More Lagging Than Leading: pro-productivity policies in the UK since the 1950s

Authors:
Tom Kelsey
National Institute of Economic and Social Research

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Authors' contacts
thomas.kelsey@kcl.ac.uk

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The Productivity Institute is headquartered at Alliance Manchester Business School, The University of Manchester, Booth Street West, Manchester, M15 6PB. More information can be found on The Productivity Institute's website. Contact us at theproductivityinstitute@manchester.ac.uk

Abstract

This paper provides a historical and analytical overview of the United Kingdom's productivity performance and the policies aimed at boosting it from the 1950s to the present day. While most advanced economies have experienced a productivity slowdown since the 2008 financial crisis, the UK's performance has been exceptionally poor, making it a critical case study. The paper examines four primary policy areas: trade policy, labour market reform, education and industrial strategy. While European economic integration has been a significant driver of productivity growth, Brexit has recently reversed it. The expansion of higher education yielded significant benefits, though the UK continues to suffer from a lack of technical and vocational training. Industrial intervention has been notably unsuccessful in the UK, with the government backing expensive programmes that either did not sell or even reach the production stage. The Anglo-French supersonic jet Concorde and British-designed nuclear reactors are key examples. In a forward look, the paper discussed challenges such as an ageing population and climate change, ultimately arguing that radical, bottom-up devolution is needed to successfully embed pro-productivity policies.

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1. Introduction

All advanced economies have suffered from a productivity slowdown since the Great Financial Crisis of 2008/9, but the UK has seen a particularly poor productivity performance. Nicholas Crafts and Terence C. Mills (2020) argued that this productivity slowdown is unprecedented in the last 250 years. This alone makes it a striking case to analyse. This paper first reviews the productivity trends in the UK from the 1950s to the present (Section 2). Section 3 then provides a brief analysis of the pro-productivity policies that successive UK governments undertook in this period and analyses their success, with a focus on trade policy, labour market reform, education policy, and industrial strategy. These areas are based on the typology of pro-productivity policies outlined by Van Ark, De Vries and Pilat (Van Ark et al., 2023). The final section provides a forward look, examining the prospects for productivity growth among the challenges and opportunities ahead.

The paper finds a very mixed picture in terms of what pro-productivity policies have worked in Britain. For example, the economic integration with Europe, which has led to productivity improvements in the UK, has been reversed by the 2016 Brexit referendum (Section 3.1). The Thatcher revolution during the 1980s transformed UK labour markets, drastically reducing the power of the trade unions, with probable productivity gains, but leaving a legacy of a low-investment economy that damaged productivity in the long run (Section 3.2). Meanwhile, while there is much evidence to suggest that education policy, especially the expansion of higher education, has benefited productivity growth, the lack of a well-institutionalised system for technical education has hampered the UK economy (Section 3.3). Finally, a specific focus of this paper is on industrial strategy in post-war Britain. It shows that the British state often backed wrong-headed programmes, such as the Anglo-French supersonic jet, Concorde and British-designed nuclear reactors (Section 3.4). In terms of the prospects for productivity growth, there are significant challenges ahead, with issues such as an ageing society. In addition, the promise of technologies such as Artificial Intelligence (AI) is no silver bullet (Section 4). One core conclusion is that the nature of the UK state itself needs to change to more easily embed pro-productivity policies, as radical devolution would help to reshape Britain's economy.

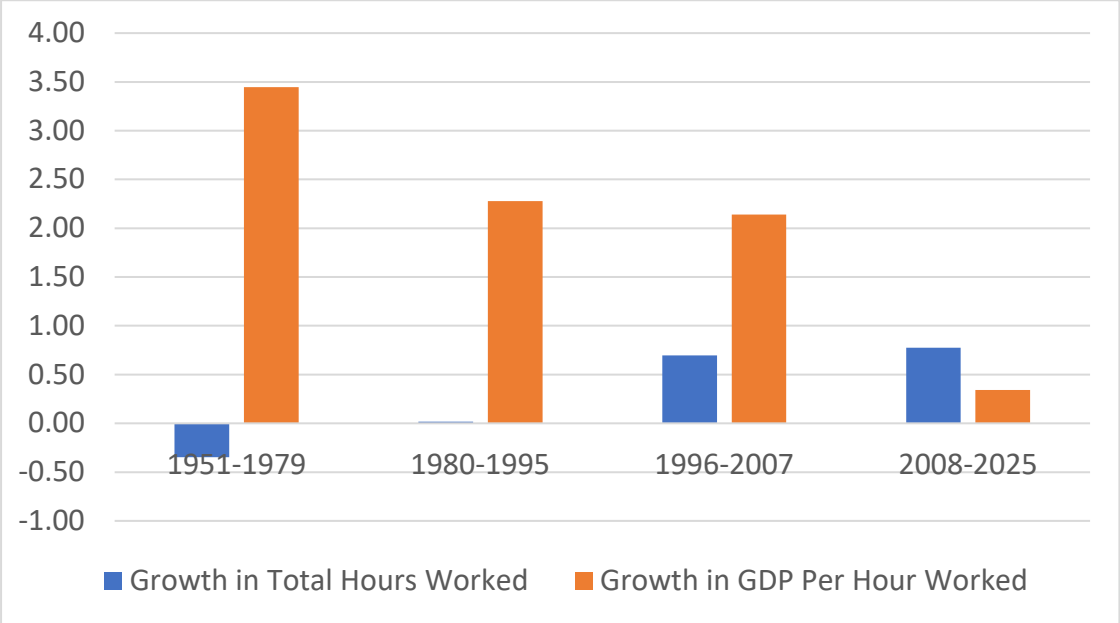
2. Productivity trends in the UK from the 1950s to the present

Figure 1 demonstrates the productivity slowdown since 2008, where growth in GDP per hour worked has been notably slower in recent history. The average annual growth in GDP per hour worked between 1951 and 1979 was 3.45 per cent, which compares with 0.34 per cent between 2008 and 2025.

In the summer of 2026, the Office for National Statistics (ONS) revised its estimates of jobs and hours worked—the labour inputs used to calculate productivity—with revisions extending back to 1997. In response to concerns about the quality of Labour Force Survey data, the ONS introduced the 'component' method for estimating jobs and total hours worked. The revisions imply slightly slower labour productivity growth in the late 1990s and early 2000s, but somewhat stronger growth during the 2010s, reflecting weaker growth in hours worked (Office for National Statistics, 2026a). This brings the UK's productivity slowdown since the global financial crisis more closely into line with that of other advanced economies. The

revised estimates also show a stronger rise in measured labour productivity during the early stages of the COVID-19 pandemic, followed by a sharper post-pandemic slowdown. However, estimates for 2025 and 2026 based on RTI data suggest a renewed recovery, even though the jury will be out on whether this will turn out to be a sustained trend improvement (Office for National Statistics, 2026b).

Figure 1: Growth in Total Hours Worked and Growth in GDP Per Hour Worked



Source: The Conference Board, Total Economy Database, 2025.

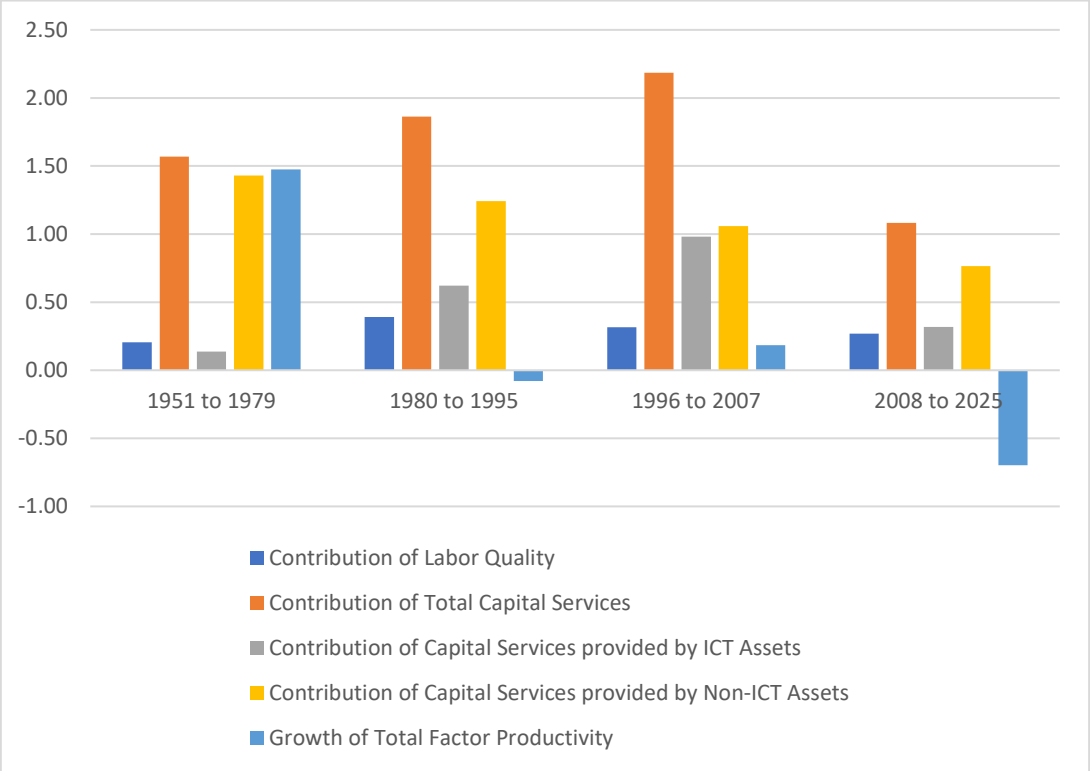
Figure 2 also demonstrates the scale of the UK's productivity slowdown. It is a decomposition of GDP growth into labour quality, capital deepening, and total factor productivity. The average growth of total factor productivity between 2008 and 2025 was a retraction of 0.7 per cent, while between 1951 and 1979, it grew 1.47 per cent. The contribution of capital deepening to GDP growth halved between the periods 1996 to 2007 and 2008 to 2025, from 2.19 per cent to 1.08 per cent, with the contribution of ICT assets particularly falling from 0.98 per cent to 0.32 per cent.

As is well documented, the post-war period saw other European countries catch up and take over the United Kingdom in terms of both productivity and economic growth (Broadberry and Crafts, 2003). The late 1990s and early 2000s were a brief moment when the UK was catching up with its European counterparts but, as mentioned in the paragraph above, depending on the precise productivity measure, productivity growth since the Global Financial Crisis has weakened more than most European countries as well as the Euro Area average.

Recent research suggests that, in terms of sectors, manufacturing, information and communication, and finance and professional/scientific/technical services in the UK have seen an especially big slowdown when compared to other advanced economies (Van Reenen and Yang, 2024). Coyle and Mei (2023) went into further detail, arguing that the UK manufacturing productivity slowdown occurred mainly in transport equipment and pharmaceuticals, while for ICT it was mainly situated in computer software and

telecommunications in terms of ICT. They noted the irony that these sectors are often considered to be UK economic success stories.

Figure 2: Decomposition of labour productivity growth into contributions of labour quality, capital deepening and total factor productivity

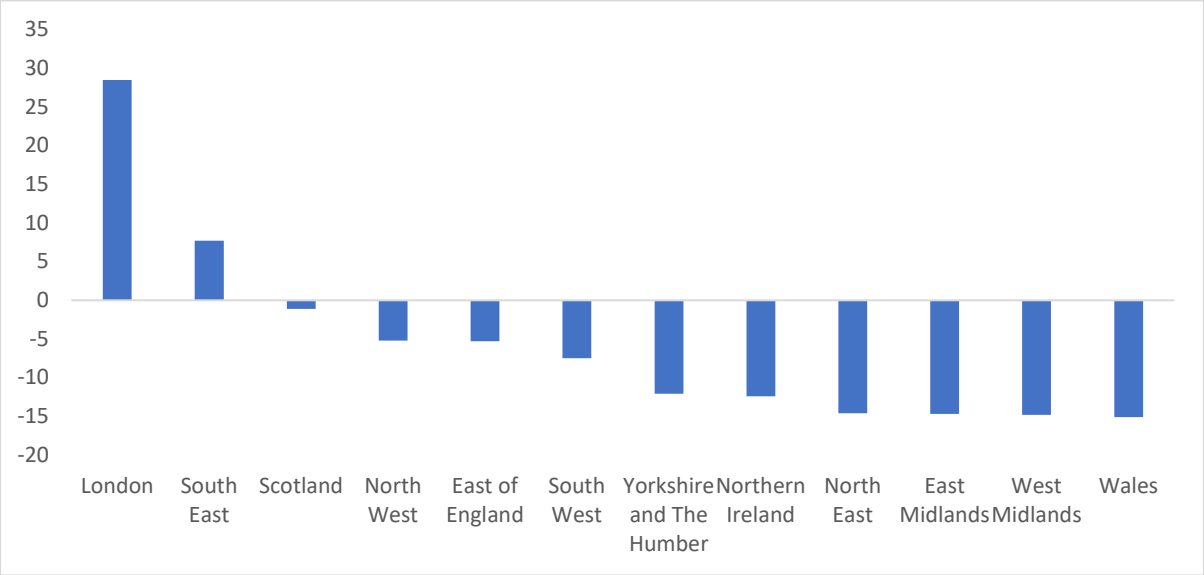


Source: The Conference Board, Total Economy Database, 2025.

The UK also suffers from deep regional disparities in productivity rates, which are more entrenched than in comparable advanced economies. While productivity is generally lower in the UK, London is one of the most productive cities in Europe. As Figure 3 shows, in 2023, London had a 28.5 per cent higher rate of output per hour worked relative to the UK average. It has been estimated that if Britain's core cities outside of London had grown at the same pace as London between 1992 and 2015, this would have added an extra £120 billion to the UK economy (Productivity Commission, 2022). Moreover, Western European cities have generally higher levels of productivity when compared to the UK, meaning that second-tier cities in the UK lag behind these comparable cities.

Those seeking to explain why the UK's productivity growth has slowed relative to comparable countries have suggested that chronic low investment is a core problem. Van Reenen and Yang (2024) estimated that in 2019, around half the productivity gap – when comparing the UK with the US, France and Germany – could be explained by lower tangible and intangible capital. Van Ark and O'Mahony (2023) suggested there were three core reasons why the UK had suffered from a particularly intense slowdown in productivity growth. In addition to low investment, they pointed towards weak diffusion mechanisms to spread innovations across the economy, alongside a fragmented policy landscape that lacks effective, joined-up policies.

Figure 3: Output per hour worked at ITL1 level relative to UK average (2023)



Source: Office for National Statistics (2025), "Regional and subregional labour productivity, UK, 2023", Census 2021, Office for National Statistics, https://www.ons.gov.uk/economy/economicoutputandproductivity/productivitymeasures/bulletins/regionalandsubregionallabourproductivityuk/2023.

3. An Analysis of Pro-Productivity Policies in the UK

The following four sections provide an analytical overview of pro-productivity policies in the UK since the 1950s, with a particular focus on labour market reform, education policy, trade policy, and industrial strategy. Each of these sections concludes by reflecting on how effective policies in these areas were at improving productivity.[1] The approach followed here is modelled on the typology of pro-productivity policies laid out by Van Ark et al. (2023). They identified four types of pro-productivity polices:

- Policies aimed at the accumulation of the factors of production – The accumulation of the factors of production, including tangible, intangible and human and natural capital, have a profound impact on economic growth. This incorporates investment, education and skills policies along with energy, environmental and resources policies.
- Policies aimed at markets and market functioning – Governments have tried through various reforms to improve how markets function for growth and productivity. This includes regulation and competition policies, as well as labour market policies and regulations.
- Policies aimed at internationalisation – Internationalisation can enhance productivity in several ways, especially through enabling economies of scale, and enhancing competition. This entails trade policies, policies to attract foreign direct investment, as well as migration policies.

[1] A version of the summary of industrial strategy policies and their evaluation first appeared in Kelsey (2023a).

- Policies aimed at technological and structural change – Technology is an important driver of productivity, especially total factor productivity growth, and the state can work to direct and foster technological change, e.g. through investment. Policies in this area include innovation and technology policies as well as industrial strategies.

This section analyses a selected set of policies drawn from this typology. These policies have been chosen both for their importance in the UK context and because they are supported by a well-developed secondary literature. With respect to internationalisation, Section 3.1 explores economic integration with Europe including the effects of Brexit. Section 3.2 focuses on labour market reforms as a key area in improving market performance of the sector. Within the category of factor accumulation, Section 3.3 examines the evolution of education policy in shaping the UK's human capital. Finally, Section 3.4 considers industrial strategy in post-war Britain as a key policy approach to modernising the structure of the economy.

Overall, the evidence presented in this section broadly supports the main conclusions by Crafts (2017) on what accounts for the UK's slow productivity growth between 1950 and 1973. In particular, our analysis aligns with Crafts' observations that delayed entry into the European Economic Community (EEC) brought protectionism that damaged British productivity; that entrenched union power before the Thatcher era blocked technological improvements; that a lack of vocational training held the UK back; and that 'high technology' investment in areas such as civil aviation and nuclear power was remarkably unsuccessful. One area where Crafts may be overly critical, however, concerns the performance of the nationalised industries (discussed further in Section 3.4).

3.1 European integration and Brexit

1950s to 1970s

Throughout the post-war decades, many saw a closer economic relationship with Europe as key to making Britain competitive. An older generation of scholarship and commentary berated the UK for not joining the European Economic Community (EEC) when it was established in 1957. The argument was made that Britain was too focused on maintaining its imperial status and preserving a close relationship with the United States to recognise that both its political and economic future was best served through a closer relationship with Europe (Daddow, 2002). From the 2000s, a more sympathetic interpretation of Britain's decision not to join the EEC at the outset has evolved. Milward (2002) argued that Britain had discrete advantages in the immediate post-war period that went beyond the borders of Europe, including a preferential system of trade with the Commonwealth, which it made sense to attempt to maintain. Indeed, during the 1950s, the Commonwealth and empire accounted for 50 per cent of British trade, a higher percentage than during the interwar and Edwardian years (Edgerton, 2018). Moreover, as Ludlow (2018) argued, Britain saw itself as in a different league both economically and politically when compared to France, West Germany and Italy. The figures for GDP in Table 1 capture that Britain, immediately after the war was still a significantly larger economy than its Western European neighbours. Ludlow also pointed out that Britain was not involved in the post-war European trade boom to the

same extent as other nations in Western Europe, whose trade with each other was rising dramatically in the 1950s (Ludlow, 2018).

These economic facts, however, would quickly change. As Table 1 demonstrates, France, West Germany and Italy would grow far more quickly than the UK throughout the 1950s and 1960s. By 1960, key officials were arguing that there were clear economic advantages to joining the EEC. The Conservative Prime Minister Harold Macmillan established a civil service committee to look into the advantages and disadvantages of joining, which Sir Frank Lee chaired, who was the Joint Permanent Secretary of the Treasury. He made clear that it would be better for the UK, not least in terms of productivity, to join: 'We should gain a great deal from larger scale production, specialisation, higher efficiency resulting from keener competition and the more rapid spread of technical skills and new developments. All this we should miss - to the detriment of our industry - if we remained outside' (cited in Ludlow, 2018). It was even claimed that joining Europe would benefit Britain's relationship with the Commonwealth, since only with a strong economy would it be able to exert global leadership (Milward, 2002). The British economy also became more interconnected with Western Europe, and by 1962, more exports were going to the EEC than to the Commonwealth (Ludlow, 2018). There were also important geo-political arguments in favour of joining, with Britain concerned that it could lose its influence in Washington if it remained outside of the EEC.

Table 1: Comparative gross domestic product figures for 1949 and 1969

1949		
Country	1990 GKUS$	
	GDP	GDP per capita
UK	349,955	6956
France	205,174	4946
West Germany	223,178	3282
Italy	152,563	3265
1969		
Country	1990 GKUS$	
	GDP	GDP per capita
UK	585,207	10,552
France	560,280	10,886
West Germany	805,410	10,440
Italy	510,051	9566

Source: Ludlow (2018)

The 1960s would see two failed attempts of Britain to join the EEC. The Conservatives first started formal negotiations in 1961. In line with the arguments of his officials, Harold Macmillan believed that if Britain were to stay out of the EEC it would have a weaker economy, which would undermine its geo-political influence, not least with the United States (Parr, 2006). Yet, while Lee had advised to join the EEC without asking for special terms, the Macmillan government sought to preserve imports of food from the Commonwealth, which was part of the reason why the French President de Gaulle vetoed Britain's application

(Ludlow, 1997). The Labour government would try again in 1967, and significantly, their application was not conditional on certain terms. Writing on the strategy behind Labour's embrace of the EEC, Helen Parr argued that after the sterling crisis of 1967, Labour's plans for modernising the economy had been undermined, and membership of the EEC became the key economic programme where the National Plan had failed (Parr, 2006). In line with the direction of travel within Labour's Mintech, this was an embrace of free markets away from economic planning. In fact, the establishment of a European Technological Community was an important part of Labour's argument for joining the EEC, hoping to entice its European allies through its scientific and technological strengths and arguing that Europe would only be able to compete with the United States through collaboration. Importantly, it was emphasised that this endeavour would only support programmes that were viable in commercial terms (Young, 2002). More generally, joining the EEC became a key economic programme for Labour. Admittedly, there were concerns about the short-term economic impacts of joining the EEC among the Labour Cabinet, especially on the balance of payments and increased food prices. Yet, there was an acceptance that in the long-term, membership of the EEC would benefit the UK economy. As Chancellor of the Exchequer, James Callaghan argued that productivity would increase through the economics of scale that came with a larger market. Harold Wilson predicted that there would be more industrial investment, which would bring higher growth (Parr, 2006). De Gaulle would once again veto Britain's application, for fear that Britain would act as a 'Trojan Horse' for the United States and because of a sense that Britain's economy was incompatible with that of the EEC, dependent as it was on imported food from the Commonwealth.

By the time he became Prime Minister in 1970, the Conservative Edward Heath was closely associated with European integration. Macmillan had appointed Heath Lord Privy Seal in 1960 and put him in charge of the negotiations to enter the EEC, and despite the failure of the bid, Heath was seen to have been a success in the role. Heath was convinced that if the UK was to be a competitive economy, it needed to enter the EEC and from a position of economic strength, there would come more geo-political influence (Young, 1996). There were concerns about the financial impact of joining the EEC. The Common Agricultural Policy (CAP) was seen a particular issue. Britain had a relatively small agricultural sector, and so would end up paying in far more than it would receive. However, it was believed that the 'dynamic gains of membership' would offset the direct costs (Young, 1996). On its third attempt, Britain successfully negotiated membership of the EEC and officially entered on 1 January 1973. Partly due to reasons of party unity, the Labour manifesto in 1974 promised to renegotiate the terms of entry, followed by a referendum or general election. Wilson won the election and negotiated concessions, particularly on how much the UK contributed to the EEC budget and to the CAP, before putting British membership of the EEC to a referendum in 1975. Once again, a key theme of the debate was the interlinking of economic prosperity with national security, the argument that only membership of the EEC would create a competitive economy, which would serve as the basis for a robust defence (Saunders, 2018). Those against membership of the EEC, particularly those on the left, argued that Britain's manufacturing industry would collapse due to imported goods from Europe, essentially suggesting that competitive pressures would fatally damage the UK economy and lead to high levels of unemployment. With a majority of 67.2 per cent against 32.8 per cent, the British public voted to stay in the EEC, which was a notable defeat for the economic nationalism of the post-war decades (Edgerton, 2018).

1980s to 1990s

Towards the end of her premiership and certainly after she left office, Margaret Thatcher became strongly associated with Euroscepticism. It has even been argued that British Conservatism might not have developed such animosity towards the European Union (EU) if it were for Thatcher's criticisms (Fontana and Parsons, 2015). She attacked the moves towards a federal Europe, especially the concept of a 'social Europe' and the moves towards monetary union, as an erosion of national sovereignty. Yet, for much of her time as Prime Minister, Thatcher was an important advocate of Europe integration, especially in economic terms. In a review of her relationship with the EU, David Ramiro Troitiño put the point bluntly: 'Margaret Thatcher has been one of the most influential politicians in the European building process' (Troitiño, 2009). Thatcher was an influential supporter of the Single Market, being clear that its creation would boost productivity and economic growth of Britain and its European allies (Wall, 2022). Once more, the claims for European unity were cast in terms of the Cold War, seeing the prosperity and security of Europe as part of the wider defence of the West (Vinen, 2012). Thatcher's 'Bruges Speech' given to the College of Europe in Belgium in 1988 is famous for its hostility towards European federalisation. Yet, the speech was clearly about reforming the EEC from the inside. Thatcher put this point clearly: 'Britain does not dream of some cosy, isolated existence on the fringes of the European Community. Our destiny is in Europe, as part of the Community... The European Community is a practical means by which Europe can ensure the future prosperity and security of its people in a world in which there are many other powerful nations and groups of nations' (Thatcher, 1988). Thatcher argued that enterprise and free markets were crucial to the success of the EEC, saying this was the only way in which they could compete with powers such as the United States and Japan. Where Thatcher differed from advocates of Europe within her own Cabinet, was in thinking that the Single Market needed new legal and administrative powers to oversee it, which created a new ideological dividing line within the Conservative Party (Gamble, 2012). Concerns about national sovereignty would come to trump the economic benefits of being in the EU, a politics that helped to lead to Britain's departure from the bloc.

2000s to 2020s

While there has been Eurosceptic sentiment in Britain since its accession to the EEC, the economic and political arguments in favour of Brexit gained momentum since the early 2010s. The three economic main claims were that Britain would be able to make advantageous trade deals with countries outside of the EU, who were growing more quickly than the EU itself; that it would cut Britain off from EU regulation that was hampering its economic growth; and it would no longer have to pay a contribution to the EU budget (Lilico, 2016). However, for the main architects of Brexit, the chief arguments in its favour were about sovereignty, not the economy. For instance, when making the case for Brexit in the *Telegraph* during the 2016 referendum debate, Boris Johnson did briefly outline an economic argument. He discussed Britain's comparative advantages in areas such as financial services and biosciences and insisted: 'Now is the time to spearhead the success of these products and services not just in Europe, but in growth markets beyond'. But the majority of his article focused on criticising the federalisation of Europe, and the lack of democratic control in Britain. 'The fundamental problem remains: that they have an ideal that we do not share. They want to create a truly

federal union, e pluribus unum, when most British people do not' (Johnson, 2016). Vote Leave would go on to win the referendum by a slim majority of 51.89 per cent. David Cameron, who had campaigned to remain in the EU after renegotiating the terms of entry, resigned as Prime Minister. Theresa May promised to take the UK out of the Single Market, though she negotiated a relatively close trade deal with the EU that would have avoided regulatory barriers on goods trade. However, she failed to get it through Parliament (Dhingra and Sampson, 2022). Boris Johnson, who replaced May as Prime Minister, obtained a more distant deal. The Trade and Cooperation Agreement (TCA) between the EU and UK is a comprehensive free trade deal that ensures no tariffs or quotas, but it reintroduced a customs and regulatory border between the UK and EU (Dhingra and Sampson, 2022). The rapprochement initiated under Starmer following the May 2025 UK–EU summit, and the prospect of a more ambitious approach under Burnham, could mitigate some of Brexit's productivity costs by reducing trade and regulatory barriers, although the extent of these gains will depend on the agreements ultimately negotiated and implemented.

Evaluating trade policy in post-war Britain

There is compelling evidence to suggest that European integration was beneficial to the UK economy, and particularly good for productivity. Badinger (2005) examined fifteen EU member states between 1950 and 2000, and suggested that without economic integration, the EU would be around one-fifth lower in terms of GDP per capita. Badinger suggested that the UK had seen a 25.5 per cent increase in GDP per capita as a result of European integration (Badinger, 2005). Crafts (2016) argued that the increased competition that resulted from membership of the EU improved productivity in Britain, which had been hampered by protectionist measures, and that Britain's relative economic decline was reversed through its integration with Europe. Broadberry and Crafts (2010) pointed out that Britain was far behind West Germany and France in real GDP per person in 1979 but had overtaken them by 2007. There was a particularly striking growth in the productivity of manufacturing in the 1980s, as employment in the sector radically declined while output increased. They also argued that the integration into the European economy allowed for economies of scale and standardisation. Many studies also point to the economic damage that Brexit has done. In their review of the evidence about the economic impact of Brexit, Dhingra and Sampson (2022) suggest that by 2019, even before Britain formally left the EU, the UK economy was between 2 and 3 per cent smaller than if it had remained. The Office for Budget Responsibility (2024) predicted that the costly non-tariff barriers that would reduce competition in trade with the EU would lower productivity by 4 per cent in the long run. A study by Millard et al. (2024) suggested a similar impact (Millard et al., 2024), while Bloom et al. (2025) predicted that by 2025, Brexit had caused a 3 to 4 per cent reduction in productivity.

3.2 Labour market reforms

1950s to 1970s

Low levels of unemployment and an economy growing relatively quickly put organised labour in a powerful position from the 1950s to the late 1970s, which worked to define the UK labour

market. The peak of union membership in Britain was in 1979, with over 13 million members, which was over half of the workforce. This was high compared to other advanced economies at this time. For instance, only 25 per cent of workers in the United States were unionised. By the late 1970s, collective bargaining covered over 70 per cent of the UK workforce, and over five million workers were in closed shops, where union membership was mandatory if workers wanted to have a job (Shackleton, 1998). Shop stewards, who were elected to represent workers in a specific workplace, were responsible for the vast majority of strikes rather than union leaders. Over 90 per cent of strikes between 1960 and 1979 started unofficially (Shackleton, 1998). Throughout the post-war decades, there was a crucial rise in white-collar workers in trade unions. By 1979, 44 per cent of white-collar workers were in trade unions, and they made up 40 per cent of all trade union members. There was also an increase in female members of trade unions, from around 20 per cent in 1945 to around 30 per cent in 1979 (Wrigley, 2002).

Voluntary or statutory incomes policy was the response to demands for higher wages, which were seen, especially by Conservatives, to be contributing towards inflation (Wrigley, 2002). There were several state-led attempts that included policies towards productivity gains as part of an incomes policy. For instance, in 1957, the Conservative Chancellor of the Exchequer, Peter Thorneycroft, created the Council on Prices, Productivity and Incomes, which criticised the unions for asking for pay increases beyond what could be reasonably justified (Wrigley, 2002). Yet, several of these attempts to work with unions on incomes policy ended in failure due to both resistance among trade union leadership and strike action. In 1969, Barbara Castle, as Secretary of State for Employment and Productivity, published a white paper called *In Place of Strife*. Compared to the industrial relations reform pursued in the 1980s, the proposals were hardly tough. One of the main proposals of the white paper was to give the Employment Secretary the power to order pre-strike ballots and to issue fines if this was breached (Pimlott, 2016). With opposition within both the Trades Union Congress (TUC) and inside the Labour Cabinet, the proposals were dropped in a major defeat for the Prime Minister, Harold Wilson. After Labour lost power in 1970, they were replaced by a Conservative government who were dedicated to reforming industrial relations. Edward Heath did not see the Industrial Relations Act as anti-union, but as an attempt to foster a peaceful, productive relationship between the unions and government (Campbell, 1993). The core idea of the bill was to try to reduce the number of unofficial strikes by making collective agreements legally binding. For this system to work, unions had to register with a newly established National Industrial Relations Court. The TUC was deeply opposed to this legislation, even staging a 'day of protest' against the bill, and several unions refused to register under the Act. The Labour government, which came to power in 1974, would repeal the Industrial Relations Act and establish the 'Social Contract' as a central plank of their economic policy. It was a deal with the TUC for voluntary wage restraint. In return for policies such as increased spending on welfare, the trade union leadership would encourage their members to keep pay rises within limits set by the government in order to control inflation. The arrangement broke down in the late 1970s, in a period remembered as the 'Winter of Discontent', where there were several strikes demanding pay increases above government limits.

1980s to 1990s

A central part of the Thatcher project was to reduce the power of the unions, since it was believed that they were holding back economic growth and productivity gains through restrictive practices and high wage claims. For Thatcher, inflation was the crucial political issue, and high levels of unemployment was a price she was willing to pay to bring inflation down. Under the governments of Thatcher and Major, there were several major pieces of legislation that curbed the power of the unions. The approach was piecemeal and gradualist, but the combined impact was substantial. For instance, the closed shop was watered down until it was made illegal by the Employment Act of 1990; the 1980 Employment Act constrained industrial action by imposing limitations on secondary action, which was then completely outlawed in the Employment Act of 1990; and the Trade Union Act of 1984 ensured that secret ballots were necessary before industrial action (for an overview of all this legislation, see (Shackleton, 1998)). Union membership fell sharply under Thatcher and Major. By 1996, it was down to 26 per cent. By 1990, the closed shop had fallen to 400,000 workers (Gregory, 1998). This was not just due to political action from the government, but also changes in the structure of the economy, especially the shift from manufacturing towards service and from full-time to part-time work (Disney et al., 1994). The Thatcher and Major era also saw the development of 'welfare-to-work' strategies. The Social Security Act of 1989 forced those on unemployment benefits to look for employment. The Jobseeker's Allowance of 1994 took this approach further, with extra qualifications added for access to benefits (Jessop, 2003). The Thatcher government also reduced the relative value of benefits, meaning that the unemployed in the UK received support that was notably below the Western European average (Gregory, 1998). In addition, Thatcher encouraged the growth of self-employment in an attempt to establish an 'entrepreneurial culture'. Under Thatcher, self-employment rose more quickly in the UK than in any other OECD country, from 7.2 per cent of the workforce in 1979 to 10.7 per cent in 1992 (Addison and Siebert, 2000).

When it came to welfare policy, there were important continuities under New Labour, especially with regard to the idea that those on unemployment benefits must be trying to find work. For instance, Tony Blair did not oppose the introduction of Jobseeker's Allowance when in opposition. There was, however, more support for the unemployed in terms of advice and training. As Bernhard Rieger argued, Labour had a different view of supply and demand, believing that there needed to be interventions in the market to help those looking for work to find a job (Rieger, 2021). New Labour was concerned with the long-term unemployed and believed that welfare dependency might increase inflationary pressure. Unemployment was not regarded in terms of a shortage of jobs, but as an issue of job-readiness (Jessop, 2003). A key policy platform was the 'New Deal for Young People', which gave young unemployed people a dedicated case worker to help them find a job. New Labour was also much more committed to tackling poverty than its Conservative predecessors. They introduced the minimum wage in 1999 in an effort to provide a basic standard of living for all workers and saw the rapid growth of working tax credits. New Labour did not reverse many of the union reforms that were introduced under Thatcher and Major. The focus was more on introducing new rights for individual workers, rather than restoring the collective power of the unions as a whole. For instance, the introduction of a national minimum wage was seen as a substitute for union-led collective bargaining.

2000s to 2020s

The Coalition government built on and extended this cross-party consensus that welfare should be focused on getting the unemployed into work. Central to its policies was a traditional Conservative dislike of welfare dependency (Daguerre and Etherington, 2016). As Daguerre and Etherington (2016) suggested, the biggest policy change under the Coalition compared to New Labour was the cuts to tax credits. The Coalition also introduced a cap on the amount of benefits working-age people could receive, used private providers for employment and training services, and made the claimant commitment stricter for those on unemployment benefits. The Welfare Reform Act of 2012 meant that those claiming benefits had to prove that they were spending up to 35 hours a week looking for work. Summarising the reforms, Daguerre and Etherington (2016) said: 'In line with the goal of reducing welfare spending and ultimately the size of the state, the coalition first and foremost used negative financial incentives in the form of benefit sanctions and low benefit levels to encourage people to either stay off benefits or to leave cash assistance'. The Coalition also reformed some key employment protections in favour of employers. For instance, they expanded the period in which someone had to be employed from one year to two years to claim unfair dismissal (Prassl, 2014). Under the Conservative government after the Coalition, there were also further restrictions placed on trade unions. Among other reforms, the Trade Union Act 2016 introduced a 50 per cent turnout threshold for strike ballots.

Evaluating labour market reform in post-war Britain

The Thatcher reforms radically changed labour markets in Britain. By the 1990s, the OECD was claiming that the British labour market was among the least regulated among advanced economies (Gregory, 1998). As Crafts (2017) argued, there is evidence to suggest that reducing the power of the unions led to productivity gains. One study found that total factor productivity growth between 1979 and 1984 was higher in unionised than in non-unionised firms by nearly 3 per cent, which suggests a marked degree of catch-up as reforms in union law removed restrictive practices (Nickell et al., 1992). Whether the marked flexibility of UK labour markets has helped productivity more broadly is more debatable. There is evidence that excessive employment protection hampers productivity. Looking at OECD countries, Martin and Scarpetta (2012) argued that reduced employment protection leads to labour mobility, which is fundamental to productivity gains. Yet, even these authors accepted that job security can enhance productivity through the stability that it affords. They argued that the spread of temporary contracts could damage productivity through reducing work commitment, investment and training. One study, using a survey of UK firms, found lower levels of innovation among companies that have flexible working practices (Michie and Sheehan, 2003).

Writing about the UK, Rubery, Keizer and Grimshaw (Rubery et al, 2016) argued that flexible working practices had led to a low productivity, low wage, and low investment economy. All this means that Labour's Employment Rights Act, which passed through Parliament at the end of 2025, could stand to improve productivity by giving workers more protection. The legislation includes reforms that reduce the qualifying period for protection against unfair dismissal from two years to six months, while making paternity and unpaid parental leave day-one rights and introducing new bereavement leave rights. It also gives zero-hours workers rights to guaranteed hours reflecting their working patterns, alongside greater protection around shift changes, and places much tighter restrictions on the use of fire and

rehire. These measures are being implemented in stages. As Milner (2024) argued, this legislation was not the comprehensive review of employment law that some campaigners hoped for, but it is important, especially in giving more power to unions, promoting flexible working, and establishing more security for many workers. In sum, while it may impact on economic growth through reducing job creation, Labour's Employment Rights Bill is well-placed to boost productivity through creating more secure jobs. Regarding the impact of the National Minimum Wage in the UK, Rizov et al. (2016) suggested that it improved productivity among low-paying jobs. Looking at the international evidence, Arindrajit Dube (2019) suggested that while there are modest costs in terms of reduced employment and hours, the use of the NMW significantly raises low pay. Pointing towards studies on the UK, Dube argued that the NMW reduces worker turnover, leading to higher productivity and greater incentives for training.

3.3 Human capital

1950s to 1970s

As Mandler (2020) argued, the transition to mass education was a more recent phenomenon than might be supposed. It also arrived later in Britain than in comparable countries. In 1938, the clear majority, 80 per cent, of people had no experience of secondary education. While all the baby boomers went to secondary school and nearly half of their children engaged in higher education. The 1944 Education Act was a pivotal measure that put the UK on the path towards mass education. The late 19th century saw the emergence of a state-organised education system, which was strongly demarcated along class lines (Simon, 1991). The education historian Brian Simon described the 1944 Education Act as "the main measure of social advance carried through *actually* during the war" (Simon, 1991). It raised the school age to fifteen, providing free compulsory education to this point, and committed to raising the school age to sixteen at a later date. It also established the tripartite system of secondary schooling in England, divided between grammar, modern and technical schools, with the "eleven plus" examination being used to determine the type of school a child would go to. As a result of these new policies, all baby boomers went to secondary school. Even at its creation, this system had its critics, who argued that all pupils should attend the same type of secondary school, advocating for comprehensive education. Indeed, Wales and Scotland rejected the tripartite system in favour of comprehensives. The post-war Atlee governments broadly worked within the framework set down in the 1944 Act. However, as Simon suggested, it can be argued that what was really established was not a tripartite system but a bipartite system of grammar and modern schools. Technical schools were supposed to take around 15 per cent of pupils, but in the immediate post-war years, they only took around 3 per cent. This lack of vocational, practical education would be a persistent issue in the UK.

The 1960s would see a crucial expansion of higher education in the UK. The early to mid-1960s have been described as Britain's 'technocratic moment', when there was a great faith in science and technology as key to the modernisation of the country (Ortolano, 2009). As already discussed, this was the era of Harold Wilson's 'white heat', and within that speech, Wilson made much about the need to expand higher education, especially in the training of scientists and technologists, and to establish a 'university of the air', which became the Open

University. The Robbins Report of 1963, which the Conservatives fully backed, was crucial in setting the framework for the expansion. Admittedly, this was built on a movement that was already underway. By 1962/63, there were 131,000 university students, a huge increase from 85,000 in 1955. The Robbins Report forecast a doubling of student numbers by 1977/78 and a tripling by 1985/86. The general principle was that anyone who was qualified to go to university should be able to attend.

More broadly, the 1960s saw a drastic rise in education spending. Between 1960 and 1970, government spending on education as a proportion of GDP increased by 50 per cent. By the end of the 1960s, the money spent on education was larger than defence expenditure for the first time in British history (Simon, 1991). Before the onset of the economic crisis in 1973, the Heath government continued the expansionist policies of the 1960s. Funding for education was set to rise by 50 per cent in constant prices from the early 1970s to the early 1980s. In 1972, the school leaving age was raised to sixteen. One estimate suggested that between 1945 and 1973, the share of education rose from 2.3 per cent of public spending to 6.15 per cent (Carpentier, 2003).

An important area of difference between the governing parties was in comprehensive education. Opposition to the "eleven plus", the exam taken to determine whether children go to a grammar school, and support for comprehensive education grew substantially from the late 1950s onwards. In fact, Labour policy in opposition during the early 1960s was to set up a 'universal system' of comprehensive education and to abandon the "eleven plus" (Simon, 1991). However, in office, the Labour governments of the mid-to-late 1960s moved more slowly. At this time, they did not legislate to introduce comprehensives but waited for local authorities to ask for the reorganisation of their schools. Comprehensives grew substantially under Labour: from 8.5 per cent of secondary school pupils in 1964 to 31 per cent in 1970. While the expansion of comprehensives increased under the Heath government, growing to 62 per cent of pupils in 1974, the Conservatives slowed down the pace of the change and ensured the survival of over 100 selective grammar schools, where pupils who passed the "eleven" plus went. When Labour won power again in 1974, there was another crucial push towards comprehensives. By 1977, nearly 80 per cent of pupils were in comprehensive schools (Simon, 1991).

1980s to 1990s

The Thatcher era saw a reduction in education budget as a proportion of state spending. From 1980/81 to 1985/86, spending on education as a proportion of GDP fell from 5.5 per cent to 4.8 per cent. Education was also not a major priority for the Thatcher governments in their first years, with the focus on the economy, especially taming inflation (Simon, 1991). Nevertheless, there were some important policy innovations. They revoked Labour's 1976 legislation that stressed the importance of comprehensives, leaving it to local authorities to decide their own schooling systems. They also launched the Assisted Places Scheme, which placed academically strong working-class pupils into successful independent schools. 2 to 3 per cent of pupils were selected for this scheme (Simon, 1991). Even more significant reform came later in the 1980s, especially with the Education Act of 1988. Leading up to these measures, there were concerns that many pupils were leaving education without formal qualifications or even the basic skills needed to succeed in the job market. A National

Curriculum was thus introduced to help raise standards. There was also the introduction of more market mechanisms into the education system. Parents were able to choose which schools their children went to. There was greater competition introduced, with schools, for instance, having to publish information about their exam results to inform the choices that parents made. There was also more standardised testing. Another issue that the Thatcher governments sought to tackle was the relatively few pupils pursuing vocational qualifications. They introduced National Vocational Qualifications as a way to rationalise the system of vocational qualifications (Machin and Vignoles, 2006).

2000s to 2020s

The New Labour governments made a commitment to increasing spending on education, seeking this as a crucial way to boost economic growth and to modernise the country. Real expenditure on education increased by 4.2 per cent under Labour, while it only increased by 1.5 per cent under the Conservatives between 1979 and 1997 (Chowdry and Sibieta, 2011). During the New Labour years, GDP spent on education rose from below average among the OECD to around average in 2010 (Heath et al., 2013). Class sizes in schools decreased, the number of teachers increased, and there was an especially dramatic rise in the number of teaching assistants. The Labour governments introduced several reforms aimed at improving standards. For instance, they introduced the Literacy and Numeracy Hours, which gave specific and focused daily time slots to reading and maths in primary schools. There were also policies aimed at enhancing equality of opportunity. In order to encourage more pupils from disadvantaged backgrounds to stay on in education after 16, the Education Maintenance Allowance (EMA) was introduced, which gave students £30 per week while they were studying. Sure Start centres were opened up. These children's centres were designed to enhance social mobility by giving integrated care and services to young children. 3,500 such centres were established across the country (Bouchal and Norris, 2014). In order to fund the growing demand for higher education, Prime Minister Tony Blair also introduced tuition fees in 1998 and set a target for 50 per cent of young people to go into higher education. Labour also introduced the academies programme, which was initially for failing schools, which could be removed from local authority control to be run with more autonomy through private, not-for-profit trusts.

The Coalition government, which came to power in 2010, would see cuts across government expenditure as part of a programme of austerity. This led to the reversal of some flagship New Labour policies. EMA, for instance, was quickly scrapped in England, though it continues to operate in Scotland, Wales, and Northern Ireland. Nevertheless, it remained that for the Coalition, spending per pupil in schools was protected in real terms (West, 2015). West (2015) argued that one of the most significant structural changes that the Coalition brought to education was the concentration of power within central government, away from local authorities. There was a significant shift towards academies, where high-performing schools were allowed to convert, and also the creation of free schools. By 2014, 60 per cent of secondary schools in England were academies (West, 2015). There was also the establishment of the Pupil Premium, where schools received more funding for pupils on free school meals. In higher education, the Coalition tripled tuition fees to a maximum of £9,000 a year.

Evaluating human capital investments in post-war Britain

There is a substantial body of literature that shows the positive relationships between investments in human capital, economic growth, and productivity. Studies specifically on the UK also demonstrate this. One suggested that with the share of those with a university education within the workforce increasing by 57 per cent between 1994 and 2005, the result was long-run productivity gains of 11-28 per cent (Holland et al., 2013). Mason et al. (2012) argued that at least one-third of productivity growth in the UK between 1994 and 2005 was due to the spread of graduate skills in the labour force. However, not all investments in education produced outstanding results. While there was much political debate about whether New Labour raised academic standards, Heath et al. (2013) concluded that there was probably little change in British educational standards, despite the spending increases, relative to other countries. One notable success of the New Labour years was the Educational Maintenance Allowance, which is credited with resulting in a 4.5 per cent increase in educational participation among those eligible, and brought people into education who would have been inactive otherwise (Dearden et al., 2005). Perhaps the most striking issue with the UK's policies towards human capital has been the underdevelopment of practical, vocational training. An analysis looking at the late 1980s suggested that only 25 per cent of the UK workforce had intermediate vocational training, compared with 40 per cent in France and 63 per cent in Germany (Prais, 1995). Regardless of several years of government effort in this area, more recent analysis suggests that the problem of weak immediate levels of education in the UK persists, with Continental Europe having a greater take-up of vocational qualifications than the UK (Rincón Aznar et al., 2015).

3.4 Industrial strategy

Before outlining the changing policies towards industrial strategy in post-war Britain, it is important to explain the conceptual, historiographical changes that have radically altered our understanding on this topic. An older generation of political scientists and historians believed that the British state needed to be more technocratic and nationalistic but remained wedded to economic liberalism (Hobsbawm, 1968; Wiener, 1981; Barnett, 1986). This 'declinist' narrative told once powerful stories about the British ruling elite, offering important characterisations of the British state, the military, industry, and political culture. The argument was that Whitehall was filled with generalist administrators, who were amateurs lacking the expertise to grapple with the modern economy. Declinist narratives often singled out the Treasury for its antiquated liberalism and its reluctance to intervene in the economy. The broader claim was that there was an 'anti-industrial' spirit that ran deep within British politics. A common assumption within these 'declinist' narratives was that an enthusiasm for technological modernisation was the privilege of the political left. Harold Wilson, the Labour Prime Minister who first entered Downing Street in 1964, came to reform Britain, and remake it in the 'white heat of the scientific revolution', bringing technocracy to British politics but he failed, struggling to get the British economy to grow, and was vote out of office in 1970.

This 'declinist' history is, however, no good guide to the historical realities, and is best understood as an 'anti-history', which ignores the technocracy, militarism and nationalism that did so much to define post-war Britain. Scholarship from the early 1990s onwards has made it clear that industrial strategy was a central part of post-war British politics and that

more generally the British state was in fact deeply technocratic, militaristic and nationalistic. It is now accepted that Britain had a 'developmental state' in the post-war years, which consciously sought to modernise the economy, with notable successes in fields such as agriculture and electricity provision (Edgerton, 2018). There was also a deeply held techno-nationalism, a bi-partisan belief that through leading in the key technologies of tomorrow, the nation would gain in both economic prosperity and national security. The central investments were in aviation and atomic energy, areas where Britain was considered to be world leading. It has also been shown that although the Treasury was liberal, as the declinists suggested, it was not in control. While the Treasury criticised key techno-nationalist programmes like the Anglo-French supersonic jet Concorde from the beginning, this criticism was side-lined in the 1950s and 1960s (Kelsey, 2023b). A more recent literature on industrial strategy in post-war Britain does not necessarily tell declinist stories but has tended to see the introduction of industrial intervention as coming in the mid-1960s, perhaps beginning with the National Economic Development Council, an economic planning forum that brought together management, trade unions and government officials. For instance, it is telling that Bailey and Tomlinson (2017) argue that the peak of industrial strategy was between 1964 and 1979. This misses the point that many of the most speculator industrial interventions of the British state had their origins in the mid-1950s.

1950s to 1970s

The Conservative governments from 1951 to 1964 have been seen as less interested in productivity than their Labour counterparts. They focused more on 'competitiveness' and reducing wage costs than productivity itself (Tiratsoo and Tomlinson, 1998; Tomlinson, 2017). Yet, when it comes to industrial strategy, it is important to recognise that the most ambitious programmes of the post-war era stemmed from this period of Conservative rule. Techno-nationalism was a central ideology of the mid-to-late 1950s, and there was a deep belief that in order to be a modern, productive economy Britain had to capitalise on its advantages in aviation and nuclear power to lead the world in these crucial technologies (Edgerton, 2005; Edgerton, 2018). For instance, Britain had the largest building programme of nuclear reactors in the world in the mid-1950s, and then tripled it in light of the Suez Crisis. The immediate post-war period saw Britain design and build its own nuclear weapons, with the first hydrogen bomb test occurring in 1957. Both Concorde, the only supersonic passenger airliner to enter regular service, and the TSR-2, the most technically advance military aircraft then being designed, have their origins in this period. In 1962, even the civil R&D budget of the Ministry of Aviation, always much smaller than the military side, was higher than what was being spent on universities (Dean, 1966). It was often experts from the scientific civil service who were put in charge of these programmes, who had considerable power. For example, James Hamilton, who was made the Director-General of the Concorde programme in 1966, was an aeronautical engineer who had previously worked at the Royal Aircraft Establishment at Farnborough. More broadly, for much of the 1950s, the responsibility for these schemes rested with a single ministry, the Ministry of Supply, a wartime creation that was only dissolved in 1959. In sum, there was no doubt that technocracy, and an enthusiasm for national technology, were important features of Conservative politics throughout the 1950s and in the early 1960s.

The ‘white heat’, as Harold Wilson formulated the need for a technological and industrial transformation in 1963, was a plan for both growth and improvements in productivity but it was not an attempt to inject technocracy and technology into the British state. Rather the idea was to redirect its existing technological efforts and learn from techniques for managing the warfare state for civil purposes (Edgerton, 1996; Edgerton, 2005). Harold Wilson, who would become Labour Prime Minister in 1964, made this clear in the speeches he gave as leader of the opposition, including within his famous ‘white heat’ speech of 1963. In this speech, there was a conflation between productivity and industrial strength, and a critique of consumerism. Wilson wanted to avoid funding ‘some new gimmick or additive to some consumer product’ but focus on projects that would ‘increase Britain’s productive power’ (cited in Edgerton, 2005). This meant a rejection of the technological priorities of the political right. Wilson wanted to cut back on ‘prestige projects’, particularly expensive military schemes, and focus on more down-to-earth industries that were likely to be profitable. In the ‘white heat’ speech, Wilson said: [if] we were not to use the technique of R and D contracts in civil industry I believe we could within a measurable period of time establish new industries which would make us once again one of the foremost industrial nations of the world’ (cited in Edgerton, 2005). He was clear that the British economy was in need of modernisation, and while acknowledging the power and importance of the warfare state, he also played into the declinist motifs of an amateur class ruling over Britain and wasting its potential. Again, in the ‘white heat’ speech, Wilson warned: ‘The Britain that is going to be forged in the white heat of this revolution will be no place for restrictive practices or for outdated methods on either side of industry’ (cited in Edgerton, 2005).

By the time they left office in 1970, the Wilson government would harbour a radical disillusionment with state-directed R&D programmes, with core policy platforms that they once stood for having been undermined, and they even had a plan to partly privatise the state research corps (Edgerton, 2005). But at first there was a powerful belief that state-directed R&D could work to boost the economy, if it focused on the right industries and had the correct organisations in place. As Wilson outlined in opposition, the idea was to scrap ‘prestige projects’ and expensive military programmes and focus on investments that were more likely to make commercial sense, such as in computing and machine tools. It thus makes sense that one of the first moves that Wilson made while in government was to try to axe Concorde, whose dubious commercial prospects were already well known inside the British state.[2] So, while Concorde sometimes represents the ‘white heat’ specifically and British modernity more generally, it was in practice precisely the sort of project that Wilson sought to get away from. The Ministry of Technology was established in 1964, and its responsibilities grew so that it in essence became a recreation of the Ministry of Supply at the peak of its power, a super ministry with great power over British industry and government-funded R&D. It took over the Atomic Energy Authority (AEA) in 1965, which was then at the heart of Britain’s national technological effort, and also absorbed the Ministry of Aviation in 1967, plus the Ministry of Fuel and Power in 1969.

[2] Concorde survived for two reasons: partly because there was no break clause in the Anglo-French treaty to allow for a unilateral exit, and the French wanted to continue the project, meaning Britain could end up paying legal damages if it were to unilaterally withdraw. There were also industrial reasons, since Labour wanted to scrap the TSR-2 and the British Aircraft Corporation was involved in both programmes and there was a fear that this major aviation company would be unlikely to survive if two of its major projects were cancelled (Kelsey, 2023b).

At the heart of Mintech's policy was the reduction and redeployment of the warfare state. Defence R&D fell drastically, meaning civil R&D became greater than it (Edgerton, 2005). There was an Americanisation of defence procurement, which built on a shift that first emerged in the late 1950s. There was also a shift away from national projects to international collaboration. In this sense, Concorde was an organisationally an important novelty, being a collaboration with France. Wilson saw an even deeper dependence on American weapons develop. A critique of civil R&D would also develop in Mintech. By the mid-to-late 1960s, it became a widely accepted in the Ministry that there was no positive correlation between R&D spending and growth, and that Britain had not been deficient in bread-and-butter civil R&D, even putting to one side the huge amount of funding on 'prestige projects' and military R&D (Edgerton, 2005). There also developed a belief that state-funded R&D needed to be more guided by the market to ensure that it was being used for productive purposes. There were proposals for a British Research and Development Corporation, which would bring together the five civil research establishments and the AEA into one organisation, funded evenly by central government, industry, and government contracts. It never came to pass because Labour was voted out in 1970, but it signified a drastic undermining of the technocratic assumptions that had led to the creation of Mintech and Labour's plan for the economy.

The Heath government is well known for its 'U-turn'. It came to power insisting that it would introduce economic liberalism, and particularly that it would refuse to give government support to failing industries. There is no doubt that this pro-market stance was at least partially abandoned when in power. Most famously, in 1971, Rolls-Royce was facing bankruptcy and Heath stepped in and nationalised the firm. Yet, the idea that Heath merely continued the interventionism of the Wilson governments masks important changes that occurred during this premiership. Mintech was disbanded, and a new procurement executive set-up in the Ministry of Defence (Edgerton, 2005). The dirigiste idea that there would be a single super ministry with great powers over British industry, and particularly R&D, was gone. The customer/contractor relationship was also brought into funding for Research Councils (Parker, 2016). There was also a disillusionment with the great techno-nationalist programmes of the era. There was much ministerial opposition to Concorde, and to British-designed nuclear reactors, and these programmes might well have been scrapped entirely if Heath had won another term in office (Kelsey, 2023a; Kelsey, 2023b). The disillusion of the 'white heat' was not reserved under Heath but in fact only became more entrenched.

The Labour government of 1974 to 1979 should be understood as a partial reversion to economic nationalism, with a renewed focus on national production and national invention. The 1975 White Paper, 'An Approach to Industrial Strategy', is instructive. It set a key task of the government as 'to reserve the relative decline of British industry'. It continued: 'Our prime objective must be to become a high output-high wage economy. This can only be achieved by improving our industrial performance and raising the growth of our productive potential' (Treasury and Department of Industry, 1975). Within Labour's industrial strategy, the two main innovations were planning agreements and the establishment of the National Enterprise Board (NEB). Planning agreements were meant to enhance co-operation between government and leading companies to ensure alignment with national needs. The NEB was established to provide long-term secure investment to the British manufacturing industry, suggesting that the market was too interested in the short-term to offer the help needed.

While in practice it came to support struggling firms such as British Leyland, there were also investments in new industries, such as the semi-conductor firm Inmos. Yet, there was no wholehearted return to the techno-nationalist era. Admittedly, under Labour, Concorde went ahead, and there was agreement to build two more British-designed nuclear reactors, yet the production commitments to these programmes were so small, that they are best understood as masked cancellations (Kelsey, 2023b). The great techno-nationalist investments of the mid-to-late 1950s were effectively, and finally, scrapped.

As noted above, this assessment of the performance of nationalised industries is somewhat more nuanced than that of Crafts (2017), who argues that these industries were inefficient, partly as a result of excessive investment. Martin and Parker (1995), in their study of UK privatisation, find no clear evidence of efficiency gains following the transfer to private ownership. Similarly, Foreman-Peck and Millward (1994) present a more mixed assessment, suggesting that the productivity performance of nationalised industries at times compared favourably with that of the private sector.

1980s to 1990s

In terms of industrial strategy, the Thatcher governments did not offer a total and immediate transformation. As we have seen, the key disillusionment with techno-nationalism came before Margaret Thatcher ever entered office. Rather than undermining the parameters of the post-war era, her government could in fact be said to be defending the post-war consensus of the 1950s of high defence spending and limited welfare spending, against the 'progressive consensus' of the 1960s and 1970s (Vinen, 2009). While employment in manufacturing would fall drastically during Thatcher's time in office, it is not at all clear that this was the initial intention of her government. After all, in the early 1980s, Thatcherite ministers praised key declinist voices such as Correlli Barnett, who wanted a revitalised manufacturing sector (Barnett, 1986). Such statements were not just rhetorical, policies reflected this economic nationalism. There was a powerful internal critique of the arms industry under Thatcher, from the Treasury and the Policy Unit, who argued in favour of buying American weapons rather than building British and European alternatives. The Thatcher governments, and especially Thatcher herself, ignored these warnings, choosing the costly path of maintaining an array of domestic capabilities in weapons design (Kelsey, 2020; Kelsey, 2026). Richard Woodward and James Silverwood have argued that what really changed under Thatcher was not the abandonment of industrial strategy in practice, but a rhetorical distancing from it. They looked at Treasury government expenditure plans to track spending on industrial strategy, arguing that it remained stable throughout Thatcher's time in office at around 6 to 8 per cent of total public expenditure (Woodward and Silverwood, 2022). However, it is important to keep in mind that the ambition for these projects was much reduced. For example, while there was support for Airbus projects under Thatcher, these were not like Concorde, an audacious next-generation leap in technology. Civil R&D was drastically cut under Thatcher, and by the late 1980s, there was an explicit policy that funding for 'near-market' research would be abandoned, with the focus turning towards spending on basic science (Agar, 2017; Agar, 2019). So, while it was complex and drawn out, there was a slow rejection of economic nationalism under Thatcher, especially outside of the defence sector. One of the most significant changes that occurred was the result of selling off the

nationalised industries, since it undermined a system where state customers would be put under pressure to 'buy British' (Edgerton, 2018).

2000s to 2020s

The 2000s saw a more wholehearted embrace of economic liberalism, with what has been called a 'post-national' economy coming into being. There would be far less concern about manufacturing employment falling, a celebration of the growing importance of the service sector, and a relaxed stance towards importing key technologies and goods. Even the Labour Party, who had been the party of national, production-focused politics, essentially abandoned an explicit industrial strategy focused on the manufacturing sector (Edgerton, 2018). The Great Financial Crash of 2008, alongside a general productivity and growth slowdown, brought a renewed focus on industrial strategy, in the UK and elsewhere, but policy churn has meant that Britain struggled to adopt a coherent set of policies (Coyle and Alayande, 2024). For instance, Theresa May's government introduced an Industrial Strategy in 2017, and established an Industrial Strategy Council to help guide policy. However, in 2021, Boris Johnson scrapped both this Strategy and the Council in favour of a 'Plan for Growth', which was led out of the Treasury. It has been suggested that Britain had an 'accidental industrial strategy' over the past few decades, focused on life sciences and pharma, financial services and the creative industries, which was without any overall strategic framework guiding policies in these areas (Coyle and Alayande, 2024). Yet, there is one area of deep continuity within the industrial strategies of the past three decades, and that is what has been called "supply-side science policy" – the notion that economic growth and productivity gains will come if the government funds basic science in universities and enables 'spin-outs' from academia to industry. In fact, many have argued that instead of industrial strategy, Britain has science policy as its replacement, which has been unable to grapple with the deep-set problems, from regional inequality to productivity, that beset the UK economy (Edgerton, 2018; Jones, 2021).

Evaluating industrial strategy in post-war Britain

Industrial strategy is commonly seen as a failure in post-war Britain. Efforts such as the NEB ended up supporting failing companies such as British Leyland, which were in need of major structural adjustments that were only delayed through state support (Broadberry and Crafts, 2010). Writing in the techno-nationalist programmes of the post-war years only underlines this assessment. One economist suggested that Concorde and the British-designed nuclear reactor, the AGR, were among two of the three worst decisions in public investment ever taken (Henderson, 1977). David Henderson, an economist who worked in the Ministry of Aviation during the mid-to-late 1960s, estimated that these programmes lost £34 billion in inflation-adjusted terms (2025 prices). While large technological programmes are often justified in terms of spin-off, a study on the spin-offs benefits of Concorde found that it could hardly justify the expenditure (Centre for the Study of Industrial Innovation, 1971). These programmes focused scientific and industrial recourses into technological dead-ends: the future of civil aviation was not supersonic, and future of energy was not nearly as atomic as the nuclear barons predicted. One of the core lessons of these investments for productivity policies is to undermine the techno-nationalist belief that investing in cutting edge industries will bring the greatest productivity gains. During the post-war decades, labour productivity

improvements in agriculture were higher than for both the economy as a whole and in manufacturing specifically (Edgerton, 2018). They also show that long-termism is no panacea (Kelsey, 2023a). It is often argued that there was no long-termism in post-war Britain due to the frequent changes in governments. Concorde and the civil nuclear programme were clearly long-term plans, investments that outlived several governments and that were justified with ideas of what the future would like in decades to come. In fact, changes of governments kept them going as elections removed ministers likely to cancel these programmes (Kelsey, 2023a). The shift from industrial strategy to science policy, the focus on R&D in universities, has also not brought with it success in generating either economic growth or productivity (Edgerton, 2025). The broader lesson is to focus less on innovation and more on the diffusion of technology (Van Ark et al., 2023; Van Ark and O'Mahony, 2024).

Labour's Modern Industrial Strategy, launched in the Summer of 2025, singles out eight 'highest-potential' sectors for targeted government intervention, including defence, creative industries, and financial services. However, this does not appear to be a full return to the techno-nationalist era. In fact, there are deep continuities with the policies of the past thirty years. A core purpose of the strategy is to try to provide long-term stability to ensure private businesses and markets can operate. However, like before, there is a focus on research and development as well as attracting foreign investment. While industrial strategy is often seen as a dirigiste form of government, Labour's policies intend to show that industrial strategy and free markets can be designed to work hand-in-hand.

4 Challenges and opportunities for productivity in the UK

This final section addresses the challenges and opportunities for productivity in the UK, looking particularly at the issues of an ageing society, the impact of Artificial Intelligence, the transition to Net Zero, and the possibilities of devolution.

4.4 An ageing society

The UK faces significant demographic pressures, with an ageing society, that without an adequate policy response, could be a significant drag on productivity. The baby boomers are an especially large generation, which coupled with people living longer, means that the UK will have more older people in the next decades. Those aged 65 and above are set to rise by 2.5 million between 2020 and 2030, a 20 per cent increase. Meanwhile, those aged under 15 will fall by 1.1 million, which is a decrease of 8.8 per cent (Broome, 2022). The Office for National Statistics predicts that by 2050, a quarter of the population will be aged over 65. The Old Age Dependency Ratio, the number of pensioners per 1,000 people aged 16 to state pension age, is set to increase from 300 to 400 (Office for National Statistics, 2019). While there is evidence to suggest an older population raises productivity through the take-up of labour-saving devices (André et al., 2024; Franklin, 2018), several studies suggest that workers become less productive as they move from middle age to older age. Feyrer (2007), looking at data from 1950 to 1995, suggested that a five per cent increase in the proportion of workers between ages 40 and 49 was associated with a one to two per cent increase in productivity,

with those aged 50 and over lowering growth in productivity. A study that used English local authority data and looked between 2001 and 2011 also suggested that older people in the workforce tended to drag down productivity (Franklin, 2018). A study of 24 European countries between 1983 and 2014 found a drop in the annual increase in productivity of between 0.1 and 0.5 per cent when there is a 1 per cent increase in the workforce aged between 55 and 64 (Calvo-Sotomayor et al., 2019). There are also the second-order impacts of an ageing society, particularly regarding the policies they tend to vote for, with more money going on pensions, rather than productivity-boosting investments such as education (André et al., 2024). Against such a backdrop, the UK government should embrace policies to mitigate the impact of an ageing society, such as lifelong learning and promoting gradual transitions into retirement (André et al., 2024).

4.5 Artificial intelligence

There are great hopes placed on Artificial Intelligence (AI) to boost both economic growth and productivity, but it is more likely that it will come with modest benefits. There are several studies at the task and worker-level that show how AI, particularly generative AI, is providing a major boost on productivity, with productivity increases ranging from 10 to 56 per cent. However, as has been argued, it cannot be assumed that these effects at task and worker level can be replicated at the firm-level, not least because these studies are carried out with companies keen to experiment with AI (Filippucci et al., 2024). Looking at recent history, there has been what might be a surprising lack of a meaningful connection between advances in AI and productivity when looking at the macroeconomic data. Parteka and Kordalska (2023) examined the relationship between AI patents, scientific papers on AI and productivity growth across OECD countries between 1985 and 2017. They found no significant statistical relationship between them. Acemoglu (2024) predicted that the total gains from AI to total factor productivity in the next ten years within the United States could be less than 0.55%. He argued that generative AI needs to change to enhance productivity, from a human-like conversational tool to something that provides reliable, useful information for workers. Another study that employed the approach that Acemoglu used, but focused on European countries, was more optimistic about the potential of AI. It suggested a total of 1.1 per cent increase in total factor productivity within five years, but still stressed that it was no silver bullet that would transform the prospects for productivity in Europe (Misch et al., 2025). There are even studies that suggest AI will have a damaging impact on productivity. There is the concept of ‘workslop’, the idea that employees use AI tools to create passable drafts of work that need so much refinement that they end up creating more work for the organisation as a whole. A survey of over 1,000 employees in the US suggested that 40 per cent of them had encountered ‘workslop’ in the past month (Niederhoffer et al., 2025). AI could also produce lower productivity growth over time by automating high-productivity jobs, leaving a greater share of lower-productivity work within the labour force (Filippucci et al., 2024). In sum, it would be unwise to assume that AI will straightforwardly lead to a boon in productivity growth.

4.3 Climate change

Both adapting to the impacts of climate change and the transition to Net Zero have important consequences for productivity. There is an agreement within the literature that higher

temperatures will lead to reduced labour productivity. One study found that for every ten extra days above 35 degrees Celsius within a year, there is a 0.3 per cent reduction in firms' annual labour productivity, while heat waves lasting a minimum of five days cause reductions of 0.2 per cent (Costa et al., 2024). Moreover, hot weather is already impacting the UK's productivity. The Office for National Statistics estimated that between 1998 and 2021, the average yearly loss due to hot days was £1.2 billion (Office for National Statistics, 2024). As Pilat (2024) recently argued, when assessing the relationship between productivity and climate change, it is important to compare the transition to Net Zero with the counterfactual of taking no policy action. In doing so, it becomes clear that the transition to Net Zero is more advantageous than not addressing the climate crisis. The Network for Greening the Financial System (2023) estimates that if there were no change in policy, there would be a 3°C rate of warming by 2050, which would lead to global GDP losses of 8 per cent due to acute risks and 15 per cent due to chronic risks by 2050, and labour productivity would be reduced by 10 per cent. Meanwhile, the negative impact of the transition to Net Zero on productivity is likely to be modest and short-term. In reviewing the literature on this theme, Pilat (2024) argued that the negative impacts of climate policies may be exaggerated, and there were scenarios where they could have a positive impact. Batten and Millard (2025) modelled the impact of Net Zero on productivity in the UK, examining the introduction of a carbon tax. In the short run, there is a productivity cost to introducing a carbon tax, but in the long run, there may be higher productivity due to the capital deepening impact of green investment.

4.4 Devolution

As discussed in Section 2, the UK suffers from deep regional disparities in productivity, and well-crafted devolution presents itself as an opportunity to reverse this trend. The UK is remarkably centralised and has fragile and underpowered local government structures. It is dependent on a super-region focused around London, a degree of concentration not found in comparable countries (Harding and Peake-Jones, 2025). For instance, two-thirds of FTSE100 companies are headquartered in the South East (Kenny et al., 2023). Such marked spatial inequalities have been found to be holding back economic growth in the UK (Carrascal-Incera et al., 2020). There has also been much churn in regional policy. For example, the Coalition scrapped the Regional Development Agencies that New Labour established in favour of local enterprise partnerships (Kenny et al., 2023). The 'Levelling Up' White Paper of the Johnson government has only introduced further churn, while not providing a coherent institutional framework or the improved coordination between institutions that is needed to bring about successful devolution (Westwood et al., 2022). But devolution is not a quick fix or simply applied remedy. There is a debate in the literature on the precise relationship between devolution, productivity, and growth, and a core conclusion is that the form that devolution takes, particularly the governance structures, matters profoundly. Standard arguments in favour of devolution include that it offers more accountability, can lead to a better fit between the provision and needs of public services and offers the opportunity for more policy innovation (Rodríguez-Pose and Gill, 2005). Yet, most crucially, it is suggested that the legitimacy of devolved governments will depend above all on whether they can deliver an 'economic dividend' (Rodríguez-Pose and Gill, 2005). One study of devolution in Germany, India, Mexico, Spain and the USA concluded that where devolution was driven from below,

there were economic benefits (Rodríguez-Pose et al., 2009). Devolution in the UK has largely been driven from the top down, and thus it makes sense that it has not been especially successful in combating regional inequalities (Pike et al., 2010). More bottom-up accountability and better scrutiny are vital ingredients in reaching a system of devolution in the UK that delivers economic growth and productivity (Newman et al., 2024).

5 Conclusion

The UK has a mixed record in terms of its pro-productivity policies from the 1950s onwards. Britain emerged from the Second World War as the industrial and technological superpower of Western Europe, and made ambitious bets on being able to manufacture the future. Yet, programmes like Concorde and the Advanced Gas-cooled Reactor (AGR) were notorious blunders, channelling industrial resources into technological dead-ends. The key upshot is to recognise that industrial strategy is no panacea, and it can make matters worse, not better. Internationalisation has a better record in the UK. Integration with Europe, through joining the EEC and then with the creation of the Single Market, did make the UK economy more productive, and Brexit has done significant damage. Labour market reforms are more complex. In the short run, the Thatcher revolution probably made the UK more productive by undermining the power of the trade unions, but in the long run, the UK suffers from a low-investment economy, in part, the product of its flexible labour markets. Although a lack of support for technical education has been a problem of education policy for decades, the investments in human capital, especially the expansion of higher education, benefited productivity in post-war Britain. The UK faces significant challenges in the coming decades in terms of productivity growth, from an ageing society to adjusting to the realities of climate change. A core finding of recent research is that meaningful, bottom-up devolution could make it easier to embed pro-productivity policies that work.

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