



TONY BLAIR
INSTITUTE
FOR GLOBAL
CHANGE

Transformative Industrial Strategy for the Long Term

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Foreword by Peter Mandelson

The central case of this report from the Tony Blair Institute is cogently made: that only government can take the long view of where UK strengths lie and how to develop them. This is not an argument against markets, including the operation of capital markets. But it juxtaposes the shorter-term financial interests and criteria that drive capitalism with the wider industrial purpose and needs of the economy as a whole, and mandates government to bring about the essential refocusing on longer-term challenges and missions.

The report sets out strong and potent ideas for making this happen. But you just need a feel for the history of industrial policy to understand how muddled we have been in Britain and how other countries have gained a competitive advantage.

From Harold Macmillan's ineffectual National Economic Development Council and Harold Wilson's defunct Department of Economic Affairs to Ted Heath's crisis about-turn, policy has lurched rather than steadily evolved. By the time of Jim Callaghan's premiership, I had my own ringside seat as a young TUC official organising the trade union representation on the industrial engines sector working party as part of Labour's ill-fated industrial strategy at the time. Our combined efforts were disappointing.

Margaret Thatcher lost no time in persuading the country that ministers and markets don't mix. That any attempt by government to "pick winners" more often ends up in the losers picking government. And that the role of government is to create the conditions in which enterprise can flourish, with minimum regulation and taxation.

New Labour recalibrated the role of government in the economy away from the intellectually dogmatic market fundamentalism of the Conservatives, pouring investment into resource-starved public services and infrastructure, expanding educational opportunity and creating regional development agencies to spearhead the drive to rebalance the UK economy. This was a mixture of "supply-side socialism", as we called it, individual opportunity and social inclusion. A decade of stable economic management and growth did not prompt significant thinking on industrial planning – about which, in any case, the Treasury was very sceptical. Then the global financial crisis brought us all up sharp and we began to think afresh about how government can work with business differently to prioritise the creation of new industry and new jobs in Britain. We recognised government needed to be more active in helping to shape the country's industrial future.

Have successive coalition and Conservative administrations to the present day built on our new thinking? Yes, they have, but in fits and starts, through needless reinvention and without any institutional building

to give lasting effect and continuity of policy, as the Institute's report chronicles. Its value above all is to address how government needs to fill this yawning gap.

If the message is heeded as it should be, the right thinking and institution-building should happen, and not then be scrapped and replaced by the next incoming government. The reshaping of the UK economy – rooted in emerging transformative technologies and dramatic transitions – requires, above all, continuity in policy. That, I suggest, is the chief lesson of Britain's chequered experience in industrial policy and how we must change going forward.

Lord Peter Mandelson

Chairman of the advisory firm Global Counsel and former president of the Board of Trade

Executive Summary

This report sets out a new way of doing industrial strategy. The UK faces seismic economic challenges that the current policy regime is simply not up to the task of meeting. But reversing the drift requires rethinking how industrial strategy is conceived and delivered, not just creating a new suite of policies.

The dual shocks of Brexit and Covid-19 are disrupting the main export-earning and job-creation sectors of the economy. Meanwhile, technological change and the quest to reach net zero represent huge challenges as well as opportunities for UK industry. At the same time, the issues of sclerotic productivity growth and deep regional disparities remain unresolved. This confluence of problems is tailor-made for an ambitious industrial strategy to tackle them.

However, in the report we analyse some systemic failings in UK industrial strategy that have sabotaged repeated previous attempts to move the UK economy onto a higher and more sustainable growth path. Caught between ever-shifting political agendas on the one hand and a bias towards a limited and unambitious “market-failure” approach on the other, the effectiveness of UK industrial strategy is continually hampered by short-termism and swings in ideology.

This haphazard approach deprives business and investors of certainty over the direction of policy, which undermines the confidence they need to take decisions to invest. The result has been a legacy of industrial fragmentation and erosion of the skills base and supplier networks that recent governments have struggled to address.

Without tackling the systemic failings and lack of ambition in industrial strategy, current and future governments will miss a golden opportunity to reset industry to respond to the challenges of levelling up, decarbonisation and adapting to technological change. The government’s Plan for Growth, which replaces Theresa May’s Industrial Strategy from 2017, addresses these challenges. But it is largely a set of policy targets and spending commitments with no clear strategy behind it.

This inaction risks squandering a rare political consensus on the need to rebuild the economy after Covid-19 and attend to legacy problems like low productivity and stark regional disparities in economic performance. Other governments, including those of the US and China, are adopting comprehensive industrial strategies to restructure their economies with similar tasks in mind. We should too. But we risk failure unless the underlying causes of short-termism and stunted ambition are addressed.

We propose a new mission-oriented approach with a more expansive view of industrial strategy to replace the current policy regime. The missions we describe embody a more strategic and structural conception of what government intervention can achieve in partnership with the private sector.

However, for this mission-oriented approach to have a realistic chance of success, the report also calls for the establishment of a set of operationally independent institutions tasked with fostering structural change in the economy. This long-term, structural approach would be organised around a broad set of missions – namely delivering net zero, levelling up and dissemination of new technologies – that are set by ministers but overseen by an independent Office for Industrial Strategy.

The aim would be to position the UK to compete in new markets with long-term growth opportunities where we have latent comparative advantage, such as robotics, nanotechnology and renewable energy.

We recommend the following reforms to Whitehall policymaking mechanisms and structures in order to bring them into line with a mission-oriented approach.

1. **Missions**

- The broad goals, or missions, of industrial strategy should be set by ministers, along with an overall envelope for spending on industrial strategy.
- The missions should be reassessed every five to seven years, but with room for flexibility to adapt to fast-changing markets.
- A cross-departmental committee should be appointed to set the missions to ensure that areas like skills, transport, communities and education are given due consideration.
- The missions should be properly defined and progress measurable.

2. **Strategy**

- A statutorily independent Office for Industrial Strategy (OIS) should be set up in the mould of the Bank of England's Monetary Policy Committee (MPC) with the purpose of determining the approach to delivering on the missions.
- The remit of the OIS should be tightly defined to prevent the problem of producer capture. There should be strict rules on offering help only to sectors and not individual firms, and on focusing on upstream interventions with significant downstream impacts – for example by building supply chains for car batteries or offshore wind turbines, or promoting research into genomic sequencing.
- The OIS should be based in Birmingham or Manchester, not London, to bring it closer to the UK's manufacturing heartland.

3. **Implementation**

- The OIS would be responsible for building and overseeing independent and properly resourced agencies with long-term mandates to handle particular strands of policy in areas like technology and finance, for example new Catapult centres or regional investment banks.
- The OIS would also oversee a revival of local industrial strategies, liaising with regional bodies such as city mayors and local enterprise partnerships.

- The OIS should have an advisory board (equivalent to the members of the MPC) comprising well-qualified experts and businesspeople, drawn from a range of industries and differently sized firms and appointed for several years. Where training and labour-market issues are the subject of discussion, representatives of trade unions and the post-secondary education sector should also be included.

What we are proposing is not warmed-up corporatism. It is not about the government backing “national champions” or “picking winners”. The role of government in the market is to act as an enabler and a catalyst for the private sector, not to pose as its master.

What government can do is help to shape the long-term view of where the UK’s strengths lie and how we develop them, not indulge in short-term micromanagement that assumes Whitehall knows best. By building a long-term, mission-driven plan for industry – one that is bold but also has credibility with business – we can tackle the immense challenges we face and help to refocus economic activity towards exploiting the boundless economic opportunities of decarbonisation and new technologies.

Introduction

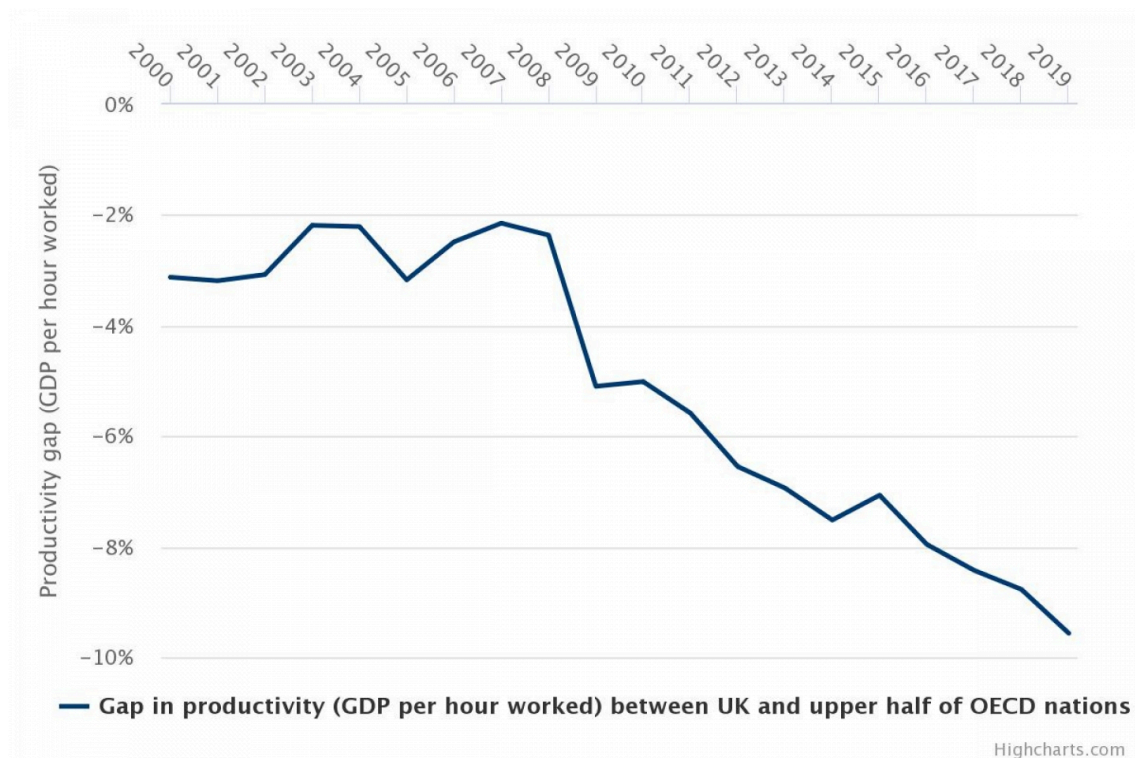
The global financial crisis (GFC) over a decade ago was a massive economic shock with lasting consequences for growth, incomes and employment. Now, however, the UK faces several GFC-sized shocks all at once.

As argued in our recent paper on [rethinking the UK's economic model](#), the UK is at a crunch point as it deals with an unprecedented economic problem load that threatens the basis of our prosperity.¹ The twin shocks of Covid-19 and Brexit are heavily impacting the main job-creating and export-earning sectors of the economy. Meanwhile, new technologies are upending old business models and employment patterns. Ahead looms the critical challenge (and potential golden opportunity) of decarbonisation.

The immediate task for politicians is to mend the economic damage and disruption arising from the pandemic and repair trading links after Brexit. At the same time, foundations must also be laid to position the UK economy towards achieving net zero carbon emissions by 2050, as well as enabling exploitation of the economic opportunities arising from accelerating technological change. But policymakers also need to think longer-term and more deeply about solutions to legacy issues of stagnating productivity and regional and social disparities.

UK productivity during the past decade has grown at its slowest pace in 250 years. This is a much worse performance than our competitors and is an unprecedented drag on real incomes and living standards (see Figure 1). Meanwhile, stark regional inequalities have been allowed to fester for decades. The UK has one of Europe's largest gaps in regional gross value added (GVA) and productivity, fuelling a deep sense that some areas of the country are being left behind.²

Figure 1 – Gap in productivity (GDP per hour worked) between UK and upper half of OECD countries



Source: OECD

Both the Brexit vote and the profound political realignment of the 2019 general election are routinely linked to discontent over regional and social disparities and the part they play in stunting opportunity. Unaddressed, this disgruntlement could fuel a resurgent populism on the right or left.

Challenges, Goals and Opportunities

This paper argues that the critical goals for economic policy are to: 1) raise the economy-wide rate of productivity growth and spread high-paying jobs and industries more widely across the country to improve quality of life in all communities; 2) re-equip industry and the economy to cope with technological change, while also seizing the myriad opportunities it presents for industrial leadership; and 3) decarbonise the economy and society in a manner that is equitable and pro-growth.

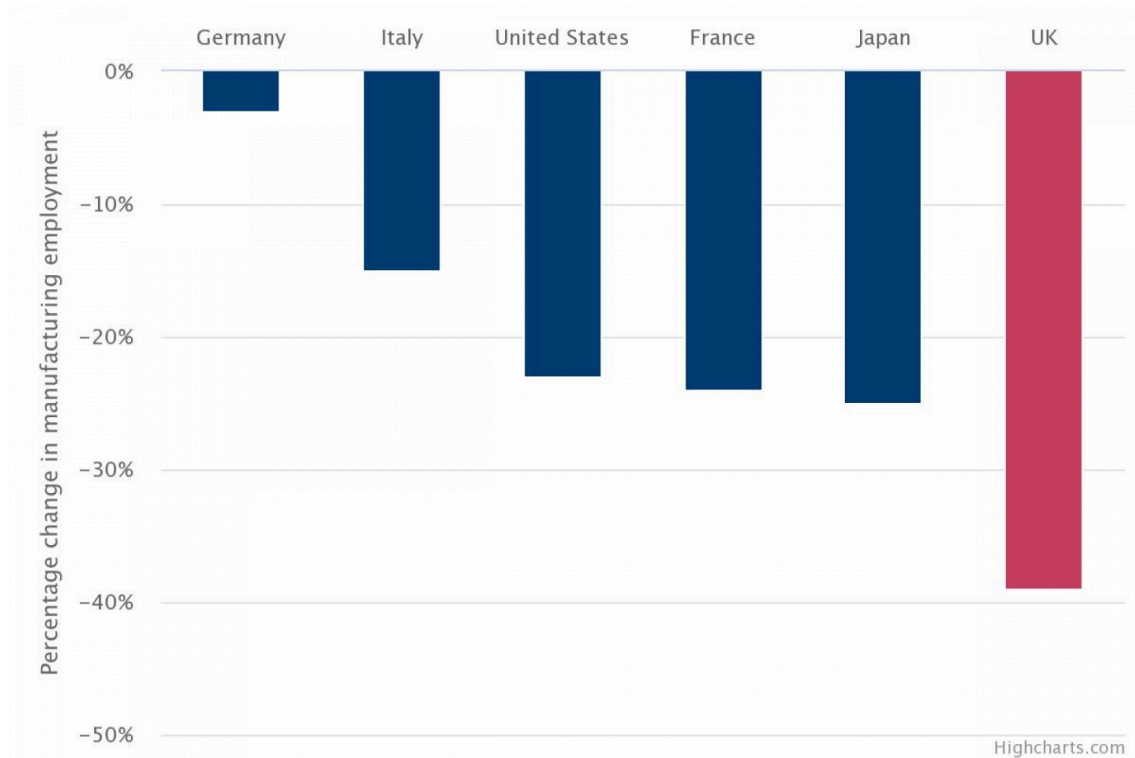
In pursuit of these goals, the government should use all policy tools available and not be hamstrung by excessive caution or ideology. Industrial strategy ought to be among these tools.³ An industrial strategy is a programme of government intervention that aims to improve the business environment, or alter the structure of the economy towards sectors or technologies that offer better prospects for growth or improving societal welfare.⁴

The ultimate aim of an industrial strategy is to help firms improve productivity growth on the road to enhancing national competitiveness in global export markets. Without tackling the UK's productivity problem, it will be difficult to pursue the important goals of economic fairness and sustainability. Moreover, since firms' productivity and competitiveness depend on decisions they make about whether and when to invest, innovate and develop new technologies, governments are in a strong position to shape the incentives for them to do this through a wide range of policies.

But an active, strategic-minded government could also take the lead in fostering structural change in the economy. Operating in close partnership with business, government can have an important role in helping industries to develop the technological and market capabilities to enter – and thrive in – emerging global markets requiring significant upfront commitments, like renewable energy.

There is considerable scope for this type of bold, ambitious policymaking to reverse the steady shrinkage of UK industry. While all advanced democracies have deindustrialised to some extent in recent decades (see Figure 2), the UK's job-shedding in this sector has been particularly extreme.

Figure 2 – Percentage change in manufacturing employment since the late 1990s

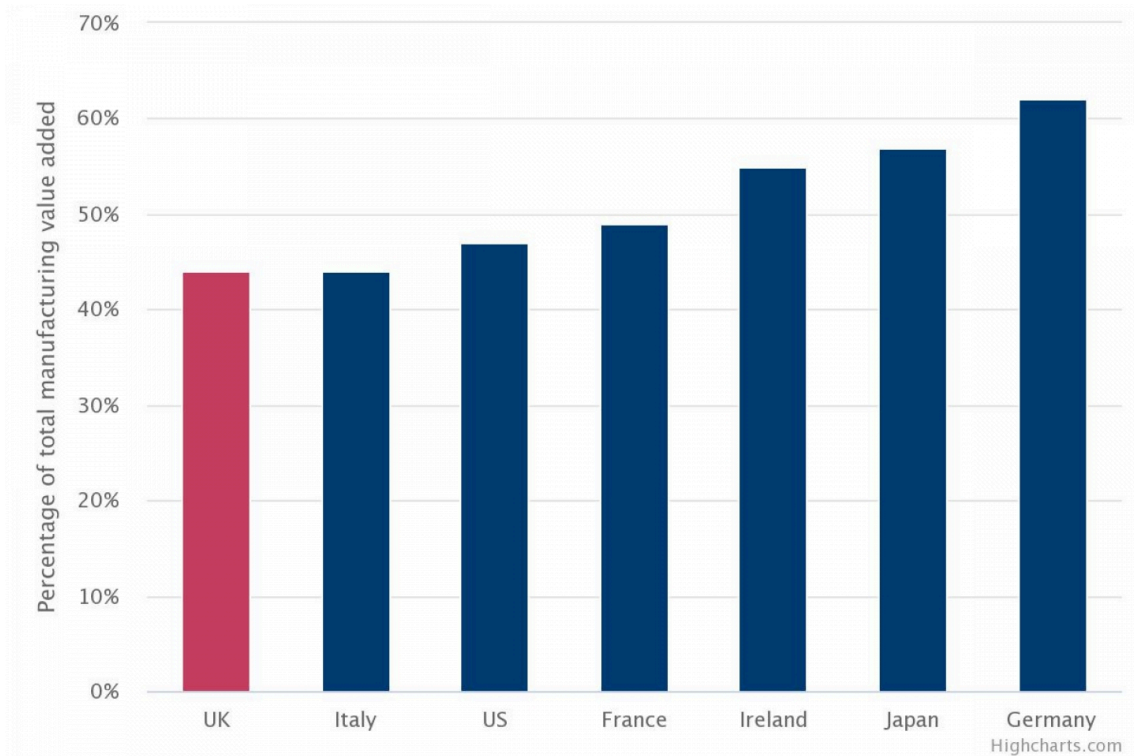


Source: McKinsey Global Institute

As the UK is now a predominantly services-led economy, this might not matter so much if more of what remained comprised high-value businesses that enabled us to punch above our weight in the upper echelons of global value chains (GVCs). As Figure 3 shows, however, not nearly enough of UK manufacturing operates in the mid- to high-value segments of these GVCs compared with our

competitors. Improving this is critical to improving our productivity performance and helping to “China-proof” the roughly 15 per cent of the economy reliant on manufacturing.⁵

Figure 3 – Medium-high value-added manufacturing as a percentage of total value-added manufacturing



Source: UNIDO

Meanwhile, decisive government action is also needed to ensure investment, policies and infrastructure are in place for the new breed of “anywhere jobs” – created by pandemic-induced changes to the labour market – to be located in the UK and not abroad.⁶

State intervention in the market inevitably invites comparisons with the 1970s: an era of industrial dysfunction marred by heavy-handed, politicised interference. But governments have learned from these mistakes and taken note of the numerous successful policy models available from abroad – for example, Germany’s Fraunhofer institutes for applied technology, which are the blueprint for the UK’s Catapult centres.

Ultimately, a modern industrial strategy is not about governments telling firms what to do, and it need not involve “picking winners” (which often degenerates into backing losers) either. Businesses still have to take the lead. But it is up to government to provide the background conditions for industry to flourish, and well-designed policies can help firms develop the capabilities they need to succeed.

Previous ideological battles over state versus market have been largely set aside in favour of a broad consensus across advanced economies that governments can have an important role in steering economies towards higher-value and more sustainable activities. The manifestos of all main parties in the 2019 UK general election campaign were packed with pledges of government intervention to foster growth.

In the supposedly free-market US, the need for industrial strategy to counter the rise of China is one of the very few issues with cross-party consensus.⁷ Marco Rubio, a former presidential candidate and serving Republican senator, has called for the overthrow of free-market ideology in favour of “common-good capitalism”.⁸ Germany, France and the EU, as well as India and China, are creating or renewing industrial strategies in order to embark on ambitious economic restructuring. Choosing not to follow the lead set by our rivals would mean surrendering the chance to adapt our economy to the new competitive environment being created.

Impediments to Industrial Strategy

The problem is that the UK is not particularly good at doing industrial strategy, either consistently or, often, very effectively. Some recent interventions, such as the Life Sciences Sector Deal, which was instrumental in the speedy development and deployment of the Oxford University/AstraZeneca vaccine for Covid-19, have been notably successful, illustrating the potential for well-targeted intervention.⁹

But in general, as this report will argue, the UK’s approach to industrial strategy is piecemeal, inconsistent and vulnerable to swings in ideology. Michael Heseltine, a former business secretary under John Major, has lamented that Theresa May’s 2017 Industrial Strategy white paper was the tenth attempt to formulate an industrial strategy in his lifetime.¹⁰

With its scrapping and replacement with a Plan for Growth¹¹ earlier this year by Kwasi Kwarteng, the new (Thatcherite) business secretary, it would seem we are now on our 11th iteration – and counting. At first glance, the Plan for Growth looks to be similarly ambitious to May’s Industrial Strategy in scale and intent – and it comes from a government that has already demonstrated during Covid-19 that it is prepared to use the full heft of the state to preserve jobs and businesses during lockdown.

The problem is that the big spending commitments, which account for the vast majority of the Plan for Growth’s policy content, amount to little more than a series of big bets that the private sector will match this funding. The assumption is that public investment will crowd in private investment as firms raise their game to develop new products, invest in new technologies and enter new markets.

But, as this report will argue, these bets are prone to fail if firms don’t answer with more investment to upgrade their product strategies. One reason they might not respond to the financial incentives on offer

is if these are not accompanied by a clear and credible strategy that will allow the overall business case for action to be assessed. The Plan for Growth mostly lists existing policies with few fixed measures or targets. There are some grand ambitions, but no clear strategy for achieving them, nor even the semblance of a coherent vision for how the strands of policy fit together. The House of Commons Business, Energy and Industrial Strategy (BEIS) Committee has criticised the government's strategy for its "...short-termist, unclear and unwelcome approach to industrial policy when business is crying out for long-term consistency and clarity".¹² All in all, the Plan for Growth is neither much of a plan nor likely to encourage much growth.

Worse, both the impressive-sounding but ultimately sparse content of the Plan for Growth, as well as the manner of its inception, exemplify how industrial strategy in the UK is almost programmed to fail. First, because governments seem unable to devise and successfully implement policies in more than a few areas. Second, because industrial strategies themselves generally lack longevity or consistency, as incoming governments or business secretaries rip up past plans and replace them with their own approach, often when the original policy has not had time to bed in properly.

Lack of Credible Commitments

Of course, this is arguably part and parcel of how politics is done in the UK. But business marches to a different drum. Firms, particularly in manufacturing, invest over very long-term time horizons. A new factory or process represents a significant sunk cost and is therefore vulnerable to hold-up problems and uncertainties, such as a change in regulation that could render a planned new product line suddenly unviable.

Equally, firms are prone to mistrust declarations from politicians about their unshakeable backing for the industries of the future if past experience tells them the commitment is likely to be only temporary. For industrial strategies to be effective in encouraging firms to invest, particularly when entering new markets where the payoffs are uncertain and in the future, they need to be both long-term and consistent in order to establish coordination across firms and between the public and private sectors. Strategies lacking these attributes will simply not be credible, so firms will not respond to them in the way that policymakers intend.

Policy inconsistency and wild swings in approach therefore mean any industrial strategy is likely to fail, even if it's basically a good strategy. By rearranging the deck chairs yet again, the government is reinforcing this tendency.

The Need for an Effective Industrial Strategy

The challenges facing the UK are far too important not to employ optimal industrial strategy, or to allow it to wither again. But advocates of industrial strategy also need to accept that, just as markets often fail to provide the collective goods required for economies to thrive, governments may also fail in their attempts to rectify this. It is easy to criticise the current government for changing the previous strategy just as aspects of it were starting to work. But this course of action is merely the latest episode in a long sequence of erratic and disjointed policymaking stretching back over decades.

By contrast, industrial strategy in other countries has generally been much more consistent and predictable. In Germany, most industrial policies over the past 15 years have been subsumed into Industrie 4.0, a plan to digitalise factories, and the Energiewende, to decarbonise industry and the economy. Despite periodic iterations, the overall goals and policies of both have remained consistent.¹³ Neither the Energiewende nor Industrie 4.0 are perfect, but what they do is provide policy certainty for German firms to make the investments needed to shift into new areas, which is reflected in Germany's dominance of high-value manufacturing (as Figure 3, above, shows).

The reasons for UK inconsistency are systemic. They are embedded in its institutions for making and enacting supply-side policy, which are biased against long-term, stable planning. Failing to grasp the systemic roots of this problem simply hands ammunition to free-marketeters whose inclination is always to abandon or nullify industrial strategy when the going gets tough.

An important step that is often missing in devising industrial strategy is addressing the political and bureaucratic context in which it is made and implemented. A fundamental problem is that the UK is a highly decentralised market economy – ruled by an extremely centralised executive – that lacks the intermediary institutions sitting between government and industry, such as the strong, compulsory Chambers of Commerce, encouraging firms to coordinate over training and product development, that are present in more successful industrial nations such as Germany.¹⁴

The absence of this kind of decentralised economic governance in the UK produces a tendency towards top-down delivery of policy, which often leads to industry capture by leading firms (as has happened with many of the Sector Deals). To avoid these problems, industrial strategy tends to default to a limited market-failure approach with a particular emphasis on tax and regulatory policies. These have largely run their course, in the sense that UK business is already lightly regulated and taxed by international standards so there is little extra advantage to gain. Moreover, they are not going to shift the dial to encourage higher productivity and more innovation, or encourage UK firms to invest to exploit new global markets of the future.

Equally, when the UK tries to implement more ambitious interventions to promote specific sectors or build effective institutions, these are often half-hearted and are abandoned before they can make an impact. This has to change.

What is needed, therefore, is not just a new slate of policies but a new way of doing industrial strategy. The same goals, but different methods, and a different approach to implementing them. In this report we analyse these systemic failings and propose a new approach that:

- Takes a more expansive view of industrial strategy that goes beyond correcting basic market failures and embodies a more strategic and structural conception of what government intervention can achieve in partnership with the private sector.
- Offers a different conception of the role of government in the market that embraces a more long-term and coordinated developmental approach to tackling the deep-seated economic and environmental challenges the UK faces.
- Involves an overhaul of policymaking structures in Whitehall and the creation of independent institutions to develop and enact industrial strategy.

The next chapter examines the reasons for policy failure and argues that they lie in a generally unambitious and uncoordinated approach geared to tackling market failures. The following chapter discusses governmental and institutional changes needed to avoid repeating the mistakes of the past in any future industrial strategy. The penultimate chapter applies these principles by setting out what a genuinely strategic approach would look like. The final chapter concludes.

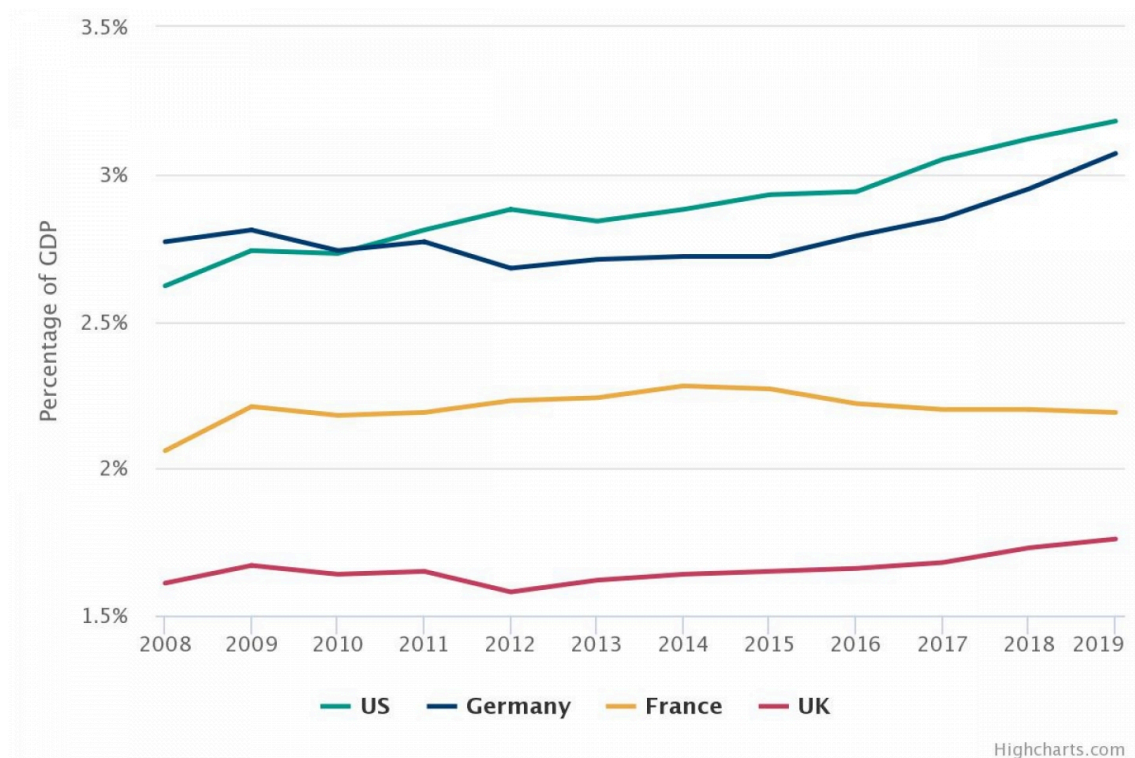
When Markets and Governments Fail: What's Wrong with Industrial Strategy in the UK?

In this chapter we examine the government's Plan for Growth and show how, its soaring ambitions notwithstanding, it represents the flawed thinking of the past – specifically, an overemphasis on a limited market-failure approach and a destabilising tendency to keep reinventing the wheel.

There are two sets of problems with the Plan for Growth. The first is with the policies themselves; the second with the manner of its introduction. Together, they exemplify the problems that bedevil UK industrial strategy. In terms of policy content, the government's approach is characterised by short-termist and incoherent thinking in pursuit of political goals. It may be a collection of industrial *policies*, among other things, but it is not an industrial *strategy*.

- The first problem is inconsistency. For example, £400 million was allocated for the unproven satellite startup OneWeb but nothing for the industrial jewel Rolls-Royce.¹⁵
- Second, its approach is ideological, as evidenced by the obsession with low-tax freeports despite evidence they make no net contribution to growth.¹⁶
- Third, many government schemes – much of the levelling-up and infrastructure agendas, for example – consist largely of throwing money at problems.
- A fourth problem is that government plans tend to be characterised by ambitious targets but devoid of a clear strategy for meeting them (much of the plan for a green industrial revolution, for example).¹⁷
- Fifth is a captivation with vanity projects with no clear goal (such as creation of Google-size “national technology champions” in technology policy, at the expense of the need to support the tech sector more broadly).¹⁸
- Sixth is short-termism: the temporary investment tax break in the March 2021 budget merely brought forward some investment spending that would probably have been introduced anyway while not altering the long-run rate of business investment, which is one of the lowest in the G7 (see Figure 4).¹⁹

Figure 4 – Business spending on R&D as a percentage of GDP



Source: OECD Main Science and Technology Indicators database

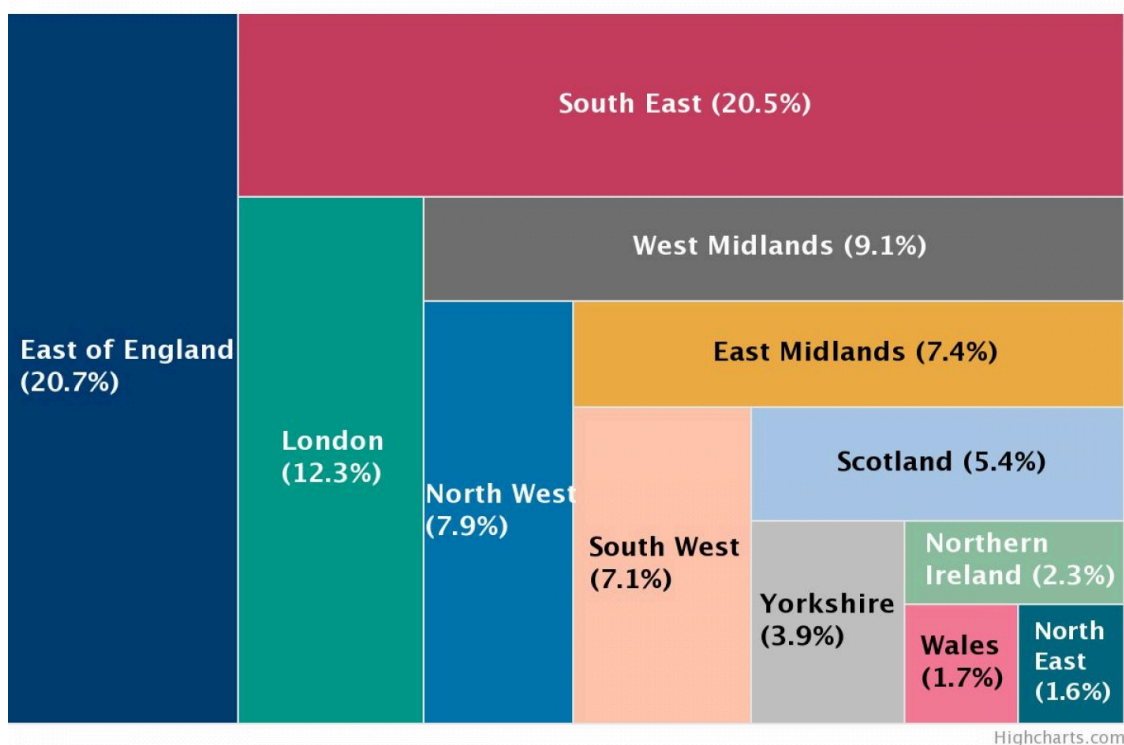
Overshadowing all this is Brexit. Leaving the EU has already hammered exports, particularly in manufacturing.²⁰ Brexit undermines industrial policy in other ways because the “Global Britain” agenda is framed as a way of regaining an abstract notion of sovereignty. Brexiteers say this will allow regulatory policy to be tailored to strategically promote growth industries.

In reality, the pursuit of free-trade agreements with peer countries would likely require new international commitments on domestic regulation, such as competition, subsidies, and environmental and labour standards. However, as our [recent paper](#) makes clear, work on agreeing these elements with potential trading partners cannot begin until the government decides on the kind of post-Brexit regulatory model it intends to pursue: particularly whether it seeks continued convergence with our main markets in the EU, or looks to diverge.²¹ In the absence of a clear strategy it is hard to see how regulatory adjustment, the go-to policy stance of many Conservative governments, can have much effect on competitiveness.

Meanwhile, the National Investment Bank, launched to great fanfare in the March 2021 budget, offers considerably less financing than was available before Brexit from the European Investment Bank.²² The recently announced replacement for the EU state-aid regime opens the door to politically expedient bail-outs under the guise of offering a more “nimble” system.²³ Business seems unimpressed with all this, the CBI damning the government’s plans with faint praise as “necessary, but not sufficient to deliver economic growth”.²⁴

Overall, the government still faces hard choices about which industries can feasibly be nurtured and the trade-offs involved. For example, Boris Johnson wants to both develop high-technology industries and “level up”. But focusing on high-tech sectors could boost inequality by concentrating jobs growth in already prosperous districts near leading universities, particularly in the South East of England where R&D activity is concentrated (see Figure 5). Conversely, rebalancing the economy to create jobs in Red Wall constituencies could weaken the focus on leading sectors where industrial policy could be most effective. Meanwhile, “greening” industry may be essential in the long run, but some elements of it impose short-term costs on firms struggling to rebuild after Covid-19.

Figure 5 – Business R&D by region (percentage of total)



Source: ONS

With the right strategy in place these trade-offs are not only surmountable: they could be turned into opportunities. But the pandemic has engendered high levels of uncertainty in the market, hindering the flow of information between government and the private sector as well as across industry, which magnifies the danger of costly policy mistakes. Ill-targeted interventions amid a strategic void risk locking in inadequate productivity growth for years to come.

Accordingly, the Office for Budgetary Responsibility is not expecting the government’s plans to shift the dial on the UK’s dismal productivity performance, forecasting output per worker to grow by only 1.3 per cent a year from 2021 to 2025.²⁵ This is scarcely higher than the rate during the previous “lost decade” of low productivity growth, and far less than the pre-2007 trend. The plans won’t raise long-run GDP

growth either. After a brief V-shaped bounce following the end of lockdown, the OBR sees growth returning to just under 2 per cent a year – rates that would have been considered disappointing previously and which are below the long-term trend rate.

The Inability to Commit to Long-Term Policies

Another problem with the government's approach is less to do with the content of policy and more with the lack of continuity of policy and the confusing message this sends to the private sector. Abandoning Theresa May's Industrial Strategy indicates an ad hoc approach to policymaking that is inimical to sound, long-term planning. If the Plan for Growth had been merely the "rebranding" the government claimed it to be (in a panicky response to hostility from industry),²⁶ then this would have been destabilising, but not completely debilitating. Instead, the move looks ideologically driven and likely to exacerbate uncertainty over its strategy.

For example, the government says it will keep the Sector Deals, which were set up to foster public-private collaboration in specific industries. But their future now looks uncertain as the dedicated industrial-strategy team in the Department for Business, Energy and Industrial Strategy (BEIS) has been disbanded and responsibility will now be shared with the Treasury, which is institutionally hostile to sectoral industrial policy.²⁷

In addition, the Industrial Strategy Council (ISC), a panel of experts set up to monitor progress on achieving the white paper's targets, was abolished soon after issuing its final report in March. The ISC may have lacked the teeth required to perform an effective monitoring role, but its replacement – the Build Back Better Business Council – appears little more than an ad hoc talking shop.

The ISC had already been critical of how many aspects of the Industrial Strategy were being implemented and would no doubt have been even more damning about the current policy drift.²⁸ Its abolition suggests that ministers want to avoid direct accountability and preserve maximum room for manoeuvre to alter policy at will. The fact that the government cannot commit to a commitment device set up barely three years ago speaks volumes about its short-termism and unwillingness to be subject to scrutiny.

Another body, the Office for Science and Technology Strategy, has now been set up to coordinate science and technology policy. But it remains uncertain how it will operate, how independent it will be and how long it will last before being cancelled or repurposed.

Market Failure and Structural Industrial Strategies

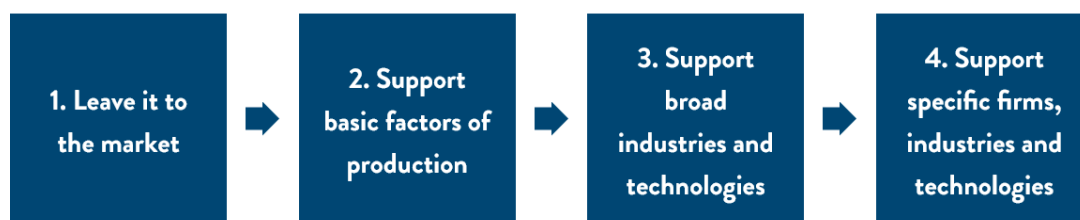
These elements – short-termist, ideologically motivated policies, coupled with an ad hoc policymaking framework – exemplify the problems with industrial strategy in the UK. But there are deeper failings, as well, that militate against ambitious and consistent policies.

One is the institutionalised policy bias towards limited market-failure policies over the genuinely strategic approach that is needed. In analysing industrial strategy, economists often distinguish between general, broad-brush policies impacting the whole economy and more selective policies intended to shape certain sectors. These are dubbed “horizontal” and “vertical” policies respectively.

Types of Intervention in Industrial Strategy

Atkinson and Ezell²⁹ have suggested the following typology of intervention. The first box (1) represents the absence of any meaningful intervention by government. The progression indicates deepening degrees of intervention. Boxes 2 and 3 correspond to horizontal (sector-neutral) interventions, while Box 4 represents vertical (sector-specific) intervention. The type of industrial strategy called for in this paper belongs in Box 3.

Figure 6 – Four types of industrial-strategy intervention



In practice, it’s often hard to distinguish between the two as most horizontal policies impact sectors in different ways and vertical policies can spill over into other sectors. Accordingly, recent analyses of industrial policy ignore the horizontal/vertical distinction. The EU refers to a “matrix” approach, whereby broad sets of policies may favour particular sectors without exclusively promoting them.³⁰

But there is a more helpful distinction that highlights what it is that governments are trying to fix or change, rather than the scope of intervention. Recent debates among economists concern whether industrial policy should be mostly about: 1) tackling market failures; or 2) taking on a more strategic role to shape the structure and direction of the economy. What characterises these two approaches?

“Market Failure” Industrial Policy

The market-failure approach involves the state intervening in the market to encourage or discourage certain types of activity that would otherwise be inefficient or harmful. This includes subsidising private-sector activities with positive externalities (which benefit those not involved in their creation) or discouraging negative externalities (such as pollution) through fines. An example of a positive externality worth encouraging is R&D. The social rate of return on R&D exceeds the private rate of return because of knowledge spillovers. Leaving it to the market will likely mean too little R&D, so there is a role for public subsidy of R&D. Skills policy is another example of a positive externality.

Other market failures can arise from malfunctioning capital markets where risk-averse investors are unwilling to support firms’ entry into new markets due to information asymmetries: they can’t work out which potential investments are unappealing “lemons” and which are potential goldmines, so they don’t invest in either. ³¹ This is a potential market failure everywhere, but it has been a particular problem in the UK due to the dominance of Friedmanite shareholder capitalism that prioritises short-term returns over long-term value creation. ³²

For example, firms looking to develop new markets and technologies will lack a track record in the sector and will thereby be unattractive to investors. Without investment they cannot buy the equipment they need or train skilled workers to operate it and so will remain in a lower productivity equilibrium. Governments can intervene to loosen regulations or give tax breaks to firms with promising new ideas to scale up in order to get through the “valley of death”. Absent this, they might otherwise fail to make the transition from startup to established player. Equally, the market may fail to guarantee adequate competition, particularly in industries with high fixed costs that act as barriers to new entrants. Government intervention here may take the form of strict rules on competition and collusion.

The drawback with a market-failure focus is that while these failings may be a straightforward concept to define, they are not so easy to identify and measure in practice – the first steps in designing solutions. Thus, there is an inbuilt conservative bias and a concern with static efficiency that favours policy tools with predictable but limited outcomes. ³³ This can result in some major economic challenges going unaddressed. For example:

- **Climate change** has been called the biggest market failure of all time. ³⁴ Yet governments have only recently woken up to the danger and begun preparations to tackle it at the necessary scale. Decisive action two decades ago would have proved far cheaper and more effective.
- **Vocational skills** are another long-standing and debilitating market failure. The UK’s poor training performance is a major contribution to its low productivity growth. ³⁵ It arises because UK firms are unable to coordinate with others in their industry in resolving their training needs. This leads to both an externality problem (firms won’t train for fear trainees will simply be poached by other firms that

scrimp on training), and a problem of asymmetric information (they can't collectively predict their industry's training needs, so the tendency is again to undertrain). Solving these market failures requires encouraging firms to coordinate so they internalise these externalities and share information (as German and Nordic firms do). But facilitating this would require the creation of a set of new institutions that the market on its own is unlikely to bring into being.

The fundamental problem is that governments can't possibly see all the market failures that exist even when there is clear evidence of market dysfunction. Correcting them, moreover, is often extremely hard and the fixes that are attempted (such as the myriad initiatives to solve the skills problem) frequently don't work.

Ultimately, even supposing most market failures could be corrected, market signals alone would probably not get firms to move towards areas of the market with highest economic potential (moving up the value chain to exploit new technologies, for example) or where there is greatest social value (tackling climate change or levelling up). Overall, the status quo bias of the market-failure approach to industrial strategy looks unlikely to solve the profound challenges we face.

“Structural” Industrial Strategy

Many analysts therefore advocate a very different approach. This embraces a notion of “systems failure” and points to more strategic interventions to alter the balance of the economy towards promising new areas. The argument is that industrial strategy should go beyond pursuit of growth for its own sake and be tasked with bringing about structural change in the economy to tackle serious, complex challenges. ³⁶

Structural industrial strategy involves identifying sectors where the UK either already enjoys comparative advantage or has the technological capabilities to develop it in areas of likely future global demand. Backing promising sectors, as opposed to individual companies, allows policymakers to focus on upstream interventions with broad downstream impacts while avoiding capture by a few well-connected firms.

Advocates of these kinds of structural industrial strategies thus have a more expansive view of government capabilities, and emphasise strategic collaboration between firms and the state. Government acts as an important catalyst here because of its ability to absorb and disseminate information in dynamic markets and create new market opportunities. ³⁷

Ambitious targets, or missions, can be a useful commitment device for this kind of policy framework. ³⁸ The UK's legal obligation to reach net zero carbon emissions by 2050 is a good example of such a mission as it requires structural change to decarbonise industry as well as presenting opportunities to develop valuable new technologies for export (though unfortunately the tough targets the government has set for itself have not yet yielded a coherent plan for achieving this). ³⁹

Structural approaches highlight the disruptive role of technology and innovation. Growth should be seen as a race to the top, with the biggest rewards going to countries that generate enduring advantages in innovative, high-productivity sectors. Industrial strategies of sufficient ambition can aid and encourage firms to upgrade their product strategies to move into higher value markets, particularly through adoption of technology.

Shifting firms into higher value-added sectors forces them to be more productive and so could help tackle the UK's decade-long puzzle of low productivity growth. By acting in partnership with the private sector, government action can crowd in investment and entrepreneurial activity by acting as the initial catalyst and providing investors with certainty about future demand.⁴⁰ Governments can thus have a crucial role as market-maker by using demand-side incentives in conjunction with supply-side measures to encourage take-up of new technologies. This is particularly important where adoption may be inhibited because of major sunk costs in existing technologies such as vehicles (see below).

A structural approach can be applied to help industry absorb new technologies horizontally by developing new capabilities. For example, the expansion of university education in the 1990s helped the rapid diffusion of ICT across the economy later in the decade, so that its contribution to labour productivity growth in the UK was twice that of Germany and France.

Electric Vehicles

An important example of government assistance in technology adoption is electric versus conventionally powered cars. Germany's carmakers were initially slow to develop the battery technology needed for electric vehicle (EV) production, even though Germany is the centre of European car production and accounts for 40 per cent of global R&D in the auto industry. But delays in battery development initially saw the country fall far behind the US and China in EV markets.⁴¹

Germany's government stepped in with a major programme of sales incentives to stimulate demand. But this was complemented by targeted R&D and infrastructure grants, and a clear commitment to help its firms manage the transition. Germany also benefited greatly from the launch of the European Battery Alliance, backed by the European Commission and the European Investment Bank, which heavily subsidises R&D and supports investment in supply chains. The German auto industry has responded by focusing heavily on EV technology, and sales of German EVs now rival those of Tesla and Chinese makers.

The UK faces a related dilemma over EVs, but policy here is all over the place. The government has rightly banned domestic sale of petrol vehicles by 2030, which sends an important signal regarding its general commitment to decarbonisation. However, the scope of the UK car industry to respond has been heavily undermined by Brexit. A current lack of domestic battery production means UK

manufacturers contemplating the switch to EVs face having to import the costly batteries and other components from the EU, where they may face tariffs from 2026.⁴²

The government's priority should be to intervene to support UK supply chains as they transition to the new technology. At the centre of this should be creation of sufficient battery gigafactories to make UK production of EVs financially viable over the long term (as batteries account for a significant proportion of production costs). But only one of the eight gigafactories estimated to be needed is currently under construction and manufacturers are complaining about the absence of a viable plan.⁴³ In other words, both Germany and the UK attended to the demand side of the EV equation. But only Germany has so far demonstrated the strategic thinking necessary by intervening effectively on the supply side as well to help producers adjust to the new market realities.

Overall, structural industrial policies could play an important role in helping the UK tackle mounting challenges. So, what is stopping policymakers from adopting them?

Ending the Market-Failure Bias

Clearly, there is a role for both types of intervention: fixing market failures, and attending to structural defects and opportunities. But UK industrial policymaking has generally strongly favoured the market-failure approach over the structural one. Market-failure policies have a role in increasing efficiency but are unambitious. They are a necessary, but insufficient, condition for industrial upgrading on the scale needed.

Renewable energy is a good illustration of the limitations of the market-failure approach. The government used a classic market-failure formula of R&D support, regulatory reform and subsidies to get power companies to switch to offshore wind generation.⁴⁴ The policy was a spectacular success, with the price of wind-generated electricity swiftly falling to the point where it is now among the UK's cheapest, as well as greenest, forms of energy. The market alone would not have achieved this outcome because of high fixed costs and uncertain returns, demonstrating the potential strengths of market-failure-based policymaking in terms of demand-side intervention.

But (as with EVs) industrial strategy is also about shaping the supply side, and here the government's approach to wind power was a flop. The initial generation of offshore wind turbines was made elsewhere even though the high cost of shipment makes it economically viable to build them in the UK, given the right infrastructure and supply chains. One of the reasons they weren't built here is that most UK ports are not equipped to handle the giant blades and supporting structures. No one in government at the time appears to have undertaken the joined-up thinking needed to link the UK's natural capacity for wind-

power generation with its manufacturing and development potential by providing the necessary infrastructure, and so the opportunity was largely missed.

The chance may come again as planners look to build a new generation of giant turbines far out to sea on Dogger Bank. But the government has only belatedly begun to recognise the logistical challenges that need to be overcome. A genuinely strategic approach is needed here to ensure this opportunity is not squandered.

Likewise, the government's target to increase R&D to 2.4 per cent of GDP by 2027 is a typical market-failure-inspired goal as it assumes that innovation activity is simply a function of spending. But (as the "New Missions for a Revamped Industrial Strategy" chapter of this report explains) nurturing an innovation system involves much more than just investing cash in R&D to expand the technology frontier. The bulk of the productivity gains lie in diffusing best practice and technology across the entire economy.

Even the 2017 Industrial Strategy white paper, the most interventionist and strategic of recent times, had an underlying market-failure approach. Then Business Secretary Greg Clark's foreword to the document defined industrial policy as "addressing weaknesses that keep the UK from achieving its full potential".⁴⁵

One reason for the market-failure bias is the way in which policy is evaluated by the Treasury. This is based on ex ante cost-benefit analysis and estimates of net present value as laid out in the Green Book.⁴⁶ Underlying these principles is the general assumption that markets themselves will reach efficient outcomes with only limited intervention, a policy framework geared to fixing market failures.⁴⁷ Inbuilt Treasury caution and an ancestral horror of "picking winners" therefore cement a bias against bold, market-shaping policies.

This matters because of the way the Treasury dominates central government policymaking. The Treasury sees its job as stopping other departments from spending money and is sceptical of attempts to strategically guide the economy. Before 1979, the Department of Trade and Industry (DTI) was well-resourced. But from the 1980s onwards, the DTI was progressively stripped of powers and funding as the Treasury assumed greater control over discretionary budgets.

Treasury dominance means ambitious schemes cooked up elsewhere in Whitehall are prone to being cut down to size. One example is how the Green Investment Bank, set up to support private firms making long-term investments in low-carbon energy, was explicitly denied the ability to borrow against its own balance sheet (and was later privatised).⁴⁸ The Catapult centres for applied technology, set up in 2011, are another example. Although in principle a very good idea, the potential behind these centres has often remained unrealised. Most failed to achieve their funding targets and only a couple were judged effective in an interim review of progress in 2017.⁴⁹

Some policy areas, such as innovation, are starting to be evaluated in ways compatible with strategic industrial policy. UK Research and Innovation (UKRI), the science and innovation funding agency, now appraises industry and technology projects on a more long-term, whole-economy basis. It increasingly uses qualitative as well as quantitative data to try to understand the overall effect of policies, rather than just their financial impact.⁵⁰ The European Union has a similar methodology for evaluating its Horizon Europe R&D programme. These are surely the right approaches and do not mean abandoning the quest for value for money.

However, UKRI controls only a very small segment of the government's overall budget for industry and innovation. With the Treasury reclaiming control over what remains of industrial policy in its Plan for Growth, these promising new approaches seem unlikely to be generalised across government.

Government Failure

Treasury domination and the resulting market-failure bias is compounded by, and may also reinforce, another problem with the way industrial policy is done in the UK. This is the inconsistent and ideologically driven nature of policymaking, which is too prone to half-heartedness and is undermined by rapid swings in direction. Even when policymakers try to take a strategic, structural approach – as with the 2017 Industrial Strategy – it often falls short in crucial respects. This then provides a pretext for its abandonment by the next government or business secretary. The result is a legacy of industrial fragmentation and erosion of the skills base and supplier networks that recent governments have struggled to address.

This is a parallel problem of government failure, which must be addressed. This is not, however, just the classic definition of government failure as capture by vested interests – although this is a problem.⁵¹ It also relates to inconsistency and the inability to credibly commit to policies; without this demonstration of commitment, private firms will not respond by investing.

This problem is evident when taking an overview of how UK industrial policy has developed since the second world war over several phases:

- **Post-war reconstruction and interventionism:** The heyday of post-war interventionism was the period from the 1950s to the late 1970s when UK governments mounted a series of attempts at French-style *dirigisme*. This involved promoting strategic industries through macro-corporatist planning via nationalisations and/or heavy public subsidy. This approach was initially successful in rebuilding the economy. But “picking winners” eventually degenerated into backing well-connected losers, with subsidies directed at industries where the UK no longer had comparative advantage (such as shipbuilding) or as a defensive measure to head off overdue rationalisation in heavily unionised sectors (cars).

- **Thatcherism and the return of markets:** The failure of interventionism led directly to the Thatcherite backlash, with industry thereafter coordinated through markets, encouraged by low taxes and deregulation. The main result of this was the rapid downsizing of manufacturing and rise of financial services. The cracks in this approach emerged in the mid-1990s as policymakers began to identify numerous market failures in product and labour markets that showed up in widening trade deficits in manufacturing and the inability of UK firms to prosper in high-technology industries.⁵² Michael Heseltine, business secretary under John Major, initiated the shift back towards interventionism to tackle these problems but lacked much policy leeway.
- **Early New Labour – productivity and prudence:** The advent of New Labour in 1997 appeared to herald a lurch towards a more active industrial strategy, as the party in opposition had attacked the Thatcherite focus on markets alone and espoused a continental style of stakeholder capitalism. However, under Chancellor Gordon Brown the early priority was demonstrating financial prudence. Supply-side policy was subsumed by the Treasury into productivity policy and it was three years before the first recognisable industrial policies emerged.⁵³ In place of the discipline of markets, this highlighted the emphasis in “New Growth Theory” on endogenous drivers of growth like innovation and education. But, in keeping with the Treasury’s market-failure approach, it was accompanied by little in the way of concrete policies or institution-building.⁵⁴ The very limited sectoral intervention was confined to aerospace and defence directly, and biotechnology indirectly. By 2006, 90 percent of state aid to industry was still used for horizontal rather than vertical policies.⁵⁵
- **Late New Labour – sectors and institutions:** Arguably, New Labour did not seriously commit to an industrial strategy until Business Secretary Peter Mandelson set the tone in a major policy framework issued in 2009.⁵⁶ In contrast to earlier plans that discussed competitiveness largely in terms of flexibility and low relative taxation, this identified a number of other areas as being responsible for growth – including skills, finance and innovation – and proposed concrete steps to enhance these. The market-failure emphasis remained, but for the first time in decades a strategic role for the state was envisaged to steer industry towards higher-value activities. New (and until recently highly successful) sector-specific institutions, such as the Automotive Council, were created.
- **Sectoral policy in the Con–Lib coalition:** The coalition took power in the shadow of the GFC, and its first major policy move, led by the highly interventionist Liberal Democrat Business Secretary Vince Cable, was to set up a growth review to identify areas of industry ripe for government intervention and form proposals for promoting high-value manufacturing. Cable’s strategy was the first in decades to have a genuinely sectoral focus in offering support for 11 key sectors and eight key technologies. It also led to the Advanced Manufacturing Supply Chain Initiative and the establishment of Catapult centres, under the supervision of New Labour’s Technology Strategy Board, where private companies and universities could collaborate on R&D with access to public funding.
- **Cameron, Osborne and the “productivity puzzle”:** But progress stalled again when the

Conservatives gained power on their own in 2015. While deficit reduction was the Conservatives' main aim, Chancellor George Osborne also said rebalancing the economy away from finance towards industry would require new institutions and new policies and talked of a "march of the makers".⁵⁷ However, the policy structures built by Mandelson and Cable a few years earlier were abandoned by the Thatcherite business secretary, Sajid Javid, in favour of politicised interventions promoting well-connected sectors such as aerospace. The government increased the number of Catapult centres to help with knowledge diffusion. However, there was little for SMEs, and Labour's regional development agencies (RDAs) were abolished. The RDAs had represented geographical areas that were too large, and had not proven particularly effective. But their replacements, local enterprise partnerships (LEPs), lack funding and have been unable to establish local coordination on training and product development. The Automotive Council, which had been critical in kickstarting recovery for the auto industry by focusing on industry-specific tech road maps, was repurposed to focus on the horizontal factors contributing to its global competitiveness. Finally, the government's majority stake in the Green Investment Bank was sold off.

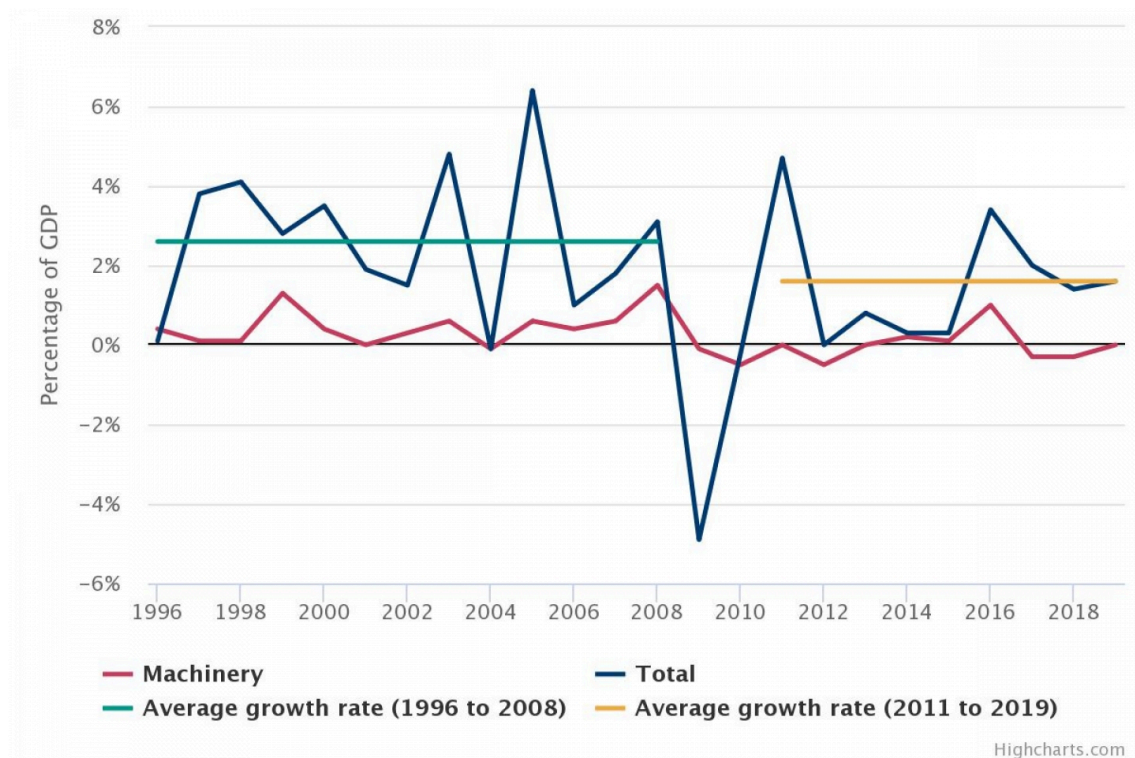
- **May and industrial strategy:** After stagnation under Cameron, the pendulum swung yet again towards interventionism with Greg Clark's 2017 Industrial Strategy white paper. This represents the apogee of industrial strategy in the current cycle. The white paper tried to take a long-term approach to transforming the wider framework conditions for industry. It incorporated both horizontal and vertical elements (with five cross-cutting foundations alongside ten Sector Deals). A structural approach was evident for the first time via four "Grand Challenges", which were broad missions designed to galvanise private-sector activity around stated long-term goals. In yet another sign of how far the Conservatives had moved from Thatcherism, May also hinted she would block foreign takeovers of "strategic" companies, citing Pfizer's bid for AstraZeneca. Although the bid was withdrawn, so May didn't have to act, this was a big departure from *laissez faire* for a Conservative Prime Minister.
- **Johnson: big plans, small tools:** But policy has dissolved into incoherence under Boris Johnson, who faced three seismic challenges – Brexit, Covid and net zero – for which a turbocharged industrial strategy initially looked tailor-made. While Johnson's first two business secretaries – Andrea Leadsom and Alok Sharma – were no one's idea of interventionists, there was an encouraging early declaration of intent with talk of a "roadmap" to update the 2017 strategy.⁵⁸ Also pointing in this direction was the government's heavy emphasis on technology and infrastructure. Likewise, the "levelling up" agenda strongly suggested a renewed, if not enhanced, role for industrial policy. Dominic Cummings's Advanced Research and Invention Agency (ARIA) survived his departure and has been set up with initial funding of £800 million. However, Kwasi Kwarteng's appointment as business secretary looks to signal the end of any kind of joined-up industrial strategy. Kwarteng understands the profound challenge of getting to net zero, but in other respects he is a *laissez faire* economic liberal in the mould of Javid and is one of the authors of "Britannia Unchained", a collection of vigorously pro-market essays.⁵⁹ The prospect of further structural intervention to set the UK economy on a higher growth path looks highly unlikely for the time being. This completely reverses the (admittedly erratic) direction of travel of industrial strategy of the past two decades.

Why is UK policy so inconsistent? To be fair, policy naturally shifts in response to changing problems and challenges. It is entirely legitimate that governments with different political mandates pursue different goals. The New Labour era was one of strong growth in GDP and productivity and increasing awareness of the importance of the knowledge economy. Things looked very different following the GFC, with a decade of stagnating productivity and mounting evidence of the seriousness of the climate crisis. Latterly, Brexit and Covid-19 have thrown an entirely different set of problems into the mix.

Nevertheless, the UK approach to industrial policy is notable for its inconsistency, institutional instability and subservience to ideology. The Institute for Government has argued that UK central government is barely able to think about, let alone manage, long-term change. Instead, creating and destroying organisations and institutions is seen as proof of progress.⁶⁰ Incoming business secretaries are determined to make their mark, usually by dismantling the achievements of their predecessor.⁶¹

This problem is widespread and not confined to industrial strategy. But it is peculiarly damaging to industrial strategy because of the importance of long-term credibility in policy commitments. The LSE’s 2017 Growth Commission was scathing about the regular rebranding or changing of business policies and departments – a long-standing problem in the UK policy environment – because of the uncertainty it created for investors.⁶² It pointed to the low level of fixed capital investment, particularly since the GFC, as a consequence (see Figure 7).

Figure 7 – Growth in UK net capital stock



Source: ONS

These government failings suggest that even a radical new industrial strategy would be prone to fail under the current policymaking regime. The problem, in other words, is political and governmental, as well as economic. Next, we make some suggestions for a new framework to deliver a long-term and credible industrial strategy.

Time for a New Approach to Industrial Strategy

As argued previously, the main problems with industrial strategy in the UK lie in its market-failure orientation and ad hoc, politicised delivery. Solving these requires a radically new approach to how intervention is conceived and applied, not just a new suite of policies. Our suggestion is to adopt elements of a “developmental state” approach to industrial strategy, accompanied by a new set of institutions to manage it. Here, we outline what this would look like.

Defining a Developmental-State Approach

In a nutshell, a developmental state deploys all the regulatory, coordinative and financial heft of the state to actively shape the structure of the economy in pursuit of broad goals such as improving economy-wide living standards, and decarbonising industry and society.

These are political and social goals that should rightly be set by politicians answering to the electorate. However, achieving them depends on policy also being receptive to what is going on in the market, which requires long-term certainty over policy. Setting effective industrial strategy in this context therefore requires stable institutions capable of coordinating disparate private actors (firms, financiers, workers, scientific researchers) in pursuit of economic and social goals. This represents a delicate balance between market and democratic accountability, with the market pushing towards efficiency and society steering policy in the direction of political goals like levelling up.

But UK industrial strategy arguably falls between two stools, because our policymaking structure fails to reconcile both types of accountability – market and political – as in many ways they are both too strong. On the one hand, hyperactive politicians are prone to chopping and changing policies according to shifting agendas; on the other, the dominant market-failure approach to policy undermines attempts to tackle major long-term economic and social challenges.

In reconciling these often competing agendas, a number of countries have deployed developmental-state strategies when an abrupt change of economic direction is required that entails a high degree of coordination across multiple policy areas. We could do this too. So, what is a developmental-state approach?

Developmental states are, of course, usually associated with developing economies – for example, post-war Asian industrialisation – with the classic instrument being Japan’s Ministry of International Trade and Industry (MITI).

But the model is also applicable to advanced economies when they face profound shocks that call for radical restructuring. In the late 1950s, Eisenhower's government pushed to rapidly develop defence and space technology, technical education and a system for knowledge diffusion by setting up DARPA and introducing strategic procurement policies when the US appeared to be losing the Cold War following Sputnik 1's successful launch. France's push to develop leadership in nuclear power and high-speed rail in the 1960s was organised by the powerful Commissariat Général du Plan (France's equivalent of MITI).

Germany's Energiewende policy to decarbonise industry involved significant infrastructure planning and market redesign, coordinated across several ministries. Germany also launched a wide-ranging National Reform Programme in response to the GFC to coordinate economic policy responses in labour markets, education and R&D. In the UK, these policy areas are generally handled separately by the relevant Whitehall departments, with little leeway to attempt a joined-up strategy.

Another interesting example is Singapore. The city-state is admired by a lot of Conservatives, although mostly for the wrong reasons. Far from the free-market paradise they imagine, the Singaporean government plays an extremely active part in steering the economy and setting the conditions in which the market can flourish. This is the case, for example, with the development of technology industries and active labour-market policies to improve human capital.

Some analysts argue the UK has itself pursued developmental-state activities for specific sectors, notably finance.⁶³ Commencing with the Big Bang of 1984, financial services were consciously nurtured as a source of export champions through a suite of regulatory, planning and competition policies conceived specifically with the interests of the sector in mind. In other words, while the tools used for this were market-failure policies, the Big Bang was motivated by the strategic concern that in an era of heightened global competition in financial services, the City risked becoming a backwater.⁶⁴ The Treasury later intervened during the GFC to protect the City by bailing out several big banks, while leaving the rest of the economy to fend for itself (although, intriguingly, the City has since been left in the lurch by Brexit).

A regional, rather than national or sectoral, example is George Osborne's (now floundering) "Northern Powerhouse" plan to rebalance the economy away from London. Whether or not the government realises it, implementing net zero will likely entail adopting important elements of a developmental state because of its pivotal role as market-maker.

Building a Developmental State

The overriding aim of a developmental state approach is building long-term policy credibility with the private sector to encourage firms to move into new markets and activities with higher social value. Key elements for providing this are: 1) high-level, strategic economic planning divorced from short-term

interference; and 2) forging extremely close links between business and the public agencies responsible for industrial strategy.

These are examined here, beginning with the overall policy mechanism, in terms of missions, strategy and policy instruments:

1. **Missions:**

- The broad goals, or missions, of industrial strategy should be set by ministers, along with an overall envelope for spending on industrial strategy. But direct political input should be confined to agreement on medium- to long-term objectives, rather than detailed micromanagement. The missions should be reassessed every five to seven years – as is the case with major defence reviews, for example – but there would also be scope for iterative, within-cycle adjustments to account for fast-moving technological change.
- A cross-departmental committee should be appointed to set the missions, as the Institute for Government and LSE have suggested. Input from across government will help to dilute Treasury dominance and ensure that areas like skills, transport, communities and education are given due consideration when setting industrial strategy.
- The missions should be properly defined and to some extent measurable. For example, a definable outcome of a mission to increase productivity growth by expanding high-value manufacturing capabilities could be to increase manufacturing exports by an agreed percentage; the mission to reach net zero could be assessed by progress in meeting the industrial decarbonisation goals set by the Climate Change Committee; a mission to level up could be judged according to success in attracting new investment to struggling areas.

2. **Strategy:**

- The approach to delivering on the missions should be determined by a statutorily independent Office for Industrial Strategy (OIS) set up for the purpose. The OIS would have a pivotal role in overseeing progress on the missions and would be given direct responsibility for public-private institutions involved in their delivery, such as Catapult centres and ARIA (see Implementation, below). It would also be tasked with forward scanning and monitoring promising emerging areas in global markets congruent with specific UK strengths, as well as functioning as an independent centre of expertise on productivity policy.
- Critical issues for the OIS are its independence and long-term mandate. The OIS can only build long-term credibility with business by demonstrating its autonomy from short-term interference and ability to commit to risky projects with long-term payoffs.
- Possible models for this are the Office for Budget Responsibility, which oversees fiscal policy, or the various antitrust and infrastructure bodies.⁶⁵ A better template – because of its direct policymaking role and guaranteed independence – would be the Bank of England’s Monetary Policy Committee. The MPC is statutorily independent vis à vis its interest-rate-setting remit and thus

cannot easily be “cancelled”, as the ISC was. It is this independence that gives the MPC its credibility in setting monetary policy, which we argue is also essential for delivering a credible industrial strategy.

- One potential problem here is that while the goals of monetary policy set for the MPC are fairly clear (low, stable inflation), those of industrial strategy are broader and more disparate. The remit of the OIS should therefore be defined as tightly as possible. There should be strict rules on offering help only to sectors and not individual firms, and by focusing on upstream interventions with significant downstream impacts – for example by promoting research into genome-sequencing or the “internet of things”. As the purpose of industrial strategy is to diversify the economy and generate new areas of comparative advantage, only new sectors or technologies should be promoted.⁶⁶ This approach could be accompanied by tough anti-trust laws and a specific remit to prevent market concentration when it harms competition.

The OIS should be based in Birmingham or Manchester, the cradle of the industrial revolution, not London. This will assist in the levelling-up agenda by keeping policymakers close to the UK’s industrial heartland.

3. **Implementation:**

- The OIS would be responsible for building and overseeing independent and properly resourced agencies with long-held mandates to handle particular strands of policy, for example in technology (ARIA, a revamped Automotive Council to promote the transition out of petrol-driven vehicles and more Catapult centres) and finance (the British Business Bank and Green Investment Bank, brought back into the public sector and assigned updated missions to green industry and spread high-productivity jobs and industries more equally).
- The OIS would also oversee local industrial strategies to allow for regional specialisation in pursuit of the missions. Its role would be to liaise with regional bodies such as city mayors and those local enterprise partnerships most suited to particular missions. New regional tiers for economic governance could, if necessary, be created – such as a new version of Labour’s RDAs or an extension of George Osborne’s Northern Powerhouse, and regional investment banks. The OIS could also help the Catapults to operate more on a hub-and-spoke model by linking up three or four regions specialising in specific areas (for example, the space centres in Cornwall, Highlands and Islands, and Oxfordshire) as well as smaller centres of expertise elsewhere.
- The OIS should have an advisory board (equivalent to the members of the MPC) comprising experts and businesspeople drawn from a range of industries and differently sized firms and appointed for several years. It is critically important that the advisory board comprises very high-calibre and influential people who are knowledgeable and well-connected in their area of expertise (as was the case with the ISC). Where training and labour-market issues are involved, representatives of trade unions and post-secondary education should also be included.
- A network of agents, similar to that of the Bank of England or the CBI, would help to keep the advisory board in touch with market developments and avoid capture by major firms.

- The large amounts of data already in use in many supply chains⁶⁷ could be utilised more effectively to monitor performance of policies and enable close communication between firms, sectoral representatives and policymakers.
- Knowledge-sharing should be put at the centre of operations of public institutions like ARIA and the British Business Bank to encourage dissemination of new technologies. (In the US, firms engaged in contracts with DARPA are obliged to share new technological advances with other researchers, which encourages collaboration.)⁶⁸

All this is obviously controversial. A developmental state inevitably has Soviet-sounding connotations of five-year plans for tractor production, bureaucracy and picking winners. This need not be the case, and there is no reason why such a development model cannot be pro-market. In any case, at the moment the UK simply lacks an effective enough centre to carry out strategic planning, but is not the free-market nirvana imagined in “Britannia Unchained” either. It is time to rethink how policy is devised and implemented. The next chapter, “New Missions for a Revamped Industrial Strategy”, looks at what this could mean in practice.

New Missions for a Revamped Industrial Strategy

The previous chapter outlined how policymaking should be reformed through the establishment of more independent institutions with a development focus. Assuming this could be accomplished, what are the main missions that a new industrial strategy could be tasked with?

We set out three missions below. They cover the most significant challenges facing the UK's economy and society. What distinguishes each mission is that they should:

- go beyond simply addressing market failures and foster structural change in the economy towards faster and better growth
- take a genuinely strategic approach to build sustainable solutions
- emphasise a cross-departmental, whole-government approach

1. **Raising productivity through innovation and technology diffusion:**

An important facet of the productivity agenda is developing and exploiting new technological opportunities to build strategic manufacturing capacity in “China-proof” growth sectors. The government grasps this, but is obsessed with expanding the technology frontier rather than the more mundane but equally important issue of knowledge dissemination.

Innovation is a key source of competitive advantage that allows countries to stay ahead of global competition. David Sainsbury, a former science minister, describes economic development as akin to climbing a ladder, where each rung represents increasingly complex organisational and technological capabilities. Firms and industries in advanced industrial economies need to keep ascending the ladder to stay ahead of lower-wage competitors in developing nations whose firms are moving inexorably up the value chain.⁶⁹

The government recognises the innovation challenge and wants to harness the UK's strong science base to develop “tech champions” to rival Google and produce world-beating technologies that UK firms can then exploit commercially. Boris Johnson has likened innovation to “moonshots” and called for transformational projects that galvanise industry around new inventions and force entrepreneurs to raise their game.⁷⁰

R&D spending is targeted to rise to 2.4 per cent of GDP by 2027. In addition, £800 million has been committed to a UK version of the US's DARPA, named the Advanced Research and Invention Agency (ARIA) and tasked with turning scientific inventions into commercial opportunities.

But while a focus on path-breaking inventions makes for heroic rhetoric, it's not necessarily the best strategy for the UK economy. A strong science base is a necessary, but not sufficient, condition for a successful innovation system. Historian of innovation David Edgerton argues that the UK has not been at the frontier of innovation for some time, so it is a delusion to think that a bit more R&D spending can turn the UK into Europe's Silicon Valley.⁷¹ The UK's R&D spend is surely too low. But there is no clear link between R&D spending and technological adoption by firms, which is essential if innovation is to be translated into prosperity.

Meanwhile, many of the products of ARIA, even if it is successful, are likely to be global public goods that benefit the UK only indirectly (DARPA's most famous invention is the internet, which can be used by anyone). ARIA's funding is far less (an initial £800 million over an unspecified period of time, compared with DARPA's \$3.5 billion a year,⁷² and the inherent riskiness of its mission will render it politically vulnerable to cancellation under the current short-termist approach. Similarly, the new Office for Science and Technology Strategy is tasked with turning the UK into a "global science superpower".⁷³ But this ignores the fact that, measured by research citations, the UK already does well in science but is far less successful at commercialising its knowledge base.

Instead of vanity symbols and abstract targets, policy should focus more on how technologies (including those developed elsewhere) are applied and exploited behind the frontier. Analyses of why some countries are more innovative than others suggest it is the dissemination of knowledge via networks, rather than necessarily where it is created, that is important. It is often the spillovers from R&D, such as provision of trained staff and solutions to technical problems, that are more commercially valuable than the direct production of knowledge.⁷⁴

For example, Robert Solow analysed the surge in economic growth in the USA during the latter part of the 1990s and identified wholesale trade, retail trade and financial services (the users rather than the generators of new technology) as the key sectors driving economic growth.⁷⁵ Where linkages between knowledge creation, dissemination and application are lacking, countries will be unable to make use of even home-grown innovations. Graphene may have been invented at Manchester University. But as the UK lacked the large-scale research labs to take it to the next stage, many of the benefits went elsewhere.⁷⁶

Unfortunately, although the UK ranks an impressive fourth overall in the Global Innovation Index (which unlike other measures captures innovation in the service sector), it sinks to 27th globally on "knowledge absorption" (ability to import knowledge) and 14th on "innovation linkages" (research collaboration and cluster development).⁷⁷

An Office for Industrial Strategy could help to turbocharge innovation by knitting together domestic networks of scientists and technicians with local entrepreneurs and investors. Linkages should also be

created between domestic innovators and foreign markets for exports, investment capital, and sources of technical skills and knowledge.

The UK already possesses institutions for knowledge exchange in the form of the Catapult research centres. They are a rare example of an institution being successfully borrowed from abroad (being based on the German Fraunhofer institutes) and transplanted into the UK, and have the potential to be very effective.⁷⁸ But a recent House of Lords inquiry criticised the government's inattention to the concept and said funding provided to the centres is far too low and time-limited, hampering their effectiveness.⁷⁹

This could be resolved by renewed commitment to the idea but, worryingly, there is not a single mention of Catapults in the Plan for Growth, although a government review is purportedly underway. The Catapults should be properly funded and integrated more closely with LEPs. Other initiatives, such as the Knowledge Exchange Framework, to strengthen links between business and academia, and the Challenge Funds, to direct resources to tackle broad themes like clean growth, are also operational. But these have also been too underfunded to crowd in much private-sector funding.⁸⁰

Moreover, there is little point in creating these institutions and building such linkages if they are prone to being cancelled or privatised by an incoming government or business secretary with a reputation to burnish. Instead, creation and maintenance of these sorts of bodies should be entirely depoliticised and placed under the auspices of the Office for Industrial Strategy.

2. Levelling up through new industries:

While levelling up is a key government priority, the methods chosen to tackle it (infrastructure and connectedness) will likely be only partially successful. More attention must be paid to issues of economic governance and fostering supply chains in new industries.

Regional disparities in productivity in the UK are among the highest in Europe, producing a highly uneven distribution of well-paying jobs and opportunities.⁸¹ The Brexit vote and underlying polarisation revealed by the 2019 General Election result underlined the political consequences of ignoring these inequalities. The extent of these divisions means economic and industrial policies are of increasing political salience, and the government has made levelling up a key part of its agenda.

However, this is a particularly intractable policy challenge that will not be solved by better infrastructure and connectivity alone, the main thrust of current policy (important though these are). The failure to level up has a number of causes, including the lack of any clear long-term development strategy for lagging regions; inadequate resources devoted to the task; lack of consistency and continuity of the institutions for delivering regional industrial policy; and executive overcentralisation.

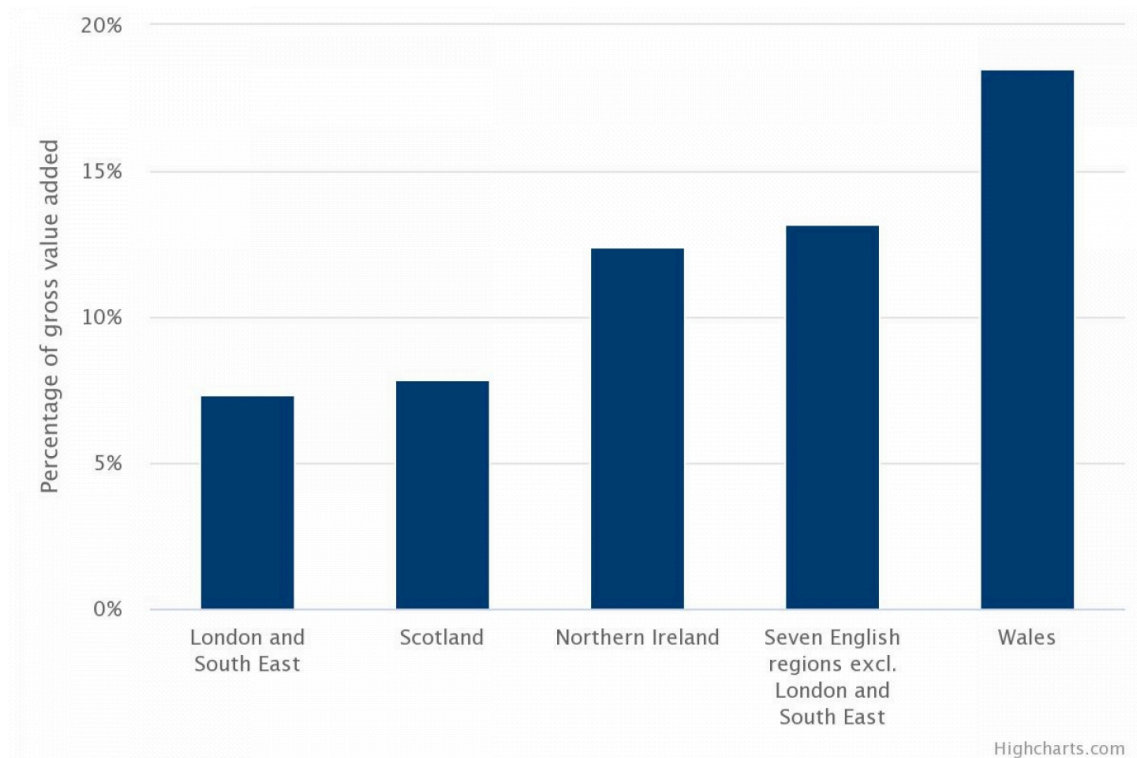
The past decade has seen a plethora of interventions – from the Local Growth Fund, to City Deals, to growth deals – that have been implemented in an ad hoc way, lacking strategic coherence.⁸² Swingeing

cuts to local authority budgets have also contributed to feelings in many regions of having been left behind. This has been compounded by the unequal concentration of investment spending, with London receiving more than twice as much capital investment per person than the East Midlands.⁸³

The ISC had criticised the incoherent approach to regional policy before its abolition, arguing that “scale and longevity” are essential for delivering industrial policy at a regional level.⁸⁴ But it is difficult to see how these can be achieved through the current policy framework.

Recent speeches about spreading public R&D spending more widely and proposals to rewrite the Treasury’s Green Book suggest a genuine desire to spread high-value economic activity more evenly. However, the Treasury’s narrow focus on productivity has naturally led to a focus on frontier technologies and advanced manufacturing. By one estimate, cash to be disbursed through the Industrial Strategy Challenge Fund will benefit sectors accounting for little more than 1 per cent of the whole economy (by employment) and 10 per cent of UK manufacturing GVA.⁸⁵ Most of the firms in these sectors are located in the Oxford-Cambridge-London “Golden Triangle” even though the bulk of manufacturing activity is located in other parts of the country (see Figure 8).

Figure 8 – Exports of manufactured goods as percentage of gross value added



Source: OECD

There is therefore a strong case for more devolution and a reintroduction of economic and industrial institutions at the regional level. The 2017 Industrial Strategy addressed the importance of “place”, but

the specifics were few and it is not clear how the Plan for Growth will change this. A more structural set of industrial policies – focused on building supply chains in sectors such as EVs and car batteries, wind turbines and heat pumps – could be coordinated through the Office for Industrial Strategy, in conjunction with regional economic institutions, to help to spread growth around the country.

3. Decarbonisation and the Green Industrial Revolution:

The drive to decarbonise industry is an example of where the government has the right goals but lacks the policy tools to achieve them. A more joined-up and demand-led approach is needed.

It is certainly hard to fault the government's ambition in setting some of the most stringent targets for decarbonisation anywhere in the world. But this ambition is let down by the lack of a proper medium-term plan to achieve them. Moreover, as many of the policies proposed rely on a market-failure framework – namely, the positive externalities of R&D and negative externalities of the inability of the market to price carbon properly – these look unambitious and unconvincing.

But even where the government tries to take a more strategic approach, it is let down by unclear goals and an obsession with the development of frontier technologies such as hydrogen. This ignores the fact that decarbonisation is not only about new technology, but also about better use of the technology we already have, as well as the infrastructural requirements and market design of moving to net zero.

What is needed, instead, is a much more strategic approach to incentivise the private sector to match the targets with investment commitments, as there is a particular problem of ex ante uncertainty with green projects. ⁸⁶

The Hydrogen Strategy, part of the government's ten-point plan for a Green Industrial Revolution published in November 2020, is an example of bold ambition let down by a simplistic approach. It consists of a target (5GW of low-carbon hydrogen production capacity by 2030) and some cash (up to £500 million for a new “hydrogen neighbourhood” by 2023, and a hydrogen village by 2025).

But, as with other areas of policy, the Hydrogen Strategy lacks a clear, investable business model with a demand-side element to it to stimulate innovation and encourage firms to make the commitment to an unproven technology. This means simultaneously attending to financing, invention, trialling, manufacture and distribution. Subsidies by themselves are unlikely to be enough to overcome this uncertainty. Instead, the government needs to lay out a proper end-to-end plan for how the hydrogen economy will work. It should also use the procurement lever by signalling its intention to act as a major customer for hydrogen energy.

The hydrogen economy no doubt appeals to the government because it is an exotic-sounding technology to throw money at. But it is a market with strong competition and limited export potential as there is only limited tradeability, according to recent analysis commissioned by BEIS that identified much

greater potential in transport, offshore wind and nuclear fission.⁸⁷ A strong, independent OIS would be in a position to ask difficult questions about the government's approach and the long-term prospects that this technology provides for the UK.

Many analysts argue the UK would also benefit more from a horizontal focus on the infrastructural requirements of moving to net zero, such as energy efficiency and low-carbon heating, complemented by vertical strategies for areas of industry with clear growth potential.

Developing a low-carbon energy system and smart grids could create a lot of green jobs, boost R&D activity in the sector and provide export opportunities for technology and know-how. For example, heat pumps will play a big part in meeting the government's climate goals.⁸⁸ With potentially 30 to 40 million heat pumps needing to be installed in UK homes in order to meet medium-term net zero targets for domestic power, there is a huge market opportunity here for UK manufacturers.

The drawback is that the UK does not currently enjoy a comparative advantage in technology for heat pumps, with UK technology lagging behind that of competitors in the US, China and the EU. But, with such a significant potential market opportunity available – both domestic and, potentially, for export – there is a strong argument for intervention to help create comparative advantage.

This could be achieved by boosting the R&D effort in the sector and incentivising more UK firms to enter the market to achieve scale. Again, the government is in a powerful position to use public procurement levers to make this an attractive proposition for UK firms. It could, for example, pledge to source a certain proportion of heat pumps from local producers while opening up the rest of the market to competition in order to keep prices low.

However, there are targets galore but no real plan. Conspicuously lacking is a proper end-to-end business model for how the public and private sectors need to work together to re-equip the energy grid. The success of wind power, discussed earlier, shows it is not just about the initial investment but about market design and pull-through. Otherwise, policymakers risk creating new markets that are satisfied by imports when they could have stimulated new domestic industries.

A more strategic approach – identifying areas where the government can help industry to build capacity, acting as market-maker if necessary, and building the required institutions – is necessary and could be coordinated through the OIS.

Conclusion

This report argues that the government made a mistake in abandoning the industrial strategy of its predecessor. Its replacement, the Plan for Growth, has critical failings and the move simply showcased its ad hoc, politicised and fundamentally incoherent approach to industrial development.

This conclusion may strike some as obtuse, given the vast sums of money the government is teeing up to spend on things like improving infrastructure and raising the share of GDP spent on R&D. These objectives are laudable in themselves – the UK has underspent in these areas for years and this has undermined the economy. Surely, therefore, reversing this neglect is the key to unlocking the country's economic potential?

The problem is that there is no underlying strategy behind this. The spending commitments are a series of big bets that public investment will crowd in private investment. But as this report has argued, these bets are prone to fail if firms neglect to respond because they don't trust the government's long-term commitment. In a modern mixed-market economy, where the state has a central role in regulating the market, government policy is itself an important potential source of uncertainty. The constant chopping and changing of industrial strategy over several decades undermines the credibility of policy commitments – even those backed up by large amounts of money.

All this is compounded by a deep institutional bias towards a limited market-failure approach to industrial strategy. Advanced economies are, of course, replete with market failures, such as inadequate training and lower than optimal R&D by firms, and these must be tackled. But the challenges the UK faces demand a much more ambitious and coordinated approach than is allowed for by a market-failure approach on its own.

However, this needs to be accompanied by institutional change at the heart of policymaking capable of building long-term credibility. Without this, the private sector will fail to respond to the incentives set by government. This requires the adoption of a more developmental approach to industrial strategy, as well as the creation of new – and genuinely independent – institutions to deliver it, such as an Office for Industrial Strategy.

The stakes could not be higher, and the timing hardly more opportune for an overhaul of the policymaking structure. Governments of other advanced countries are busy devising ambitious industrial strategies to position their economies for the future as geopolitical tensions rise.⁸⁹ This will engender shifts in global supply chains upon which the UK depends. We have to respond with a similarly forward-looking industrial strategy or be left behind.

Equally, raising employment and productivity in the growth-generating sectors of the economy is not just economically advantageous. It is a domestic political necessity right now as we recover from the pandemic. Dani Rodrik, a Harvard economist, argues that the provision of good, plentiful jobs must be the number-one priority of governments everywhere, post-pandemic, as labour markets face looming disruption from new technologies.⁹⁰

Industrial strategy is a critically important tool in tackling these issues. Andy Haldane, the Bank of England's outgoing chief economist, has defined economic success as being about providing "good jobs, at a good wage, everywhere."⁹¹ By generating the productive, high-paying jobs that people want and spreading these more widely across the country than they are now, political arguments for populism that thrive on perceptions of economic unfairness will be undermined.

A long-term industrial strategy is essential for this. But unless it is accompanied by structural change in the economy and government, it is unlikely to take root and deliver the change we need.

Charts created with Highcharts unless otherwise credited.

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