

‘Levelling up’ in post-Brexit United Kingdom: Economic realism or political opportunism?

Local Economy
2022, Vol. 37(1-2) 50–65
© The Author(s) 2022



Article reuse guidelines:
sagepub.com/journals-permissions
DOI: 10.1177/02690942221099480
journals.sagepub.com/home/lec



Ray Hudson 

Emeritus Professor in the Department of Geography, Durham University, Durham, UK; and Honorary Professor, Cardiff University

Abstract

Following the 2019 general election, the Prime Minister claimed that leaving the EU would enable him to ‘get Brexit done’ and introduce policies to “level up” inequalities in a post-EU UK. There still is, however, considerable uncertainty as to exactly what the government means by this, though it seemingly includes reducing differences in economic performance and opportunities between North and South in England, how it will achieve this goal and how ‘levelling up’ relates to the policy objective of restoring national economic growth, and with the added complication of also seeking a transition to a zero-carbon green economy and society. This ambition to ‘level up’ became even more challenging as COVID-19 both further revealed and reinforced existing deep socio-spatial inequalities. A more fundamental question is whether such an ambition is realisable within the context of a capitalist economy. Even so, despite the ambiguities and uncertainties surrounding it, ‘levelling up’ is undoubtedly a politically important message, directed at those voters, newly converted to the Conservative vision and who caused the former ‘red wall’ of Labour support partially to crumble. Some of these constituencies had not returned a Conservative MP for decades, others had never before returned a Conservative to Parliament.

Keywords

socio-spatial inequalities, Brexit, “levelling up”, uneven development, capitalism, state policies, COVID-19

Introduction

The 2019 general election enabled the Prime Minister to claim that leaving the EU would restore the UK to its rightful status as a sovereign state with control over its destiny, boundaries and laws and enable him to ‘get Brexit done’ and introduce policies to ‘level up’ inequalities in a post-EU UK. There was and still is, however, considerable uncertainty as to

exactly what the government means by this, though it would seem to include reducing differences in economic performance and

Corresponding author:

Ray Hudson, Emeritus Professor in the Department of Geography, Durham University, Lower Mountjoy, South Road, Durham, DH1 3LY, UK.
Email: ray.hudson@durham.ac.uk

opportunities between North and South in England. It is equally unclear as to what the government proposes to do to ensure that this occurs. Whilst there are some specific proposals for particular places, there is a lack of clarity as to what a comprehensive coherent policy would mean in practice. This absence is especially significant as claims about ‘levelling up’ were made against the background of an ‘extreme version of Brexit’ (O’Toole, 2021) and a trade deal with the EU which has significant omissions and inherent weaknesses.

It also remains unclear as to how ‘levelling up’ would relate to the pressing policy objective of restoring growth in the national economy – with echoes here of policy dilemmas that had defeated national governments since the 1930s (Hudson, 1989), and with the added complication of also seeking a transition to a zero-carbon green economy and society. This ambition to ‘level up’ became even more challenging as COVID-19 both further revealed and reinforced existing deep socio-spatial inequalities (Dibb et al., 2021). A more fundamental question is whether such an ambition is realisable within the context of a capitalist economy, a question I return to later in the paper. Even so, despite the ambiguities and uncertainties surrounding it, ‘levelling up’ is undoubtedly a politically important message, directed at those voters, newly converted to the Conservative vision, who had caused what some have referred to as the former ‘red wall’ of Labour support partially to crumble as 29 former solidly Labour voting constituencies in England switched to the Conservatives (Butler, 2021; Rayson, 2020). Some of these constituencies had not returned a Conservative MP for decades, others had never before returned a Conservative to Parliament.

How is Boris Johnson’s post-December 2019 government seeking to ‘level up’?

The scale of the challenge is easily demonstrated empirically. For example, the UK is

Europe’s most regionally unequal major economy (Forth, 2021) and is now more regionally divided than ever (Webb et al., 2022). In 649 neighbourhoods across the country, at least half of children are estimated to be living below the breadline (Marsden, 2021). Whilst I will mainly focus upon the North/South division in England and more specifically on the north east of England in the empirical examples below – not least because of their electoral and political salience – this is but one manifestation of the inequalities that would need to be addressed in a comprehensive ‘levelling up’ policy agenda. There are sharp divisions at other socio-spatial scales (Martin et al., 2021) as well as deeply embedded inequalities along dimensions including class, ethnicity, race and gender, a consequence of the particular form of capitalist development in the UK.

The macro context: The state of the post-EU national economy and the Brexit constraints. As the effects of COVID-19 bit deeply into the fabric of economy and society, the UK economy shrank by an unprecedented 8.75% in 2020 – the largest annual decline in 300 years – and by a further 1.5% in the first quarter of 2021. Whilst recovering to a degree in the rest of 2021, by 2022 it was still below pre-COVID levels. Whilst registered unemployment remains relatively modest by historical standards, this reflects the pressures on people to take any form of employment on offer in the context of growing poverty (Bettington, 2021). Record levels of government borrowing and of public debt further define the economic context in which the government seeks to deliver on its promises to voters in the North to ‘level up’, reducing structural inequalities that became further etched into the social fabric as a result of three decades of Blatcherite neoliberalism and the previous decade of austerity policies imposed by successive Conservative governments (Johns, 2020). The politics of austerity severely cut levels of state welfare support and provision and encouraged increasingly precarious labour market conditions rather than delivering

equality of outcomes – a much more salient issue for those suffering from the adverse effects of diverse inequalities (Beynon and Hudson, 2021). Given this context, what is the likelihood of the ‘levelling up’ agenda being meaningfully delivered in the foreseeable future via an unspecified narrowing of opportunities in markets of various sorts and in levels of state provision?

The trade deal between the EU and UK also forms an important part of the political-economic context within which the government seeks to pursue its policy commitments. Doubts were soon raised as to what the new trade deal, limited as it is, would mean in practice, whilst questions were raised as to whether the government had carried out an assessment of the impact of Brexit on the UK economy (Stewart, 2021) and understood what it meant. In particular, at his celebratory press conference the Prime Minister proclaimed that ‘there will be no non-tariff barriers to trade. And instead, there will be a *giant free trade zone* of which we will at once be a member’ (emphasis added). This was not a slip of the tongue. The claim is in the written text of his speech as published on the UK government’s website. It has not been deleted or withdrawn (O’Toole, 2021). For Johnson to declare that there are ‘no non-tariff barriers’ for trade with the EU was a ‘manifest error’ (Islam, 2020) – a blatant lie.

That these non-tariff barriers will be a structural feature of future EU-UK trade was forcefully pointed out to the Prime Minister by James Ramsbotham, CEO of the North East Chamber of Commerce (Ramsbotham, 2021). As such, these restrictions will further undermine the economies of those Northern deindustrialised areas that will supposedly benefit from post-Brexit ‘levelling up’ (Morris, 2018). With a reliance on just-in-time supply chains and components that cross and re-cross customs boundaries countless times in the process of becoming part of a completed product, barriers to international trade are a major concern to many remaining

manufacturing industries, notably automobile assemblers heavily reliant upon the EU as a source of inputs and a market for final products (Hudson, 1995, 2003). The failure of a component to arrive in the specified location at the allotted time threatens the viability of production in that place. Moreover, there are also now non-tariff barriers within the UK between Great Britain and Northern Ireland, with potentially profound political implications for the constitutional integrity and unity of the United Kingdom.

Some examples of how the government is seeking to deliver on the ‘levelling up’ agenda

New post-Brexit trade deals? Heralded with great fanfares – and assuming that they would be easy to negotiate, with other sovereign states queueing up to sign them (Hudson, 2020) – new trade deals have been notable by their absence¹. Such deals as have been agreed are roll-overs from EU membership and minimal in scale relative to the loss of trade with the EU. Consider the roll-over deal with India, announced by the Prime Minister early in May 2021. This, he claimed, would create over 6500 jobs and pave the way for a more ambitious bi-lateral free trade agreement. The agreement includes £533m in investment from India, expected to create more than 6000 jobs. British businesses have allegedly secured export deals with India that are expected to create more than 400 British jobs. Several things therefore remain uncertain: how much new investment will there be and where will it locate? How many new jobs will there actually be, where will they be located? What type of employment will be provided? Could the deal reinforce rather than narrow the North/South divide? Will this initial small deal lead to any bigger future agreement? Will this deal form the model for further deals with other countries? Until such questions are answered, it is impossible to say whether such trade deals and

any investment associated with them will enhance of reduce the North/South divide.

Freeports: A tired initiative, already tried and rejected in 2012. The freeport experiment was introduced by the government of Margaret Thatcher as one dimension of a plethora of small area policies following the urban riots of 1981.² Six freeports were created in coastal locations (Hudson and Williams, 1986, 144–148) but these were unsuccessful and closed down in 2012. Such developments have certainly been successful in moving production from the Global North to parts of the Global South (Dicken, 2015) and as such have contributed to reinforcing the North/South divide in England. Moreover, evidence from other parts of the Global North revealed that they simply divert firms from one location to another within a national territory in pursuit of tax and other advantages.

Nonetheless, in announcing the Brexit deal, Prime Minister Johnson emphasised his intention to establish a ‘Singapore-on-Thames’, which would be in direct competition with the EU and indeed the wider world. What ‘we’re jointly creating’, he declared on December 24, is a ‘giant free trade zone’. The UK, its sovereign status newly restored, would now ‘be able to decide how and where we are going to stimulate new jobs and new hope, with freeports and new green industrial zones’ (Stevens, 2020). Following an invitation in November 2020 to submit bids³, proposals for eight freeports in England were announced by the Chancellor of the Exchequer in the March 2021 Budget. It seems the government intends freeports to be ‘national hubs for global trade and investment’, to ‘promote regeneration and job creation’, especially high skilled jobs and ‘create hotbeds for innovation’. Freeports will allegedly provide ‘dynamic environments which [will] enable innovators, start-ups, businesses and regulators to generate and test new ideas and technologies across a range of sectors’.

The new freeports will be in a variety of locations: East Midlands Airport; Felixstowe

and Harwich; Humber; Liverpool City Region; Plymouth and South Devon; Solent; Teesside; and Thames. With less than half in the North, however, it is unclear how they relate to reducing, let alone eliminating, the broader North/South divide. They could as well exacerbate as narrow that divide. In terms of spatial policy, they seem intended more as a way solving specific local problems wherever they are, driven by a political rather than economic agenda – whilst perhaps attracting some jobs to a lagging region (The UK in a Changing Europe, 2021, 10).

To take one well-publicised example of such local problem solving, the Freeport on Teesside, encompassing the site of the former BSC/Corus/SSI steelworks (Hudson and Swanton, 2012), has attracted considerable attention, not least as the Conservatives had made significant electoral gains there and had hopes of making more (they subsequently won the parliamentary by-election for the Hartlepool constituency in May 2021, a seat previously always held by Labour). Encompassing an area central to plans of the Conservative government of the early 1960s for Teesside to become a major centre of self-sustaining economic growth – plans that came to nothing (Hudson, 1989; Beynon et al., 1994) – there have been claims that it will now lead to thousands of new jobs, many integral to a new green economy via the production of hydrogen and the development of carbon capture and storage and vast offshore wind arrays (Tees Valley Combined Authority, 2018). This has led to concerns that it could exacerbate inequalities within the north east, widening the gap with deprived areas further north in Tyneside and Wearside.

In summary, Chancellor of the Exchequer Sunak asserts that these freeports would provide ‘an unprecedented economic boost across the UK’⁴. Others are less sanguine, however, arguing that there was little evidence that freeports create additional jobs or economic activity, and suggesting that at best freeports would lead to relocation of already existing economic activity and jobs in search of the

benefits that freeport location would confer (The UK in a Changing World, 2021).

Decentralising state jobs

There is a long history of routine back office civil service jobs being decentralised to the north east. These include the Post Office Savings Certificate Division (Bowden and Gibb, 1970) and the Passport Office to Durham City, the Benefits Offices of the DHSS to the giant complex at Longbenton on the northern fringe of Tyneside, employing around 8000 (Robinson, 1988, 41), and the DHSS Child Benefit Centre to Washington New Town which by the late 1970s employed 4000 women, mostly married, on part-time 'flexi-time' contracts (Hudson, 1980, 31). More generally, many of these modestly paid devolved jobs have been taken by women, again many on a part-time basis. Even so, they have provided employment and helped diversify the range of available jobs, although not all schemes have come to fruition (e.g. as with the Property Services Agency: see Beynon et al., 1994, 110–111).

Seen in this light, more recent proposals to decentralise civil service jobs to the north east as part of a more general commitment to decentralise 22,000 such jobs by 2030 are neither without precedent nor particularly ambitious. They include 750 Treasury and Business Department jobs to Darlington. A second housing department headquarters has been created in Wolverhampton and the new UK Infrastructure Bank is based in Leeds. But will these involve the transfer of high-level jobs and officials from London? Will Permanent Secretaries, notoriously difficult to dislodge from London and its immediate environs, be made to re-locate? Or will these be just further instances of low-grade, poorly paid clerical jobs for local people? Jake Berry, Chair of the Conservative Group of Northern MPs has emphasised that 'We need to see the government move forward with their promises to move government departments in their entirety out of London... including

permanent secretaries' (Hayward, 2021). It remains to be seen whether Darlington will become home to Permanent Secretaries from the Treasury.

The north east is also the location of several prisons. The Ministry of Justice now proposes to create a Category 3-style prison to detain female asylum seekers awaiting deportation on the site of the former Hassockfield Secure Training Centre near Cossett in north west Durham, which closed in 2015 with the loss of around 150 jobs (Englebrecht, 2021). According to Richard Holden, recently elected Conservative MP for North West Durham 'To re-use the Hassockfield site as a secure immigration removal facility for 80 inmates is a sensible use of taxpayers' money and the 150 good full-time local jobs in North West Durham that will be created are a very significant boost to the local economy from a Conservative government that is determined to see foreign criminals deported'. Whether it would provide 'good full-time local jobs' remains a matter of some debate as the contract for running the facility has been given to Mitie, the UK's biggest provider of services for migrant detention centres. It is also a company with a record of abuse of migrants, poor management of its facilities and paying poverty wages to its employees. Nevertheless, a small number of poorly paid jobs in activities that would be seen as undesirable in other parts of England is being presented as evidence of government commitment to its 'levelling up' agenda and a reward for voting Tory.

New industries in a green economy?

As generally understood, a green economy would embrace a diverse range of activities, different processes of production and forms of consumption, united by a concern to minimise their environmental impacts, especially in relation to global warming – for example changing patterns of food consumption, tourism and travel, the production and installation of materials for home insulation, lithium ion

battery ‘gigafactories’ producing power units for use in electrically powered vehicles, production of windmills and turbines to produce electricity from windfarms and batteries to store the electricity they produce, the transition to hydrogen as a source of power and so on. As yet, however, there is no strategic vision as to how the various possibilities combine into a coherent zero-greenhouse gas energy strategy⁵, let alone a more comprehensive ‘green economy’, that could be realistically implemented and in a way that contributed to delivering the political commitment to ‘levelling up’.

Whilst there are good reasons for moving to a more environmentally sustainable economy with a much lower impact on natural systems (Hudson 2021), it is difficult to see how the disconnected set of proposals currently on offer amount to a coherent economic strategy that will significantly reduce environmental warming whilst contributing seriously to ‘levelling up’ the multiple inequalities that characterise the contemporary UK. Not least, following the failure of Foreign Direct Investment policies in north east England and south Wales in the 1990s (Beynon and Hudson, 2021), the UK now has virtually no capacity to produce integrated circuits⁶ and lags far behind in building battery ‘gigafactories’ which will be critical to its industrial future. China currently produces 80% of the world’s batteries to power vehicles, with firm plans for more gigafactories; 16 battery gigafactories are planned in the EU (See [BBC News, 2021c](#)); the UK has plans for one. This factory is at Blyth, in north east England, in a constituency that returned a Conservative MP for the first time in decades in the 2019 general election. It is intended to produce batteries for 300,000 automobiles per annum by 2027 (Wright and Clarence Smith, 2021)⁷. As with the new proposed developments in the Tees Valley noted above, there is a suspicion that such decisions are being driven more by an electoral and political rationale rather than any coherent economic strategy and are further widening inequalities within the north east.

The vulnerability of the automobile sector largely results from a decision by the Labour government in the early 2000s to focus on producing diesel engines, with tax breaks given to owners of new diesel cars. Whilst reinforcing the UK’s position as a centre of excellence in combustion engineering, it was a policy choice to back an old technology rather than investing to establish first-mover advantage in new electronic technologies and enhance national economic performance, spatially re-balance the national economy and move towards a more environmentally sustainable future. Because of the size, weight and cost of electric car batteries – with a battery accounting for some 40% of the cost of a medium-sized automobile – the location of the gigafactories will strongly influence the location of assembly plants and companies in the supply chain and the other stages in the manufacturing process. However, the location of the gigafactories will depend upon access to the requisite supplies of lithium, cobalt and the rare earths required to make magnets and other components and the UK has no deposits of these materials⁸. The UK lacks significant reserves of copper, for which demand will grow rapidly as production of wind and solar power devices increases whilst each battery powered vehicle requires 2 to 3 times as much copper as one powered by an internal combustion engine (McKie, 2021). It is difficult to see, therefore, how the government can realistically engineer a transition from carbon- to electric-powered vehicles⁹, let alone a more comprehensive transition to green technologies across economy and society without at the same time creating import dependency in relation to key strategic minerals. But can the UK develop the international trade deals necessary to secure access to these key materials? And if so, over what time period?

The Faraday Institute estimates that at least eight battery plants will be needed by 2040, without which 114,000 jobs will be lost in the UK’s automotive manufacturing sector (see also [BBC News, 2021b](#)). Almost all of these will be in areas that already have a history of

deindustrialisation, areas that are supposedly to be the beneficiaries of the government's 'levelling up' agenda (Collingridge, 2021, 5). More generally, 180,000 jobs would be at risk in the 2500 component suppliers in the wider supply chain. More immediately, under the terms of the post-Brexit trade agreement, automobile assemblers have to source batteries for electrically powered vehicles from within the UK or EU by 1 January 2027. Failure to do so would result in the imposition of tariffs, with the risk that production in the UK would become insufficiently profitable. Clearly there is a serious threat to automobile production and the hundreds of thousands of jobs involved in component production and final assembly. Many of these jobs would be in the North. If the gigafactories were to be built, where would they be located? In places that would advance or retard the 'levelling up' agenda? In summary, all this in relation to one key industry and its technological options powerfully emphasises the more general absence of a coherent Industrial Strategy and could both deepen existing regional divides and open up new ones rather than reducing those between North and South.

A Northern 'Big Bang'?

So, is there hope for the North? In 2014 Chancellor of the Exchequer, George Osborne, launched the Northern Powerhouse initiative, intended to stimulate growth in the North. In practice, other than the creation of a 'Metro Mayor' for Greater Manchester, it had little impact and seemed overly pre-occupied with HS2, which was more likely to lead to further concentration of activities in London than to decentralisation to the North. Unlike the pepper-potted, one-off ad hoc measures outlined above, intended to reward voters is specific constituencies voting Tory for the first time in 2019¹⁰, the Northern Group of Conservative MPs is seeking to develop a broader strategic vision to regenerate the economy of the North. Its report, *A Northern*

Big Bang (Berry and King, 2021), sets out recommendations as to how to stimulate private sector investment across the macro-region of the North of England and so – allegedly – create a globally recognised economic powerhouse. As such, it is the latest in a long line of policy initiatives that believe the solution lies in the same market forces as were the initial superficial cause of the North's economic problems.

The Northern Group's aim is to replicate the impact of the 1986 'Big Bang', which unlocked multi-billion-pound investment in banking and financial services in London and the South East, but with measures which reflect the North's existing strengths and future potential. Its report calls for a new Initial Investment Incentive – a cash payment to attract new investments and global capital to the region. This could (but would not necessarily) be focused explicitly on green growth and meeting Net Zero targets, for example by incentivising investment into new gigafactories, which it asserts would help spur a Green Industrial Revolution. As noted above, however, a Green Industrial Revolution would require much more than just gigafactories and electrically powered vehicles, problematic though they would be – for example, appropriate strategies to create the necessary skilled labour and supply chains for various final products – and would have to contend with the fact that China's own strategy to transition to a green economy would absorb a large percentage of available processed rare earths, as well as the difficulties of sourcing other key materials, as noted above. Other recommendations include changes to taxation arrangements to entice fresh investment and more flexible planning regulations to encourage job creation. To ensure local decision-making remains central to this regeneration project, the Report advocates for the creation of a new Growth Board for the North, and a Northern Recovery Bond, to encourage local investment. Implementation of the Report's proposals would, it is implied, restore the

Northern economy to the heart of the national – even international – economy, as it was in the nineteenth century. Whilst recognising that the root of the problems of the Northern economy lies in the operations of the market, the Report is equally insistent that the route to ‘levelling up’ between North and South also lies in the operations of the market, suitably shaped and supported by state policies¹¹.

‘Levelling up’ and the lack of a coherent industrial strategy

The Northern Big Bang initiative has, however, to be seen in the context of the absence of coherent national industrial and spatial strategies. How would this initiative for the North relate to strategies for other regions and nations? The counterpart of the UK’s continued dual emphasis on marketisation and locating factories and jobs in response to short-term party-political priorities and electoral gain is the lack of a coherent industrial strategy. Such a strategy would need, *inter alia*, to decide on those products that for strategic reasons needed to be produced within the national territory; encompass the sourcing of key raw materials, not least those needed for a transition to a green economy, with appropriate trade policies in place to secure these; understand the material flows and links between different activities, firms and places in supply chains (see, e.g. [The White House, 2021](#)); acknowledging synergies between different sectors, activities and places, it would recognise a clear strategic role for the state beyond simply setting market conditions and parameters. Whilst recognising a strategic role for public ownership and accountability, it would avoid the mistakes of past nationalisations of particular loss-making parts of sectors (witness the histories of the partial nationalisations within the coal and steel industries) by keeping a focus on the links between the various components of production

systems and the places in which they were located. In contrast to this, the continuing emphasis on the market rather than an engaged and pro-active state in steering the trajectory of the economy and the fate of places culminated in the formal announcement of the government’s plans to disband the Industrial Strategy Council in 2021. In the face of chronic inequalities in economic performance within and between North and South in England, between England and the Celtic nations, a weak and faltering national economy, and urgent economic challenges to mitigate the worst effects of climate change, as well as meeting the UK’s legal obligations under the Paris Climate treaty, the ramifications of relying on market solutions have become even more apparent during the COVID-19 pandemic.

Could an ambitious strategy be devised that conjoined industrial and environmental objectives whilst at the same time meeting the goal of ‘levelling up’? Or is there a need to recognise that some policy objectives will need to be sacrificed as others are prioritised? Consider again the example of the transition to a green economy and the production of electric batteries, central to a transition from carbon-powered road vehicles. In order to sustain a viable vehicle production system in the UK, eight battery gigafactories would need to be in production by 2040; so far, plans for one in addition to the existing facility at Nissan’s Sunderland complex. This factory is at Blyth, in north. Should the remaining gigafactories be pepper-potted around in locations that are electorally important to the Conservative government, even if these are economically sub-optimal locations that could threaten the international competitiveness of vehicle production in the UK? Or should they be located in economically more optimal locations within the overall vehicle production system – say close to major ports in the south of England – locations through which both imports of key raw materials and components and export of finished vehicles could smoothly flow whilst widening

the North/South divide? Is it possible to devise a policy that simultaneously meets the aims of ‘levelling up’ and creating a coherent internationally competitive production system for electric vehicles in the UK simply by relying on market forces? Or will reliance on market forces necessitate sacrificing one or more of these objectives in pursuit of others? Whether such a strategy is possible within the structural constraints of a capitalist economy is a question to which we return later.

Whilst the government has been reticent in spelling out the broad outlines, let alone the details, of its overall strategy, confining itself to a set of disparate measures across a variety of places (e.g. see [BBC News Reality Check Team, 2021](#)), promising much but failing to deliver ([Webb et al., 2022](#): Table 1,1), the Confederation of British Industry (CBI) has been much more forthcoming as to what would be required to promote both national economic growth and international competitiveness and the interests of its members (e.g. see [CBI, 2020, 2021a, 2021b, 2021c](#)). In particular, it has set out five goals for the economy (developing one that is de-carbonised, innovative, globalised, regionally thriving and inclusive) alongside that of ensuring a healthier nation and set out proposals as to how these goals can be achieved ([CBI, 2021a](#)). The development of new innovative clusters is seen as particularly important in terms of reducing regional inequalities (see also [CBI, 2021b](#)). It remains a matter for debate as to whether such ambitious goals can be simultaneously achieved. Whilst ‘levelling up’ and inclusion should be compatible (although reducing inter-regional disparities could well create new intra-regional inequalities), it is unclear as to whether ‘levelling up’ would be compatible with de-carbonisation and innovation, but at least this provides a broad strategic overview so far lacking in government statements.

The clearest indication of what the government may finally come to in terms of a strategy that seeks to address enhancing

national economic performance with implementing the ‘levelling up’ agenda is the report by Lord Sainsbury ([Sainsbury, 2021](#)), which shares certain features in common with the CBI Report. It relies upon institutional and governance changes to create conditions in which new forms of market-led regionally more even development could be encouraged at the cost of greater intra-regional inequalities. However, it has nothing to say about a transition to a green(er) economy. The core proposition of the Report is that to both enhance national economic performance and the growth rate of the national economy and at the same time ‘level up’ the significant differences in regional economic performance, the weaker cities in the lagging regions must develop clusters of globally competitive, high value-added economic activities (a view that has come to be accepted by the government: see [HM Treasury, 2021](#); [HM Government, 2022](#)). There is no indication as to the activities to be carried out in these high-performing clusters – the Report simply states that they could be in manufacturing or services. As such, they could deepen rather than help resolve environmental impacts and hinder a transition to a green(er) economy whilst focussing growth on a few cities might enhance national growth and narrow inter-regional inequalities in economic performance whilst enhancing intra-regional differences, creating ‘losers’ as well as ‘winners’ in the place market. To underpin and facilitate the growth of these clusters, local government should be reorganised, with Mayors as key animateurs¹². Mayoral Combined Authorities should be given responsibility for coordinating growth and supporting innovative high value-added clusters. As well as powers to coordinate spatial planning and transport, the Authorities should be able to ensure that educational establishments offer training and education relevant to the labour-power needs of the new clusters (echoing the historical role of Further Education and Technical colleges). Whilst it is debatable as to whether such

institutional change is necessary, it is certainly insufficient in itself to bring about ‘levelling up’¹³.

Capitalism in the UK: Is ‘levelling up’ feasible or are inequalities unavoidable?

So how realistic is the claim of Boris Johnson’s Conservatives to be able to ‘level up’? What precisely would constitute ‘levelling up’? Presumably it must at a minimum imply a considerable reduction, if not elimination, in differences in economic performance and opportunities between North and South in England. This, however, is but one expression of uneven and combined development within the UK. There are significant inequalities within as well as between North and South: between areas within major conurbations, between rural and urban areas and so on¹⁴. The map of uneven development is complex and multi-scalar. These spatial inequalities are but one dimension of the problem of ‘levelling up’, however. In addition, as well as the fundamental structural inequalities of class, there are significant inequalities of age, gender, ethnicity and race, related to, but never reducible to, those of class. For example, in 2020 someone both under 25 and black was nine times less likely to find work than a white adult (Bettington, 2021, 35). These complex patterns of inequalities are deeply inscribed into the UK’s social formation (Hudson and Williams, 1995). It remains to be seen how the Johnson government proposes to eliminate them to create a ‘levelled up’ United Kingdom. The long and long-delayed government White Paper (HM Government, 2022), setting out its understanding of the causes of inequality and uneven development and proposed ways of tackling them by 2030 via various ‘missions’, provides little cause for optimism (Shearer, 2022). Whilst it sets out a long list of things the government promises to do by 2030, it singularly fails to demonstrate

how these will in practice be delivered and abolish inequalities among people and places in the (dis)United Kingdom. In short, it assumes that markets can be re-configured to eliminate inequalities but a reliance on the mechanisms and processes that initially produced and then reproduced inequalities as the route to eliminating them is far from convincing.

This is particularly so as the historical geography of the United Kingdom is characterised by deep spatial divisions, some pre-dating the rise of capitalism, with London and the south east already the centre of economic and political life and power (Hazeldine, 2020). In the initial phases of the long transition to capitalism, the dominance of London and its surrounding region was reinforced, regarded as natural, even inevitable, the centre of political power, of the growing Empire and a major industrial and trading centre until it was eclipsed as a centre of capitalist industrial production by the rise of the North in the nineteenth century. Even then, however, London remained the centre of political power, of Empire and of banking and finance – and the destination of profits from manufacturing and mining in the North. At the same time, the growth of Empires, both formal and informal, was also significant in the North becoming, for a while, one of the workshops of the world, a pivotal region of global capitalist production. The slump following the end of World War One and the recession, then depression, of the inter-war years recreated the divide between a prosperous South and depressed North. However, this regional divide began to be understood as socially produced, a consequence of a particular structure of class relations and of the ways in which markets operated rather than a natural inevitability. As a result, the North/South divide became seen as a political problem that required attention by the state. Consequently, for many years – from around 1930 to 1975 – UK governments of both major political parties pursued policies that attempted to keep this divide within politically and

socially tolerable limits. Even in relation to those modest objectives, however, these policies had at best limited success.

In more recent decades, with various versions of neoliberalism in the ascendant, governments led by both major parties have increasingly proclaimed that there was little they could do to reduce inequalities and reverse the workings of market forces. Instead, they were more concerned to release Schumpeterian ‘animal spirits’ and encourage a culture of entrepreneurialism, of winners and losers, in pursuit of national economic growth. The specific Blatcherite (Jenkins, 2006) political-economic policy arrangements pursued by Conservative and New Labour governments alike over the last four decades have, deliberately or inadvertently, deepened inequalities to levels not seen since the Victorian era of liberal capitalism. When Conservative-led UK governments subsequently responded to the global financial and economic crises of 2007–2009, they did so by bailing out the banks with unprecedented levels of financial support and introducing austerity policies that impacted most severely on those people and places that were already severely disadvantaged, further widening socio-spatial inequalities. Seen in this context, governmental claims about successful post-Brexit – and post-COVID-19 – policies of ‘levelling up’ look particularly thin and unconvincing: indeed, ‘much of the “levelling up” agenda is itself likely to be thwarted by Brexit’ (McCann and Ortega-Argiles, 2021). This strongly suggests that in the current conjuncture, ‘levelling up’ is a political slogan rather than a realistic spatial economic policy objective, one seen as electorally and politically necessary by the Prime Minister and his political allies as they seek to ensure the continuing support of those first-time Tory voters in the 2019 general election.

There undoubtedly are different forms of capitalism and some of these are less unequal than others. In that sense, a move to a social formation incorporating a more socially

democratic and radically reformist mode of regulation would be desirable, but there is little sign of that on the horizon in the UK. More fundamentally, government policies for ‘levelling up’ ignore the reality that capitalism unavoidably has socio-spatial inequality structurally and deeply inscribed into its landscapes (Harvey, 1982). Given this, and the long history of inequality in the United Kingdom – perhaps more accurately described by Prince Charles in 1985 as a ‘divided realm’ – the Prime Minister’s claim as to the feasibility of ‘levelling up’ was a bold one. Whether based on a failure to understand the essential character of capitalist economies or upon a cynical political calculation regarding the next general election, or perhaps both, remains to be determined.

What is undeniable is that inequalities are a structural rather than contingent characteristic of capitalist development, so that eliminating inequalities and ‘levelling up’ are not simply unattainable policy goals within capitalist social formations but eliminating inequalities would pose an existential threat to the economy as constituted around and through the social relations of capital. As such, claims by Prime Minister Johnson that Brexit was an event rather than one moment in a long-established process (O’Toole, 2021; Thompson, 2017), so that once he had ‘got it done’ his government could easily introduce successful ‘levelling up’ policies, would require the impossible to be necessary whilst the necessary remained impossible in terms of state policies (Offe, 1976). Will the unavoidable failure of policies to ‘level up’ be a critical tipping point, leading to a crisis in the legitimacy of the Johnson government that is reflected electorally and/or, in a manner reminiscent of Brexit, produce a reaction against the wider political establishment?

Acknowledgements

Thanks to Huw Beynon for his careful reading of the paper, correcting some mistakes and for valuable comments and suggestions.

Declaration of conflicting interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

ORCID iD

Ray Hudson  <https://orcid.org/0000-0001-6896-973X>

Notes

1. As I was finishing this paper, it was announced that the first new deal, with Australia, was imminent. However, Australia is an economy heavily reliant upon food and raw material exports, especially to China. The scope for extensive trade with the UK is limited and, in some respects, politically controversial. According to figures from the UK Treasury, the Australia deal will lead to an estimated 0.02% increase in UK GDP in contrast to a 4.0% decline in UK GDP as a result of the loss of EU trade (see [BBC News, 2021a](#)).
2. Whilst these, and several of the other ad hoc government initiatives, were later to re-appear (see *The Treasury March 2022*), this policy paper fell some way short of an integrated, coherent growth strategy, particularly one that would effectively address the issues of ‘levelling up’.
3. Seeking to address inequalities via competitive bidding inevitably creates ‘losers’ as well as ‘winners’ and as such undermines any attempt to ‘level up’.
4. See also [Sunak \(2016\)](#), in which he unambiguously identifies Brexit as an enabling condition for an expanded programme of freeports.
5. Whilst political discourse generally refers to zero-carbon futures, carbon dioxide is by no means the only – or most potent – greenhouse gas. Current investment is focussed largely on renewable energy opportunities, hydrogen production, and carbon capture and storage ([HMG, 2021](#)) and the government is yet to produce a credible energy policy.
6. South Korea and Taiwan together account for 83% of global production. China, the EU and USA all have ambitious plans to create their own domestic capacity ([Nimmo, 2021a](#)).
7. Shortly afterwards, Nissan announced that a battery facility would be constructed at its Sunderland factory to produce batteries for up to 100,000 Nissan vehicles per annum, creating 600 new jobs there, as well as 4500 in the wider supply chain. It will be funded by a Chinese company, Envision AESC, which also owns a smaller factory nearby that already supplies batteries to Nissan for its LEAF model, and will create another 750 job ([Hiscott, 2021](#)). As production of electric-powered cars is less labour-intensive, it is unclear what will become of the 6000 jobs at Nissan currently involved in producing vehicles powered by petrol and diesel engines, of the 24,000 jobs in the existing supply chain, and where the new 4500 supply chain jobs will be located.
8. Over 75% of global lithium reserves are found in Argentina, Bolivia, Chile and Australia ([González and De Haan, 2020](#); [Lohan, 2021](#); [McKie, 2021](#)). Over 50% of global cobalt reserves are in the Democratic Republic of Congo ([World Economic Forum, 2019](#); [González and De Haan, 2020](#)). Re-chargeable batteries used in a wide range of commodities already account for 60% of global cobalt production, much of which is mined in ethically dubious conditions in the DRC ([Scheele et al., 2016](#); [Jolly, 2020](#)). China dominates the global production of rare earths minerals, with about 80% of global reserves and 60% of the processing capacity. For further discussions of rare earths see [Krebs \(2017\)](#); [Meyer \(2021\)](#); [Nimmo \(2021b\)](#); [Northam \(2019\)](#).
9. McKie (op.cit) quotes Professor Richard Herriott, head of earth sciences at the Natural History Museum, London. ‘... if you want to turn all the UK’s 31m cars into electric vehicles you would require about 12% of the world’s entire copper output – just for Britain. That is an

unrealistic demand, given that we are hoping to be making electric cars only within a decade’.

10. As another example, 47 of the 56 Parliamentary constituencies awarded funding under the Towns Fund announced in the March 2020 budget have Conservative MPs, including 14 in seats gained from Labour in the 2019 general election. There was widespread concern as to the criteria and process deployed in reaching this distribution (National Audit Office, 2020; House of Commons Public Accounts Committee, 2020). The PAC was ‘not convinced by the rationales for selecting some towns and not others’ whilst ‘The justification offered by ministers for selecting individual towns are vague and based on sweeping assumptions’ (p.3).
11. There are clear echoes of the 1960s Hailsham proposals for the north east which manifestly failed to deliver their promise of self-sustaining economic growth there (Hudson, 1989).
12. As of now, not all major cities have elected Mayors.
13. More recently, Webb et al. (2022, 6) have argued for a more wide-reaching devolution of powers to the North from central government, suggesting that this will be both a necessary and seemingly a sufficient condition for successful ‘levelling up’.
14. For example, the Index of Multiple Deprivation reveals that alongside areas of great affluence, half of London boroughs were in the most deprived third of English local authorities in 2019: London Councils (2019).

References

- BBC News (2021a) *Australia Trade Deal Will Not Hit UK Farmers, Says Liz Truss*. Available at: <https://www.bbc.co.uk/news/business-57478412> (accessed 16 June 2021).
- BBC News (2021b) *UK Could Be Left behind in the Electric Car Race, Warns Report*. Available at: <https://www.bbc.co.uk/news/business-57490100> (accessed 16 June 2021).
- BBC News (2021c) *Gigafactories: Europe Tools up against US and Asia as a Car Battery Force*. Available at: <https://www.bbc.co.uk/news/business-57382472> (accessed 16 June 2021).
- BBC News Reality Check Team (2021) *What Is Levelling up and How Is it Going?* Available at: <https://www.bbc.co.uk/news/56238260> (accessed 27 May 2021).
- Berry J and King N (2021) *A Northern Big Bang: Unleashing Investment in the North*. London: Northern Research Group and Centre for Policy Studies, 26.
- Bettington P (2021) *Work in 2021: A Tale of Two Economies*. Centre for Labour and Social Studies (CLASS).
- Beynon H and Hudson R (2021) *The Shadow of the Mine: Coal and the End of Industrial Britain*. London: Verso.
- Beynon H, Hudson R and Sadler D (1994) *A Place Called Teesside*. Edinburgh: Edinburgh University Press.
- Bowden PJ and Gibb AA (1970) Economic development o in the Twentieth Century. In: Dewdney JC (ed) *Durham County and City with Teesside*. Durham: British Association for the Advancement of Science.
- Confederation of British Industry (2020) *Reviving Regions; Empowering Places to Revive and Thrive*. London: CBI and Lloyds Bank, p. 48.
- Confederation of British Industry (2021a) *Seize the Moment- How Business Can Transform the British Economy*. London: CBI, p. 76.
- Confederation of British Industry (2021b) *Industrial Clusters in Every Region the Only Way to Level up – CBI Chief*. Available at : <https://www.cbi.org.uk/media-centre/articles/industrial-clusters-in-every-region-the-only-way-to-level-up-cbi-chief/> (accessed 26 May 2021).
- Confederation of British Industry (2021c) *Growing Productivity and Tackling Inequality Are Key to Post-covid Levelling-Up – CBI*. Available at: <https://www.cbi.org.uk/media-centre/articles/growing-productivity-and-tackling-inequality-are-key-to-post-covid-levelling-up-cbi/> (accessed 26 May 2021).
- Collingridge J (2021) *Electric Shock*. The Sunday Times Business & Money, May 16, pp. 4–5.
- Dicken R (2015) *Global Shift*. 7th edition. London: Sage.

- Dibb G, Jung C, Parkes H, et al. (2021) *Prosperity and Justice after the Pandemic*. IPPR. <https://www.ippr.org/research/publications/prosperity-and-justice-after-the-pandemic> (accessed 21 March 2022).
- nglebrecht G (2021) *Plans Revealed to Build Prison-Style Immigration Camp on Site of Former Hassockfield Detention Centre*. Available at: <https://www.thenorthernecho.co.uk/news/19009076.plans-immigration-detention-centre-notorious-medomsley-site/> (accessed 15 April 2021).
- Forth T (2021) "Regional Inequalities: Post-Brexit: Levelling Up?" Brexit and Beyond: Economy, UK In a Changing Europe. Available at: <https://ukandeu.ac.uk/regional-inequalities-and-brexit/> (accessed 10 June 2021).
- González A and de Haan E (2020) *The Battery Paradox: How the Electric Vehicle Boom Is Draining Communities and the Planet*. Amsterdam: SOMO, p. 62.
- Harvey D (1982) *The Limits to Capital*. Oxford: Blackwell.
- Hayward F (2021) "What Do Jake Berry and the Tory Northern Research Group Want?" New Statesman, 1 March. Available at <https://www.newstatesman.com/politics/uk/2021/03/what-do-jake-berry-and-tory-northern-research-group-want> (accessed 15 May 2021).
- Hazeldine T (2020) *The Northern Question: A History of a Divided Country*. London: Verso.
- HM Government (2021) *Net Zero Strategy: Build Back Greener*. Available at HM Government [HMG] (2021). Net zero strategy: Build back greener. Available at: <https://assets.publishing.service.gov.uk/government/uploads/system/uploads/Attachmentdata/file/026655/net-zero-strategy.pdf> (accessed 21 March 2022).
- HM Government (2022) *Levelling Up the United Kingdom*. Presented to Parliament by the Secretary of State for Levelling Up, Housing and Communities by Command of Her Majesty 2 February 2022. Available at: www.gov.uk/official-documents (accessed 12 March 2022).
- HM Treasury (2021) *Build Back Better: our plan for growth*. Available at <https://gov.uk/publications> (accessed 12 March 2022).
- House of Commons Public Accounts Committee (2020) *Selecting Towns for the Towns Fund Twenty-Fourth Report of Session 2019–21*. HC 651. (accessed 11 November 2020).
- Hudson R (1980) *Women and Work: A Study of Washington New Town, Occasional Publication (New Series) No 16*. Department of Geography, University of Durham, p. 52.
- Hudson R (1989) *Wrecking a Region: State Policies, Party Politics and Regional Change in North East England*. London: Pion.
- Hudson R (1995) New production concepts, new production geographies? Reflections on changes in the automobile industry. *Transactions, Institute of British Geographers* 19(3): 331–345.
- Hudson R (2003) Global production systems and European integration. In: Peck J and Yeung HW-C (eds) *Global Connections*. London: Sage, 216–230.
- Hudson R (2020) Life post-Brexit in the Divided Realm. *European Urban and Regional Studies* 28: 14–19.
- Hudson R (2021) Capitalism, contradiction, crises: pushing back the limits to capital or breaching the capacity of the planetary ecosystem? *Area Development and Policy* 6(2): 123–142. DOI: [10.1080/23792949.2020.1854615](https://doi.org/10.1080/23792949.2020.1854615)
- Hudson R and Swanton D (2012) Global shifts in contemporary times: the changing trajectories of steel towns in China, Germany and the United Kingdom. *European Urban and Regional Studies* 19: 6–19.
- Hudson R and Williams AM (1986) *Divided Britain*. London: Paul Chapman.
- Hudson R and Williams AM (1995) *Divided Britain*. 2nd edition. Southampton: John Wiley.
- Islam F (2020) *What Boris Johnson's Mistake Tells Us about Our Future - BBC News*. 24 December, (accessed 16 April 2021).
- Jenkins S (2006) *Thatcher and Sons: A Revolution in Three Acts*. London: Allen Lane.
- Johns M (2020) *10 Years of Austerity: Eroding Resilience in the North*. Institute of Public Policy Research, p. 11.
- Jolly J (2020). *Cutting Battery Industry's Reliance on Cobalt Will Be an Uphill Task*. Available at:

- <https://amp.theguardian.com/environment/2020/jan/05/cutting-cobalt-challenge-battery-industry-electric-cars-congo> (accessed 18 July 2021).
- Krebs D (2017) Greenland's unique Kvanefjeld multi-element rare earth project. *Johnson Matthey Technology Review* 61(2): 154–155. DOI: [10.1595/205651317x69511](https://doi.org/10.1595/205651317x69511)
- Lohan T (2021) "Will the Race for Electric Vehicles Endanger the Earth's Most Sensitive Ecosystem?". *The Revelator*, March 10. Available at <https://therevelator.org/ev-batteries-seabed-mining/> (accessed 18 July 2021).
- London Councils (2019) *Indices of Deprivation 2019*. Available at: [https://www.londoncouncils.gov.uk/members-area/member-briefings/local-government-finance/indices-deprivation-2019#:~:text=In%20September%202019%20the%20Ministry,Areas%20\(LSOAs\)%20in%20England](https://www.londoncouncils.gov.uk/members-area/member-briefings/local-government-finance/indices-deprivation-2019#:~:text=In%20September%202019%20the%20Ministry,Areas%20(LSOAs)%20in%20England) (accessed 10 June 2021).
- Marsden C (2021) *Boris Johnson, Social Murder and the Struggle against the Labour and Trade Union Bureaucracy*" Report to the 2021 International May Day Online Rally.
- Martin R, Gardiner B, Pike A, et al. (2021) *Levelling up Left behind Places: The Scale and Nature of the Economic and Policy Challenge*. London: Regional Studies Association.
- McCann P and Ortega-Argiles R (2021) The UK 'geography of discontent': narratives, Brexit and inter-regional 'levelling up'. *Cambridge Journal of Regions, Economy and Society* 14(3): 545–564. DOI: [10.1093/cjres/rsab017](https://doi.org/10.1093/cjres/rsab017). (accessed 12 March 2022).
- McKie R (2021) *Child Labour, Toxic Leaks: The Price We Could Pay for a Greener Future*. Available at: <https://amp.theguardian.com/environment/2021/jan/03/child-labour-toxic-leaks-the-price-we-could-pay-for-a-greener-future> (accessed 18 July 2021).
- Meyer R (2021) "Greenland's Rare Earth Election". *The Atlantic*, 3 May. Available at: <https://amp.theatlantic.com/article/618785/> (accessed 24 May 2021).
- Morris M (2018) *An Equal Exit? The Distributional Consequences of Leaving the EU*. London: Institute for Public Policy Research, p. 24pp.
- National Audit Office (2020) *Review of the Town Deals Selection Process*. London: NAO, p. 41pp.
- Nimmo J (2021a) *China and the Chip Factory – Johnson's Hi-Tech Dilemma*. *The Sunday Times Business and Money*, Vol. 11(July), p. 5.
- Nimmo J (2021b) *Why China's Stranglehold on Rare Minerals Could Cost Us the Earth*. *The Sunday Times Business & Money*, May 16. p. 5.
- Northam J (2019) Greenland is not for sale. but it has rare earth minerals America wants. Available at: www.npr.org (accessed 24 May 2021).
- Offe C (1976) The theory of the capitalist state and the problem of policy formation. In: Lindberg LN, Alford R, Crouch C, et al. (eds) *Stress and Contradiction in Modern Capitalism*. Lexington: D. C. Heath, 125–144.
- O'Toole F (2021) *The King of Little England*. *New York Review of Books*. June 10.
- Ramsbotham J (2021) *Letter to Prime Minister Boris Johnson*. Available at: <https://www.neechamber.co.uk/wp-content/uploads/2021/07/Letter-to-the-Prime-Minister.pdf> (accessed 9 August 2021).
- Rayson S (2020). *The Fall of the Red Wall*. UK: Amazon
- Robinson F (1988) Industrial structure. In: Robinson F (ed) *Post-Industrial Tyneside: An Economic and Social Survey of Tyneside in the 1980s*. Newcastle: Newcastle upon Tyne City Libraries and Arts, 12–61.
- Sainsbury Lord D (2021) *Levelling up the UK's Regional Economies: Increasing the UK's Rate of Economic Growth*. London: Centre for Cities, 35.
- Scheele F, de Haan E and Kiezebrink V (2016) *Environmental Pollution and Human Rights Violations in Katanga's Copper and Cobalt Mines*. Amsterdam: SOMO, 56.
- Shearer E (2022) *Will the Levelling up Missions Help Reduce Regional Inequality?* Institute for Local Government, p. 26.
- Stevens R (2020) *Brexit Deal Paves Way for Further Conflicts*. Available at: <https://www.wsws.org/en/articles/2020/12/29/brex-d29.html> (accessed 25 May 2021).
- Stewart H (2021) *Labour Suggests Ministers Failed to Do Analysis of Brexit Deal*. Available at: <https://>

- www.theguardian.com/politics/2021/mar/12/labour-suggests-ministers-failed-to-do-analysis-of-brex-it-deal (accessed 29 May 2021).
- Sunak R (2016) *The Free Ports Opportunity: How Brexit Could Boost Trade, Manufacturing and the North*. London: Centre for Policy Studies, p. 48.
- Tees Valley Combined Authority [TVCA] (2018) *Offshore Tees Valley: A World Class Offshore Sector*. Available at: <https://teesvalley-ca.gov.uk/wp-content/uploads/2018/07/Offshore-Brochureweb-version.pdf> (accessed 7 January 2019).
- The White House (2021) Building resilient supply chains and fostering broad-based growth: 100 day reviews under executive order. Washington, DC: Revitalizing American Manufacturing, 14017, p. 250.
- Thompson H (2017) Inevitability and contingency: the political economy of Brexit. *The British Journal of Politics and International Relations* 19(3): 434–449.
- Webb J, Johns M, Roscoe E, et al. (2022) *State of the North 2021/22: Powering Northern Excellence*. IPPR. <http://www.ippr.org/research/publications/state-of-the-north-2021-22-powering-northern-excellence> (accessed 21 March 2022).
- World Economic Forum (2019) *The Dirty Secret of Electric Vehicles*. Available at: <https://www.weforum.org/agenda/2019/03/the-dirty-secret-of-electric-vehicles/> (accessed 18 July 2021).
- Wright O and Clarence-Smith L (2021) Nissan deal heralds car ‘gigafactories’. *The Times* 2(July): 12.