

Productivity and Industrial Policy by Design: The UK Experience

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Abstract

The number of industrial policy interventions and the scale of the public expenditure involved is on the increase globally. The United Kingdom has a history of churn with respect to industrial policies, and has largely been averse to policy activism in this area since 1980. This article presents case studies of three UK sectors – life sciences and pharma, financial services and the creative industries – arguing that despite the anti-activism policy rhetoric for much of the past four decades these have experienced sectoral industrial policies ‘by accident’, involving classic policy tools used without a strategic framework. Policies affecting business decisions cannot avoid having an impact; acts of omission are policy choices, just as much as positive decisions. We argue that, although counterfactual outcomes are necessarily speculative, productivity outcomes would be better if policies impacting key sectors of the economy were developed by design, due to improved policy co-ordination, derisking of investment and more effective realization of spillovers.

After some five decades out of fashion, at least in terms of rhetoric, industrial policy is high on the agenda in many countries. The number of industrial policy interventions and the scale of the public expenditure involved is on the increase globally, and particularly in Organisation for Economic Co-operation and Development

(OECD) economies (Criscuolo *et al.*, 2022; Juhász, Lane & Rodrik, 2023; Evenett *et al.*, 2024). There are several reasons for the re-emergence of a type of policy out of favour politically in the period since the introduction in economic policy of a market-first philosophy by Margaret Thatcher and Ronald Reagan of the 1980s.

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In addition to the imperative for macroeconomic stabilisation policies, the supply side shocks experienced since the 2008-9 financial crisis, including the 2020-21 pandemic and 2022 Russian invasion of Ukraine, revealed the existence of various supply chain bottlenecks in globalized production networks. Geopolitical tensions have underlined concerns about economic resilience (Aiyar *et al.*, 2023). Moreover, the global economy is in the midst of two structural technological transformations, namely the energy system transition to net zero and the new wave of AI and digital technologies. The market structures and patterns of comparative advantage established in the short to medium term as these two general purpose technologies advance and diffuse will shape countries' economic fortunes for decades to come.

The recent rise of industrial policies therefore signals governments' recognition – to varying degrees – that establishing a strategic framework for the supply side of the economy is timely. While this recognition has other motivations than improving productivity – such as national security and economic resilience – there are also hopes that reviving industrial policy by design can help tackle the slowdown in trend productivity growth.

There is of course a gap between rhetoric and reality. Governments have never stopped using some industrial policy tools even as they downplayed or critiqued the idea of actively shaping production activities (Crafts and Hughes, 2014). 'Horizontal' policy tools such as public spending on basic research, tax credits for research and development (R&D), export credit guarantees and infrastructure investment have

always been part of the policy armoury. Some 'verticals' have long been explicitly supported, such as defence R&D and production, or basic industries such as steel, on national security or resilience grounds. And the pandemic brought a significant set of government interventions to produce, manufacture and distribute new vaccines rapidly and at scale, in some cases involving explicit setting aside of market economic principles, such as the invocation in the US of the Defense Production Act of 1950 (Bown, 2022).

The focus of this article is on UK industrial policies in recent decades that have not been characterized as such by policymakers. Specifically, we describe how successive UK governments have implemented 'accidental' industrial policies in three sector verticals, pharmaceuticals and life sciences, the creative industries and financial services. These sectors have been variously recognized as areas of UK economic strength in the intermittent explicit industrial policy initiatives introduced since Mrs Thatcher significantly downgraded the National Economic Development Office (NEDO) on attaining office (it was finally abolished by her successor, John Major, in 1992). These policies were introduced by the Labour Government in 2008-2010, the Coalition Government in 2012-2015 and, most explicitly, Theresa May's Conservative Government in 2017-2019 (HM Government, 2009; Department for Business, Innovation and Skills - BIS, 2012; HM Government, 2017).

However, they fell far short of an intentional, strategic approach to developing the UK economy's supply side strengths; rather, in each case there has been a suc-

cession of measures not informed by or located within a sustained national strategy. Moreover, a sectoral approach is still regarded with suspicion by some economists as a return to 1970s-style ‘picking winners’ or promoting ‘national champions’ at the expense of consumers (Posen, 2023; Owen 2024). The Labour Government elected in 2024 intends to implement a new industrial strategy.

We argue that a strategic industrial policy by design, rather than by happenstance, in three high value, export-rich sectors could have produced better productivity outcomes than the ad hoc interventions that actually occurred. One reason is that an intentional industrial policy framework can act as a device for joining up, or in other words co-ordinating, government interventions across different domains, such as infrastructure, skills, R&D and place-based policies. The lack of joining-up across government is widely recognized as a dysfunction of the UK economy, which increases the likelihood that there will be some unaddressed barriers to growth preventing other policies from having their potential impact (Coyle and Muhtar 2023a; Kremer 1993).

Better policy co-ordination increases the potential impact of government action on productivity, first by creating a consistent regulatory and tax environment and thereby helping derisk private investment; and second by elucidating trade-offs such as between consumer protection and innovation. A further mechanism for industrial policy to increase productivity is the improved potential it offers to realize spillovers such as those due to agglomeration or knowledge transfer. As a quantita-

tive demonstration of counterfactual outcomes is not possible, we use three case studies to illustrate the impacts of implementing industrial policies by accident rather than design. Importantly, we include service sectors of the economy, which have often been overlooked in the industrial policy literature (Rodrik and Sabel 2022).

A Brief History of Formal UK Industrial Policies Since 1979

The Thatcher Government elected in May 1979 inherited the National Economic Development Office NEDO (or ‘Neddy’) as the main vehicle for determining industrial policies. Established in 1963, it formalized tripartite relations between the government, employers and unions, and operated through sectoral sub-committees known as ‘little Neddies’. Mrs Thatcher promptly moved to replace its monthly meetings with quarterly ones, with senior government attendance only once a year. In a BBC interview on the occasion of NEDO’s 25th anniversary in 1987, she said:

“Yes things are different; we are much more market oriented, and what does that mean? It is not a great economic theory. What the market means is that the wage earner and the housewife go down to market, they decide what they want to buy and therefore they decide whose goods should be prosperous and successful (COI, 1987)”

In 1988, her Government also abolished the sectoral structure (“sponsorship divisions”) of the Department of Trade and Industry (as it was then called), leading to a sig-

nificant reduction in the civil service's engagement with industry and thus its knowledge and expertise, and also a reduced ability on the part of business to communicate with government (Greaves, 2008). In 1992 NEDO was abolished by Conservative Prime Minister John Major.

The Labour Governments in power from 1997-2010 were somewhat less allergic than the Conservatives to the potential role that the state might play in economic strategy; indeed, Chancellor Gordon Brown as a young radical Rector of Edinburgh University had called for a socialist society (Brown, 1975). New Labour in power also largely adhered to a market-first vision for the economy in terms of its political rhetoric. As Jones (2018) has noted:

“The industrial policy of the Conservative governments between 1979 and 1997 was to not have an industrial policy. The New Labour government of 1997 broadly accepted this consensus, in particular resisting so-called vertical industrial policy—that is, specific measures in support of particular industrial sectors.”

The Labour Secretary of State for Business, Peter Mandelson nevertheless pushed for an industrial policy in 2009, as a means of enabling economic growth to recover after the financial crisis. The focus was indeed on ‘horizontal’ measures intended to enhance the UK’s R&D, upskill the labour force, stimulate innovation in science and technology, and ensure a low-carbon transition (HM Government, 2009).

This nascent strategy was brought to a halt by the election of 2010, which brought to power a Conservative-Liberal Democrat

coalition. In the coalition period, it was again the Business minister, now Vince Cable, who re-introduced an industrial policy in 2012. It included a focus on finance for investment and basic research, but also on packages of measures to support specific sectors: advanced manufacturing including life sciences, knowledge-intensive traded services including finance, and ‘enabling’ sectors such as energy and construction (Department for Business, Innovation and Skills (BIS), 2012). The 2012 paper discusses the risks of a sector-based approach but sets out a long list of reasons for nevertheless adopting it. This list includes the observation that, “Sectoral shifts reflect increasing sectoral specialization across all the advanced economies whereby a small number of sectors account for a relatively large share of GDP,” (BIS, 2012:12). In other words, the argument it made was that the nation’s economic fortunes are increasingly dependent on the performance of a relatively small number of sectors.

The final episode in this brief history is the Industrial Strategy of Greg Clark, Business minister in Theresa May’s Conservative government. The 2017 document (HM Government, 2017) was framed around horizontal policy ‘pillars’ but also included sector ‘deals’, with an emphasis on technological innovation. These were: life sciences, construction, artificial intelligence and the automotive sector. The government also set up an Industrial Strategy Council consisting of business representatives and experts to advise it on policy. Yet again, a change of government overturned the policy, even though May’s successor Boris Johnson was a member of the same party. His government promptly scrapped

Table 1: Sectoral Focus in Successive UK Governments’ Industrial Strategies

New Labour 2008	Coalition 2012	May 2017	Johnson 2021	Labour 2024
Life Sciences /Pharmaceuticals	Advanced manufacturing (Aerospace, automotive, life sciences)	Life Sciences	Space	Life sciences Aerospace
Advanced manufacturing		Automotive		defence Advanced manufacturing
Professional Services/Finance	Knowledge-Intensive services (finance, information services, higher education)	Creative sector	-	Financial services Professional & Business services Creative industries
Net Zero (low-carbon vehicles)	Energy	-	Net zero/energy	Clean energy industries
Engineering Construction	Construction	Construction	-	-
Digital	-	AI	AI	Digital technology

the Strategy (and the Council), replacing it with a ‘Plan for Growth’ in 2021. The Labour Government elected in 2024 has announced a planned Industrial Strategy (UK Government 2024), signaling a sectoral focus, and has established an independent Industrial Strategy Council.

There has been some consistency over time in the sectoral strengths, or hoped-for strengths, identified by successive governments (Table 1). The Chancellor in the most recent Conservative Government, Jeremy Hunt, in a 2023 speech on economic growth prospects echoed some of the earlier policies in citing digital technology, green industries, life sciences, advanced manufacturing and the creative industries.² The 2024 Labour Government has pointed to similar priority sectors in its statements on industrial policy and “missions”. However, below the level of identifying broad sectoral strengths, the policy environment

has been characterized by significant policy churn and a lack of the co-ordination among government departments and other public bodies needed to implement an effective strategic supply-side framework (Coyle and Muhtar, 2023a, 2023b; House of Lords, 2024). The next section turns to three sectors identified by successive governments as UK economic strengths to describe their trajectories and the policy shifts affecting them over time: pharmaceuticals/life sciences, financial services and the creative sector.

The UK’s Accidental Industrial Policies

In this section we describe how successive governments have, by accident rather than by design, operated what could be fairly characterized as sector-based industrial policies since 1990, despite the strong

² <https://www.gov.uk/government/news/chancellor-sets-out-long-term-vision-to-grow-the-economy>

Figure 1: Taxonomy of Policy Instruments by Economic Welfare Rationale



Source: Coyle (2024)

emphasis on private business and markets in the rhetoric of economic policy. We adopt a broad definition of industrial policies as supply side interventions supporting a strategic policy goal such as economic growth or national security. This encompasses other definitions in the literature. For example, Juhász *et al.*, (2023:4) define industrial policy as,

“Those government policies that explicitly target the transformation of the structure of economic activity in pursuit of some public goal,”

while Evenett *et al.*, (2024:6) go for,

“Any targeted government intervention aimed at developing or supporting specific domestic firms, industries, or economic activities to achieve national economic or noneconomic (e.g., security, social, or environmental) objectives,”

These and other definitions all specify the intentionality and strategic character of industrial policies ‘by design’ (while recognizing that ad hoc or firm specific interven-

tions are common), whereas we argue that policies adopted with a less well-specified strategic rationale are also industrial policies, but ‘by accident’; many of those described in this section were introduced with a general notion of supporting an important sector of the economy, or a response to lobbying or the broader political economy environment, rather than a reasoned analysis of supply-side aims and what policy instruments might best service them. Acts of omission are still acts. What’s more, the specific nature of the interventions has changed quite a lot over time in each case.

The examples we give here also demonstrate the use of a range of differing policy instruments. Figure 1 sets out a taxonomy of policies organized according to their economic welfare rationale. The mix of instruments used has been different across each of our three examples, as described below.

Table 2 presents some summary descriptive statistics for the three sectors, each of which accounts for a meaningful share of GDP. Chart 1 shows labour productivity (Gross Value Added, GVA per hour worked) for each sector and the total econ-

Table 2: Sectoral Descriptive Statistics (2022 or latest available data)

Sector	GVA	Share of GDP, Per cent	Number Employed	Average Earnings	Net Trade Balance
Life sciences/pharma	£43.3bn	1.2	304,190	£40,000	£625m
Financial services	£171.4bn	7.5	1,148,000	£48,197	£59.9bn
Creative Sector	£148.7bn	6.5	2,300,000	£30,164	£600m

PWC: <https://www.pwc.co.uk/industries/pharmaceuticals-life-sciences/insights/the-life-sciences-future50.html> & Office for Life Sciences; <https://www.gov.uk/government/collections/bioscience-and-health-technology-database-annual-reports>; ONS: Blue Book 2023 <https://www.ons.gov.uk/economy/grossdomesticproductgdp/compendium/unitedkingdomnationalaccounts/thebluebook/2023/supplementarytables>; TradeTimeSeries, 2024- <https://www.ons.gov.uk/economy/nationalaccounts/balanceofpayments/datasets/tradingoodsmretsallbopeu2013timeseriespreadsheet> ; Creative Industries Jobs Data, 2023 - <https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/adhocs/15627jobsinthecreativeindustriesandoccupationsinlondonandallotherregionsoftheuk2010to2021> ; Annual Surveys of Hours and Earnings 2023 <https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/earningsandworkinghours/datasets/ashe1997to2015selectedestimatesOLS>; Bioscienceandhealthtechnologysectorstatistics,2023-<https://www.gov.uk/government/statistics/bioscience-and-health-technology-sector-statistics-2021-to-2022#full-publication-update-history> ; Life Sciences Sector Data, 2024 - <https://www.gov.uk/government/publications/life-sciences-sector-data-2024> DCMS: Sector Economic Estimates GVA 2022 - <https://www.gov.uk/government/statistics/dcms-sectors-economic-estimates-regional-gva-2022> ; Sector Economic Estimates - Trade, 2021, Main Report - <https://www.gov.uk/government/statistics/dcms-and-digital-sector-economic-estimates-trade-2021/dcms-sectors-economic-estimates-trade-2021-main-report>; Sector Economic Estimates: Earnings 2023 and Employment October 2022 to September 2023 - <https://www.gov.uk/government/statistics/economic-estimates-earnings-2023-and-employment-october-2022-to-september-2023-for-the-dcms-sectors-and-digital-sector>

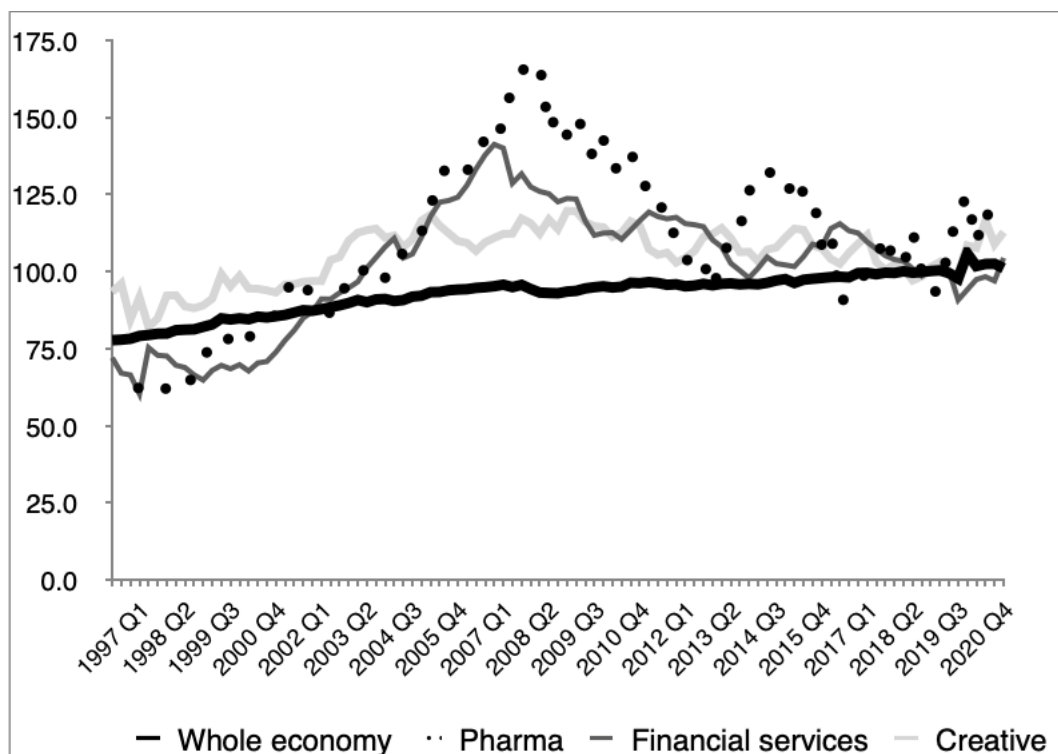
omy from 1997 to 2020. That the three sectors have contributed to the broader slowdown post-2008 in trend productivity growth is clear from the chart, with the productivity index declining in each case. This is consistent with other evidence that the biggest contributors to the UK productivity slowdown have been high value, intangibles-intensive sectors (Coyle and Mei 2023, Goodridge and Haskel 2023). Nevertheless, between 2000 and 2020, whole economy labour productivity rose 19 per cent, compared with 53 per cent for pharmaceuticals and 50 per cent for fi-

nance.

Life Sciences and Pharmaceuticals

The pharmaceuticals and life sciences sector spans several SIC codes, including the manufacture of basic pharmaceutical products (SIC 21100), preparations (21200) and also biotechnical research activities (72110) and ‘other’ scientific activities (74909). As with the creative sector, policy documents as well as company activities may refer to a broader or narrow range of these. Although the sector boundary is

Chart 1, GVA per Hour Worked by Sector (Volume Index 2019=100)



Source: ONS (2022) Labour productivity by industry division (2022, January). <https://www.ons.gov.uk/economy/economicoutputandproductivity/productivitymeasures/datasets/labourproductivitybyindustrydivision>.

fuzzy, it is intertwined with health policy and the role of the NHS in the UK as a purchaser of products, a valuable environment for trials, and increasingly as a potential source of data for use in research. Not surprisingly, given the role of safety regulation in medicines as well as the outsize importance of government policy decisions in health provision in the UK, the industry undertakes considerable lobbying efforts, which help explain the shape industrial policy interventions have taken over time. Naci & Forrest (2023) summarize these efforts as funding for patient support groups (which can call for the NHS to pay for specific drugs, for example; for clinical commissioning groups; and for Parliamentary interest groups (p22).

Box 1 summarizes relevant policy interventions since 1990. These take three main

forms. First, there is a clear and stable regulatory framework. This has been a significant enabler of UK comparative advantage in the life sciences in particular. The extended public and political consultations undertaken by the Warnock Review led to the establishment of the Human Fertilisation and Embryology Authority (HFEA) in 1991, setting a regulatory framework for embryology and genetic research that had societal consent and enabled the UK to operate at the frontier of blue skies and applied research in this area (Harding 2023). The legislation set the HFEA dual aims of patient care and medical innovation (UK Government, 1990). The broader regulatory framework for approving pharmaceutical products and funding them, with the Medicine and Healthcare Products Regulatory Agency, has also remained stable and

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Box 1: Health and Life Sciences timeline 1990-present

- **1990s to 2000:**
 - Clear regulatory framework e.g. HFEA in 1991 set framework for life sciences research; European Medicines Agency established in 1995
 - Healthcare policy and market access: targeted cost-effectiveness of new drugs to support healthcare policy. Led to the National Institute for Health and Care Excellence (NICE), 1999
- **2000- 2010:**
 - Medicine and Healthcare Products Regulatory Agency, MHRA established in 2003
 - Increased public funding for Research; National Institute for Health Research (NIHR) established in 2006
- **2010-2020s:**
 - Cancer Drugs Fund Established in 2011
 - Cell and gene therapy Catapult Centre (across 4 locations) established by Innovate UK
 - MHRA rebranded, 2013
 - Tax subsidy: Patent box 2013
 - Technology transfer and innovation support: attempts at commercialisation spin-outs from R&D, e.g., the Biomedical Catalyst programme 2013 – now under Innovate UK
 - Programmatic interventions beginning in 2012, e.g., establishment of the Cell and Gene Therapy Catapult 2012 and the Medicines Discovery Catapult 2015
 - Increased research support: National Health Research Authority 2015
 - Cancer Drugs Fund Reformed, 2016
 - Public-private partnerships, e.g., Industrial Strategy Life Sciences Sector Deal 2017
 - More programmatic support – PPP Innovative Medicines Fund, 2021; NHS launches Commercial Medicines Framework, 2021
 - MHRA becomes standalone UK Regulator of Medicines, 2021
 - Innovative Licensing and Access Pathway (ILAP) established, 2021

Source: Authors' own

provided researchers and the private sector with a clear operating framework. This is a clear example of the benefits of regulatory clarity and stability in enabling innovation and investment.

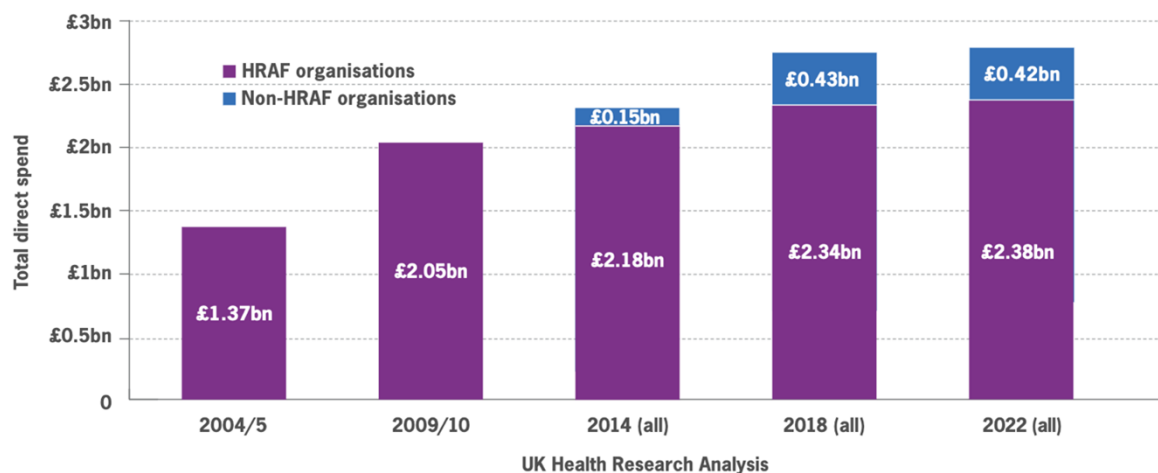
The second, and related, intervention has been consistent and significant public funding for research in UK universities, augmented by private funding from charities and foundations such as the Wellcome Trust. Jones and Wilsdon (2018:5) note the scale of the increase in funding for biomedical research since at least 2000: “The share of overall research council spending accounted for by the Medical Research Council (MRC) has risen from 16 per cent in 2004 to 24 per cent in 2015 – a 75 per cent increase in real terms.”

Chart 2 shows the increase over time in health-related research funding. This has brought huge innovations, not least the first sequencing of the human genome by John Sulston and colleagues, announced in 2000, and several UK Nobel Prizes. The continuing research funding has enabled the UK to retain its research lead and to attract

and retain private investment in pharma and biomedicine, building on early industrial strengths from ICI in the 1960s onwards and on early intellectual advances, such as Franklin, Crick and Watson’s discovery of DNA. The Laboratory of Molecular Biology at Cambridge has recently been singled out as one of the most successful ideas factories ever, producing over a dozen Nobel Laureates (Gebel *et al.*, 2024). One estimate put the annual total economic rate of return on public health research spending in the 20 years to 1995 at between 15 and 18 per cent (Sussex *et al.*, 2016) although – in arguing for a reprioritization of funding away from basic biomedical and life sciences research to research into behavioural and environmental influences on health – Jones and Wilsdon argue that the economic return has diminished since.

A third significant policy tool supporting the sector has been tax relief for private sector R&D and the introduction of the patent box in 2013. Companies registering for the relief pay a lower corporation tax rate of 10 per cent on profits at-

Chart 2: Direct Expenditure on Health-related Research in the UK



Source: The UKCRC Health Research Analysis Forum (HRAF) (2023), a subgroup of twelve large public and charity funders of health research, plus the Association of Medical Research Charities (AMRC). https://hrcsonline.net/wp-content/uploads/2024/04/UK_Health_Research_Analysis_Report_2022_web_v1-1-postpub.pdf

tributable to patented products they have developed. The total value of relief claimed in 2022 was £1.4bn, almost all (94 per cent) claimed by large companies. The tax authority, His Majesty’s Revenue and Customs (HMRC), does not publish data beyond broad SIC categories, but manufacturing companies account for over half the claimants and 44 per cent of the relief. The effectiveness of the tax relief in encouraging companies to locate and commercialize their R&D in a particular country has been questioned (Gaessler *et al.*, 2021) but – as with other corporate tax instruments – governments are likely to feel compelled not to diverge too far from practice in countries competing for such investments.

Financial Services

The UK has long had a comparative advantage in financial and related services thanks to the City of London. From the formation of the Lloyds of London insur-

ance market after its early informal beginnings in local coffee houses to innovations such as the idea of discounting (Deringer, 2018), today’s City began to take shape in the 17th and 18th centuries. The creation of the Bank of England in 1694 was an important milestone (Kynaston, 2018). In recent times, the growth of the Eurodollar markets through the 1980s paved the way for the major de- or re-regulation in the shape of the 1987 ‘Big Bang’.

Among other factors, the legislation passed by the first Thatcher Government enabled a substantial shake-up of the traditional market structures, permitted the growth of derivatives markets, opened London more to foreign banks, and paved the way for most building societies to shed their mutual status and list as public companies. The offshore ‘Eurodollar’ markets moved onshore, and the City grew massively in terms of transactions volumes, jobs, and also net exports. The financial services core has also enabled growth in ancillary profes-

sional services businesses such as law and accountancy firms and mergers and acquisitions (M&A) consultancies.

The regulatory and legislative environment is the main focus of many accounts of financial services policies, and has continued to be contested. The Labour Government's decision early in its 1997 term to make the Bank of England independent and responsible for monetary policy drove one rearrangement of the supervisory architecture. In the 1980s the Securities and Futures Authority (SFA) was responsible for oversight of investment firms, and the Bank of England for banks. With the Bank's independence, a new single body, the Financial Services Authority, emerged from the predecessor Securities and Investments Board formed prior to Big Bang.

Unsurprisingly, the regulatory environment changed again in the wake of the financial crisis, with the splitting of responsibilities into the Prudential Regulatory Authority (PRA, prudential regulation of all firms) and the Financial Conduct Authority (FCA, conduct of consumer-facing firms), while the Bank of England regained responsibility for overall financial stability. This complicated institutional history indicates a once a decade major restructuring of the basic regulatory environment, and was accompanied by an increasingly complex set of international rule books, both from the EU and other bodies such as the Bank for International Settlements and Financial Action Task Force.

One of the benefits of Brexit was claimed to be the potential to lift some of the post-2008 regulatory burden on the financial sector, including unpopular (with the City) caps on bonuses. In 2024, the newly-

elected Chancellor Rachel Reeves used a speech to signal a tilt away from regulation toward greater risk-taking (HM Treasury, 2024). The overall picture is one of an unstable regulatory environment for the sector.

While the story of regulation since 2008 has largely been one of increasingly tight restrictions, an important exception has been the FCA's introduction of its innovation 'sandbox' for fintech startups and for already-authorized firms wanting to test new technology products. Studies typically find positive effects on the participants on metrics such as ability to raise capital and many other countries have adopted regulatory sandboxes for finance. The innovation remit of the Payment Services Regulator and efforts to enforce competition in UK retail banking through the Open Banking initiative, have probably also helped foster fintech innovation.

As Box 2 indicates, other 'classic' industrial policy supports for financial services have often been overlooked, however. These have included planning reforms enabling the construction of the modern landscape of the City, with large floor spaces for trading floors and the liberation of air rights to build out over public highways and spaces; and the creation in 1981 of the London Docklands Development Corporation. The City – or rather Canary Wharf – has also benefited from infrastructure investments in the Docklands Light Railway (cumulatively over £1bn), the Jubilee Line extension (£3.5bn), London City Airport (£400m), and the Elizabeth Line serving Canary Wharf from towns west of London (£19bn). Other parts of the UK can only weep at the scale of these investments in

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Box 2: Financial Services Timeline 1990-Present

- **Late 80s – early 90s:**
 - Major regulatory shake-up: ‘Big Bang’, Financial Services Act and Building Societies Act 1986, Building Societies’ demutualizations. Securities and Investment Board 1985
 - Planning reform in City of London and Docklands, development support for Docklands, construction boom
 - Infrastructure investment: DLR, City Airport
- **Late 90s to mid-2000s:**
 - Regulatory evolution: Bank of England loses stability and market oversight functions in creation of Securities and Investment Board; SIB morphed into Financial Services Authority (Financial Services and Market Act 2000)
 - Investment schemes: e.g., Venture Capital Trusts, 1995 – targeted at small, high-risk companies
 - Jubilee Line extension
- **Post-2008 crisis:**
 - Regulatory evolution: shake-up of regulators
 - Nationalization of failing banks – subsequent share sales
 - Public funding for R&D in fintech
 - Banking Reform Act, 2013
 - Elizabeth Line opened 2022 (Crossrail)
 - Financial Services and Markets Act 2023
 - Brexit

Source: Authors’ own

London’s transportation infrastructure.

Creative Industries

In contrast to pharma/life sciences and financial services, the UK’s creative industries did enjoy an intentional industrial policy early in the 20th century, but have been the poor relation in terms of policy attention and strategy in recent decades, to the extent that it is the most ‘accidental’ of the industrial policy examples in this paper. The BBC was established 1922 as the British Broadcasting Corporation, by the Post Office convening private companies such as Marconi to create a commercial rival to RCA and help ensure that the American company did not dominate in the new technology of radio (Coyle, 2015). At that time it was seen as a research and engineering-centric company; while subsequent BBC Royal Charters have all included a core engineering R&D function, this has shrunk over time although it has remained an important participant in areas of broadcasting and internet research, and in international standards-setting in broadcast and online technologies.

The radio and then television markets subsequently grew, with the UK landscape changing when the television Act of 1954 established the Independent Television Authority, later known as the Independent Broadcasting Authority, and the first commercial channels launched in 1955. Mrs Thatcher’s Government further liberalized the broadcasting market in 1990.

Other pre-1990 interventions were the establishment of the British Film Institute Production Board in 1964 (it was folded into the UK Film Council in 2000, which in turn was closed down in 2011) to commission experimental and indeed uncommercial films; and the launch in 1982 of publicly-owned Channel 4 & S4C (in Welsh) to stimulate innovation in the independent production sector. These broadcasters are purchasers not producers, and hence their funding (advertising for Channel 4 and part of the BBC licence fee for S4C) is a form of advance market commitment (Kremer *et al.*, 2020).

One notable intervention with a lasting impact on the UK economy was the BBC’s commissioning of the BBC Micro in 1982, as a tie-in to a TV programme (The Sil-

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Box 3: Creative Sector Timeline 1990-Present

- **1990 to 2000:**
 - The Broadcasting Act 1990: deregulation of the broadcasting industry
 - BBC and Channel 4 provide advance purchase commitment and training for independent sector
 - Establishment of National Lottery, 1994, provided significant funding for independent producers
 - Creative Industries Task Force established, 1997
- **2000 to 2010:**
 - First set of tax reliefs: Film Tax relief in 2007
- **2010 to 2020s:**
 - Creative Industry Council established 2011
 - More tax reliefs: High-End Television Tax Relief 2013, Video Games Tax Relief 2014
 - Screen Skills created in 2018

Source: Authors' own

icon Factor, followed by ITV's *The Might Micro* in 1983) explaining computers (Radcliffe and Salkeld 1983). The commission to produce the machines, which supported coding in a version of Basic, was won by Acorn Computers in Cambridge, the seed from which today's chip design giant ARM developed.

Even more significant, however, was the development of a generation of software developers and the highly successful UK games industry out of the new coding enthusiasts who bought the machines. An early blockbuster game was *Elite*, created by two Cambridge students. The UK's early strengths in games development were cemented by some new university courses, such as those developed at Abertay University. The BBC undertook the exercise as part of its education mission, specified in every one of its Royal Charters, and had a grant of £10,000 from the (then) DTI's Electronic Applications Division. Since that intentional start, however, there has been little systematic strategic policymaking for the games sector, the computer software sector or the rest of the creative industries more broadly (Tsang 2021). The UK's games and software sectors are fragmented with few large companies, and whose trade surpluses are small (Mandys

& Coyle 2024).

As the timeline in Box 3 shows, there have been piecemeal policies across the creative sector, such as small tax reliefs and – importantly – funding provided through the National Lottery. On the contrary, although on some definitions the creative industries account for as large a share of GDP as do financial services, successive governments have cut basic arts funding (which can be seen as the equivalent of R&D for the cultural industries), downplayed the importance of arts education in schools and universities, reduced public funding in real terms for the BBC, and kept the future status of Channel 4 in doubt. Broadly speaking, although (as Table 1 shows) various industrial policy statements have included the creative industries as a key sector, Box 3 indicates a paucity of policy interest, with a focus on tax reliefs for the private sector and deregulation.

The consequence of this market-first orientation in the creative industries has been – apart from constant funding pressures – a failure to deploy effectively the BBC's role as an engine of industrial policy for the sector, and an opening of UK broadcast markets to overseas providers. While this may benefit consumers, it risks undermining UK-based skills and supply chains.

In addition to its engineering R&D in relevant technologies (including for example the first deployment of long-form video on demand and implementation of high definition television), the BBC is a large commissioner and purchaser of UK radio, TV, online and music output, with regulatory requirements to purchase from suppliers around the UK. It is an important funder of the sector's skills body and provides skills and experience for large parts of the rest of the sector. R&D funding, advance purchases and skills provision are all classic industrial policy tools.

Moreover, successive Governments' neglect has not been benign. Political attacks and funding cuts have made it increasingly difficult for the BBC and Channel 4 to play these policy roles, as even some of their commercial rivals accept. One specific policy decision with adverse consequences was the Competition Commission's 2009 decision to ban for 5 years a joint venture between the five UK broadcasters to provide a long-form video streaming platform ('Project Kangaroo'). This paved the way for Netflix to enter that market and become the UK's biggest broadcaster. The supply-side implications of the decision for the UK's production base did not feature in the reasoning for the decision (Coyle 2024).

Discussion

Of these three examples, the sector that comes closest to a 'classic' industrial policy, acknowledged as such, is pharmaceuticals and the life sciences. It featured in almost all the iterations of formal industrial policy described in Table 1. One explanation for this may be the lobbying ef-

fectiveness of the pharma industry (Naci & Forrest 2023; Abraham 2002; Rickard and Ozieranski, 2021). But the sector has historic strengths dating at least back to the 1960s, both in research and in industrial production.

The financial services sector is not generally regarded as the beneficiary of a sector-based industrial policy, in part because of the tendency in the debate to focus on manufacturing. It has nevertheless also been consistently seen as an area of UK strength, with a long history of innovation and comparative advantage dating back to at least the 17th century. It too wields significant lobbying power (Culpepper, 2014; Bell and Hindmoor, 2015, 2017) while governments are also mindful of the power of the financial markets to make or break their macroeconomic policies. However, the debate about policy for the industry focuses on regulatory design and institutions, whereas as we have noted it has also benefited from other classic industrial policy tools such as significant infrastructure investment. Given the instability of the regulatory framework, other aspects of the policy environment may have been important in cementing the UK's status as an international financial centre.

The creative sector has increasingly come to be seen as an area of economic strength for the UK but it is more disparate, arguably lobbies less effectively, and the BBC in particular has increasingly become a focus of culture war politics. So while the sector benefited from an explicit industrial policy in the early 20th century, and was a focus of deregulatory policies from the 1960s and especially the 1980s on, government policies have be-

come progressively less supportive of the sector over time. Although it is comparable in scale to the financial services sector in terms of GVA, jobs and trade, it does not have equal status in terms of policy priorities such as tax reliefs or public R&D. Indeed, recently government policies have in some ways become actively hostile to the sector, although the current Labour government has so far taken a different tone.

What the three examples have in common is that the various policies supporting them have not formed part of a conscious strategic framework, with interventions linked to specific identified needs. As Figure 1 indicated, the differing economic welfare rationales for not ‘leaving it to the market’ point to different subsets of policy instruments. While public support for basic R&D due to knowledge spillovers is indeed an appropriate instrument in the case of life sciences, as noted questions have been raised about whether or not there is now too much funding relative to other research areas.

Meanwhile the important role of the UK’s regulatory environment has not been fully acknowledged; it will be important to maintain the stability of the regulatory framework and to develop a similarly clear and stable set of rules for health data use in the age of AI. In addition, other sectoral needs have not been met. For example, companies often complain of skill shortages at the mid-skill level, such as lab technicians; from 2010-2020 the highest growth in demand in scientific and technical companies was for employees with undergraduate and higher apprenticeship qualifications rather than PhDs (Royal Society, 2022). This too calls for a policy ad-

ressing the need for a public good, as in Figure 1, and a strategic framework might more easily enable joining up of financial incentives, R&D and skills needs – as without the latter, the impact of government spending or tax breaks will be more limited.

In the case of financial services, the regulatory environment has by contrast been unstable over many governments, understandably so post-crisis. But the framework continues to be debated and it seems likely to remain contested. There are also questions about the appropriate regulatory framework for fintech innovations, and the balance between enabling innovation and protecting consumers.

The debate also ignores the important role of planning policies and infrastructure provision. The question here seems to concern the societal economic return to what has in fact been substantial public subsidy to the sector (even ignoring the public finance cost of bank bailouts and the ultimate cost of the QE programme). As a number of authors have pointed out (Christophers 2013, Coyle 2014), the construct in the national accounts of ‘financial intermediation services indirectly measured’ imputes valued added to speculative trading by the sector. Of the three sectors discussed here, it is by far the most successful net exporter, but it would not be unreasonable to consider its ‘true’ ratio of GVA to GDP to be lower than the 7 per cent recorded in the national accounts. An intentional policy framework would investment and regulation to better outcomes for society including productivity and potentially regional economic outcomes. For example, should infrastructure

investments favouring the sector occur outside the City of London and Canary Wharf, in cities such as Birmingham, Edinburgh and Manchester?

When it comes to the creative sector, there is, in recent decades, a sense that its success has come about despite stated government support rather than because of it. Although a varied sector, including broadcast, games, software, publishing, heritage and the arts, with a share of GDP and numbers employed similar to financial services, public funding has been progressively reduced in real terms. The success of public interventions such as Channel 4 or the BBC Micro does not feature in political rhetoric; on the contrary, successive Conservative Governments sought to undermine the case for any government role at the same time as enabling and lauding commercial activities – even though these often have foreign providers without a commitment to the UK supply chain.

Nevertheless, the UK's creative sector is, like the others, an economic success story. Understanding interventions the sector as an important area of economic policy would help maximize its potential productivity, which also has an important regional dimension.

Given that these are successes, the argument here concerns the counterfactual: how much more successful might they have been with an intentional and stable industrial policy framework, with interventions targeted to identified market failures? accident. We argue that there are (at least) two channels through which industrial policy by design would have enabled higher productivity in these sectors, as compared with the reality of accidental industrial

policies.

One of these is *reduced investment risk due to reduced policy uncertainty*: a sustained industrial policy would encourage a more stable tax and regulatory environment, including by making explicit the political choice made with regard to trade-offs. For example, in contrast to the life sciences, the financial services sector could have experienced less regulatory upheaval, offering firms more clarity about the policy trade-offs between competition, innovation and consumer protection or financial stability. Similarly, if there had been a sustained industrial policy focus on the creative industries, with less policy churn with regard to tax breaks or skills policies, or simply a greater awareness among politicians of the sector's economic scale and importance, the UK could instead have grown a more export-oriented sector with larger producers rather than the current fragmented supply base of small independent suppliers and freelancers.

Policy churn is an often-noted weakness of the UK political system, and there is cross-country evidence that policy uncertainty reduces investment (Davis, 2019). Industrial policy offers a potential framework for reducing policy-related uncertainty, both by reducing churn and through classic instruments such as standard-setting and advance market commitments.

A second channel is the potential to realize spillovers through co-ordination. High value and knowledge-based sectors are characterized by knowledge spillovers. These can take the form of agglomeration in certain locations, given the evidence on the continuing importance of in-person

links and thick labour markets for specialist skills (e.g. Atkin *et al.*, 2022, Giroud *et al.*, 2024). The massive infrastructure investment in London's financial services is an implicit recognition of the power of agglomeration. With an intentional strategy, UK Governments might also have considered more carefully the location of the major infrastructure investments and planning reform, to accelerate the development of secondary financial services locations in the UK. With a greater focus on labour market spillovers and training provision life sciences and pharmaceuticals could have fewer mid-level skill shortages or labour market mismatch. The keystone role of the public service broadcasters in the creative industries could, in a counterfactual world, have been used through R&D, training and clustering to have delivered a larger sector, exporting more. The positive impact of the BBC's 2007 decision to relocate a large chunk of its services and activities to Media City in Salford suggests the positive scope for such policies (Nathan *et al.*, 2024).

Labour reallocation from lower to higher value sectors encouraged by policy interventions could also contribute to improved aggregate productivity outcomes. Employment has grown in each of the three cases considered here, although other work has found that the contribution of labour reallocation effects to recent UK productivity performance has been limited (Coyle & Mei 2023).

Policies affecting business decisions cannot avoid having an impact on the supply side of the economy and thus on levels of productivity; acts of omission are choices, just as much as positive decisions. Although the counterfactual outcomes are

necessarily speculative, the political revival of interest in industrial policies argues for making the most of the ones we already have, in the context of a more intentional or strategic approach to economic policy at a time of significant technological and geopolitical transition.

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