later China had to confront, if they were to compete at the highest level. For the Soviet Union, these new technological regimes proved to be impassible obstacles for an economy blockaded from the receipt of the latest western technological developments for all of the post-war period, posing challenges to which the Soviet centrally planned economy were unable to successfully respond with indigenous replication. China's performance in the last two decades appears to have been more successful than was ever true of the Soviet Union, partially because of the greater access it had to western components and technology after 2001 (though a range of obstacles to accessing

current technologies are now being imposed upon China by the west). Additionally, however, China's mix of central planning combined with competition among its domestic firms in the electronics sector has more resembled the successful combination of forms of economic management used by a range of capitalist economies – the US during its most innovative phase, with planning from the DOD combined with intense firm rivalry, and a similar mix from Japan, with central directives coming from MITI – than a purely centrally planned approach. China's domestic competitive environment and its integration into the international production of high-tech components has meant not only acquaintance with contemporary technologies, but a familiarity at the highest level with the relevant standards and protocols.

A further consideration for firms and nations all over the world will affect the possibility of entry into the domain of, especially, high tech production against existing players: how will it be altered by the long-term tendency for the craft component in technology to decline (with semiconductor lithography being, at the moment, a notorious exception), compared to the more scientific and hence replicable aspects of new developments? If, indeed, the assimilation of new technology progressively stems more from the monitoring of the latest formal, academic knowledge rather than from the slower process of replication by skilled craft-workers emerging from a learning-by-doing context, then a state's educational policy becomes progressively a key component of any nation's proposed industrial strategy.

#### Some considerations concerning the political economy of the state

In what in retrospect seems to be the brief hiatus of post-Second World War optimism, we see conceptualisations of the role of the state as an autonomous, disinterested principal. Heroic attempts were made by economists (Bator, 1957, Graaff, 1968) to construct a welfare function for society, hinting (but never explicitly declaiming) that an objective, universally acceptable version of such a function could be formulated using the egregious, and frankly absurd constraint of the Paretian principle, under which societal actions can only proceed when no one can be made worse off. In a more applied context, and under the influence of Keynesian economics, Tinbergen (1952) postulated the presence of a state responding to a utility function generated from a process of democratic decision-making. It guides economic actors by using instruments and setting targets for the purpose of maximising general welfare in the domain of macroeconomic regulation.

These optimistic approaches to the role of the state in modern political economy were running up against a deep suspicion in the literature of western political economy about the very necessity for the existence of the state: it has been widely postulated, from a wide variety of perspectives, that civil society can function in its absence, and should aspire to do so. We see such an assertion not just in anarchist thought, but in such disparate figures as Karl Marx, where the state disappears (or is abolished) in the higher reaches of communism, and in Friedrich Hayek, whose notion of capitalism is that it exists as a species of spontaneous order, substantively autonomous not only from the state, but even from a state-derived legal system (Hayek, 1982).

In the post-war world, the optimistic vision of an autonomous state acting to promote the general welfare was confronted with a range of critiques. One of the most prominent (Lucas, 1981) suggested that, in the context of macroeconomic regulation, those individuals and institutions who are the objects of these attempts by the state to regulate their behaviour are not merely passive respondents, but economic actors who are likely to adjust their actions in a manner directed at neutralising – or even reversing – the state’s intended outcome: any attempt by the state at directing macroeconomic outcomes through a simple setting of targets and the use of directives (or instruments) is likely to fail. This Lucas critique of Keynesian-style forms of macroeconomic regulation, which could be interpreted in largely technocratic terms, was accompanied by a torrent of critical views of the role of government in the economy, largely coming from a right wing, free market perspective. These notions included suggestions that governmental activity is inherently predatory (Shleifer and Vishny, 1998), and a more subtle approach, cited above, by Bacon and Eltis, differentiating between an economy’s marketed and non-marketed (e.g. governmental activity) output, essentially identifying the latter with unproductive activity.

Further blows against governmental participation in the economy took the form of academic and ideological support for the privatisation of state-owned facilities and institutions, which was partially put forth as a mechanism for liberating societies (especially those in ‘less developed’ economies) from corruption that emanated from the state’s management of elements of the economy (Fry, 1995). These privatisation endeavours, if we accept the attempt to mitigate corruption as a true motivation, were a spectacular failure: the state and its political actors emerged as inextricably involved in these acts of privatisation, including the pricing of state assets and, in many cases, the regulation of the privatised firms, resulting in a web of often subterranean relationships between the state and the private sector that were at least as dissolute

as the state-owned systems that had existed previously. Accompanying the fashion for privatisation was a burgeoning literature (Stigler, 1971) offering reasons to be suspicious of state action, one that suggests the inefficaciousness of regulation due to a tendency for regulators to be captured by the industries they were regulating. This analysis gained increased credibility through a host of mechanisms, one of which was intensified by privatisation – the creation of a ‘revolving door’ between individuals in public service and those involved in the private sector – so that a politician who has initially been influential in the privatisation of a formerly state-owned firm subsequently gained remuneration from this firm upon retirement from political life, e.g. by sitting on the board of directors of this firm.

One particularly powerful critique of the notion of the disinterested state intervening in the economy for the sake of the general welfare served as ballast for the long-term decline in the support among the intellectual class for notions of the state as a vehicle for democratic decision-making. In Buchanan and Tullock (1962), the dominant mode of behaviour in a parliamentary context is a formalisation of the kind of lobbying and special interest trading that we in fact see in reality; more recent research has confirmed that the concerns of the public play a negligible role in U.S. lawmaking (Gilens and Page, 2014). The suggestion from Buchanan and Tullock, however, is that this kind of bargaining is in fact superior to democratically reached decision making because it creates a mechanism for the protection of minority interests (wealthy people?) that is superior to the ‘tyranny of the majority’, the great bugbear of those writing the US Constitution in the eighteenth century. Reinforcing this approach was the popularisation of the Condorcet-Arrow voting paradox, which notes that democratic voting could potentially lead to an inconsistent ranking of voters’ choices, a technocratic observation that has never been demonstrated to be of practical significance, but one that reinforced the notion of the impossibility of gauging the presence of a general welfare.

The thrust of these anti-state tendencies has been from right wing sources. But the critique of regulation had its origins in the work of a left historian who suggested that, in the context of the Progressive Era in the US, regulation was not something imposed upon the great industrial firms of the era, but a position they often advocated and lobbied for publicly in order to create barriers to entry against new competition (especially from pesky smaller firms), or even to promote the formation of *de facto* cartels with support from the state (Kolko, 1963). From Gabriel Kolko’s perspective, this form of advocacy by big business can be seen as an instance of the exercise of class power disguising itself as a manifestation of the public’s will.

In recent decades, it is difficult to find academic support for the empirical presence of a disinterested state that is pursuing a democratically generated expression of the general welfare. One reason for the disappearance of this benign notion of the state has been the presence in recent decades of state policies overtly in pursuit of raising levels of inequality in society. As background to these developments, we see an impetus in the direction of rising economic inequality in rich countries as a by-product of increasing international competition emanating from, most notably, Japan in the 1970s and the ‘great doubling’ of the global labour supply with, especially, the accession of China and India into the mix in the 1980s and 1990s (Freeman, 2005). These important changes in the functioning of the international economy have impinged upon all rich nations, but we observe in this period sharply differing trajectories in the rate of growth of economic inequality between countries.

State policy has played an important role in accounting for the divergent paths in the growth of inequality between nations, in determining how, and to what extent, this underlying tendency in the direction of economic inequality has manifested itself in different countries. Thus, the US in the 1960s was approximately as unequal as other rich countries in statistical measures, but having an average income level so much higher than its rivals, it was still widely regarded as a standard for the good life in material terms for much of the world. In addition, its aggressive development of public-school education and later higher education, and its apparent lack of the post-medieval class barriers found in much of Europe (e.g. Great Britain) made it, for many, a standard for progressive development in economic and social terms. But starting in the 1970s, and then becoming explicit in 1981 with the accession in the US of Ronald Reagan to the presidency, we observe the initiation of a political economy that was ratified by and elaborated upon by subsequent administrations, both Republican and Democratic – tax cuts on upper-level incomes, restrictions on labour union rights, deregulation, cutbacks in support for low income families, high levels of immigration – that reinforced underlying international tendencies in the direction of inequality. In the twenty-first century, the US has emerged as distinctively the most unequal of high-income countries. Its continuing lead over most of its rivals in GDP per capita has not neutralised its mediocre performance in longevity, infant mortality, scholastic achievement and other fundamental indicators, with much of this failure located in the very poor outcomes present at the low end of the income spectrum. Thus, contrary to presumptions from many narratives postulating that the long-term trajectory of a society’s distribution of income will emerge solely from developments in an autonomous civil economy (e.g. from changes in the relative productivity of different groups), state policies have played a central

role in the reconstruction and redirection of whole societies in such fundamental economic characteristics as their distribution of income.

If state policies have seriously impinged on societal levels of inequality, then in the opposite direction, economic inequality has deformed the functioning of the state. In the US, for instance, the influence of high wealth individuals on state policy is now such a natural aspect of the way that government conducts its affairs as to obviate the very concept of corruption: by analogy, in the early modern period, when absolute monarchs could, in principle, dispose of the resources of the state and nation as they chose, was corruption a well-defined concept? And when the minions of high wealth – politicians, the purveyors of mass media and others – find their incomes having climbed to unprecedented multiples over median levels in recent decades, is there any surprise that they are out of touch?

Despite pervasive cynicism about the presence of a disinterested state that serves the general welfare, in public discourse there remains the hope, or aspiration, perhaps because of lack of a perceived alternative, that the state and its governing politicians can act as stewards for the economy; a minority, however, perhaps an increasing one, look to independent central bankers, conscientious bureaucrats, military professionals, or heroic entrepreneurs as a source of salvation. The last US president with a deep knowledge of the functioning of the productive economy was Herbert Hoover (no irony intended here), with the low level of cognitive functioning of the present resident of the White House generating an increasing regard for the technocratic qualifications of Chinese leaders. In the end, however, politicians in all societies find themselves judged by their success in running the economy: macroeconomic stabilisation and more elusively, economic growth.

In current debates worldwide, there is an increasing tendency to focus not on economic growth in general, but upon improvements in the productive economy (perhaps through AI, the latest *deus ex machina*) which will be the key to unleashing this growth. The claims surrounding the efficacy of governmental action to enforce industrialisation are being reawakened after a long hiatus celebrating the virtues of free market liberalism, with evocations of historical examples of apparently successful intervention, such as South Korea, commonly functioning as support for the use of state power in industrial development, with failed interventions in Argentina inevitably used as arguments against such policies. It is the Chinese example, however, that has infused the contemporary focus on the expansion of a nation's industrial sector, most especially on the need for the generation of a large volume of exports, combined with notions

of autarkic national control of productive forces, reflecting the deplorable widespread growth of military-security considerations. This relatively recent focus on industrial expansion as opposed to economic growth in any marketised form (e.g. private sector services; finance) is reflected, for instance, in the current negative evaluation by economists and others of the UK government under Margaret Thatcher, not because of the rapid rise in economic inequality associated with the administration, but upon the perception that the Thatcher administration's accession to power in 1979 led to an acceleration of an on-going long term deindustrialisation: the government's monetarist policies (in fact the setting of high interest rates) reinforced the coming on stream of North Sea oil to generate such a substantial rise in the value of the pound sterling internationally as to make industrial exports uncompetitive. In contemporary public discourse, it often appears as if economic success, and efficacy of governmental policy in bringing it about, is identified with, and to be measured by, the volume of (export-focused) industrial production.

By contrast, it can be argued that the evolution of a nation's industrial economy has inevitable, inexorable components. Maturing economies almost invariably find themselves with employment shrinking in the extractive and agricultural sectors, followed by reductions in employment in manufacturing and related areas, with job growth coming in a residual and unsatisfactorily conceptualised tertiary sector. In many economies, sectors with declining employment will continue to maintain their weight in the economy in value added terms.

Such patterns unfold in extreme form in the case of two great imperial conglomerations, with uncertain effects on international political economy. Britain rose to supreme ascendancy at the end of the Napoleonic wars in 1815, with the key to predominance undoubtedly being its pioneering role in the First Industrial Revolution. And though a world-wide perception was preserved of the political-economic predominance of the British empire and its regulation of the international gold standard, by the latter part of the nineteenth century it was by far the slowest growing economy among its great rivals – Imperial Germany, France and, of course, the US in per capita terms (the slow growth in GDP in absolute terms in France was a reflection of its unique flat-line growth in population, an issue of importance only in military-security terms with the coming of the Great War). Britain, having been the first industrial power, became a minor participant in the Second Industrial Revolution, with a focus on trade and finance over industry – gentlemanly capitalism – (Cain and Hopkins, 1993; 2016), that led it to be leaders worldwide in 1914 in only textiles and shipbuilding. Soft power of various kinds was a key aspect of Britain's continued predominance after its loss of a leading position as an

industrial producer and innovator, so that an important aspect of its supremacy in the First World War over Imperial Germany was its ability to finance the war with money borrowed from the US. Its maintenance of a central role in international affairs in the inter-war period was due to the residual effects of imperial influence. Great Britain's continued relative decline in the post-war world is partially explained by attempts made to preserve evanescent aspects of its former power – the maintenance of the pound sterling as a key currency, a focus on trade with members of the former empire, and the provision of a military establishment that was beyond the capacity of the state to maintain.

This model of imperial decline has been, in many respects, replicated by the US. Its initial post Second World War predominance, rooted in industrial supremacy, was greater than anything ever enjoyed by the British empire. The benefits of seigniorage on the currency of the empire eased the task of financing economic expansion for war-beaten countries in the imperial domain and its vast military presence across the globe. Like Britain in the nineteenth century, the imperial currency's over-valuation in strictly economic terms contributed to a long-term decline in the very economic predominance that had been the basis of its role as a key currency (Triffin, 1960). In the Plaza Accord of 1985, the US in a Cold War context was able to use a brutal form of soft power upon Japan and others to maintain the status of the dollar as key medium of exchange for international transactions, thus facilitating a continuation of the US world-wide military presence and political freedom of action.

But a key aspect of the imperial model is free trade, with Britain as the centre of an empire gaining benefits from the seigniorage on its currency with the low prices that it paid for key imports such as food for its population. Free trade, however, implies specialisation, and specialisation implies vulnerability in a military-security context. The British empire compensated for this vulnerability with oceanic dominance, alliances and soft power. For several decades, the US has been expressing ambivalence about the very free trade institutions it had helped to create after the Second World War. At present, US policy seems to be moving in contradictory directions with, on the one hand wanting to preserve the role of the dollar as a key currency in international transactions, with an elevated value due to seigniorage. This special role for the dollar permits the US to enjoy the benefits of free trade from cheaply produced commodities from around the world and the recirculation of dollars to US financial markets, alleviates the cost of its vast overseas military presence, and gives the US opportunities to punish nations engaged in dollar-denominated transactions when it is displeased with them. In a contradictory direction, the US would like to protect itself from

economic decline due to international economic competition, tendencies likely exacerbated by the presence of an elevated exchange rate. It would also like to protect itself from the vulnerabilities that emerge from the specialisation consequent upon free trade, most especially the inhibitions on freedom of action in, especially, a military direction. Militarism is often associated with autarky, and it is unsurprising that a leading contemporary opponent of US militarism, the economist Jeffrey Sachs, is a disciple of Richard Cobden, the nineteenth century proponent of the linkage between free trade and universal peace.

In this context, it seems impossible to avoid the question – what purpose does the state serve in a contemporary context?

### Concluding remarks

Most modern conceptualisations of what government *ought* to be doing, it would appear, revolve around the notion of the state as the steward of the economy in the context of democratic decision-making. Few other normative notions persist today, though adherence to the strictures dictated by ‘the [financial] market’ and the principle of central bank independence are sometimes spoken of as if they have the status of constitutional dictates. As a description of how contemporary states operate, the notion of the state as a democratically underpinned, disinterested steward of the economy is perhaps at a lower point than at any time within recent memory. Both scholars and a broad public would point to the disproportionate and even dominant roles played by key economic interests (the financial sector, the military-industrial complex) and the presence of delusionary elites (US, UK) wanting to retain glories of past empire. In all countries, the economic priorities set by the state, and decisions undertaken, are likely to be correlated with the skewness of the income distribution – poor public transport in unequal societies (there are some exceptions here – public transport is reputed to be as poor in Canada as the US) and lavish airports in poor countries run by oligarchies.

The discussions in the previous paragraph represent, I would think, conventional wisdom. But even if we proceed with the notion that the state should be the steward of the economy in the context of democratic decision-making, many issues obtrude when we confront this principle in the context of contemporary debates. Most fundamentally, towards what maximand is our Tinbergenian steward directing our economy? If it is GDP growth, is it absolute or per capita? As we have seen above, the fixation on growth has become so engrained that its realisation is a self-justification for determining public policy on the most intimate considerations in social

life, such as the characteristics of the nation's population in the context of immigration debates and, as in the current AI fervour, the nature of working life. Is perhaps a focus on more growth due to the fact that past growth hasn't done much good and, much like eating junk food, we feel the need to consume (even) more of it, because it doesn't sate our hunger?

We have recently seen a renewed emphasis in political discourse on industry as the key to growth (the emphasis moves beyond manufacturing because of the current focus on AI and the need for electricity generation, and on mining, with the search for rare earths). But this growth – GDP growth – is, as we have seen, an imperfect measure of the elevation of a nation's income, once human and ecological aspects are appropriately brought into consideration. The historical links between industrial development and GDP growth may become increasingly imperfect in the contemporary context. In the post-war world, increasing returns in a range of industries had formed the basis for high growth rates in Japan and then Taiwan and South Korea. With, however, emerging competition from China, Vietnam and other countries at the low wage end of the income spectrum (though China has now largely exited from this category) the notion has dampened that, for a broad range of countries, there will indefinitely remain a straightforward low wage path to economic development. Furthermore, industrial development (more specifically here manufacturing) can no longer be perceived as a method in the long term of creating mass employment, given the inexorable increases in labour productivity, and as the dream of high wage factory work (e.g. the US car industry of the post-war world) has faded into history. A strategy of industrial development as a vehicle for exports, furthermore, poses the dangers of deforming an economy for the sake of these exports (i.e. producing goods that the nation itself cannot consume) and making an economy subject to fluctuations in international demand, politics and fashion. And an export-led strategy is, arithmetically, not generalisable across countries – it cannot be pursued by all nations simultaneously.

If an export-led strategy as a mechanism of poor countries for elevating their incomes poses dangers of fragility through over-specialisation, moves in the direction of autarky under the banners of industrial renewal and the securing of strategic materials is likely to become an expensive proposition. The continued use of absolute, as opposed to per capita growth as a metric raises the suspicion of the dominance of military-security considerations in these developments. The high economic costs of autarky, for economies across the world, is likely underestimated, and the very nation that has done the most to foment military-security tensions in recent years, the US, is not particularly well placed to surrender the economic gains of international specialisation.

A curious addendum to the debates over industrial development has been the consoling notion that the industrial strategy practiced by China has led to economic growth that has lifted 800 million people out of poverty. This example is comforting to many analysts because despite retaining the word ‘socialist’ in its self-description, this elevation apparently took place in a Paretian manner – in the context of rises in (absolute) income across the economy, but also a substantial increase in economic inequality. Poverty reduction can thus take place in a painless (for the rich) manner. My suspicion is that the truth is more complicated, and that much of the elimination of extreme poverty at the low end was not the product of the ‘natural’ forces of economic growth, but targeted state intervention by China into those regions that had not benefited from the general uplift of the economy. This state intervention was, in the end, not very costly, and verified the much-derided notion in Jeffrey Sachs’s book *The End of Poverty* (2005) that the elimination of extreme poverty world-wide could, in fact, be done quite quickly and cheaply (e.g. by the provision of mosquito nets), without waiting for decades for growth to liquidate the problem. The obsession, however, with growth continues, and no amount of argument seems to dissuade the proponents.

The voices in rich countries now calling for reindustrialisation are not limited to President Trump. In all cases, however, the motivations for so doing are vague, seemingly linked to recapturing a past time of a high growth, high wage economy in the context of increasing returns and technological dynamism. The implausibility of these aspirations suggests that the motivation is, in fact, a confused combination of economic necessity based on a fear of being left behind, reinforced in the context of the accelerating military-security considerations that have risen to the surface in recent years. The Trump approach seems timid in its conceptualisation, financing reindustrialisation by extracting resources from the public through Listian tariffs, but retaining a neoliberal faith in the ability of the market (i.e. the activities of privately-owned companies) to sort out the reallocation of resources. No role for the state is otherwise perceived, though the visible hand of military expenditure may be a part of this strategy that is left unspoken. Under current schemes, new industries, under the umbrella of Listian protection, will spring into existence in the Hayekian manner, with little conception of the need for the state to aid in the conscious creation of industrial interlinkages, collective communities of learning and the necessary expansion of resources into education necessary for such a project. It would, however, be unfair to blame the narrowness of this conception on the political class, since it is merely following upon the orthodoxy replicated in contemporary textbooks in economics.

A few last words on the role of the state and the economy, economic statecraft and economic warfare. There is a widespread and comfortable presumption that we understand and can predict the unfolding of the present world-wide political and economic crisis. Two decades ago, predictions of the imminent implosion of the Chinese economy were common, but have now lost fashion. They have given way to interpretations that stress the presence of strategies on the part of the US to reverse, or at least slow down what appears to be the rise of China to the position of the leading economic, and hence political power in the globe. Most of these forms of analysis implicitly presume that the economic rise of China is in fact inexorable and that attempts to reverse or even impede its ascent to political hegemony will fail. Such approaches to contemporary international political economy are versions of an economic Darwinism, in which those nations housing the most efficient economic mechanisms will impose their political dominance upon others. They perhaps contain the consoling conclusion that economic best practice will be spread world-wide.

There are substantial gaps, however, in any presumptive link between economic efficiency and political hegemony and, indeed, such a story has little to do with the substantive history of the past half millennium. The great Niccolò Machiavelli has been badly abused in popular history. He has been depicted as the Marquis de Sade of political theory when he was, in fact, a political realist *avant la lettre*, replacing the cloying propaganda of the day concerning the behaviour of a proper Catholic Monarch with an astute depiction of the dilemmas that rulers of his time will face. His visionary, and for the time unique, political perspective was his commitment to the concept of an Italian nation: individual Italian city-states, perfectly viable as individual economic entities, had no chance of surviving when faced with the military might of the kingdoms of the north. Machiavelli's prescient notions of the demise of the Italian city-state was not due to any perception of the intrinsic lack of economic viability of these city-states, but rather the crushing military advantage of the giants opposing them. In this case and many others, such as the envelopment by Britain of the Dutch Republic in the eighteenth century, the decisive component was likely to have been the absolute size of the victorious power.

In other contexts, military superiority alone seems sufficient to explain political hegemony. Many historians give a substantial weight to the colonial success of Europeans against richer and larger entities (e.g. Portugal's success in Asia in the sixteenth century) to the military advantage accrued by Europeans in the centuries of violence between themselves in the medieval and early modern periods (Cipolla, 1965; Parker, 1988). These events should serve as a reminder of the disassociation between, on the one hand, GDP or any similar measure of

economic capacity and, on the other, military success. This flawed association continues as an academic and journalistic fashion, one that focuses upon the combined GDP of the EU and the US vis-à-vis Russia, or upon the US vis-à-vis Iran and asserts the dominance of the former over the latter. Recent events cause us to face with incredulity the irrelevance of this use of GDP in a military context.

Undoubtedly, however, the most contemporaneously relevant disassociation between GDP or any other measure of economic capacity and political predominance is the presence on one side of an advantage in terms of soft power emanating largely from the state, but also including financial and informal linkages at an international level. Thus, by 1914, Britain had been surpassed by Imperial Germany in practically every category of industrial development except shipbuilding and textiles. Germany's defeat in the First World War to a coalition led by Great Britain was due to the latter's overwhelming soft power – the quantity and quality of its allies and, through financial linkages, the ability to borrow enormous amounts of money to pay for military expenditures and to sustain its civilian population.

The US is at present attempting to assert an equivalent predominance over China, despite its relative deficiencies in a range of industrial capacities, through the pursuit of soft power mechanisms. We see the US continuing its strategic and political dominance (i.e. 'alliances') over the richest nations in the world, those of western Europe and north Asia, and maintaining its own currency as the medium of exchange and unit of account in international trade and investment, with funds recycled into dollar-denominated assets as a matter of course. These practices have permitted the US government to impose sanctions and a range of financial penalties on whatever countries have suffered its displeasure.

Even more overt forms of state power have been exercised by the US through its development in the Cold War period of an enormous repertoire of procedures through its intelligence agencies and non-governmental organisations – regime change, sabotage, assassination and mass surveillance – in cooperation with allies such as Great Britain and Israel (O'Rourke, 2018). Perhaps unintuitively from conventional perspectives, these activities have greatly expanded in scope and sophistication in the post-Cold War period (Good, 2022; Ganser, 2022), with the links between state and non-state action becoming ever more fluid. (A full depiction of the secretive aspects of these post-Cold War developments is, however, difficult to create, since the last occasion when the state has deigned to inform the public on these activities was in 1975 and 1976 in the US Senate Church Committee.) The scope of ambition of the US state

has become unbounded in the post-Cold War period, epitomised by the informally entitled Wolfowitz doctrine of 1992 that asserted the need for US strategic predominance in the military, political and economic domains in every region of the world. There is no reason to believe that the US state has in any way retreated from this aspiration.

A last, and perhaps most successful manifestation of soft power by the US state has been the control of the media narrative. Much like Great Britain during the First World War, the US has successfully depicted its rivals as dangerous aggressors, making use of international media outlets possessing a level of uniformity equal to, and sophistication far beyond, that of its supposedly authoritarian or totalitarian rivals. Once again, the line between the exercise of this power directly by the US state and its expression through other compliant governments and non-state institutions and organisations, both domestic and foreign, is a fuzzy one. This manifestation of US state power – the control of the media narrative – is, at the moment, proving to be its most enduring element, though the present resident of the White House is, perhaps, dissipating much of this advantage by ‘speaking the quiet parts out loud’, i.e. by expressing frankly the self-interested motives behind the exercise of US state power.

It is easy to suggest that many of the adventurous actions and wars being undertaken by, especially, the US state in the present period are unwise in a thermonuclear world. But such a conclusion presupposes that the policies being pursued are undertaken in the name of, or at the behest of, a broad base of the population. If these decisions are not in fact a reflection of popular opinion but are executed autonomously by an elite with its own set of desires and illusions, including the maintenance of empire dominance, suicidal actions are not completely improbable if the empire finds itself in a period of decline. The middle class of the nineteenth century was fed on literature that promoted fear of ‘the mob’ or of poverty-stricken non-Europeans as the greatest threats to their way of life, when in fact it was the elite – the purveyors of this literature – that led society to catastrophe in 1914.

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<sup>1</sup> I am grateful for the insights and sources made available to me in an early draft of Stockhammer and Tomas Labarca (2025).

<sup>2</sup> The material in the next few paragraphs follows from Auerbach (2016), chapters 2 and 3.

<sup>3</sup> This discussion follows from Auerbach (2016), chapter 9.

<sup>4</sup> See Auerbach (2016), chapter 7.

<sup>5</sup> Many commentators would also point to an alleviation of the apparent demographic crisis of overpopulation present in Europe.

<sup>6</sup> Joan Robinson's wilful blindness to the depredations of the Maoist regime is scandalous from the perspective of both ethics and economic analysis. See the references to her writing on China in Osborne (2020).

<sup>7</sup> See Inside China Business 'Much more important than it sounds: Large-frame aluminum casting will transform manufacturing' [https://youtu.be/NDmA\\_BQczvg?si=SdkIVvww86E55ngb](https://youtu.be/NDmA_BQczvg?si=SdkIVvww86E55ngb)

<sup>8</sup> See Baumol (2014).

<sup>9</sup> There has been a minority suggestion (Kotkin, 2017) that the depressed conditions induced some western (largely USA) firms to indulge in more foreign direct investment in the USSR than otherwise would have been the case.